

# Allied Health Sciences Research Quarterly Newsletter

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## INSIDE THIS ISSUE

- 1 Featured Story
- 2 Interdisciplinary Spotlight
- 3 From the Associate Chair for Research
- 4 Research News
- 8 Grants Submitted
- 9 New Grants Awarded
- 9 Workshops and Seminars
- 10 Resources for Students and Faculty
- 11 Publications and Presentations
- 12 Honors & Achievements

## Featured Story

### Dr. Rebecca Laudicina Plays Key Role in ASCLS Task Force Research

A task force of the American Society for Clinical Laboratory Science (ASCLS), with Dr. Rebecca Laudicina of Allied Health Sciences participating in a key role, was charged with studying clinical laboratory science (CLS) professionals' engagement in research activities.

A link to a 3-part online survey was sent by electronic mail to 7,572 ASCLS members and 500 CLS educational program directors. Survey items included quantitative and qualitative measures of professionals' engagement in research and other scholarly activities, perceptions about research importance, educational preparation for conducting research, and descriptions of program curricula in research.



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*This newsletter can be downloaded at any time from the following link:*  
<http://www.med.unc.edu/ahs/research>

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The task concluded that CLS professionals participate in research in limited numbers and are more likely to engage in non-research types of scholarly activities. Numerous barriers were identified which impose limits to conducting research, and over half of CLS's research efforts lack external funding. The formal educational background of many CLS professionals, especially those at the baccalaureate level, may leave them unprepared or underprepared for conducting research. The results of this study are very likely to prove useful as, up to this point, the CLS professional literature had been limited to studies of the research productivity of university faculty which resulted in a somewhat narrow perspective. If you would like further information or details relating to this study, please contact Dr. Laudicina at [Rebecca\\_laudicina@med.unc.edu](mailto:Rebecca_laudicina@med.unc.edu).

## Interdisciplinary Spotlight

### USARIEM Grant Supports Research on New Assessment for Wounded Warriors

A new grant from the United States Army Institute of Environmental Medicine (USARIEM) will help Dr. Karen McCulloch (Division of Physical Therapy) and an interdisciplinary research team further develop a new assessment protocol specifically designed for military service members who have sustained concussions/mild traumatic brain injuries.



Dr. Karen McCulloch

Thousands of military service members have experienced concussion or mild traumatic brain injuries (mTBI) in the wars in Iraq and Afghanistan. Military medical personnel who make return-to-duty decisions often rely on input from occupational and physical therapists who have treated these wounded warriors, but traditional rehabilitation assessments are problematic because of ceiling effects, lack of face validity for military stakeholders, and inadequate sensitivity to duty-relevant vulnerabilities after mTBI. A new grant from the United States Army Institute of Environmental Medicine (USARIEM) will help Dr. McCulloch and her interdisciplinary research team address these deficiencies by further developing a new assessment protocol specifically designed for military service members who have sustained mTBI. The USARIEM grant will fund the next two years of the project, titled “Assessment of Military Multitasking Performance: Validation of a Dual-Task and Multitask Protocol” or AMMP. The team of civilian and military occupational and physical therapy researchers will use the time to continue evaluating the efficacy of this new protocol and to refine its procedures for future implementation by therapists.

*“Traditional assessments do not fully take into account the intense physical demands and extreme environmental conditions that military service members face, particularly in the theater of war,” said Dr McCulloch. “We have developed the AMMP to more accurately replicate the activities that a soldier needs to be able to perform in order to successfully and safely return to duty.”*

The AMMP is intended to measure both high-level mobility skills and simultaneous cognitive challenges, a combination that can often prove difficult for wounded warriors, according to reports from therapists and military decision makers. The battery includes tasks such as Run-Roll-Aim, in which a service member runs, rolls, avoids obstacles, and aims at visual targets with a simulated weapon, and the Duty Roster Task, which asks a soldier to schedule staff duty while monitoring a recording of a staff meeting and noting what is important to a specific unit.

