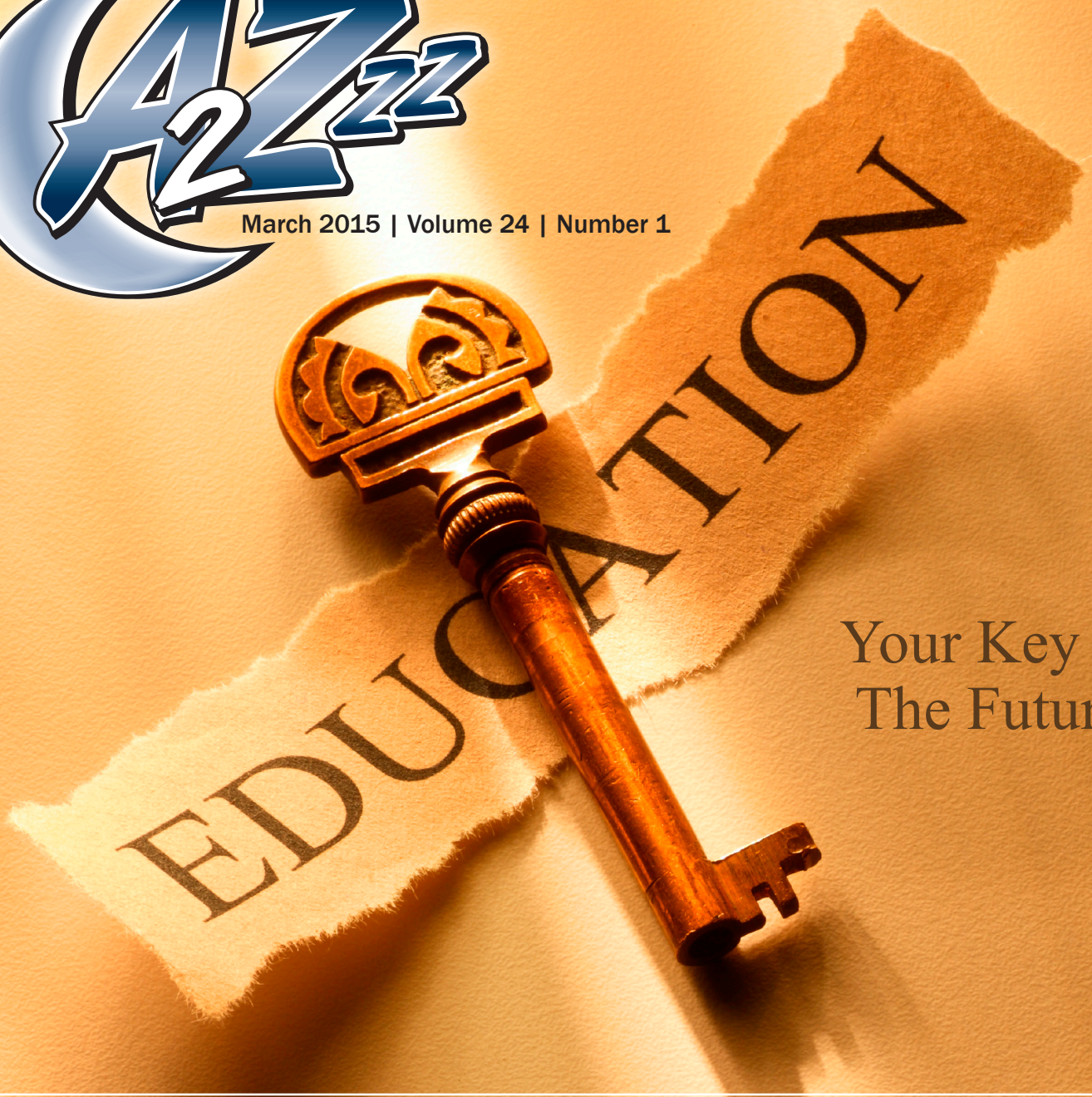
AZzz

March 2015 | Volume 24 | Number 1



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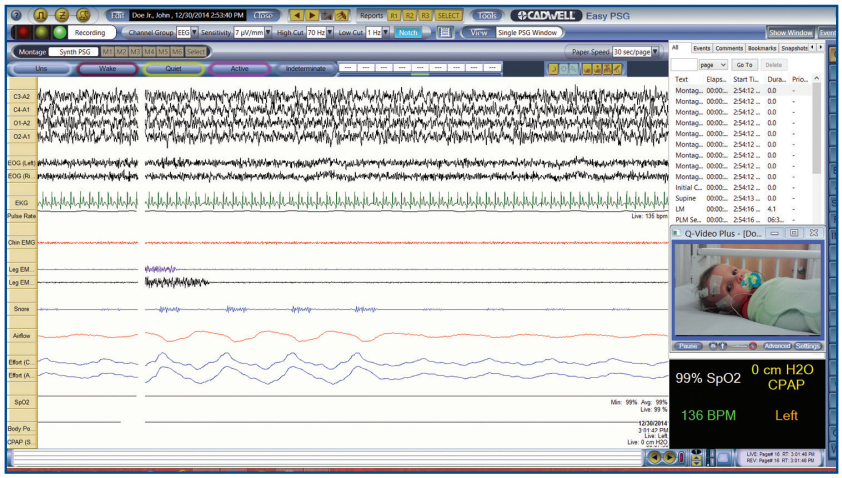

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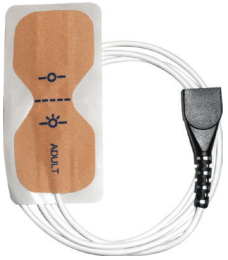

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FROM THE EDITOR

By Laura Linley, CRT, RST, RPSGT

LAURA LINLEY,
CRT, RST, RPSGT

The American Association of Sleep Technologists (AAST) is proud to produce this special themed issue of the *A_2Zzz*. This edition *Education: Your Key to the Future* is geared toward helping sleep technologists prepare themselves for the future in the field of sleep technology. This project has been led by Joanne Hebding, Director at Large for the AAST and the Board Liaison for the Membership and Communications Committee. Joanne had the vision for the special edition and has worked diligently to put this issue together. Her objective was to provide follow-up on our AAST Summit meeting "The Future of Sleep Technology." This summit and the follow-up white paper were part of an initiative which brought key stakeholders together to promote and advance the sleep technology profession through the continued development of educational, technical and clinical excellence in sleep medicine and technology. Joanne and I worked together and outlined this issue with the goal of creating a resource for the sleep technologist navigating through the changing landscape of sleep medicine. This edition is not only available electronically but will soon be available in printed format so that it can be available as a tangible magazine for our Committee on Accreditation for Polysomnographic Technologist (CoA-PSG) education programs, students, sleep centers and sleep professionals.

The articles provide key initiatives needed to advance (evolve) in the field of sleep technology. There are several perspectives on how the shift to multi-disciplinary case management in sleep medicine is creating an increased educational requirement for sleep technologists in order for them to transition into a variety of career paths in sleep technology that are foreseen in the changing world of health care.

You will see authors discussing the changes in delivery of specialty medicine in general. There are dramatic changes occurring in reimbursement, authorization requirements, and an increased demand for case management and the vital need for technology and information integration to the success of sleep programs.

This project gave me the incentive to move forward with my personal goal and to invest in my own education. I am enrolled in an online AAS program so that I can not only preach the necessity of higher education but can lead by example; now who wants to help me with assignments?

Seriously, I'd like to thank you for your continued support. On behalf of the AAST, I encourage you to review and discuss this magazine with your sleep programs and take advantage of the many educational products and services available on our website (www.aastweb.org) to help you navigate the changing roles of the sleep center and the sleep technologist.

Laura Linley

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FROM THE PRESIDENT

By Rita Brooks, MED, RST, RPSGT, REEG/EPT

AAST PRESIDENT RITA BROOKS, MED, RST, RPSGT, REEG/EPT

The American Association of Sleep Technologists (AAST) Board of Directors released a report in the May 2014 issue of the *Journal of Clinical Sleep Medicine (JCSM)*, The Future of Sleep Technology: Report from an American Association of Sleep Technologists Summit Meeting, which provides recommendations for transforming the field of sleep technology. In particular, focusing on identifying new roles for sleep technologists, and determining appropriate education to prepare technologists for the future.

Changes in the way sleep disorders patients are diagnosed and treated, along with a changing focus in medicine from diagnosis to outcomes, is providing challenges and opportunities for sleep technologists. Recommendations from the summit included increasing education and demonstrating competency in more roles than overnight monitoring and record scoring.

The challenge for us as a professional association is to define these new roles for sleep technologists and provide the education that our membership will require to flourish in these new roles. This year the AAST offered the Sleep Care Manager Course for the first time. The course was developed and offered in response to the significant changes in the field of sleep medicine and technology that we have seen over the past several years.

If you were not able to attend the course, the entire Sleep Care Manager Course is available online as a series of online modules that include CEC credits. The first module on Career Management is offered free for AAST members and non-member technologists. This module provides an overview for technologists of all levels of where we are now and where our field is headed as healthcare and sleep medicine and technology evolve. The module also addresses the resources that AAST has developed to provide information and education for the sleep technologist, appropriate to the changes that are occurring in the field. In addition, an organized plan for career development that focuses on new competencies, additional training and higher education is provided with this free module.

We are also presenting this special issue of *A_2Zzz*, Education: Your Key to The Future. Inside you will find helpful articles on everything from the AAST Sleep Technology Summit, to Advances in Sleep Technology, to Preparing for and Taking Advantage of Industry Conferences, to an overview of online degree programs and much more.

> *"As the premier allied health membership association for professionals dedicated to improving the quality of sleep and wakefulness in all people, be assured that the AAST is dedicated to exploring new opportunities for education and career development to help sleep technologists grow and adapt to new roles and realities."*

Another excellent source for information for sleep technologists is the AAST website. We have a career section which includes a job board, a video about what the sleep technologist does, scope of practice, core competences, technical guidelines, the AAST's Position Statement on Education, job descriptions, educational resources and recertification information.

Sleep technologists of the future will need a higher level of both education and skills in order to provide value to potential employers and to be competitive in the job market. As the premier allied health membership association for professionals dedicated to improving the quality of sleep and wakefulness in all people, be assured that the AAST is dedicated to exploring new opportunities for education and career development to help sleep technologists grow and adapt to new roles and realities.

Sincerely,

Rita J. Brooks

Rita Brooks, MEd, RST, RPSGT, REEG/EPT
President

OFFICIAL PUBLICATION OF THE **AMERICAN ASSOCIATION OF SLEEP TECHNOLOGISTS** (AAST)

ABOUT *A$_2$Zzz*

A$_2$Zzz is published quarterly by the American Association of Sleep Technologists (AAST), 2510 North Frontage Road, Darien, IL 60561. Postage paid at Eau Claire, Wisconsin.

Learning Objectives: Readers of *A$_2$Zzz* should be able to do the following:

- Analyze articles for information that improves their understanding of sleep, sleep disorders, sleep studies and treatment options
- Interpret this information to determine how it relates to the practice of sleep technology
- Decide how this information can improve the techniques and procedures that are used to evaluate sleep disorders patients and treatments
- Apply this knowledge in the practice of sleep technology

Submissions: Original articles submitted by AAST members and by invited authors will be considered for publication. Published articles become the permanent property of the AAST.

Advertising: Advertising is available in *A$_2$Zzz*. Please contact the AAST national office for information concerning *A$_2$Zzz* rates and policies, or find more details online at www.aastweb.org.

Mission: To promote and advance the sleep technology profession through the continued development of educational, technical and clinical excellence in sleep disorders.

Vision: To advocate for advanced education and expertise for sleep professionals that is commensurate with a key role in sleep health.

Purpose: To provide a voice for the professionals who ensure the safe and accurate assessment and treatment of sleep disorders

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SUBMIT AN ARTICLE TO *A$_2$Zzz*

Share your expertise with colleagues in the profession of sleep technology by submitting an original article to *A$_2$Zzz*. Read the *A$_2$Zzz* Writer's Guidelines at http://www.aastweb.org/A2Zzz/A2ZzzGenInfo.aspx. To propose an article topic or to get more information, send an e-mail to A2Zzz@aastweb.org.

CONTRIBUTORS

A$_2$Zzz publishes articles that relate to the profession of sleep technology and informs members about recent and upcoming activities of the American Association of Sleep Technologists (AAST).

CONTINUING EDUCATION CREDIT OFFERING

INSTRUCTIONS FOR EARNING CREDIT

AAST members who read *A2Zzz* and claim their credits online by the deadline can earn 2.00 AAST Continuing Education Credits (CECs) per issue – for up to 8.00 AAST CECs per year. AAST CECs are accepted by the American Board of Sleep Medicine (ABSM) and the Board of Registered Polysomnographic Technologists (BRPT).

To earn AAST CECs, carefully read four of the designated CEC articles from the list below and claim your credits online. You must go online to claim your credits by the deadline of **June 4, 2015**. After the successful completion of this educational activity, a confirmation letter acknowledging that you have earned 2.00 AAST CECs will be sent to the email address that you have on file with the AAST.

