



UNC CHARLOTTE

Office of the Chancellor

9201 University City Boulevard, Charlotte, NC 28223-0001

t/ 704.687.5727 f/ 704.687.3219 www.uncc.edu

June 7, 2011

Dr. Steven Leath
Vice President for Research
Office of the President
University of North Carolina
Post Office Box 2688
Chapel Hill, North Carolina 27515-2688

Dear Dr. Leath:

Enclosed is UNC Charlotte's request to establish a new Bachelor of Science in Neurodiagnostics and Sleep Science, as well as a request to establish the program online. The proposed program represents a collaboration between UNC Charlotte and UNC Chapel Hill to address emerging health care needs in the state.

Thank you for your consideration of this request. Provost Joan Lorden or I would be pleased to respond to any questions that you may have regarding this request.

Cordially,

A handwritten signature in blue ink, appearing to read "PLD".

Philip L. Dubois
Chancellor

PLD/cfh

Enclosure (1 copy of Appendix C and 1 of Appendix G)

cc: Provost Joan F. Lorden
Dr. Jane Neese



Executive Summary

Bachelor of Science in Neurodiagnostics and Sleep Science

Description of the Program: The Department of Kinesiology in the College of Health and Human Services at the University of North Carolina at Charlotte, in collaboration with the Departments of Allied Health Sciences and Neurology in the School of Medicine at the University of North Carolina at Chapel Hill, requests permission to establish a post-professional baccalaureate degree program in neurodiagnostics and sleep science (NDSS). Potential students for this program are Sleep Technologists and Electroneurodiagnostic Technologists who are already registered and practicing, but who want to pursue a BS degree to expand their professional knowledge and expand opportunities for career advancement. The NDSS program will provide a broad based foundation for sleep science professionals to gain vital skills of critical thinking and creative problem solving needed for key leadership, educational, and management roles in this emerging discipline. We anticipate that the program's prospective students will be motivated and qualified practitioners who want to pursue this degree to become the institutional, educational, and health care leaders needed in this field. The proposed program will be the first of its type in the nation and will set the national standard for future BS degrees in NDSS.

Neurodiagnostic and sleep science procedures record and study the electrical activity of the brain, spinal cord, and peripheral nerves, the function of the cardiovascular system, and the function of the respiratory system. A variety of diagnostic tests are performed including recording sleep studies (polysomnograms), recording brain wave activity (electroencephalography), recording responses from peripheral nerve stimulation (nerve conduction velocities), recording stimulus evoked responses from the brain and spinal cord (Evoked Potentials), and monitoring brain and spinal cord activity during surgery (intraoperative monitoring). Therapeutic procedures are also performed including positive airway pressure and supplemental oxygen titration for people with certain sleep disorders such as apnea.

The curriculum of the NDSS program will provide the foundation for our graduates to advance scholarly pursuits, contribute to the professional knowledge base and promote high quality patient-centered service. Upon graduation, students are prepared with the knowledge, experience, and skills to sit for national registry examinations.

This curriculum of this program is a collaboration between the UNC Charlotte Department of Kinesiology and the UNC Chapel Hill School of Medicine. The Provosts of each institution have executed a formal written agreement attesting to this collaboration. Collaborative agreements include UNC Charlotte providing the academic home for the program as well as faculty and UNC Chapel Hill providing facilities, faculty, and specialized NDSS course content offered via distance education. This unique collaborative approach provides UNC Charlotte the ability to increase accessibility of this program to North Carolina and beyond. Inter-institutional resource utilization decreases the amount of new and existing resources needed for the NDSS program, leading to more efficient use of funds. This collaboration between UNC Charlotte and UNC Chapel Hill may serve as a new alternative model of education and state outreach.

Intended Audience: Potential students for this program are Sleep Technologists and Electroneurodiagnostic Technologists who have an associate's degree and are already registered and practicing, but who want to pursue a BS degree to expand their professional knowledge and opportunities for career advancement. The NDSS program will provide a broad based foundation for sleep science professionals to gain vital discipline of thought, critical thinking, and creative problem solving needed for key leadership, educational, management, and research roles in this emerging discipline. We anticipate that the program's prospective students will be motivated and qualified practitioners who want to pursue

this degree at the University to become the institutional, educational, governmental, and research leaders needed in the fields.

Justification for the Program: The proposed baccalaureate program is consistent with the University of North Carolina at Charlotte's mission to offer "exemplary undergraduate programs," the College of Health and Human Services mission to offer "professionally recognized and accessible undergraduate ... programs that are nationally and globally relevant, and responsive to changing health care... needs in the state and region," and the Department of Kinesiology's mission to "promote optimal health and well-being by encouraging life-long movement and activity in a variety of populations through scholarly research, teaching and service." The proposed program also aligns with the University of North Carolina at Chapel Hill's mission to "extend knowledge-based services and other resources of the University to the citizens of North Carolina and their institutions" by preparing health care professionals with the knowledge, competence, and adaptive skills to fulfill educational, professional and leadership positions. Addressing the needs of North Carolina and the nation by providing graduates to fulfill many vacancies in neurodiagnostic and sleep science leadership positions is consistent with the University's mission to "address, as appropriate, regional, national and international needs." An environment of research-centered learning and quality instruction will be at the core of the new program, which is consistent with the Department of Allied Health Sciences' mission to provide "exemplary teaching, innovative research, and patient-centered clinical practice" and with the University's mission to "provide high-quality undergraduate instruction...and to those values that foster enlightened leadership for the state and the nation." Further, the development of this program is completely in alignment with the Department of Neurology's mission (in part) within the School of Medicine at UNC Chapel Hill in "... providing high quality neurological consultation and specialty neurological care to the people of North Carolina and to others who travel to our state." The medical director of this proposed program has provided a short video describing UNC Chapel Hill's Department of Neurology's commitment to the NDSS program and a description of the need for advanced technologists.

The number of patients seen for diagnosis and therapy for sleep-related disorders in North Carolina has increased dramatically over the past 20 years, with the most increase in the past 5 years. The number of patients seen for sleep studies is projected to continue this upward trend.

Hospitals are eagerly investing in sleep clinics to help meet the patient need. The October 24th issue of the Triangle Business Journal states "Helping people sleep well is becoming a big business, and Duke Raleigh Hospital is expanding...to double the size of its center..."⁷ Sleep facilities such as Duke Raleigh Hospitals number more than 3,300 and sleep lab revenue nationally is expected to increase by 2012 to \$5.8 billion from the current \$4.5 billion according to Market data Enterprises.⁸ The National Sleep Foundation published an article stating "Market data also expects mainstream publicity regarding the importance of sleep to continue, along with heavy advertising for sleep drugs. Market data predicts the number of sleep labs will grow by 6 percent over the next four years"⁹ North Carolina alone has more than 20 sleep centers accredited by the American Academy of Sleep Medicine, and this number is continuing to rise.¹⁰ Accredited sleep centers must employ qualified staff, which is a major issue the proposed program will positively affect.

APPENDIX C

UNIVERSITY OF NORTH CAROLINA

REQUEST FOR AUTHORIZATION TO ESTABLISH A NEW DEGREE PROGRAM

***INSTRUCTIONS:** Please submit five copies of the proposal General Administration. Each proposal should include a 2-3 page executive summary. The signature of the Chancellor is required. Proposals will be submitted electronically after January 1, 2010.*

Date: 5/18/2011

Constituent Institution: The University of North Carolina at Charlotte

CIP Discipline Specialty Title: Health Professions and Related Sciences

CIP Discipline Specialty Number: 51.0999 Level: B X M ___ 1st Prof ___ D ___

Exact Title of the Proposed Degree: Neurodiagnostics and Sleep Science

Exact Degree Abbreviation (e.g. B.S., B.A., M.A., M.S., Ed.D., Ph.D.): B.S.

Does the proposed program constitute a substantive change as defined by SACS? Yes ___ No X

a. Is it at a more advanced level than those previously authorized? Yes ___ No X

b. Is the proposed program in a new discipline division? Yes ___ No X

Proposed date to establish degree program (allow at least 3-6 months for proposal review: *month*
August year 2011

Do you plan to offer the proposed program away from campus *during the first year of operation*?
Yes X No ___

If so, complete the form to be used to request establishment of a distance education program and submit it along with this request.

I. DESCRIPTION OF THE PROGRAM

A. Describe the proposed degree program (i.e., its nature, scope, and intended audience).

The Department of Kinesiology in the College of Health and Human Services at the University of North Carolina at Charlotte, in collaboration with the Departments of Allied Health Sciences and Neurology in the School of Medicine at the University of North Carolina at Chapel Hill, requests permission to establish a post-professional baccalaureate degree program in neurodiagnostics and sleep science (NDSS). Potential students for this program are Sleep Technologists and Electroneurodiagnostic Technologists who are already registered and practicing, but who want to pursue a BS degree to expand their professional knowledge and expand opportunities for career

advancement. The NDSS program will provide a broad based foundation for sleep science professionals to gain vital skills of critical thinking and creative problem solving needed for key leadership, educational, and management roles in this emerging discipline. We anticipate that the program's prospective students will be motivated and qualified practitioners who want to pursue this degree to become the institutional, educational, and health care leaders needed in this field. The proposed program will be the first of its type in the nation and will set the national standard for future BS degrees in NDSS.

Neurodiagnostic and sleep science procedures record and study the electrical activity of the brain, spinal cord, and peripheral nerves, the function of the cardiovascular system, and the function of the respiratory system. A variety of diagnostic tests are performed including recording sleep studies (polysomnograms), recording brain wave activity (electroencephalography), recording responses from peripheral nerve stimulation (nerve conduction velocities), recording stimulus evoked responses from the brain and spinal cord (Evoked Potentials), and monitoring brain and spinal cord activity during surgery (intraoperative monitoring). Therapeutic procedures are also performed including positive airway pressure and supplemental oxygen titration for people with certain sleep disorders such as apnea.

Neurodiagnostic and sleep science procedures are increasingly used in many areas of diagnostic and therapeutic care and health research. Example areas of medicine utilizing these procedures include:

- Sleep disorders: Polysomnography is used to diagnose sleep disorders and therapeutic techniques are used to correct certain sleep disorders. Common sleep disorders include insomnia, sleep apnea, narcolepsy, periodic limb movement disorder, hypersomnia, snoring, arousal disorders, sleep-wake transition disorders, circadian rhythm sleep disorders, sleepwalking, restless legs syndrome, and sleep disorders associated with mental disorders, neurological disorders, and other medical disorders.
- Nervous system diseases/disorders: Neurodiagnostic procedures are used to diagnose conditions such as seizures, epilepsy, congenital and developmental malfunctions, infectious diseases, movement and pain disorders, neuromuscular disorders, toxic and metabolic diseases, nutritional and endocrine disorders, tumors, degenerative disorders and dementia, and vascular disorders. It is also becoming standard to use these procedures to monitor the brain and spinal cord during surgery to reduce postoperative neurological deficits.
- Behavioral/Psychiatric disorders: Neurodiagnostic and sleep science procedures also aid in the evaluation of disorders such as psychotic disorders, depression and mood disorders, anxiety disorders, psychological disorders, and somatoform and dissociative disorders.

The College of Health and Human Services at the University of North Carolina at Charlotte has successful post-professional, distance education baccalaureate degree completion programs in nursing and respiratory therapy. The latter degree is housed in the Department of Kinesiology, which will serve as the academic home for the proposed degree given its experience with respiratory therapy and other allied health degree programs. UNC Charlotte is experienced with the successful initiation and maintenance of programs similar to the one proposed. UNC Charlotte, located in the largest city in a multi-state area, has well-established educational affiliation agreements with numerous hospitals and other agencies in order to provide opportunities for experiential learning including: Carolinas Medical Center and Novant Health / Presbyterian Hospital. UNC Chapel Hill is uniquely positioned to collaborate with UNC Charlotte to support this degree through its School of Medicine, with its departments of Allied Health Sciences (DAHS), which will provide faculty expertise for this program; and Neurology, which

operates the UNC Sleep Disorders Center, a unit of UNC Hospitals, through its Division of Sleep Medicine. The UNC Sleep Disorders Center is accredited by the American Academy of Sleep Medicine as a full service sleep center and a high-quality clinical setting.

Nature of Program: The curriculum of the NDSS program will provide the foundation for our graduates to advance scholarly pursuits, contribute to the professional knowledge base and promote high quality patient-centered service. Upon graduation, students are prepared with the knowledge, experience, and skills to sit for national registry examinations.

Currently, the highest education level for polysomnography and electroneurodiagnostic technology is an associate degree; therefore the baccalaureate degree is the most appropriate for this program. Potential students will have earned an associate's degree and complete prerequisite courses before entering the program. The curriculum includes content to prepare students as advanced-level health care professionals in accordance with national accreditation standards and includes coursework in education, advanced clinical procedures, management, research, and leadership. Advanced roles in neurodiagnostics and sleep science require significant levels of analysis, problem solving, and professional judgment. This program will prepare students with the knowledge and skill sets to fulfill these advanced roles. Curriculum courses offered above the entry-level scope of practice will set this program apart and ahead of other programs with similar concentrations in our state, nation, and world.

Instruction for the proposed neurodiagnostics and sleep science post-professional program will combine web-based, distance education courses and on-campus laboratory sessions, clinical rotations, research projects, and campus/community presentations. Program completion time is projected at 2 years. Major concentrations include:

- Advanced principles in neurodiagnostic and sleep science design and function
- Principles of education for leaders
- Philosophy and application of scientific research
- Philosophy and principles of laboratory management, healthcare administration, and finance

Clinical rotations will take place through hospitals, specialized sleep and epilepsy labs, private practice, educational institutions, and research facilities. The clinical rotation is designed to maximize student exposure to all areas in neurodiagnostics and sleep science. Students are assigned to sites by the program. Students can indicate their first and second choices and indicate whether location or financial support is most important to them. In cases where there is competition for clinical sites of close proximity, the program will work with the financial aid office to determine the students with the greatest financial need.

Scope: The Neurodiagnostics and Sleep Science program has a global scope since there are no other programs offering a similar degree of this nature and the need for graduates is demonstrated in North Carolina, most other states in the US, and several other countries. It is anticipated that in the first years of the program, the majority of students will be citizens from within the United States.

Intended Audience: Potential students for this program are Sleep Technologists and Electroneurodiagnostic Technologists who have an associate's degree and are already registered and practicing, but who want to pursue a BS degree to expand their professional knowledge and opportunities for career advancement. The NDSS program will provide a broad based foundation for sleep science professionals to gain vital

discipline of thought, critical thinking, and creative problem solving needed for key leadership, educational, management, and research roles in this emerging discipline. We anticipate that the program's prospective students will be motivated and qualified practitioners who want to pursue this degree at the University to become the institutional, educational, governmental, and research leaders needed in the fields.

Program outcomes: Graduates will hold influential positions in clinical, educational, and research settings. They will use their professional knowledge and critical thinking skills to help create and maintain cost-effective practices for North Carolina and the nation. Graduates of the NDSS program will positively impact many aspects of healthcare, including:

- Quality of patient care
- Education of healthcare workers
- Building of needed accredited sleep centers in established and underdeveloped areas in North Carolina
- Attitudes of employers and co-workers
- Career ladders
- Insurance and reimbursement issues
- Legislative decisions directly affecting the field.

Program alumni will be prepared for advanced roles in neurodiagnostics and sleep science, which require significant levels of analysis, problem solving, and professional judgment. The NDSS program will uniquely further the knowledge base within health sciences and reach across disciplines of education, business, biomedical engineering, and public health. Graduates will also be well prepared for additional advanced degrees. In particular, the program will develop sleep technology leaders that will become:

- Educators and directors in associate degree programs
- Directors for laboratories
- Entrepreneurs
- Developers of new technology
- Researchers

B. List the educational objectives of the program.

1. Provide graduates with the broad scope of knowledge and understanding of the underlying systems and principles involved in neurodiagnostics and sleep science, as well as the complex adaptive skills needed to be able to create novel solutions to problems arising in their daily practice and in the fields of neurodiagnostics and sleep science.
2. Respond to the immediate and future needs of the community by providing competent, patient-centered, responsive, and proactive graduates who raise the standard of care.
3. Provide graduates with the skills for critically using (and participating in) health-related research and establishing life-long learning practices.
4. Prepare graduates to become faculty for Polysomnography and Electroneurodiagnostic technology associate degree (AAS) programs in North Carolina as well as all other states within the US and other countries.
5. Provide advanced professional education for individuals pursuing or actively involved in leadership roles and/or advanced degrees.

- C. Describe the relationship of the program to other programs currently offered at the proposing institution, including the common use of: (1) courses, (2) faculty, (3) facilities, and (4) other resources.

The proposed disciplinary-specific courses in NDSS are unique in the institution and UNC system. However, the program proposes to leverage existing courses and institutional expertise in research, adult education, information technology, and management and leadership.

NDSS is an allied health profession and will be located within the College of Health and Human Services. The relationship between the NDSS profession and other health professions at the same level within the University is limited to a common goal of improving healthcare for the citizens of North Carolina, the nation, and the world.

Courses:

Existing courses in Nursing and Respiratory Care will be utilized in the curriculum to decrease course duplication. Other NDSS courses are new and will be developed (approximately 10 courses) by UNC Charlotte and UNC Chapel Hill.

Faculty:

The primary faculty of the NDSS program is Mary Ellen Wells. Dr. Joseph Paul Coyle, MD, will continue to teach the Respiratory Therapy courses in the program's core. An additional faculty member will be added to teach in the NDSS program at 0.5 FTE. Clinical instructors are non-paid and include laboratory directors, faculty, residents, and physicians within UNC Hospitals. Clinical instructors will also be utilized from other accredited laboratories and acute care centers, primarily in North Carolina.

Facilities:

The web-based courses require minimal classroom support. Video and teleconferencing activities will utilize the Video Conferencing Center located within the UNC Hospitals Clinical Neurophysiology Laboratory.

Course presentations will take place in Bondurant Hall and the space will be scheduled through the Medical School Teaching Laboratories (MSTL).

Limited laboratory instruction will take place in the UNC Hospitals Clinical Neurophysiology Department and Sleep Disorders Center.

Other Resources:

Web-based courses will utilize software and services available through UNC Charlotte and UNC Chapel Hill as well as open source content management systems, such as Moodle and Sakai, which have minimal to no cost.

UNC Charlotte's Office of Extended Academic Programs works with academic departments and colleges to deliver off-campus face-to-face or technology-based instruction. The Office of Extended Academic Programs shares responsibility with the academic departments and colleges for distance education programs and takes the lead in coordinating all administrative and student support services.

The UNC hospitals Information Services Department will be used as support for the Video Conferencing Center. The support department is onsite with 24/7 on-call services.

Technical support for web-based curriculum includes student and faculty access to ITS and faculty support from the Office of Information Services in the Medical School.

- D. Describe any explorations of collaborative offering of this program and the results of those explorations.

This curriculum of this program is a collaboration between the UNC Charlotte Department of Kinesiology and the UNC Chapel Hill School of Medicine. The Provosts of each institution have executed a formal written agreement attesting to this collaboration. Collaborative agreements include UNC Charlotte providing the academic home for the program as well as faculty and UNC Chapel Hill providing facilities, faculty, and specialized NDSS course content offered via distance education. This unique collaborative approach provides UNC Charlotte the ability to increase accessibility of this program to North Carolina and beyond. Inter-institutional resource utilization decreases the amount of new and existing resources needed for the NDSS program, leading to more efficient use of funds. This collaboration between UNC Charlotte and UNC Chapel Hill may serve as a new alternative model of education and state outreach.

II. JUSTIFICATION FOR THE PROGRAM-NARRATIVE STATEMENT

- A. Describe the proposed program as it relates to:
1. the institutional mission and strategic plan and response to UNC Tomorrow

The proposed baccalaureate program is consistent with the University of North Carolina at Charlotte's mission to offer "exemplary undergraduate programs," the College of Health and Human Services mission to offer "professionally recognized and accessible undergraduate ... programs that are nationally and globally relevant, and responsive to changing health care... needs in the state and region," and the Department of Kinesiology's mission to "promote optimal health and well-being by encouraging life-long movement and activity in a variety of populations through scholarly research, teaching and service." The proposed program also aligns with the University of North Carolina at Chapel Hill's mission to "extend knowledge-based services and other resources of the University to the citizens of North Carolina and their institutions" by preparing health care professionals with the knowledge, competence, and adaptive skills to fulfill educational, professional and leadership positions. Addressing the needs of North Carolina and the nation by providing graduates to fulfill many vacancies in neurodiagnostic and sleep science leadership positions is consistent with the University's mission to "address, as appropriate, regional, national and international needs." An environment of research-centered learning and quality instruction will be at the core of the new program, which is consistent with the Department of Allied Health Sciences' mission to provide "exemplary teaching, innovative research, and patient-centered clinical practice" and with the University's mission to "provide high-quality undergraduate instruction...and to those values that foster enlightened leadership for the state and the nation." Further, the development of this program is completely in alignment with the Department of Neurology's mission (in part) within the School of Medicine at UNC Chapel Hill in "... providing high quality neurological consultation and specialty neurological care to the people of North Carolina and to others who travel to our state." The medical director of this proposed program has provided a short video describing UNC Chapel Hill's Department of Neurology's commitment to the NDSS program and a description of the need for advanced technologists. View the video at <http://media.med.unc.edu/sleep/sleep.html>.

The proposed program's educational objectives have a direct relationship to the UNC Tomorrow Initiative and the needs of our State as described in the 2007 UNC Tomorrow Final Commission Report. Compliance with the UNC Tomorrow Initiative

will be established by addressing the following major findings and recommendations of the UNC Tomorrow Final Commission Report Initiative:

Major Finding: *UNC should educate its students to be personally and professionally successful in the 21st century and, to do so, should enhance the global competitiveness of its institutions and their graduates.*

4.1.1. *UNC should prepare its students for successful professional and personal lives in the 21st century, equipping them with the tools they will need to adapt to the ever-changing world.*

4.1.2. *UNC programs, especially research programs, should be globally competitive to ensure that they are globally relevant and significant.*

The proposed program addresses 4.1.1 and 4.1.2 by providing an opportunity for students to earn a baccalaureate degree in neurodiagnostics and sleep science, which is the first (to our knowledge) of its type in the world, and prepare them with the complex adaptive skills to excel as leaders in the health care field.

Major Finding: *UNC should increase access to higher education for all North Carolinians, particularly for underserved regions, underrepresented populations, and non-traditional students.*

4.2.2. *UNC should continue ongoing efforts with the North Carolina Community College System to strengthen and streamline articulation between the two systems to develop a more seamless relationship.*

The proposed program addresses 4.2.2 by providing qualified instructors and program directors for neurodiagnostic and sleep science educational programs in the North Carolina Community College System and providing a pathway for Community College neurodiagnostic and sleep science graduates to earn a baccalaureate degree.

Major Finding: *UNC should lead in improving the health and wellness of all people and communities in our state.*

4.5.1. *UNC should lead in improving health and wellness in North Carolina.*

4.5.2. *UNC should educate more health professionals*

4.5.3. *UNC should lead in utilizing health information to improve health and wellness in North Carolina.*

The proposed program addresses 4.5.1 – 4.5.3 by providing graduates who will promote improving health and quality of life of all people. The graduates will also place priority on facilitating patient-centered clinical practice and innovation in health care.

Major Finding: *UNC should become more directly engaged with and connected to the people of North Carolina, its regions, and our state as a whole.*

4.7.1. *UNC should apply, translate, and communicate research and scholarship to broader audiences.*

The curriculum of the proposed program addresses 4.7.1 by providing the foundation for the graduates to advance scholarly pursuits, contribute to the professional knowledge base and promote high quality patient centered service to the people of North Carolina and the world.

2. student demand

To assess the demand for a baccalaureate degree program in NDSS, students enrolled in the five community college programs in NC with a concentration in polysomnography and/or electroneurodiagnostic technology were surveyed. Eighty-two percent of the students surveyed (N = 39 respondents) indicated that they were interested in pursuing a BS degree in neurodiagnostics and sleep science. Students enrolled in the 33 CAAHEP accredited polysomnography and electroneurodiagnostic technology programs in the US were also surveyed and 65% of the respondents (N = 34) were interested in pursuing a BS degree in neurodiagnostics and sleep science. Program directors from the NC Community College Polysomnography and Electroneurodiagnostic Technology with Add-on Polysomnography programs stated their students and graduates are interested in a BS degree in Neurodiagnostics and Sleep Science.

Letters of support from the North Carolina Community College System, Council for Allied Health in North Carolina, UNC Chapel Hill School of Medicine Department of Neurology, North Carolina Association of Sleep Technologists, and the American Society of Electroneurodiagnostic Technologists all attest to the interest in and need for this program in North Carolina.

Anecdotal evidence of student demand for the Neurodiagnostics and Sleep Science BS degree also exists from conversations with prospective students, student advisors, community college faculty and program directors, Sleep medicine physicians, and sleep and neurophysiology laboratory managers in North Carolina. Prospective students are showing great enthusiasm in the possibility of earning a new degree from a program that will be the first in the nation and world.

Some Polysomnographic and electroneurodiagnostic technologists holding associate degrees and a registry in the NDSS field (our target population) who have expressed interest in an NDSS BS degree are currently working in the following capacities:

- Director and developer of a nationally accredited polysomnographic technology program within the North Carolina Community College System
- Sleep laboratory entrepreneur
- Supervisor of neurophysiology laboratory in rapidly growing hospital in eastern NC
- Lead technologist in a new pharmaceutical research facility in eastern NC
- Active involvement in writing legislation for NC
- Recently given lectures and presentations in annual conferences for the field's professional societies
- Have held and currently hold offices in the field's professional societies

The Board of Registered Polysomnographic Technologists (the international registry for Sleep Technologists) currently has limited pathways for technologists to qualify and apply to sit for their registry examination. The "on-the-job trained" pathway will soon be eliminated and the only pathway for registration will be graduation from a nationally accredited formal education program. This will further increase the student demand for the program as the need for educators will continue to rise.

3. societal need (For graduate, first professional, and baccalaureate professional programs, cite manpower needs in North Carolina and elsewhere.)

"Sleep medicine has far reaching effects beyond public health. As part of our own being, sleep is integral to how we function in society. Technologists play a critical role in this discipline. We need well trained individuals across the spectrum to move our understanding and level of care forward," said Brad Vaughn, M.D., Professor of Neurology, Chief, Division of Sleep and Epilepsy, UNC School of Medicine at the University of North Carolina at Chapel Hill.

Sleep disorders affect approximately one-third of the North Carolina population, or almost 3 million people. These disorders are directly associated with decreased cognitive function, depression, weight gain, and irritability; and often result in death due to heart disease, diabetes, and accidents associated with these primary effects. It is estimated that approximately half of all individuals who have moderate to severe apnea will die within 10 years.

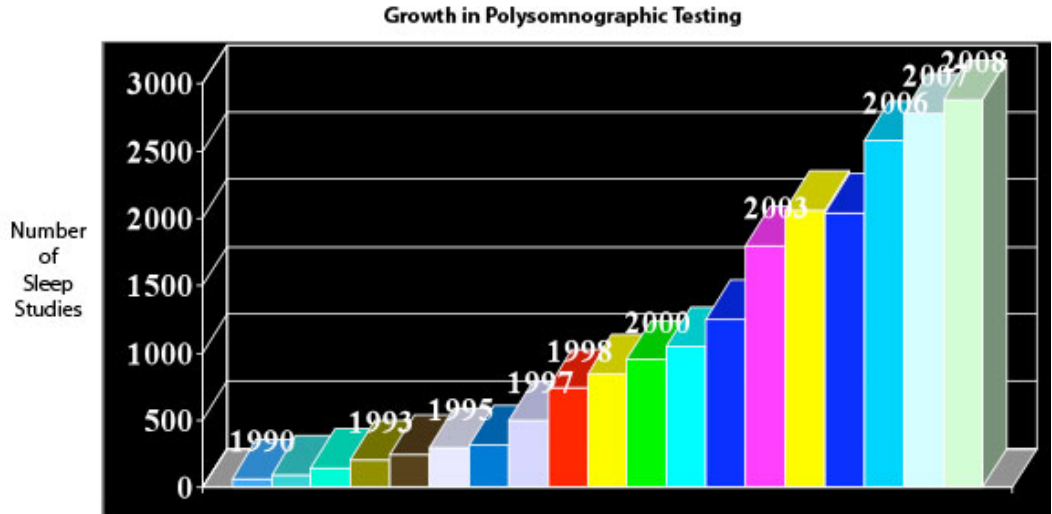
Devastating events with sleep dysfunctions traced as factors include:

- Exxon Valdez disaster^{1 and 2}
- Challenger space shuttle explosion (CNN)³
- Three Mile Island nuclear accident (U.S. NRC)⁴
- Chernobyl explosion (BBC)^{5 and 6}

As seen in the examples and statistics above, we have a local problem as well as a global problem. Societal awareness of neurological and sleep disorders and the effects on individual lives and society as a whole will be directly and positively affected by advancing education in these areas. Patient advocacy will also be increased.

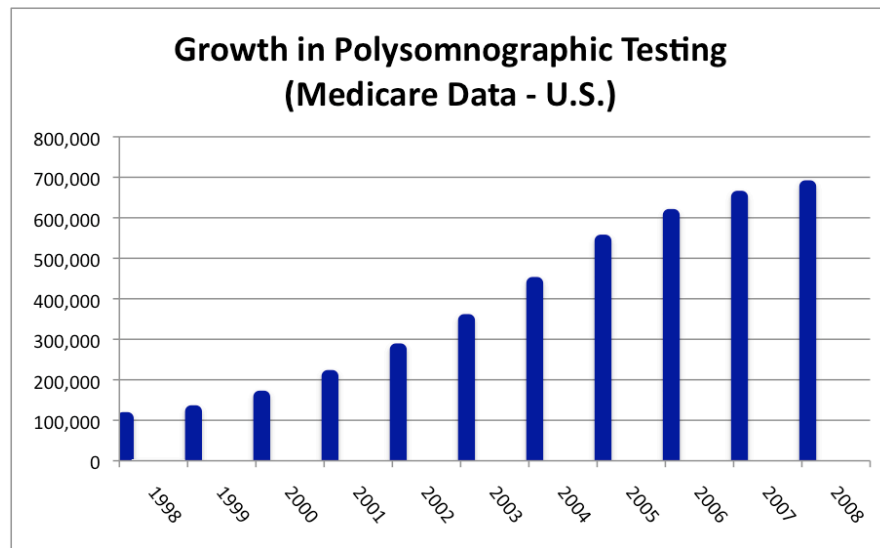
Hospitals are eagerly investing in sleep clinics to help meet the patient need. The October 24th issue of the Triangle Business Journal states "Helping people sleep well is becoming a big business, and Duke Raleigh Hospital is expanding...to double the size of its center..."⁷ Sleep facilities such as Duke Raleigh Hospitals number more than 3,300 and sleep lab revenue nationally is expected to increase by 2012 to \$5.8 billion from the current \$4.5 billion according to Market data Enterprises.⁸ The National Sleep Foundation published an article stating "Market data also expects mainstream publicity regarding the importance of sleep to continue, along with heavy advertising for sleep drugs. Market data predicts the number of sleep labs will grow by 6 percent over the next four years".⁹ North Carolina alone has more than 20 sleep centers accredited by the American Academy of Sleep Medicine, and this number is continuing to rise.¹⁰ Accredited sleep centers must employ qualified staff, which is a major issue the proposed program will positively affect.

The number of patients seen for diagnosis and therapy for sleep-related disorders in North Carolina has increased dramatically over the past 20 years, with the most increase in the past 5 years. This increase is demonstrated by the data from UNC Hospitals Sleep Disorders Center from 1998 to 2008 in the following chart. The number of patients seen for sleep studies is projected to continue this upward trend.



In a recent survey of North Carolina sleep disorders laboratories accredited by the American Academy of Sleep Medicine (N = 16), 73% of the respondents projected an increase in the number of technologists needed in the near future. In addition, 73% indicated difficulty in recruiting polysomnographic technologists with the necessary skills to fulfill management and leadership roles within their institutions.

The graph below demonstrates the growth in Polysomnographic testing in the United States from 1998-2008. This growth is leading to a national shortage of qualified entry-level sleep technologists. New associate degree programs are helping to address this need. These trends have led to a great need for advanced level technologists, and the proposed NDSS program is designed to meet this need.



Educators, students, and employers attest to the increasing need for an advanced degree in NDSS. Recently, program directors of respiratory therapy, polysomnography, and electroneurodiagnostic technology programs were surveyed (N = 122) and over 70% agree that:

- Sleep centers have a need for technologists with advanced training or specialization
- Education requirements for sleep technologists will increase in the next 5-10 years
- The need for educators will increase in the next 5-10 years

The Committee on Accreditation of Allied Health Education (CAAHEP) is the national accreditation body for allied health programs. In 2008 CAAHEP increased the standard for program directors to a minimum degree at the baccalaureate level for electroneurodiagnostic technology programs. The current minimum degree required by CAAHEP of polysomnography programs is an associate's degree, which was adopted in 2004 as a standard. The 2004 standards are scheduled for review and/or revision in the near future.

Relationship to NC Community College System

The 2009 North Carolina General Assembly passed into law "The Polysomnography Practice Act," (S.L. 2009-434). This new law mandates that as of January 1, 2012, it will be illegal for individuals not registered with the NC Medical Board to:

- Practice Polysomnography
- Represent, orally or in writing, that the person is credentialed to practice polysomnography
- Use the title "Registered Polysomnographic Technologist" or the initials "RPSGT"

To register with the NC Medical Board, individuals must earn the RPSGT credential from The Board of Registered Polysomnographic Technologists (BRPT), which is the international registry for Sleep Technologists. Nationally, the BRPT is soon eliminating all on-the-job-training pathways and will require all applicants to have an accredited degree in Polysomnography. The Centers for Medicare and Medicaid require credentialed technologists to monitor sleep testing in independent sleep laboratories. Labs accredited by the American Academy of Sleep Medicine require all technologists to have formal training. As formal education requirements increase, the American Academy of Sleep Medicine (AASM) in North Carolina is still documenting a critical shortage of qualified and licensed technologists.

The North Carolina Community College System (NCCCS) has responded to this immediate need by adding Polysomnography programs and/or Electroneurodiagnostic technology programs at six institutions, with more on the way. North Carolina currently leads in the nation for the most accredited associate degree programs with a concentration in Polysomnography and is demonstrating a current need for qualified faculty. The distribution of North Carolina programs is demonstrated in the following image. It is important to note the location of the UNC Chapel Hill and the UNC Charlotte campuses in relation to the existing community college programs. The locations of the UNC campuses provide excellent access for all students in the NCCCS.

**NCCCS campuses with
polysomnography/electroneurodiagnostic technology
programs accredited by the Commission on Accreditation of
Allied Health Education Programs**



- | | |
|---|--|
| <ul style="list-style-type: none"> ■ Catawba CC (2 programs) ■ Sandhills CC ■ Central Carolina CC | <ul style="list-style-type: none"> ■ Lenoir CC ■ Pamlico CC ■ Pitt CC |
|---|--|

The proposed NDSS program will not compete with community colleges, but will articulate with the community colleges' programs and respond to their need for qualified faculty. We have found unanimous support for the proposed NDSS BS degree among program directors and administrators within the NC Community College System Polysomnography and Electroneurodiagnostic Technology with Add-on Polysomnography programs. (See appendix for copies of support letters for this degree from representatives of the NCCCS).

4. impact on existing undergraduate and/or graduate academic programs of your institution. (e.g., Will the proposed program strengthen other programs? Will it stretch existing resources? How many of your programs at this level currently fail to meet Board of Governors' productivity criteria? Is there a danger of proliferation of low-productivity degree programs at the institution?)

This new proposed degree is a specialized program in allied health care utilizing both an interdisciplinary and multidisciplinary approach within the College of Health and Human Services, throughout the University of North Carolina at Charlotte and University of North Carolina at Chapel Hill. This program will complement the existing portfolio of degree programs in applied health areas, including public health, respiratory care, nursing, athletic training, exercise science, and social work. The degree program will be administratively housed in the Department of Kinesiology. The focus of the proposed curriculum content is also consistent with the Department's expertise on cardiopulmonary systems and function. The new program will utilize 3 courses that are already being taught in existing programs in the College. The 9 new proposed courses are specific to the neurodiagnostics and sleep science discipline, and complement the Department's current upper division offerings at the 3000 & 4000 level.

- B. Discuss potential program duplication and program competitiveness.
1. Identify similar programs offered elsewhere in North Carolina. Indicate the location and distance from the proposing institution. Include a) public and b) private institutions of higher education.

No public or private institutions of higher education in North Carolina currently operate baccalaureate level programs similar to the proposed NDSS program. The proposed NDSS program will not compete with any of the current BS degrees within the UNC Charlotte College of Health and Human Services.

The proposed NDSS program will not compete with community colleges, but will actually respond to their growing need for qualified faculty to teach in these community college programs. Further, this new degree will provide an additional pathway for articulation agreements between UNC Charlotte and the NC Community College System. We have found unanimous support for the proposed NDSS BS degree among program directors and higher administrators within the NC Community College System Polysomnography and Electroneurodiagnostic Technology with Add-on Polysomnography programs. (See appendix for copies of support letters for this degree from representatives of the NCCCS).

2. Indicate how the proposed new degree program differs from other programs like it in the University. If the program duplicates other UNC programs, explain a) why is it necessary or justified and b) why demand (if limited) might not be met through a collaborative arrangement (perhaps using distance education) with another UNC institution. If the program is a first professional or doctoral degree, compare it with other similar programs in public and private universities in North Carolina, in the region, and in the nation.

No public or private institutions of higher education at UNC Charlotte, in North Carolina, or the nation currently operate baccalaureate level programs similar to the proposed new degree program.

- C. Enrollment (baccalaureate programs should include only upper division majors, juniors and seniors).

Headcount enrollment

Show a five-year history of enrollments and degrees awarded in similar programs offered at other UNC institutions (using the format below for each institution with a similar program); indicate which of these institutions you consulted regarding their experience with student demand and (in the case of professional programs) job placement. Indicate how their experiences influenced your enrollment projections.

not applicable (no similar programs at UNC institutions)

Use the format in the chart below to project your enrollment in the proposed program for four years and explain the basis for the projections:

	Year 1 (2011-2012)	Year 2 (2012-2013)	Year 3 (2013-2014)	Year 4 (2014-2015)
Full-time	0	0	0	0
Part-time	10	40	60	60
TOTALS	10	60	60	60

Enrollment projections are based upon the following

- Number of registered sleep technologists in NC
- Rate of increase in new sleep technologists in NC per year
- Density of sleep technologists employed in NC accredited laboratories
- Comparison with other allied health BS degree enrollments at UNC Charlotte

Please indicate the anticipated steady-state headcount enrollment after four years:

Full-time 0 Part-time 60 Total 60

SCH production (upper division program majors, juniors and seniors *only*, for baccalaureate programs).

Use the format in the chart below to project the SCH production for four years. Explain how SCH projections were derived from enrollment projections (see UNC website for a list of the disciplines comprising each of the four categories).

Year 1	Student Credit Hours		
Program Category	UG	Masters	Doctoral
Category I			
Category II			
Category III	170		
Category IV			

Year 2	Student Credit Hours		
Program Category	UG	Masters	Doctoral
Category I			
Category II			
Category III	720		
Category IV			

Year 3	Student Credit Hours		
Program Category	UG	Masters	Doctoral
Category I			
Category II			
Category III	1,140		

Category IV			
-------------	--	--	--

Year 4	Student Credit Hours		
Program Category	UG	Masters	Doctoral
Category I			
Category II			
Category III	1,140		
Category IV			

Schematics used in determining total SCH's are as follows:

Part-time student enrollment hours

Year 1 – 9 credits in fall, 5 in spring, and 3 in summer

Year 2 – 9 credits in fall and 12 in spring

Year 1	Student Credit Hours		
Total SCHs = 170	Fall	Spring	Summer
10 part-time students	90	50	30
Total	90	50	30

Year 2	Student Credit Hours		
Total SCHs = 720	Fall	Spring	Summer
10 continuing part-time students	90	120	0
30 new part-time students	270	150	90
Total	360	270	90

Year 3	Student Credit Hours		
Total SCHs = 1,140	Fall	Spring	Summer
30 continuing part-time students	270	360	0
30 new part-time students	270	150	90
Total	540	510	90

III. PROGRAM REQUIREMENTS AND CURRICULUM

A. Program Planning.

1. List the names of institutions with similar offerings regarded as high quality programs by the developers of the proposed program.

No similar programs exist at the baccalaureate level

2. List other institutions visited or consulted in developing this proposal. Also discuss or append any consultants' reports, committee findings, and simulations

(cost, enrollment shift, induced course load matrix, etc.) generated in planning the proposed program.

Evolving the field of neurodiagnostics and sleep science to a BS degree is being discussed throughout the professional community. Presentations on this topic have been given at national conferences and discussions are taking place in North Carolina professional associations and regional societies. National societies are building task forces to promote the idea of a BS degree. Many associate degree schools and graduates have expressed interest in a BS degree in this field. All of these references are at the root of this proposal.

The neurodiagnostics and sleep science program received a generous commitment from a private donor in 2008 to fund a range of program start-up expenses including the salaries of the program director and faculty members. Another generous gift was received in 2010 to fund course development.