Having service members perform tasks that relate directly to real-world scenarios should provide decision makers with additional information to help them determine whether a soldier is ready to return to duty following a mTBI. Researchers have also found that service members are more enthusiastic about participating in assessments that seem relevant to what is actually expected of them as soldiers.

Over the next two years of the project, the research team will pursue the following objectives:

- Evaluate inter-rater reliability for each dual-and complex task using healthy control service members and a comparison group of those with mild brain injury.
- Correlate scores on tests of neurobehavioral domains, dual-tasks and multitasks in healthy control service members and those with mild brain injury.
- Determine ability of dual-task and multitask test items to discriminate between healthy control service members and service members with mild brain injury.

Dr. McCulloch also has received funding as an Oak Ridge Institute for Science and Education (ORISE) fellow through the Rehabilitation and Reintegration Division (R2D) of the Army Office of the Surgeon General. The R2D was established in 2007 to institute Army-wide standards of care for rehabilitation and transition of injured soldiers, including those with traumatic brain injury. In her role as an ORISE fellow, McCulloch offers consultation on issues related to mTBI as directed by Army leadership. This can include the instruction of therapist providers about mTBI, the development of standards of care in theater when a concussion is suspected, and the development of research capacity focused on mTBI.

## From Dr. Grace Baranek, Associate Chair for Research



Dr. Grace Baranek

This newsletter spans two quarters of research and scholarship in our department (July-December, 2011). We've had a productive fall semester! DAHS welcomed several new faculty and a new cohort of doctoral students across three divisions. The Research Advisory Committee (RAC) has been actively developing vision and mission statements for research, and drafting goals and strategies to build our interdisciplinary research culture to enhance productive research and scholarship. We welcome your input during this process and will provide ample opportunities for faculty feedback.

Among tasks the RAC has tackled recently are improving data securities (in collaboration with Dennis Schmidt at OIS), and facilitating greater communications internally and externally about DAHS research. Please check out the newly re-organized research webpage (<http://www.med.unc.edu/ahs/research>), where you can keep abreast of upcoming DAHS research events/news, up-to-date university policies/procedures and general resources for conducting research. A goal for the near future is to create meta-data tags to facilitate web searches and networking by specifying areas of faculty expertise. We welcome any suggestions for further improvements to the research page to enhance its utility, accessibility, and visibility.

The RAC has also been working in partnership with Susan Pusek, MS, MPH (NC TraCS Education, Training and Career Development Core) to develop a scholarly project on research mentoring experiences. Stay tuned to hear more about this project and upcoming opportunities to engage in focus groups. Finally, I welcome your participation in our research forums, scheduled for the last Wednesday of each month in the spring semester. We especially encourage PhD students and post-docs to network with faculty across divisions around scholarly projects and research methodologies.

Wishing you a happy, healthy, and prosperous new year.

## Research News

### Big Strides in Human Movement Science Lab

Walking after stroke is typically slow, while leg movements are often asymmetric. These asymmetries can be energy inefficient, challenge balance control, increase the risk of falls and injury, and limit functional mobility. To address these problems, Dr. Michael Lewek (Division of Physical Therapy) will be leading a study to better understand how the use of movement errors during walking can help individuals post-stroke learn to walk better. Current rehabilitation to improve gait is based on one of two competing motor learning strategies: *minimizing or augmenting symmetry*

*errors* during training. For this project, Lewek and his team have developed and validated a novel, responsive, 'closed loop' control system, using a split-belt instrumented treadmill that continuously adjusts the difference in belt speeds to be proportional to the patient's current asymmetry. Using this system, they can either augment or minimize asymmetry on a step-by-step basis to determine which motor learning strategy produces the largest change in overground spatiotemporal symmetry. Dr. Lewek will train individuals with chronic stroke who have gait asymmetry for 18 sessions with either: 1) Asymmetry Augmentation, 2) Asymmetry Minimization, or 3) a Control condition (conventional treadmill training). Spatiotemporal symmetry will be measured during overground walking at baseline, at 3 and 6 weeks of training, and at a 4-week follow-up to ascertain the cumulative effect of 6 weeks of training with each strategy. Additionally, they will demonstrate the effect of improved spatiotemporal symmetry on gait efficiency, balance, gait speed, endurance, quality of life, and physical activity in people with chronic stroke.