COST

The *A2Zzz* continuing education credit offering is an exclusive learning opportunity for AAST members only and is a free benefit of membership.

CLAIM CEC CREDITS FOR A2ZZZ ONLINE

Claiming continuing education credits (CECs) by reading *A2Zzz* is now easier than ever: AAST Members can claim credits online through the AAST website – no need to mail, email or fax your completed evaluation form! Visit the AAST website and claim your CECs today!

STATEMENT OF APPROVAL

This activity has been planned and implemented by the AAST Board of Directors to meet the educational needs of sleep technologists. AAST CECs are accepted by the American Board of Sleep Medicine (ABSM) and the Board of Registered Polysomnographic Technologists (BRPT). Individuals should only claim credit for the articles that they actually read and evaluate for this educational activity.

STATEMENT OF EDUCATIONAL PURPOSE/OVERALL EDUCATIONAL OBJECTIVES

A2Zzz provides current sleep-related information that is relevant to sleep technologists. The magazine also informs readers about recent and upcoming activities of the AAST. CEC articles should benefit readers in their practice of sleep technology or in their management and administration of a sleep disorders center.

Readers of A2Zzz should be able to do the following:

- Analyze articles for information that improves their understanding of sleep, sleep disorders, sleep studies and treatment options
- Interpret this information to determine how it relates to the practice of sleep technology
- Decide how this information can improve the techniques and procedures that are used to evaluate sleep disorders patients and treatments
- Apply this knowledge in the practice of sleep technology

You must go online to claim your CECs by **the deadline of June 4, 2015.**

Read and evaluate four of the following articles to earn 2.0 AAST CECs: Page #

AAST 37TH ANNUAL MEETING PREVIEW

Registration is open for the American Association of Sleep Technologists (AAST) 37th Annual Meeting, which will take place from Sunday, June 7, through Tuesday, June 9, 2015, at the Sheraton Seattle Hotel in Seattle, Wash. Attendees will be able to stay current with the latest trends and developments in sleep technology while earning up to 19.75 continuing education credits (CECs).

The AAST 37th Annual Meeting was designed with the busy sleep technologist in mind. The general session includes an intensive, 3-day program that will cover topics from out of center sleep testing (OCST) to telemedicine and technology, to the AASM scoring manual changes. The foremost authorities in sleep medicine and sleep technology will present workshops, symposia and discussion groups at the meeting as well.

Attendees will uncover the latest in sleep technology in the SLEEP 2015 exhibit hall; network with leaders in the sleep field; gain insight into the emerging roles of the sleep professional and learn how to develop a successful business model for OCST. Attendees will also have the opportunity to participate in the SLEEP 2015 Plenary Session and new, exciting sessions including oral presentations of the latest research and case reports.

The premier educational event in sleep technology will offer eight, hour-long sessions on the opening day. Some of the highlights include: Patient Assessment Methods, Co-morbidities and Implementing Telemedicine for Sleep Medicine.

The second day of the meeting starts with SLEEP 2015 plenary lectures on Moving Toward Solving the Mystery of Sleep: From Reverse Genetics to Forward Genetics in Mice and Where in the Brain is Insomnia? How in the World Should we Treat it? There will also be a keynote lecture on Trends in Sleep Medicine and the AAST General Membership and Award Ceremony.

Day three wraps up with five sessions. Some of the highlights include: Basic Pediatrics and Pediatric Scoring, and Scoring Update.

An advanced registration discount is available for the AAST 37th Annual Meeting until April 22, 2015. Pre-registration will continue until May 25, after which registration will only be available on-site beginning at 6:30 a.m. on Saturday, June 6.

While in town for the conference be sure to experience all that Seattle has to offer.

Downtown Seattle includes some of the city's key attractions. Pike Place Market, a massive open-air bazaar and one of Seattle's most iconic attractions, is filled with many tasty treats. Grab some cheeses, meats, fruits and vegetables and head on down to the Seattle Waterfront for a picnic. Other notable downtown attractions include the Seattle Art Museum and the Seattle Public Library.

In addition to being a great picnic spot, the Seattle Waterfront offers dozens of paths, piers and public spaces and is a great place to relax and take in the local scene. While there, visit the Seattle Aquarium and take a ride on the waterfront's newest attraction, The Great Wheel.

Just a short walk from downtown Seattle is the boutique-filled Queen Anne neighborhood. Queen Anne offers some stunning views of the Space Needle, the Sound and Mount Ranier. Lower Queen Anne backs up to the Seattle Center, which includes four museums, 11 theaters, five gardens, six fountains, more than a dozen restaurants, a skate park and an events arena.

Washington also boasts one of the country's largest concentrations of breweries. For those more interested in exploring wine country, the Woodinville wine area is just 30 minutes outside of the city, and is home to dozens of local wineries, cellars and tasting rooms.

Looking to enjoy some retail therapy? Seattle's diverse neighborhoods offer virtually every type of shopping imaginable.

Thanks to a great bus system, monorail, light rail and water taxis, Seattle is an easy city to get around.

Register today for the AAST 37th Annual Meeting! Visit www.aastweb.org to download the preliminary program or to register online. ❖

AAST'S EDUCATION POSITION STATEMENT

By American Association of Sleep Technologists

This position supports best practice and encourages credentialing bodies for the Sleep Technology profession to require a minimum education level for entry into the profession, thus eliminating the clinical experience pathway for credentialing examination eligibility.

The sleep technologist cares for patients with sleep disorders that affect sleep and wakefulness, providing care for patients who range in age from infants to the elderly. The range of services provided includes comprehensive evaluation and treatment of sleep disorders including in center polysomnographic testing and out of center sleep testing, diagnostic and therapeutic interventions, comprehensive patient care and direct patient education. This broad range of services requires that the sleep technologist exercise critical thinking and independent judgment, and possess an advanced knowledge of sleep technology, sleep/wake disorders and associated co-morbid conditions such as cardiac disease, pulmonary disorders and diabetes.

Sleep technologists work in hospitals, free-standing care facilities and may travel to patient's homes.

In order to attain competence and adequate knowledge of sleep/wake disorders and their treatment, the AAST has adopted the position that individuals performing sleep testing procedures and patient care services possess at minimum the following:

Successful completion of an accredited education program leading to a certificate or associate degree with an emphasis in sleep technology.

OR

An Associate's Degree or higher from an accredited college or university.

AND

Certification by a nationally recognized certification board and holds the Registered Sleep Technologist (RST), Registered Polysomnographic Technologist (RPSGT), or Sleep Disorders Specialist (SDS) credential. If the individual is not credentialed at the time of hire a deadline for obtaining the credential, established by the employer, is strongly recommended.

AND

A license to practice sleep technology in any state that has enacted licensure requirements.❖

ADVANCES IN SLEEP TECHNOLOGY

By Emerson Kerr, RRT, RPSGT

There is a "new normal" evolving in sleep medicine. Health care reform is driving a transition from "what was" to "what will be," and in sleep medicine, traditional methodology is giving way to practices rooted in outcomes rather than in process. Technology and connected solutions are presenting sleep centers with unprecedented opportunities to engage, diagnose and treat patients in ways that can yield better results and improve patient care, while proving their relevance in an increasingly competitive landscape.

Sleep centers, physicians, providers, payers and manufacturers all understand the collective need to control health care costs and improve care through more efficient and effective diagnosis and therapy, as well as proactive and preventative disease management. New regulations are prompting change and connected health innovations will be increasingly critical to understanding and treating patients with sleep-disordered breathing.

OPPORTUNITIES FOR CONNECTED HEALTH TECHNOLOGY IN SLEEP MEDICINE

Sleep medicine is being impacted by a number of variables, including competitive bidding, value-based reimbursement, high deductible health plans, high insurance copays, the readmissions reduction program, and new Centers for Medicare & Medicaid Services (CMS) requirements for sleep physicians. Sleep centers have the burden of not only gathering documentation on the appropriateness of sleep testing, they must also document discharge planning and implementation of home therapy. This is critical in a hospital setting, where in most cases the sleep center physician does not manage ongoing patient care at the sleep center; as a result, follow-up documentation is not readily accessible and requires staff to call patients and/or physicians to confirm home therapy setup and follow up on adherence. Technologists who work within sleep centers, therefore, are an integral part of increasing patient accessibility to sleep and treatment education, which in turn increases adherence to therapy.

It is well-documented that patients who adhere to therapy, particularly those with significant co-morbidities, are likely to improve their overall health and avoid hospital readmission. In the new health care environment where sleep centers face numerous challenges, what will make this process work?

Connected health technology.

Connected health technology can help drive greater efficiencies and improved outcomes in sleep medicine and enable the sleep center to thrive in a dynamic healthcare landscape. Instead of waiting for the referral, then testing, treating and finally prescribing, sleep centers now have the opportunity to be more proactive in patient care by looking for opportunities to treat co-morbidities and identify the optimal test for each patient, using technology that enables ongoing disease management and cost-effective educational tools. All of this can be accomplished while collecting relevant patient data and sharing the information and outcomes with the patient's other disease management partners across the continuum of care.

So how does connected health work in sleep medicine? Today's obstructive sleep apnea (OSA) therapy model is a prime example of where this new way of thinking and operating can be put to work. The traditional OSA therapy model is high touch and complicated by disparate vendors, labor intensive setup, and too much manual workflow. Under current reimbursement levels, there is no room for therapeutic ineffectiveness or inefficiency. Positive change starts with bringing the right data together to better empower clinicians, analyze and understand patient needs and outcomes, and automate critical processes. Compliance software like Philips' EncoreAnywhere is an example of this new way of thinking in action. As sleep centers adapt to the new world of value-based medicine, patient management programs allow them to prescribe therapy, follow the patients after the referral process and throughout the disease management cycle to review and analyze critical data related to adherence, compliance and ultimately outcomes.

All of these efforts are for naught, however, if the patient fails to achieve or maintain compliance with their therapy. Sleep centers need to identify ways to drive success while containing costs.

A DATA-DRIVEN, CONNECTED APPROACH TO OSA THERAPY

- *Real-time education and coaching*: Connected health technology affords clinicians new ways to encourage patients to take a more active role in their care. Virtual coaches that are accessible via desktop and mobile devices can provide patients with basic information about their disorder, tips on mask fit and cleaning, and insight into their apnea hypopnea index (AHI). Clinicians will have more educational tools to offer patients, including guidance on how best to use therapy on a day-to-day basis. Effective

EMERSON KERR, RRT, RPSGT

Emerson Kerr, RRT, RPSGT, is a senior field marketing manager for Philips Respironics overseeing the Eastern United States region. A registered respiratory therapist and polysomnographic technologist, he has 20 years of clinical experience in sleep and respiratory medicine.

patient compliance tools such as SleepMapper can result in a patient compliance rate that is 22 percent higher, compared to those not using connected technology.* These new tools provide clinicians with patient data that they can use to operate more efficiently, focusing on concerns and questions that require more in-person consultation with patients.

- *Targeted follow up:* With this connected approach in place, data drives efficient deployment of resources. Guided by risk-scoring algorithms, clinicians can identify at-risk patients for interventional management and then focus on the patients that need the most assistance while reducing high-touch follow up with those who have adjusted well to therapy.
- *Reportable Outcomes:* Along with tools like SleepMapper and the risk-scoring algorithms of EncoreAnywhere to help drive success, the data that downloadable equipment and patient management programs generate is crucial. To have an effective disease management program you must be able to measure compliance—you can't manage what you don't measure. Clinicians can use EncoreAnywhere as part of a comprehensive compliance management program to identify patients who may need other solutions such as PAP-NAPs to assess complications of therapy, or restudies or advanced technologies such as autoSV Advanced or AVAPS. With this insight, clinicians can quickly move patients to those solutions to maximize the probability of success.

Connected health technology is becoming a reality across many areas of health care and is an answer to improving therapy for sleep-disordered breathing patients in the new world of outcomes-driven reimbursement. Backed by data-driven information that enables tailored patient care and greater therapy compliance, this approach to therapy provides a range of new opportunities for providers to stay virtually connected to the patient and coach them more efficiently and effectively to success.

Disease management and outcomes are very much dependent on the success of the solutions prescribed and how easy it is for their patients to adhere to them. Automated processes can empower sleep centers to improve patient experience with their OSA therapy, giving them the opportunity to play a vital role in today's healthcare ecosystem and demonstrate that they can perform effectively and efficiently in the "new normal."

**White paper published by Philips Respironics highlighting a retrospective study showing that patients using SleepMapper achieved a PAP therapy adherence rate that was 22 percent higher than non-SleepMapper users.* http://sleepmapper.respironics.com/files/sleepmapper-tx-whitepaper.pdf ❖

AAS DEGREE IN POLYSOMNOGRAPHIC TECHNOLOGY AT MINNEAPOLIS COMMUNITY AND TECHNICAL COLLEGE

By Danielle Swenson, RST, RPSGT

"So, all you do is watch people sleep at night?" This is a question nearly every sleep technologist has encountered, probably multiple times throughout their career as a Polysomnographic Technologist. Yes, to the untrained eye and uneducated patient, it would appear that all we do is "watch people sleep." Lucky for them, they are in much better hands than they realize, thanks to programs like the Associate in Applied Science (AAS) degree in Polysomnographic (PSOM) Technology at Minneapolis Community and Technical College (MCTC) based out of Minneapolis, Minn.