In 2008, a group of people interested in advancing the field of NDSS partnered to build relationships among but not limited to: potential students, faculty, staff, healthcare providers, providers of healthcare supplies and equipment, alumni, stakeholders, employees, and employers. This group has reviewed program goals and outcomes, reviewed a draft curriculum, researched funding needs, developed student recruitment strategies, and discussed issues related to the proposed program. If approval is granted for the proposed program, this group will transition to an academic advisory committee. The proposed committee consists of the natural partners for a program designed to prepare graduates for advanced roles in the NDSS field. Students, graduates, faculty, sponsor administration, employers, physicians, and public representatives comprise the group and are as follows:

- Mary Ellen Wells, MS, RPSGT, R.EEG T., R.NCS T., Clinical Assistant Professor, Department of Allied Health Sciences, UNC School of Medicine
- Lee McLean, Ph.D., Associate Dean and Chair, Department of Allied Health Sciences, UNC School of Medicine
- Bradley V. Vaughn, MD, D.ABSM, Vice Chair and Professor of Neurology, University of North Carolina School of Medicine, Medical Director UNC Sleep Center
- Karen Rowe, BS, RPSGT, Polysomnography Program Director/Instructor, Lenoir Community College
- Kyle Kalkowski, R. EEG T., Technical Director – UNC Sleep Center and Clinical Neurophysiology Lab
- Jimmy Singleton, BS, RPSGT, Atlantic Sleep Center, Facility Director
- Will Underwood, RPSGT, President – NC Association of Sleep Technologists, UNC Sleep Disorders Center
- Sandra Mathis, BA, RPSGT, RLVT, PSG Program Director, Pitt Community College
- Tammy Williams, RRT, RCP, RPSGT, Polysomnography Program Coordinator, Sandhills Community College
- Sarah (Hoffman) Stephens R. EEG T., RPSGT, Department Head, Polysomnography, Catawba Valley Community College
- Renee Batts, RN, MSN, Program Coordinator, Health Sciences, North Carolina Community College System
- Sheila Wilson, AAS, UNC Clinical Neurophysiology

- Alisa E Debnam, M.P.H., Executive Director - Council for Allied Health in North Carolina
- Christine Bates, MA, Chair of English Department and Instructor, Lenoir Community College
- Marc H. Williams, R.EEG/EP T., CNIM, BVE, RLTM, Electroneurodiagnostic Technology Program Director, Pamlico Community College

This group is in regular contact to discuss instructional formats, curriculum, resources, admissions requirements, and other issues related to the proposed NDSS program. Members of the group have attended and will continue to attend state and national professional meetings to discuss the proposed program. These professional meetings include:

- The North Carolina Association of Sleep Technologists (NCAST)
- The Southern Society of Electroneurodiagnostic Technologists (SSET)
- The American Association of Sleep Technologists (AAST)
- The American Society of Electroneurodiagnostic Technologists (ASET)

B. Admission. List the following:

1. Admissions requirements for proposed program (indicate minimum requirements and general requirements).

Minimum and general admission requirements are as follows:

- Associate degree from an accredited institution with a cumulative grade point average of 2.0 or better
- Training in sleep technology (validated by course work in the proposed NDSS program)
- Registration as an RPSGT or R.EEG T. by the Board of Registration of Polysomnographic Technologists or the American Board of Registration of Electroencephalographic and Evoked Potential Technologists
- Earn at least a C in all coursework taken by the end of the semester prior to the semester for which application is made
- Completed application for the proposed NDSS program and three professional references.

The ideal candidate for the Neurodiagnostics and Sleep Science program will demonstrate strong academic standing, especially in math and science, as well as a commitment to health care. Applicants with the highest collective scores and who meet all criteria for clinical rotations will receive admission to the program up to its capacity. The NDSS program is cohort based and admits new students each fall semester.

In an effort to meet societal health care needs, it is the desire of the Neurodiagnostics and Sleep Science program to recruit students to mirror the diversity of North Carolina with regard to race, gender, and non-traditional students.

2. Documents to be submitted for admission (listing or sample).

Documents required for application evaluation are

- Application
- Transcripts of all schools of higher education attended
- Three letters of recommendation attesting to the applicant's academic ability and suitability for a health care career
- A current basic life support or basic CPR certification
- A photocopy of registration as RPSGT or R.EEG T

C. Degree requirements. List the following:

1. Total hours required. Major. Minor.

The minimum total credit hours required to earn the bachelor's degree is 120. Total academic credit hours in the NDSS program is 38 for applicants who have completed an associate degree from an accredited institution and are registered by the BRPT and/or ABRET. Students will receive up to 46 hours through credit by examination after successfully passing NDSS 3101 with a C or better. The difference between the number of credits transferred through the associate degree and those earned in the major will constitute the number of hours awarded by the credit by examination procedure (see below under 4).

2. Proportion of courses open only to graduate students to be required in program (graduate programs only).

N/A

3. Grades required.

Students must receive a minimum average of C- (70%) in each course to receive credit towards graduation. Grades will be consistent with the Universities undergraduate requirements.

4. Amount of transfer credit accepted.

The NDSS program will follow the undergraduate policy on transfer of credits. Students will receive no more than 46 hours of placement credit toward the NDSS program upon completion of the following:

- Earning an associate degree from an accredited institution
- Completing a registry by the BRPT and/or ABRET
- Gaining admission into the NDSS program
- Successfully completing 1 transition courses in the NDSS program (3101)

5. Other requirements (e.g. residence, comprehensive exams, thesis, dissertation, clinical or field experience, "second major," etc.).

Due to the program being distance education, residency is not required. However, students are required to attend an on campus program orientation.

All students are required to participate in clinical education and an internship. Clinical education rotations and internships are scheduled by the program's clinical coordinator and typically include a combination of one or more of the following:

- Hospital
- Freestanding laboratory
- Education institution
- Research facility
- Private practice

6. Language and/or research requirements.

There are no language requirements in addition to the University's general education requirements. Students will complete 3 credit hours of health care research with a focus on scientific methodology, case studies, directed research, and publication of health-related research.

7. Any time limits for completion.

All requirements for graduation must be met within 4 years of enrolling in the Neurodiagnostics and Sleep Science program.

D. List existing courses by title and number and indicate (*) those that are required. Include an explanation of numbering system. List (under a heading marked "new") and describe new courses proposed.

Existing Courses

* NURN 4201 – Information Technology: Applications in Health Care (2)
* RESP 4102 - Program Administration (3)
* RESP 4103 – Evidence-Based Practice (3)

New Courses

* NDSS 3101 – Pathophysiology of Sleep, Neurological, and Related Disorders (3)
* NDSS 3102 – Neurological and Sleep Diagnostic and Therapeutic Methods, and Monitoring Services (3)
* NDSS 3104 – Advanced Sleep and Neurodiagnostic Clinical Procedures (3)
* NDSS 3405 – Practicum (3)
* NDSS 4101 – Principles and Practice of Healthcare Education (3)
* NDSS 4104 – Advanced Physiological Monitoring and Data Acquisition (3)
* NDSS 4105 – Leadership in Healthcare Organizations (3)
* NDSS 4406 – Internship (3)
* NDSS 4107 – Sleep and Neurodiagnostic Sciences Capstone (6)

Numbering system explanation: 3000 level courses are junior level courses and 4000 level courses are senior level courses. 01, 02, etc. follow the order in which students are advised to enroll in courses.

IV. FACULTY

- A. List the names of persons now on the faculty who will be directly involved in the proposed program. Provide complete information on each faculty member's education, teaching experience, research experience, publications, and experience in directing student research, including the number of theses and dissertations directed for graduate programs. The official roster forms approved by SACS can be submitted rather than actual faculty vita.

Mary Ellen Wells
Joseph Paul Wells
(see vita in the appendices)

- B. Estimate the need for new faculty for the proposed program over the first four years. If the teaching responsibilities for the proposed program will be absorbed in part or in whole by the present faculty, explain how this will be done without weakening existing programs.

We plan to hire one additional part-time faculty member to teach courses in the NDSS program (0.5 FTE).

- C. If the employment of new faculty requires additional funds, please explain the source of funding.

We anticipate that we may need one part time faculty member by 2013 to help teach NDSS courses, and to coordinate the administrative and clinical components of the program. There will be no need for student assistance for this program.

- D. Explain how the program will affect faculty activity, including course load, public service activity, and scholarly research.

The program will enhance the public service activity of the faculty. Course load will be assigned to ensure faculty will not be overloaded so they may be actively involved in the community and professional associations. NDSS courses will reflect the most current issues and trends in the field, which will provide faculty the opportunities for scholarly research to be implemented in their course planning.

V. LIBRARY

- A. Provide a statement as to the adequacy of present library holdings for the proposed program.

Due the collaborative nature of this curriculum, the NDSS program will utilize the libraries of both the UNC Charlotte and the UNC Chapel Hill campuses. Adequacy of each is described below:

UNC Charlotte library holdings

The Chair of the Department of Kinesiology (Dr. Mitch Cordova) has communicated with Ms. Jean Hiebert Health & Human Services Librarian from Atkins Library regarding what holdings the library currently has that will support the proposed curriculum. In summary, the library appears to have adequate holdings (textbooks and journals) to initially begin this program. The library is committed to obtaining pertinent textbooks related specifically to

Neurodiagnostics and Sleep Science in time for Fall 2011. Moreover, as the program continues to grow over time, the appropriate requests will be made to the library to support the program's needs.

UNC Chapel Hill library holdings

The Library currently supports the Sleep Medicine Division in the School of Medicine's Department of Neurology and the UNC Sleep Disorders Center, accredited as a full service sleep center. Existing library collections hold several hundred subject-specific books, and more than twenty journal subscriptions are already available to support both new and existing sleep and neurodiagnostic programs.

An analysis of current collection strength reveals that the library has electronic subscriptions or access to all but one of the most needed journals and to approximately half of the core texts required for the new program, as designated by program faculty member Mary Ellen Wells.

The Library supports other distance education programs in four of the five schools associated with it, including three other programs in the Department of Allied Health. General resource support is provided by a large and expanding collection of electronic journals, books, databases, and other resources available online from on campus and off campus. More than 200 databases are available, of which PubMed, CINAHL, CogPrints, and PsycINFO are central to the new program.

- B. State how the library will be improved to meet new program requirements for the next five years. The explanation should discuss the need for books, periodicals, reference material, primary source material, etc. What additional library support must be added to areas supporting the proposed program?

UNC Charlotte library

The Atkins Library at UNC Charlotte is committed to improving its holdings in Neurodiagnostics & Sleep Science as the program becomes established and matures over the years. As indicated in our Library Consult, the holdings are adequate at this time, and the Library is committed to supporting this program throughout its existence.

UNC Chapel Hill library

The UNC Chapel Hill Health Science Library (HSL) has a dedicated librarian liaison for the Department of Allied Health who works solely and closely with its constituent programs, allowing focused and continuous support for their library and research needs, both on and off campus. This librarian will work with the students and faculty of the proposed program to ensure that need for library resources and instruction are met as a priority.

Collections development staff will also work with faculty member Mary Ellen Wells to create a staggered plan for acquiring additional books, media, and journals to support the new program. A central core of textbooks and reference materials will be added to library holdings first, with listed additional materials to support the program as it matures. Electronic format will be preferred when available in order to support distance and off-campus students as well as on-

campus students and faculty. The UNC-HSL will provide assistance with creation of custom digital teaching materials.

The UNC-HSL Library will purchase requested media materials and the remaining texts and journal subscription as soon as the budget will allow. As a state university, the University of North Carolina is experiencing extraordinary budgetary pressure. Despite this, the UNC-HSL will work with the faculty of the new program to create further lists of desired ancillary materials to acquire after the already-developed core list of resources has been added.

The library is exploring cost-sharing options, including support from the program's donor funds designated for the start-up of this program. Funds coming to the library from increased enrollment, though uncertain and small, could also be used for new materials.

C. Discuss the use of other institutional libraries.

A Distance Education Librarian is employed to ensure that Library resources and services are provided appropriately to course faculty, the Senior Program Manager in Distance Education, and enrolled students, including through such means as electronic document delivery, the arrangement of borrowing privileges for students at other libraries, and mailing (or delivery by other means) of materials to individual students. If NDSS faculty and/or students discover a resource [book, journal article, dissertation, etc.] which is not owned by J. Murrey Atkins Library, they can request the Library to obtain it from another source via the Library's Inter-library Loan Service. Candidates and faculty also have borrowing privileges at all 17 UNC campuses across the state.

UNC Chapel Hill is a member of the Triangle Research Libraries Network (TRLN), which allows UNC students to use libraries at Duke University, North Carolina Central University and North Carolina State University. North Carolina also has five community colleges with electroneurodiagnostic and/or polysomnographic technology programs, with library collections available to UNC students upon interlibrary loan request.

The UNC Health Sciences Library is a Resource Library for the National Network of Libraries of Medicine, meaning that it vigorously participates in national and international interlibrary loan consortia. Belonging to these consortia allows the library to borrow materials quickly from other libraries around the nation and the world.

VI. FACILITIES AND EQUIPMENT

A. Describe facilities available for the proposed program.

The NDSS program will be housed in Belk Gymnasium within the Department of Kinesiology. The academic space within Belk Gymnasium includes: office spaces, extensive research laboratories, an athletic training clinical instructional laboratory, and 5 classrooms.

Additionally, the UNC School of Medicine will provide office, conference, and classroom space for the proposed program. UNC Hospitals Clinical Neurophysiology Laboratory and Sleep Center will also provide classroom, laboratory, and practicum space.

Office and classroom space:

Belk Gymnasium contains office space for 22 full time faculty in the Department of Kinesiology at UNC Charlotte. The classrooms are equipped with “smart technology” where each of these rooms contains all necessary A/V and computer equipment to aid in electronic instruction. If additional space is needed, the faculty in the NDSS program will have access to the College of Health & Human Services building. This 161,000 ft² facility contains 4 floors of offices, over 40 classrooms, four Skills Laboratories, 10 conference rooms, one computer laboratory and 3 computer classrooms. All classrooms, conference rooms and laboratories are equipped with mounted LCD projectors, instructor computers, DVD, VCR, and control system for greater ease of use. In the future, some of the classrooms will be able to offer asynchronous learning opportunities. All of the instructional equipment housed in these classrooms is supported locally through the Office of Health Informatics in the College, as well as through central Information Technology Services on campus.

The UNC Hospitals classroom is a 33-seat, state of the art video conferencing center with individual Internet hookups at the seats.

Laboratory and practicum space:

UNC Hospitals Clinical Neurophysiology Laboratory:

The Clinical Neurophysiology Laboratory performs electroencephalograms, electromyograms, nerve conduction velocities, autonomic testing and sensory evoked potentials, which are essential to the diagnosis and monitoring of patients with illnesses involving the central and peripheral nervous systems. These studies are performed to diagnose neurological abnormalities, classify epilepsies, quantify efficacy of treatment and localize areas of neurologic disease. Highly trained staff evaluates the effects of anticonvulsant drug therapies, non-invasive monitoring and potential surgical approaches to neurologic diseases.

UNC Hospitals Sleep Center: The Sleep Studies Program and the Sleep Studies Laboratory provide extensive testing to identify the presence of sleep disturbances and to determine therapeutic solutions to these problems. Procedures include polysomnography, positive airway pressure, sleep apnea assessment, multiple sleep latency tests and other sleep studies. Diagnostic procedures are performed on both inpatients and outpatients, and the multidisciplinary sleep clinic is used to screen and evaluate sleep complaints.

- B. Describe the effect of this new program on existing facilities and indicate whether they will be adequate, both at the commencement of the program and during the next decade.

Due to the program being distance education, classroom use will be at a minimum and we do not anticipate any problems finding space for NDSS students. The proposed program is not expected to cause any adverse effects on the UNC Hospitals laboratories. UNC Charlotte and UNC Hospitals laboratories are expected to be adequate into the next decade.

C. Discuss any information technology services needed and/or available.

It is not anticipated additional support services will be needed for the proposed program.

The classrooms are equipped with “smart technology” where each of these rooms contains all necessary A/V and computer equipment to aid in electronic instruction. If additional space is needed, the faculty in the NDSS program will have access to the College of Health & Human Services building. This 161,000 ft² facility contains 4 floors of offices, over 40 classrooms, four Skills Laboratories, 10 conference rooms, one computer laboratory and 3 computer classrooms. All classrooms, conference rooms and laboratories are equipped with mounted LCD projectors, instructor computers, DVD, VCR, and control system for greater ease of use. In the future, some of the classrooms will be able to offer asynchronous learning opportunities. All of the instructional equipment housed in these classrooms is supported locally through the Office of Health Informatics in the College, as well as through central Information Technology Services on campus.

The UNC Chapel Hill School of Medicine’s Office of Information Services (OIS) maintains the web servers and supports the information technology needs of faculty and support staff in the Department of Allied Health Sciences. Students receive 24/7 support from the UNC Chapel Hill Information Technology Services via help line and have access to a variety of resources that support distance education. The UNC Hospitals Clinical Neurophysiology Laboratory, Sleep Disorders Center, and video conferencing center utilize the hospital’s Information Services Department, which is located onsite with 24/7 on-call services.

Faculty will not need any additional equipment for computer usage above and beyond what is provided for them when they are hired. Additionally, all students enrolled in the NDSS program will have full access to the new, state-of-the-art computer lab located in the College of Health and Human Services building. This lab is equipped with nearly 125 PC workstations. Also, as previously mentioned, each of the classrooms is equipped with recent PCs to support multimedia instruction.

There are no additional specific needs for A/V support from Media Services for this program. All of the A/V needs for the program can be handled through the equipment that currently exists in the Department and in the College.

D. Discuss sources of financial support for any new facilities and equipment.

It is not anticipated additional support services will be needed for the proposed program.

VII. **ADMINISTRATION**

Describe how the proposed program will be administered, giving the responsibilities of each department, division, school, or college. Explain any inter-departmental or inter-unit administrative plans. Include an organizational chart showing the "location" of the proposed new program.

The Department of Kinesiology will administer the proposed program. Administrative responsibilities will include admission, advising, and registration. The Department will

collect application information and communicate with applicants regarding the status of their application as well as course registration and clearance for graduation. Faculty for the proposed program will provide academic advising to students.

Students in the proposed program will adhere to all departmental policies and will have the same rights of appeal or grievance as current students majoring in all undergraduate programs in Kinesiology.

An organizational chart of the Department of Kinesiology showing the "location" of the proposed program is attached.

VIII. **ACCREDITATION**

Indicate the names of all accrediting agencies normally concerned with programs similar to the one proposed. Describe plans to request professional accreditation. If the proposed new degree program is at a more advanced level than those previously authorized or if it is in a new discipline division, was SACS notified of a potential "substantive change" during the planning process? If so, describe the response from SACS and the steps that have been taken to date with reference to the applicable procedure.

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) is the accrediting agency normally associated with allied health educational programs. CAAHEP is the largest national accreditor of programs in health sciences and is recognized by the Council for Higher Education Accreditation (CHEA). At this time, CAAHEP accreditation is only appropriate for associate level programs; therefore no current plans exist to seek CAAHEP accreditation for the proposed NDSS program.

SUPPORTING FIELDS

Are other subject-matter fields at the proposing institution necessary or valuable in support of the proposed program? Is there needed improvement or expansion of these fields? To what extent will such improvement or expansion be necessary for the proposed program?

We do not anticipate the proposed program to require institutional improvement or expansion. The UNC Hospitals Sleep Center and Clinical Neurophysiology Laboratory will provide support for the proposed program in the form of clinical education and laboratory and classroom space for students. The center and laboratory are expanding as the need for their services increases.

IX. **ADDITIONAL INFORMATION**

Include any additional information deemed pertinent to the review of this new degree program proposal.

X. **BUDGET**

Provide estimates (using the attached form) of the additional costs required to implement the program and identify the proposed sources of the additional required funds. *Use SCH projections (section II.C.) to estimate new state appropriations through enrollment increase funds.* Prepare a budget schedule for each of the first four years of the program, indicating the account number and name for all additional amounts required. Identify EPA and SPA positions immediately below the account listing. New SPA positions should be listed at the first step in the salary range using the SPA classification rates currently in effect. Identify any larger or specialized equipment and any unusual supplies requirements.

For the purposes of the second and third year estimates, project faculty and SPA position rates and fringe benefits rates at first year levels. *Include the continuation of previous year(s) costs in second and third year estimates.*

Additional state-appropriated funds for new programs may be limited and in recent years have been almost non-existent. Except in exceptional circumstances, institutions should request such funds for no more than three years (e.g., for start-up equipment, new faculty positions, etc.), at which time enrollment increase funds should be adequate to support the new program. Therefore it will be assumed that requests (in the "New Allocations" column of the following worksheet) are for one, two, or three years unless the institution indicates a continuing need and attaches a compelling justification. However, funds for new programs are more likely to be allocated for limited periods of time if available at all.

Please see appendices for summary of estimated additional costs for the first years of the proposed program.

XI. EVALUATION PLANS

All new degree program proposals must include an evaluation plan which includes: (a) the criteria to be used to evaluate the quality and effectiveness of the program, (b) measures to be used to evaluate the program, (c) expected levels of productivity of the proposed program for the first four years of operation (number of graduates), (d) the names, addresses, e-mail addresses, and telephone numbers of at least three persons (six reviewers are needed for graduate programs) qualified to review this proposal and to evaluate the program once operational, and (e) the plan and schedule to evaluate the proposed new degree program prior to the completion of its fifth year of operation once fully established.

PROGRAM EVALUATION FORMAT

A. Criteria to be used to evaluate the proposed program:

Quality and effectiveness of the program are assessed by:

1. Program personnel (advisory committee, medical director, program faculty, others actively involved in the program)
2. Student satisfaction
3. Graduate satisfaction
4. Employer satisfaction
5. Appropriateness and effectiveness of externship facilities
6. Student pass rate in national examinations
7. Students gaining and maintaining employment in the field and or advancing education

B. Measures to be used to evaluate the program:

Surveys are designed to measure the programs appropriateness and effectiveness in the cognitive, affective, and psychomotor domains. Description and distribution dates of measurements are as follows:

1. Program Personnel Survey – Completed annually by advisory committee, medical director, program faculty, and others actively

involved in the program. Survey goal is to identify strengths and/or weaknesses in the NDSS program's resources.

2. Graduate Satisfaction Survey – Completed by recent graduates of the NDSS program. Survey is given yearly and no less than three months after a student completes the program. Survey goal is to assess NDSS graduates on how well the program prepared them for gainful employment.
3. Employer Survey – Completed by recent graduates' employers. Survey is given six months after the graduate gains and maintains employment. Survey goal is to assess NDSS graduate employers on how well the program prepared the graduate for employment at the employer's facility.
4. Student Satisfaction Survey – Completed by current NDSS program students. Survey is given every semester in every NDSS course. Survey goal is to assess current students to determine strengths and/or weaknesses in the programs resources and instruction.
5. Student Externship Survey – Completed by students at the end of their clinical rotation. Survey is conducted during every semester clinical is offered and one survey is completed for each clinical site attended. Survey goal is to assess the quality and effectiveness of the NDSS program's clinical affiliates.
6. Student records – The program director demonstrates sufficient effort to maintain contact with graduates and documents employment history, advanced education enrollment and completion, and registry examination completion.

Measurement of all program outcomes is ongoing with the following format for reporting:

- Purpose statement
- Measurement system
- Dates of measurement
- Results
- Analyses
- Action plans
- Follow-up

The NDSS academic advisory committee will meet each year to review the evaluations. Revisions are made as needed.

C. Projected productivity levels (number of graduates):

<u>Level</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>TOTALS</u>
B	0	10	30	30	70
M	_____	_____	_____	_____	_____
I/P	_____	_____	_____	_____	_____
D	_____	_____	_____	_____	_____

(Key: B-Bachelor's, M-Master's, I/P-Intermediate or Professional, D-Doctoral)

- D. Recommended consultant/reviewers: Names, titles, addresses, e-mail addresses, and telephone numbers. May not be employees of the University of North Carolina.

Ms. Karen Rowe, BS, RPSGT
Polysomnography Program Director/Instructor
Lenoir Community College
PO Box 188
231 Hwy. 58 South
Kinston, NC 28502-0188
Phone: 252-527-6223 et. 347
karenmonarchy@suddenlink.net

Debra Jester Carson, Ed.D., R.EEG/EP T.
Program Chair, Electroneurodiagnostic Technology
Health and Public Safety
3520 Central Parkway
Cincinnati, Ohio 45223-2690
Phone: 513-569-1283
Fax: 513-569-1659
debcarson@cinci.rr.com

Ms. Maureen Bendyna, R.EEG/EP T., RPSGT, CNIM
Program Director Neurodiagnostic Technology
Harcum College
Bryn Mawr, PA 19013
Phone: 610-526-6174
mbendyna@harcum.edu

Mr. Jimmy Singleton, BS, RPSGT
Atlantic Sleep Center
Facility Director
2861 Trent Road
New Bern, NC 28562
Phone: 252-633-0251
jsingleton@atlanticsleepcenter.com

John Manning, RPSGT
Area Operations Manager
Sleep Services of America
3622 Lyckan Parkway, Suite 5003
Durham, NC 27707
Office: 919-403-1615
Cell: 919-491-6168
jmanning.ncast@gmail.com

- E. Plan for evaluation prior to fifth operational year.

Allied health educational programs require rigorous ongoing evaluation to ensure their quality and effectiveness. This ongoing evaluation culminates in a yearly report prepared the program director. The report contains a summary and quantitative analysis of the measurements completed in item B. The yearly report is presented to the program's evaluation committee. The evaluation committee will assess the appropriateness and effectiveness of the program. The program director will devise and implement action plans for any deficiencies in the program found by the committee.

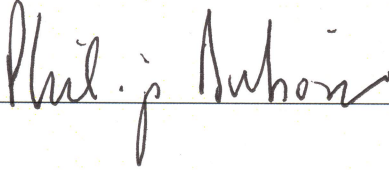
XII. REPORTING REQUIREMENTS

Institutions will be expected to report on program productivity after one year and three years of operation. This information will be solicited as a part of the biennial long-range planning revision.

Proposed date of initiation of proposed degree program: August 2011

This proposal to establish a new degree program has been reviewed and approved by the appropriate campus committees and authorities.

Chancellor:



References:

1. The Science of Sleep. Lesley Stahl Explores The Latest Findings In Sleep Research. 60 Minutes. CBS News. June 2008.
(http://www.cbsnews.com/stories/2008/03/14/60minutes/main3939721_page3.shtml)
2. Boost your brain power at work. CareerBuilder.com. CNN. Oct. 2005.
(<http://www.cnn.com/2005/US/Careers/10/14/brain.power/index.html>)
3. Merry, A., and Smith, A.M. Errors, Medicine and the Law. Cambridge University Press. 2001
(<http://assets.cambridge.org/052180/6313/sample/0521806313WS.pdf>)
4. Fact Sheet on the Three Mile Island Accident. United States Nuclear Regulatory Commission.
(<http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html>)
5. Mandell, M. Fighting off sleep at the office. CNN. April 1999.
(<http://www.cnn.com/TECH/computing/9904/09/sleep.ent.idg/index.html>)
6. 'Sleep deprivation' rise at work. BBC News. June 2005.
(<http://news.bbc.co.uk/1/hi/wales/4114876.stm>)
7. Gallagher, J. Duke Health Raleigh is grabbing its piece of the lucrative sleep business. Triangle Business Journal. Oct 2008.
(<http://triangle.bizjournals.com/triangle/stories/2008/10/27/story5.html>)
8. The U.S. Sleep Market. Report #FS34. June 2008.
(<http://www.marketdataenterprises.com/FullIndustryStudies.htm#SLEEP>)
9. National Sleep Foundation Alert. Nov. 2008
(<http://www.sleepfoundation.org/site/apps/nlnet/content2.aspx?c=huIXKjMoIXF&b=4009115&ct=6314681>)
10. Sleepcenters.org. (<http://www.sleepcenters.org/Centers.aspx?state=NC>)



Department of Allied Health Sciences

Personal Information:

- Mary Ellen Wells
- 48 Margaret Place, Chapel Hill, NC 27516
- 252-561-7751 (mobile) 919-843-4673 (office)
- mwells@med.unc.edu

Education:

- Currently enrolled and working toward PhD, Curriculum and Instruction, North Carolina State University, Raleigh, NC
- MS Instructional Technology, East Carolina University, Greenville, NC 2004
- BS Computer Science, East Carolina University, Greenville, NC 2001
- AAS Electroneurodiagnostic Technology with add-on Polysomnography, Pamlico Community College, Grantsboro, NC 2008

Professional Experience:

- Clinical Assistant Professor/Program Director, 2008 - present, The University of North Carolina at Chapel Hill, Department of Allied Health Sciences, Chapel Hill, NC
- Neurodiagnostic Technologist, 2010 – present, The University of North Carolina Hospitals, Clinical Neurophysiology Laboratory, Chapel Hill, NC
- Electroneurodiagnostic Technology Program Director, 2006 – 2008, Pamlico Community College, Grantsboro, NC
- Adjunct Instructor, 2003 – 2008, Pitt Community College, Greenville, NC
- Technologist, 2006 – 2008, Atlantic Neurology, New Bern, NC
- Technologist, 1999 – 2006, Carolina Neurology & Electromyography, Greenville, NC

Accreditations:

- Board of Registered Polysomnographic Technologists (BRPT), #13602, 2009
- American Board of Registration of Electroencephalographic and Evoked Potential Technologists (ABRET), #3697, 2004
- American Association of Electroneurodiagnostic Technologists (AAET), #477, 2002

Memberships:

- North Carolina Association of Sleep Technologists (NCAST)
- American Society of Electroneurodiagnostic Technologists (ASET)



Department of Allied Health Sciences

- American Association of Sleep Technologists (AAST)
- Southern Society of Electroneurodiagnostic Technologists (SSET)

Bibliography:

- Wells, M.E. Progression of Neuromuscular Disorders and Sleep-Related Dysfunction. *A2Zzz*, A Publication of the American Association of Sleep Technologists. Vol 20(1). P 18-21. 2011.
- Wells, M.E. Epilepsy: Low-Pass (High frequency) Filters. *A2Zzz*, A Publication of the American Association of Sleep Technologists. Vol 19(1). P 28-29. 2010.
- Wells, M.E. Epilepsy: The Night Thief. *A2Zzz*, A Publication of the American Association of Sleep Technologists. Vol 18(4). P 19-21. 2009.
- *Taking Sleep to a New Level – The Profession of Neurodiagnostics and Sleep Science, Celebrating Allied Health Professions Appreciation Week*, Council for Allied Health in North Carolina, 4 page article, 2008
- Reviewer for North Carolina Health Careers handbook, North Carolina Area Health Education Centers Program (AHEC), 2006

Teaching record:

Courses taught for NCCCS

- EDT 110 Neuroscience/Pathological Conditions
- EDT 111 Laboratory Management
- EDT 112 Instrument/Record Methods
- EDT 113 Clinical Correlates
- EDT 114 Special Procedures
- EDT 115 Laboratory Practice
- EDT 116 Clinical Experience
- EDT 118 Laboratory Practice II
- OST 149 Medical Legal Issues
- MED 118 Medical Law and Ethics
- CIS 110 - Introduction to Computers
- ACA 111 – College Student Success
- CIS 172 - Introduction to the Internet
- MAT 60 and 80 – Remedial Algebra

Lab Mentorships and Continuing Education Lecture

- ABRET Registry exam preparation, Pamlico Community College
- Nerve Conduction Velocities workshop 2007 and 2008, invited by Cadwell Laboratories, Inc.

Student Preceptorships 2007

- Electroencephalography
- Evoked potential testing
- Nerve conduction velocity testing
- Patient assessment

Grants:



Department of Allied Health Sciences

- Principle Investigator, Community College Allied Health Enhancement Funds, The North Carolina Community College System, 2006-2007, 95% effort, \$129,500.00
- Principle Investigator, American Society of Electroneurodiagnostic Technologists Foundation Grant, 2010-2011, 95% effort, \$5,000.00

Awards:

Allen DeVilbiss Literary Award presented by the American Association of Sleep Technologists at the 2010 Annual Meeting of the Associated Professional Sleep Societies in San Antonio TX. This award is in recognition of an original article published in A2Zzz deemed to represent excellence in technical literary writing by a sleep technologist.

Professional Service:

- Health Sciences Library Advisory Committee. The University of North Carolina at Chapel Hill. Appointed 2010.
- Committee on Accreditation for Education in Electroneurodiagnostic Technology (CoA-END) committee member, appointed 2009 - present
- American Council on Education evaluator, Military Program Evaluations, Portsmouth Virginia Electroneurodiagnostic Technology with Add-on Polysomnography Program, 2009-2010
- Invited member 2009 – present, Polysomnography Technology Program Academic Advisory Committee, Lenoir Community College, Kinston, NC
- Invited taskforce member, 2008-present, American Association of Electroneurodiagnostic Technologists, Bachelor's Degree Taskforce
- Initiator and maintainer, CAAHEP accreditation of Electroneurodiagnostic Technology with add-on Polysomnography at Pamlico Community College, 2007 - 2008
- Invited member 2006 - present, Health Services Management Academic Advisory Committee, East Carolina University, Greenville, NC
- Institutional Effectiveness Committee member, 2007 – 2008, Pamlico Community College, Grantsboro, NC
- Public Relations Committee member, 2007, Pamlico Community College, Grantsboro, NC

Presentations:

- Polysomnography Instrumentation. UNC Hospitals Sleep Disorders Center. April 15th 2011.
- Reaching High in Sleep Medicine Education. North Carolina Association of Sleep Technologists Annual Meeting. Nov. 13th 2010



Department of Allied Health Sciences

- Bachelor's Degree END Education Development Webinar. American Society of Neurodiagnostic Technologists. Oct. 6th 2010.
- Interactive Pattern Recognition. Southern Society of Electroneurodiagnostic Technologists 50th Anniversary conference, Myrtle Beach, NC Sept. 25th 2010.
- Logistical Needs for Widespread Higher Education in Sleep Webinar: Career Enhancement Series. American Association of Sleep Technologists. Sept. 8th 2010. 6pm–7pm.
- A Sleep Technologists Guide to Epilepsy. Northwest and Greensboro Area Health Education Centers. Aug. 24th 2010. 9am-1pm.
- Advancing the Sleep Profession Through Education: It's Time to Get Involved! Symposium speaker and chair, American Association of Sleep Technologists 32nd Annual Meeting, San Antonio Tx. June 7th, 2010.
- Sleep Disorders and the Impact on Public Health. Eastern Area Health Education Center. Feb. 26th 2010. 8am-12pm.
- A Sleep Technologists Guide to Epilepsy. Eastern Area Health Education Center. Feb. 26th 2010. 1pm-5pm.
- Electroneurodiagnostic Technology and Polysomnography demonstration for the North Carolina legislators at the Raleigh legislative building, 2007

Reflective Statement:

I have worked as a technologist in the field of neurodiagnostics and sleep science since 1999. After completing my BS degree in 2001, I began pursuing my MS degree and became deeply involved in designing instruction at the college level. Distance education is a passion of mine and I created the first accredited DE associates degree in electroneurodiagnostic technology/polysomnography in our nation. I worked as a faculty member at Pitt Community College and as a program director at Pamlico Community College. My research/scholarly interests include clinical education competencies, educational leadership, distance education, advanced didactic and laboratory competencies in neurodiagnostics and sleep science, educational assessments and outcomes, community awareness of neurological and sleep disorders and patient advocacy.

Program accreditation is a major part of my responsibility. I initiated accreditation by the Committee on Accreditation of Allied Health Education Programs (CAAHEP) for an Electroneurodiagnostic Technology with add-on Polysomnography program. My program received accreditation by CAAHEP approximately six months later – the first in our state and the 12th in the nation to receive the accreditation. To ensure the best education for my students, I maintain equipment featuring the latest in technology for the field. This is achieved by soliciting funds for new equipment and acquiring donor/loaner equipment from leading manufacturers. I also follow SACS requirements and adhere to the guidelines set forth by UNC, ASET, CAAHEP, BRPT, ABRET, ACNS, and the AASM as well as participate in continuing clinical and professional education.



Department of Allied Health Sciences

Currently, I am working towards creating a baccalaureate of science degree in neurodiagnostics and sleep science for which I will be the first director. This program is a collaboration between the UNC Department of Allied Health Sciences at The University of North Carolina at Chapel Hill and The University of North Carolina at Charlotte. This proposed program will be the first in our state, nation, and the world. A major goal of my endeavors for the new program is to create a national model for future BS degrees in neurodiagnostics and sleep science.

CURRICULUM VITAE

Joseph Paul Coyle, M.D.

Anesthesiologist and Critical Care Physician
Southeast Anesthesiology Consultants, P.A.
Carolinas Medical Center, Charlotte, North Carolina

Home Address: 7620 Turnberry Lane
Stanley, North Carolina 28164
Phone: (704) 892-5692

Hospital Address: Department of Anesthesiology
Carolinas Medical Center
P.O. Box 32861
Charlotte, NC 28232
Phone: (704) 355-2000 (Paging)
(704) 355-2372 (Office)

Personal Data: Born - June 17, 1952; Bethesda, Maryland
Married - 1972 - Patricia Linn Coyle
Children: Michael 1974
Kathleen 1977
David 1979

Education: **Medical School** - Hahnemann Medical College, Philadelphia, PA
1974-1978: Doctor of Medicine, Alpha Omega Alpha (President)
Medical Internship - Bethesda Naval Hospital, Bethesda, Md
1978-1979
Residency in Anesthesiology - Bethesda Naval Hospital
1979-1981
Fellowship in Critical Care Medicine
July 1981-June 1982
Harvard Medical College
Massachusetts General Hospital, Boston, Ma
Fellowship in Cardiothoracic Anesthesiology
July 1982-June 1983
Harvard Medical College
Massachusetts General Hospital, Boston, Ma

Certification: National Board of Medical Examiners #220870 1979
American Board of Anesthesiology #10505 1982
Recertification ABA 2002

Critical Care Medicine #39	1986
Examiner, American Board of Anesthesiology	1994 - 2008
Advanced Trauma Life Support	2006

License:	North Carolina #29831	1986
	Virginia #0101242628	2007

Society

Memberships:

- American Medical Association
- American Society of Anesthesiology
- North Carolina Society of Anesthesiologists
- Society of Cardiovascular Anesthesiologists
- International Anesthesia Research Society
- Society of Critical Care Medicine
- Fellow of the American College of Chest Physicians

Professional Appointments and Positions:

North Carolina Respiratory Care Board

Chairman	2010 - present
----------	----------------

Commission on Accreditation of Respiratory Care, CoARC

Commissioner:	2009 - present
---------------	----------------

University of North Carolina, Charlotte

Lecturer in the Department of Kinesiology	August 15, 2008 - Present
---	---------------------------

North Carolina Respiratory Care Board

	2001-2008
Vice Chairman	2001-2002
Chairman	2002-2008

Carolinas Medical Center,

April 1990-Present

Department of Anesthesiology

P.O. Box 32861

Charlotte, North Carolina 28232

Staff Anesthesiologist and Critical Care Physician	1990-Present
--	--------------

CQI Committee, Department of Anesthesiology	1990-2001
---	-----------

Chief, Cardiac Anesthesia	1991-2006
---------------------------	-----------

Director, Cardiovascular Recovery Unit	1991-2004
--	-----------

Medical Director, CQI/QA

Department of Anesthesiology	1996-2001
------------------------------	-----------

Vice-Chief, Department of Anesthesiology	1995-2002
--	-----------

Medical Director, Respiratory Care	1996-Aug 1, 2008
------------------------------------	------------------

Cleveland Clinic Foundation, June 1988 - April 1990
Department of Cardiothoracic Anesthesiology
9500 Euclid Ave., Cleveland, Ohio 44195

Staff Anesthesiologist and Critical Care Physician	1988-1990
Division Committee	1989-1990
Director, CT Anesthesia Fellowship	1989-1990
Director, Critical Care Fellowship	1989-1990

Bethesda Naval Hospital, July 1983 - June 1988
8901 Wisconsin Avenue, Bethesda, Maryland 20814

Staff Anesthesiologist and Critical Care Physician	1983-1988
Assistant Professor of Anesthesiology and Medicine	
Uniformed Services Univ. Of Health Sciences	1983-1988
Director of Cardiac Anesthesia	1983-1986
Assistant Head, Critical Care Medicine	1984-1987
Director of the Recovery Room	1987-1988
Director of Quality Assurance, Critical Care	1984-1988
Chairman of Hospital CPR Committee	1987-1988

Military Service:

Commissioned, Ensign, Medical Corps, U.S.N.R.	1975
Meritorious Unit Commendation	1985
Deployment in support of the Grenada Invasion	
Letter of Commendation	1985
Perioperative Care of President Ronald Reagan	
Letter of Commendation	1987
Perioperative Care of First Lady Nancy Reagan	
Honorable Discharge, Commander (Select), M.C., U.S.N.R.	1988

Awards:

Best Doctors List	2003 – 2009
Undergraduate Teaching Award:	
UNCC, College of Health & Human Services	2009
NCSRC Physician of the Year	2006

Publications:

1. Chernow B., Lake CR, Cruess D., Coyle JP, Hughes P., Balestrieri F., Casey, L., Rainey TG, Fletcher JR: The Effect of Ketamine on Catecholamine Levels in Plasma Urine, and CSF. Critical Care Medicine, 10:600-603, 1982.
2. Coyle, JP, Cullen DJ: Anesthetic Management of the Critically Ill. In The Pharmacologic Approach to Critically Ill Patients. ed by Chernow B, and Lake CR: Williams and Wilkens Co., Baltimore, 1983.
3. Chernow B, Lake CR, Cook D, Coyle JP, Hughes P, Coleman M., Zeigler MG: Fenfluramine Lowers Plasma Norepinephrine in Overweight Subjects. J Clin Pharm Res 3 (4), 233-237, 1983.
4. Coyle JP: Anesthesia for the Hypertensive patient. U.S. Navy Medicine, 76:21-24, 1985.
5. Coyle JP, Cullen DJ: Anesthetic Agents in Intensive Care in Postoperative Care Procedures at the Massachusetts General Hospital. ed by Kopfke A and Levy J: Little Brown Publishers, 1986.
6. Zeigler Mg, Chernow B, Woodson LC, Coyle JP, Cruess D, Lake CR: The Effect of Propranolol on Catecholamine Clearance. Clin Pharmacol Ther (40 (1): 116-119, 1986.
7. Hotchkiss RS, Katsamouris AN, Lappas DG, Mikelakas PT, Wilson RS, Long M, Coyle, JP, Brewster D, Greene R: Interpretation of Pulmonary Artery Wedge Pressure and Pullback Blood Gas Determination During Positive End-expiratory Pressure ventilation and Exclusion of the Bronchial Circulation in the Dog. Am Rev Resp Dis 133 (6): 1019-1023, 1989.
8. Coyle JP, Cullen DJ: Anesthesia Pharmacology in Critical Care in The Pharmacologic Approach to Critically Ill Patients. ed by Chernow B: Williams and Wilkens Co., Baltimore, 1989.
9. Cullen DJ, Coyle JP, Teplick R, Long MC, Hotchkiss RS, C: Cardiovascular, Pulmonary, and Renal Effects of Massively Increased Intraabdominal Pressure in Critically Ill Patients. Crit Care Med. 17:118-121, 1989.
10. Coyle JP, Carlin HM, Lake CR, Lee CK, Chernow B: Left Atrial Infusion of Norepinephrine in the Management of Right Ventricular Failure. J Cardiothoracic Anes. 4:80-83, 1990.
11. Cutrone F, Coyle JP, Novoa R, Stewart R, Currie PJ: Severe Dynamic Left Ventricular Outflow Tract Obstruction Following Aortic Valve Replacement diagnosed by Intraoperative Echocardiography. Anesthesiology 72:165-168, 1990.