Dr. Michael Lewek

On average, every 40 seconds someone in the United States has a stroke, according to the American Heart Association's journal *Circulation*. Often survivors experience partial or full paralysis on one side of the body. Regaining the ability to walk involves a long and arduous rehabilitation process and, research has shown, walking with an asymmetrical gait is exhausting. It can require as much as 40 percent more metabolic energy than walking symmetrically.

With the help of an NC TraCS \$10K pilot grant and a two year project will be funded by the NIH / NICHD through an R21 mechanism, Dr. Lewek and his team including Professors Carol Giuliani (Division of Physical Therapy), Mary Whitton M.S., (Department of Computer Science), Heather Walker (Department of Physical Medicine and Rehabilitation), and Pranab Sen (Department of Biostatistics) are investigating motor learning strategies that will teach individuals who have had a stroke how to adjust their gait to walk more symmetrically. Dr. Lewek is collaborating with Fred Brooks, Jr., Ph.D., professor and Jeff Feasel, M.S., graduate research assistant, in UNC's Department of Computer Science.

Using a split-belt treadmill that has been programmed to adjust automatically to the gait of the walker, they can "force people to make mistakes, from which they learn and compensate," explained Dr. Lewek. Instead of correcting gait for the individual, Lewek and his colleagues are testing the theory that augmenting movement errors will improve the ability to perceive them for improved self-correction. To do this the separate sides of the treadmill speed up or slow down in response to the walker's gait, forcing the

walker to make compensatory movements, he said. This enables the brain to undergo the learning necessary to improve walking.

“Even though they have had a stroke, their brains are still capable of processing information to adjust walking patterns,” said Dr. Lewek.

This project is part of a larger stream of bedside-to-practice translational research intended to improve walking for individuals who have had a stroke. Together these projects will measure outcomes based on feedback that subjects receive solely through their legs. Ultimately, Dr. Lewek hopes it will lead to a larger R01 grant that will test the effect of multiple forms of feedback, including the use of a virtual environment. They have already developed and done preliminary testing with the virtual environment and published a description of it and plan to present it at national conferences.

### Big Words Project Awarded Funding for Phase II

We are pleased to announce that Dr. Karen Erickson (Division of Speech and Hearing Sciences) has received funding for Phase II *Technology and Media Services for Individuals with Disabilities* proposal. The project, *Big Words II: Computer-Based Decoding Instruction* is largely due to the efforts of Dr. Penny Hatch, Project Director of the Phase I grant, during her first two years on faculty at the Center for Literacy and Disability Studies (CLDS). Dr. Hatch’s leadership during this Phase I effort that yielded the results critical to obtaining Phase II funding. Dr. Kristin Nellenbach also played a major role in writing this Phase II grant as part of her post doc work this spring. Together, their efforts resulted in 3 years of funding (\$886,355 total) to complete the development of this software that teaches students to decode words with multiple syllables using a morphological approach. Over the next few years they will be completing the software and running a randomized clinical trial with 100 students with high incidence disabilities in middle and high school.



Dr. Penny Hatch

### Research, Robotics and Allied Health: Professor Jenny Womack Works on Interdisciplinary Study



Jenny Womack

Professor Jenny Womack (Division of Occupational Science and Occupational Therapy) is a senior investigator on a project entitled "Computing Robot Motions for Home Healthcare Assistance" led by Drs. Ron Alterovitz and Dinesh Manocha from the Department of Computer Science. The project was awarded funding from the NSF Smart Health and Wellbeing program and is based on the concept of demonstration guided motion planning (DGMP), a focus of the computational robotics workgroup in Computer Science. For this particular grant the goal is to write software that will program a child-sized robot to be taught to assist persons with disabilities in carrying out basic ADL tasks, and to refine that assistance as it responds to the motions of the human being. The group has also submitted a second grant to the National

Robotics Initiative hoping to secure funding for an adult-size robot to continue working toward ADL assistance on a larger scale.