The program started as a traditional classroom-based learning environment with clinical experience completed at associated sleep laboratories throughout Minnesota. Success followed. According to Program Director, Chad Whittlef, over 70 students have graduated since the first cohort in May 2007, and nearly all graduates have passed the Board of Registered Polysomnographic Technologists (BRPT) credentialing examination, earning the title Registered Polysomnographic Technologist (RPSGT)—almost entirely on the first attempt.

Yielding such positive results from the very beginning, the program continues to run strong. With over seven years under its belt, MCTC's AAS degree in PSOM has laid a solid foundation for itself and is now ready to guide new students who are existing sleep technologists through the next phase of the program: a completely online version of a two-year technical degree in sleep technology.

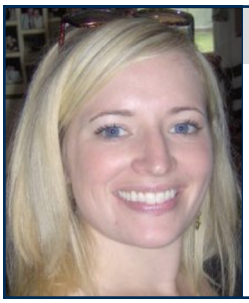
The classroom-based option is still available for students entering the field. But chances are if you are reading this article, you already work in sleep technology. If you are a sleep technologist but do not have your college degree, expanding your level of professionalism has never been easier or more affordable than it is right now. This degree is now offered completely online, with many credits being available through past work experience. According to Whittlef, this is "the fastest and most economical in-field degree in the nation."

It is because of the ever-changing and evolving characteristics of the sleep technology profession that programs like the one at MCTC are invaluable. A formal education program for sleep technologists produces well-rounded health care clinicians who are capable of performing all aspects of the job at the highest possible level of expertise. Not to mention the strength added to the title "sleep technologist" validated by earning a college degree.

You might be asking yourself, "Why do I need a degree when I am already employed?" Bob Dylan said it best when he sang, "The Times They Are A-Changin.'" In a field that is rapidly expanding and advancing, we must arm ourselves with the best possible tools to stay current and competitive in the job market. Think about it. If you worked in Human Resources and were looking to hire a new employee, would you choose the candidate with or without a college degree? This is not only a competition to see who can get a job first, rather it is a competition with yourself to expand your knowledge and ability to provide the best patient care possible.

Laura Linley, President-Elect of the American Association of Sleep Technologists (AAST), is a strong advocate of the evolving role of the sleep technologist, and she is demonstrating by example. She is enrolled in the first completely online cohort of the AAS degree in Polysomnographic Technology and expects to graduate in spring 2015.

Linley has had a successful career in health care, completing a Respiratory Therapy Certificate program in 1984, transitioning to a sleep technologist role via on the job training in 1989, and passing her RPSGT examination in 1997. All past success aside, she still understands the importance of MCTC's associate degree program. Linley is a poster child when it comes to the importance of further education, stating: "A program like this allows a student to continue to work and to commit to higher learning within their sleep profession. The sleep technologist cares for patients with sleep disorders that affect sleep and wakefulness, providing care for patients who range in age from infants to the elderly. The range of services provided includes comprehensive evaluation and treatment of sleep disorders including in-center polysomnographic testing, out of center sleep testing, diagnostic and therapeutic interventions, comprehensive patient care, and direct patient education. This broad range of services requires that the sleep technologist exercise critical thinking and independent judgment and possess an advanced knowledge of sleep technology, sleep/wake disorders, and associated co-morbid conditions such as cardiac disease, pulmonary disorders, and diabetes. The AAS degree program helps meet the critical thinking education required to be successful and to evolve in sleep technology."



DANIELLE SWENSON RST, RPSGT

Danielle Swenson RST, RPSGT, graduated with the first cohort of the AAS degree program in Polysomnographic Technology (PSOM) at Minneapolis Community and Technical College (MCTC) in 2007 and has worked for Park Nicollet in St. Louis Park, Minn. for over seven years as an RPSGT, working as both an overnight and dayshift technologist before transitioning to DME.

Linley was able to transfer in over 40 credits from an outside educational institution, and was also awarded roughly 27 additional credits by testing and earning credit for past work experience. The goal of MCTC's PSOM program is to assist new students, as well as existing sleep technologists, to enter this program at any level and to become well-rounded, well-educated sleep technologists with a college degree.

Linley is not alone in her endeavors. Past graduates of the AAS degree program at MCTC are enjoying inspiring and successful careers in the field of sleep technology.

Leif Ulstrom is a 2011 graduate of MCTC's PSOM program. After graduating, Ulstrom worked as an overnight technologist for Noran Neurological Clinic Sleep Center at both the Minneapolis and Blaine, Minn. locations for two years before transitioning to the position of Clinical Manager for two additional years. His current title is Director of the Sleep and Electroneurodiagnostic Department. As a graduate of MCTC's program, Ulstrom understands the importance of a degree in the field of sleep technology.

"Graduates of the PSOM program are well-rounded technologists," said Ulstrom. "Not only are they capable of running a successful sleep study, but they also understand the physiology and theory behind sleep-related disorders. This additional insight creates technologists with excellent decision-making skills, which translate into long-term success in the field."

Former student, Meisha Lee, has pursued an equally successful career path. As a 2012 graduate of MCTC's program, Lee has filled several roles in the field, starting as an overnight technologist for two years before moving into a day position for another year. She is currently the Department Supervisor at North Memorial Sleep Health Center with locations in Maple Grove and Robbinsdale, Minn. Lee understands that formal education in the field of sleep technology is extremely important in order to: "learn the fundamentals of sleep technology and have a comprehensive understanding of diagnostic procedures and how to properly use therapeutic modalities."

The AAS degree in Polysomnographic Technology provides sleep technologists with the knowledge and confidence to take their careers to a higher level. While some have moved into supervisory and management positions, others have found successful careers as overnight or dayshift technologists. Some have made the transition to the durable medical equipment (DME) arena. We all agree on one thing: formal education for sleep technologists is essential for success as the role of the sleep technologist evolves. Strength comes with unity, coherence, and structure; qualities that the AAS degree in Polysomnographic Technology at MCTC provides!

Learn more about earning your AAS degree in Polysomnographic Technology at Minneapolis Community and Technical College by visiting their website at:

http://www.minneapolis.edu/Educational-Programs/Healthcare/Polysomnographic-Technology

Or by contacting Program Director, Chad Whittlef: psom@minneapolis.edu

Happy learning! ❖

HOW TO PREPARE FOR AND TAKE ADVANTAGE OF INDUSTRY CONFERENCES

By Joanne Hebding, RST, RPSGT

A flight into a new city. Getting a cab to take you to the hotel. Navigating a convention center to find the conference rooms. Registration fees and badges. Vendor area. As either a seasoned veteran to conferences or a new allied healthcare student, attending a conference can be very stressful. By being organized and making a plan, you can successfully navigate the conference and find new colleagues along the way.

Professional organizations and industry sponsors often mix at an educational conference. Allied healthcare professionals join national or state organizations for both networking and educational opportunities. Educational conferences provide the opportunity to learn new skills, view the latest and greatest in equipment, and provoke thought processes in preparing for the future. New equipment, strategic planning, and growth opportunities are usually hot topics at these conferences.

Staying current is not looking at the posts on Facebook or Twitter sites; it involves some planning based on time availability, finances and educational needs. With the vast variety of conferences available, it is best to decide what type of conference to attend. Are you interested in new sleep medicine topics or just looking for knowledge in one specific area? For example, if your employer is expanding into pediatrics, you might want to find a conference that focuses solely on pediatrics. National and state conferences usually offer a variety of topics that may intertwine with interests of allied healthcare professionals such as respiratory therapists and nurse practitioners who are interested in the sleep field.

Approach your work organization to seek funding to attend meetings. Some organizations have set aside monies for continuing education but funding should not be the primary reason you decide to attend a meeting. Professional conferences occur at many levels; local, state, regional and national. Exposing yourself to new ideas, opportunities and other professionals is a great way to stay fresh in your career and possibly promote future employment.

Both formal and informal learning occurs as you learn to navigate the classes, vendor booths, sponsored events and even during mealtime. Many conferences offer lunch and learn, networking breakfasts, and sponsored dinners discussing a specific topic. Plan to learn one or two new things you know nothing about so you can bring some information back to your workplace.

If you do not have a work business card, this is a great opportunity to print personal cards to give out to new contacts. Ask your new friends for their business card, get e-mail addresses and telephone numbers and keep them for future reference. Make a point of meeting the conference organizers, let them know what you liked about the conference and what you would be interested in for future conferences, and get their business cards for your files.

Sometimes the informal opportunities are the most valuable part of the conference, as you gain networking contacts and make some life-long friends in your field. Some of my best contacts have come by way of a chance meeting over a cup of coffee in between educational sessions, being introduced to someone new by another colleague. Talk to the people sitting around you, or at the lunch table.

Save some time daily to visit the vendor booths to get one-to-one training with that sales representative who is well versed in the product and willing to spend that extra time with you. Many of the vendor sponsors have hired technical support from conference attendees. Knowing your territorial sales representatives well will aid you as you are already comfortable with them and they will introduce you to the rest of their vendor teammates.

Stay fresh, learn what is new or changing, and take valuable information back to your team in the sleep center. Attend a conference! ❖

JOANNE HEBDING, RST, RPSGT

Joanne Hebding, RST, RPSGT, has been in the sleep field since 1988 and is manager of the Tallahassee Memorial Sleep Center in Florida.

American Association of Sleep Technologists

AAST

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SEATTLE

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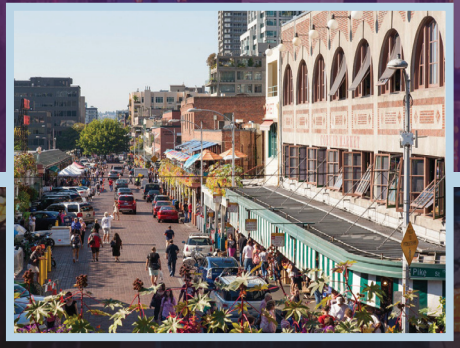

ONLINE LEARNING OPPORTUNITIES IN POLYSOMNOGRAPHY

By Donald S. Cucuzzella, MA

Colleges and universities across the country are rapidly expanding online programs to meet the needs of nontraditional students, but it is important for working adults who are thinking about returning to school to understand that not all online programs are the same.

Technology can help institutions remove two main barriers facing working adults who are interested in advancing their education: time and location. Most people cannot sacrifice time away from their jobs or their families in order to sit in a classroom or join an online discussion at a specific time. Fortunately, they do not have to.

Asynchronous online courses do not require a student to log in at any specific times. This means that students do not have to be online the same time as their classmates, like they do in a course taught in a brick-and-mortar classroom, or log in at a specific time and day during the week. Another common type of online course is the synchronous course, which removes the need to travel to a campus, but requires students to log in at specific times for live discussions.

In an asynchronous course, students follow a weekly course schedule that enables them to participate in online discussions and submit their assignments at times when it is convenient for them, so long as work is turned in by the assigned due dates. Students researching online programs should check to see if the programs are offered asynchronously.

In addition to the asynchronous versus synchronous aspect of online courses, it is also important to understand how interaction in an online course will take place. Institutions that focus on adult learners, like Thomas Edison State College, utilize a model where professors who guide students in asynchronous, online courses are practitioners in the field. This leads to interactions between students and the professor that result in lessons that can be applied to a student's profession.

Just like there is no "one-size-fits-all" approach to online courses, it is also important to consider other ways a college or university can meet the needs of adult students, who typically have different responsibilities than an 18-year-old who attends college full time directly after high school.

Adult students are not simply older versions of recent high school graduates. Many adults have already completed at least some college credits and may even possess college-level knowledge that has been acquired outside of a traditional classroom. These are important assets that older students bring to academy.

Since it was established in 1972, Thomas Edison State College has focused exclusively on providing flexible, high-quality, collegiate learning opportunities for self-directed adults.

The college offers undergraduate and graduate degree programs in more than 100 areas of study, including Polysomnography. The average age of the college's student is 36 and most are working professionals who cannot take time away from their families or their careers to complete their education.

Some are interested in changing careers or professional advancement while others come back to finish something they started earlier in their lives or to set a positive example for their children. In more and more fields, students are coming back because a degree is required to maintain employment and advance.

We provide them with the ability to balance their life and their learning in ways not offered by traditional institutions. For example, our semesters begin the first of every month, not just in the spring and the fall, so students can start their program whenever they are ready.

In addition, most of our students transfer credits they completed at other institutions. The college can apply up to 80 credits earned at regionally accredited community colleges and apply up to 120 credits earned at regionally accredited senior colleges and universities. When students apply, they receive an evaluation that shows how their transfer credits will be applied to their new degree and what credits they still need to complete to earn their degree.

For these credits, students can take asynchronous, online courses, where they interact with each other as well as a course mentor who facilitates the course and grades assignments and exams. The college also offers independent study courses, which are a good option for independent learners who prefer no interaction with other students.