12. Jorgensen NH, Coyle JP: Intravenous Droperidol Decreases nausea and Vomiting After Alfentanil Anesthesia Without Increasing Recovery Time. J Clinical Anesthesia 2:312-316,1990.
13. Coyle JP: Sedation, Pain Relief and Neuromuscular Blockade in the Postoperative Cardiac Surgical Patient. Seminars in Thoracic and Cardiovascular Surgery 3:81-87, 1991.
14. Coyle JP, Higgins TL: Cardiac Surgery in Principles of Critical Care Medicine. ed. by Hall, Schmidt, and Wood: McGraw-Hill Inc, New York, NY pp1012-1029, 1992.
15. Smith CE, Higgins TL, Kraenzler EJ, Starr NJ, Coyle JP, Licina MG, Blum J: Alpha-drenergic Agonist Drugs, Left Ventricular Function, and Emergence from Cardiopulmonary Bypass. Journal of Cardiothoracic Anesthesia 4:681-686,1990.
16. Higgins TL, Coyle JP: Sedation, Pain Relief and Neuromuscular Blockade in The High Risk Patient: Management of the Critically Ill. ed by Sinah Higgins and Seiner. Williams aand Wilkins, Baltimore, MD, pp 1278-1290, 1995.
17. Higgins TL, Yared JP, Estafanous FG, Coyle JP, Goodale DB - Propofol vs. Midazolam for ICU Sedation After Coronary Artery Bypass Grafting. Critical Care Medicine. 1994.
18. Pollard RJ, Coyle JP, Gilbert, RL, Beck, JE – Intraoperative Awareness in a Regional Medical System. Anesthesiology. 106:269-274, 2007.

Published Abstracts:

1. Chernow B., Zeigler M, Coyle JP, Cruess D, Hughes P, Rainey TG, Lake CR: Beta Adrenergic Mediation of Sympathetic Nervous System Activity Clin Res 29:819A, 1982; and in Crit Care Med 10:221, 1982.
2. Coyle, JP, Teplick RS, Long MC, Davison JK: Respiratory Variations in Systemic Arterial Pressure as an Indicator of Volume Status. Anesthesiology, 1983.
3. Teich S, Coyle JP, Lee C, Chernow B: Conjunctival Oxygen Monitoring During Coronary Artery Bypass Grafting. Critical Care Medicine 13:322, 1985.
4. English JF, Coyle JP, Rainey TG, Wilkens L, Gario J, McCormick C, Zaloga GP: Bedside Laboratory Testing Accurately Reflects Main Hospital Laboratory Results in Critically Ill Patients. Critical Care Medicine 15:379, 1987.
5. Jorgensen NH, Coyle JP: Effect of Intravenous Droperidol Upon Nausea and Recovery Using Alfentanil Anesthesia. Anesth Analg. S139, 1989.

6. Coyle JP, ElDabh E, Shannon-Padua N, Cosgrove DM: Anesthesia experience with Pulmonary Embolectomy and Thromboendarterectomy. Society of Cardiovascular Anesthesiologists 11th Annual Meeting Book, April, 1989.
7. Higgins TL, Barrett C, Riden DJ, Roberts MM, Coyle JP: Influence of Pleural and Mediastinal Chest Tubes on Respiration Following Coronary Artery Bypass Grafting. Chest 96:2, August, 1989 Supplement.
8. Coyle JP, Kamath G, Licina MG, Higgins TL: Factors Affecting Magnesium Levels After Cardiac Surgery. Anesthesiology 71:A192, 1989.
9. Coyle JP, Steele J, Cutrone F, Higgins TL: Patient Controlled Analgesia After Cardiac Surgery. Anesthesiology 71:A192, 1989.
10. Higgins TL, Yared JP, Estafanous FG, Coyle JP, Vassel F, Goodale DB: ICU Sedation Following CABG: Propofol vs Midazolam. American Society of Anesthesiologists Meeting, San Francisco, CA, October 1999.

**Projected Funding for New Degree Program
Bachelor of Science in Neurodiagnostics and Sleep Science
Regular Term 2011-12
(Based on 2010-2011 Change in Student Credit Hours)**

Program Category	Change in Student Credit Hours			Instructional - Position Funding Factors			Instructional Positions Required		
	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral
Category I				708.64	169.52	115.56	0.000	0.000	0.000
Category II				535.74	303.93	110.16	0.000	0.000	0.000
Category III				406.24	186.23	109.86	0.000	0.000	0.000
Category IV				232.25	90.17	80.91	0.000	0.000	0.000

Fringe rates for staff
 FICA @ 7.65%
 Retirement @ 8.75%
 Medical @ \$4,527

Fringes for faculty salaries
 FICA @ 7.65%
 Retirement @ 11.86%
 Medical @ \$4,527

	\$0
	\$0
	\$0
	<u>\$0</u>

Total Positions Required		0.000
Instructional - Position Salary Rate		<u>\$80,189</u>
101-1310 Instructional Salary Amount		\$0
Other Academic Costs	44.89300%	<u>0</u>
Purpose 101 Total Academic Requirements		\$0
Purpose 151 Library	11.48462%	0
Purposes 152, 160, 170 180 General Instit Support	54.04980%	0
Neg Adj Factor	50.00000%	n/a
In-state SCHs	0	
Financial Aid (in-state)	67.99800%	<u>0</u>
Total Requirements		<u>\$0</u>

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM/TRACK

<i>Institution</i>	UNC Charlotte			<i>Date</i>	July 7, 2010	
<i>Program (API#, Name, Level)</i>	51.0999 Neurodiagnostics and Sleep Science					
<i>Degree(s) to be Granted</i>	BS			<i>Program Year</i>	2011-12	
ADDITIONAL FUNDING REQUIRED - BY SOURCE						
	Reallocation of Present Institutional Resources	Enrollment Increase Funds	Federal/State or Other Non-state Funds (Identify)	Donor Education Funds	New Allocations	Total
101 Regular Term Instruction						
1210 SPA Regular Salaries	\$0			\$17,856		\$17,856
1110 EPA Non-teaching Salaries						0
1310 EPA Academic Salaries	0	0	0	112,500		112,500
Coordinator Stipend Graduate Teaching Assistants						
1810 Social Security			0	8,442		8,442
1820 State Retirement	0		0	10,207		10,207
1830 Medical Insurance (3432*X)	0			8,315		8,315
2000 Supplies and Materials	4,500					4,500
2600 Office Supplies	4,500					4,500
3000 Current Services				10,500		10,500
4000 Fixed Charges						0
5000 Capital Outlay (Equipment)	0					0
5100 Office Equipment 5200 EDP Equipment						
TOTAL Regular Term Instruction	\$4,500	\$0	\$0	\$167,820	\$0	\$172,320
151 Libraries						
5000 Capital Outlay (Equipment)	0	0				0
5600 Library Book/Journal						
TOTAL Libraries	\$0	\$0	\$0	\$2,000	\$0	\$0
189 General Institutional Support						
2000 Supplies and Materials						0
2600 Office Supplies						
3000 Current Services						0
3200 Communications 3400 Printing & Binding						
5000 Capital Outlay (Equipment)						0
5100 Office Equipment 5200 EDP Equipment						
TOTAL General Inst. Support	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL ADDITIONAL COSTS	\$4,500	\$0	\$0	\$169,820	\$0	\$172,320

NOTE: Accounts may be added or deleted as required.

**Projected Funding for New Degree Program
 Bachelor of Science in Neurodiagnostics and Sleep Science
 Regular Term 2012-13
 (Based on 2011-2012 Change in Student Credit Hours)**

Program Category	Change in Student Credit Hours			Instructional - Position Funding Factors			Instructional Positions Required		
	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral
Category I				708.64	169.52	115.56	0.000	0.000	0.000
Category II				535.74	303.93	110.16	0.000	0.000	0.000
Category III	150			406.24	186.23	109.86	0.369	0.000	0.000
Category IV	20			232.25	90.17	80.91	0.086	0.000	0.000

* No change in overall credit hours due to the presence of students in the Health Information Technology certificate program.

Fringe rates for staff
 FICA @ 7.65%
 Retirement @ 8.75%
 Medical @ \$4,527

Fringes for faculty salaries
 FICA @ 7.65%
 Retirement @ 11.86%
 Medical @ \$4,527

	\$2,793
	\$4,331
	\$2,061
	<u>\$9,185</u>

Total Positions Required		0.455
Instructional - Position Salary Rate		<u>\$80,189</u>
101-1310 Instructional Salary Amount		\$36,514
Other Academic Costs	44.89300%	<u>16,392</u>
Purpose 101 Total Academic Requirements		\$52,906
Purpose 151 Library	11.48462%	6,076
Purposes 152, 160, 170 180 General Instit Support	54.04980%	28,596
Neg Adj Factor	50.00000%	n/a
In-state SCHs	0	
Financial Aid (in-state)	67.99800%	<u>0</u>
Total Requirements		<u>\$87,578</u>

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM/TRACK

Institution	UNC Charlotte	Date	May 31, 2011
Program (API#, Name, Level)	51.0999 Neurodiagnostics and Sleep Science		
Degree(s) to be Granted	BS	Program Year	2012-13

ADDITIONAL FUNDING REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Enrollment Increase Funds	Federal/State or Other Non-state Funds (Identify)	Donor	New Allocations	Total
101 Regular Term Instruction						
1210 SPA Regular Salaries						\$0
1110 EPA Non-teaching Salaries						0
1310 EPA Academic Salaries	0	36,514	0			36,514
1810 Social Security	0	2,793	0			2,793
1820 State Retirement	0	6,792	0			6,792
1830 Medical Insurance		2,061				2,061
2000 Supplies and Materials		2,000				2,000
3000 Current Services		2,746				2,746
5000 Capital Outlay (Equipment)		0				0
5100 Office Equipment						
5200 EDP Equipment						
TOTAL Regular Term Instruction	\$0	\$52,906	\$0		\$0	\$52,906
151 Libraries						
5000 Capital Outlay (Equipment)		6,076				6,076
5600 Library Book/Journal		6,076				
TOTAL Libraries	\$0	\$6,076	\$0		\$0	\$6,076
189 General Institutional Support						
2000 Supplies and Materials		9,500				9,500
2600 Office Supplies		9,500				
3000 Current Services		9,500				9,500
3200 Communications		4,750				
3400 Printing & Binding		4,750				
5000 Capital Outlay (Equipment)		9,596				9,596
5100 Office Equipment		4,800				
5200 EDP Equipment		4,796				
TOTAL General Inst. Support	\$0	\$28,596	\$0		\$0	\$28,596
TOTAL ADDITIONAL COSTS	\$0	\$87,578	\$0		\$0	\$87,578

NOTE: Accounts may be added or deleted as required.

**Projected Funding for New Degree Program
Bachelor of Science in Neurodiagnostics and Sleep Science
Regular Term 2013-2014
(Based on 2012-2013 Change in Student Credit Hours)**

Program Category	Change in Student Credit Hours			Instructional - Position Funding Factors			Instructional Positions Required		
	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral
Category I				708.64	169.52	115.56	0.000	0.000	0.000
Category II				535.74	303.93	110.16	0.000	0.000	0.000
Category III	550			406.24	186.23	109.86	1.354	0.000	0.000
Category IV				232.25	90.17	80.91	0.000	0.000	0.000

Fringe rates for staff
 FICA @ 7.65%
 Retirement @ 8.75%
 Medical @ \$4,527

Fringes for faculty salaries
 FICA @ 7.65%
 Retirement @ 11.86%
 Medical @ \$4,527

	\$8,305
	\$12,876
	\$6,129
	<u>\$27,310</u>

Total Positions Required		1.354
Instructional - Position Salary Rate		<u>\$80,189</u>
101-1310 Instructional Salary Amount		\$108,566
Other Academic Costs	44.89300%	<u>48,739</u>
Purpose 101 Total Academic Requirements		\$157,305
Purpose 151 Library	11.48462%	18,066
Purposes 152, 160, 170 180 General Instit Support	54.04980%	85,023
Neg Adj Factor	50.00000%	n/a
In-state SCHs	0	
Financial Aid (in-state)	67.99800%	<u>0</u>
Total Requirements		<u>\$260,394</u>

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM/TRACK

Institution	UNC Charlotte	Date	May 31, 2011
Program (API#, Name, Level)	51.0999 Neurodiagnostics and Sleep Science		
Degree(s) to be Granted	BS	Program Year	2013-14

ADDITIONAL FUNDING REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Enrollment Increase Funds	Federal/State or Other Non-state Funds (Identify)	Donor Education Funds	New Allocations	Total
101 Regular Term Instruction						
1210 SPA Regular Salaries						\$0
1110 EPA Non-teaching Salaries						0
1310 EPA Academic Salaries	0	108,566	0			108,566
1810 Social Security	0	2,793	0			2,793
1820 State Retirement	0	12,876	0			12,876
1830 Medical Insurance		6,129				6,129
2000 Supplies and Materials		8,000				8,000
3000 Current Services		10,441				10,441
5000 Capital Outlay (Equipment)		8,500				8,500
5100 Office Equipment		500				
5200 EDP Equipment		8,000				
TOTAL Regular Term Instruction	\$0	\$157,305	\$0	\$0	\$0	\$157,305
151 Libraries						
5000 Capital Outlay (Equipment)		18,066				18,066
5600 Library Book/Journal		18,066				
TOTAL Libraries	\$0	\$18,066	\$0	\$0	\$0	\$18,066
189 General Institutional Support						
2000 Supplies and Materials		28,300				28,300
2600 Office Supplies		28,300				
3000 Current Services		28,300				28,300
3200 Communications		14,150				
3400 Printing & Binding		14,150				
5000 Capital Outlay (Equipment)		28,423				28,423
5100 Office Equipment		14,200				
5200 EDP Equipment		14,223				
TOTAL General Inst. Support	\$0	\$85,023	\$0	\$0	\$0	\$85,023
TOTAL ADDITIONAL COSTS	\$0	\$260,394	\$0	\$0	\$0	\$260,394

NOTE: Accounts may be added or deleted as required.

**Projected Funding for New Degree Program
 Bachelor of Science in Neurodiagnostics and Sleep Science
 Regular Term 2014-2015
 (Based on 2013-2014 Change in Student Credit Hours)**

Program Category	Change in Student Credit Hours			Instructional - Position Funding Factors			Instructional Positions Required		
	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral
Category I				708.64	169.52	115.56	0.000	0.000	0.000
Category II				535.74	303.93	110.16	0.000	0.000	0.000
Category III	420			406.24	186.23	109.86	1.034	0.000	0.000
Category IV				232.25	90.17	80.91	0.000	0.000	0.000

Fringe rates for staff
 FICA @ 7.65%
 Retirement @ 8.75%
 Medical @ \$4,527

Fringes for faculty salaries
 FICA @ 7.65%
 Retirement @ 11.86%
 Medical @ \$4,527

	\$6,342
	\$9,833
	\$4,680
	<u>\$20,855</u>

Total Positions Required		1.034
Instructional - Position Salary Rate		<u>\$80,189</u>
101-1310 Instructional Salary Amount		\$82,905
Other Academic Costs	44.89300%	<u>37,219</u>
Purpose 101 Total Academic Requirements		\$120,124
Purpose 151 Library	11.48462%	13,796
Purposes 152, 160, 170 180 General Instit Support	54.04980%	64,927
Neg Adj Factor	50.00000%	n/a
In-state SCHs	0	
Financial Aid (in-state)	67.99800%	<u>0</u>
Total Requirements		<u>\$198,847</u>

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM/TRACK

Institution	UNC Charlotte	Date	May 31, 2011
Program (API#, Name, Level)	51.0999 Neurodiagnostics and Sleep Science		
Degree(s) to be Granted	BS	Program Year	2014-15

ADDITIONAL FUNDING REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Enrollment Increase Funds	Federal/State or Other Non-state Funds (Identify)	Donor Education Funds	New Allocations	Total
101 Regular Term Instruction						
1210 SPA Regular Salaries						\$0
1110 EPA Non-teaching Salaries						0
1310 EPA Academic Salaries	0	82,905	0			82,905
1810 Social Security	0	2,793	0			2,793
1820 State Retirement	0	9,833	0			9,833
1830 Medical Insurance		4,680				4,680
2000 Supplies and Materials		3,500				3,500
3000 Current Services		11,913				11,913
5000 Capital Outlay (Equipment)		4,500				4,500
5100 Office Equipment		500				
5200 EDP Equipment		4,000				
TOTAL Regular Term Instruction	\$0	\$120,124	\$0	\$0	\$0	\$120,124
151 Libraries						
5000 Capital Outlay (Equipment)		13,796				13,796
5600 Library Book/Journal		13,796				
TOTAL Libraries	\$0	\$13,796	\$0	\$0	\$0	\$13,796
189 General Institutional Support						
2000 Supplies and Materials		21,600				21,600
2600 Office Supplies		21,600				
3000 Current Services		21,600				21,600
3200 Communications		10,800				
3400 Printing & Binding		10,800				
5000 Capital Outlay (Equipment)		21,727				21,727
5100 Office Equipment		10,900				
5200 EDP Equipment		10,827				
TOTAL General Inst. Support	\$0	\$64,927	\$0	\$0	\$0	\$64,927
TOTAL ADDITIONAL COSTS	\$0	\$198,847	\$0	\$0	\$0	\$198,847

NOTE: Accounts may be added or deleted as required.



**Clinical Neurophysiology Labs
Sleep Disorders Center**

May 26, 2010

Mitchell L. Cordova
Professor and Chairperson Department of Kinesiology
The University of North Carolina at Charlotte
9201 University City Blvd.
Charlotte, NC 28223

Dear Dr. Cordova:

The University of North Carolina (UNC) Hospitals is in support of the Neurodiagnostics and Sleep Science (NDSS) baccalaureate program being proposed at the University of North Carolina at Charlotte and in collaboration with the University of North Carolina at Chapel Hill. Upon request by the NDSS program once the degree program is established we will initiate a student contract between the program and UNC Hospitals Clinical Neurophysiology Labs and Sleep Disorders Center and providing that all criteria is met than UNC Hospitals is willing to provide clinical instruction in its Clinical Neurophysiology Laboratory and Sleep Disorders Center according to the current plan of study of the NDSS program at The University of North Carolina at Charlotte.

Please do not hesitate to call if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Kyle Kalkowski".

Kyle K. Kalkowski
Director
Clinical Neurophysiology Labs
UNC Hospitals
Chapel Hill, NC 27514
(919) 966-1686



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

OFFICE OF THE EXECUTIVE VICE CHANCELLOR
AND PROVOST

104 SOUTH BUILDING
CAMPUS BOX 3000
CHAPEL HILL, NC 27599-3000

T 919.962.2198
F 919.962.1593

October 6, 2010

Dr. Joan Lorden
Provost and Vice Chancellor for Academic Affairs
The University of North Carolina at Charlotte
Denny 118
9201 University City Boulevard
Charlotte, NC 28223-0001

Dear Joan:

I am pleased to enclose a partially executed Memorandum of Understanding between The University of North Carolina at Chapel Hill's Department of Allied Health Sciences and The University of North Carolina at Charlotte's Department of Kinesiology. This partnership between our School of Medicine and your College of Health and Human Services will deliver specialized, on-line curricula to advanced practice professionals in the field of neurodiagnostics and sleep science.

Joan, this new baccalaureate degree is an excellent example of inter-institutional collaboration and vision, and I appreciate the oversight you provided on behalf of your campus. I look forward to receiving a copy of the fully-executed agreement once you have obtained all the required signatures.

Sincerely,

Bruce W. Carney
Executive Vice Chancellor
and Provost

BWC:st
copy: Chancellor Holden Thorp
Dean Bill Roper
Dr. Lee McLean

MEMORANDUM OF UNDERSTANDING

BETWEEN

The University of North Carolina at Chapel Hill, School of Medicine, Department of Allied Health Sciences

AND

The University of North Carolina at Charlotte, College of Health & Human Services, Department of Kinesiology

I. PURPOSE

The purpose of this Memorandum of Understanding is to define the working relationship between The University of North Carolina at Chapel Hill, School of Medicine, Department of Allied Health Sciences (DAHS) and The University of North Carolina at Charlotte, College of Health & Human Services, Department of Kinesiology (CHHS). This agreement will clarify the collaborative roles and responsibilities of the two institutions with respect to the establishment and delivery of an on-line Bachelors Degree in Neurodiagnostics and Sleep Science (NDSS).

DAHS has developed a specialized curricular content for a new baccalaureate degree to prepare advanced practice professionals in the field of Neurodiagnostics and Sleep Science (NDSS). The need for this new degree and level of preparation has become apparent over the past several years and is well documented in an initial "Intent to Plan" proposal prepared by the DAHS faculty. Ideally, this content would be offered in the form of a primarily on-line, post-professional degree for currently registered sleep technologists and neurodiagnostic technologists who already have their AS or AAS degrees (preferably earned from one of the NC Community College END or PSG programs.) CHHS has been successful in designing and delivering a very parallel, post-professional baccalaureate degree for practicing respiratory care professionals in North Carolina.

Our mutual goal is to establish a collaborative partnership through which CHHS will sponsor this new degree and offer approximately four of the required upper division undergraduate courses. DAHS will deliver and be responsible for approximately eight of the specialized neurodiagnostics and sleep science courses. DAHS's responsibility includes course management, content evaluation, and course revision.

II. LEGAL STATUS

All of the provisions of this MOU and any addenda are subject to mutual agreement of the parties, to the availability of appropriate funding at each institution, to review by the Office of University Counsel and approval by the Provost at each participating campus, and to review and approval by the UNC General Administration. This MOU will remain in effect until terminated or amended by mutual consent. Both parties to this MOU have the right to terminate this MOU by informing the partner in writing six months prior to the desired termination date.

III. TERM OF THIS MEMORANDUM

The effective date of this memorandum shall be the date of execution and it shall continue in effect until terminated by either party or modified by written amendment executed by both parties.

IV. ROLES AND RESPONSIBILITIES

A. The DAHS will:

1. Provide CHHS with access to editable versions of documents prepared by their faculty that are needed for the establishment of a new NDSS degree program in the UNC system (i.e., *Intent to Plan* and *Request to Establish*).
2. Provide assistance if requested to faculty at CHHS in the final preparation and submission of these forms on behalf of UNC-Charlotte
3. Advertise and recruit students for this new degree program at UNC-Charlotte
4. Provide the full time services of a DAHS faculty member qualified in NDSS , Mary Ellen Wells (or should she be or become unavailable, of a substitute NDSS faculty member reasonably acceptable to CHHS), who will assume responsibility for overall program coordination, NDSS specialty course development and delivery, assisting with applicant screening , making admission recommendations, submitting student grades in a timely manner, and related teaching and program administrative duties as may be agreed through further addenda to this MOU.
5. Disseminate information about this collaborative degree program throughout the UNC system and the relevant professional community, and list the program on its own website, noting the contributions of each partner institution.
6. Submit needed documentation to allow students in the NDSS program to access needed specialty content through the UNC Chapel Hill Health Sciences Library
7. Provide access to the facility and faculty resources of the UNC Hospitals Sleep Disorders Center and UNC Clinical Neurophysiology Laboratory, including the services of the Medical Director of this program (Dr. Bradley Vaughn), as described in the curriculum plan for this degree.

B. The NDSS specialty courses will be cross listed at UNC- CH

C. DAHS will be responsible for the course material content and quality assurance for the specialty courses.

D. The CHHS will:

1. Submit the *Intent to Plan* and *Request to Establish* documents in accordance with the policies and timelines established for UNC-Charlotte and the UNC General Administration.
2. Assist with the process of securing approval and listing of new NDSS courses by the Registrar at UNC-Charlotte; and securing an appropriate adjunct or joint appointment for Mary Ellen Wells (or substitute DAHS faculty member) at UNC-Charlotte.
3. Plan for the additional student slots needed in CHHS health science courses that will be required for completion of the NDSS degree program.

4. Provide the Information and Education Technology infrastructure and support needed for delivery of this on-line degree program.
5. Advertise this new collaborative degree program on its website and in other materials advertising related health science degree programs, identifying UNC-Chapel Hill as a partner in this offering, and noting the contributions of each partner institution.
6. Admit students accepted into this program; and confer the designated degree upon their successful completion of the program.
7. Track student credit hours projected and actually generated through this degree program, and request enrollment growth funding from the UNC General Administration for the ongoing support of the program

V. FINANCIAL CONSIDERATIONS

There will be no exchange of tuition funds between the participating institutions. The DAHS will contribute the time and expertise of its NDSS faculty member, Mary Ellen Wells, as in-kind support for this collaborative partnership during the initial degree start up period, which shall be until such time as enrollment growth funding for the CHHS will support this cost, or through December 31, 2011, whichever comes first.

During this same start up period, DAHS will provide funding for adjunct faculty needed to support expanded capacity of existing CHHS health science courses that will be required for students enrolled in the NDSS degree program. This funding will not exceed \$15,000 per academic year, and will continue until such time as enrollment growth funding for the CHHS will support this cost, or through December 31, 2011, whichever comes first.

It is expected that the this program will generate new student credit hours sufficient to maintain the local program costs at CHHS; and to support a contractual arrangement with DAHS that will provide funding to support Ms. Wells' time commitment to the program. The specific terms of such an arrangement will be determined at a later date and documented in an addendum to this MOU or through a more formal, inter-institutional contract.

V. SIGNATURES

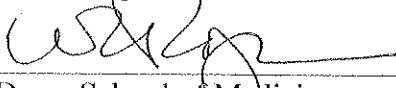
The University of North Carolina
at Chapel Hill

The University of North Carolina
at Charlotte



Chair, Dept. of Allied Health Sciences

Chair, Dep't of Kinesiology



Dean, School of Medicine

Dean, College of Health & Human Services



Provost

Provost

MEMORANDUM OF UNDERSTANDING

BETWEEN

The University of North Carolina at Chapel Hill, School of Medicine, Department of Allied Health Sciences

AND

The University of North Carolina at Charlotte, College of Health & Human Services, Department of Kinesiology

I. PURPOSE

The purpose of this Memorandum of Understanding is to define the working relationship between The University of North Carolina at Chapel Hill, School of Medicine, Department of Allied Health Sciences (DAHS) and The University of North Carolina at Charlotte, College of Health & Human Services, Department of Kinesiology (CHHS). This agreement will clarify the collaborative roles and responsibilities of the two institutions with respect to the establishment and delivery of an on-line Bachelors Degree in Neurodiagnostics and Sleep Science (NDSS).

DAHS has developed a specialized curricular content for a new baccalaureate degree to prepare advanced practice professionals in the field of Neurodiagnostics and Sleep Science (NDSS). The need for this new degree and level of preparation has become apparent over the past several years and is well documented in an initial "Intent to Plan" proposal prepared by the DAHS faculty. Ideally, this content would be offered in the form of a primarily on-line, post-professional degree for currently registered sleep technologists and neurodiagnostic technologists who already have their AS or AAS degrees (preferably earned from one of the NC Community College END or PSG programs.) CHHS has been successful in designing and delivering a very parallel, post-professional baccalaureate degree for practicing respiratory care professionals in North Carolina.

Our mutual goal is to establish a collaborative partnership through which CHHS will sponsor this new degree and offer approximately four of the required upper division undergraduate courses. DAHS will deliver and be responsible for approximately eight of the specialized neurodiagnostics and sleep science courses. DAHS's responsibility includes course management, content evaluation, and course revision.

II. LEGAL STATUS

All of the provisions of this MOU and any addenda are subject to mutual agreement of the parties, to the availability of appropriate funding at each institution, to review by the Office of University Counsel and approval by the Provost at each participating campus, and to review and approval by the UNC General Administration. This MOU will remain in effect until terminated or amended by mutual consent. Both parties to this MOU have the right to terminate this MOU by informing the partner in writing six months prior to the desired termination date.

III. TERM OF THIS MEMORANDUM

The effective date of this memorandum shall be the date of execution and it shall continue in effect until terminated by either party or modified by written amendment executed by both parties.

IV. ROLES AND RESPONSIBILITIES

A. The DAHS will:

1. Provide CHHS with access to editable versions of documents prepared by their faculty that are needed for the establishment of a new NDSS degree program in the UNC system (i.e., *Intent to Plan* and *Request to Establish*).
2. Provide assistance if requested to faculty at CHHS in the final preparation and submission of these forms on behalf of UNC-Charlotte
3. Advertise and recruit students for this new degree program at UNC-Charlotte
4. Provide the full time services of a DAHS faculty member qualified in NDSS , Mary Ellen Wells (or should she be or become unavailable, of a substitute NDSS faculty member reasonably acceptable to CHHS), who will assume responsibility for overall program coordination, NDSS specialty course development and delivery, assisting with applicant screening , making admission recommendations, submitting student grades in a timely manner, and related teaching and program administrative duties as may be agreed through further addenda to this MOU.
5. Disseminate information about this collaborative degree program throughout the UNC system and the relevant professional community, and list the program on its own website, noting the contributions of each partner institution.
6. Submit needed documentation to allow students in the NDSS program to access needed specialty content through the UNC Chapel Hill Health Sciences Library
7. Provide access to the facility and faculty resources of the UNC Hospitals Sleep Disorders Center and UNC Clinical Neurophysiology Laboratory, including the services of the Medical Director of this program (Dr. Bradley Vaughn), as described in the curriculum plan for this degree.

B. The NDSS specialty courses will be cross listed at UNC- CH

C. DAHS will be responsible for the course material content and quality assurance for the specialty courses.

D. The CHHS will:

1. Submit the *Intent to Plan* and *Request to Establish* documents in accordance with the policies and timelines established for UNC-Charlotte and the UNC General Administration.
2. Assist with the process of securing approval and listing of new NDSS courses by the Registrar at UNC-Charlotte; and securing an appropriate adjunct or joint

appointment for Mary Ellen Wells (or substitute DAHS faculty member) at UNC-Charlotte.

3. Plan for the additional student slots needed in CHHS health science courses that will be required for completion of the NDSS degree program.
4. Provide the Information and Education Technology infrastructure and support needed for delivery of this on-line degree program.
5. Advertise this new collaborative degree program on its website and in other materials advertising related health science degree programs, identifying UNC-Chapel Hill as a partner in this offering, and noting the contributions of each partner institution.
6. Admit students accepted into this program; and confer the designated degree upon their successful completion of the program.
7. Track student credit hours projected and actually generated through this degree program, and request enrollment growth funding from the UNC General Administration for the ongoing support of the program

V. FINANCIAL CONSIDERATIONS

There will be no exchange of funds between the participating institutions. The DAHS will contribute the time and expertise of its NDSS faculty member, Mary Ellen Wells, as in-kind support for this collaborative partnership during the initial degree start up period, which shall be until such time as enrollment growth funding for the CHHS will support this cost, but no later than 18 months from the date the Board of Governors approves UNC-Charlotte's Request to Establish this degree. After the Board of Governors approves the Establishment of this program, DAHS will provide funding for adjunct faculty needed to support expanded capacity of existing CHHS health science courses that will be required for students enrolled in the NDSS degree program. This funding will not exceed \$15,000 per academic year, and will continue until such time as enrollment growth funding for the CHHS will support this cost, but no later than 18 months from the date the Board of Governors approves UNC-Charlotte's Request to Establish this degree.

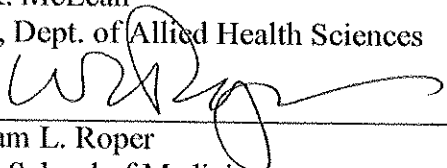
It is expected that the this program will generate new student credit hours sufficient to maintain the local program costs at CHHS; and to support a contractual arrangement with DAHS that will provide funding to support Ms. Wells' time commitment to the program. The specific terms of such an arrangement will be determined at a later date and documented in an addendum to this MOU or through a more formal, inter-institutional contract.

VI. SIGNATURES

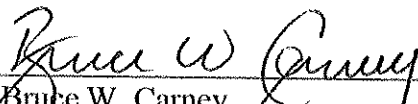
The University of North Carolina
at Chapel Hill



Lee K. McLean
Chair, Dept. of Allied Health Sciences

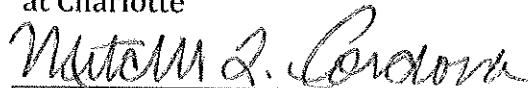


William L. Roper
Dean, School of Medicine



Bruce W. Carney
Executive Vice Chancellor and Provost

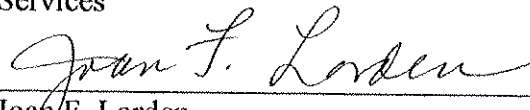
The University of North Carolina
at Charlotte



Mitchell L. Cordova
Chair, Dept. of Kinesiology



Jane B. Neese
Interim Dean, College of Health & Human
Services



Joan F. Lorden
Provost and Vice Chancellor for Academic
Affairs



UNC CHARLOTTE
J. Murrey Atkins Library

Consultation on Library Holdings

To: Mitch Cordova

From: Jean Hiebert

Date: April 10, 2011

Subject: Sleep Neuroscience and Atkins Library Holdings

Summary of Librarian's Evaluation of Holdings:

Evaluator: Jean Hiebert Date: 4/10/11

Please Check One:

- Holdings are superior _____
- Holdings are adequate _____
- Holdings are adequate only if Dept. purchases additional items. _____
- Holdings are inadequate _____

Comments:

Jean Hiebert
Evaluator's Signature

4/10/11
Date

UNC Charlotte Atkins Library Holdings - B.S. Degree in Neurodiagnostics & Sleep Science

Advances in sleep research	edited by Elliot D. Weitzman	1974
An evolutionary psychology of sleep and dreams	McNamara, Patrick	2004
Atlas of sleep medicine	Chokroverty, Sudhansu	2005
Basic sleep mechanisms	Edited by Olga Petre-Quadens [and] John D. Schlag	1974
Behavioral sleep medicine [electronic resource].		2003
Birds asleep	Skutch, Alexander F.	1989
Brain mechanisms of sleep	editors, Dennis J. McGinty ... [et al.].	1985
Brain mechanisms of sleep	editors, Dennis J. McGinty	1985
Brainstem control of wakefulness and sleep	Mircea Steriade and Robert W. McCarley	1990
Circadian clocks	Moore	2001
Clinical aspects of sleep and sleep disturbance	edited by Terrence L. Riley	1985
Clinical physiology of sleep	edited by Ralph Lydic, Julien F. Biebuyck.	1988
Clinical physiology of sleep	edited by Ralph Lydic, Julien F. Biebuyck	1988
Cultural issues and children's sleep : international perspectives : International Pediatric Sleep Education Task Force, June 3, 2003 Chicago, Illinois	Judith A. Owens, supplement editor	2005
Eating, sleeping, and sexuality : treatment of disorders in basic life functions	edited by Michael R. Zales	1982
Encyclopedia of sleep and sleep disorders	Thorpy, Michael J.	1991
Evaluation and treatment of insomnia	Kales, Anthony.	1984
Functions of dreaming	Alan Moffitt, Milton Kramer, and Robert Hoffmann, editors.	1993
Good night's sleep : a step-by-step program for overcoming insomnia and other sleep problems	Maxmen, Jerrold S.	1981
Human sleep : research and clinical care	Mendelson, Wallace B.	1987
Human sleep and its disorders	Mendelson, Wallace B.	1977
Insomnia, assessment and management in primary care	National Center on Sleep Disorders Research, National Heart, Lung, and Blood Institute, National Institutes of Health,	1998
Insomniac	Greene, Gayle	2008
Integration of behavioral and relaxation approaches into the treatment of chronic pain and insomnia : January 1985 through July 1995 : 1147 citations	Glock, Martha.	1995
Journal of clinical sleep		

Losing sleep : how your sleeping habits affect your life	Dotto, Lydia	1990
Lung biology in health and disease. Vol. 133, Regulation of sleep and circadian rhythms [electronic resource]	/ edited by Fred W. Turek, Phyllis C. Zee	1999
Manifestations and management of chronic insomnia in adults [electronic resource]	Buscemi N	2005
Mind awake and asleep ; The mind hidden and divided [videorecording Neurobiology of sleep and memory : proceedings of a conference held in Mexico City in March 1975	editors, René R. Drucker-Colín, James L. McGaugh	1989
Neuronal substrates of sleep and epilepsy	Steriade, Mircea	1977
Neuropsychology of sleep and dreaming	edited by John S. Antrobus, Mario Bertini.	2003
Night : night life, night language, sleep, and dreams	Alvarez, A.	1993
Obstructive sleep apnea : recognition and management in primary care	James F. Pagel	1995
Obstructive sleep apnea. Diagnosis and treatment	edited by Clete A. Kushida	2008
Obstructive sleep apnea. Pathophysiology, comorbidities, and consequences	edited by Clete A. Kushida	2007
Obstructive sleep apnea. Pathophysiology, comorbidities, and consequences	edited by Clete A. Kushida	2007
Overcoming insomnia : a medical program for problem sleepers	Sweeney, Donald M	1989
Philosophical essays on dreaming	edited by Charles E. M. Dunlop	1977
Physiologic nature of sleep	edited by] Pier Luigi Parmeggiani, Ricardo A. Velluti	2005
Physiologic nature of sleep	[edited by] Pier Luigi Parmeggiani, Ricardo A. Velluti.	1992
Physiological and psychological aspects of night and shift work	Wojtczak-Jaroszowa, Jadwiga	1977
Physiology in sleep	edited by John Orem, Charles D. Barnes	1980
Physiology in sleep	edited by John Orem, Charles D. Barnes	1980
Problems of sleep and dream in children	Harms, Ernest	1964
Psychophysiological aspects of sleep : proceedings of the Third International Congress of Sleep Research	edited by Ismet Karacan	1981
Regulation of Tris-treated sleepwear : hearings before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, House of Representatives, Ninety-seventh Congress, first session, April 15 and June 4, 1981	United States. Congress. House. Committee on Energy and Commerce. Subcommittee on Oversight and Investigations. Delegation to Latvia on the State of the Environment	1981
Relief from insomnia : getting the sleep of your dreams	Morin, Charles M	1995
Review of sleep medicine	edited by] Teri J. Barkoukis, Alon Y. Avidan	2007
Review of sleep medicine	[edited by] Teri J. Barkoukis, Alon Y. Avidan	2007

Sleep & breathing [electronic resource] : international journal of the science and practice of sleep medicine.		
Sleep and aging : a research-based guide to sleep in later life	Morgan, Kevin	1987
Sleep and biological rhythms [electronic resource].		2003
Sleep and biological rhythms [electronic resource].		2003
Sleep and breathing in children [electronic resource] : a developmental approach	edited by Gerald M. Loughlin ; John L. Carroll ; Carole L. Marcus	2000
Sleep and dreaming	Jacob Empson	1993
Sleep and dreams : a sourcebook	edited by] Jayne Gackenbach.	1987
Sleep and its secrets : the river of crystal light	Aronoff, Michael S.	1991
Sleep and respiration : proceedings of the First International Symposium on Sleep and Respiration, held in Banff, Alberta, April 1-4, 1989	editors, Faiq G. Issa, Paul M. Suratt, John E. Remmers.	1990
Sleep and respiration in aging adults : proceedings of the Second International Symposium on Sleep and Respiration, held at South Shore Harbour Resort and Conference Center, League City, Texas, March 9-13, 1991	editors, Samuel T. Kuna, Paul M. Suratt, John E. Remmers	1991
Sleep and society : sociological ventures into the (un)known	Simon J. Williams.	2005
Sleep and the maturing nervous system	Edited by Carmine D. Clemente, Dominick P. Purpura [and] Florence E. Mayer.	1972
Sleep and wakefulness	Kleitman, Nathaniel, Committee on Sleep Medicine and Research, Board on Health Sciences Policy	1963 2006
Sleep disorders and sleep deprivation : an unmet public health problem		
Sleep disorders sourcebook : basic consumer health information about sleep and its disorders including insomnia, sleepwalking, sleep apnea, restless leg syndrome, and narcolepsy; along with data about shiftwork and its effects, information on the societal costs of sleep deprivation, descriptions of treatment options, a glossary of terms, and resource listings for additional help	edited by Jenifer Swanson	1999
Sleep mechanisms and functions in humans and animals : an evolutionary perspective	edited by Andrew Mayes	1983
Sleep medicine	Christian Guilleminault	2010
sleep medicine reviews [electronic resource]		
Sleep peptides : basic and clinical approaches	edited by Shojiro Inoué and D. Schneider-Helmert	1988
Sleep research; a critical review	Freemon, Frank	1972
Sleep thieves : an eye-opening exploration into the science and mysteries of sleep	Coren, Stanley	1996