### NCTraCS Funding Fuels Research by Dr. Rick Segal

Professor and PT Division Director, Rick Segal, and Co-Principal Investigator Heather Walker, MD, UNC Chapel Hill Department of Physical Medicine and Rehabilitation, received NCTraCS funding for a grant titled *Operant conditioning of Tibialis Anterior H-reflexes in Patients Post-stroke*. In North Carolina the age-adjusted stroke rate is 57.4 per 100,000 with North Carolina considered the buckle on the stroke belt. Problems walking after stroke are very common and often include foot drop, a common manifestation of stroke where the Tibialis Anterior (TA) muscle becomes weak or its antagonist muscles (e.g., Soleus) become hyperactive.



Dr. Rick Segal

The mechanisms underlying foot drop vary but it consistently causes stroke victims to use compensatory walking behavior if left untreated. One of the most common treatments is the use of light weight braces that do not encourage the use of TA during walking and will not produce increased strength over time in TA. Segal and Walker are gathering preliminary data on the feasibility of using operant conditioning of TA H-reflexes to make them larger (up-train) in patients post-stroke with foot drop.

### Dr. Virginia Dickie to Serve on International Expert Panel

Dr. Virginia Dickie has accepted an invitation to serve on an international scientific expert panel to evaluate the scientific quality of the Care Science research programs at Swedish universities. The Swedish Research Council will use the work of this panel and those of a relevance panel to recommend future governmental support of Swedish Care science. Research in Swedish Care sciences includes "studies of problems and interventions in a context of health care as it relates to human health, quality of life, activity, and involvement, as well as care and social services for people in different contexts and environments" (Swedish Research Council, 2011). Twenty-eight universities are being evaluated. Dr. Dickie will travel to Stockholm in early January for a meeting of the panel.



Dr. Virginia Dickie

### Sara Mamo Awarded NIH F32 Award for Postdoctoral Study



Dr. Sara Mamo

Congratulations to Dr. Sara Mamo, a 2008 graduate of the AuD program and currently a PhD student (Division of Speech and Hearing Sciences) who has been awarded an F32 postdoctoral fellowship by the National Institutes of Health. These competitive awards, which require a sponsoring institution and highly qualified research mentor, provide three years of support and training "for promising postdoctoral researchers with the potential to become productive, independent investigators within the broad scope of biomedical, behavioral, or clinical research." Her research, entitled: "Electrophysiological and Psychophysical Measures of Auditory Temporal Processing," will be conducted in the lab of Dr. John Grose, Department of Otolaryngology, under his mentorship.

### ASAHP Annual Conference

This year's annual ASAHP Conference (Oct. 19 – 21, in Scottsdale, AZ) offered several excellent speakers and papers addressing timely topics relevant to our work here in DAHS. Among the Plenary Speakers was John Corrigan (Ohio State U), who presented on issues and innovations for the next five years in brain injury research. He highlighted 5 specific issues in his talk: a) TBI caused by blasts; 2) TBI as a co-morbid condition; 3) TBI as a disorder of regulation; 4) Cumulative effects of concussion; and 5) TBI as a chronic health condition. Among the emerging technologies he discussed were new imaging techniques, biomarkers of B.I., neuromodulation, and even the potential role of "app's" on hand-held devices for managing the chronic effects of B.I. Another keynote talk by Susan Egerter (UCSF), provided a summary of current research on health disparities in the US, and in Europe, and the importance of social determinants of health.

Many of the papers presented at ASAHP addressed timely health education topics, including papers on curriculum innovations for specific disciplines, and more cross discipline topics like: models for increasing interprofessional learning; the role of simulation in clinical education; building electronic health records into an AH curriculum, and the pros/cons of admissions interviews. A few papers also addressed more specific intervention research (e.g., effects of aquatic exercise on mobility for individuals with M.S.; and outcomes of O.T. intervention with a sample of 234 geriatric patients with complex medical needs. If you would like more information on any of these presentations, Dr. Lee McLean has copies of the keynote powerpoint slides, as well as the abstracts and author contact information for the specific papers.