DONALD CUCUZZELLA, MA

Donald Cucuzzella, MA, is the Assistant Director for the School of Applied Science and Technology at Thomas Edison State College. He has been with Thomas Edison for 12 years serving in a variety of roles including Admissions, Registrar's Office and Academic Advising.

Students are also able to earn the remaining credits they need for their degree through the college's prior learning assessment program. Prior learning assessment is not a process where students earn credit for life experience. Rather, it provides students the opportunity to earn credit by demonstrating that they possess college-level knowledge that has been acquired outside the classroom.

At Thomas Edison State College—a national leader in the assessment of prior learning—prior learning assessment includes credit-by-exam programs, portfolio assessment, and earning credit for select licenses, certifications and professional and military training programs. When considering prior learning assessment, students should work closely with their academic advisor to determine where credits can be used towards their degree requirements.

Credit-by-exam programs, including the college's own Thomas Edison State College Examination Program (TECEP®) exams, are pass/fail exams that award credit to a student if they pass a comprehensive exam. The college also accepts credit earned through other testing programs, such as DANTES Subject Standardized Tests (DSST®) and College Level Examination Program (CLEP®).

Portfolio assessment enables students to earn credit for practical knowledge they have gained through their life and career. Many students do not realize that the training and work they have done outside of the classroom has given them knowledge in a variety of areas that could be used toward their degree. With portfolio assessment, students work with a subject matter expert to demonstrate that the knowledge they already have is equivalent to what they would have learned in a particular course. This knowledge could have been gained through on the job training programs, professional certificate programs, volunteer service, or even hobbies or recreational pastimes.

At Thomas Edison State College, students take two courses (PLA-100 and PLA-200) that help them to identify and articulate this knowledge. Mentors for these courses help guide students through the portfolio development process. After completing these courses, students compile a portfolio and submit it to a subject matter expert to determine if credit can be awarded.

The college's Office for the Assessment of Professional and Workplace Learning conducts academic program reviews of training and education programs in a wide variety of fields, including professional license and certification programs and other professional credentials such as the Board of Registered Polysomnographic Technologists (BRPT) certification exam.

Students who possess this credential can earn 17 credits that can be applied to our Commission on Accreditation of Allied Health Education Programs (CAAHEP) Accredited Associate in Applied Science degree in Polysomnography or our undergraduate certificate in Polysomnography.

The college developed its Polysomnography program with sleep medicine professionals from the Capital Health Center for Sleep Medicine in Hamilton Township, N.J., which is accredited by the American Academy of Sleep Medicine (AASM). Most of the requirements for both the certificate and the degree program can be completed online. Online Polysomnography courses required are:

- Theoretical Fundamentals of Polysomnography (PSG-101)
- Instrumentation Theory (PSG-102)
- Polysomnography Scoring (PSG-103)
- Sleep Disorders (PSG-104)
- Medical Terminology

In addition to the courses above, there are two clinical courses required, Clinical Fundamentals of Polysomnography (PSG-200) and Therapeutic Interventions and Clinical Patient Management (PSG-105). These courses, taken in a two-semester sequence, are blended in design to encompass the clinical component of the course. This means that students complete part of the course online and part of the course at a clinical site.

Capital Health became the first site approved for the clinical component of this program. Two other sites are also available in Norfolk, Va. and Port Jefferson, N.Y. For students who possess the BRPT certificate, the 17 credits can be applied to satisfy the Polysomnography portion of the degree. The remaining general education and free elective courses can be completed entirely online, which creates a wonderful opportunity for students working in the field, as many states now require candidates to possess a college degree to sit for licensing exams.

Thomas Edison State College enables Polysomnography professionals to earn credit for their BRPT certification, transfer in credit from other colleges and take online courses that provide the flexibility that adult students need to advance their education and their careers. ❖

LIFE IN A SLEEP PRACTICE: WHICH BUCKET DO YOU FIT INTO NOW AND IS THERE A BUCKET FOR THE FUTURE?

By Robyn Woidtke MSN, RN, RPSGT, CCSH, CCP

For those working in a sleep center, the days are as varied as the nights, as too are the roles for those individuals. In this article, we will explore the variety of roles, skills and expertise that are needed within a sleep practice. The practice of sleep medicine/sleep health may be changing, but the fundamental deliverable remains the same, that is, to help individuals attain good sleep health as part of their overall health and well-being. Sleep health knows no boundaries, not age, gender, race or condition; however, without sleep health, all areas of life are negatively impacted.

Like many specialties, sleep medicine has been practiced in silos. Silos occur when communication and inter-professional collaboration do not take place. The sleep practice must become an integral component of the health of patients, from discharge planning after hospitalization to the patient-centered approach to managing patients with positive airway pressure (PAP). The sleep technologist or individuals certified in clinical sleep health can play a large role. As cited in Newhouse and Spring (2010), "Evidence suggests that teams of people from different disciplines who work together can improve work processes and patient care outcomes", thus individuals working within sleep practices must make themselves readily available as a resource to those outside of the field. The question that remains is how can the various roles lend themselves to these inter-professional teams in and outside of the sleep practice?

We are well aware of the role of the night technologist providing the skill and knowledge needed to record sleep and other parameters. Such knowledge includes basic sleep anatomy and physiology, the application of neurodiagnostic techniques such as the routine use of the International 10-20 System of Electrode Placement and applying appropriate settings (i.e. filters) to the recording to ensure rigorous data collection occurs. The fitting of patient masks and the art and science of titration of PAP devices is a skill that takes patience and practice in understanding the nuances. The role of the night technologist takes on special meaning with regards to education and initial training of the patient on the use of PAP and sleep hygiene. As we know, for some patients, this may be one of the only prolonged periods of time a patient has with a sleep knowledgeable provider, thus patient engagement is key; further, documentation and communication with others in and outside of the practice is a crucial component of the patient's continuum of care. Enhancing communication skills (written and verbal) will continue to be essential as models of health care such as the patient-centered medical home continue to evolve.

ROBYN WOIDTKE MSN, RN, RPSGT, CCSH, CCP

Robyn Woidtke MSN, RN, RPSGT, CCP, CCSH, is a registered nurse and a registered polysomnographic sleep technologist and has received her credential in Clinical Sleep Health. She is also certified as a Chronic Care Professional (CCP) Health Coach.

Taking a step outside of night shift work, there are many daytime roles. These may include the sleep center manager, who may have oversight of general operations and marketing. Another sleep center management role is that of the clinical coordinator or "chief" technologist. The emerging role of clinical sleep educator (this role may have various titles, i.e. CPAP coordinator etc.); and that of a clinical sleep healthcare case manager are beginning to see some traction as principles of chronic care management and ongoing support to engage the patient and enhance self-management have begun to be recognized as vital to the success of the patient. The newly created Certification in Clinical Sleep Health (CCSH) by the Board of Registered Polysomnographic Technologists (BRPT) has integrated concepts of sleep throughout the life-span with incorporation of data outcomes and improved communication between practitioner and the patient. The American Association of Sleep Technologists (AAST), likewise has been taking a pro-active approach to expanding the role of non-physician/physician extenders (i.e. the Sleep Care Manager). See the AAST website for the Sleep Care Manager job description: http://www.aastweb.org/jobsleepcaremanager.aspx. These organizations are helping to shape and define the sleep practice of the future. Let's take a look at some of these roles more closely.

The sleep center manager, which has been historically important to the overall running of a practice can be considered as a "mission control" role. This role may include coordination of staff and patient load (logistics), supply maintenance; maintaining employee records, and management of other staff such as medical assistants or administrative support. This person in this role should have knowledge of basic business practices including accounting and may work closely with billing and reimbursement personnel. In addition, the role may provide support during accreditation periods. A person in this position may or may not have a clinical background.

A Clinical Coordinator (Chief Technologist etc.) typically will have a clinical background and manage the clinical staff. A component of this role is to ensure that work quality is maintained, assure that the technologists are competent, provide education and training and may include either oversight of scoring or include some scoring duties. This role may also include some recording of daytime studies such as Multiple Sleep Latency Test (MSLT), maintenance of wakefulness test (MWT) or positive airway pressure nap (PAP-NAP) and occasional night shift work as well. Communication between the sleep center managers is crucial to ensure a smooth running facility. However, given today's resource constraints, the lines of these positions may be blurred and/or may also be combined. Creativity will be key in insuring all of the needs of the facility are met. Input to marketing and education endeavors may be considered as part of

this domain as well as the clinical resource may have important insights to provide with regard to patients' needs and wants and potentially, gaps in the care continuum.

Wikipedia defines marketing as "communicating the value of a product or service to customers, for the purpose of selling that product or service." It is about relationship management. Marketing and education to non-sleep practices may be a component of the above or be distinct and separate. Community outreach can be crucial in maintaining the viability of the sleep practice. Some tasks under the marketing title may include preparing marketing materials and tracking metrics of referrals or developing an educational opportunity for community physicians to include continuing medical education and/or allied health contact hours. Activities like these provide a robust opportunity to encourage a collaborative spirit, seeking untraditional referral resources such as obstetrics/gynecology or school behavioral health and/or learning programs such as individual educational programs (IEP) may be part of an overall marketing strategy. In this role, keeping up to date with new and interesting research and/or guidelines can provide a robust pipeline of opportunities! Communication is key whether one-on-one or in a group. Selling the importance of sleep health is the goal.

Patient activation and engagement! A key to patient success! What does it mean and how do we do it? Why is it important? And, who should do it? The answer to the last question is that all staff should be involved with patient engagement; however it might be that the "point" person is the clinical sleep health professional (by whatever title). The "Care Manager" should have a robust understanding of these topics. A person in this role may be a sleep technologist or not. What is patient engagement? According to the Centers for Medicare and Medicaid Services (CMS, 2015), it is a partnership between the patient and family together with the health care professional. Easier said than done! Patient activation is the foundation of ongoing engagement and includes concepts of self-efficacy and willingness to participate in their care; whereas engagement includes activation and is a broader term to include longer term self-management (Hibbard & Greene, 2013). Studies have shown that patients who are activated and engaged use fewer health care resources. In general, low rates of adherence are known for patients undergoing treatment for sleep apnea, thus activation and ongoing engagement are important concepts to consider (Sawyer, Gooneratne, Marcus, Ofer, Richards & Weaver, 2011). Another area of clinical competency for this role is to understand the bi-directionality of co-morbid, chronic conditions and demonstrate the ability to show empathy for the "burden" these patients bear on a day-to-day basis. In view of the fact that this bi-directionality exists, it provides an excellent opportunity for the "Care Manager" to contact referral sources to be the "go-to" person for sleep health information and patient support. This communication promotes and invites an environment of collegiality.

Research! The individual who works in a research role is very different from one in clinical practice. Although working with research subjects is much like engaging with patients, the outcomes are quite different. Different skill sets and knowledge are required and include understanding bioethics, Institutional Review Boards, Codes of Federal Regulations and guidelines specific to research as well as clinical trial design and basic statistics. Negotiating budgets, contracts and publishing rights may also be required. Subject recruitment and retention is essential to ensuring that the study runs on time and that the data are robust. Research may be investigator driven or sponsored by a medical device or pharmaceutical company. Research involves data collection, obtaining informed consent and possible bio-specimen collection. Typical clinical practice is "waived" in lieu of a protocol designed to obtain the most important "endpoint." Research is a balance between risk and benefit, whereas clinical practice is always geared toward the benefit of the patient. Appreciation of these differences is core to this role.

Finding your niche and growing it in the new health care era will be important. Cross training and flexibility to engage with others and take on expanded roles may be the norm and siloed careers may become a thing of the past. Learning new skills and knowledge is important to ongoing sustainability. Sometimes, although financially difficult, finding a way to become certified or pursuing that degree can be not only rewarding on a personal level, but may be a career changing moment. A quote from President Clinton sums this up: "The future is not an inheritance, it is an opportunity and an obligation." We have inherited a rich history of groundbreaking research, the development of a new specialty and new careers, now it is up to us to continue to seek out opportunity and understand our obligations for the future.

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HEALTHCARE LEADERSHIP AND ADMINISTRATION AT A STATE UNIVERSITY

By Jane Foote, EdD, MSN, RN

In 2010 the Winona State University Center of Excellence was asked to develop a baccalaureate completion degree to advance the educational level of working professionals from a variety of allied health professions. This article describes the process used and challenges and opportunities that accompanied the process of developing a new completion degree, and specifically the engagement of the polysomnographic community in Minnesota in the degree development process.

BACKGROUND AND DRIVING FORCES

Winona State University (WSU) had a long-standing reputation for excellence in their Business, Nursing and Exercise Science programs. For more information, visit their website at www.winona.edu. WSU also housed the Minnesota State Colleges and Universities Center of Excellence in healthcare called HealthForce Minnesota. For more information, visit their website at www.healthforceminnesota.org. Prior to assuming my executive director role at HealthForce Minnesota, I was the Dean of Health Sciences at Minneapolis Community and Technical College (MCTC). During my tenure at MCTC the Polysomnography and Electroneurodiagnostics Associate of Applied Science (AAS) degree programs was developed. For full degree options, visit www.minneapois.edu. A recurrent workforce development theme emerged over time at MCTC and HealthForce Minnesota. There appeared to be a gap in access to four-year state-supported baccalaureate degree programs for experienced allied health professionals desiring to attain a degree preparing them for leadership roles in allied health care settings. This gap was impacting employers' ability to find and hire qualified leaders for clinics, outpatient departments, in-patient departments and stand-alone sleep centers.