Sleep, dreams, and arousal	Murray, Edward R.	1965
Sleep, its nature and physiological organization	Koella, Werner P	1967
Sleep, sleep disorders, and biological rhythms [electronic resource]	[writing team, Charles Amlaner ... et al.].	2003
Sleep, sleep disorders, and biological rhythms [electronic resource]	writing team, Charles Amlaner ... et al	2003
Sleep, sleepiness, and performance	Monk, Timothy	1991
Sleep/wake disorders : natural history, epidemiology, and long- term evolution	editors, Christian Guilleminault, Elio Lugaresi	1983
Sleep: an experimental approach	Webb, Wilse B	1968
Sleep: physiology & pathology; a symposium	Edited by Anthony Kales	1969
Sleepfaring : a journey through the science of sleep	Horne, James	2006
Sleeping and waking disorders : indications and techniques	Guilleminault, Christian	1982
Sleeping brain : proceedings of the symposia of the first international congress of the Association for the Psychophysiological Study of Sleep, Bruges, Belgium, June 19-24, 1971	Association for the Psychophysiological Study of Sleep.	1971
Sleep-talking : psychology and psychophysiology	Arkin, Arthur M	1981
Somnologie [electronic resource]		
Treating sleep disorders : principles and practice of behavioral sleep medicine	edited by Michael L. Perlis, Kenneth L. Lichstein.	2003
Understanding sleep : the evaluation and treatment of sleep disorders	edited by Mark R. Pressman, William C. Orr	1997
Understanding sleep : the evaluation and treatment of sleep disorders	edited by Mark R. Pressman, William C. Orr.	1997
Understanding sleeplessness : perspectives on insomnia	Neubauer, David N	2003
Your guide to healthy sleep [electronic resource]	U.S. Dept. of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute	2005

TITLE	AUTHOR
1 A good night's sleep.	
2 A manual of standardized terminology, techniques and scoring system for sleep stages of human subjects / Allan Rechtschaffen and Anthony Kales, editors.	
3 A primer on sleep and dreaming / Rosalind Dymond Cartwright.	Cartwright, Rosalind Dymond.
4 A study of sleep patterns of a group of psychiatric patients who were transferred from a racially segregated environment to one which was racially desegregated / by Rose Geraldine George.	George, Rose Geraldine.
5 A treatise on headache and neuralgia including spinal irritation and a disquisition on normal and morbid sleep / by J. Leonard Corning.	Corning, J. Leonard (James Leonard), 1855-1923.
6 A tune concept of the brain and behaviour, by Paul D. MacLean. Including Psychology of memory and Sleep and dreaming papers presented at Queen's University, Kingston, Ontario, February 1969, by V. A. Kral and others.	MacLean, Paul D.
7 AE quod rAvent nos enfans? English: "What do children dream?" / GA@rard BIA@ndonu translated by Sophie Leighton.	Bleandou, GA@rard.
8 ABC of sleep disorders / edited by Colin M. Shapiro with contributions by William C. Dement ... [et al.]	
9 Abnormalities of respiration during sleep : diagnosis, pathophysiology, and treatment / edited by Eugene C. Fletcher.	
10 Adolescent sleep needs and school starting times / edited by Kyia L. Wahlstrom.	
11 Adolescent sleep patterns : biological, social, and psychological influences / edited by Mary A. Carskadon.	
12 Advances in sleep research (series)	
13 Advances in sleep research, edited by Elliot D. Weitzman.	
14 An evolutionary psychology of sleep and dreams / Patrick McNamara.	McNamara, Patrick, 1956-
15 Aesber Nachtwandel und Mondsucht eine medizinisch-literarische Studie.	Sadger, J.
16 Aesber Nachtwandel und Mondsucht : eine medizinisch-literarische Studie / von J. Sadger.	Sadger, J.
17 Aristotle on sleep and dreams : a text and translation with introduction, notes and glossary / (edited by) David Gallop.	Aristotle.
18 Aspects of human efficiency: diurnal rhythm and loss of sleep: the proceedings of a conference held at Strasbourg in July 1970 under the aegis of the NATO Scientific Affairs Division edited by W. P. Colquhoun.	
19 Atlas of sleep medicine in infants and children / by Stephen H. Sheldon, Susan Riter, Mark Detrojan.	
20 A-voll, il, juil, il, jui, il, ja sna. English: "Evolution of sleep: stages of the formation of the 'wakefulness-sleep' cycle in vertebrates / Ida Gavrilovna Karmanova translation from Russian by A.I. Koryushkin and O.P. Uchastkin with editorial assistance by Werner P. Koella."	Karmanova, I. G. (Ida Gavrilovna)
21 Awakening and sleep-wake cycle across development / edited by Piero Salzarulo, Gianluca Ficca.	
22 Basic sleep mechanisms. Edited by Olga Petre-Quadens [and] John D. Schlag.	NATO Advanced Study Institute (1971 : Bruges, Belgium)
23 Behavioral treatment for persistent insomnia / Patricia Lacks.	Lacks, Patricia
24 Biological rhythms and mental disorders / editors David J. Kupfer, Timothy H. Monk, Jack D. Barchas.	
25 Biological rhythms, sleep and shift work / edited by Laverne C. Johnson ... [et al.]	
26 Biological rhythms, sleep, and performance / edited by Wise B. Webb.	
27 Birds asleep / Alexander F. Skutch illustrations by N. John Schmitt.	Skutch, Alexander Frank, 1904-2004.
28 Brain mechanisms of sleep / editors Dennis J. McGinty ... [et al.]	
29 Brainstem control of wakefulness and sleep / Mircea Steriade and Robert W. McCarley.	Steriade, Mircea.
30 Breathing disorders in sleep / (edited by) Walter T. McNicholas, Eliot A. Philipson.	
31 Breathing disorders of sleep / edited by Norman H. Edelman, Teodoro V. Santiago.	
32 C. L. Dellums, international president of the Brotherhood of Sleeping Car Porters and civil rights leader : an interview / conducted by Joyce Henderson with an introd. by Tarea Hall Pittman.	Dellums, C. L. (Cottrell Laurence)
33 Can drivers afford to fall asleep at the wheel? - relationship between awareness of sleepiness and ability to predict sleep onset / Anna Itoi ... [et al.]	
34 Case studies in insomnia / edited by Peter J. Hauri with a foreword by William C. Dement.	
35 Children's sleep : a series of studies on the influence of motion pictures normal age, sex, and seasonal variations in motility experimental insomnia the effects of coffee and the usual flicker limens of children. [By] Samuel Renshaw, Vernon L. Miller [and] Dorothy P. Marquis.	Renshaw, Samuel, 1892-1981.
36 Ciba Foundation Symposium on the Nature of Sleep. Editors for the Ciba Foundation: G.E.W. Woistenholme and Maeve O'Connor.	Ciba Foundation Symposium on the Nature of Sleep (1960 : London, England)
37 Clinical handbook of insomnia / edited by Hrayr P. Attarian foreword by Mark W. Mahowald.	
38 Clinical handbook of sleep disorders / Antonio Culebras.	Culebras, A.
39 Clinical handbook of sleep disorders in children / edited by Charles E. Schaefer.	
40 Clinical physiology of sleep / edited by Ralph Lydic, Julien F. Biebuyck.	
41 Clinical sleep disorders / editors Paul R. Carney, Richard B. Berry, James D. Geyer.	
42 Clinician's guide to sleep disorders / edited by Nathaniel F. Watson, Bradley V. Vaughn.	
43 Concise guide to evaluation and management of sleep disorders / Martin Reite, John Ruddy, Kim Nagel.	Reite, Martin.
44 Concise guide to evaluation and management of sleep disorders / Martin Reite, Kim Nagel, John Ruddy.	Reite, Martin.
45 Continuous positive airway pressure for the treatment of obstructive sleep apnea in adults / [H. Handelsman, E. Carter].	Handelsman, Harry.
46 Continuous spikes and waves during slow sleep, electrical status epilepticus during slow sleep : acquired epileptic aphasia and related conditions : colloquium of the Pierfranco e Luisa Manani Foundation, Milan, in cooperation with International School of Neurological Sciences, San Servolo, Venice, Venice, San Servolo, 15-16 October 1993 / edited by A. Beaumont ... [et al.]	
47 Control of breathing during sleep and anesthesia / edited by W.A. Karczewski ... [et al.]	International Symposium on Control of Breathing during Sleep and Anesthesia (1987 : Warsaw, Poland)
48 Counting sheep : the science and pleasures of sleep and dreams / Paul Martin.	Martin, Paul R., 1951-
49 Current research in hypnopaedia. Edited by F. Rubin.	Rubin, Frederick.
50 Current research on sleep and dreams.	Luze, Gay Gaer.
51 De la cause du sommeil lucide, ou A%tude de la nature de l'homme / Faria.	Faria, JosA@ CustA%dio de, 1756-1819.
52 Die Nacht des Schlafes in der griechisch-A%mischen Welt : eine Untersuchung der mythologischen und physiologischen Aspekte der antiken Standpunkte / Petra Strobl.	Strobl, Petra.
53 Dreaming : an introduction to the science of sleep / J. Allan Hobson.	Hobson, J. Allan, 1933-
54 Dreaming.	Malcolm, Norman, 1911-
55 Dreaming.	Malcolm, Norman, 1911-
56 Du sommeil, des rAves et du somnambulisme dans l'A%tat de santA% et de maladie / M.-M.-A. Macario.	Macario, Maurice Martin Antonin, b. 1813.
57 El Olamah ha-á "asum shel ha-shenah. English: "The enchanted world of sleep / Peretz Lavie translated by Anthony Beris."	Lavie, P. (Peretz), 1949-
58 Eating, sleeping, and sex / edited by Albert J. Stunkard, Andrew Baum.	
59 Eating, sleeping, and sexuality : treatment of disorders in basic life functions / edited by Michael R. Zales.	
60 Electroencephalography (EEG) of human sleep: clinical applications [by] Robert L. Williams, Ismet Karacan [and] Carolyn J. Hursch.	Williams, Robert L. (Robert Leon), 1922-
61 Electrotherapeutic sleep and electroanesthesia. Proceedings of the first international symposium Graz, Austria, 12-17 September, 1966. Editors F. M. Wageneder [and] S. Schuy. In collaboration with J. NussM%ller, J. Clifton-Brock [and] B. M. Q. Weaver.	
62 Encyclopedia of sleep and dreaming / Mary A. Carskadon, editor in chief.	
63 ErmA%dung, Schlaf und Traum mit BeitrA%gen von J. Aschoff [u.a.] Hrsg. von Walter Baust.	Baust, Walter.
64 Ethnologie de la chambre A. coucher / Pascal Dibie.	Dibie, Pascal.
65 Evaluating sleep in infants and children / Stephen H. Sheldon.	Sheldon, Stephen H.
66 Evaluation and treatment of insomnia / Anthony Kales, Joyce D. Kales.	Kales, Anthony.
67 Everybody's guide to natural sleep : a drug-free approach to overcoming insomnia and other sleep disorders / Philip Goldberg and Daniel Kaufman.	Goldberg, Philip, 1944-
68 Facts about problem sleepiness.	
69 Fatal familial insomnia - inherited prion diseases, sleep, and the thalamus / editors, Christian Guilleminault ... [et al.]	
70 Geheimnis des Schlafes. English: "Secrets of sleep / Alexander BorbA%ly translated by Deborah Schneider."	BorbA%ly, Alexander A.
71 Geschichte der Nacht / Walter Seitter.	Seitter, Walter.
72 Handbook of sleep disorders / edited by Michael J. Thorpy.	
73 Handbook of sleep medicine / John M. Shneerson.	Shneerson, John.
74 Handbook of sleep-related breathing disorders / J.R. Stradling.	Stradling, John R.
75 Healthy sleep habits, happy child / Marc Weissbluth.	Weissbluth, Marc.
76 How to help your shift workers wake up and get some sleep : improve their performance at work, at home, and on the road.	
77 Human brainwaves : the psychological significance of the electro-encephalogram / Jacob Empson.	Empson, Jacob, 1944-
78 Human sleep : research and clinical care / Wallace B. Mendelson.	Mendelson, Wallace B.
79 Human sleep and its disorders / Wallace B. Mendelson, J. Christian Gillin, and Richard Jed Wyatt.	Mendelson, Wallace B.
80 Hypnagogia : the unique state of consciousness between wakefulness and sleep / Andreas Mavromatis.	Mavromatis, Andreas.
81 Insomnia : its causes and treatment / by James Sawyer.	Sawyer, James, Sr, 1844-1920.
82 Insomnia : psychological assessment and management / Charles M. Morin foreword by William C. Dement.	Morin, Charles M.
83 Insomnia, assessment and management in primary care.	
84 Insomniac / Gavie Greene.	Greene, Gavie, 1943-
85 Insomniacs of the world, goodnight : a bedside book. Illustrations by Michael K. Frith.	Rubinsten, Hilary.
86 Integration of behavioral and relaxation approaches in the treatment of chronic pain and insomnia : National Institutes of Health technology assessment conference statement October 16-18, 1995 / National Institutes of Health.	
87 IARm Schlaf und Leistung : eine empirische Untersuchung der Auswirkungen IARmgestA%rter Nachtruhe auf Stimmung und Verhalten / Eckhard Gros.	Gros, Eckhard.
88 Lelet le-lo naa %at. English: "Restless nights : understanding snoring and sleep apnea / Peretz Lavie translated from the Hebrew by Anthony Beris."	Lavie, P. (Peretz), 1949-
89 Losing sleep : how your sleeping habits affect your life / Lydia Dotto.	Dotto, Lydia.
90 Lung biology in health and disease. Vol. 133. Regulation of sleep and circadian rhythms [electronic resource] / edited by Fred W. Turek, Phyllis C. Zee.	
91 Managing sleep complaints / William C. Orr, Kenneth Z. Altschuler, Monte L. Stahl.	Orr, William C.
92 Mathematical models of the circadian sleep-wake cycle / editors, Martin C. Moore-Ede, Charles A. Czeisler.	
93 Neurobiology of sleep and memory : proceedings of a conference held in Mexico City in March 1975 / editors, RenA% R. Drucker-CoA%, James L. McGaugh associate editors, Robert A. Jensen and Joe L. Martinez, Jr.	
94 Night and shift work : biological and social aspects : proceedings of the fifth International Symposium on Night and Shift Work, Scientific Committee on Shift Work of the Permanent Commission and International Association on Occupational Health (PCIAOH) Rouen, 12-16 May 1980 / editors, Alain Reinberg, Norbert Vieux, Pierre Andlauer.	International Symposium on Night and Shift Work (5th : 1980 : Rouen, France)
95 Night-time and sleep in Asia and the West : exploring the dark side of life / edited by Brigitte Steger and Ledewik Brunt.	
96 NIH Technology Assessment Conference on Integration of Behavioral and Relaxation Approaches into the Treatment of Chronic Pain and Insomnia.	National Institutes of Health Technology Assessment Conference (1995 : Bethesda, Md.)
97 No more sleepless nights / Peter Hauri, Shirley Linde foreword by Philip R. Westbrook.	Hauri, Peter.
98 No more sleepless nights / Peter Hauri, Shirley Linde.	Hauri, Peter.
99 Nocturnal asthma : mechanisms and treatment / edited by Richard J. Martin.	
100 Nordisk forskning om sA%mn = Nordic sleep research : 4. Nordiska sA%mnforskningens kongressen den 30.-31.3.1990 i A...bo vid Folkpensjonsanstalts Central IA%r Rehabiliteringsforskning = 4th Scandinavian Congress for Sleep Research, March 30-31, 1990, in Turku at the Rehabilitation Research Centre of the Social Insurance Institution / redaktA%r/editer, Markku T. HyyppA%.	Scandinavian Congress for Sleep Research (4th : 1990 : Turku, Finland)
101 Normal sleep in man : an experimental contribution to our knowledge of the phenomenology of sleep, by Uros J. Jovanovic.	Jovanovic, UroA% J. (UroA% Jovan)
102 On going to bed / Anthony Burgess.	Burgess, Anthony, 1917-1993.
103 On the state of the mind during sleep, etc.	Fowler, Richard, 1765-1863.
104 Overcoming insomnia : a cognitive-behavioral therapy approach : therapist guide / Jack D. Edinger, Colleen E. Carney.	Edinger, Jack D.
105 Pediatric sleep medicine / Stephen H. Sheldon, Jean-Paul Spire, Howard B. Levv.	Sheldon, Stephen H.
106 PersA%nlichkeit und Schlafverhalten.	Othmer, Ekkehard.
107 Pharmacology of sleep / edited by Robert L. Williams, Ismet Karacan foreword by Jules H. Masseman.	
108 Pharmacology of the states of alertness : proceedings of the satellite symposium of the 7th International Congress of Pharmacology / editors, P. Passouant, I. Oswald.	
109 Philosophical essays on dreaming / edited by Charles E. M. Dunlop.	
110 Philosophie der Myistik. English: "The philosophy of mysticism / Carl Du Prel."	Du Prel, Carl, 1839-1899.
111 Physiology in sleep / edited by John Orr, Charles D. Barnes.	
112 Polysomnography and sleep disorder centers.	
113 Present role of sleep study in lung disease : methods and application in adults : proceedings of a Workshop held October 6-8, 1988 at the Medical Center for Rehabilitation, Veruno (Novara), Italy / Edited by C.F. Donner (Italy), P. Howard (UK).	
114 Principles and practice of sleep medicine / [edited by] Meir H. Kryger, Thomas Roth, William C. Dement.	

115	Principles and practice of sleep medicine / edited by Meir H. Kryger, Thomas Roth, William C. Dement.	
116	Principles and practice of sleep medicine / edited by Meir H. Kryger, Thomas Roth, William C. Dement.	
117	Principles and practice of sleep medicine / edited by Meir H. Kryger, Thomas Roth, William C. Dement.	
118	Principles and practice of sleep medicine in the child / edited by Richard Ferber, Meir Kryger.	
119	Problems of sleep and dream in children.	Harms, Ernest, 1895-1974.
120	Psychopharmacology of sleep / sponsored by the British Association for Psychopharmacology - editor, David Wheatley.	
121	Psychophysiological aspects of sleep : proceedings of the Third International Congress of Sleep Research / edited by Ismet Karacan.	International Congress of Sleep Research (3rd : 1979 : Tokyo, Japan)
122	Regulation of sleep and circadian rhythms / edited by Fred W. Turek, Phyllis C. Zee.	
	Regulation of Tris-treated sleepwear : hearings before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, House of Representatives, Ninety-seventh Congress, first session, April 15 and June 4, 1981.	United States. Congress. House. Committee on Energy and Commerce. Subcommittee on Oversight and Investigations.
123	Seasonal affective disorder and beyond : light treatment for SAD and non-SAD conditions / edited by Raymond W. Lam.	
124	Self-identified sleep patterns in a selected population of normal, aged persons / by Paulette Yvonne Russell.	Russell, Paulette Yvonne.
125	Shitwork / quest editor, Ailene Jane Scott.	
127	Sick and tired of waking up sick and tired?	
128	Sleep or, The hygiene of the night.	Hall, W. W. (William Whitty), 1810-1876.
129	Sleep the mysterious third of your life [by] Jonathan and Marianna Kastner. Illustrated by Don Madden.	Kastner, Jonathan.
130	Sleep / edited by Rosemary Cooper.	
131	Sleep / edited by Thomas Wiedemann and Ken Dowden.	
132	Sleep / Ian Oswald.	Oswald, Ian.
133	Sleep / J. Allan Hobson.	Hobson, J. Allan, 1933-
134	Sleep - a comprehensive handbook / [edited by] Teofilu Lee-Chiong.	
135	Sleep - evolution and disorders / Ida G. Karmanova, Genrikh A. Oganessian translated by L. N. Sminova.	Karmanova, I. G. (Ida Gavrilovna)
136	Sleep - neurotransmitters and neuromodulators / editors, A. Wauguier ... [et al.].	
137	Sleep - physiology & pathology - a symposium / Edited by Anthony Kales.	
138	Sleep - problems and solutions / Quentin Regestein, David Ritchie, and the editors of Consumer Reports Books.	Regestein, Quentin R.
139	Sleep 1982 : physiology, pharmacology, sleep factors, memory, sleep deprivation, hypnotics : Sixth European Congress on Sleep Research, Zurich, March 23-26, 1982 / editor, W.P. Koella.	European Congress on Sleep Research (6th : 1982 : Zurich, Switzerland)
140	Sleep and aging : a research-based guide to sleep in later life / Kevin Morgan.	Morgan, Kevin, 1950-
141	Sleep and altered states of consciousness : proceedings of the association, December 3 and 4, 1965, New York.	Association for Research in Nervous and Mental Disease. Meeting (45th : 1965 : New York, N.Y.) Universit� de Montr�al. Centre de recherche en sciences neurologiques. Symposium (10th : 1968)
142	Sleep and biological rhythms : basic mechanisms and applications to psychiatry / edited by Jacques Montplaisir, Roger Godbout.	
143	Sleep and brain plasticity / edited by P. Maquet, C. Smith and R. Stickgold.	
144	Sleep and breathing / edited by Nicholas A. Saunders, Colin E. Sullivan.	
145	Sleep and breathing / edited by Nicholas A. Saunders, Colin E. Sullivan.	
146	Sleep and breathing in children [electronic resource] : a developmental approach / edited by Gerald M. Loughlin, John L. Carroll, Carole L. Marcus.	
147	Sleep and dream research.	
148	Sleep and dreaming / Jacob Empson with a chapter by Michael Wang.	Empson, Jacob, 1944-
149	Sleep and dreaming / Jacob Empson.	Empson, Jacob, 1944-
150	Sleep and dreaming / Marvin Rosen.	Rosen, Marvin.
151	Sleep and dreaming : origins, nature and functions / by David B. Cohen.	Cohen, David B., 1941-
152	Sleep and dreams, edited by Ernest Hartmann.	
153	Sleep and dreams - a sourcebook / [edited by] Jayne Gackelbach.	
154	Sleep and epilepsy / edited by M.B. Sterman, Margaret N. Shouse, P. Passouant.	
155	Sleep and epilepsy / edited by M.B. Sterman, Margaret N. Shouse, P. Passouant.	
156	Sleep and its derangements / by William A. Hammond - new introduction by R.W. Rieber, William S. Lafer, and Dagna K. Skoog.	Hammond, William Alexander, 1828-1900.
157	Sleep and its disorders in children / editor, Christian Guilleminault.	
158	Sleep and its secrets : the river of crystal light / Michael S. Aronoff.	Aronoff, Michael S.
159	Sleep and respiration : proceedings of the First International Symposium on Sleep and Respiration, held in Banff, Alberta, April 1-4, 1989 / editors, Faig G. Issa, Paul M. Suratt, John E. Remmers.	International Symposium on Sleep and Respiration (1st : 1989 : Banff, Alta.)
	Sleep and respiration in aging adults : proceedings of the Second International Symposium on Sleep and Respiration, held at South Shore Harbour Resort and Conference Center, League City, Texas, March 9-13, 1991 / editors, Samuel T. Kuna, Paul M. Suratt, John E. Remmers.	International Symposium on Sleep and Respiration (2nd : 1991 : League City, Tex.)
161	Sleep and rheumatism, by J. I. Rodale.	Rodale, J. I. (Jerome Irving), 1898-1971.
162	Sleep and sleep disorders : a neurophysiopharmacological approach / [edited by] Malcolm Lader, Daniel P. Cardinali, S.R. Pandi-Perumal.	
163	Sleep and sleeplessness in advanced age / by Rene Spiegel.	Spiegel, Ren�.
164	Sleep and sleeplessness in advanced age / Ren� Spiegel.	Spiegel, Ren�.
165	Sleep and society : sociological ventures into the (unknown) / Simon J. Williams.	Williams, Simon J. (Simon Johnson), 1961-
166	Sleep and the maturing nervous system. Edited by Carmine D. Clemente, Dominick P. Purpura [and] Florence E. Mayer.	
167	Sleep and wakefulness.	
168	Sleep apnea - implications in cardiovascular and cerebrovascular disease / edited by T. Douglas Bradley, John S. Floras.	Kleitman, Nathaniel, 1895-
169	Sleep apnea [electronic resource] : implications in cardiovascular and cerebrovascular disease / edited by T. Douglas Bradley, John S. Floras.	
170	Sleep apnea and rhonchopathy / 3rd World Congress on Sleep Apnea and Rhonchopathy, Tokyo, September 21-23, 1991 - editors, Kiyoshi Togawa ... [et al.].	World Congress on Sleep Apnea and Rhonchopathy (3rd : 1991 : Tokyo, Japan)
171	Sleep apnea and snoring - surgical and non-surgical therapy / [edited by] Michael Friedman.	
172	Sleep apnea syndrome research focus / Andrew O. Lang, editor.	
173	Sleep apnea syndromes / edited by Christian Guilleminault and William C. Dement.	
174	Sleep bibliography [serial].	
175	Sleep characteristics : how they vary and react to changing conditions in the group and the individual [by] N. Kleitman, F. J. Mullin, N. R. Cooperman [and] S. Titebaum ...	Kleitman, Nathaniel, 1895-
176	Sleep disorders : basic and clinical research / [edited by] Michael Chase, Elliot D. Weitzman.	
177	Sleep disorders : diagnosis and treatment / edited by Robert L. Williams, Ismet Karacan, Constance A. Moore.	
178	Sleep disorders : insomnia and narcolepsy / by Henry Kellerman.	Kellerman, Henry.
179	Sleep disorders : their impact on public health / edited by Damien L�pger and S.R. Pandi-Perumal.	
180	Sleep disorders and neurological disease [electronic resource] / edited by Antonio Culebras.	
181	Sleep disorders and sleep deprivation : an unmet public health problem / Committee on Sleep Medicine and Research, Board on Health Sciences Policy - Harvey R. Colten and Bruce M. Altevogt, editors.	
182	Sleep disorders in women : a guide to practical management / edited by Hravr P. Altman.	
183	Sleep disorders medicine : basic science, technical considerations, and clinical aspects / edited by Sudhansu Chokroverty with 39 contributing authors.	
184	Sleep disturbance : a special report from the Harvard Health Letter / [written by] Susan Ince.	Ince, Susan.
185	Sleep disturbance in children and adolescents with disorders of development : its significance and management / edited by Gregory Stores, Luci Wiggs.	
186	Sleep less, live more / Everett Mattlin.	Mattlin, Everett B.
187	Sleep mechanisms and functions in humans and animals : an evolutionary perspective / edited by Andrew Mayes.	
188	Sleep medicine / [edited by] Teofilu L. Lee-Chiong, Jr., Michael J. Sateia, Mary A. Carskadon.	
189	Sleep medicine / Michael S. Aldrich.	Aldrich, Michael S.
190	Sleep medicine - a guide to sleep and its disorders / John M. Shneerson.	Shneerson, John.
191	Sleep medicine in clinical practice / Michael H. Silber, Lois E. Krahn, Timothy I. Morgenthaler.	Silber, Michael H.
192	Sleep medicine pearls / Richard B. Berry.	Berry, Richard B., 1947-
193	Sleep onset : normal and abnormal processes / edited by Robert D. Ogilvie and John R. Harsh.	
194	Sleep peptides : basic and clinical approaches / edited by Shojiro Inou� and D. Schneider-Helmert.	
195	Sleep positions : the night language of the body / by Samuel Dunkell.	Dunkell, Samuel.
196	Sleep psychiatry / edited by Alexander Z. Golbin, Howard M. Kravitz, Louis G. Keith.	
197	Sleep psychologically considered with reference to sensation and memory / by Blanchard Fosgate.	Fosgate, Blanchard.
198	Sleep research : a critical review, by Frank R. Freeman.	Freeman, Frank R., 1938-
199	Sleep research : proceedings of the Northern European Symposium on Sleep Research, Basle, September 26 and 27, 1978 / edited by R.G. Priest, A. Pletscher, and J. Ward.	Northern European Symposium on Sleep Research (1978 : Basle, Switzerland)
200	Sleep research and clinical practice. Edited by Gene Usdin.	
201	Sleep therapy : bibliography and commentary, by Robert L. Williams and Wise B. Webb. With a special review by James A. Lewis.	Williams, Robert L. (Robert Leon), 1922-
202	Sleep therapy in the neuroses. Translated from the Russian by Basil Haigh.	Andrew, B. V. (Boris Vladimirovich)
203	Sleep thieves : an eye-opening exploration into the science and mysteries of sleep / Stanley Coren.	Coren, Stanley.
204	Sleep walking and moon walking : a medico-literary study, by Dr. J. Sadger ... tr. by Louise Brink.	Sadger, J.
205	Sleep, aging, and related disorders / Symposium 3 on Sleep Disorders, held during the 13th World Congress on Neurology, Hamburg, September 2, 1985 - volume editors, W. Emser, D. Kurtz, W.B. Webb.	Symposium 3 on Sleep Disorders (1985 : Hamburg, Germany)
206	Sleep, benzodiazepines, and performance : experimental methodologies and research prospects / editors, I. Hindmarch, H. Ott, T. Roth.	
207	Sleep, dreaming & sleep disorders - an introduction / William H. Moorcroft.	Moorcroft, William H., 1944-
208	Sleep, dreams, and arousal [by] Edward J. Murray.	Murray, Edward J.
209	Sleep, dreams, and memory / edited by William Fishbein.	
210	Sleep, its nature and physiological organization, by Werner P. Koella. With a foreword by Hudson Hoagland.	Koella, Werner P. (Werner Paul), 1917-
211	Sleep, sleepiness and performance / edited by Timothy H. Monk.	
212	Sleep, the gentle tyrant / Wise B. Webb.	Webb, Wise B.
213	Sleep.	Oswald, Ian.
214	Sleep/wake disorders : natural history, epidemiology, and long-term evolution / editors, Christian Guilleminault, Elio Lugaresi.	
215	Sleep: an active process - research and commentary. Edited by Wise B. Webb. Contributing authors: Dana C. Brooks [and others]	Webb, Wise B.
216	Sleep: an experimental approach [by] Wise B. Webb.	Webb, Wise B.
217	Sleepfaring : a journey through the science of sleep / Jim Horne.	Horne, James (James A.)
218	Sleeping and waking : physiology and psychology.	Oswald, Ian.
219	Sleeping and waking disorders / indications and techniques / edited by Christian Guilleminault.	
220	Sleeping pills, insomnia, and medical practice : report of a study / Institute of Medicine, Division of Mental Health and Behavioral Medicine.	Institute of Medicine (U.S.) . Division of Mental Health and Behavioral Medicine.
221	Sleep-talking : psychology and psychophysiology / Arthur M. Arkin.	Arkin, Arthur M.
222	Snoring and obstructive sleep apnea / [edited by] David N.F. Fairbanks ... [et al.].	
223	Snoring and obstructive sleep apnea / editors, David N.F. Fairbanks, Shiro Fujita.	
224	Some must watch while some must sleep, by William C. Dement.	Dement, William C., 1928-
225	Sommeil et le R�ve, English: "The paradox of sleep : the story of dreaming / Michael Jouvet - translated by Laurence Garey."	Jouvet, Michel.
226	Sommeil et le R�ve, English: "The paradox of sleep [electronic resource] : the story of dreaming / Michael Jouvet - translated by Laurence Garey."	Jouvet, Michel.
227	Sound sleep / by Quentin R. Regestein, with James R. Rechts.	Regestein, Quentin R.
228	Surgery for sleep-disordered breathing / Karl Hattmann, Thomas Verse.	Hattmann, Karl, Dr.
229	Surgical management of sleep apnea and snoring / edited by David J. Teris, Richard L. Goode.	
230	Synsiorium somnorum omnis generis insomnia explicantes lron quatuor. Books 2-4. Italian; Sogni / Gerolamo Cardano - a cura di Agnese Grieco e Mauro Mancia - traduzione di Silvia Montiglio e Agnese Grieco.*	Cardano, Girolamo, 1501-1576.

231	Synthesis of the tripeptide L-Trp-L-Ser-L-Glu : comparison of its biological activity with that of the Delta-Sleep-Inducing-Peptide (DSIP) / Vincent M. Monnier.	Monnier, Vincent M.
232	The abnormalities of sleep in man. Proceedings of the XVth European meeting on electroencephalography, Bologna, 1967. Edited by H. Gastaut, [and others]	European Meeting on Electroencephalography (15th : 1967 : Bologna, Italy)
233	The activity of young children during sleep : an objective study, by Chester Roy Garvey.	Garvey, Chester Roy
234	The art of procuring pleasant dreams / by Benjamin Franklin.	Franklin, Benjamin, 1706-1790.
235	The auditory system in sleep / Ricardo A. Velluti.	Velluti, Ricardo A.
236	The auditory threshold in reverie : a study of normal and psychopathic individuals / by Marion R. Bartlett.	Bartlett, Marion Rachael
237	The circulation and sleep : experimental investigations accompanied by an atlas, by John F. Shepard.	Shepard, John Frederick, b. 1881.
238	The complete book of sleep : how your nights affect your days / Dianne Hales.	Hales, Dianne R., 1950-
239	The complete guide to natural sleep [electronic resource] / Dian Dincin Buchman.	Buchman, Dian Dincin
240	The complete idiot's guide to getting a good night's sleep [electronic resource] / by Martin Moore-Ede and Suzanne LeVet.	Moore-Ede, Martin C.
241	The dreaming brain / J. Allan Hobson.	Hobson, J. Allan, 1933-
242	The effectiveness of individualized nursing care in combating insomnia / by Tina Elizabeth Green.	Green, Tina Elizabeth.
243	The family that couldn't sleep : a medical mystery / D. T. Max.	Max, D. T. (Daniel T.)
244	The Functions of sleep / edited by BenÅ© Drucker-CoÅ©n, Mario Shkurovich, M. B. Sterman.	
245	The functions of sleep [by] Ernest L. Hartmann.	Hartmann, Ernest, 1934-
246	The living function of sleep, life, and aging.	Ho, Betty Yu-Lin, 1930-
247	The mind in sleep : psychology and psychophysiology / edited by Arthur M. Arkin, John S. Antrobus, Steven J. Ellman.	
248	The Mind in sleep : psychology and psychophysiology / edited by Steven J. Ellman, John S. Antrobus.	
249	The natural way to healthful sleep. With an introd. by Maurice E. Linden.	Kelly, Charles P. (Charles Peck), b. 1874.
250	The neural control of sleep and waking / Jerome Siegel, with a foreword by Jerome M. Siegel.	Siegel, Jerome H., 1932.
251	The Neuropsychology of sleep and dreaming / edited by John S. Antrobus, Mario Bertini.	
252	The Nightmare : psychological and biological foundations / edited by Henry Kellerman.	
253	The nightmare : the psychology and biology of terrifying dreams / Ernest Hartmann.	Hartmann, Ernest, 1934-
254	The nightmare : the psychology and biology of terrifying dreams / Ernest Hartmann.	Hartmann, Ernest, 1934-
255	The old Dutch burying ground of Sleepy Hollow in North Tarrytown, New York : a record of the early gravestones and their inscriptions.	Perry, William Graves, 1883-1975.
256	The pathophysiology of schizophrenia / Ray S. Greenberg.	Greenberg, Ray S., 1926-
257	The philosophy of sleep / by Robert Macnish.	Macnish, Robert, 1802-1837.
258	The physiologic nature of sleep / edited by Pier Luigi Parmegiani, Ricardo A. Velluti.	
259	The promise of sleep : a pioneer in sleep medicine explores the vital connection between health, happiness, and a good night's sleep / William C. Dement and Christopher Vaughan.	Dement, William C., 1928-
260	The psychological treatment of insomnia / Colin A. Espie.	Espie, Colin A.
261	The psychology of sleep [by] David Foulkes.	Foulkes, David, 1935-
262	The sleep book, by Shirley Motter Linde and Louis M. Savary.	Linde, Shirley Motter.
263	The sleep disorders / Peter Hauri chapter on disorders of excessive somnolence by William C. Orr.	Hauri, Peter.
264	The sleep instinct / Ray Meddis.	Meddis, Ray
265	The sleeping pill / Ernest Hartmann.	Hartmann, Ernest, 1934-
266	The terror that comes in the night : an experience-centered study of supernatural assault traditions / David J. Hufford.	Hufford, David
267	The timing of sleep and wakefulness : on the substructure and dynamics of the circadian pacemakers underlying the wake-sleep cycle / J. T. Enright.	Enright, J. T. (James Thomas), 1939-
268	The use and misuse of sleeping pills : a clinical guide / Wallace B. Mendelson.	Mendelson, Wallace B.
269	The use and misuse of sleeping pills : a clinical guide to treatment / Wallace B. Mendelson.	Mendelson, Wallace B.
270	The use of laryngeal sound recordings in the detection, quantification, and characterization of sleep apnea syndrome / D. Barry Moore.	Moore, D. Barry
271	Through the night : helping parents and sleepless infants / Dilys Daws.	Daws, Dilys
272	TraitÅ© du somnambulisme et des diffÅ©rents modifications qu'il prÅ©sente / A. Bertrand.	Bertrand, Alexandre-Jacques-FranÅ©ois, 1795-1831.
273	Treating sleep disorders : principles and practice of behavioral sleep medicine / edited by Michael L. Peris, Kenneth L. Lichstein.	
274	Understanding sleep and dreaming / William H. Moorcroft, with assistance from Paula Belcher.	Moorcroft, William H., 1944.
275	Understanding sleeplessness : perspectives on insomnia / David N. Neubauer foreword by Paul R. McHugh.	Neubauer, David N., 1951-
276	Variations on Unvne Sleep / (Gru Search) photographs by Chris Nash.	Search, Gay
277	Vvod zakreplenie informai. ti, iÅ© v pam'i. ti, iÅ© cheloveka vo vremi. ti, iÅ© estestvennogo sna.	Blyzmychenko, Leonid Andriia-ovych.
278	Why aren't you asleep yet? : a bedtime story / by Egon Weck.	Weck, Egon
279	Why we sleep : the functions of sleep in humans and other mammals / James Horne.	Horne, James (James A.)
280	Worlds of sleep Lodewijk Brunt/Brigitte Steger (ed.)	
281	You can sleep well : the A B C's of restful sleep for the average person.	Jacobson, Edmund, 1888-
282	A clinical guide to sleep disorders in children and adolescents [electronic resource] / Gregory Stores.	Stores, Gregory.
283	A woman's guide to sleep disorders [electronic resource] / Meir H. Kryger foreword by Barbara Phillips introduction by Richard Gelula.	Kryger, Meir H.
284	Adolescent sleep patterns [electronic resource] : biological, social, and psychological influences / edited by Mary A. Carskadon.	
285	Awake/sleep and sleep/wake cycles across development [electronic resource] / edited by Piero Salzarulo, Gianluca Ficca.	
286	Brain control of wakefulness and sleep [electronic resource] / Mircea Steriade and Robert W. McCarley.	Steriade, Mircea
287	Clinical pharmacology of sleep [electronic resource] / edited by S.R. Pandi-Perumal and J.M. Monti.	Pandi-Perumal, S. R.
288	Health behaviors of adults : United States, 2002-04. / [by Patricia F. Adams and Charlotte A. Schoenborn].	Adams, Patricia F.
289	Individual differences in the adaptability to irregular rest-wake rhythms/status of the use of drugs in sleep-wakefulness management = Les diffÅ©rences entre individus concernant les facultÅ©s d'adaptation aux rythmes rÅ©guliÅ©rs activitÅ©-repos : le point sur l'utilisation des mÅ©dicaments pour la gestion des pÅ©riodes veille-sommeil.	
290	Letit le to naat Vat. English: "Restless nights [electronic resource] : understanding snoring and sleep apnea." Peretz Lavie. translated from the Hebrew by Anthony Berris.	Lavie, P. (Peretz), 1949-
291	Letit kano linot. English: "Sleeping like a baby [electronic resource] : a sensitive and sensible approach to solving your child's sleep problems / Avi Sadeh."	Sadeh, Avi, 1957-
292	Neuroimmunology of sleep [electronic resource] / S.R. Pandi-Perumal, Daniel P. Cardinali, Georgios Chrousos.	Pandi-Perumal, S. R.
293	Neuronal substrates of sleep and epilepsy [electronic resource] / Mircea Steriade.	Steriade, Mircea.
294	Serotonin and sleep [electronic resource] : molecular, functional and clinical aspects / edited by J.M. Monti. [et al.]	
295	Sleep apnea [electronic resource] : implications in cardiovascular and cerebrovascular disease / edited by T. Douglas Bradley, John S. Floras.	
296	Sleep disorders and neurological disease [electronic resource] / edited by Antonio Culebras.	
297	Sleep needs, patterns, and difficulties of adolescents [electronic resource] : summary of a workshop : forum on adolescence / Mary G. Graham, editor.	
298	Soft bedding products and sleep position contribute to infant suffocation deaths [electronic resource] : safety alert.	
299	Systematic review of the literature regarding the diagnosis of sleep apnea / prepared by MetaWorks Inc. Susan D. Ross, project director / Elaine Allen, [et al.] investigators.	
300	Systematic review of the literature regarding the diagnosis of sleep apnea [electronic resource] / prepared for Agency for Health Care Policy and Research : prepared by MetaWorks Inc. Susan D. Ross, EPC project director.	
301	Systematic review of the literature regarding the diagnosis of sleep apnea [electronic resource].	
302	The encyclopedia of sleep and sleep disorders / Michael J. Thorpy and Jan Yager.	Thorpy, Michael J.
303	The philosophy of sleep.	Macnish, Robert, 1802-1837.
304	The physiologic nature of sleep [electronic resource] / edited by Pier Luigi Parmegiani, Ricardo A. Velluti.	
305	Understanding sleep and dreaming [electronic resource] / William H. Moorcroft, with assistance from Paula Belcher.	Moorcroft, William H., 1944.
306	Understanding sleep and dreaming [electronic resource] / William H. Moorcroft, with the assistance from Paula Belcher.	Moorcroft, William H., 1944.
307	Understanding sleeplessness : perspectives on insomnia / David N. Neubauer foreword by Paul R. McHugh.	Neubauer, David N., 1951-
308	Alcohol and sleep.	
309	An assessment of commuting risk factors for air traffic control specialists [electronic resource] : final report / T. Nesthus. [et al.]	
310	Binocular fusion time in sleep-deprived subjects [electronic resource] / C. E. Melton, Marlene Wicks.	Melton, C. E.
311	Brain basics [electronic resource] : understanding sleep.	
312	Continuous positive airway pressure for the treatment of obstructive sleep apnea in adults.	
313	Crew factors in flight operations. IV. Sleep and wakefulness in international aircrews [microform] / R. Curtis Graeber, editor.	Handelman, Harry.
314	Crew factors in flight operations. VII. Factors influencing sleep timing and subjective sleep quality in commercial long-haul flight crews [microform] / Philippa H. Gander. [et al.]	
315	Crew factors in flight operations. XIII. A survey of fatigue factors in corporate/executive aviation operations [microform] / Mark R. Rosekind. [et al.]	
316	Diseases and conditions index [electronic resource] / National Heart, Lung, and Blood Institute.	
317	Drugs and insomnia.	
318	Effectiveness of circadian countermeasures in simulated transmeridian flight schedules [microform] : final technical report / acting principal investigator, Margaret L. Moline initial principal investigator, Timothy H. Monk.	Moline, Margaret L.
319	Effects of sleep loss on vestibular response during simple and complex vestibular stimulation / William E. Collins.	Collins, William Edward, 1932-
320	Endocrine and fluid metabolism in males and females of different ages after bedrest, acceleration, and lower body negative pressure [microform] / Carolyn S. Leach. [et al.]	
321	Fact sheet : narcolepsy / [prepared by National Institute of Neurological and Communicative Disorders and Stroke.]	National Institute of Neurological and Communicative Disorders and Stroke.
322	Health care [microform] : reduction in resident physician work hours will not be easy to attain : briefing report to the Honorable Marty Russo, House of Representatives / United States General Accounting Office.	United States, General Accounting Office.
323	Informacion de salud para las persona de la tercera edad [electronic resource] : consejos para dormir bien.	
324	Insomnia.	National Institute of Mental Health (U.S.)
325	Integration of behavioral and relaxation approaches into the treatment of chronic pain and insomnia : January 1985 through July 1995 : 1147 citations / prepared by Martha H. Glock, Richard Friedman, Patricia Meyer.	Glock, Martha.
326	Melatonin for treatment of sleep disorders [electronic resource] / authors, Buscemi, N. [et al.]	
327	Melatonin for treatment of sleep disorders [electronic resource] / prepared by University of Alberta Evidence-based Practice Center : Nina Buscemi, project manager. [et al.]	
328	Narcolepsy fact sheet [electronic resource].	
329	National Railroad Passenger Corporation, Chicago, Illinois.	
330	Physiological correlates of stress-induced decrements in human perceptual performance [microform] / Garnet A. McLean. [et al.]	
331	Physiological responses of men during sleep deprivation [electronic resource] / Vincent Florica. [et al.]	
332	Polysomnography and sleep disorder centers [microform].	
333	Problem sleepiness in your patient.	
334	Project sleep : about sleep as you grow older / National Program on Insomnia and Sleep Disorders.	
335	Project sleep : myths and facts about sleep / U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Program on Insomnia and Sleep Disorders.	
336	Sleep apnea : is your patient at risk?	
337	Sleep apnea : January 1980 through August 1983. 323 citations / prepared by Charlotte Kenton.	Kenton, Charlotte.
338	Sleep disorders of older people : January 1985 through March 1990. 725 citations / prepared by Lori J. Klein, Loretta D. Ulincy, Andrew A. Monjan.	Klein, Lori.
339	Sleep patterns in air traffic controllers working rapidly rotating shifts [microform] : a field study : final report / Crystal E. Cruz, Pamela S. Della Rocco.	Cruz, Crystal E.
340	Sleep, sleep disorders, and biological rhythms [electronic resource] / writing team, Charles Antlener. [et al.]	
341	Some effects of sleep deprivation on tracking performance in static and dynamic environments / William E. Collins.	Collins, William Edward, 1932-
342	The effects of age, sleep deprivation, and altitude on complex performance / Henry W. Merten and William E. Collins.	Mertens, Henry W.
343	The effects of napping on night shift performance [microform] : final report / Pamela S. Della Rocco. [et al.]	
344	The twenty-four hour workday : proceedings of a symposium on variations in work-sleep schedules / editors Laverne C. Johnson. [et al.]	Symposium on Variations in Work-Sleep Schedules (1979 : San Diego, Calif.)
345	Understanding sleep.	
346	Useful information on sleep disorders.	
347	Wake up America [microform] : a national sleep alert : report of the National Commission on Sleep Disorders Research / submitted to the United States Congress and to the Secretary, U.S. Department of Health and Human Services.	National Commission on Sleep Disorders Research (U.S.)
348	Behavioral sleep medicine (Online) "Behavioral sleep medicine [electronic resource]"	

349 FOCUS (Rhinbeck, N.Y. - Online); FOCUS [electronic resource] : journal for respiratory care & sleep medicine.

350 Journal of sleep research (Online; Synergy); Journal of sleep research [electronic serial].

351 Journal of sleep research (Online); Journal of sleep research [electronic resource].

352 Sleep & breathing (Online); Sleep & breathing [electronic resource] : international journal of the science and practice of sleep medicine.