### Sue Coppola Attends World Health Organization Conference, "World Report on Disability"

In September 2011 the World Health Organization launched the first comprehensive World Report on Disability at its US headquarters in Virginia. The report has compelling data about approximately 1 billion people with disabilities worldwide and the issues they face.

Context for this visit was a confluence of interests and opportunities, including:

- **Increasing incidence of disability** in the region from successes of public health efforts, management of chronic diseases including HIV, and survival from acute illness and trauma.
- **Occupational therapy is a small but growing profession in Africa.** There is a culture of respect and collaboration by the OT African Regional Group (OTARG) and the Malawian OT Association and shared interest to develop education and practice.
- **Malawi College of Medicine has a plan to develop an OT Education program.** Deputy Dean Adamson Muula, MD, PhD as well as the OT identified to lead the curriculum development, Dorothy Chinguo, have requested assistance to develop the program.
- **UNC's Project Malawi** offered: 1) infrastructure to enable collaborations about rehabilitation. 2) advice on culturally and pragmatically sound collaboration. 3) wisdom about capacity building and sustainability from experience with preparing and retaining Malawian health professionals.
- **Alignment with Sue Coppola's work** as USA Delegate to the World Federation of Occupational Therapists (WFOT). Dr. Coppola serves on the WFOT Committee to Develop OT in Developing Countries which has a focus on the African Region and has experience in curriculum development and international collaboration.

## Grants Submitted (July 2011 – Dec. 2011)

<u>Project Title</u>	<u>Team</u>	<u>Funder</u>	<u>Proposed Budget</u>
Teaching pivotal social communication skills to preschoolers with autism: Efficacy of video vs. in-vivo modeling in the classroom	<b>Wilson, Kaitlyn;</b> Watson, Linda	Organization of Autism Research	\$25,333.00
Spinal Circuits and the Musculoskeletal System	<b>Segal, Rick</b>	Emory University	\$150,871.00
Implementing Best Practices for Quality Improvement in Sweat Chloride Testing in North Carolina	<b>Legrys, Vicky</b>	Cystic Fibrosis Foundation	\$32,948.64
2011 Scientific Service Program for Elite Discus Throwers	<b>Yu, Bing</b>	USA Track and Field	\$12,000.00
Council for Allied Health in North Carolina	<b>Debnam, Alisa;</b> Gaul, Katie	North Carolina Dept. of Commerce	\$27,905.90
Electrophysiological and psychophysical measures of auditory temporal processing	<b>Mamo, Sara;</b> Grose, John	National Institutes of Health (NIH)	\$193,360.00
First Years Certificate Program Stress, Coping, and Health in Older Adults in Assisted Living: Does Place Matter?	<b>Wilson, Kathryn</b> <b>Cutchin, Malcolm</b>	Oberkotter Foundation Emory University	\$285,000.00 \$176,454.48
The 3R's for Promoting Positive Interactions between Caregivers and Their Toddlers with Autism	<b>Boyd, Brian;</b> Crais, Betsy; Dickie, Virginia	Institute of Education Sciences	\$1,464,562.00
The Assessment of Military Multitasking Performance	<b>McCulloch, Karen</b>	Sister Kenny Research Institute	\$234,762.68
Engagement in Students with Autism: The Impact of Student Characteristics and Classroom Factors in Classrooms Serving Students with Autism	<b>Dykstra, Jessica;</b> Watson, Linda	National Academy of Education (Spencer Fellow)	\$25,000.00
The Role of Feedback for Detection and Correction of Asymmetric Gait	<b>Lewek, Michael;</b> Guiliani, Carol; Morgan, Jennifer; McCulloch, Karen	National Institutes of Health (NIH)	\$1,942,153.00
Auditory masking effects on speech fluency in aphasia and apraxia of speech	<b>Jacks, Adam;</b> Haley, Katarina	National Institutes of Health (NIH)	\$429,098.00
Project ACT: Communication Modules	Erickson, Karen	North Carolina Dept of Public Instruction	\$29,031.75
The Influence of Hearing Loss on the Development of Auditory Behavior: Children's Outcomes with Frequency-Compression Hearing Aids	<b>Leibold, Lori;</b> Hillock-Dunn, Andrea	March of Dimes Foundation	\$279,656.00