Employers shared a clear need to advance talented allied health professionals with two-year degrees into leadership and management roles. However, additional knowledge, skills and abilities were needed for this employment advancement to transpire within the regional health care systems. In fall of 2009, HealthForce Minnesota convened a group of over 20 employers from across the state to engage in initially a one day dialogue about what knowledge, skills and abilities they required in graduates from a baccalaureate degree focused on health care leadership and administration. Sleep centers were well-represented with four major employers from the Minnesota sleep medicine community attending the dialogue session. University faculty from WSU and Bemidji State University (BSU) were invited to attend for the purpose of clarifying with employers the completion degree learner outcomes expected. The original day of dialogue with employers guided the curriculum design.

JANE FOOTE, EDD, MSN, RN

Jane Foote has been serving in the Minnesota State Colleges and University System since 1991. Her current role is as an associate professor teaching graduate and undergraduate courses in Health Policy, Leadership, Nursing Education and Integrative Therapies at Winona State University.

GUIDING PRINCIPLES

Employers emphasized that accessibility to a baccalaureate degree program needed to be flexible. Employers from all over the state provided input on the program's design, and it was determined that an online degree would be an ideal delivery method. It was anticipated that these adult learners would continue to work while attending school, so online delivery would be flexible and eliminate geographical and schedule barriers. An initial challenge was that WSU had a limited number of faculty experienced with online course and program delivery. BSU is a sister university in the system, and faculty at BSU were accomplished in online course design and as a result they became a full partner in the degree design. For more information, visit http://www.bemidjistate.edu/ .

Employers and academics agreed the degree must be of high quality and for that reason a commitment was made to have all courses nationally certified by Quality Matters. For more information, visit www.qualitymatters.org. This process involves each individual faculty member teaching in the program to design their course to meet the rigorous standards of the Quality Matters (QM) certification process. Small stipends were offered to the faculty in the new degree program in an effort to compensate for the additional work necessary to attain the QM seal of approval. Core competencies of the program included financial, statistical, business, policy and leadership content areas. Graduates needed to be able to communicate and work effectively with diverse communities and be able to participate as leaders in creating a strategic plan. This degree was the first of its kind at WSU, and the interprofessional and interdepartmental design of the program, bringing business, nursing, statistics, communications, education, and exercise science faculty together, was a learning experience for the university.

IF YOU BUILD IT, THEY WILL COME

Response to the Healthcare Leadership and Administration (HLA) degree has been growing and the HLA program will produce its first graduates in the summer of 2015. Currently there are 42 students in cohorts one and two, with approximately another 15 students seeking admission for spring 2015. Current students include those with associate degrees in a variety of areas including polysomnography, intraoperative monitoring

(IOM) technicians with a degree in electroneurodiagnostics, dental professionals (both hygiene and assisting), radiography, respiratory therapy, and medical office professionals. Some of the major employers in the region have required that all managers have a baccalaureate degree. Local health professionals with an associate degree as the terminal degree in their field, like an AAS in Polysomnography, have found the HLA degree is a great option for those seeking promotion and career advancement.

The HLA degree at WSU is a 120 semester credit Bachelor of Applied Science (BAS) degree. Following transcript review from the WSU registrar and the program director, usually all 60 credits of an AS and most of the credits from an AAS degree will transfer into WSU. For students with an applied associate's degree, up to 30 technical credits are transferable, which helps reduce time to degree completion for these students. Students might also need general education credits to complete graduation requirements. These allied health professionals may also be eligible for credit for prior learning. Each student creates a plan of study and timeline for degree completion with the program director. The 38 upper division credits for the HLA Core and 12 elective credits are offered online, and 30 credits must be completed through WSU for the degree to be conferred.

RESOURCES AND LESSONS LEARNED

Adult learners are focused, motivated and generally are a joy to teach. The interprofessional nature of the learners brought a variety of expertise to the course topics and kept the online classroom engaging and interactive. For example, in the Health Policy course students were asked to find a policy or a current bill that interested them. In required online discussions, students presented the background on this policy and how it impacted their area of health care practice. They learned to write letters to their elected officials, gave elevator speeches on the policy topic they chose, and finally wrote a scholarly paper on a needed policy change including why the change was needed, who the opponents and proponents were and how the change might be funded. Students were asked to go online and reflect on the Affordable Care Act (ACA) insurance options by actually using the online registration site and sharing with their classmates the accessibility of the system, how affordable the plans were, and what the impact of the ACA might be for patients they are caring for. The application of basic health policy processes was applied to their area of expertise or passion and in this way the content was mastered and new abilities were attained. Course evaluations were strong and students commented that the course was fun.

Challenges in start-up of the completion degree program were many. Initial funding for the HLA completion degree program came from a small $70,000 grant from Minnesota Online, part of the Minnesota State Colleges and University system, and approximately $25,000 from HealthForce Minnesota. Additionally, the WSU Outreach and Continuing Education Department provided administrative and staff support, as well as significant assistance from the WSU Technology Learning and Teaching department. Internally WSU stretched in new ways to serve adult learners seeking an undergraduate degree.

Increasing complexities in health care are apparent to most of us who work with patients, regardless of what that setting is. This includes management of scarce resources, people, and facilities. Academics are beginning to actively engage with employers in meeting their needs for a qualified workforce, including development of leaders with technical skills in patient care areas. The HLA degree at Winona State University is an example of a baccalaureate completion degree that was built upon what health care employers identified was essential to meet their current and future workforce needs.❖

Image courtesy of Jane Foote. A recent social gathering of Winona State University HLA students and faculty, taken November 3, 2015 in Rochester, Minn.

FINANCING YOUR EDUCATION

By Auburne Deming, MHA, RPSGT and Mary Ellen Wells, MS, RPSGT, R.EEG T, R.NCS T.

A college degree is one of the best investments you can make in yourself. A degree can lead you to more job opportunities, higher pay, and a better life for yourself and your family. When considering completing a college degree, there are many questions you may have about how to pay for your education.

FINANCING OPTIONS

The first step in determining how you are going to finance your education is to fill out your Free Application for Federal Student Aid (FAFSA) application by visiting www.fafsa.gov. This is a tool developed by the U.S. Department of Education to determine your eligibility for student loans and grants based on your income and current financial responsibilities as determined by your taxes from the previous year. It is recommended to complete the FAFSA as soon as you file your taxes for the previous year. Early completion will ensure that you get the most complete overview of your financing options as soon as possible to allow you more time to make decisions. You do have to file a new FAFSA each year so don't forget to complete the form for any year that you think you may enroll in courses.

The FAFSA report will tell you which financial options you qualify for that are offered through the federal government. There are other options available to help you finance your education as well. Sources such as state government, non-profit organizations, private companies, your own or your spouse's employers, and the educational institution itself are all places that you should look to help find funding for your education. Any business that has a foundation typically gives out money to aspiring college students in the form of grants or scholarships. The institution where you plan to study should be able to provide you with information about funding for which you may be eligible.

There is really not much difference between grants and scholarships. Both usually require that some type of qualifying criteria be met (race, age, gender, income level, field of study, etc.), and may require written essays and applications. For some (particularly the very large amounts) there are additional projects and work that the student must complete as part of their course of study. Typically, both grants and scholarships can be thought of as a "gift" as they are funds that you are not required to repay. You should apply for every grant and scholarship you think you may be awarded. You never know what could be available to you unless you try. However, be sure to read the fine print as some have specific terms and conditions for each one that you accept, as certain actions or circumstances may place you in a position that would require you to repay the grant. For example, if you accept a Federal Pell Grant (a very common grant available to undergraduate students), then withdraw from your classes or the institution all-together, you are required to repay the grant to the federal government. Others may require that you maintain a grade point average above a certain threshold to be eligible to receive the scholarship in later semesters.

Student loans, however, are much different. Unlike grants and scholarships, loans require repayment. Student loans are one of the more readily available and realistic options for many students, especially when students do not qualify for federal financial aid. Some students actually use a combination of student loans and aid from other sources, such as scholarships and even federal financial aid. Loans are differentiated from financial aid, grants, and scholarships by the fact that loans usually must be repaid with interest. Student loans may come from the federal government, or may come from the private sector, such as banks or financial institutions.

Two types of federal student loans are available – Direct Loans and Federal Perkins Loans. Direct Loans are the most common and the U.S. Department of Education is the lender. The four types of direct loans as well as the Perkins Loan Program are outlined below:

- Subsidized loans are made to eligible students who demonstrate financial need and have slightly better terms than unsubsidized loans, such as the U.S. Department of Education pays the interest on these loans while the student is still enrolled and for the first six months after graduation.
- Unsubsidized loans are made to eligible students who do not demonstrate financial need. Interest on these loans is the responsibility of the borrower during all loan periods.

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- Direct PLUS loans are made to graduate or professional students and parents of dependent undergraduate students.
- Direct Consolidation loans are made to allow consolidation of all eligible federal loans into a single loan with a single loan service provider.
- Federal Perkins Loan Program is made to undergraduates and graduate students with financial need. Unlike the previous types of loans, in this instance the school is the lender.

Remember that loans for an education are an investment in your future, but know your options and responsibilities for paying back your loans. Interest accumulated from student loans can often be a tax deduction, but make sure you speak with a financial advisor to make this determination. Most importantly, if you take out a student loan, make sure you understand the terms and conditions of the loan and know who is making the loan.

Another opportunity is loan forgiveness or loan repayment by another entity. There are different programs available through the federal government and through other organizations, such as the National Health Service Corps. For more information, visit http://nhsc.hrsa.gov/loanrepayment. These programs have a competitive application process and usually offer loan forgiveness or repayment up to a certain amount in exchange for a service commitment. This usually involves working in a designated health care area for a given amount of time, such as two years.

The Public Service Loan Forgiveness (PSLF) Program is another program offered by the federal government, which encourages individuals to work in public service jobs. In this program, after making 120 payments on the given loan (approximately 10 years of payments), the remaining balance of the loan will be forgiven if the individual is working in a public service job. Sleep technologists or educators working in hospitals and educational institutions will often qualify, but it is important to speak with a representative of the PSLF program to ensure eligibility before establishing a loan repayment program.

For more information about federal student loans, please visit the U.S. Department of Education's Federal Student Aid website at: https://studentaid.ed.gov/types/loans.

If you, your spouse, or your parents are veterans of the military, you may have educational funding available to you through the U.S. Department of Veterans Affairs (VA). This could be particularly helpful for anyone that qualifies for the GI Bill such as veterans, survivors and dependents. If you think you may qualify for VA educational funding, you can find more information by visiting: www.benefits.va.gov/gibill.

There are many options available to those seeking financial support of their educational endeavors. When determining which opportunities best fit your needs, remember that if you qualify for grants or scholarships, always accept those monies first since they do not have to be repaid. You should then subtract your grant and scholarship amount from the amount that you estimate needing for your tuition, fees, books, and other educational materials. If you find that you still need additional funding once those monies are applied, look cautiously at student loans to best determine which are the best option for you and your current and future budgets. Most colleges are now very helpful in providing calculators and other information about what your student loan payments may look like upon graduation. This can be an important tool as it will allow you to determine how much money you really want to accept in the form of student loans each semester based on what you feel you can afford upon graduation.

There are many options available to assist you in funding your educational endeavors. Don't let the fear of not being able to afford a college degree keep you from pursuing your personal and professional goals. You may be surprised to know what types of financing you qualify for and how affordable a degree may be. No matter what path you choose to fund your education, do it responsibly and always read the fine print. ❖

ONLINE DEGREES: A FIRST PERSON ACCOUNT

By Mary Kay Hobby, BAS, RRT, RPSGT, CCSH

ONLINE LEARNING

Distance learning is the ability to complete education programs from a distance. This is typically done on a computer in your own home. Academic institutions nationwide offer online degree programs. The classroom travels across the distance to your home.

As a working adult with family obligations, it is difficult to conform to life in a traditional classroom. Online learning offers the flexibility to juggle commitments and still complete a degree program. Accessibility is another advantage to online learning. A brick and mortar campus may be miles away. Attending classes in the park, library, or living room is appealing to many. Online courses are flexible yet structured. The structure of the course is laid out to accommodate many different types of learners. The student must be disciplined to complete an online program. Like starting an exercise routine, it is easy to find excuses or find something more fun or relaxing to engage in rather than completing reading assignments or writing a paper for class. If it is important, make the time!

AVAILABLE PROGRAMS

When searching online degree programs, it is important to select a college or university offering a regionally accredited program. Regional accreditation provides more credibility with employers and transfer colleges or universities than does national accreditation (Littlefield). Programs specializing in Polysomnography are available and are accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). At the time of this article submission, the CAAHEP website (www.caahep.org) reveals two Associates and one Bachelor degree program in polysomnography. Certificate programs are also available.