353 Sleep (New York, N.Y. - Online); Sleep [electronic resource].

354 Sleep [serial].

355 Sleep and biological rhythms (Online); Sleep and biological rhythms [electronic resource].

356 Sleep apnea [electronic resource] : pathogenesis, diagnosis, and treatment / edited by Allen I. Pack.

357 Sleep mechanisms / edited by A. Borbély and J. Valatx.

358 Sleep medicine (Online); Sleep medicine [electronic resource].

359 Sleep medicine (Online); Sleep medicine [electronic serial].

360 Sleep medicine clinics (Online); Sleep medicine clinics [electronic resource].

361 Sleep medicine reviews (Online); Sleep medicine reviews [electronic resource].

362 Sleep medicine reviews (Online); Sleep medicine reviews [electronic resource].

363 Somnologie (Online); Somnologie [electronic resource] : Schlaforschung und Schlafmedizin = Somnologie : sleep research and sleep medicine.

364 Somnologie (Online); Somnologie [electronic serial] : Schlaforschung und Schlafmedizin = Somnologie : sleep research and sleep medicine.

365 Investigations into the mechanism of reduction of ethanol-induced sleep by thyrotropin releasing hormone (TRH) [microfilm] / by Jerry M. Cott.

366 Sleep bulletin [serial].

367 Sleep deprivation: effects upon selective systemic physiological responses / by Charles F. Brown.

368 Sleep patterns and introversion-extraversion / by Pamela J. D'Souza.

369 The effect of sleep deprivation on the plasma beta-endorphin levels in female runners during heavy submaximal treadmill running / by JoAnn F. Fafrowicz.

370 Dream voyage [videorecording] : a presentation of Films for the Humanities, Inc. produced by Goldcrest Films and Television producer, writer, Karl Sabbagh.

371 Miles of smiles, years of struggle [videorecording] / Columbia Historical Society in cooperation with the Smithsonian Institution, Office of Folklore Programs produced and directed by Jack Santino and Paul Wagner.

372 NIH Consensus Conference: sleep disorders of older people [videorecording] / Robert J. Joynt.

373 Sleep apnea [videorecording HSL suppressed] : recognition and management / Barry S. DiCicco.

374 Sleep disorders [videorecording] : assessment and management in primary care / Gabriele M. Barthlen, Lauren Broch.

375 Sleep and hypnosis (Online); Sleep and hypnosis [electronic resource] : an international journal of sleep, dream, and hypnosis.

376 A K/WIG index of EEG literature (and society proceedings) / Compiled by Reinald G. Bickford, James L. Jacobson, and David Langworthy.

377 A manual for EEG technicians Chapter 11. Nonlaboratory recording with the electroencephalograph, by Frances Potts. With a foreword by Robert S. Schwab.

378 A manual of electroencephalographic technology / C.D. Binnie, A.J. Rowan and Th. Gutter.

379 A primer of electroencephalography by Gary D. VanderArk and Ludwig G. Kempe.

380 Abstracts / editors, H. Lechner, A. Aranibar organized by the Austrian Society of EEG and Clinical Neurophysiology.

381 Applications of electroencephalography in psychiatry, a symposium, edited by William P. Wilson.

382 Atlas of adult electroencephalography / Warren T. Blume, Masako Kaibara, G. Bryan Young.

383 Atlas of brain mapping - topographic mapping of EEG and evoked potentials / Konrad Maurer, Thomas Dierks.

384 Atlas of EEG & seizure semiology / Bassel Abou-Khalil, Karl E. Misulis.

385 Atlas of EEG patterns / John M. Stern consulting editor, Jerome Engel Jr.

386 Atlas of electroencephalography / Alan Guberman, Madeleine Couture.

387 Atlas of electroencephalography / editors: Michael R. Sperling and Robert R. Clancy.

388 Atlas of electroencephalography in coma and cerebral death: EEG at the bedside or in the intensive care unit / Donald R. Bennett ... [et al.].

389 Atlas of electroencephalography in the child / by Paul Laget and Roger Salbreux.

390 Atlas of electroencephalography, by Frederic A. Gibbs and Erna L. Gibbs.

391 Atlas of electroencephalography, by Frederic A. Gibbs and Erna L. Gibbs.

392 Atlas of neonatal electroencephalography / Janet E. Stockard-Pope, Sarah S. Werner, Reinald G. Bickford with a contribution by John S. Curran.

393 Atlas of neonatal electroencephalography / Sarah S. Werner, Janet E. Stockard, Reinald G. Bickford.

394 Atlas of pediatric electroencephalography / Warren T. Blume, Masako Kaibara.

395 Atlas of pediatric electroencephalography / Warren T. Blume.

396 Atlas of sleep medicine in infants and children / by Stephen H. Sheldon, Susan Riter, Mark Detrojan.

397 Automation of clinical electroencephalography: a conference. Participants: R. G. Bickford [and others]. Editors: Peter Kellaway [and] Ingemar Peters/En.

398 Basic mechanisms of the EEG / St. Zschocke, E.-J. Speckmann, editors.

399 Behavior and brain electrical activity : proceedings of the Seventh Annual Symposium on Behavior and Brain Electrical Activity held at the Texas Research Institute of Mental Sciences, Texas Medical Center, Houston, Texas, November 28-30, 1973 / edited by Neil Bruce and H. L. Aitshuler.

400 Bibliografija rabot po [Selektrol] [Sensetefalografi]. 1875-1963 gg. [Selekticheskaia aktivnost' golovnogo mozga zhivotnykh i cheloveka v norme. [Otv. red.: A. M. Riabinovskaia]

401 Bibliography of electroencephalography, 1875-1948 / edited by Mary A. B. Brazier.

402 Biopotentials of cerebral hemispheres in brain tumors. Authorized translation from the Russian by Basil Haigh. With a preface by Percival Bailey.

403 Brain disturbances caused by barbital as detected by electroencephalography.

404 Brain electrical potentials and individual psychological differences / Enoch Callaway.

405 Brain function and malnutrition: neuropsychological methods of assessment / edited by James W. Prescott, Merrill S. Read, David B. Coursin.

406 Brain function and oscillations / Erol BaYar.

407 Brain imaging of nicotine and tobacco smoking / editor, Edward F. Domino copy editor, Antoinette F. Domino.

408 Brain, nerves, muscles, and electricity : my life in science / Wladimir Theodore Liberson compiled and edited by Robert Cohn, Cathryn W. Liberson.

409 Clinical applications of computer analysis of EEG and other neurophysiological signals / edited by F.H. Lopes da Silva, W. Storm van Leeuwen, A. RÅmmond.

410 Clinical electroencephalography in epilepsy and related conditions in children.

411 Clinical electroencephalography.

412 Clinical electroencephalography.

413 Clinical electrophysiology of the somatosensory cortex : a combined study using electrocorticography, scalp-EEG, and magnetoencephalography / Christoph Baumgartner.

414 Clinical neurophysiology of infancy, childhood, and adolescence / Gregory L. Holmes, Solomon L. MoshÅe, H. Royden Jones, Jr.

415 Collected writings / W.T. Liberson compiled by Cathryn Liberson.

416 Comprehensive clinical neurophysiology / [edited by] Kerry H. Levin, Hans O. LÅzders.

417 Cortical evoked potentials in man, by Ludovico Bergamini and Bruno Bergamasco. With a foreword by Henri Gastaut. English translation edited by James M. Sraque.

418 Current clinical neurophysiology : update on EEG and evoked potentials / editor, C.E. Henry.

419 Current practice of clinical electroencephalography / editors, David D. Daly, Timothy A. Pedley.

420 Current practice of clinical electroencephalography / editors, Donald W. Klass, David D. Daly.

421 Depth-electrographic stimulation of the human brain and behavior from fourteen years of studies and treatment of Parkinson's disease and mental disorders with implanted electrodes, by C.W. Sem-Jacobsen. With an introd. by David McK. Riech.

422 Diagnosis and management of neonatal seizures / Eli M. Mizrahi, Peter Kellaway.

423 Diagnostic electroencephalography [bv] Hans Strauss, Mortimer Ostow [and] Louis Greenstein.

424 E E G and clinical neurophysiology : proceedings of the 2nd European Congress of EEG and Clinical Neurophysiology, Salzburg, Austria, September 16-19, 1979 / editors, H. Lechner and A. Aranibar.

425 E E G recording / by M.-L. Hector.

426 EEG and evoked potentials in psychiatry and behavioral neurology / edited by John R. Hughes and William P. Wilson with 9 contributing authors.

427 EEG in clinical practice / John R. Hughes.

428 EEG in clinical practice / John R. Hughes.

429 EEG informatics : a didactic review of methods and applications of EEG data processing : lectures for an International Course in EEG Data Processing / held under the auspices of the International Federation of Societies for Electroencephalography and Clinical Neurophysiology in Paris on August 29-September 2, 1977 edited by A. RÅmmond.

430 EEG instrumentation and technology / by E.T. Richey and Richard Namon with a foreword by William P. Wilson.

431 EEG primer / R. Spehlmann, editor.

432 EEG technology / R. Cooper, J.W. Osselton, J.C. Shaw.

433 EEG technology [bv] R. Cooper, J. W. Osselton [and] J. C. Shaw.

434 EEG-Atlas fÅr AnÅsthesisten. English; EEG atlas for anesthesiologists / Ina Pichlmayr with the collaboration of P. Lehmkuhl and U. Lips advised by H. KÅnkel translation from the first German edition by A. Kasperczyk.

435 EEG-brain dynamics : relation between EEG and brain evoked potentials / Erol BaYar.

436 Electric fields in the brain : the neurophysics of EEG / Paul L. Nunez with contributions by Ron D. Katznelson.

437 Electric fields of the brain : the neurophysics of EEG / Paul L. Nunez, Ramesh Srinivasan.

438 Electrical stimulation research techniques / edited by Michael M. Patterson, Raymond P. Kesner.

439 Electrical studies on the unanesthetized brain : a symposium with 49 participants. Edited by Estelle R. Ramey and Desmond S. O'Doherty.

440 Electroencephalographic atlas for pharmacological research: effect of drugs on the electrical activity of the rabbit brain.

441 Electroencephalography (EEG) of human sleep: clinical applications [bv] Robert L. Williams, Ismet Karacan [and] Carolyn J. Hirsch.

442 Electroencephalography : a symposium on its various aspects / by W. A. Cobb ... [et al.] edited by Denis Hill & Geoffrey Parr.

443 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

444 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

445 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

446 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

447 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

448 Electroencephalography and human brain potentials, edited by Richard F. Thompson [and] Michael M. Patterson.

449 Electroencephalography for anesthesiologists and surgeons [bv] Max S. Sadove, Dorothy Becka and Frederic A. Gibbs.

450 Electroencephalography in clinical practice.

451 Electroencephalography in hospital and general consulting practice: an introduction. With a contribution on Methods of activation of the electroencephalogram by Robert S. Schwab, and a pref. by H. Fishgold.

452 Electromyography/electroencephalography / Michael R. Isley ... [et al.].

453 Electroencephalography and psychopathology : 2nd International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions, Capri, September 23-26, 1980 / volume editors, C. Perris, D. Kemali, and L. Vacca.

454 Electroencephalography and psychopathology : 3rd International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions, Stockholm, June 28, 1981 / volume editors, C. Perris ... [et al.].

455 Elektroencefalogramm des Menschen. English; Hans Berger on the electroencephalogram of man. The fourteen original reports on the human electroencephalogram. Translated from the original German and edited by P. Gloor.

456 Elektroencefalogramm in der AnÅsthesie. English; The electroencephalogram in anesthesia : fundamentals, practical applications

457 Epilepsy : electroclinical syndromes / edited by Hans LÅzders and Ronald P. Lesser.

458 Essentials of clinical neurophysiology / Karl E. Misulis.

459 Essentials of clinical neurophysiology / Karl E. Misulis.

460 Evaluating sleep in infants and children / Stephen H. Sheldon.

461 Functional brain imaging / [edited by] William W. Orrison, Jr. ... [et al.]

Hypnosis Periodicals.; Sleep Periodicals.; Dreams Periodicals.; Sleep Disorders Periodicals.

Bickford, Reinald G.

Mingarich, Rhoda Feinstein.

Binnie, C. D.

VanderArk, Gary D.

European Congress of EEG and Clinical Neurophysiology (2nd : 1979 : Salzburg, Austria)

Blume, Warren T. (Warren Thomas)

Maurer, Konrad, 1943-

Abou-Khalil, Bassel.

Stern, John M.

Guberman, Alan.

Laget, Paul.

Gibbs, Frederic Andrews, 1903-

Gibbs, Frederic Andrews, 1903-

Stockard-Pope, Janet E.

Werner, Sarah S., 1941-

Blume, Warren T. (Warren Thomas)

Blume, Warren T. (Warren Thomas)

Symposium on Behavior and Brain Electrical Activity (7th : 1973 : Texas Research Institute of Mental Sciences)

Akademi, il, ja nauk SSSR. Sektor seti speÅ. It. [isla] [nykh bibliotek.

Bekhtereva, N. P. (Natal'Åi, il, ja Petrovna), 1924-

Callaway, Enoch.

BaYar, Erol.

Liberson, W. T., 1904-

Fois, Alberto.

Cohn, Robert.

Baumgartner, Christoph, 1959-

Liberson, W. T., 1904-

Bergamini, Ludovico.

Henry, C. E.

Pedley, Timothy A.

Daly, David D.

Sem-Jacobsen, C. W.

Mizrahi, Eli M.

Strauss, Hans, b. 1898.

European Congress of EEG and Clinical Neurophysiology (2nd : 1979 : Salzburg, Austria)

Hector, Marie Louise.

Hughes, John R., 1928-

Hughes, John R., 1928-

International Course in EEG Data Processing (1977 : Paris, France)

Richey, Eldred Thurston, 1928-

Cooper, R. (Raymond)

Cooper, R. (Raymond)

Pichlmayr, I. (Ina), 1932-

BaYar, Erol.

Nunez, Paul L.

Nunez, Paul L.

Kesner, Raymond P.

Longo, V. G. (Vincenzo G.)

Williams, Robert L. (Robert Leon), 1922-

International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions (2nd : 1980 : Capri, Italy)

International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions (3rd : 1981 : Stockholm, Sweden)

Berger, Hans, 1873-1941.

Pichlmayr, I. (Ina), 1932-

Misulis, Karl E.

Misulis, Karl E.

Sheldon, Stephen H.

462	Fundamentals of electroencephalography / Kenneth A. Kooi with an introductory chapter on basic electrical principles by Vefik A. Basman.	Kooi, Kenneth A., 1922-
463	Fundamentals of electroencephalography / Kenneth A. Kooi, Richard P. Tucker, Robert E. Marshall with an introductory chapter on basic electrical principles by Vefik A. Basman.	Kooi, Kenneth A., 1922-
464	Goldensohn's EEG interpretation : problems of overreading and underreading / by Eli S. Goldensohn ... [et al.].	
465	Handbook of electroencephalography and clinical neurophysiology : index volume / editor, C. Ajmoné Marsan.	
466	Handbook of electroencephalography and clinical neurophysiology [serial] : revised series.	
467	Handbook of electroencephalography and clinical neurophysiology. Editor-in-chief: Antoine RA@mond.	
468	Hirneigenschaften und Verhalten : elektro-physiologische und Verhaltensuntersuchungen an der Ratte [von] Lothar Pickenhain und Fritz Klingberg.	Pickenhain, Lothar.
469	Human brainwaves : the psychological significance of the electro-encephalogram / Jacob Empson.	Empson, Jacob, 1944-
470	Imaging of the brain in psychiatry and related fields / Konrad Maurer (ed.).	
471	Infant EEG and event-related potentials / edited by Michelle de Haan.	
472	Intracranial electroencephalography / Michael R. Sperling.	Sperling, Michael R.
473	Mass action in the nervous system : examination of the neurophysiological basis of adaptive behavior through EEG / Walter J. Freeman.	Freeman, Walter J.
474	Medical electroencephalography [by] Frederic A. Gibbs [and] Erna L. Gibbs.	Gibbs, Frederic Andrews, 1903-
475	Methods of analysis of brain electrical and magnetic signals / edited by A.S. Gevins, A. RA@mond.	
476	Mind/body integration : essential readings in biofeedback / edited by Erik Peger, Sonia Ancoli, and Michele Quinn.	
477	Monitoring cerebral function : long-term monitoring of EEG and evoked potentials / Pamela F. Prior and Douglas E. Maynard foreword by the late D.G. McDowall.	Prior, Pamela.
478	Monitoring cerebral function : long-term recordings of cerebral electrical activity / Pamela Prior technical aspects written in collaboration with D. E. Maynard foreword by D. G. McDowall.	Prior, Pamela.
479	Neocortical dynamics and human EEG rhythms / [edited by] Paul L. Nunez with contributions by Brian A. Cuttito ... [et al.].	
480	Neonatal cerebral investigation / edited by Janet M. Rennie, Cornelia F. Hagmann, Nicola J. Robertson.	
481	Neonatal electroencephalography / Robert R. Clancy, Hee Jung Chung, John P. Temple.	Clancy, Robert R.
482	Neurological and electroencephalographic correlative studies in infancy / edited by Peter Kellaway and Ingemar Petersen.	World Federation of Neurology.
483	Neurometric assessment of brain dysfunction in neurological patients / ThAIA-a Harmony.	Harmony, ThAIA-a
484	Nocturnal sleep stereo-electroencephalography and polygraphy in epileptics / Josef Faber, Vilibald Vladvka.	Faber, Josef.
485	Nonlinear dynamics and brain functioning / edited by N. Pradhan, P.E. Rapo and R. Sreenivasan.	
486	Pediatric and adult electroencephalography / Michael R. Sperling, Martha J. Morrell.	Sperling, Michael R.
487	Physiological basis of the alpha rhythm / Per Andersen, Sven A. Andersson.	Andersen, Per.
488	Polysomnography and sleep disorder centers.	
489	Practical electroencephalography for the anesthesiologist, by Verne L. Brechner, Richard D. Walter [and] John B. Dillon.	Brechner, Verne L.
490	Principles of brain functioning : a synergetic approach to brain activity, behavior, and cognition / Hermann Haken.	Haken, H.
491	Quantitative analytic studies in epilepsy / edited by Peter Kellaway, Ingemar Petersen.	
492	Quantitative EEG, event-related potentials and neurotherapy / Juri D. Kropotov.	Kropotov, I. Ii, U. D. (I. Ii,UriA- Dmitrievich)
493	Recent advances in EEG and EMG data processing : the proceedings of the International Conference on EEG and EMG Data Processing, held in Kanazawa, Japan, September 10-12, 1981 / edited by Nariyoshi Yamauchi and Kiyoshi Fujisawa.	International Conference on EEG and EMG Data Processing (1981 : Kanazawa-shi, Japan)
494	Recommendations for the practice of clinical neurophysiology / made by the International Federation of Societies for Electroencephalography and Clinical Neurophysiology.	International Federation of Societies for Electroencephalography and Clinical Neurophysiology.
495	Rheoencephalography : a method for the continuous registration of cerebrovascular changes / by Fritz L. Jenkner.	Jenkner, F. L. (Fritz L.), 1923-
496	Rhythmic EEG activities and cortical functioning : proceedings of the International Symposium on Event-Related Changes in Cortical Rhythmic Activities--Behavioural Correlates, held in Schladingm, Austria, September 19-22, 1979 / edited by Gert Pfurtscheller ... [et al.].	International Symposium on Event-Related Changes in Cortical Rhythmic Activities--Behavioral Correlates (1979 : Schladingm, Austria)
497	Sleep : a comprehensive handbook / [edited by] Teofilo Lee-Chiong.	
498	Spehlmann's EEG primer / Bruce J. Fisch.	Fisch, Bruce J.
499	Synopsis of electroencephalography or, Guide to brain waves [by] Thomas C. Barnes.	Barnes, Thomas C.
500	The abnormalities of sleep in man. Proceedings of the XVth European meeting on electroencephalography, Bologna, 1967. Edited by H. Gastaut, [and others].	European Meeting on Electroencephalography (15th : 1967 : Bologna, Italy)
501	The alpha syllabus : a handbook of human EEG alpha activity. Edited by Barbara B. Brown and Jay W. Klug.	Brown, Barbara B.
502	The clinical neurophysiology of epilepsy : a survey of current research / by B. Joe Wilder.	Wilder, B. J. (Buna Joe), 1929-
503	The clinical neurophysiology primer / edited by Andrew S. Blum, Seward B. Rutkove.	
504	The EEG handbook / Frances M. Dyro.	Dyro, Frances M.
505	The electroencephalogram : its patterns and origins / John S. Barlow.	Barlow, John S., 1925-
506	The electroencephalogram of the normal child translated and edited by Niels L. Low With preface by Angelo Chiefli and Frederic A. Gibbs.	Fois, Alberto.
507	The electrophysiology of intellectual functions / Duilio Giannitrapani with a contribution by W.T. Liberson.	Giannitrapani, Duilio.
508	The relationships between electroencephalographic and psychological data in normal adults.	Werre, Peter Frans.
509	The responsive brain : the proceedings of the Third International Congress on Event-related Slow Potentials of the Brain, Bristol, England, 13-18 August, 1973 / edited by W. Cheyne McCallum and John R. Knott.	International Congress on Event-related Slow Potentials of the Brain (3rd : 1973 : Bristol, England)
510	Topographic brain mapping of EEG and evoked potentials / K. Maurer (ed.) foreword by F.H. Duffy.	
511	Understanding EEG : an introduction to electroencephalography / Donald Scott.	Scott, Donald F.
512	Cerebral monitoring in the OR and ICU [electronic resource] / edited by Enno Freye.	Freye, E. (Enno)
513	Handbook of brain connectivity [electronic resource] / Viktor K. Jirsa, A.R. McIntosh (eds.).	
514	American journal of EEG technology [serial].	
515	American journal of electroneurodiagnostic technology [Online]; American journal of electroneurodiagnostic technology [electronic resource].*	
516	American journal of electroneurodiagnostic technology [serial].	
517	Brain topography [serial] : journal of functional neurophysiology.	
518	Clinical EEG and neuroscience [serial].	
519	Clinical electroencephalography [serial].	
520	Electroencephalography and clinical neurophysiology [Online]; Electroencephalography and clinical neurophysiology [electronic resource HSL suppressed].*	
521	Electroencephalography and clinical neurophysiology [Online]; Electroencephalography and clinical neurophysiology [electronic resource].*	
522	Electroencephalography and clinical neurophysiology [serial].	
523	Electroencephalography and clinical neurophysiology. Supplement [serial].	
524	Journal of clinical neurophysiology [serial] : official publication of the American Electroencephalographic Society.	
525	Neurophysiologie clinique [Online]; Neurophysiologie clinique [electronic resource] : Clinical neurophysiology.*	
526	Neurophysiologie-Labor [Online]; Das Neurophysiologie-Labor [electronic resource] : Zeitschrift für Neurophysiologische Funktionsdiagnostik.*	
527	Revue d'Electroencephalographie et de neurophysiologie clinique [Online]; Revue d'Electroencephalographie et de neurophysiologie clinique [electronic resource].*	
528	Index to current electroencephalographic literature [serial] / prepared by UCLA Brain Information Service.	
529	Index to current literature [serial] / prepared by the Brain Information Service of the University of California at Los Angeles.	
530	Control of interictal epileptiform bursts in the rat hippocampal slice [microfiche] / by Nancy L. Chamberlin.	Chamberlin, Nancy L.
531	Dream voyage [videorecording] / a presentation of Films for the Humanities, Inc. produced by Goldcrest Films and Television producer, writer, Karl Sabbagh.	

APPENDIX G

THE UNIVERSITY OF NORTH CAROLINA

**REQUEST FOR AUTHORIZATION TO ESTABLISH A NEW DISTANCE
EDUCATION DEGREE PROGRAM OR SITE
(THROUGH WHICH 50% OR MORE OF A DEGREE PROGRAM IS PROVIDED)**

INSTRUCTIONS: Fill in the appropriate blanks and expand the electronic version of this form as required to include other more extensive information. Please submit three copies of the proposal to General Administration. As of January 1, 2010 submission of proposals will be electronic.

Date: 5/18/2011

Constituent Institution The University of North Carolina at Charlotte

CIP Discipline Specialty Title: Health Professions and Related Sciences

CIP Discipline Specialty Number: 51.09999 Level: B X M I D

Exact Title of the Proposed Program: Bachelor of Science in Neurodiagnostics and Sleep Science

Degree Abbreviation: BS Proposed Date of Initiation: *month* August *year* 2011

Will this program be completely individual access (e.g., online, videocassette)? Y X N

If "yes," primary mode of delivery: Internet

If "no," list proposed sites (use additional lines as needed):

(1) _____
(city) *(county)* *(state)*

(street address)

(2) _____
(city) *(county)* *(state)*

(street address)

If cohort-based, length of time to complete the program (e.g., 18 mos., 2 years) _____

List any other UNC institutions that offer similar programs in the same location (if requesting a site-based program) or a similar program online or by individual access (if requesting an individual access program):

NA

For the following question, please consult "Guidelines for Alternative, Online, or Distance Education Delivery of approved Degree Programs" from the UNC Policy Manual available on the UNC GA Academic Planning website.

Which SACS COC substantive change procedure applies? (SACS policy on substantive change: <http://www.sacscoc.org/pdf/081705/Substantive%20change%20policy.pdf>)

One **XX** (prior authorization from SAC; both Appendix F and G should be submitted to COC of SACS by the institution, if applicable)

Two _____ (prior notification to SACS; Appendix F should be submitted to COC of SACS by the institution, if applicable)

Based on the SACS policy on substantive change, by what date should the campus be notified by UNC-GA of authorization to establish? _____

The following items conform to the information required for SACS Substantive Change Procedure One.

1. **Abstract** (limit to one page or less)

Describe the proposed change; its location; initial date of implementation; projected number of students; description of primary target audience; projected life of the program (single cohort [indicate number of years] or ongoing); and instructional delivery methods.

The Department of Kinesiology in the College of Health & Human Services will be the academic home for the program. Initial date of implementation is 08/2011. Full enrollment is projected at 50 students (30 new students accepted each fall). Students who have earned an associates degree from an accredited institution, a professional registry as a RPSGT and/or R.EEG T., have completed prerequisites, and have basic sleep technology training are the primary target audience. The projected life of the program is ongoing.

Instruction for the proposed neurodiagnostics and sleep science post-professional program will combine web-based, distance education courses and on-campus laboratory sessions, clinical rotations, research projects, and campus/community presentations. Program completion time is projected at one year for full-time students and two years for part-time students. Major concentrations include:

- Advanced principles in neurodiagnostic and sleep science design and function
- Principles of education for leaders
- Philosophy and application of scientific research
- Philosophy and principles of laboratory management, healthcare administration, and finance

Clinical rotations will take place through hospitals, specialized sleep and epilepsy labs, private practice, educational institutions, and research facilities. The clinical rotation is designed to maximize student exposure to all areas in neurodiagnostics and sleep science. Students are assigned to sites by the program. Students can indicate their first and second choices and indicate whether location or financial support is most important to them. In cases where there is competition for clinical sites of close proximity, the program will work with the financial aid office to determine the students with the greatest financial need.

2. **Background information**

Provide a clear statement of the nature and purpose of the change in the context of the institution's mission, goals, and strategic plan; evidence of the legal authority for the change (*to be provided by UNC General Administration in authorization letter*).

The UNC Charlotte Academic Plan for Extended Academic Programs (Off-Campus) Program Delivery identifies as a campus priority those initiatives that will address the needs of North

Carolina's citizens. The academic plans of the College of Health and Human Services and the Department of Kinesiology identify the delivery of instruction to off-campus students as a priority in order to serve the health care needs of North Carolina's citizens. In addition, the 2007 *UNC Tomorrow Commission Final Report* cites the need for additional preparation of health care professionals. This program will support that effort.

3. Assessment of need and program planning/approval

Discuss the rationale for the change, including:

- intended audience and an assessment of need (*include results of surveys or special studies*);

Potential students for this program are Sleep Technologists and Electroneurodiagnostic Technologists who have an associates degree and who are already registered and practicing, but who want to pursue a BS degree to expand their professional knowledge and opportunities for career advancement. The NDSS program will provide a broad based foundation for sleep science professionals to gain vital discipline of thought, critical thinking, and creative problem solving needed for key leadership, educational, management, and research roles in this emerging discipline. We anticipate that the program's prospective students will be motivated and qualified practitioners who want to pursue this degree at the University to become the institutional, educational, governmental, and research leaders needed in these fields.

To assess the demand for the new baccalaureate degree program in NDSS, students enrolled in the five community college programs in NC with a concentration in polysomnography and/or electroneurodiagnostic technology were surveyed in 2008. Eighty two percent of the students surveyed indicated that they were interested in pursuing a BS degree in neurodiagnostics and sleep science. Students enrolled in the 33 CAAHEP accredited polysomnography and electroneurodiagnostic technology programs in the US were also surveyed and 65 percent of the respondents were interested in pursuing a BS degree in neurodiagnostics and sleep science.

Program directors from the NC Community College Polysomnography and Electroneurodiagnostic Technology with Add-on Polysomnography programs stated their students and graduates are interested in a BS degree in Neurodiagnostics and Sleep Science.

- evidence of inclusion of the change in the institution's ongoing planning and evaluation processes;

Resources are in place within UNC-CH and the Department of Allied Health Sciences, which will support the new program (see Appendix D for organizational chart showing location of program and services for the Department of Allied Health Sciences).

- documentation that faculty and other groups were involved in the review and approval of the new site or program.

In 2008, a group of people interested in advancing the field of NDSS partnered to build relationships among but not limited to; potential students, faculty, staff, healthcare providers, providers of healthcare supplies and equipment, alumni, stakeholders, employees, and employers. This group has reviewed program goals and outcomes, reviewed a draft curriculum, researched funding needs, developed student recruitment strategies, and discussed issues related to the proposed program. If approval is granted

for the proposed program, this group will transition to an academic advisory committee. The proposed committee consists of the natural partners for a program designed to prepare graduates for advanced roles in the NDSS field.

The group is in regular contact to discuss instructional formats, curriculum, resources, admissions requirements, and other issues related to the proposed NDSS program. Members of the group have and will attend state and national professional meetings to discuss the proposed program, which include:

- The North Carolina Association of Sleep Technologists (NCAST)
- The Southern Society of Electroneurodiagnostic Technologists (SSET)
- The American Association of Sleep Technologists (AAST)
- The American Society of Electroneurodiagnostic Technologists (ASET)

Provide projected annual headcount enrollment:

Individual access: Years 1: 10 2: 40 3: 60 4: 50 5: 60

Site 1: Years 1 _____ 2 _____ 3 _____ 4 _____ 5 _____

Site 2: Years 1 _____ 2 _____ 3 _____ 4 _____ 5 _____

Projected total SCHs (all sites):

Year 1	Student Credit Hours		
Program Category	UG	Master's	Doctoral
Category I			
Category II			
Category III	170		
Category IV			

Year 2	Student Credit Hours		
Program Category	UG	Master's	Doctoral
Category I			
Category II			
Category III	720		
Category IV			

Year 3	Student Credit Hours		
Program Category	UG	Master's	Doctoral
Category I			
Category II			
Category III	1,140		
Category IV			

Year 4	Student Credit Hours		
Program Category	UG	Master's	Doctoral
Category I			
Category II			
Category III	1,140		
Category IV			

4. Description of the substantive change (as required by SACS)

- description of the proposed program;

The Department of Kinesiology in the College of Health & Human Services at The University of North Carolina at Charlotte requests permission to establish a post-professional baccalaureate degree program in neurodiagnostics and sleep science (NDSS). The proposed program will be the first of its type in the nation and will set the national standard for future B.S. degrees in NDSS. Graduates of the NDSS program will be prepared with the knowledge, competence, and adaptive skills to fulfill educational, professional and leadership positions in the field.

The curriculum includes content to prepare students as advanced-level health care professionals in accordance with national accreditation standards and includes coursework in education, advanced clinical procedures, management, research, and leadership. Advanced roles in neurodiagnostics and sleep science require significant levels of analysis, problem solving, and professional judgment. This program will prepare students with the knowledge and skill sets to fulfill these advanced roles. Curriculum courses offered above the entry-level scope of practice will set this program apart and ahead of other programs with similar concentrations in our state, nation, and world.

- specific outcomes and learning objectives;

Learning Objectives: The proposed post-professional NDSS BS degree will

1. Provide graduates with the broad scope of knowledge and understanding of the underlying systems and principles involved in neurodiagnostics and sleep science, as well as the complex adaptive skills needed to be able to create novel solutions to problems arising in their daily practice and in the fields of neurodiagnostics and sleep science.
2. Respond to the immediate and future needs of the community by providing competent, patient-centered, responsive, and pro-active graduates who raise the standard of care.
3. Provide graduates with the skills for critically using (and participating in) health-related research and establishing life-long learning practices.
4. Prepare graduates to become faculty for Polysomnography and Electroneurodiagnostic technology associate degree (AAS) programs in North Carolina as well as all other states within the US and other countries.
5. Provide advanced professional education for individuals pursuing or actively involved in leadership roles and/or advanced degrees.

Program Outcomes: Our graduates will hold influential positions in clinical, educational, and research settings. They will use their professional knowledge and critical thinking skills to address problems such as misdiagnosis and health care fraud and to create and maintain cost-effective practices for North Carolina and the nation. In particular, NDSS graduates will:

1. Be prepared to work in electrophysiological fields (laboratories, hospitals, industry, colleges)
2. Problem solve individually and in teams addressing unique issues arising in the health care arena involving the overlap of electrophysiology, laboratory science, management and education
3. Be prepared to teach at the community college level in electrophysiological areas

4. Create and promote policy that improves cost-effective quality practices
 5. Be well prepared for additional advanced degrees.
- curriculum and schedule of proposed course offering.

Year 1

Semester	Course
Fall	NDSS 3101 - Pathophysiology of Sleep, Neurological, and Related Disorders
	NDSS 3102 - Neurological and Sleep Diagnostic and Therapeutic Methods, and Monitoring Services
	RESP 4103 – Evidence-Based Practice
Spring	NDSS 3104 - Advanced Sleep and Neurodiagnostic Clinical Procedures
	NURN 4201 - Information Technology: Applications in Health Care
Summer I and II	NDSS 3105 - Practicum

Year 2

Semester	Course
Fall	NDSS 4101 - Principles and Practice of Healthcare Education
	RESP 4102 - Program Administration
	NDSS 4104 - Advanced Physiological Monitoring and Data Acquisition
Spring	NDSS 4105 - Leadership in Healthcare Organizations
	NDSS 4106 - Internship
	NDSS 4107 - Sleep and Neurodiagnostic Sciences Capstone

Describe and provide rationale for any differences in admission, curriculum, or graduation requirements for students enrolled online or at the new site(s), or any special arrangements for grading, transcripts, or transfer policies.

The NDSS program will follow the undergraduate policy on admission, graduation, curriculum, transfer of credits, and all other policies. Students will receive up to 46 hours of placement credit toward the NDSS program upon completion of the following:

- Earning an associate degree from an accredited institution
- Completing a registry by the BRPT and/or ABRET
- Gaining admission into the NDSS program
- Successfully completing 1 transition course in the NDSS program (NDSS 3101)

Minimum admission requirements are as follows:

- Associate degree from an accredited institution with a cumulative grade point average of 2.0 or better

- Training in sleep technology (validated by course work in the proposed NDSS program)
- Registration as an RPSGT or R.EEG T. by the Board of Registration of Polysomnographic Technologists or the American Board of Registration of Electroencephalographic and Evoked Potential Technologists
- Earn at least a C in all coursework taken by the end of the semester prior to the semester for which application is made
- Completed application for the proposed NDSS program, three professional references and written/oral interviews

General admission requirements are as follows:

- Completion or near completion of the University general education requirements
- Completion of program prerequisites

Total academic credit hours in the NDSS program = 35 for applicants who have completed an associate degree from an accredited institution, are registered by the BRPT and/or ABRET, and have completed the general education requirements of the University and the prerequisites of the program.

Requirements for grading, transcripts, and transfer policies are consistent with those of UNC-Charlotte.

Describe administrative oversight to ensure the quality of the program or services to be offered.