## New Grants Awarded (July 2011 – Dec. 2011)

<u>Title</u>	<u>Team</u>	<u>Sponsor</u>	<u>Start Date</u>	<u>End Date</u>	<u>Award</u>
Teaching Communication Skills to Preschoolers with Autism: Video vs Live Modeling in the Classroom (2011 Graduate Student Grant Competition)	<b>Wilson, Kaitlyn</b>	Organization of Autism Research	7/1/2011	9/30/2011	\$2,000
Special Education-Literacy Institute for Teachers of Students with Significant Disabilities	<b>Erickson, Karen; Hatch, Penny</b>	NC Dept of Public Instruction	7/1/2011	6/30/2012	\$30,000
ORISE Fellow - U.S. Army Center for Health Promotion and Preventive Medicine	<b>McCulloch, Karen</b>	Oak Ridge Institute for Science and Education	9/26/2011	9/25/2012	\$59,524
Preparing Speech-Language Pathologists and Occupational Therapists for Working in Teams: Focus on High Need Socioculturally Diverse Children	<b>Crais, Elizabeth; McComish, Cara; Domby, Lisa; Coppola, Susan</b>	US Department of Education	10/1/2011	9/30/2015	\$235,575
Big Words II	<b>Erickson, Karen</b>	US Department of Education	11/1/2011	10/31/2014	\$295,389
Electrophysiological and psychophysical measures of auditory temporal processing	<b>Mamo, Sara; Grose, John</b>	National Institutes of Health (NIH)	1/09/2012	01/01/2015	\$193,360

## Workshops and Seminars

### Allied Health Research Forums for the Spring Semester

We are excited to announce that we will be continuing our Research Forums for the Spring semester! Topics will be announced as each session comes closer -- please save the dates!

January 25, 2012

Bondurant Hall, Room G030

11:30 a.m. – 12:45 p.m.

February 29, 2012

Bondurant Hall, Room G030

11:30 a.m. – 12:45 p.m.

March 28, 2012

Bondurant Hall, Room G030

11:30 a.m. – 12:45 p.m.

April 25, 2012

Bondurant Hall, Room G030

11:30 a.m. – 12:45 p.m.

May 30, 2012

Bondurant Hall, Room G030

11:30 a.m. – 12:45 p.m.

June 27, 2012

Bondurant Hall, Room G030

11:30 a.m. – 12:45 p.m.

As always, all faculty and PhD students are welcome to attend and lunch will be provided!

### Spring Schedule for Joint UNC-NCSU BME Rehabilitation Engineering Center Released

We are excited to announce that the joint UNC-NCSU BME Rehabilitation Engineering Center seminars will continue into the Spring semester! Further information will be announced and posted as it becomes available on each seminar. The schedule will be as follows:

- January 10: Mike Lewek, PhD (*UNC Physical Therapy*)  
January 24: Deborah Thorpe, PT, PhD, PSC (*UNC Physical Therapy*)  
February 7: Rohan Shirwaiker, PhD (*Industrial and Systems Engineering*)  
February 21: Elizabeth Lobo, PhD (*Biomedical Engineering*)  
March 6: Nina Browner, MD (*Department of Neurology*)  
March 20: Ola Harrysson, PhD (*Industrial and Systems Engineering*), Denis Marcellin-Little, DEDV (*NCSU Veterinary School*)  
April 3: Karen McCulloch, PT, PhD, NCS (*UNC Physical Therapy*)  
April 17: David Kaber, PhD (*Industrial and Systems Engineering*)

All seminars will be presented from or teleconferenced to 150 MacNider Hall at UNC and 4142 Engineering Building III at NCSU.