WHAT TO EXPECT

I recently chose to complete an online Bachelor of Allied Health Science program through Arizona State University (ASU). Since I previously obtained an associate degree in an allied health field (Respiratory Therapy), the Bachelor in Allied Health degree was the best fit for me. Health informatics, health promotion and disease prevention, medical ethics, and gendered communication were key elements of the program which offered a diversity of learning that has broadened and fortified my health and wellness knowledge base. I am now more sensitive to the diverse needs of others. I realize the importance of understanding each patient's health literacy and learning style and can adapt communication and teaching methods to foster positive outcomes. I appreciate health promotion but can identify with one's difficulty in changing health behaviors. I am better equipped to serve the needs of the patient and community. I believe advancing my education has made me a better teacher and a better patient care provider. Let me share my experience.

At ASU, the same qualified faculty teaching traditional courses also teaches online using the same curriculum. Online courses are 7-8 week accelerated courses. A full semester of course material is completed in half the time. ASU estimates the time required to successfully compete an online course is 5-6 hours per credit hour. This means the student should plan to spend 15 hours per week to complete a 3 credit hour course. It takes discipline. It takes organization. It takes putting other things on the back burner a while.

Students are assigned an academic advisor after completing the application process and are accepted into the program. The academic advisor is the expert who can assist in class selection to help navigate through the degree program. A curriculum "success" coach will check in weekly to address any problems or concerns you may have. The coach's role is to support the learner, keeping them on the track to achieving education goals. Think of the coach as a personal trainer. "Coach" will provide encouragement but also provide a nudge when needed to ensure the student's success. The coach helps the student set and reach small goals along the road to academic achievement.

A personalized and customized web portal is created as the link to the academic institution. The portal provides integrated interactive access to information and services such as financial resources, degree audit records enabling the student to track degree progress, course registration, and class management. The portal provides access to a complete package of college resources available to online learners. Services, technology, staff, faculty, and the institution welcome you. Tutoring and academic support are available for the asking.

MARY KAY HOBBY, BAS, RRT, RPSGT, CCSH

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The portal navigation panel steers the student toward course details such as syllabus and expectations, schedule of due dates, and instructor meet and greet, as well as seven or more sections corresponding to course weeks. The syllabus and course overview is presented as a downloadable document for easy access. Professors meet and greet students through a welcome video where they can discuss key elements and course expectations. It is fun to actually see the instructor. This allowed me to 'see' the professor in my mind while listening to course lectures.

The home page also includes instructor announcements and class updates that are often used to remind students of upcoming deadlines or class project due dates. Assignments are integrated into a google mail calendar and a course checklist is just a click away. This "To Do" list helps track completed and outstanding tasks.

College students often hang out in a common area outside of class to discuss relevant subject matter. The "Hallway Conversations" forum allows interaction among enrolled students. Here students can share thoughts and ideas about class assignments, report course glitches to the instructor, or ask questions. The instructor or any class participant may respond to a "Hallway Conversation." Selecting a weekly course link expands the section to reveal content for the week.

Learning objectives, readings, videos, audio narrated slide lectures, discussion assignments, and exam links are found online each week. Academic integrity is monitored to thwart plagiarism. Audio lecture recordings simulate sitting in the classroom listening to the instructor. The good news is that the rewind button allows the student to listen again as needed. Imagine sitting in a classroom and participating in discussion. Students within the online course are separated into small groups to facilitate interaction amongst students. Interaction with other students required.

Interaction is created through discussion board posts. The sense of community is presented through this interaction. Weekly discussion board posts typically include two initial 300-500 word posts pertaining to questions the instructor has assigned based on that weeks readings, videos, and lectures. 150-300 word response posts to classmates may also be required. It sounds strange, but I really began to feel like I knew my classmates and instructors. I even attended multiple classes with the same students at times!

CONCLUSION

My father completed his bachelor degree while working full time and raising four children. It was difficult but he was determined. He drove nearly an hour several nights a week after working all day to attend college classes. It took him nearly 10 years to complete his degree. Advances in technology have afforded us the opportunity to take virtual classes from the privacy of our home. Michael Crow, President of Arizona State University states, "The objective is to learn ways to enhance your ability to be what you want to be, who you want to be and achieve what you are hoping to achieve." So consider bringing the classroom home with you. I am glad that I did!

REFERENCES

Littlefield, J. (n.d.). *About Education*. Retrieved February 6, 2015, from About.com: http://distancelearn.about.com/od/accreditationinfo/a/regional.htm ❖

BOOK REVIEW: FUNDAMENTALS OF SLEEP TECHNOLOGY WORKBOOK

By David Gregory, RPSGT, RST and Joanne Hebding, RPSGT, RST

The *Fundamentals of Sleep Technology Workbook* includes numerous exercises and discussion questions to complement the second edition of *Fundamentals of Sleep Technology*. References to research and scientific papers are included in the discussion questions. The workbook includes a complementary download of the enhanced eBook version and access to online videos and training modules. The cost of the workbook is $64.99. ISBN 13;978-1-4511-9436-4, ISBN 10: 1-4511-9436-6.

The workbook was written by credentialed sleep professionals including registered sleep technologists, a PhD and a sleep medicine physician. It serves as a useful learning tool for working sleep technologists as well as for those studying for registry examination. The workbook was written as a professional reference book and is organized in a very clear format with content covering the following topics: Anatomy and Physiology, Sleep Disorders and Disorders that Affect Sleep, Patient Care and Assessment, Polysomnography, Interventions and Therapeutics, Ancillary Procedures, and Pediatrics.

As managing sleep professionals we feel that the workbook is a must have for the sleep professional and as a reference in the sleep center. We recommend copies of the second edition of *Fundamentals of Sleep Technology* and the workbook as reference material for working sleep technologists to stay current with the ongoing changes in definitions, sleep scoring criteria, patient guidelines, regulatory policies and emerging technology. Sections of the workbook can be used in staff meetings or for competency verification of sleep center staff. An added feature in the companion eBook version is that significant changes that occur after the workbook has been published will be posted online as updates for workbook users.

The workbook has fulfilled its goal as a useful learning tool providing clarity and updated information for sleep professionals. The workbook and the second edition of *Fundamentals of Sleep Technology* are recommended for all allied health professionals interested in sleep medicine and technology.

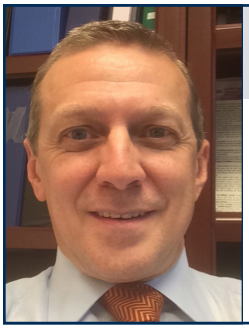
Theme: Sleep Technology

Thesis: Aspects of clinical sleep technology is the basis of this workbook.

The authors have written multiple choice questions pertaining to the specified subject matter in each section. Each chapter includes questions, answers and references. Of special interest are the sections on interventions, ancillary procedures, pediatrics and algorithms. The section on interventions and therapeutics includes topics on maintaining compliance, alternative sleep therapies and oxygen administration. The evolving use of ancillary procedures is addressed to include actigraphy and portable monitoring. An excellent section on pediatrics is provided as reference material for those working with this patient population. The section on algorithms includes case studies and tracing examples that demonstrate the use of algorithms to evaluate EEG artifact, cardiac arrhythmias, oxygen administration, movement disorders and excessive daytime sleepiness.

The workbook is well-organized, colorful and includes up-to-date subject material. Illustrations of sleep tracings, cardiac arrhythmias, respiratory events, the 10-20 System of Electrode Placement, crossword puzzles and examples of report templates are included in the workbook sections.

In summary, the *Fundamentals of Sleep Technology Workbook* is an excellent companion to the second edition of *Fundamentals of Sleep Technology* and a must have for any sleep professional. ❖



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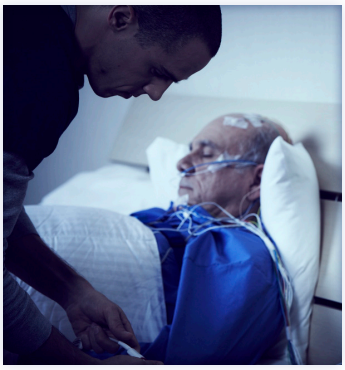
NEW AAST ONLINE LEARNING MODULES

The AAST Online Learning Center gives you new and affordable opportunities each month to earn continuing education credits (CECs) while you sharpen your professional skills and understanding. Each narrated presentation allows you to learn at your own pace and from the convenience of your home or office.

VISIT THE AAST ONLINE LEARNING CENTER FOR THE LATEST LEARNING MODULES IN EACH OF THESE SERIES:

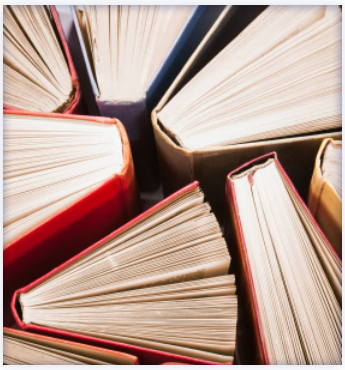


SLEEP CARE MANAGER COURSE MODULES

In September 2014 the AAST's "Sleep Care Manager" course prepared attendees for their expanding role in the care of sleep disorders patients.

Several presentations from the course are now available as learning modules:

- Career Management
- Assessment Methods
- Care Plans
- Ethics
- Evolving Role of the Sleep Technologist
- And more

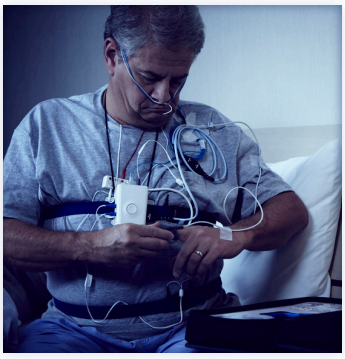


CASE OF THE MONTH

Each month a new module reviews a case dealing with topics such as proper and improper titration, difficult decisions associated with split-night studies, and normal sleep study variants. Tips on scoring and reporting are provided with each presentation.

Recent modules include:

- Sleep Apnea in Adolescents
- Obese OSA Patient With Oxygen Desaturation
- Comorbidity of Sleep Apnea and Insomnia
- CPAP and BPAP Split Night Study



JOURNAL CLUB

These learning modules will help you stay up to date on the latest developments in sleep technology and sleep medicine. Each module contains a video discussion with the author of a recent article published in a sleep journal. The full text of the article is included with purchase.

Recent modules include:

- Single Channel Home Nasal Pressure Testing
- APAP
- Opiates and ASVAuto
- Hospitalized Patients

American Association of Sleep Technologists
AAST®

http://www.aastweb.org/learningcenter/home.aspx

SPECIAL ARTICLES

JCSM
Journal of Clinical Sleep Medicine

http://dx.doi.org/10.5664/jcsm.3720

The Future of Sleep Technology: Report from an American Association of Sleep Technologists Summit Meeting

Rita Brooks, M.Ed.; Melinda Trimble

American Association of Sleep Technologists, Darien, IL

The American Association of Sleep Technologists (AAST) Board of Directors hosted a Sleep Technology Summit on September 21, 2013 with the goals of identifying changes in the delivery of diagnostic and treatment services to sleep disorders patients, predicting the impact on sleep technologists, identifying new roles for sleep technologists, and determining appropriate education to prepare technologists for the future. A carefully chosen panel of speakers focused on the business skills necessary to provide care cost effectively and the clinical skills that will be essential for the technologist of the future to help care for patients with sleep disorders. A group of selected leaders, educators, and industry professionals reviewed the current state of affairs and examined opportunities to sustain the profession and define the role of the sleep technologist of the future. Facilitated group discussions of these critical topics followed each session.

There was a clear consensus that regulatory and economic pressures are changing the way sleep disorders patients are diagnosed and treated. Private insurers are requiring pre-authorization for laboratory sleep studies and are incentivizing home sleep testing for most patients suspected of obstructive sleep apnea. Reimbursement for home testing will be lower than for laboratory testing, and further reductions in overall reimbursement are anticipated. These factors will almost certainly reduce the need for technologists to perform laboratory diagnostic studies and pressure sleep centers to reduce payrolls. Remaining laboratory patients will have more complicated sleep disorders, have more comorbidity, and require a higher level of care than most of the patients currently tested in sleep centers. Testing these patients will require technologists with a higher level of training, experience, and sophistication.

A second area of consensus was that the focus in medicine is changing from diagnosis to outcomes. New models of integrated care will include an increased focus on patient education, monitoring, and follow-up. The most effective treatments will require an individualized, patient-centered approach. A workforce analysis shows that the number of trained physician specialists will be inadequate to provide this care. Well-trained sleep medicine practitioners at many levels will be needed to meet treatment goals, including some roles appropriate for sleep technologists.

These factors provide challenges and opportunities for sleep technologists. In order to maintain viability as an allied health profession, the majority of sleep technologists will need to be better educated and demonstrate competency in more roles than overnight monitoring and record scoring. Models for this transition already exist, with several programs moving technologists from night work to days and from diagnosis to patient education, provision of treatment, and monitoring of adherence. The challenge for the professional association is to define new roles for sleep technologists and provide the education that the membership will require to flourish in those new roles.

Keywords: sleep, sleep disorders, lab testing

Citation: Brooks R, Trimble M. The future of sleep technology: report from an American Association of Sleep Technologists summit meeting. *J Clin Sleep Med* 2014;10(5):589-593.