UNC Charlotte's Office of Extended Academic Programs works with the academic Departments and Colleges to deliver off-campus face-to-face or technology-based instruction. The Office of Extended Academic Programs shares responsibility with the academic Departments and Colleges for distance education programs and takes the lead in coordinating all administrative and student support services. The Office of Extended Academic Programs is a component of the Office of Continuing Education, Extension, and Summer Programs, headed by Dr. Connie Martin. Dr. Martin reports to the Associate Provost for Metropolitan Studies and Extended Academic Programs, Dr. Owen Furuseth. Dr. Furuseth reports to Dr. Joan Lorden, the Provost and Vice Chancellor for Academic Affairs.

Ms. Mary Ellen Wells will be the Coordinator of the BS in NDSS program in the Department of Kinesiology. Dr. Mitchell Cordova, Chair of the Department of Kinesiology, is responsible for directing and evaluating distance education programs within the Department and works in collaboration with faculty in the department. Dr. Cordova reports to Dr. Jane Neese, Interim Dean of the College of Health and Human Services, and works collaboratively with the University's Office of Extended Academic Programs. Interim Dean Neese reports to Dr. Joan Lorden, the Provost and Vice Chancellor for Academic Affairs.

5. Faculty and support staff

Please Provide:

- Number of faculty expected to deliver instruction: full-time faculty 1 part-time faculty 1
- A complete roster (using the SACS "Roster of Instructional Staff" form) of those faculty employed to teach in the program, including a description of those faculty members' academic

qualifications and course load in the proposed program, as well as course work taught in other programs currently offered; Attached

- Evidence that adequate faculty members are assigned to support the program; The program is designed to offer five to six courses per semester ranging from 15-18 credit hours and one course during the summer totally 3 credit hours. The program director is responsible for instructing 2-3 courses per semester and a part time faculty member is responsible for instructing 1-2 courses per semester, and two courses are utilized from other programs.
- Impact of the initiative on faculty workload; The program will enhance the public service activity of the faculty. Course load will be assigned to ensure faculty will not be overloaded so they may be actively involved in the community and professional associations. NDSS courses will reflect the most current issues and trends in the field, which will provide faculty the opportunities for scholarly research to be implemented in their course planning.
- Number and responsibilities of support staff (e.g., program coordinator). The program director (1 FTE) and one administrative assistant (0.5 FTE) are responsible for the day-to-day activities of the program including communication, public contact, record keeping and report writing, student services, composition, office equipment operation, filing, and mailing.

Describe means by which the institution will provide support services for students enrolled at the site(s) or online (e.g., admissions, skills assessment, course registration, academic advising, counseling, etc.).

A Senior Program Manager in the University's Office of Extended Academic Programs will be assigned to this program to provide marketing and administrative assistance to faculty and administrators in the Department of Kinesiology to provide direct assistance to prospective and enrolled students, and to coordinate the efforts of all the academic, student support, and administrative office on campus in their design and delivery of services to off-campus students. This individual will be the same person who is also responsible for the Department of Kinesiology's Respiratory Therapy program in which this proposed program was completely modeled after.

Full-time faculty members are assigned to provide academic advisement to NDSS students in this distance education program. Mary Ellen Wells will provide the academic advising and counseling to students in the program, and will also provide support for the admission and skills assessment of students in the program.

6. Library and learning resources

Describe library and information resources to support the program, including staffing and services in place to support the initiative.

A Distance Education Librarian is employed to ensure that Library resources and services are provided appropriately to course faculty, the Senior Program Manager in Distance Education, and enrolled students, including through such means as electronic document delivery, the arrangement of borrowing privileges for students at other libraries, and mailing (or delivery by other means) of

materials to individual students. If NDSS faculty and/or students discover a resource [book, journal article, dissertation, etc.] which is not owned by J. Murrey Atkins Library, they can request the Library to obtain it from another source via the Library's Inter-library Loan Service. Candidates and faculty also have borrowing privileges at all 16 UNC campuses across the state. The library's electronic and physical collection of resources that support the College of Health and Human Services are vast.

There are a vast number of library holdings to support the Neurodiagnostics and Sleep Science program at UNC Charlotte as well as at UNC Chapel Hill. Specifically, UNC Charlotte library contains over 100 journals and volumes related specifically to Neurodiagnostics and Sleep Science and also has access to other health related subjects, containing ~30,000 titles in multiple formats. The library also subscribes to over 200 nursing, health and medical journals in paper, as well as over 5700 electronic journals in various subject areas. The library spends approximately \$2,000,000 on electronic resources yearly, including multiple nursing, medicine, and health-specific databases, such as CINAHL, Medline, Cochrane, DARE, EBM Reviews, Science Direct, Wiley Interscience, Journals @ Ovid Full-Text, PsycInfo, and many more. All distance education students and faculty have access to these resources from their office or home by means of a simple log in procedure. The University maintains a toll-free telephone number for use by distance education students. The Faculty Center for Teaching and e-Learning provides a Technical Help Desk for students in distance education programs (available by webform, e-mail, and telephone).

At UNC Chapel Hill the School of Medicine library currently supports the Sleep Medicine Division in the Department of Neurology and the UNC Sleep Disorders Center – which is an accredited full service sleep center. Existing library collections hold several hundred subject-specific books, and more than twenty journal subscriptions are already available to support both new and existing sleep and neurodiagnostic programs.

An analysis of current collection strength reveals that the library has electronic subscriptions or access to all but one of the most needed journals and to approximately half of the core texts required for the new program.

Describe cooperative agreements with other institutions and include a copy of such agreements in the appendix.

No cooperative agreements with other institutions are required.

Relative to electronic resources, describe how students and faculty will access information, training for faculty and students in the use of online resources, and staffing and services available to students and faculty.

UNC Charlotte's Faculty Center for Teaching and Learning (FCTL) provides distance education instructors with technical training, which includes the use of Wimba and Moodle. The College of Health and Human Services information

technology staff also will provide full technology assistance to the NDSS distance education instructors.

UNC Charlotte has employed a Distance Education Librarian specifically to ensure that we are fully aware of the needs and the alternatives by which we can serve the needs of off-campus students. The Distance Education Librarian provides direct support to students and faculty in distance education programs and coordinates the involvement of subject-matter librarians and other librarians as needed. The Senior Program Manager in the Office of Extended Academic Programs coordinates with other support units on campus, with the academic program/instructors in the College of Health and Human Services, and with the students themselves on the identification of educational needs, the design of solutions to those needs, and the effective and efficient implementation of those solutions. The Senior Program Manager functions as the single point-of-contact for needs outside of those handled directly by course instructors for distance education students admitted to the University.

The Office of Extended Academic Programs, Atkins Library, and FCTL produce a non-credit online orientation course accessible to students upon program registration and throughout their first semester in the program. This online orientation provides students with training for use of Wimba, Moodle, UNC Charlotte email, Atkins Library distance education services, and technical help access. Each semester that students are registered for courses in distance education programs, they receive online information describing access to University services.

7. Physical resources

Describe physical facilities and equipment to support this initiative. Assess the impact that the proposed change will have on existing programs and services.

Office and classroom space:

Because this program is offered via individual Internet access and the instructors can teach from their current offices, there are no additional physical facilities required.

Laboratory and practicum space:

UNC Hospitals Clinical Neurophysiology Laboratory:

The Clinical Neurophysiology Laboratory performs electroencephalograms, electromyograms, nerve conduction velocities, autonomic testing and sensory evoked potentials, which are essential to the diagnosis and monitoring of patients with illnesses involving the central and peripheral nervous systems. These studies are performed to diagnose neurological abnormalities, classify epilepsies, quantify efficacy of treatment and localize areas of neurologic disease. Highly trained staff evaluates the effects of anticonvulsant drug therapies, non-invasive monitoring and potential surgical approaches to neurologic diseases.

UNC Hospitals Sleep Center: The Sleep Studies Program and the Sleep Studies Laboratory provide extensive testing to identify the presence of sleep disturbances and to determine therapeutic solutions to these problems. Procedures include polysomnography, positive airway pressure, sleep apnea assessment, multiple sleep latency tests and other sleep studies. Diagnostic procedures are performed on both inpatients and outpatients, and the multidisciplinary sleep clinic is used to screen and evaluate sleep complaints.

For off-campus facilities:

Name of the agency or organization that is providing the space.

Rental, lease, or other arrangements involved in obtaining use of this space including rates.

Describe any agreements or understandings with the organization providing the space.

8. Financial support

Describe financial resources to support the change, including the budget for the first year of the proposed program. Include projected revenues (including tuition and fees receipts, state appropriations based on projected SCHs, grants, etc.) and expenditures, as well as amount of resources going to institutions or organizations for contractual or support services.

Please see the attachments for a summary of estimated additional costs in the first four years of program operation.

Student credit hours (SCHs) delivered to non-North Carolina residents receiving instruction outside the boundaries of North Carolina are not eligible for State-provided enrollment funding and these SCHs should not be reported on the funding matrix. The institution must set the rate charged for these SCHs at a level sufficient to cover the cost of instruction, which should be at least double the official in-state tuition rate. Indicate the average number of SCHs per semester that will be delivered to non-NC residents receiving instruction outside the boundaries of NC and the tuition that will be charged per-SCH for this instruction:

SCHs per semester delivered to non-NC residents receiving the instruction outside of NC boundaries:

_____.

Per-SCH charge, tuition and fees, for this out-of-state instruction to non-NC residents:

_____.

If a site-based degree program is to be offered out of state, a more detailed justification is required. Please provide the rationale for offer the program out-of-state and the how resources will be secured to support the program, and indicate whether any State-supported resources will be used in the program.

9. Evaluation and assessment

Describe the means used by the institution to monitor and ensure the quality of the degree program and off-campus site(s).

Quality and effectiveness of the program are assessed by:

Program personnel (advisory committee, medical director, program faculty, others actively involved in the program)

Student satisfaction

Graduate satisfaction

Employer satisfaction

Appropriateness and effectiveness of externship facilities

Student pass rate in national examinations
Students gaining and maintaining employment in the field and or advancing education

Summarize procedures for systematic evaluation of instructional results, including the process for monitoring and evaluating programs at the new site, as well as using the results of evaluation to improve institutional programs, services, and operations.

The NDSS program will use the standardized student instructor surveys utilizing the same procedures followed by all faculty in the College of Health & Human Services to evaluate overall teaching effectiveness. Additionally, the NDSS will develop other surveys that will be designed to measure the program's overall appropriateness and effectiveness in the cognitive, affective, and psychomotor domains of Neurodiagnostics & Sleep Science. The description and distribution dates of the measurements are as follows:

1. Program Personnel Survey – Completed annually by NDSS Advisory Committee, Medical Director, program faculty, and others actively involved in the program. Survey goal is to identify strengths and/or weaknesses in the NDSS program's resources.
2. Graduate Satisfaction Survey – Completed by recent graduates of the NDSS program. Survey is given yearly and no less than three months after a student completes the program. Survey goal is to assess NDSS graduates on how well the program prepared them for gainful employment.
3. Employer Survey – Completed by recent graduates' employers. Survey is given six months after the graduate gains and maintains employment. Survey goal is to assess NDSS graduate employers on how well the program prepared the graduate for employment at the employer's facility.
4. Student Satisfaction Survey – Completed by current NDSS program students. Survey is given every semester in every NDSS course. Survey goal is to assess current students to determine strengths and/or weaknesses in the programs resources and instruction.
5. Student Externship Survey – Completed by students at the end of their clinical rotation. Survey is conducted during every semester clinical is offered and one survey is completed for each clinical site attended. Survey goal is to assess the quality and effectiveness of the NDSS program's clinical affiliates.
6. Student records – The program director demonstrates sufficient effort to maintain contact with graduates and documents employment history,

advanced education enrollment and completion, and registry examination completion.

Measurement of all program outcomes is ongoing with the following format for reporting:

- Purpose statement
- Measurement system
- Dates of measurement
- Results
- Analyses
- Action plans
- Follow-up

The NDSS Academic Advisory Committee will meet each year to review the evaluations. Revisions will be made as needed.

In accordance with accreditation requirements, the institution will ensure that the student who registers in a distance education course or program is the same student who participates in and completes the program and receives the academic credit.

10. Attachments

Attachments may include items such as (1) vitae of key faculty; (2) selected letters of support; (3) copies of library and other cooperative agreements, etc.

The following attachments will be provided:

The curriculum vita of the Program Coordinator – Mrs. Mary Ellen Wells
Letter of Support From NCCC President – Dr. Ralls
Letter of Support From UNC Chapel Hill Provost – Dr. Carney
Memorandum of Understanding between UNCC and UNCCH
Letter of Support from UNC Chapel Hill Clinical Neurophysiology Labs Sleep Center
Library Holdings from UNCC and UNCCH

Name, title, telephone, and e-mail of contact person to respond to questions:

Jane B. Neese, PhD, RN
Interim Dean – College of Health & Human Services
UNC Charlotte
9201 University City Boulevard
Charlotte, NC 28223
(704) 687-8640
jbneese@uncc.edu

Mary Ellen Wells, MS, RPSGT, R.EEG T, R.NCS T.
Clinical Assistant Professor
Department of Allied Health Sciences
UNC School of Medicine

The University of North Carolina at Chapel Hill, CB #7120
Chapel Hill, NC 27599
919-843-4673
mwells@med.unc.edu

This request to establish a new distance education degree program (or program site) has been reviewed and approved by the appropriate campus committees and authorities.

Chief Academic Officer _____



Department of Allied Health Sciences

Personal Information:

- Mary Ellen Wells
- 48 Margaret Place, Chapel Hill, NC 27516
- 252-561-7751 (mobile) 919-843-4673 (office)
- mwells@med.unc.edu

Education:

- Currently enrolled and working toward PhD, Curriculum and Instruction, North Carolina State University, Raleigh, NC
- MS Instructional Technology, East Carolina University, Greenville, NC 2004
- BS Computer Science, East Carolina University, Greenville, NC 2001
- AAS Electroneurodiagnostic Technology with add-on Polysomnography, Pamlico Community College, Grantsboro, NC 2008

Professional Experience:

- Clinical Assistant Professor/Program Director, 2008 - present, The University of North Carolina at Chapel Hill, Department of Allied Health Sciences, Chapel Hill, NC
- Neurodiagnostic Technologist, 2010 – present, The University of North Carolina Hospitals, Clinical Neurophysiology Laboratory, Chapel Hill, NC
- Electroneurodiagnostic Technology Program Director, 2006 – 2008, Pamlico Community College, Grantsboro, NC
- Adjunct Instructor, 2003 – 2008, Pitt Community College, Greenville, NC
- Technologist, 2006 – 2008, Atlantic Neurology, New Bern, NC
- Technologist, 1999 – 2006, Carolina Neurology & Electromyography, Greenville, NC

Accreditations:

- Board of Registered Polysomnographic Technologists (BRPT), #13602, 2009
- American Board of Registration of Electroencephalographic and Evoked Potential Technologists (ABRET), #3697, 2004
- American Association of Electroneurodiagnostic Technologists (AAET), #477, 2002

Memberships:

- North Carolina Association of Sleep Technologists (NCAST)
- American Society of Electroneurodiagnostic Technologists (ASET)



Department of Allied Health Sciences

- American Association of Sleep Technologists (AAST)
- Southern Society of Electroneurodiagnostic Technologists (SSET)

Bibliography:

- Wells, M.E. Progression of Neuromuscular Disorders and Sleep-Related Dysfunction. *A2Zzz*, A Publication of the American Association of Sleep Technologists. Vol 20(1). P 18-21. 2011.
- Wells, M.E. Epilepsy: Low-Pass (High frequency) Filters. *A2Zzz*, A Publication of the American Association of Sleep Technologists. Vol 19(1). P 28-29. 2010.
- Wells, M.E. Epilepsy: The Night Thief. *A2Zzz*, A Publication of the American Association of Sleep Technologists. Vol 18(4). P 19-21. 2009.
- *Taking Sleep to a New Level – The Profession of Neurodiagnostics and Sleep Science, Celebrating Allied Health Professions Appreciation Week*, Council for Allied Health in North Carolina, 4 page article, 2008
- Reviewer for North Carolina Health Careers handbook, North Carolina Area Health Education Centers Program (AHEC), 2006

Teaching record:

Courses taught for NCCCS

- EDT 110 Neuroscience/Pathological Conditions
- EDT 111 Laboratory Management
- EDT 112 Instrument/Record Methods
- EDT 113 Clinical Correlates
- EDT 114 Special Procedures
- EDT 115 Laboratory Practice
- EDT 116 Clinical Experience
- EDT 118 Laboratory Practice II
- OST 149 Medical Legal Issues
- MED 118 Medical Law and Ethics
- CIS 110 - Introduction to Computers
- ACA 111 – College Student Success
- CIS 172 - Introduction to the Internet
- MAT 60 and 80 – Remedial Algebra

Lab Mentorships and Continuing Education Lecture

- ABRET Registry exam preparation, Pamlico Community College
- Nerve Conduction Velocities workshop 2007 and 2008, invited by Cadwell Laboratories, Inc.

Student Preceptorships 2007

- Electroencephalography
- Evoked potential testing
- Nerve conduction velocity testing
- Patient assessment

Grants:



Department of Allied Health Sciences

- Principle Investigator, Community College Allied Health Enhancement Funds, The North Carolina Community College System, 2006-2007, 95% effort, \$129,500.00
- Principle Investigator, American Society of Electroneurodiagnostic Technologists Foundation Grant, 2010-2011, 95% effort, \$5,000.00

Awards:

Allen DeVilbiss Literary Award presented by the American Association of Sleep Technologists at the 2010 Annual Meeting of the Associated Professional Sleep Societies in San Antonio TX. This award is in recognition of an original article published in A2Zzz deemed to represent excellence in technical literary writing by a sleep technologist.

Professional Service:

- Health Sciences Library Advisory Committee. The University of North Carolina at Chapel Hill. Appointed 2010.
- Committee on Accreditation for Education in Electroneurodiagnostic Technology (CoA-END) committee member, appointed 2009 - present
- American Council on Education evaluator, Military Program Evaluations, Portsmouth Virginia Electroneurodiagnostic Technology with Add-on Polysomnography Program, 2009-2010
- Invited member 2009 – present, Polysomnography Technology Program Academic Advisory Committee, Lenoir Community College, Kinston, NC
- Invited taskforce member, 2008-present, American Association of Electroneurodiagnostic Technologists, Bachelor's Degree Taskforce
- Initiator and maintainer, CAAHEP accreditation of Electroneurodiagnostic Technology with add-on Polysomnography at Pamlico Community College, 2007 - 2008
- Invited member 2006 - present, Health Services Management Academic Advisory Committee, East Carolina University, Greenville, NC
- Institutional Effectiveness Committee member, 2007 – 2008, Pamlico Community College, Grantsboro, NC
- Public Relations Committee member, 2007, Pamlico Community College, Grantsboro, NC

Presentations:

- Polysomnography Instrumentation. UNC Hospitals Sleep Disorders Center. April 15th 2011.
- Reaching High in Sleep Medicine Education. North Carolina Association of Sleep Technologists Annual Meeting. Nov. 13th 2010



Department of Allied Health Sciences

- Bachelor's Degree END Education Development Webinar. American Society of Neurodiagnostic Technologists. Oct. 6th 2010.
- Interactive Pattern Recognition. Southern Society of Electroneurodiagnostic Technologists 50th Anniversary conference, Myrtle Beach, NC Sept. 25th 2010.
- Logistical Needs for Widespread Higher Education in Sleep Webinar: Career Enhancement Series. American Association of Sleep Technologists. Sept. 8th 2010. 6pm–7pm.
- A Sleep Technologists Guide to Epilepsy. Northwest and Greensboro Area Health Education Centers. Aug. 24th 2010. 9am-1pm.
- Advancing the Sleep Profession Through Education: It's Time to Get Involved! Symposium speaker and chair, American Association of Sleep Technologists 32nd Annual Meeting, San Antonio Tx. June 7th, 2010.
- Sleep Disorders and the Impact on Public Health. Eastern Area Health Education Center. Feb. 26th 2010. 8am-12pm.
- A Sleep Technologists Guide to Epilepsy. Eastern Area Health Education Center. Feb. 26th 2010. 1pm-5pm.
- Electroneurodiagnostic Technology and Polysomnography demonstration for the North Carolina legislators at the Raleigh legislative building, 2007

Reflective Statement:

I have worked as a technologist in the field of neurodiagnostics and sleep science since 1999. After completing my BS degree in 2001, I began pursuing my MS degree and became deeply involved in designing instruction at the college level. Distance education is a passion of mine and I created the first accredited DE associates degree in electroneurodiagnostic technology/polysomnography in our nation. I worked as a faculty member at Pitt Community College and as a program director at Pamlico Community College. My research/scholarly interests include clinical education competencies, educational leadership, distance education, advanced didactic and laboratory competencies in neurodiagnostics and sleep science, educational assessments and outcomes, community awareness of neurological and sleep disorders and patient advocacy.

Program accreditation is a major part of my responsibility. I initiated accreditation by the Committee on Accreditation of Allied Health Education Programs (CAAHEP) for an Electroneurodiagnostic Technology with add-on Polysomnography program. My program received accreditation by CAAHEP approximately six months later – the first in our state and the 12th in the nation to receive the accreditation. To ensure the best education for my students, I maintain equipment featuring the latest in technology for the field. This is achieved by soliciting funds for new equipment and acquiring donor/loaner equipment from leading manufacturers. I also follow SACS requirements and adhere to the guidelines set forth by UNC, ASET, CAAHEP, BRPT, ABRET, ACNS, and the AASM as well as participate in continuing clinical and professional education.



Department of Allied Health Sciences

Currently, I am working towards creating a baccalaureate of science degree in neurodiagnostics and sleep science for which I will be the first director. This program is a collaboration between the UNC Department of Allied Health Sciences at The University of North Carolina at Chapel Hill and The University of North Carolina at Charlotte. This proposed program will be the first in our state, nation, and the world. A major goal of my endeavors for the new program is to create a national model for future BS degrees in neurodiagnostics and sleep science.

CURRICULUM VITAE

Joseph Paul Coyle, M.D.

Anesthesiologist and Critical Care Physician
Southeast Anesthesiology Consultants, P.A.
Carolinas Medical Center, Charlotte, North Carolina

Home Address: 7620 Turnberry Lane
Stanley, North Carolina 28164
Phone: (704) 892-5692

Hospital Address: Department of Anesthesiology
Carolinas Medical Center
P.O. Box 32861
Charlotte, NC 28232
Phone: (704) 355-2000 (Paging)
(704) 355-2372 (Office)

Personal Data: Born - June 17, 1952; Bethesda, Maryland
Married - 1972 - Patricia Linn Coyle
Children: Michael 1974
Kathleen 1977
David 1979

Education: **Medical School** - Hahnemann Medical College, Philadelphia, PA
1974-1978: Doctor of Medicine, Alpha Omega Alpha (President)
Medical Internship - Bethesda Naval Hospital, Bethesda, Md
1978-1979
Residency in Anesthesiology - Bethesda Naval Hospital
1979-1981
Fellowship in Critical Care Medicine
July 1981-June 1982
Harvard Medical College
Massachusetts General Hospital, Boston, Ma
Fellowship in Cardiothoracic Anesthesiology
July 1982-June 1983
Harvard Medical College
Massachusetts General Hospital, Boston, Ma

Certification: National Board of Medical Examiners #220870 1979
American Board of Anesthesiology #10505 1982
Recertification ABA 2002

Critical Care Medicine #39 1986
Examiner, American Board of Anesthesiology 1994 - 2008
Advanced Trauma Life Support 2006

License: North Carolina #29831 1986
Virginia #0101242628 2007

**Society
Memberships:**

American Medical Association
American Society of Anesthesiology
North Carolina Society of Anesthesiologists
Society of Cardiovascular Anesthesiologists
International Anesthesia Research Society
Society of Critical Care Medicine
Fellow of the American College of Chest Physicians

Professional Appointments and Positions:

North Carolina Respiratory Care Board
Chairman 2010 - present

Commission on Accreditation of Respiratory Care, CoARC
Commissioner: 2009 - present

University of North Carolina, Charlotte
Lecturer in the Department of Kinesiology August 15, 2008 - Present

North Carolina Respiratory Care Board 2001-2008
Vice Chairman 2001-2002
Chairman 2002-2008

Carolinas Medical Center, April 1990-Present
Department of Anesthesiology
P.O. Box 32861
Charlotte, North Carolina 28232
Staff Anesthesiologist and Critical Care Physician 1990-Present
CQI Committee, Department of Anesthesiology 1990-2001
Chief, Cardiac Anesthesia 1991-2006
Director, Cardiovascular Recovery Unit 1991-2004
Medical Director, CQI/QA
Department of Anesthesiology 1996-2001
Vice-Chief, Department of Anesthesiology 1995-2002
Medical Director, Respiratory Care 1996-Aug 1, 2008

Cleveland Clinic Foundation, June 1988 - April 1990
Department of Cardiothoracic Anesthesiology
9500 Euclid Ave., Cleveland, Ohio 44195

Staff Anesthesiologist and Critical Care Physician	1988-1990
Division Committee	1989-1990
Director, CT Anesthesia Fellowship	1989-1990
Director, Critical Care Fellowship	1989-1990

Bethesda Naval Hospital, July 1983 - June 1988
8901 Wisconsin Avenue, Bethesda, Maryland 20814

Staff Anesthesiologist and Critical Care Physician	1983-1988
Assistant Professor of Anesthesiology and Medicine	
Uniformed Services Univ. Of Health Sciences	1983-1988
Director of Cardiac Anesthesia	1983-1986
Assistant Head, Critical Care Medicine	1984-1987
Director of the Recovery Room	1987-1988
Director of Quality Assurance, Critical Care	1984-1988
Chairman of Hospital CPR Committee	1987-1988

Military Service:

Commissioned, Ensign, Medical Corps, U.S.N.R.	1975
Meritorious Unit Commendation	1985
Deployment in support of the Grenada Invasion	
Letter of Commendation	1985
Perioperative Care of President Ronald Reagan	
Letter of Commendation	1987
Perioperative Care of First Lady Nancy Reagan	
Honorable Discharge, Commander (Select), M.C., U.S.N.R.	1988

Awards:

Best Doctors List	2003 – 2009
Undergraduate Teaching Award:	
UNCC, College of Health & Human Services	2009
NCSRC Physician of the Year	2006

Publications:

1. Chernow B., Lake CR, Cruess D., Coyle JP, Hughes P., Balestrieri F., Casey, L., Rainey TG, Fletcher JR: The Effect of Ketamine on Catecholamine Levels in Plasma Urine, and CSF. Critical Care Medicine, 10:600-603, 1982.
2. Coyle, JP, Cullen DJ: Anesthetic Management of the Critically Ill. In The Pharmacologic Approach to Critically Ill Patients. ed by Chernow B, and Lake CR: Williams and Wilkens Co., Baltimore, 1983.
3. Chernow B, Lake CR, Cook D, Coyle JP, Hughes P, Coleman M., Zeigler MG: Fenfluramine Lowers Plasma Norepinephrine in Overweight Subjects. J Clin Pharm Res 3 (4), 233-237, 1983.
4. Coyle JP: Anesthesia for the Hypertensive patient. U.S. Navy Medicine, 76:21-24, 1985.
5. Coyle JP, Cullen DJ: Anesthetic Agents in Intensive Care in Postoperative Care Procedures at the Massachusetts General Hospital. ed by Kopfke A and Levy J: Little Brown Publishers, 1986.
6. Zeigler Mg, Chernow B, Woodson LC, Coyle JP, Cruess D, Lake CR: The Effect of Propranolol on Catecholamine Clearance. Clin Pharmacol Ther (40 (1): 116-119, 1986.
7. Hotchkiss RS, Katsamouris AN, Lappas DG, Mikelakas PT, Wilson RS, Long M, Coyle, JP, Brewster D, Greene R: Interpretation of Pulmonary Artery Wedge Pressure and Pullback Blood Gas Determination During Positive End-expiratory Pressure ventilation and Exclusion of the Bronchial Circulation in the Dog. Am Rev Resp Dis 133 (6): 1019-1023, 1989.
8. Coyle JP, Cullen DJ: Anesthesia Pharmacology in Critical Care in The Pharmacologic Approach to Critically Ill Patients. ed by Chernow B: Williams and Wilkens Co., Baltimore, 1989.
9. Cullen DJ, Coyle JP, Teplick R, Long MC, Hotchkiss RS, C: Cardiovascular, Pulmonary, and Renal Effects of Massively Increased Intraabdominal Pressure in Critically Ill Patients. Crit Care Med. 17:118-121, 1989.
10. Coyle JP, Carlin HM, Lake CR, Lee CK, Chernow B: Left Atrial Infusion of Norepinephrine in the Management of Right Ventricular Failure. J Cardiothoracic Anes. 4:80-83, 1990.
11. Cutrone F, Coyle JP, Novoa R, Stewart R, Currie PJ: Severe Dynamic Left Ventricular Outflow Tract Obstruction Following Aortic Valve Replacement diagnosed by Intraoperative Echocardiography. Anesthesiology 72:165-168, 1990.

12. Jorgensen NH, Coyle JP: Intravenous Droperidol Decreases nausea and Vomiting After Alfentanil Anesthesia Without Increasing Recovery Time. J Clinical Anesthesia 2:312-316,1990.
13. Coyle JP: Sedation, Pain Relief and Neuromuscular Blockade in the Postoperative Cardiac Surgical Patient. Seminars in Thoracic and Cardiovascular Surgery 3:81-87, 1991.
14. Coyle JP, Higgins TL: Cardiac Surgery in Principles of Critical Care Medicine. ed. by Hall, Schmidt, and Wood: McGraw-Hill Inc, New York, NY pp1012-1029, 1992.
15. Smith CE, Higgins TL, Kraenzler EJ, Starr NJ, Coyle JP, Licina MG, Blum J: Alpha-drenergic Agonist Drugs, Left Ventricular Function, and Emergence from Cardiopulmonary Bypass. Journal of Cardiothoracic Anesthesia 4:681-686,1990.
16. Higgins TL, Coyle JP: Sedation, Pain Relief and Neuromuscular Blockade in The High Risk Patient: Management of the Critically Ill. ed by Sinah Higgins and Seiner. Williams aand Wilkins, Baltimore, MD, pp 1278-1290, 1995.
17. Higgins TL, Yared JP, Estafanous FG, Coyle JP, Goodale DB - Propofol vs. Midazolam for ICU Sedation After Coronary Artery Bypass Grafting. Critical Care Medicine. 1994.
18. Pollard RJ, Coyle JP, Gilbert, RL, Beck, JE – Intraoperative Awareness in a Regional Medical System. Anesthesiology. 106:269-274, 2007.

Published Abstracts:

1. Chernow B., Zeigler M, Coyle JP, Cruess D, Hughes P, Rainey TG, Lake CR: Beta Adrenergic Mediation of Sympathetic Nervous System Activity Clin Res 29:819A, 1982; and in Crit Care Med 10:221, 1982.
2. Coyle, JP, Teplick RS, Long MC, Davison JK: Respiratory Variations in Systemic Arterial Pressure as an Indicator of Volume Status. Anesthesiology, 1983.
3. Teich S, Coyle JP, Lee C, Chernow B: Conjunctival Oxygen Monitoring During Coronary Artery Bypass Grafting. Critical Care Medicine 13:322, 1985.
4. English JF, Coyle JP, Rainey TG, Wilkens L, Gario J, McCormick C, Zaloga GP: Bedside Laboratory Testing Accurately Reflects Main Hospital Laboratory Results in Critically Ill Patients. Critical Care Medicine 15:379, 1987.
5. Jorgensen NH, Coyle JP: Effect of Intravenous Droperidol Upon Nausea and Recovery Using Alfentanil Anesthesia. Anesth Analg. S139, 1989.

6. Coyle JP, ElDabh E, Shannon-Padua N, Cosgrove DM: Anesthesia experience with Pulmonary Embolectomy and Thromboendarterectomy. Society of Cardiovascular Anesthesiologists 11th Annual Meeting Book, April, 1989.
7. Higgins TL, Barrett C, Riden DJ, Roberts MM, Coyle JP: Influence of Pleural and Mediastinal Chest Tubes on Respiration Following Coronary Artery Bypass Grafting. Chest 96:2, August, 1989 Supplement.
8. Coyle JP, Kamath G, Licina MG, Higgins TL: Factors Affecting Magnesium Levels After Cardiac Surgery. Anesthesiology 71:A192, 1989.
9. Coyle JP, Steele J, Cutrone F, Higgins TL: Patient Controlled Analgesia After Cardiac Surgery. Anesthesiology 71:A192, 1989.
10. Higgins TL, Yared JP, Estafanous FG, Coyle JP, Vassel F, Goodale DB: ICU Sedation Following CABG: Propofol vs Midazolam. American Society of Anesthesiologists Meeting, San Francisco, CA, October 1999.

**Projected Funding for New Degree Program
Bachelor of Science in Neurodiagnostics and Sleep Science
Regular Term 2011-12
(Based on 2010-2011 Change in Student Credit Hours)**

Program Category	Change in Student Credit Hours			Instructional - Position Funding Factors			Instructional Positions Required		
	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral
Category I				708.64	169.52	115.56	0.000	0.000	0.000
Category II				535.74	303.93	110.16	0.000	0.000	0.000
Category III				406.24	186.23	109.86	0.000	0.000	0.000
Category IV				232.25	90.17	80.91	0.000	0.000	0.000

Fringe rates for staff
FICA @ 7.65%
Retirement @ 8.75%
Medical @ \$4,527

Fringes for faculty salaries
FICA @ 7.65%
Retirement @ 11.86%
Medical @ \$4,527

	\$0
	\$0
	\$0
	<u>\$0</u>

Total Positions Required		0.000
Instructional - Position Salary Rate		<u>\$80,189</u>
101-1310 Instructional Salary Amount		\$0
Other Academic Costs	44.89300%	<u>0</u>
Purpose 101 Total Academic Requirements		\$0
Purpose 151 Library	11.48462%	0
Purposes 152, 160, 170 180 General Instit Support	54.04980%	0
Neg Adj Factor	50.00000%	n/a
In-state SCHs	0	
Financial Aid (in-state)	67.99800%	<u>0</u>
Total Requirements		<u>\$0</u>

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM/TRACK

<i>Institution</i>	UNC Charlotte				<i>Date</i>	July 7, 2010	
<i>Program (API#, Name, Level)</i>	51.0999 Neurodiagnostics and Sleep Science						
<i>Degree(s) to be Granted</i>	BS				<i>Program Year</i>	2011-12	
ADDITIONAL FUNDING REQUIRED - BY SOURCE							
	Reallocation of Present Institutional Resources	Enrollment Increase Funds	Federal/State or Other Non-state Funds (Identify)	Donor Education Funds	New Allocations	Total	
101 Regular Term Instruction							
1210 SPA Regular Salaries	\$0			\$17,856		\$17,856	
1110 EPA Non-teaching Salaries						0	
1310 EPA Academic Salaries	0	0	0	112,500		112,500	
Coordinator Stipend Graduate Teaching Assistants							
1810 Social Security			0	8,442		8,442	
1820 State Retirement	0		0	10,207		10,207	
1830 Medical Insurance (3432*X)	0			8,315		8,315	
2000 Supplies and Materials	4,500					4,500	
2600 Office Supplies	4,500					4,500	
3000 Current Services				10,500		10,500	
4000 Fixed Charges						0	
5000 Capital Outlay (Equipment)	0					0	
5100 Office Equipment 5200 EDP Equipment							
TOTAL Regular Term Instruction	\$4,500	\$0	\$0	\$167,820	\$0	\$172,320	
151 Libraries							
5000 Capital Outlay (Equipment)	0	0				0	
5600 Library Book/Journal							
TOTAL Libraries	\$0	\$0	\$0	\$2,000	\$0	\$0	
189 General Institutional Support							
2000 Supplies and Materials						0	
2600 Office Supplies							
3000 Current Services						0	
3200 Communications 3400 Printing & Binding							
5000 Capital Outlay (Equipment)						0	
5100 Office Equipment 5200 EDP Equipment							
TOTAL General Inst. Support	\$0	\$0	\$0	\$0	\$0	\$0	
TOTAL ADDITIONAL COSTS	\$4,500	\$0	\$0	\$169,820	\$0	\$172,320	

NOTE: Accounts may be added or deleted as required.

**Projected Funding for New Degree Program
 Bachelor of Science in Neurodiagnostics and Sleep Science
 Regular Term 2012-13
 (Based on 2011-2012 Change in Student Credit Hours)**

Program Category	Change in Student Credit Hours			Instructional - Position Funding Factors			Instructional Positions Required		
	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral
Category I				708.64	169.52	115.56	0.000	0.000	0.000
Category II				535.74	303.93	110.16	0.000	0.000	0.000
Category III	150			406.24	186.23	109.86	0.369	0.000	0.000
Category IV	20			232.25	90.17	80.91	0.086	0.000	0.000

* No change in overall credit hours due to the presence of students in the Health Information Technology certificate program.

Fringe rates for staff
 FICA @ 7.65%
 Retirement @ 8.75%
 Medical @ \$4,527

Fringes for faculty salaries
 FICA @ 7.65%
 Retirement @ 11.86%
 Medical @ \$4,527

	\$2,793
	\$4,331
	\$2,061
	<u>\$9,185</u>

Total Positions Required		0.455
Instructional - Position Salary Rate		<u>\$80,189</u>
101-1310 Instructional Salary Amount		\$36,514
Other Academic Costs	44.89300%	<u>16,392</u>
Purpose 101 Total Academic Requirements		\$52,906
Purpose 151 Library	11.48462%	6,076
Purposes 152, 160, 170 180 General Instit Support	54.04980%	28,596
Neg Adj Factor	50.00000%	n/a
In-state SCHs	0	
Financial Aid (in-state)	67.99800%	<u>0</u>
Total Requirements		<u>\$87,578</u>

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM/TRACK

Institution	UNC Charlotte	Date	May 31, 2011
Program (API#, Name, Level)	51.0999 Neurodiagnostics and Sleep Science		
Degree(s) to be Granted	BS	Program Year	2012-13

ADDITIONAL FUNDING REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Enrollment Increase Funds	Federal/State or Other Non-state Funds (Identify)	Donor	New Allocations	Total
101 Regular Term Instruction						
1210 SPA Regular Salaries						\$0
1110 EPA Non-teaching Salaries						0
1310 EPA Academic Salaries	0	36,514	0			36,514
1810 Social Security	0	2,793	0			2,793
1820 State Retirement	0	6,792	0			6,792
1830 Medical Insurance		2,061				2,061
2000 Supplies and Materials		2,000				2,000
3000 Current Services		2,746				2,746
5000 Capital Outlay (Equipment)		0				0
5100 Office Equipment						
5200 EDP Equipment						
TOTAL Regular Term Instruction	\$0	\$52,906	\$0		\$0	\$52,906
151 Libraries						
5000 Capital Outlay (Equipment)		6,076				6,076
5600 Library Book/Journal		6,076				
TOTAL Libraries	\$0	\$6,076	\$0		\$0	\$6,076
189 General Institutional Support						
2000 Supplies and Materials		9,500				9,500
2600 Office Supplies		9,500				
3000 Current Services		9,500				9,500
3200 Communications		4,750				
3400 Printing & Binding		4,750				
5000 Capital Outlay (Equipment)		9,596				9,596
5100 Office Equipment		4,800				
5200 EDP Equipment		4,796				
TOTAL General Inst. Support	\$0	\$28,596	\$0		\$0	\$28,596
TOTAL ADDITIONAL COSTS	\$0	\$87,578	\$0		\$0	\$87,578

NOTE: Accounts may be added or deleted as required.

**Projected Funding for New Degree Program
Bachelor of Science in Neurodiagnostics and Sleep Science
Regular Term 2013-2014
(Based on 2012-2013 Change in Student Credit Hours)**

Program Category	Change in Student Credit Hours			Instructional - Position Funding Factors			Instructional Positions Required		
	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral
Category I				708.64	169.52	115.56	0.000	0.000	0.000
Category II				535.74	303.93	110.16	0.000	0.000	0.000
Category III	550			406.24	186.23	109.86	1.354	0.000	0.000
Category IV				232.25	90.17	80.91	0.000	0.000	0.000

Fringe rates for staff
FICA @ 7.65%
Retirement @ 8.75%
Medical @ \$4,527

Fringes for faculty salaries
FICA @ 7.65%
Retirement @ 11.86%
Medical @ \$4,527

	\$8,305
	\$12,876
	\$6,129
	<u>\$27,310</u>

Total Positions Required		1.354
Instructional - Position Salary Rate		<u>\$80,189</u>
101-1310 Instructional Salary Amount		\$108,566
Other Academic Costs	44.89300%	<u>48,739</u>
Purpose 101 Total Academic Requirements		\$157,305
Purpose 151 Library	11.48462%	18,066
Purposes 152, 160, 170 180 General Instit Support	54.04980%	85,023
Neg Adj Factor	50.00000%	n/a
In-state SCHs	0	
Financial Aid (in-state)	67.99800%	<u>0</u>
Total Requirements		<u>\$260,394</u>

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM/TRACK

Institution	UNC Charlotte	Date	May 31, 2011
Program (API#, Name, Level)	51.0999 Neurodiagnostics and Sleep Science		
Degree(s) to be Granted	BS	Program Year	2013-14

ADDITIONAL FUNDING REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Enrollment Increase Funds	Federal/State or Other Non-state Funds (Identify)	Donor Education Funds	New Allocations	Total
101 Regular Term Instruction						
1210 SPA Regular Salaries						\$0
1110 EPA Non-teaching Salaries						0
1310 EPA Academic Salaries	0	108,566	0			108,566
1810 Social Security	0	2,793	0			2,793
1820 State Retirement	0	12,876	0			12,876
1830 Medical Insurance		6,129				6,129
2000 Supplies and Materials		8,000				8,000
3000 Current Services		10,441				10,441
5000 Capital Outlay (Equipment)		8,500				8,500
5100 Office Equipment		500				
5200 EDP Equipment		8,000				
TOTAL Regular Term Instruction	\$0	\$157,305	\$0	\$0	\$0	\$157,305
151 Libraries						
5000 Capital Outlay (Equipment)		18,066				18,066
5600 Library Book/Journal		18,066				
TOTAL Libraries	\$0	\$18,066	\$0	\$0	\$0	\$18,066
189 General Institutional Support						
2000 Supplies and Materials		28,300				28,300
2600 Office Supplies		28,300				
3000 Current Services		28,300				28,300
3200 Communications		14,150				
3400 Printing & Binding		14,150				
5000 Capital Outlay (Equipment)		28,423				28,423
5100 Office Equipment		14,200				
5200 EDP Equipment		14,223				
TOTAL General Inst. Support	\$0	\$85,023	\$0	\$0	\$0	\$85,023
TOTAL ADDITIONAL COSTS	\$0	\$260,394	\$0	\$0	\$0	\$260,394

NOTE: Accounts may be added or deleted as required.