## Resources for Students and Faculty

### Statistical Software Information through Virtual Computing Lab ([vcl.unc.edu](http://vcl.unc.edu)).

Research Computing is piloting a new service called the Virtual Computing Lab (VCL). Originally developed by NC State University in collaboration with IBM, the VCL provides users with anytime, anywhere access to custom application environments created specifically for their use.

By simply using a web browser, users can make a reservation for an application, either in advance or immediately, and the VCL will provision that application on a centrally maintained server, and provide the user with remote access to that server. Connection to the remote server is then made via Remote Desktop Client if it's a Windows-based application, or SSH Client if it's Linux-based.

VCL provides users remote access to hardware and software that they would otherwise have to install themselves on their own systems, or visit a computer lab to use. It also reduces the burden on computer labs to maintain large numbers of applications on individual lab computers, where in many cases it's difficult for some applications to coexist on the same machine. In the VCL, operating system images with the desired applications and custom configurations are stored in an image library and deployed to a server on-demand when a user requests it.

VCL can also be a useful classroom tool. Instructors can request a "block reservation" to preload a number of servers with a specific application environment for use in the class. Students would then have immediate access to the application during that time.

### QUALTRICS Survey Methodology Tool Available

The Odom Institute has recently made the survey methodology tool known as QUALTRICS available for UNC faculty and staff to use free of charge! So long as you have a valid UNC e-mail address ending in @email.unc.edu, @unc.edu, @live.unc.edu, or @mail.unc.edu, you will be able to access this incredible tool! For instructions on how to access and use the QUALTRICS tool, please visit the following link:

[http://www.odum.unc.edu/odum/jsp/content\\_node.jsp?nodeid=577](http://www.odum.unc.edu/odum/jsp/content_node.jsp?nodeid=577)

## Publications and Presentations

Boyd, B.A., Conroy, M., Asmus, J., & McKenney, E. (2011). Direct observation of peer-related social interaction outcomes for young children with autism spectrum disorders. *Exceptionality, 19*, 94-108.

Boyd, B.A., McDonough, S.G., Rupp, B., Khan, F., & Bodfish, J.W. (2011). Effects of a family-implemented treatment on the repetitive behaviors of children with autism. *Journal of Autism and Developmental Disorders, 41*, 1330-1341.

Boyd, B.A., McDonough, S.G., & Bodfish, J. (2011). Evidence-based behavioral interventions for repetitive behaviors in autism. *Journal of Autism and Developmental Disorders*. doi: 10.1007/s10803-011-1284-z.

Boyd, B.A., Woodard, C., & Bodfish, J. (2011). Feasibility of exposure response prevention to treat repetitive behaviors of children with autism and an intellectual disability: A brief report. *Autism*. doi: 10.1177/1362361311414066.

Boyd, B.A. (2011). Modified exposure response prevention to the treat the repetitive behaviors of a child with autism: A case report. *Case Reports in Psychiatry*. doi: 10.1155/2011/241095.

Chen, X.Y., Chen, Y., Wang, Y., Thompson, A., Carp, C.J., Segal, R.L., & Wolpaw, J.R. (2011). Reflex conditioning: A new strategy for improving motor function after spinal cord injury. *Annals of the New York Academy of Sciences, 1198*, E12-E21.

Crais, E.R. (2011). Testing and beyond: Strategies and tools for evaluation and assessment of infants and toddlers. *Language, Speech, Hearing in Schools, 42*, 1-24.

Feasel, J., Whitton, M.C., Kassler, L., Brooks, F.P., Lewek, & M.D. (2011). The integrated virtual environment rehabilitation treadmill system. *IEEE Transactions on Neural Systems and Rehabilitation Engineering, 19*(3), 290-297.

Hume, K., Boyd, B.A., McBee, M., Coman, D., Gutierrez, A., Shaw, E., et al. (2011). Assessing implementation of comprehensive treatment models for young children with ASD: Reliability and validity of two measures. *Research in Autism Spectrum Disorders, 5*(4), 1430-1440.