The diagnosis of sleep disorders, especially obstructive sleep apnea, is expected to increase in coming years due to increases in rates of obesity[1] and other risk factors. Despite this trend, many surveys of sleep businesses indicate a decreasing need for sleep technologists.[2] The cause of this apparent paradox is a shift from traditional laboratory testing to home sleep testing using portable monitoring devices. Home testing is now reimbursed by Medicare, and an increasing number of private payers and is recognized as an alternative for diagnosis by the National Institutes of Health.[3] Some estimates predict that as many as 70% of patients with obstructive sleep apnea could be accurately diagnosed using home portable monitoring devices.

The impact of this shift is expected to be a dramatic increase in patient throughput per technologist. Compared to American Academy of Sleep Medicine (AASM) requirements of 2 patients per technologist for laboratory testing,[4] a single technologist can prepare and record 3 or 4 times more home sleep testing patients per night. Home sleep testing devices use limited channels and many systems use computer-assisted scoring, making preparation of studies for physician interpretation less labor intensive. Both factors will reduce demand for sleep technologists.

An additional trend in medicine is a shift from diagnostic testing to "integrated care." At present, reimbursement incentivizes diagnostic testing and procedures. Regulatory and market forces are changing the focus to outcomes. An accountable-care model is developing that will shift incentives to promotion of adherence to treatment and long-term follow-up. As a result of these shifts, a reasonable prediction based on workload and reimbursement is that in the near future there will be a true

integration of pre-test evaluation, diagnostic testing, provision of care, follow-up, and long-term care.

Will these trends result in a progressive shrinking of the sleep technologist workforce, or will there be new opportunities for technologists in the integrated sleep center of the future? What skills and knowledge will make a technologist a valuable member of the sleep medicine patient care team? In an effort to answer these questions, the American Association of Sleep Technologists (AAST), which represents more than 4,200 members, hosted a Sleep Technology Summit on September 21, 2013, at the national office in Darien, Illinois. Key opinion leaders were invited to speak on the fluid business environment and the clinical activities that will be essential for the technologist of the future. A group of selected leaders, educators, and industry professionals reviewed the current state of affairs and examined opportunities to sustain the profession and define the role of the sleep technologist of the future.

ECONOMIC AND REGULATORY FACTORS

Dr. Stephen Plenzler, Senior Director of Program Operations of the Sleep Management Program at Care Core National, LLC, summarized the financial pressures on the business of sleep medicine from an insurer's perspective. He noted that the demand for sleep disorders testing has increased dramatically in the past decade. Insurers will work to reduce costs by turning to less expensive diagnostic alternatives, such as home sleep testing. At the same time, insurers recognize that adequate treatment of sleep apnea is consistently reported to decrease health care expenditures and provide long-term cost savings.[5] Dr. Plenzler noted that, in comparison to other conditions, adherence with treatment of sleep apnea is considered to be low.[6] As a result, increased treatment adherence is an outcome that will be increasingly incentivized by insurers. At present, these two factors are not in balance; the majority of expense is currently for diagnosis of sleep apnea rather than treatment.

Carolyn Winter-Rosenberg, Director of Coding and Compliance for the AASM, reviewed sleep medicine in the public sphere, including coding and regulatory changes. Sleep testing faces decreasing reimbursement and will need to adapt to an increasing percentage of home sleep tests. In one scenario, maintaining the revenue stream of a typical sleep center would require a doubling of patient volume to compensate for the impact of these factors. The high volume of sleep tests being performed in sleep centers has already resulted in more frequent audits and fraud investigations. Sleep centers performing an increased volume of home sleep testing as a result of these changes will need to develop internal auditing and quality assurance programs in response. Center managers will need to keep current with changing regulations, including the anticipated change from ICD-9 to ICD-10. These changes present challenges and opportunities for sleep technologists who decide to maintain their viability in the center by moving to managerial roles.

CHANGING TREATMENT MODELS

Dr. Patrick J. Strollo, Professor of Medicine and Clinical and Translational Science and Medical Director of the University of Pittsburgh Medical Center Sleep Medicine Center and past president of the AASM, predicts that reimbursement for laboratory sleep studies will continue to decrease, and reimbursement for home sleep testing is likely to be "modest at best."[7] Like many of the speakers at the summit, Dr. Strollo also noted that the focus in medicine is shifting from procedures to outcomes. This will require that the sleep center team integrate with other medical professionals, including primary care physicians, otolaryngologists, behavioral specialists, and dentists. Technologists included in this integrated care model will require a basic understanding of medical terminology and physiology in order to participate. Dr. Strollo predicts that improved patient monitoring technology and alternative therapies will become standard treatment for sleep apnea in the future. This, too, will require increased sophistication of all members of the sleep medicine team. Finally, development of an individualized, patient-centered approach will be a key to the success of this model. With respect to sleep apnea, pre-test evaluation of patients is likely to provide guidance in the type of treatment that will be successful, methods for preventing cardiovascular and endocrine consequences, and an individualized program of monitoring and intervention. The participation of a trained and educated sleep medicine workforce is anticipated. Sleep technologists will have an opportunity to advance into these roles.

ENVISIONING NEW ROLES FOR SLEEP TECHNOLOGISTS

Is there a need for highly trained technologists, and would employers be willing to pay well-trained applicants a premium? At least one employer says he is already doing so. John Mathias, President of Sleep Services of America, told the group that he is currently offering a premium for flexible, qualified technologists. Core competencies are necessary but are no longer sufficient to be competitive in the job market. Mr. Mathias is willing to pay more for technologists who are knowledgeable about all aspects of sleep medicine and can easily be cross-trained for similar allied health positions. He also values advanced knowledge of medicine and an ability to care for complex patients. He has been forced to let go of some technologists who have failed to obtain appropriate credentials or meet licensure requirements. He noted that entry-level positions are declining but envisions a favorable future for technologists who have skills that exceed the minimum.

Dr. Dennis Hwang, Co-chair Sleep Medicine at Southern California Permanente Medical Group and Medical Director of the sleep center at Kaiser Permanente Fontana Medical Center, has a perspective that is unique at present but may provide a model for future sleep centers. The Kaiser system has a large number of covered lives. They have implemented a program that includes home sleep testing and regional facilities that provide laboratory testing for complex patients. All patients receive education and follow-up care. His clinic has approximately 1,700 patient encounters per month, yet it is staffed by only two physicians. He has turned to sleep professionals to provide a variety of different services, and many of these are drawn from staff formerly devoted to performing overnight studies or from respiratory care. These higher level sleep technologists provide diagnostic services and contribute to the care of patients with

insomnia, restless legs syndrome, and narcolepsy, as well as obstructive sleep apnea. Specially trained sleep professionals manage the home sleep testing program and collect PAP downloads. Qualified personnel conduct individual and group education sessions, and participate in resolving individual treatment issues. The Kaiser system is a "closed" system, allowing Dr. Hwang access to comprehensive medical data for each patient, including costs. He is able to quantify the efficacy of changes to the treatment protocol not only in terms of adherence and outcomes, but also the cost of care to the insurer. Preliminary data have demonstrated a strong return on the investment of continuing contact with the patient after initiation of treatment.

A second aspect of Dr. Hwang's presentation was recognition that the patients that are sent for laboratory testing are increasingly complex and require a higher level of expertise for an adequate study. Technologists need to respond to CPAP failures by implementing treatment with more sophisticated PAP platforms or other alternatives. Technologists must understand complicated PAP devices and the effects of changes to the settings. This requires a working knowledge of respiratory physiology and pathology. A broader and more challenging task for the sleep technologist of the future is an understanding of comorbid disorders common to sleep center patients and how these comorbidities affect the sleep study and treatment options.

Kevin Asp, President of the Alaska Sleep Clinic, Inc., spoke to the group about including the provision of durable medical equipment, such as PAP machines and consumables, as an integral part of the sleep center of the future. Regulatory issues, primarily with Medicare, have caused many centers to shy away from this aspect of sleep medicine. He argued that therapeutic issues are best resolved by competent sleep center staff. New technologies allow for accurate real time monitoring of patient adherence to treatment, which facilitates rapid intervention in patients who need it. In addition, internet, and cell phone communication with patients can provide timely intervention and support to improve patient adherence to treatment, reminders for replacement of disposables, and improve customer service. Mr. Asp feels that continuity of care will be a focus in the future, and well-trained sleep technologists who are adept at using new technologies will be at the center of that care.

OPTIONS FOR THE FIELD OF SLEEP TECHNOLOGY

A clear consensus at the conference was that maintaining the *status quo* is not a viable option. The technologist whose skill set begins and ends with performance of an adequate overnight sleep study will not be able to compete in the job market of the near future. Two options emerged from the presentations and discussion: broaden the skill set of the sleep technologist to include other allied health care tasks such as EEG, respiratory care, or ECG technology, or encourage technologists to become proficient in all aspects of sleep disorders care and become a valuable member of an integrated sleep care model. The first option is only possible in centers that offer a variety of diagnostic services, such as a hospital-based facility. Technologists following this pathway will need to seek training from allied health education programs. For those seeking to expand their skills in sleep medicine, few educational opportunities exist currently.

Integrated sleep medicine care includes pre-test evaluation, diagnostic testing, provision of care, follow-up, and long-term care. Today the typical sleep technologist focuses almost entirely on the diagnostic testing portion of this process. The future will almost certainly provide a more balanced approach to the care of patients with sleep disorders. **Table 1** provides a list of potential roles for technologists in each of these areas. A common career pathway for sleep technologists has been to work nights for several years, become proficient in scoring, and then move to a day shift role. Some technologists progress into management roles and take a more diverse position in the sleep center. This diverse position will, in the estimation of many summit participants, become the entry point for many technologists in the future. The tasks are both technical and cognitive. Technologists will need to collect pre-test evaluation data, learn to monitor more complicated parameters during sleep studies, and become facile with data collection and management of databases. Technologists will also need an in depth understanding of sleep disorders and comorbidities to enable them to interact with patients, insurers, and other health care professionals in a meaningful way.

NEED FOR ADVANCED EDUCATION

Auburne Overton, President of the Board of Directors of the Committee on Accreditation of Polysomnographic Technologist Education (CoA PSG), argued that a higher level of education for all technologists is essential. Currently, most CoA PSG programs provide a certificate, with some providing an associate's degree. There was a consensus among the participants that the educational entry level for sleep technologists needs to move to an associate's degree level in the near future. There is also now growing support for a requirement that entry-level sleep technologists hold a bachelor's degree. In a recent survey of educators, 83% of responders endorsed "agree" or "strongly agree" for the statement, "Education requirements for sleep technologists will increase in the next 5-10 years."[8] In addition, 83% endorsed, "An advanced educational degree in sleep technology will increase professional competence." In order to expand the educational opportunities available for new and current sleep technologists, there is a great demand for the development of more Associate Degree programs at institutes of higher education nationwide. The CoA PSG is dedicated to assisting sleep technologists when speaking to the administration of their local colleges about developing those programs, as well as assuring that those programs provide the quality and content necessary for the future of sleep medicine through participating in the program accreditation process.

Cindra Altman, President of the Board of Registered Polysomnographic Technologists, concurred with a corresponding need to increase educational requirements for eligibility for registration examinations. There was support at the conference for a joint committee of all stakeholders to begin work on a plan of action that would require professional level training of sleep technologists to meet the needs of physicians, employers, and educators.

Summit participants also agreed on the need to offer practicing technologists an opportunity to build on their knowledge and experience to prepare for changing roles. This effort might

Table 1—New opportunities and educational needs for sleep technologists

	Roles for Technologists	Educational Needs
Pre-Test Evaluation	• Vital signs • Blood glucose testing • Pulmonary function tests • Screening tests • Pre-test risk assessment • Patient education	• Clinical evaluation skills • Risk factor analysis • Monitoring and interpretation of blood glucose testing • Assessing results of pulmonary function and screening tests • Documentation requirements
Diagnostic Testing	• Out of center testing • Actigraphy • CO_2 monitoring • Evaluation of high risk patients	• Home sleep testing provision and interpretation • Actigraphy monitoring and interpretation • Age appropriate care • Evaluation and management of comorbidities
Provision of Treatment	• Mask fitting • Patient education • Advanced PAP platforms • Appropriate use of oxygen • Alternative therapies	• Basic pulmonary physiology • Ventilation • Cardiac physiology and arrhythmias • Goals of therapy • Evidence based medicine • Critical care pathways • Practice parameters
Follow-Up	• Monitoring adherence • Behavioral and motivational therapies	• Monitoring techniques • Basics of health psychology • Group and individual patient education methods
Long-Term Care	• Equipment monitoring • Compliance and outcomes tracking • Replenishment of consumables	• Understanding chronic care models • Health maintenance • Age appropriate care • Database management • Coding and billing

include workshops, conferences, and continuing education programs that focus on several key areas:

1. **Core competencies** including medical terminology, basics of physiology, and pathophysiology of sleep disorders. The technologist of the future will need to interact on a professional level with physicians, other healthcare professionals and patients. Evidence-based research skills and written and oral communication skills will be essential in developing professionals prepared for interdisciplinary healthcare. Medical literacy, including an ability to explain complex medical issues to patients, will be part of the required skill set.
2. **Disease management** including pulmonary and cardiovascular comorbidities, endocrine disorders and obesity, and management of pediatric and elderly patients. Many sleep patients will follow critical pathways that include home sleep testing and PAP titration. Patients requiring laboratory testing will be complex, with multiple comorbidities or treatment failures. The sleep technologist will need to recognize and react to difficult situations and provide care that is more sophisticated than simple continuous PAP.
3. **Patient education** including individual and group sessions, self-directed care and motivational enhancement. As the focus in medicine shifts from diagnosis to adherence, technologists will need to become competent in health psychology methods. These methods have established efficacy and have been learned by a variety of health care professionals during relatively brief training sessions.
4. **Sleep center management** including billing and coding, quality assurance, and interaction with insurers. A technologist can bring valuable patient care experience to management positions. Acquiring skills in budgeting and development of business proposals will be important in this transition. Technologists will need to be trained to manage and motivate center personnel.