**Projected Funding for New Degree Program
 Bachelor of Science in Neurodiagnostics and Sleep Science
 Regular Term 2014-2015
 (Based on 2013-2014 Change in Student Credit Hours)**

Program Category	Change in Student Credit Hours			Instructional - Position Funding Factors			Instructional Positions Required		
	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral	Undergrad	Masters	Doctoral
Category I				708.64	169.52	115.56	0.000	0.000	0.000
Category II				535.74	303.93	110.16	0.000	0.000	0.000
Category III	420			406.24	186.23	109.86	1.034	0.000	0.000
Category IV				232.25	90.17	80.91	0.000	0.000	0.000

Fringe rates for staff
 FICA @ 7.65%
 Retirement @ 8.75%
 Medical @ \$4,527

Fringes for faculty salaries
 FICA @ 7.65%
 Retirement @ 11.86%
 Medical @ \$4,527

	\$6,342
	\$9,833
	\$4,680
	<u>\$20,855</u>

Total Positions Required		1.034
Instructional - Position Salary Rate		<u>\$80,189</u>
101-1310 Instructional Salary Amount		\$82,905
Other Academic Costs	44.89300%	<u>37,219</u>
Purpose 101 Total Academic Requirements		\$120,124
Purpose 151 Library	11.48462%	13,796
Purposes 152, 160, 170 180 General Instit Support	54.04980%	64,927
Neg Adj Factor	50.00000%	n/a
In-state SCHs	0	
Financial Aid (in-state)	67.99800%	<u>0</u>
Total Requirements		<u>\$198,847</u>

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM/TRACK

Institution	UNC Charlotte	Date	May 31, 2011
Program (API#, Name, Level)	51.0999 Neurodiagnostics and Sleep Science		
Degree(s) to be Granted	BS	Program Year	2014-15

ADDITIONAL FUNDING REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Enrollment Increase Funds	Federal/State or Other Non-state Funds (Identify)	Donor Education Funds	New Allocations	Total
101 Regular Term Instruction						
1210 SPA Regular Salaries						\$0
1110 EPA Non-teaching Salaries						0
1310 EPA Academic Salaries	0	82,905	0			82,905
1810 Social Security	0	2,793	0			2,793
1820 State Retirement	0	9,833	0			9,833
1830 Medical Insurance		4,680				4,680
2000 Supplies and Materials		3,500				3,500
3000 Current Services		11,913				11,913
5000 Capital Outlay (Equipment)		4,500				4,500
5100 Office Equipment		500				
5200 EDP Equipment		4,000				
TOTAL Regular Term Instruction	\$0	\$120,124	\$0	\$0	\$0	\$120,124
151 Libraries						
5000 Capital Outlay (Equipment)		13,796				13,796
5600 Library Book/Journal		13,796				
TOTAL Libraries	\$0	\$13,796	\$0	\$0	\$0	\$13,796
189 General Institutional Support						
2000 Supplies and Materials		21,600				21,600
2600 Office Supplies		21,600				
3000 Current Services		21,600				21,600
3200 Communications		10,800				
3400 Printing & Binding		10,800				
5000 Capital Outlay (Equipment)		21,727				21,727
5100 Office Equipment		10,900				
5200 EDP Equipment		10,827				
TOTAL General Inst. Support	\$0	\$64,927	\$0	\$0	\$0	\$64,927
TOTAL ADDITIONAL COSTS	\$0	\$198,847	\$0	\$0	\$0	\$198,847

NOTE: Accounts may be added or deleted as required.



**Clinical Neurophysiology Labs
Sleep Disorders Center**

May 26, 2010

Mitchell L. Cordova
Professor and Chairperson Department of Kinesiology
The University of North Carolina at Charlotte
9201 University City Blvd.
Charlotte, NC 28223

Dear Dr. Cordova:

The University of North Carolina (UNC) Hospitals is in support of the Neurodiagnostics and Sleep Science (NDSS) baccalaureate program being proposed at the University of North Carolina at Charlotte and in collaboration with the University of North Carolina at Chapel Hill. Upon request by the NDSS program once the degree program is established we will initiate a student contract between the program and UNC Hospitals Clinical Neurophysiology Labs and Sleep Disorders Center and providing that all criteria is met than UNC Hospitals is willing to provide clinical instruction in its Clinical Neurophysiology Laboratory and Sleep Disorders Center according to the current plan of study of the NDSS program at The University of North Carolina at Charlotte.

Please do not hesitate to call if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Kyle Kalkowski".

Kyle K. Kalkowski
Director
Clinical Neurophysiology Labs
UNC Hospitals
Chapel Hill, NC 27514
(919) 966-1686



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

OFFICE OF THE EXECUTIVE VICE CHANCELLOR
AND PROVOST

104 SOUTH BUILDING
CAMPUS BOX 3000
CHAPEL HILL, NC 27599-3000

T 919.962.2198
F 919.962.1593

October 6, 2010

Dr. Joan Lorden
Provost and Vice Chancellor for Academic Affairs
The University of North Carolina at Charlotte
Denny 118
9201 University City Boulevard
Charlotte, NC 28223-0001

Dear Joan:

I am pleased to enclose a partially executed Memorandum of Understanding between The University of North Carolina at Chapel Hill's Department of Allied Health Sciences and The University of North Carolina at Charlotte's Department of Kinesiology. This partnership between our School of Medicine and your College of Health and Human Services will deliver specialized, on-line curricula to advanced practice professionals in the field of neurodiagnostics and sleep science.

Joan, this new baccalaureate degree is an excellent example of inter-institutional collaboration and vision, and I appreciate the oversight you provided on behalf of your campus. I look forward to receiving a copy of the fully-executed agreement once you have obtained all the required signatures.

Sincerely,

Bruce W. Carney
Executive Vice Chancellor
and Provost

BWC:st
copy: Chancellor Holden Thorp
Dean Bill Roper
Dr. Lee McLean

MEMORANDUM OF UNDERSTANDING

BETWEEN

The University of North Carolina at Chapel Hill, School of Medicine, Department of Allied Health Sciences

AND

The University of North Carolina at Charlotte, College of Health & Human Services, Department of Kinesiology

I. PURPOSE

The purpose of this Memorandum of Understanding is to define the working relationship between The University of North Carolina at Chapel Hill, School of Medicine, Department of Allied Health Sciences (DAHS) and The University of North Carolina at Charlotte, College of Health & Human Services, Department of Kinesiology (CHHS). This agreement will clarify the collaborative roles and responsibilities of the two institutions with respect to the establishment and delivery of an on-line Bachelors Degree in Neurodiagnostics and Sleep Science (NDSS).

DAHS has developed a specialized curricular content for a new baccalaureate degree to prepare advanced practice professionals in the field of Neurodiagnostics and Sleep Science (NDSS). The need for this new degree and level of preparation has become apparent over the past several years and is well documented in an initial "Intent to Plan" proposal prepared by the DAHS faculty. Ideally, this content would be offered in the form of a primarily on-line, post-professional degree for currently registered sleep technologists and neurodiagnostic technologists who already have their AS or AAS degrees (preferably earned from one of the NC Community College END or PSG programs.) CHHS has been successful in designing and delivering a very parallel, post-professional baccalaureate degree for practicing respiratory care professionals in North Carolina.

Our mutual goal is to establish a collaborative partnership through which CHHS will sponsor this new degree and offer approximately four of the required upper division undergraduate courses. DAHS will deliver and be responsible for approximately eight of the specialized neurodiagnostics and sleep science courses. DAHS's responsibility includes course management, content evaluation, and course revision.

II. LEGAL STATUS

All of the provisions of this MOU and any addenda are subject to mutual agreement of the parties, to the availability of appropriate funding at each institution, to review by the Office of University Counsel and approval by the Provost at each participating campus, and to review and approval by the UNC General Administration. This MOU will remain in effect until terminated or amended by mutual consent. Both parties to this MOU have the right to terminate this MOU by informing the partner in writing six months prior to the desired termination date.

III. TERM OF THIS MEMORANDUM

The effective date of this memorandum shall be the date of execution and it shall continue in effect until terminated by either party or modified by written amendment executed by both parties.

IV. ROLES AND RESPONSIBILITIES

A. The DAHS will:

1. Provide CHHS with access to editable versions of documents prepared by their faculty that are needed for the establishment of a new NDSS degree program in the UNC system (i.e., *Intent to Plan* and *Request to Establish*).
2. Provide assistance if requested to faculty at CHHS in the final preparation and submission of these forms on behalf of UNC-Charlotte
3. Advertise and recruit students for this new degree program at UNC-Charlotte
4. Provide the full time services of a DAHS faculty member qualified in NDSS , Mary Ellen Wells (or should she be or become unavailable, of a substitute NDSS faculty member reasonably acceptable to CHHS), who will assume responsibility for overall program coordination, NDSS specialty course development and delivery, assisting with applicant screening , making admission recommendations, submitting student grades in a timely manner, and related teaching and program administrative duties as may be agreed through further addenda to this MOU.
5. Disseminate information about this collaborative degree program throughout the UNC system and the relevant professional community, and list the program on its own website, noting the contributions of each partner institution.
6. Submit needed documentation to allow students in the NDSS program to access needed specialty content through the UNC Chapel Hill Health Sciences Library
7. Provide access to the facility and faculty resources of the UNC Hospitals Sleep Disorders Center and UNC Clinical Neurophysiology Laboratory, including the services of the Medical Director of this program (Dr. Bradley Vaughn), as described in the curriculum plan for this degree.

B. The NDSS specialty courses will be cross listed at UNC- CH

C. DAHS will be responsible for the course material content and quality assurance for the specialty courses.

D. The CHHS will:

1. Submit the *Intent to Plan* and *Request to Establish* documents in accordance with the policies and timelines established for UNC-Charlotte and the UNC General Administration.
2. Assist with the process of securing approval and listing of new NDSS courses by the Registrar at UNC-Charlotte; and securing an appropriate adjunct or joint appointment for Mary Ellen Wells (or substitute DAHS faculty member) at UNC-Charlotte.
3. Plan for the additional student slots needed in CHHS health science courses that will be required for completion of the NDSS degree program.

4. Provide the Information and Education Technology infrastructure and support needed for delivery of this on-line degree program.
5. Advertise this new collaborative degree program on its website and in other materials advertising related health science degree programs, identifying UNC-Chapel Hill as a partner in this offering, and noting the contributions of each partner institution.
6. Admit students accepted into this program; and confer the designated degree upon their successful completion of the program.
7. Track student credit hours projected and actually generated through this degree program, and request enrollment growth funding from the UNC General Administration for the ongoing support of the program

V. FINANCIAL CONSIDERATIONS

There will be no exchange of tuition funds between the participating institutions. The DAHS will contribute the time and expertise of its NDSS faculty member, Mary Ellen Wells, as in-kind support for this collaborative partnership during the initial degree start up period, which shall be until such time as enrollment growth funding for the CHHS will support this cost, or through December 31, 2011, whichever comes first.

During this same start up period, DAHS will provide funding for adjunct faculty needed to support expanded capacity of existing CHHS health science courses that will be required for students enrolled in the NDSS degree program. This funding will not exceed \$15,000 per academic year, and will continue until such time as enrollment growth funding for the CHHS will support this cost, or through December 31, 2011, whichever comes first.

It is expected that the this program will generate new student credit hours sufficient to maintain the local program costs at CHHS; and to support a contractual arrangement with DAHS that will provide funding to support Ms. Wells' time commitment to the program. The specific terms of such an arrangement will be determined at a later date and documented in an addendum to this MOU or through a more formal, inter-institutional contract.

V. SIGNATURES

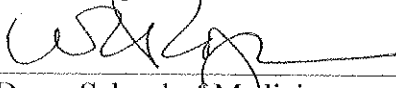
The University of North Carolina
at Chapel Hill

The University of North Carolina
at Charlotte



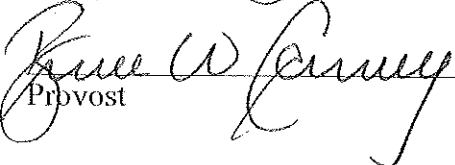
Chair, Dept. of Allied Health Sciences

Chair, Dep't of Kinesiology



Dean, School of Medicine

Dean, College of Health & Human Services



Provost

Provost

MEMORANDUM OF UNDERSTANDING

BETWEEN

The University of North Carolina at Chapel Hill, School of Medicine, Department of Allied Health Sciences

AND

The University of North Carolina at Charlotte, College of Health & Human Services, Department of Kinesiology

I. PURPOSE

The purpose of this Memorandum of Understanding is to define the working relationship between The University of North Carolina at Chapel Hill, School of Medicine, Department of Allied Health Sciences (DAHS) and The University of North Carolina at Charlotte, College of Health & Human Services, Department of Kinesiology (CHHS). This agreement will clarify the collaborative roles and responsibilities of the two institutions with respect to the establishment and delivery of an on-line Bachelors Degree in Neurodiagnostics and Sleep Science (NDSS).

DAHS has developed a specialized curricular content for a new baccalaureate degree to prepare advanced practice professionals in the field of Neurodiagnostics and Sleep Science (NDSS). The need for this new degree and level of preparation has become apparent over the past several years and is well documented in an initial "Intent to Plan" proposal prepared by the DAHS faculty. Ideally, this content would be offered in the form of a primarily on-line, post-professional degree for currently registered sleep technologists and neurodiagnostic technologists who already have their AS or AAS degrees (preferably earned from one of the NC Community College END or PSG programs.) CHHS has been successful in designing and delivering a very parallel, post-professional baccalaureate degree for practicing respiratory care professionals in North Carolina.

Our mutual goal is to establish a collaborative partnership through which CHHS will sponsor this new degree and offer approximately four of the required upper division undergraduate courses. DAHS will deliver and be responsible for approximately eight of the specialized neurodiagnostics and sleep science courses. DAHS's responsibility includes course management, content evaluation, and course revision.

II. LEGAL STATUS

All of the provisions of this MOU and any addenda are subject to mutual agreement of the parties, to the availability of appropriate funding at each institution, to review by the Office of University Counsel and approval by the Provost at each participating campus, and to review and approval by the UNC General Administration. This MOU will remain in effect until terminated or amended by mutual consent. Both parties to this MOU have the right to terminate this MOU by informing the partner in writing six months prior to the desired termination date.

III. TERM OF THIS MEMORANDUM

The effective date of this memorandum shall be the date of execution and it shall continue in effect until terminated by either party or modified by written amendment executed by both parties.

IV. ROLES AND RESPONSIBILITIES

A. The DAHS will:

1. Provide CHHS with access to editable versions of documents prepared by their faculty that are needed for the establishment of a new NDSS degree program in the UNC system (i.e., *Intent to Plan* and *Request to Establish*).
2. Provide assistance if requested to faculty at CHHS in the final preparation and submission of these forms on behalf of UNC-Charlotte
3. Advertise and recruit students for this new degree program at UNC-Charlotte
4. Provide the full time services of a DAHS faculty member qualified in NDSS , Mary Ellen Wells (or should she be or become unavailable, of a substitute NDSS faculty member reasonably acceptable to CHHS), who will assume responsibility for overall program coordination, NDSS specialty course development and delivery, assisting with applicant screening , making admission recommendations, submitting student grades in a timely manner, and related teaching and program administrative duties as may be agreed through further addenda to this MOU.
5. Disseminate information about this collaborative degree program throughout the UNC system and the relevant professional community, and list the program on its own website, noting the contributions of each partner institution.
6. Submit needed documentation to allow students in the NDSS program to access needed specialty content through the UNC Chapel Hill Health Sciences Library
7. Provide access to the facility and faculty resources of the UNC Hospitals Sleep Disorders Center and UNC Clinical Neurophysiology Laboratory, including the services of the Medical Director of this program (Dr. Bradley Vaughn), as described in the curriculum plan for this degree.

B. The NDSS specialty courses will be cross listed at UNC- CH

C. DAHS will be responsible for the course material content and quality assurance for the specialty courses.

D. The CHHS will:

1. Submit the *Intent to Plan* and *Request to Establish* documents in accordance with the policies and timelines established for UNC-Charlotte and the UNC General Administration.
2. Assist with the process of securing approval and listing of new NDSS courses by the Registrar at UNC-Charlotte; and securing an appropriate adjunct or joint

appointment for Mary Ellen Wells (or substitute DAHS faculty member) at UNC-Charlotte.

3. Plan for the additional student slots needed in CHHS health science courses that will be required for completion of the NDSS degree program.
4. Provide the Information and Education Technology infrastructure and support needed for delivery of this on-line degree program.
5. Advertise this new collaborative degree program on its website and in other materials advertising related health science degree programs, identifying UNC-Chapel Hill as a partner in this offering, and noting the contributions of each partner institution.
6. Admit students accepted into this program; and confer the designated degree upon their successful completion of the program.
7. Track student credit hours projected and actually generated through this degree program, and request enrollment growth funding from the UNC General Administration for the ongoing support of the program

V. FINANCIAL CONSIDERATIONS

There will be no exchange of funds between the participating institutions. The DAHS will contribute the time and expertise of its NDSS faculty member, Mary Ellen Wells, as in-kind support for this collaborative partnership during the initial degree start up period, which shall be until such time as enrollment growth funding for the CHHS will support this cost, but no later than 18 months from the date the Board of Governors approves UNC-Charlotte's Request to Establish this degree. After the Board of Governors approves the Establishment of this program, DAHS will provide funding for adjunct faculty needed to support expanded capacity of existing CHHS health science courses that will be required for students enrolled in the NDSS degree program. This funding will not exceed \$15,000 per academic year, and will continue until such time as enrollment growth funding for the CHHS will support this cost, but no later than 18 months from the date the Board of Governors approves UNC-Charlotte's Request to Establish this degree.

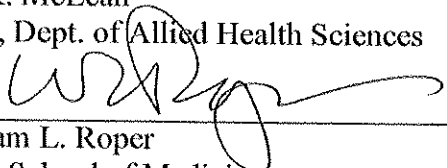
It is expected that the this program will generate new student credit hours sufficient to maintain the local program costs at CHHS; and to support a contractual arrangement with DAHS that will provide funding to support Ms. Wells' time commitment to the program. The specific terms of such an arrangement will be determined at a later date and documented in an addendum to this MOU or through a more formal, inter-institutional contract.

VI. SIGNATURES

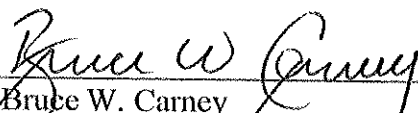
The University of North Carolina
at Chapel Hill



Lee K. McLean
Chair, Dept. of Allied Health Sciences

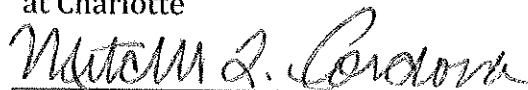


William L. Roper
Dean, School of Medicine




Bruce W. Carney
Executive Vice Chancellor and Provost


The University of North Carolina
at Charlotte



Mitchell L. Cordova
Chair, Dept. of Kinesiology



Jane B. Neese
Interim Dean, College of Health & Human
Services



Joan F. Lorden
Provost and Vice Chancellor for Academic
Affairs



UNC CHARLOTTE
J. Murrey Atkins Library

Consultation on Library Holdings

To: Mitch Cordova

From: Jean Hiebert

Date: April 10, 2011

Subject: Sleep Neuroscience and Atkins Library Holdings

Summary of Librarian's Evaluation of Holdings:

Evaluator: Jean Hiebert

Date: 4/10/11

Please Check One:

Holdings are superior

Holdings are adequate

Holdings are adequate only if Dept. purchases additional items.

Holdings are inadequate

Comments:

Jean Hiebert
Evaluator's Signature

4/10/11
Date

UNC Charlotte Atkins Library Holdings - B.S. Degree in Neurodiagnostics & Sleep Science

Advances in sleep research	edited by Elliot D. Weitzman	1974
An evolutionary psychology of sleep and dreams	McNamara, Patrick	2004
Atlas of sleep medicine	Chokroverty, Sudhansu	2005
Basic sleep mechanisms	Edited by Olga Petre-Quadens [and] John D. Schlag	1974
Behavioral sleep medicine [electronic resource].		2003
Birds asleep	Skutch, Alexander F.	1989
Brain mechanisms of sleep	editors, Dennis J. McGinty ... [et al.].	1985
Brain mechanisms of sleep	editors, Dennis J. McGinty	1985
Brainstem control of wakefulness and sleep	Mircea Steriade and Robert W. McCarley	1990
Circadian clocks	Moore	2001
Clinical aspects of sleep and sleep disturbance	edited by Terrence L. Riley	1985
Clinical physiology of sleep	edited by Ralph Lydic, Julien F. Biebuyck.	1988
Clinical physiology of sleep	edited by Ralph Lydic, Julien F. Biebuyck	1988
Cultural issues and children's sleep : international perspectives : International Pediatric Sleep Education Task Force, June 3, 2003 Chicago, Illinois	Judith A. Owens, supplement editor	2005
Eating, sleeping, and sexuality : treatment of disorders in basic life functions	edited by Michael R. Zales	1982
Encyclopedia of sleep and sleep disorders	Thorpy, Michael J.	1991
Evaluation and treatment of insomnia	Kales, Anthony.	1984
Functions of dreaming	Alan Moffitt, Milton Kramer, and Robert Hoffmann, editors.	1993
Good night's sleep : a step-by-step program for overcoming insomnia and other sleep problems	Maxmen, Jerrold S.	1981
Human sleep : research and clinical care	Mendelson, Wallace B.	1987
Human sleep and its disorders	Mendelson, Wallace B.	1977
Insomnia, assessment and management in primary care	National Center on Sleep Disorders Research, National Heart, Lung, and Blood Institute, National Institutes of Health,	1998
Insomniac	Greene, Gayle	2008
Integration of behavioral and relaxation approaches into the treatment of chronic pain and insomnia : January 1985 through July 1995 : 1147 citations	Glock, Martha.	1995
Journal of clinical sleep		

Losing sleep : how your sleeping habits affect your life	Dotto, Lydia	1990
Lung biology in health and disease. Vol. 133, Regulation of sleep and circadian rhythms [electronic resource]	/ edited by Fred W. Turek, Phyllis C. Zee	1999
Manifestations and management of chronic insomnia in adults [electronic resource]	Buscemi N	2005
Mind awake and asleep ; The mind hidden and divided [videorecording Neurobiology of sleep and memory : proceedings of a conference held in Mexico City in March 1975	editors, René R. Drucker-Colín, James L. McGaugh	1989
Neuronal substrates of sleep and epilepsy	Steriade, Mircea	1977
Neuropsychology of sleep and dreaming	edited by John S. Antrobus, Mario Bertini.	2003
Night : night life, night language, sleep, and dreams	Alvarez, A.	1993
Obstructive sleep apnea : recognition and management in primary care	James F. Pagel	1995
Obstructive sleep apnea. Diagnosis and treatment	edited by Clete A. Kushida	2008
Obstructive sleep apnea. Pathophysiology, comorbidities, and consequences	edited by Clete A. Kushida	2007
Obstructive sleep apnea. Pathophysiology, comorbidities, and consequences	edited by Clete A. Kushida	2007
Overcoming insomnia : a medical program for problem sleepers	Sweeney, Donald M	1989
Philosophical essays on dreaming	edited by Charles E. M. Dunlop	1977
Physiologic nature of sleep	edited by] Pier Luigi Parmeggiani, Ricardo A. Velluti	2005
Physiologic nature of sleep	[edited by] Pier Luigi Parmeggiani, Ricardo A. Velluti.	1992
Physiological and psychological aspects of night and shift work	Wojtczak-Jaroszowa, Jadwiga	1977
Physiology in sleep	edited by John Orem, Charles D. Barnes	1980
Physiology in sleep	edited by John Orem, Charles D. Barnes	1980
Problems of sleep and dream in children	Harms, Ernest	1964
Psychophysiological aspects of sleep : proceedings of the Third International Congress of Sleep Research	edited by Ismet Karacan	1981
Regulation of Tris-treated sleepwear : hearings before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, House of Representatives, Ninety-seventh Congress, first session, April 15 and June 4, 1981	United States. Congress. House. Committee on Energy and Commerce. Subcommittee on Oversight and Investigations. Delegation to Latvia on the State of the Environment	1981
Relief from insomnia : getting the sleep of your dreams	Morin, Charles M	1995
Review of sleep medicine	edited by] Teri J. Barkoukis, Alon Y. Avidan	2007
Review of sleep medicine	[edited by] Teri J. Barkoukis, Alon Y. Avidan	2007

Sleep & breathing [electronic resource] : international journal of the science and practice of sleep medicine.		
Sleep and aging : a research-based guide to sleep in later life	Morgan, Kevin	1987
Sleep and biological rhythms [electronic resource].		2003
Sleep and biological rhythms [electronic resource].		2003
Sleep and breathing in children [electronic resource] : a developmental approach	edited by Gerald M. Loughlin ; John L. Carroll ; Carole L. Marcus	2000
Sleep and dreaming	Jacob Empson	1993
Sleep and dreams : a sourcebook	edited by] Jayne Gackenbach.	1987
Sleep and its secrets : the river of crystal light	Aronoff, Michael S.	1991
Sleep and respiration : proceedings of the First International Symposium on Sleep and Respiration, held in Banff, Alberta, April 1-4, 1989	editors, Faiq G. Issa, Paul M. Suratt, John E. Remmers.	1990
Sleep and respiration in aging adults : proceedings of the Second International Symposium on Sleep and Respiration, held at South Shore Harbour Resort and Conference Center, League City, Texas, March 9-13, 1991	editors, Samuel T. Kuna, Paul M. Suratt, John E. Remmers	1991
Sleep and society : sociological ventures into the (un)known	Simon J. Williams.	2005
Sleep and the maturing nervous system	Edited by Carmine D. Clemente, Dominick P. Purpura [and] Florence E. Mayer.	1972
Sleep and wakefulness	Kleitman, Nathaniel, Committee on Sleep Medicine and Research, Board on Health Sciences Policy	1963 2006
Sleep disorders and sleep deprivation : an unmet public health problem		
Sleep disorders sourcebook : basic consumer health information about sleep and its disorders including insomnia, sleepwalking, sleep apnea, restless leg syndrome, and narcolepsy; along with data about shiftwork and its effects, information on the societal costs of sleep deprivation, descriptions of treatment options, a glossary of terms, and resource listings for additional help	edited by Jenifer Swanson	1999
Sleep mechanisms and functions in humans and animals : an evolutionary perspective	edited by Andrew Mayes	1983
Sleep medicine	Christian Guilleminault	2010
sleep medicine reviews [electronic resource]		
Sleep peptides : basic and clinical approaches	edited by Shojiro Inoué and D. Schneider-Helmert	1988
Sleep research; a critical review	Freemon, Frank	1972
Sleep thieves : an eye-opening exploration into the science and mysteries of sleep	Coren, Stanley	1996

Sleep, dreams, and arousal	Murray, Edward R.	1965
Sleep, its nature and physiological organization	Koella, Werner P	1967
Sleep, sleep disorders, and biological rhythms [electronic resource]	[writing team, Charles Amlaner ... et al.].	2003
Sleep, sleep disorders, and biological rhythms [electronic resource]	writing team, Charles Amlaner ... et al	2003
Sleep, sleepiness, and performance	Monk, Timothy	1991
Sleep/wake disorders : natural history, epidemiology, and long- term evolution	editors, Christian Guilleminault, Elio Lugaresi	1983
Sleep: an experimental approach	Webb, Wilse B	1968
Sleep: physiology & pathology; a symposium	Edited by Anthony Kales	1969
Sleepfaring : a journey through the science of sleep	Horne, James	2006
Sleeping and waking disorders : indications and techniques	Guilleminault, Christian	1982
Sleeping brain : proceedings of the symposia of the first international congress of the Association for the Psychophysiological Study of Sleep, Bruges, Belgium, June 19-24, 1971	Association for the Psychophysiological Study of Sleep.	1971
Sleep-talking : psychology and psychophysiology	Arkin, Arthur M	1981
Somnologie [electronic resource]		
Treating sleep disorders : principles and practice of behavioral sleep medicine	edited by Michael L. Perlis, Kenneth L. Lichstein.	2003
Understanding sleep : the evaluation and treatment of sleep disorders	edited by Mark R. Pressman, William C. Orr	1997
Understanding sleep : the evaluation and treatment of sleep disorders	edited by Mark R. Pressman, William C. Orr.	1997
Understanding sleeplessness : perspectives on insomnia	Neubauer, David N	2003
Your guide to healthy sleep [electronic resource]	U.S. Dept. of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute	2005

TITLE	AUTHOR
1 A good night's sleep.	
2 A manual of standardized terminology, techniques and scoring system for sleep stages of human subjects / Allan Rechtschaffen and Anthony Kales, editors.	
3 A primer on sleep and dreaming / Rosalind Dymond Cartwright.	Cartwright, Rosalind Dymond.
4 A study of sleep patterns of a group of psychiatric patients who were transferred from a racially segregated environment to one which was racially desegregated / by Rose Geraldine George.	George, Rose Geraldine.
5 A treatise on headache and neuralgia including spinal irritation and a disquisition on normal and morbid sleep / by J. Leonard Corning.	Corning, J. Leonard (James Leonard), 1855-1923.
6 A tune concept of the brain and behaviour, by Paul D. MacLean. Including Psychology of memory and Sleep and dreaming papers presented at Queen's University, Kingston, Ontario, February 1969, by V. A. Kral and others.	MacLean, Paul D.
7 AE quid rAvent nos enfants? English: "What do children dream?" / GA@rard BIA@ndonu translated by Sophie Leighton.	Bleandonu, GA@rard.
8 ABC of sleep disorders / edited by Colin M. Shapiro with contributions by William C. Dement ... [et al.]	
9 Abnormalities of respiration during sleep : diagnosis, pathophysiology, and treatment / edited by Eugene C. Fletcher.	
10 Adolescent sleep needs and school starting times / edited by Kyta L. Wahlstrom.	
11 Adolescent sleep patterns : biological, social, and psychological influences / edited by Mary A. Carskadon.	
12 Advances in sleep research (series)	
13 Advances in sleep research, edited by Elliot D. Weitzman.	
14 An evolutionary psychology of sleep and dreams / Patrick McNamara.	McNamara, Patrick, 1956-
15 Aesber Nachtwandel und Mondsucht eine medizinisch-literarische Studie.	Sadger, J.
16 Aesber Nachtwandel und Mondsucht : eine medizinisch-literarische Studie / von J. Sadger.	Sadger, J.
17 Aristotle on sleep and dreams : a text and translation with introduction, notes and glossary / (edited by) David Gallop.	Aristotle.
18 Aspects of human efficiency: diurnal rhythm and loss of sleep: the proceedings of a conference held at Strasbourg in July 1970 under the aegis of the NATO Scientific Affairs Division edited by W. P. Colquhoun.	
19 Atlas of sleep medicine in infants and children / by Stephen H. Sheldon, Susan Riter, Mark Detrojan.	
20 A-voll, il, jui, il, jui, il, ja sna. English: "Evolution of sleep: stages of the formation of the 'wakefulness-sleep' cycle in vertebrates / Ida Gavrilovna Karmanova translation from Russian by A.I. Koryushkin and O.P. Uchastkin with editorial assistance by Werner P. Koella."	Karmanova, I. G. (Ida Gavrilovna)
21 Awakening and sleep-wake cycle across development / edited by Piero Salzarulo, Gianluca Ficca.	
22 Basic sleep mechanisms. Edited by Olga Petre-Quadens [and] John D. Schlaag.	NATO Advanced Study Institute (1971 : Bruges, Belgium)
23 Behavioral treatment for persistent insomnia / Patricia Lacks.	Lacks, Patricia
24 Biological rhythms and mental disorders / editors David J. Kupfer, Timothy H. Monk, Jack D. Barchas.	
25 Biological rhythms, sleep and shift work / edited by Laverne C. Johnson ... [et al.]	
26 Biological rhythms, sleep, and performance / edited by Wise B. Webb.	
27 Birds asleep / Alexander F. Skutch illustrations by N. John Schmitt.	Skutch, Alexander Frank, 1904-2004.
28 Brain mechanisms of sleep / editors Dennis J. McGinty ... [et al.]	
29 Brainstem control of wakefulness and sleep / Mircea Steriade and Robert W. McCarley.	Steriade, Mircea.
30 Breathing disorders in sleep / (edited by) Walter T. McNicholas, Eliot A. Philipson.	
31 Breathing disorders of sleep / edited by Norman H. Edelman, Teodoro V. Santiago.	
32 C. L. Dellums, international president of the Brotherhood of Sleeping Car Porters and civil rights leader : an interview / conducted by Joyce Henderson with an introd. by Tarea Hall Pittman.	Dellums, C. L. (Cottrell Laurence)
33 Can drivers afford to fall asleep at the wheel? - relationship between awareness of sleepiness and ability to predict sleep onset / Anna Itoi ... [et al.]	
34 Case studies in insomnia / edited by Peter J. Hauri with a foreword by William C. Dement.	
35 Children's sleep : a series of studies on the influence of motion pictures normal age, sex, and seasonal variations in motility experimental insomnia the effects of coffee and the usual flicker limens of children. [By] Samuel Renshaw, Vernon L. Miller [and] Dorothy P. Marquis.	Renshaw, Samuel, 1892-1981.
36 Ciba Foundation Symposium on the Nature of Sleep. Editors for the Ciba Foundation: G.E.W. Woistenholme and Maeve O'Connor.	Ciba Foundation Symposium on the Nature of Sleep (1960 : London, England)
37 Clinical handbook of insomnia / edited by Hrayr P. Attarian foreword by Mark W. Mahowald.	
38 Clinical handbook of sleep disorders / Antonio Culebras.	Culebras, A.
39 Clinical handbook of sleep disorders in children / edited by Charles E. Schaefer.	
40 Clinical physiology of sleep / edited by Ralph Lydic, Julien F. Biebuyck.	
41 Clinical sleep disorders / editors Paul R. Carney, Richard B. Berry, James D. Geyer.	
42 Clinician's guide to sleep disorders / edited by Nathaniel F. Watson, Bradley V. Vaughn.	
43 Concise guide to evaluation and management of sleep disorders / Martin Reite, John Ruddy, Kim Nagel.	Reite, Martin.
44 Concise guide to evaluation and management of sleep disorders / Martin Reite, Kim Nagel, John Ruddy.	Reite, Martin.
45 Continuous positive airway pressure for the treatment of obstructive sleep apnea in adults / [H. Handelsman, E. Carter].	Handelsman, Harry.
46 Continuous spikes and waves during slow sleep, electrical status epilepticus during slow sleep : acquired epileptic aphasia and related conditions : colloquium of the Pierfranco e Luisa Maniani Foundation, Milan, in cooperation with International School of Neurological Sciences, San Servolo, Venice, Venice, San Servolo, 15-16 October 1993 / edited by A. Beaumont ... [et al.]	
47 Control of breathing during sleep and anesthesia / edited by W.A. Karczewski ... [et al.]	International Symposium on Control of Breathing during Sleep and Anesthesia (1987 : Warsaw, Poland)
48 Counting sheep : the science and pleasures of sleep and dreams / Paul Martin.	Martin, Paul R., 1951-
49 Current research in hypnopaedia. Edited by F. Rubin.	Rubin, Frederick.
50 Current research on sleep and dreams.	Luze, Gay Gaer.
51 De la cause du sommeil lucide, ou A%tude de la nature de l'homme / Faria.	Faria, JosA@ CustA%dio de, 1756-1819.
52 Die Nacht des Schlafes in der griechisch-A%mischen Welt : eine Untersuchung der mythologischen und physiologischen Aspekte der antiken Standpunkte / Petra Strobl.	Strobl, Petra.
53 Dreaming : an introduction to the science of sleep / J. Allan Hobson.	Hobson, J. Allan, 1933-
54 Dreaming.	Malcolm, Norman, 1911-
55 Dreaming.	Malcolm, Norman, 1911-
56 Du sommeil, des rAves et du somnambulisme dans l'A%tat de santA% et de maladie / M.-M.-A. Macario.	Macario, Maurice Martin Antonin, b. 1813.
57 El Olamah ha-á "asum shel ha-shenah. English: "The enchanted world of sleep / Peretz Lavie translated by Anthony Beris."	Lavie, P. (Peretz), 1949-
58 Eating, sleeping, and sex / edited by Albert J. Stunkard, Andrew Baum.	
59 Eating, sleeping, and sexuality : treatment of disorders in basic life functions / edited by Michael R. Zales.	
60 Electroencephalography (EEG) of human sleep: clinical applications [by] Robert L. Williams, Ismet Karacan [and] Carolyn J. Hursch.	Williams, Robert L. (Robert Leon), 1922-
61 Electrotherapeutic sleep and electroanesthesia. Proceedings of the first international symposium Graz, Austria, 12-17 September, 1966. Editors F. M. Wageneder [and] S. Schuy. In collaboration with J. NussM%ller, J. Clifton-Brock [and] B. M. Q. Weaver.	
62 Encyclopedia of sleep and dreaming / Mary A. Carskadon, editor in chief.	
63 ErmA%dung, Schlaf und Traum mit BeitrA%gen von J. Aschoff [u.a.] Hrsg. von Walter Baust.	Baust, Walter.
64 Ethnologie de la chambre A. coucher / Pascal Dibie.	Dibie, Pascal.
65 Evaluating sleep in infants and children / Stephen H. Sheldon.	Sheldon, Stephen H.
66 Evaluation and treatment of insomnia / Anthony Kales, Joyce D. Kales.	Kales, Anthony.
67 Everybody's guide to natural sleep : a drug-free approach to overcoming insomnia and other sleep disorders / Philip Goldberg and Daniel Kaufman.	Goldberg, Philip, 1944-
68 Facts about problem sleepiness.	
69 Fatal familial insomnia - inherited prion diseases, sleep, and the thalamus / editors, Christian Guilleminault ... [et al.]	
70 Geheimnis des Schlafes. English: "Secrets of sleep / Alexander BorbA%ly translated by Deborah Schneider."	BorbA%ly, Alexander A.
71 Geschichte der Nacht / Walter Seitter.	Seitter, Walter.
72 Handbook of sleep disorders / edited by Michael J. Thorpy.	
73 Handbook of sleep medicine / John M. Shneerson.	Shneerson, John.
74 Handbook of sleep-related breathing disorders / J.R. Stradling.	Stradling, John R.
75 Healthy sleep habits, happy child / Marc Weissbluth.	Weissbluth, Marc.
76 How to help your shift workers wake up and get some sleep : improve their performance at work, at home, and on the road.	
77 Human brainwaves : the psychological significance of the electro-encephalogram / Jacob Empson.	Empson, Jacob, 1944-
78 Human sleep : research and clinical care / Wallace B. Mendelson.	Mendelson, Wallace B.
79 Human sleep and its disorders / Wallace B. Mendelson, J. Christian Gillin, and Richard Jed Wyatt.	Mendelson, Wallace B.
80 Hypnagogia : the unique state of consciousness between wakefulness and sleep / Andreas Mavromatis.	Mavromatis, Andreas.
81 Insomnia : its causes and treatment / by James Sawyer.	Sawyer, James, Sr., 1844-1920.
82 Insomnia : psychological assessment and management / Charles M. Morin foreword by William C. Dement.	Morin, Charles M.
83 Insomnia, assessment and management in primary care.	
84 Insomniac / Gavly Greene.	Greene, Gavly, 1943-
85 Insomniacs of the world, goodnight : a bedside book. Illustrations by Michael K. Frith.	Rubinsten, Hilary.
86 Integration of behavioral and relaxation approaches in the treatment of chronic pain and insomnia : National Institutes of Health technology assessment conference statement October 16-18, 1995 / National Institutes of Health.	
87 IARm. Schlaf und Leistung : eine empirische Untersuchung der Auswirkungen IARmgestA%rter Nachtruhe auf Stimmung und Verhalten / Eckhard Gros.	Gros, Eckhard.
88 Lelet le-lo naa %at. English: "Restless nights : understanding snoring and sleep apnea / Peretz Lavie translated from the Hebrew by Anthony Beris."	Lavie, P. (Peretz), 1949-
89 Losing sleep : how your sleeping habits affect your life / Lydia Dotto.	Dotto, Lydia.
90 Lung biology in health and disease. Vol. 133. Regulation of sleep and circadian rhythms [electronic resource] / edited by Fred W. Turek, Phyllis C. Zee.	
91 Managing sleep complaints / William C. Orr, Kenneth Z. Altschuler, Monte L. Stahl.	Orr, William C.
92 Mathematical models of the circadian sleep-wake cycle / editors, Martin C. Moore-Ede, Charles A. Czeisler.	
93 Neurobiology of sleep and memory : proceedings of a conference held in Mexico City in March 1975 / editors, RenA% R. Drucker-CoA%, James L. McGaugh associate editors, Robert A. Jensen and Joe L. Martinez, Jr.	
94 Night and shift work : biological and social aspects : proceedings of the fifth International Symposium on Night and Shift Work, Scientific Committee on Shift Work of the Permanent Commission and International Association on Occupational Health (PCIAOH) Rouen, 12-16 May 1980 / editors, Alain Reinberg, Norbert Vieux, Pierre Andlauer.	International Symposium on Night and Shift Work (5th : 1980 : Rouen, France)
95 Night-time and sleep in Asia and the West : exploring the dark side of life / edited by Brigitte Steger and Ledewik Brunt.	
96 NIH Technology Assessment Conference on Integration of Behavioral and Relaxation Approaches into the Treatment of Chronic Pain and Insomnia.	National Institutes of Health Technology Assessment Conference (1995 : Bethesda, Md.)
97 No more sleepless nights / Peter Hauri, Shirley Linde foreword by Philip R. Westbrook.	Hauri, Peter.
98 No more sleepless nights / Peter Hauri, Shirley Linde.	Hauri, Peter.
99 Nocturnal asthma : mechanisms and treatment / edited by Richard J. Martin.	
100 Nordisk forskning om sA%mn = Nordic sleep research : 4. Nordiska sA%mnforskningens kongressen den 30.-31.3.1990 i A...bo vid Folkpensjonsanstaltsens Central fA%r Rehabiliteringsforskning = 4th Scandinavian Congress for Sleep Research, March 30-31, 1990, in Turku at the Rehabilitation Research Centre of the Social Insurance Institution / redaktA%r/editer, Markku T. HyyppA%.	Scandinavian Congress for Sleep Research (4th : 1990 : Turku, Finland)
101 Normal sleep in man : an experimental contribution to our knowledge of the phenomenology of sleep, by Uros J. Jovanovic.	Jovanovic, UroA% J. (UroA% Jovan)
102 On going to bed / Anthony Burgess.	Burgess, Anthony, 1917-1993.
103 On the state of the mind during sleep, etc.	Fowler, Richard, 1765-1863.
104 Overcoming insomnia : a cognitive-behavioral therapy approach : therapist guide / Jack D. Edinger, Colleen E. Carney.	Edinger, Jack D.
105 Pediatric sleep medicine / Stephen H. Sheldon, Jean-Paul Spire, Howard B. Levv.	Sheldon, Stephen H.
106 PersA%nlichkeit und Schlafverhalten.	Othmer, Ekkehard.
107 Pharmacology of sleep / edited by Robert L. Williams, Ismet Karacan foreword by Jules H. Masseman.	
108 Pharmacology of the states of alertness : proceedings of the satellite symposium of the 7th International Congress of Pharmacology / editors, P. Passouant, I. Oswald.	
109 Philosophical essays on dreaming / edited by Charles E. M. Dunlop.	
110 Philosophie der Mysterik. English: "The philosophy of mysticism / Carl Du Prel."	Du Prel, Carl, 1839-1899.
111 Physiology in sleep / edited by John Orr, Charles D. Barnes.	
112 Polysomnography and sleep disorder centers.	
113 Present role of sleep study in lung disease : methods and application in adults : proceedings of a Workshop held October 6-8, 1988 at the Medical Center for Rehabilitation, Veruno (Novara), Italy / Edited by C.F. Donner (Italy), P. Howard (UK).	
114 Principles and practice of sleep medicine / [edited by] Meir H. Kryger, Thomas Roth, William C. Dement.	