Kinard, J., Wilson, K., Dykstra, J., Watson, L.R., Boyd, B.A. (2011). Advancing social-communication and play (ASAP): Development of a supplemental intervention for public preschools serving children with autism. *Perspectives on School-Based Issues, 12*, 91-100.

Laudicina, R.J., Fenn, J., Freeman, V., McCoy, C., McLane, M., Mundt, L., et al. (2011) Research in clinical laboratory science: Professionals' involvement. *Clinical Laboratory Science, 24*(4), 241-248.

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Lewek, M.D. & Randall, E.P. (2011). Reliability of spatiotemporal asymmetry during overground walking for individuals following chronic stroke. *Journal of Neurologic Physical Therapy, 35*(3), 116-121.

Kinard, J., Wilson, K., Dykstra, J., Watson, L.R., & Boyd, B.A. (2011). Advancing Social-Communication and Play (ASAP): Development of a supplemental intervention for public preschools serving children with autism. *Perspectives on School-Based Issues, 12*, 91-100.

Ogletree, B.T., Bruce, S.M., Finch, A., Fahey, R., & McLean, L.K. (2011). Recommended communication-based interventions for individuals with severe intellectual disabilities. *Communication Disorders Quarterly*, 32(3), 164-175.

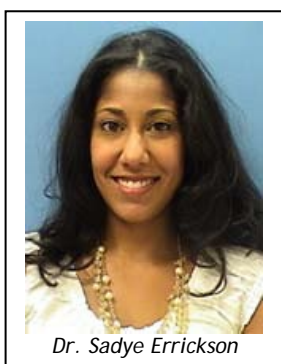
Phillips, K., Burker, E., & White, H. (2011). The roles of social support and psychological distress in transplant candidacy. *Progress in Transplantation*, 21(3), 200-206.

Travers, B.C., Klinger, M.R., & Klinger, L.G. (2011). Attention and working memory in autism spectrum disorders. In D. Fein (Ed.), *The neuropsychology of autism* (pp.161-184). New York, NY: Oxford University Press.

Wilson, K.P., Dykstra, J.R., Watson, L.R., Boyd, B.A., & Crais, E.R. (2011). Coaching in early education classrooms serving children with autism: A pilot study. *Early Childhood Education Journal*, doi: 10.1007/s10643-011-0493-6.

## Honors & Achievements

### Dr. Sayde Errickson joins BRIDGES Academic Leadership for Women



Dr. Sadye Errickson

BRIDGES Academic Leadership for Women is a prestigious leadership development course, focusing on transformational leadership and intensive professional development for women in academia. Through the program, participants will develop insights into leadership, with a particular focus on the special skills and attributes women bring to their leadership roles. Additionally, participants will acquire an understanding of the many facets of colleges and universities, refine and improve their cross-cultural communication skills, and create a program of personal and professional development to benefit themselves and their institutions.

### Dr. Michael Gross and doctoral student Don Goss featured in the N&O

Find the full story here about their work with the Human Movement Lab:

<http://www.newsobserver.com/2011/11/07/1624758/tracking-touch-the-ground-running.html>

### Dr. Karla Ausderau Receives Postdoctoral Award for Research Excellence

This award was presented to Dr. Ausderau in the amount of \$1,000 to further her research training and development and was awarded based upon the outstanding research in her field! Dr. Ausderau has also accepted a faculty position at the University of Wisconsin-Madison, Department of Kinesiology, Program in Occupational Therapy, beginning in the spring, 2012 – Congratulations!

### Dr. Chinyu Wu Awarded New Faculty Development Grant

Dr. Chinyu Wu has also been awarded a New Faculty Development Grant in the amount of \$5,000 to further her study in the motivation and activity participation of people with schizophrenia.

### New Faculty

The Department of Allied Health Sciences would also like to welcome our new faculty Dr. Andrew Byrne (RCP) and Dr. Mark Klinger (RSP) to the Department!



Dr. Chinyu Wu

Please contact Wesley Winkelman at [wwinkelm@med.unc.edu](mailto:wwinkelm@med.unc.edu) with any questions or concerns about this newsletter!