To this point, technologists who have developed expertise in these areas have relied, for the most part, on on-the-job training. Few training programs for sleep technologists currently offer an associate's degree, let alone a bachelor's degree. The key areas listed above may provide a road map for the development of higher education in sleep technology. As an intermediate step, the AAST and other stakeholders can fill the gap by broadening educational offerings. Rather than focus on electrode application and sleep study scoring, programs should focus on patient evaluation and long-term care. Diverse courses, seminars, workshops, and remote learning opportunities can focus on individual aspects of integrated sleep care; educational materials from these programs can provide the basis for a comprehensive curriculum.

CONFERENCE CONSENSUS

The AAST Board of Directors convened the Future of Sleep Technology Summit to explore the forces spurring change and provide participants with diverse views of the future of sleep medicine. There was a broad consensus that the technologist of the future will need a higher level of education and skills

to provide value to potential employers and be competitive in the job market. As a result of the Summit, the AAST Board has a better understanding of the market forces and probable future of sleep technology. The Board plans to work with stakeholders to develop job descriptions that encompass these new roles, educational programs to meet changing workforce needs, and curriculum for associate's and bachelor's degree programs in sleep technology. The Board hopes to serve its members by exploring new opportunities for education to help sleep technologists grow and adapt to new roles and realities.

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ACKNOWLEDGMENTS

The authors appreciate the careful reading and helpful suggestions of Dr. Timothy Morgenthaler (President-elect, American Academy of Sleep Medicine), Ms. Auburne Overton (President of the Board of Directors of the Committee on Accreditation of Polysomnographic Technologist Education) and Ms. Cindra Altman (President of the Board of Registered Polysomnographic Technologists). Richard S. Rosenberg, PhD, provided editorial assistance in the development of this manuscript. Rita Brooks' professional credentials are RST, RPSGT and REEG/EPT. Melinda Trimble's professional credentials are RST, RPSGT and LRCP.

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DISCLOSURE STATEMENT

This was not an industry supported study. The authors have indicated no financial conflicts of interest. ❖

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REVISITING THE 2013 AAST SUMMIT

By Rita Brooks, M Ed., RST, RPSGT, President, American Association of Sleep Technologists

The Future of Sleep Technology "white paper", developed as a result of the 2013 American Association of Sleep Technologists (AAST) Summit, was previously published in the *A_2Zzz* and the *Journal of Clinical Sleep Medicine (JCSM)* and is reprinted in this special issue of *A_2Zzz*. The white paper is intended to inform the AAST membership and stakeholders of the results of the summit. I urge you to read it!

The summit brought key opinion leaders together who developed a consensus on factors impacting sleep technology and opportunities for growth in the field of sleep technology. The AAST continues to work on next steps: Where are we headed and how we will get there?

Technology continues to evolve and there is a new push toward payment for outcomes as Dr. Timothy Morgenthaler, now President of the AASM, predicted at the 2013 summit. As we enter 2015 technological innovation is providing new treatments for sleep-disordered breathing, new and better ways to monitor treatment adherence and effectiveness, and virtual health coaches and sleep monitoring "apps."

Also, as predicted, the sleep technologist's role is changing. Technologists are moving into more clinically oriented roles that require a higher skill level, initiating a push toward higher education for technologists. Raising the educational bar is a key to moving the field of sleep technology from a job to a profession and keeping the profession viable in the future. An increasing need for technologists with more education is likely to lead to implementation of minimum education requirements for entry-level technologists and certification examination eligibility. The framework of educational needs for the technologist of the future includes new core competencies that focus on disease management and patient education.

At the 2013 summit, Dr. Russell Rosenberg pointed out that "setting a path forward will be no easy task and the stakeholders should collaborate on a plan to make sleep technology a viable career for the future." The AAST is leading an Educational Task Force of sleep technology stakeholders that has met and begun the work required to move forward to develop a position statement on education and a curriculum outline that defines the knowledge, skills and competencies that the sleep technologist of the future will need. Work on these and other fronts continues and additional task force meetings are scheduled in March and at SLEEP 2015 in Seattle.

RITA BROOKS, M ED., RST, RPSGT,

Rita Brooks, M Ed., RST, RPSGT, is President of the American Association of Sleep Technologists. She began her career in sleep medicine in 1980 as an electroencephalogram (EEG) technologist at Capital Health in Trenton, N.J., where she is currently the Director of Diagnostic Services.

The AAST has posted a position statement on technologist education and developed new job descriptions that incorporate the expanded roles of the sleep technologist as well as educational tools for technologists seeking advanced educational resources. The focus of the annual meeting at SLEEP 2014 in Minneapolis was the expanding horizon in the practice of sleep technology. The program included presentations on disease management, advanced technologies and expanding care opportunities and programs. A comprehensive Sleep Care Manager Course was held in fall 2014 at the AAST national office in Darien, IL. Educational modules that provide timely core and advanced knowledge have been developed and are available online for technologists or may be incorporated into formal learning programs. The AAST Board of Directors reviews educational needs on a regular basis and strives to fill gaps in technologist education using a variety of formats and venues in order to help shape the future workforce.

Another major AAST project completed in 2014 is the *Fundamentals of Sleep Technology Workbook* that was developed as a learning tool for both students and working technologists to accompany the 2nd edition of the *Fundamentals of Sleep Technology* textbook. The workbook was published on January 15th and is accompanied by an interactive eBook with complete content and links to supplemental videos, including demonstrations of a patient hook-up and pediatric sleep disorders, and additional online learning tools.

The AAST has completed and posted a new strategic plan, which incorporates the consensus of the 2013 summit and the changes we have seen since the summit. The plan focuses on accomplishing goals related to continuing efforts to collaborate with stakeholders, increasing the level of technologist education, and providing advanced knowledge for technologists as a means of strengthening the sleep technology profession. The primary goal of the AAST is to meet the needs of its membership. Bringing the diverse elements of sleep technology together and speaking with a combined voice is consistent with that goal and a positive step toward building a profession.

The consensus of the summit meeting was that market forces would reduce the need for sleep technologists with limited skills and drive the educational requirements for sleep technologists higher. Home sleep apnea testing programs, outsourcing of diagnostic services, and complicated authorization processes have surfaced in most markets and are impacting many sleep centers. Many sleep centers are developing new programs geared toward preventing heart failure and respiratory failure hospital readmissions and identifying surgical patients with sleep apnea so they can be managed safely. Identifying new essential skills and providing educational resources for technologists to acquire essential advanced skills is a primary focus of the AAST. The AAST summit on The Future of Sleep Technology was a first step –we are now moving toward developing and sustaining our future. Join the AAST and help us to shape our profession. ❖

Educational/Technical Order Form

Educational Resources	Item #	Qty.	Members	Non-Members	Total
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Sleep Technologist Toolbox Companion to A Technologist's Guide to Performing Sleep Studies, incorporating study questions and activities to improve retention and understanding of material.	1190	_____	$35.00	$55.00	_____
UPDATED **Technologist's Guide to Performing Sleep Studies** The Guide is an excellent introduction to sleep technology and can be used as a review text for those with sleep center experience.	2103	_____	$40.00	$60.00	_____
AAST Sleep Technology Terms & Definitions Provides the profession with a consistent and accurate explanations of key terms that are used in the routine practice of sleep technology.	1170	_____	$14.99	$14.99	_____
Sleep Technology Self Assessment Exam Part I Prepare for the registry exam with this self-assessment tool, which is based on the AASM scoring manual and comprises 100 questions with a referenced answer key.	1011	_____	$25.00	$45.00	_____
Sleep Technology Self Assessment Exam Part II Part II continues where Part I leaves off with an additional 100 questions and a referenced answer key.	1012	_____	$25.00	$45.00	_____
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A_2Zzz Article Bundles The AAST has developed six A2Zzz Article Bundles containing articles about specific topics and a quiz for each article. After reading each of the articles and taking the quizzes, individuals can earn 3.00 AAST Continuing Education Credits (CECs) per bundle by submitting an AAST CEC Request Form to the national office. The bundles are available as a set or individually.					
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Set: Includes Bundles 1, 3-6	4100-A2Z	_____	~~$100.00~~ $40.00	~~$180.00~~ $80.00	_____
SALE **Advances in Sleep Technology Webinar Series** This professional educational opportunity provides individuals with 1.00 CEC for each webinar topic.					
Developing Formal Sleep Education Programs	3004	_____	~~$10.00~~ $5.00	~~$10.00~~ $5.00	_____
Foundations of Clinical Research - Research Project Planning	3009	_____	~~$10.00~~ $5.00	~~$10.00~~ $5.00	_____

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Fundamentals of Sleep Technology – Preparing for Certification – 1st Edition

The Fundamentals of Sleep Technology - Preparing for Certification is a review course designed to help sleep professionals study for the registry exam and features real-time video alongside an electronic presentation. The course has four package options - each has the same content and the same total AAST CEC value, but it's divided to suit your needs.

		Item #	Qty.	Members	Non-Members	Total
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Technical References

AAST 10-20 Head Measurement Chart This tool assists sleep technologists with converting head measurements to determine electrode placement.	1150	_____	$5.00	$7.50	_____
Manual Titration of PAP in Patients with OSA & Sleep Related Sleep Disturbances This reference & training tool is designed to provide quick access to CPAP & BiPAP protocols.	1160	_____	$5.00	$7.50	_____
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CERTIFICATION UPDATE

From the Board of Registered Polysomnographic Technologists

BRPT ANNOUNCES FIFTH ANDREA PATTERSON SCHOLARSHIP WINNER

POLYSOMNOGRAPHY STUDENT AT COLLIN COLLEGE IN TEXAS RECEIVES $2,500

The Board of Registered Polysomnographic Technologists (BRPT) announced that Uzma Rashid is the winner of the fifth Andrea Patterson Memorial Scholarship. Rashid is a student enrolled in the Polysomnographic Technology program at Collin College in McKinney, Texas.

"It's a privilege to recognize Uzma with this scholarship," said BRPT President Theresa Krupski, RPSGT, RRT. "Sleep apnea claimed the lives of two of her dearest family members. As a result, she has a very deep and personal connection to the field, and an unwavering work ethic and desire to help others suffering from sleep disorders."

Said Uzma Rashid, "It's a tremendous honor to receive this Scholarship and to be acknowledged by such a prestigious organization. This scholarship has not only lightened my financial burden, which allows me to focus more on my studies, but is also an unforgettable experience that has further inspired me to advance my personal and academic pursuits with an even deeper passion for helping others."

Prior to enrolling in the PSG program at Collin College, Rashid was a substitute teacher where she enjoyed creating a positive learning environment for her students.

Rashid is expected to graduate in May 2016 after which she plans to take the RPSGT examination. She is a member of the Sleep Tech Club – a student organization that's part of the PSG program at Collin College – where she is actively involved in fundraising and community service efforts.

Added Rashid, "I'm certain a career in polysomnography will not only be riveting but also rewarding. It will be so gratifying to help suffering people overcome their sleep disorders, and therefore improving the quality of their lives."

The Andrea Patterson Memorial Scholarship Program, named in honor of an early and highly regarded leader in the field of sleep technology, awards a $2,500 tuition grant each year to a promising student of polysomnography. Scholarship applicants must be enrolled in or accepted by a CAAHEP-accredited program in PSG or a CoARC-accredited program with a PSG add-on.❖

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Professor of Psychiatry (Sleep Medicine)
The Geisel School of Medicine at Dartmouth
Dartmouth College
Hanover, New Hampshire

Helene A. Emsellem, MD
Clinical Professor of Neurology
George Washington University
Washington, District of Columbia

Shalanda L. Mitchell, RPSGT, RST
Clinical Services Manager
SleepMed, Inc.
Virginia Beach, Virginia

Agenda

6:30 PM	Registration and Dinner
7:00 PM	Introduction
7:05 PM	Best Practices for Assessment and Diagnosis of Narcolepsy
7:30 PM	Insights into the Treatment of Narcolepsy
7:55 PM	Case Presentation
8:15 PM	Panel Discussion
8:30 PM	Conclusion of Program

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