115	Principles and practice of sleep medicine / edited by Meir H. Kryger, Thomas Roth, William C. Dement.	
116	Principles and practice of sleep medicine / edited by Meir H. Kryger, Thomas Roth, William C. Dement.	
117	Principles and practice of sleep medicine / edited by Meir H. Kryger, Thomas Roth, William C. Dement.	
118	Principles and practice of sleep medicine in the child / edited by Richard Ferber, Meir Kryger.	
119	Problems of sleep and dream in children.	Harms, Ernest, 1895-1974.
120	Psychopharmacology of sleep / sponsored by the British Association for Psychopharmacology - editor, David Wheatley.	
121	Psychophysiological aspects of sleep : proceedings of the Third International Congress of Sleep Research / edited by Ismet Karacan.	International Congress of Sleep Research (3rd : 1979 : Tokyo, Japan)
122	Regulation of sleep and circadian rhythms / edited by Fred W. Turek, Phyllis C. Zee.	
	Regulation of Tris-treated sleepwear : hearings before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, House of Representatives, Ninety-seventh Congress, first session, April 15 and June 4, 1981.	United States. Congress. House. Committee on Energy and Commerce. Subcommittee on Oversight and Investigations.
123	Seasonal affective disorder and beyond : light treatment for SAD and non-SAD conditions / edited by Raymond W. Lam.	
124	Self-identified sleep patterns in a selected population of normal, aged persons / by Paulette Yvonne Russell.	Russell, Paulette Yvonne.
125	Shitwork / guest editor, Ailene Jane Scott.	
127	Sick and tired of waking up sick and tired?	
128	Sleep or, The hygiene of the night.	Hall, W. W. (William Whitty), 1810-1876.
129	Sleep, the mysterious third of your life [by] Jonathan and Marianna Kastner. Illustrated by Don Madden.	Kastner, Jonathan.
130	Sleep / edited by Rosemary Cooper.	
131	Sleep / edited by Thomas Wiedemann and Ken Dowden.	
132	Sleep / Ian Oswald.	Oswald, Ian.
133	Sleep / J. Allan Hobson.	Hobson, J. Allan, 1933-
134	Sleep - a comprehensive handbook / [edited by] Teofilu Lee-Chiong.	
135	Sleep - evolution and disorders / Ida G. Karmanova, Genrikh A. Oganessian - translated by L. N. Sminova.	Karmanova, I. G. (Ida Gavrilovna)
136	Sleep - neurotransmitters and neuromodulators / editors, A. Wauguier ... [et al.].	
137	Sleep - physiology & pathology - a symposium / Edited by Anthony Kales.	
138	Sleep - problems and solutions / Quentin Regestein, David Ritchie, and the editors of Consumer Reports Books.	Regestein, Quentin R.
139	Sleep 1982 : physiology, pharmacology, sleep factors, memory, sleep deprivation, hypnotics : Sixth European Congress on Sleep Research, Zurich, March 23-26, 1982 / editor, W.P. Koella.	European Congress on Sleep Research (6th : 1982 : Zurich, Switzerland)
140	Sleep and aging : a research-based guide to sleep in later life / Kevin Morgan.	Morgan, Kevin, 1950- Association for Research in Nervous and Mental Disease. Meeting (45th : 1985 : New York, N.Y.) Universit� de Montr�al. Centre de recherche en sciences neurologiques. Symposium (10th : 1988)
141	Sleep and altered states of consciousness : proceedings of the association, December 3 and 4, 1965, New York.	
142	Sleep and biological rhythms : basic mechanisms and applications to psychiatry / edited by Jacques Montplaisir, Roger Godbout.	
143	Sleep and brain plasticity / edited by P. Maquet, C. Smith and R. Stickgold.	
144	Sleep and breathing / edited by Nicholas A. Saunders, Colin E. Sullivan.	
145	Sleep and breathing / edited by Nicholas A. Saunders, Colin E. Sullivan.	
146	Sleep and breathing in children [electronic resource] : a developmental approach / edited by Gerald M. Loughlin - John L. Carroll - Carole L. Marcus.	
147	Sleep and dream research.	
148	Sleep and dreaming / Jacob Empson - with a chapter by Michael Wang.	Empson, Jacob, 1944-
149	Sleep and dreaming / Jacob Empson.	Empson, Jacob, 1944-
150	Sleep and dreaming / Marvin Rosen.	Rosen, Marvin.
151	Sleep and dreaming : origins, nature and functions / by David B. Cohen.	Cohen, David B., 1941-
152	Sleep and dreams, edited by Ernest Hartmann.	
153	Sleep and dreams - a sourcebook / [edited by] Jayne Gackelbach.	
154	Sleep and epilepsy / edited by M.B. Sterman, Margaret N. Shouse, P. Passouant.	
155	Sleep and epilepsy / edited by M.B. Sterman, Margaret N. Shouse, P. Passouant.	
156	Sleep and its derangements / by William A. Hammond - new introduction by R.W. Rieber, William S. Lafer, and Dagna K. Skoog.	Hammond, William Alexander, 1828-1900.
157	Sleep and its disorders in children / editor, Christian Guilleminault.	
158	Sleep and its secrets : the river of crystal light / Michael S. Aronoff.	Aronoff, Michael S. International Symposium on Sleep and Respiration (1st : 1989 : Banff, Alta.)
159	Sleep and respiration : proceedings of the First International Symposium on Sleep and Respiration, held in Banff, Alberta, April 1-4, 1989 / editors, Faig G. Issa, Paul M. Suratt, John E. Remmers.	International Symposium on Sleep and Respiration (2nd : 1991 : League City, Tex.)
160	Sleep and respiration in aging adults : proceedings of the Second International Symposium on Sleep and Respiration, held at South Shore Harbour Resort and Conference Center, League City, Texas, March 9-13, 1991 / editors, Samuel T. Kuna, Paul M. Suratt, John E. Remmers.	International Symposium on Sleep and Respiration (2nd : 1991 : League City, Tex.)
161	Sleep and rheumatism, by J. I. Rodale.	Rodale, J. I. (Jerome Irving), 1898-1971.
162	Sleep and sleep disorders : a neurophysiopharmacological approach / [edited by] Malcolm Lader, Daniel P. Cardinali, S.R. Pandi-Perumal.	
163	Sleep and sleeplessness in advanced age / by Rene Spiegel.	Spiegel, Ren�.
164	Sleep and sleeplessness in advanced age / Ren� Spiegel.	Spiegel, Ren�.
165	Sleep and society : sociological ventures into the (unknown) / Simon J. Williams.	Williams, Simon J. (Simon Johnson), 1961-
166	Sleep and the maturing nervous system. Edited by Carmine D. Clemente, Dominick P. Purpura [and] Florence E. Mayer.	
167	Sleep and wakefulness.	
168	Sleep apnea - implications in cardiovascular and cerebrovascular disease / edited by T. Douglas Bradley, John S. Floras.	Kleitman, Nathaniel, 1895-
169	Sleep apnea [electronic resource] : implications in cardiovascular and cerebrovascular disease / edited by T. Douglas Bradley, John S. Floras.	
170	Sleep apnea and rhonchopathy / 3rd World Congress on Sleep Apnea and Rhonchopathy, Tokyo, September 21-23, 1991 - editors, Kiyoshi Togawa ... [et al.].	World Congress on Sleep Apnea and Rhonchopathy (3rd : 1991 : Tokyo, Japan)
171	Sleep apnea and snoring - surgical and non-surgical therapy / [edited by] Michael Friedman.	
172	Sleep apnea syndrome research focus / Andrew O. Lang, editor.	
173	Sleep apnea syndromes / edited by Christian Guilleminault and William C. Dement.	
174	Sleep bibliography [serial].	
175	Sleep characteristics : how they vary and react to changing conditions in the group and the individual [by] N. Kleitman, F. J. Mullin, N. R. Cooperman [and] S. Titebaum ...	Kleitman, Nathaniel, 1895-
176	Sleep disorders : basic and clinical research / [edited by] Michael Chase, Elliot D. Weitzman.	
177	Sleep disorders : diagnosis and treatment / edited by Robert L. Williams, Ismet Karacan, Constance A. Moore.	
178	Sleep disorders : insomnia and narcolepsy / by Henry Kellerman.	Kellerman, Henry.
179	Sleep disorders : their impact on public health / edited by Damien L�pger and S.R. Pandi-Perumal.	
180	Sleep disorders and neurological disease [electronic resource] / edited by Antonio Culebras.	
181	Sleep disorders and sleep deprivation : an unmet public health problem / Committee on Sleep Medicine and Research, Board on Health Sciences Policy - Harvey R. Colten and Bruce M. Altevogt, editors.	
182	Sleep disorders in women : a guide to practical management / edited by Hravr P. Altman.	
183	Sleep disorders medicine : basic science, technical considerations, and clinical aspects / edited by Sudhansu Chokroverty - with 39 contributing authors.	
184	Sleep disturbance : a special report from the Harvard Health Letter / [written by] Susan Ince.	Ince, Susan.
185	Sleep disturbance in children and adolescents with disorders of development : its significance and management / edited by Gregory Stores, Luci Wiggs.	
186	Sleep less, live more / Everett Mattlin.	Mattlin, Everett B.
187	Sleep mechanisms and functions in humans and animals : an evolutionary perspective / edited by Andrew Mayes.	
188	Sleep medicine / [edited by] Teofilu L. Lee-Chiong, Jr., Michael J. Sateia, Mary A. Carskadon.	
189	Sleep medicine / Michael S. Aldrich.	Aldrich, Michael S.
190	Sleep medicine - a guide to sleep and its disorders / John M. Shneerson.	Shneerson, John.
191	Sleep medicine in clinical practice / Michael H. Silber, Lois E. Krahn, Timothy I. Morgenthaler.	Silber, Michael H.
192	Sleep medicine pearls / Richard B. Berry.	Berry, Richard B., 1947-
193	Sleep onset : normal and abnormal processes / edited by Robert D. Ogilvie and John R. Harsh.	
194	Sleep peptides : basic and clinical approaches / edited by Shojiro Inou� and D. Schneider-Helmert.	
195	Sleep positions : the night language of the body / by Samuel Dunkell.	Dunkell, Samuel.
196	Sleep psychiatry / edited by Alexander Z. Golbin, Howard M. Kravitz, Louis G. Keith.	
197	Sleep psychologically considered with reference to sensation and memory / by Blanchard Fosgate.	Fosgate, Blanchard.
198	Sleep research : a critical review, by Frank R. Freeman.	Freeman, Frank R., 1938-
199	Sleep research : proceedings of the Northern European Symposium on Sleep Research, Basle, September 26 and 27, 1978 / edited by R.G. Priest, A. Pletscher, and J. Ward.	Northern European Symposium on Sleep Research (1978 : Basle, Switzerland)
200	Sleep research and clinical practice. Edited by Gene Usdin.	
201	Sleep therapy : a bibliography and commentary, by Robert L. Williams and Wise B. Webb. With a special review by James A. Lewis.	Williams, Robert L. (Robert Leon), 1922-
202	Sleep therapy in the neuroses. Translated from the Russian by Basil Haigh.	Andrew, B. V. (Boris Vladimirovich)
203	Sleep thieves : an eye-opening exploration into the science and mysteries of sleep / Stanley Coren.	Coren, Stanley.
204	Sleep walking and moon walking : a medico-literary study, by Dr. J. Sadger ... tr. by Louise Brink.	Sadger, J.
205	Sleep, aging, and related disorders / Symposium 3 on Sleep Disorders, held during the 13th World Congress on Neurology, Hamburg, September 2, 1985 - volume editors, W. Emser, D. Kurtz, W.B. Webb.	Symposium 3 on Sleep Disorders (1985 : Hamburg, Germany)
206	Sleep, benzodiazepines, and performance : experimental methodologies and research prospects / editors, I. Hindmarch, H. Ott, T. Roth.	
207	Sleep, dreaming & sleep disorders - an introduction / William H. Moorcroft.	Moorcroft, William H., 1944-
208	Sleep, dreams, and arousal [by] Edward J. Murray.	Murray, Edward J.
209	Sleep, dreams, and memory / edited by William Fishbein.	
210	Sleep, its nature and physiological organization, by Werner P. Koella. With a foreword by Hudson Hoagland.	Koella, Werner P. (Werner Paul), 1917-
211	Sleep, sleepiness and performance / edited by Timothy H. Monk.	
212	Sleep, the gentle tyrant / Wise B. Webb.	Webb, Wise B.
213	Sleep.	Oswald, Ian.
214	Sleep/wake disorders : natural history, epidemiology, and long-term evolution / editors, Christian Guilleminault, Elio Lugaresi.	
215	Sleep: an active process - research and commentary. Edited by Wise B. Webb. Contributing authors: Dana C. Brooks [and others]	Webb, Wise B.
216	Sleep: an experimental approach [by] Wise B. Webb.	Webb, Wise B.
217	Sleepfaring : a journey through the science of sleep / Jim Horne.	Horne, James (James A.)
218	Sleeping and waking : physiology and psychology.	Oswald, Ian.
219	Sleeping and waking disorders / indications and techniques / edited by Christian Guilleminault.	
220	Sleeping pills, insomnia, and medical practice : report of a study / Institute of Medicine, Division of Mental Health and Behavioral Medicine.	Institute of Medicine (U.S.) . Division of Mental Health and Behavioral Medicine.
221	Sleep-talking : psychology and psychophysiology / Arthur M. Arkin.	Arkin, Arthur M.
222	Snoring and obstructive sleep apnea / [edited by] David N.F. Fairbanks ... [et al.].	
223	Snoring and obstructive sleep apnea / editors, David N.F. Fairbanks, Shiro Fujita.	
224	Some must watch while some must sleep, by William C. Dement.	Dement, William C., 1928-
225	Sommeil et le R�ve. English: "The paradox of sleep : the story of dreaming / Michael Jouvet - translated by Laurence Garey."	Jouvet, Michel.
226	Sommeil et le R�ve. English: "The paradox of sleep [electronic resource] : the story of dreaming / Michael Jouvet - translated by Laurence Garey."	Jouvet, Michel.
227	Sound sleep / by Quentin R. Regestein, with James R. Rechts.	Regestein, Quentin R.
228	Surgery for sleep-disordered breathing / Karl Hattmann, Thomas Verse.	Hattmann, Karl, Dr.
229	Surgical management of sleep apnea and snoring / edited by David J. Teris, Richard L. Goode.	
230	Synnesium somnorum omnis generis insomnia explicantes lron quatuor. Books 2-4. Italian: "Sogni / Gerolamo Cardano - a cura di Agnese Grieco e Mauro Mancia - traduzione di Silvia Montiglio e Agnese Grieco."	Cardano, Girolamo, 1501-1576.

349 FOCUS (Rhinbeck, N.Y. - Online); FOCUS [electronic resource] : journal for respiratory care & sleep medicine.

350 Journal of sleep research [Online : Synergy]; Journal of sleep research [electronic serial].

351 Journal of sleep research [Online]; Journal of sleep research [electronic resource].

352 Sleep & breathing [Online]; Sleep & breathing [electronic resource] : international journal of the science and practice of sleep medicine.

353 Sleep [New York, N.Y. - Online]; Sleep [electronic resource].

354 Sleep [serial].

355 Sleep and biological rhythms [Online]; Sleep and biological rhythms [electronic resource].

356 Sleep apnea [electronic resource] : pathogenesis, diagnosis, and treatment / edited by Allen I. Pack.

357 Sleep mechanisms / edited by A. Borbely and J. Valatx.

358 Sleep medicine [Online]; Sleep medicine [electronic resource].

359 Sleep medicine [Online]; Sleep medicine [electronic serial].

360 Sleep medicine clinics [Online]; Sleep medicine clinics [electronic resource].

361 Sleep medicine reviews [Online]; Sleep medicine reviews [electronic resource].

362 Sleep medicine reviews [Online]; Sleep medicine reviews [electronic resource].

363 Somnologie [Online]; Somnologie [electronic resource] : Schlaforschung und Schlafmedizin = Somnology : sleep research and sleep medicine.

364 Somnologie [Online]; Somnologie [electronic serial] : Schlaforschung und Schlafmedizin = Somnology : sleep research and sleep medicine.

365 Investigations into the mechanism of reduction of ethanol-induced sleep by thyrotropin releasing hormone (TRH) [microfilm] / by Jerry M. Cott.

366 Sleep bulletin [serial].

367 Sleep deprivation: effects upon selective systemic physiological responses / by Charles F. Brown.

368 Sleep patterns and introversion-extraversion / by Pamela J. D'Souza.

369 The effect of sleep deprivation on the plasma beta-endorphin levels in female runners during heavy submaximal treadmill running / by JoAnn F. Fafrowicz.

370 Dream voyage [videorecording] : a presentation of Films for the Humanities, Inc. produced by Goldcrest Films and Television producer, writer, Karl Sabbagh.

371 Miles of smiles, years of struggle [videorecording] / Columbia Historical Society in cooperation with the Smithsonian Institution, Office of Folklore Programs produced and directed by Jack Santino and Paul Wagner.

372 NIH Consensus Conference: sleep disorders of older people [videorecording] / Robert J. Jovnt.

373 Sleep apnea [videorecording HSL suppressed] : recognition and management / Barry S. DiCicco.

374 Sleep disorders [videorecording] : assessment and management in primary care / Gabriele M. Barthlen, Lauren Broch.

375 Sleep and hypnosis [Online]; Sleep and hypnosis [electronic resource] : an international journal of sleep, dream, and hypnosis.

376 A K/WIG index of EEG literature (and society proceedings) / Compiled by Reinald G. Bickford, James L. Jacobson, and David Langworthy.

377 A manual for EEG technicians Chapter 11. Nonlaboratory recording with the electroencephalograph, by Frances Potts. With a foreword by Robert S. Schwab.

378 A manual of electroencephalographic technology / C.D. Binnie, A.J. Rowan and Th. Gutter.

379 A primer of electroencephalography by Gary D. VanderArk and Ludwig G. Kempe.

380 Abstracts / editors, H. Lechner, A. Aranibar organized by the Austrian Society of EEG and Clinical Neurophysiology.

381 Applications of electroencephalography in psychiatry, a symposium, edited by William P. Wilson.

382 Atlas of adult electroencephalography / Warren T. Blume, Masako Kaibara, G. Bryan Young.

383 Atlas of brain mapping - topographic mapping of EEG and evoked potentials / Konrad Maurer, Thomas Dierks.

384 Atlas of EEG & seizure semiology / Bassel Abou-Khalil, Karl E. Misulis.

385 Atlas of EEG patterns / John M. Stern consulting editor, Jerome Engel Jr.

386 Atlas of electroencephalography / Alan Guberman, Madeleine Couture.

387 Atlas of electroencephalography / editors: Michael R. Sperling and Robert R. Clancy.

388 Atlas of electroencephalography in coma and cerebral death : EEG at the bedside or in the intensive care unit / Donald R. Bennett ... [et al.].

389 Atlas of electroencephalography in the child / by Paul Laget and Roger Salbreux.

390 Atlas of electroencephalography, by Frederic A. Gibbs and Erna L. Gibbs.

391 Atlas of electroencephalography, by Frederic A. Gibbs and Erna L. Gibbs.

392 Atlas of neonatal electroencephalography / Janet E. Stockard-Pope, Sarah S. Werner, Reinald G. Bickford with a contribution by John S. Curran.

393 Atlas of neonatal electroencephalography / Sarah S. Werner, Janet E. Stockard, Reinald G. Bickford.

394 Atlas of pediatric electroencephalography / Warren T. Blume, Masako Kaibara.

395 Atlas of pediatric electroencephalography / Warren T. Blume.

396 Atlas of sleep medicine in infants and children / by Stephen H. Sheldon, Susan Riter, Mark Detrojan.

397 Automation of clinical electroencephalography : a conference. Participants: R. G. Bickford [and others]. Editors: Peter Kellaway [and] Ingemar Peters/En.

398 Basic mechanisms of the EEG / St. Zschocke, E.-J. Speckmann, editors.

399 Behavior and brain electrical activity : proceedings of the Seventh Annual Symposium on Behavior and Brain Electrical Activity held at the Texas Research Institute of Mental Sciences, Texas Medical Center, Houston, Texas, November 28-30, 1973 / edited by Neil Bruce and H. L. Aitshuler.

400 Bibliografija rabot po [Selektrol] [Sensetefalografi]. 1875-1963 gg. [Selekticheskaia aktivnost' golovnogo mozga zhivotnykh i cheloveka v norme. [Otv. red. A. M. Riabinovskaia]

401 Bibliography of electroencephalography, 1875-1948 / edited by Mary A. B. Brazier.

402 Biopotentials of cerebral hemispheres in brain tumors. Authorized translation from the Russian by Basil Haigh. With a preface by Percival Bailey.

403 Brain disturbances caused by barbital as detected by electroencephalography.

404 Brain electrical potentials and individual psychological differences / Enoch Callaway.

405 Brain function and malnutrition: neuropsychological methods of assessment / edited by James W. Prescott, Merrill S. Read, David B. Coursin.

406 Brain function and oscillations / Erol BaYar.

407 Brain imaging of nicotine and tobacco smoking / editor, Edward F. Domino copy editor, Antoinette F. Domino.

408 Brain, nerves, muscles, and electricity : my life in science / Wladimir Theodore Liberson compiled and edited by Robert Cohn, Cathryn W. Liberson.

409 Clinical applications of computer analysis of EEG and other neurophysiological signals / edited by F.H. Lopes da Silva, W. Storm van Leeuwen, A. RÅmmond.

410 Clinical electroencephalography in epilepsy and related conditions in children.

411 Clinical electroencephalography.

412 Clinical electroencephalography.

413 Clinical electrophysiology of the somatosensory cortex : a combined study using electrocorticography, scalp-EEG, and magnetoencephalography / Christoph Baumgartner.

414 Clinical neurophysiology of infancy, childhood, and adolescence / Gregory L. Holmes, Solomon L. MoshÅe, H. Royden Jones, Jr.

415 Collected writings / W.T. Liberson compiled by Cathryn Liberson.

416 Comprehensive clinical neurophysiology / [edited by] Kerry H. Levin, Hans O. LÅzders.

417 Cortical evoked potentials in man, by Ludovico Bergamini and Bruno Bergamasco. With a foreword by Henri Gastaut. English translation edited by James M. Sraque.

418 Current clinical neurophysiology : update on EEG and evoked potentials / editor, C.E. Henry.

419 Current practice of clinical electroencephalography / editors, David D. Daly, Timothy A. Pedley.

420 Current practice of clinical electroencephalography / editors, Donald W. Klass, David D. Daly.

421 Depth-electrographic stimulation of the human brain and behavior from fourteen years of studies and treatment of Parkinson's disease and mental disorders with implanted electrodes, by C.W. Sem-Jacobsen. With an introd. by David McK. Riech.

422 Diagnosis and management of neonatal seizures / Eli M. Mizrahi, Peter Kellaway.

423 Diagnostic electroencephalography [bv] Hans Strauss, Mortimer Ostow [and] Louis Greenstein.

424 E E G and clinical neurophysiology : proceedings of the 2nd European Congress of EEG and Clinical Neurophysiology, Salzburg, Austria, September 16-19, 1979 / editors, H. Lechner and A. Aranibar.

425 E E G recording / by M.-L. Hector.

426 EEG and evoked potentials in psychiatry and behavioral neurology / edited by John R. Hughes and William P. Wilson with 9 contributing authors.

427 EEG in clinical practice / John R. Hughes.

428 EEG in clinical practice / John R. Hughes.

429 EEG informatics : a didactic review of methods and applications of EEG data processing : lectures for an International Course in EEG Data Processing / held under the auspices of the International Federation of Societies for Electroencephalography and Clinical Neurophysiology in Paris on August 29-September 2, 1977 edited by A. RÅmmond.

430 EEG instrumentation and technology / by E.T. Richey and Richard Namon with a foreword by William P. Wilson.

431 EEG primer / R. Spehlmann, editor.

432 EEG technology / R. Cooper, J.W. Osselton, J.C. Shaw.

433 EEG technology [bv] R. Cooper, J. W. Osselton [and] J. C. Shaw.

434 EEG-Atlas fÅr AnÅsthesisten. English; EEG atlas for anesthesiologists / Ina Pichlmayr with the collaboration of P. Lehmkuhl and U. Lips advised by H. KÅnkel translation from the first German edition by A. Kasperczyk.

435 EEG-brain dynamics : relation between EEG and brain evoked potentials / Erol BaYar.

436 Electric fields in the brain : the neurophysics of EEG / Paul L. Nunez with contributions by Ron D. Katznelson.

437 Electric fields of the brain : the neurophysics of EEG / Paul L. Nunez, Ramesh Srinivasan.

438 Electrical stimulation research techniques / edited by Michael M. Patterson, Raymond P. Kesner.

439 Electrical studies on the unanesthetized brain : a symposium with 49 participants. Edited by Estelle R. Ramey and Desmond S. O'Doherty.

440 Electroencephalographic atlas for pharmacological research : effect of drugs on the electrical activity of the rabbit brain.

441 Electroencephalography (EEG) of human sleep: clinical applications [bv] Robert L. Williams, Ismet Karacan [and] Carolyn J. Hirsch.

442 Electroencephalography : a symposium on its various aspects / by W. A. Cobb ... [et al.] edited by Denis Hill & Geoffrey Parr.

443 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

444 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

445 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

446 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

447 Electroencephalography : basic principles, clinical applications, and related fields / [edited by] Ernst Niedermeyer, Fernando Lopes da Silva.

448 Electroencephalography and human brain potentials, edited by Richard F. Thompson [and] Michael M. Patterson.

449 Electroencephalography for anesthesiologists and surgeons [bv] Max S. Sadove, Dorothy Becka and Frederic A. Gibbs.

450 Electroencephalography in clinical practice.

451 Electroencephalography in hospital and general consulting practice : an introduction. With a contribution on Methods of activation of the electroencephalogram by Robert S. Schwab, and a pref. by H. Fishgold.

452 Electromyography/electroencephalography / Michael R. Isley ... [et al.].

453 Electroencephalography and psychopathology : 2nd International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions, Capri, September 23-26, 1980 / volume editors, C. Perris, D. Kemali, and L. Vacca.

454 Electroencephalography and psychopathology : 3rd International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions, Stockholm, June 28, 1981 / volume editors, C. Perris ... [et al.].

455 Elektroencefalogramm des Menschen. English; Hans Berger on the electroencephalogram of man. The fourteen original reports on the human electroencephalogram. Translated from the original German and edited by P. Gloor.

456 Elektroencefalogramm in der AnÅsthesie. English; The electroencephalogram in anesthesia : fundamentals, practical applications

457 Epilepsy : electroclinical syndromes / edited by Hans LÅzders and Ronald P. Lesser.

458 Essentials of clinical neurophysiology / Karl E. Misulis.

459 Essentials of clinical neurophysiology / Karl E. Misulis.

460 Evaluating sleep in infants and children / Stephen H. Sheldon.

461 Functional brain imaging / [edited by] William W. Orrison, Jr. ... [et al.]

Hypnosis Periodicals.; Sleep Periodicals.; Dreams Periodicals.; Sleep Disorders Periodicals.

Bickford, Reinald G.

Milnarich, Rhoda Feinstein.

Binnie, C. D.

VanderArk, Gary D.

European Congress of EEG and Clinical Neurophysiology (2nd : 1979 : Salzburg, Austria)

Blume, Warren T. (Warren Thomas)

Maurer, Konrad, 1943-

Abou-Khalil, Bassel.

Stern, John M.

Guberman, Alan.

Laget, Paul.

Gibbs, Frederic Andrews, 1903-

Gibbs, Frederic Andrews, 1903-

Stockard-Pope, Janet E.

Werner, Sarah S., 1941-

Blume, Warren T. (Warren Thomas)

Blume, Warren T. (Warren Thomas)

Symposium on Behavior and Brain Electrical Activity (7th : 1973 : Texas Research Institute of Mental Sciences)

Akademi, il, ja nauk SSSR. Sektor seti speÅ. fi. [isla] [nykh bibliotek.

Bekhtereva, N. P. (Natal'Åi, il, ja Petrovna), 1924-

Callaway, Enoch.

BaYar, Erol.

Liberson, W. T., 1904-

Fois, Alberto.

Cohn, Robert.

Baumgartner, Christoph, 1959-

Liberson, W. T., 1904-

Bergamini, Ludovico.

Sem-Jacobsen, C. W.

Mizrahi, Eli M.

Strauss, Hans, b. 1898.

European Congress of EEG and Clinical Neurophysiology (2nd : 1979 : Salzburg, Austria)

Hector, Marie Louise.

Hughes, John R., 1928-

Hughes, John R., 1928-

International Course in EEG Data Processing (1977 : Paris, France)

Richey, Eldred Thurston, 1928-

Cooper, R. (Raymond)

Cooper, R. (Raymond)

Pichlmayr, I. (Ina), 1932-

BaYar, Erol.

Nunez, Paul L.

Nunez, Paul L.

International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions (2nd : 1980 : Capri, Italy)

International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions (3rd : 1981 : Stockholm, Sweden)

Berger, Hans, 1873-1941.

Pichlmayr, I. (Ina), 1932-

Misulis, Karl E.

Misulis, Karl E.

Sheldon, Stephen H.

462	Fundamentals of electroencephalography / Kenneth A. Kooi with an introductory chapter on basic electrical principles by Vefik A. Basman.	Kooi, Kenneth A., 1922-
463	Fundamentals of electroencephalography / Kenneth A. Kooi, Richard P. Tucker, Robert E. Marshall with an introductory chapter on basic electrical principles by Vefik A. Basman.	Kooi, Kenneth A., 1922-
464	Goldensohn's EEG interpretation : problems of overreading and underreading / by Eli S. Goldensohn ... [et al.].	
465	Handbook of electroencephalography and clinical neurophysiology : index volume / editor, C. Ajmoné Marsan.	
466	Handbook of electroencephalography and clinical neurophysiology [serial] : revised series.	
467	Handbook of electroencephalography and clinical neurophysiology. Editor-in-chief: Antoine RA@mond.	
468	Hirneigenschaften und Verhalten : elektro-physiologische und Verhaltensuntersuchungen an der Ratte [von] Lothar Pickenhain und Fritz Klingberg.	Pickenhain, Lothar.
469	Human brainwaves : the psychological significance of the electro-encephalogram / Jacob Empson.	Empson, Jacob, 1944-
470	Imaging of the brain in psychiatry and related fields / Konrad Maurer (ed.).	
471	Infant EEG and event-related potentials / edited by Michelle de Haan.	
472	Intracranial electroencephalography / Michael R. Sperling.	Sperling, Michael R.
473	Mass action in the nervous system : examination of the neurophysiological basis of adaptive behavior through EEG / Walter J. Freeman.	Freeman, Walter J.
474	Medical electroencephalography [by] Frederic A. Gibbs [and] Erna L. Gibbs.	Gibbs, Frederic Andrews, 1903-
475	Methods of analysis of brain electrical and magnetic signals / edited by A.S. Gevins, A. RA@mond.	
476	Mind/body integration : essential readings in biofeedback / edited by Erik Peper, Sonia Ancoli, and Michele Quinn.	
477	Monitoring cerebral function : long-term monitoring of EEG and evoked potentials / Pamela F. Prior and Douglas E. Maynard foreword by the late D.G. McDowall.	Prior, Pamela.
478	Monitoring cerebral function : long-term recordings of cerebral electrical activity / Pamela Prior technical aspects written in collaboration with D. E. Maynard foreword by D. G. McDowall.	Prior, Pamela.
479	Neocortical dynamics and human EEG rhythms / [edited by] Paul L. Nunez with contributions by Brian A. Cuttito ... [et al.].	
480	Neonatal cerebral investigation / edited by Janet M. Rennie, Cornelia F. Hagmann, Nicola J. Robertson.	
481	Neonatal electroencephalography / Robert R. Clancy, Hee Jung Chung, John P. Temple.	Clancy, Robert R.
482	Neurological and electroencephalographic correlative studies in infancy / edited by Peter Kellaway and Ingermar Petersen.	World Federation of Neurology.
483	Neurometric assessment of brain dysfunction in neurological patients / ThAIA-a Harmony.	Harmony, ThAIA-a
484	Nocturnal sleep stereo-electroencephalography and polygraphy in epileptics / Josef Faber, Vilibald Vladvka.	Faber, Josef.
485	Nonlinear dynamics and brain functioning / edited by N. Pradhan, P.E. Rapo and R. Sreenivasan.	
486	Pediatric and adult electroencephalography / Michael R. Sperling, Martha J. Morrell.	Sperling, Michael R.
487	Physiological basis of the alpha rhythm / Per Andersen, Sven A. Andersson.	Andersen, Per.
488	Polysomnography and sleep disorder centers.	
489	Practical electroencephalography for the anesthesiologist, by Verne L. Brechner, Richard D. Walter [and] John B. Dillon.	Brechner, Verne L.
490	Principles of brain functioning : a synergetic approach to brain activity, behavior, and cognition / Hermann Haken.	Haken, H.
491	Quantitative analytic studies in epilepsy / edited by Peter Kellaway, Ingermar Petersen.	
492	Quantitative EEG, event-related potentials and neurotherapy / Juri D. Kropotov.	Kropotov, I. Ii, U. D. (I. Ii,UriA- Dmitrievich)
493	Recent advances in EEG and EMG data processing : the proceedings of the International Conference on EEG and EMG Data Processing, held in Kanazawa, Japan, September 10-12, 1981 / edited by Nariyoshi Yamauchi and Kiyoshi Fujisawa.	International Conference on EEG and EMG Data Processing (1981 : Kanazawa-shi, Japan)
494	Recommendations for the practice of clinical neurophysiology / made by the International Federation of Societies for Electroencephalography and Clinical Neurophysiology.	International Federation of Societies for Electroencephalography and Clinical Neurophysiology.
495	Rheoencephalography : a method for the continuous registration of cerebrovascular changes / by Fritz L. Jenkner.	Jenkner, F. L. (Fritz L.), 1923-
496	Rhythmic EEG activities and cortical functioning : proceedings of the International Symposium on Event-Related Changes in Cortical Rhythmic Activities--Behavioural Correlates, held in Schladingm, Austria, September 19-22, 1979 / edited by Gert Pfurtscheller ... [et al.].	International Symposium on Event-Related Changes in Cortical Rhythmic Activities--Behavioral Correlates (1979 : Schladingm, Austria)
497	Sleep : a comprehensive handbook / [edited by] Teofilo Lee-Chiong.	
498	Spehlmann's EEG primer / Bruce J. Fisch.	Fisch, Bruce J.
499	Synopsis of electroencephalography or, Guide to brain waves [by] Thomas C. Barnes.	Barnes, Thomas C.
500	The abnormalities of sleep in man. Proceedings of the XVth European meeting on electroencephalography, Bologna, 1967. Edited by H. Gastaut, [and others].	European Meeting on Electroencephalography (15th : 1967 : Bologna, Italy)
501	The alpha syllabus : a handbook of human EEG alpha activity. Edited by Barbara B. Brown and Jay W. Klug.	Brown, Barbara B.
502	The clinical neurophysiology of epilepsy : a survey of current research / by B. Joe Wilder.	Wilder, B. J. (Buna Joe), 1929-
503	The clinical neurophysiology primer / edited by Andrew S. Blum, Seward B. Rutkove.	
504	The EEG handbook / Frances M. Dyro.	Dyro, Frances M.
505	The electroencephalogram : its patterns and origins / John S. Barlow.	Barlow, John S., 1925-
506	The electroencephalogram of the normal child translated and edited by Niels L. Low With preface by Angelo Chiefli and Frederic A. Gibbs.	Fois, Alberto.
507	The electrophysiology of intellectual functions / Duilio Giannitrapani with a contribution by W.T. Liberson.	Giannitrapani, Duilio.
508	The relationships between electroencephalographic and psychological data in normal adults.	Werre, Peter Frans.
509	The responsive brain : the proceedings of the Third International Congress on Event-related Slow Potentials of the Brain, Bristol, England, 13-18 August, 1973 / edited by W. Cheyne McCallum and John R. Knott.	International Congress on Event-related Slow Potentials of the Brain (3rd : 1973 : Bristol, England)
510	Topographic brain mapping of EEG and evoked potentials / K. Maurer (ed.) foreword by F.H. Duffy.	
511	Understanding EEG : an introduction to electroencephalography / Donald Scott.	Scott, Donald F.
512	Cerebral monitoring in the OR and ICU [electronic resource] / edited by Enno Freye.	Freye, E. (Enno)
513	Handbook of brain connectivity [electronic resource] / Viktor K. Jirsa, A.R. McIntosh (eds.).	
514	American journal of EEG technology [serial].	
515	American journal of electroneurodiagnostic technology [Online]; American journal of electroneurodiagnostic technology [electronic resource].*	
516	American journal of electroneurodiagnostic technology [serial].	
517	Brain topography [serial] : journal of functional neurophysiology.	
518	Clinical EEG and neuroscience [serial].	
519	Clinical electroencephalography [serial].	
520	Electroencephalography and clinical neurophysiology [Online]; Electroencephalography and clinical neurophysiology [electronic resource HSL suppressed].*	
521	Electroencephalography and clinical neurophysiology [Online]; Electroencephalography and clinical neurophysiology [electronic resource].*	
522	Electroencephalography and clinical neurophysiology [serial].	
523	Electroencephalography and clinical neurophysiology. Supplement [serial].	
524	Journal of clinical neurophysiology [serial] : official publication of the American Electroencephalographic Society.	
525	Neurophysiologie clinique [Online]; Neurophysiologie clinique [electronic resource] : Clinical neurophysiology.*	
526	Neurophysiologie-Labor [Online]; Das Neurophysiologie-Labor [electronic resource] : Zeitschrift für Neurophysiologische Funktionsdiagnostik.*	
527	Revue d'Electroencephalographie et de neurophysiologie clinique [Online]; Revue d'Electroencephalographie et de neurophysiologie clinique [electronic resource].*	
528	Index to current electroencephalographic literature [serial] / prepared by UCLA Brain Information Service.	
529	Index to current literature [serial] / prepared by the Brain Information Service of the University of California at Los Angeles.	
530	Control of interictal epileptiform bursts in the rat hippocampal slice [microfiche] / by Nancy L. Chamberlin.	Chamberlin, Nancy L.
531	Dream voyage [videorecording] / a presentation of Films for the Humanities, Inc. produced by Goldcrest Films and Television producer, writer, Karl Sabbagh.	