UNIVERSITY OF PITTS BURGH

SCHOOL OF HEALTH AND REHABILITATION SCIENCES

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SUMMER 2005

Unraveling the Mysteries of Low Back Pain

FACETS SCHOOL OF HEALTH AND REHABILITATION SCIENCES

SUMMER 2005

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Unraveling the Mysteries of Low Back Pain

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Cliff Brubaker

We also extended special recognition to Peter DeComo (BS '77, MS '80 Health Related Professions) with the "Dean's Choice" award. Pete is presently the CEO of Renal Solutions, a new enterprise in western Pennsylvania with great promise for revolutionizing kidney dialysis to enable patients to undergo treatment in the home while they sleep and at a fractional cost of the current technology. Pete is continuing the legacy of entrepreneurial excellence that has been characteristic of many SHRS alumni.

I am particularly pleased to inform you that we are already very near our initial goal for establishing the SHRS Alumni Endowed Scholarship Fund. The amount we set to establish this endowed scholarship is \$75,000, which must be collected within five years. I was privileged to report to alumni, faculty and friends of SHRS that we had received pledges of \$68,000 at the 35th Anniversary Celebration. This salutary event was capped by a most scintillating presentation by our featured speaker, John Siciliano. John is a native Pittsburgher who has distinguished himself as a paralympic athlete and a highly successful actor. John shared his experiences and the development of his career subsequent to an automobile accident that resulted in a trans-femoral amputation when he was a student at Point Park College.

Among highlighted features in this edition of FACETS is an article that chronicles the contributions of SHRS alumni and faculty in defining the state of the art and standard of care for low back pain. This article recounts the assessment procedures for back pain developed by Rick Bowling and Dick Erhard several years ago. It is interesting (and satisfying) to note that this work continues as the basis for much of present procedures for assessing low back pain. It is also particularly pleasing to note that recent research by Tony Delitto, chair of the SHRS Physical Therapy Department, and his colleagues constitutes a basis for the formulation of new standards of care for low back pain.

I have commented in recent issues on my belief that the future of rehabilitation will be increasingly associated with and influenced by advances in regenerative medicine. Our featured interview for this edition was conducted with Professor Alan Russell, director of the McGowan Institute for Regenerative Medicine and also executive director of the Pittsburgh Tissue Engineering Initiative. I believe you will find the discourse for this interview to be both interesting and informative.

Your School graduated a total of 354 health and rehabilitation professionals on May 1, 2005. This graduating class exceeds the entire enrollment of SHRS of only a few years ago. Among the 2005 graduates were 19 new PhD recipients. This seems quite a remarkable accomplishment considering the first admissions to our PhD program were in 1995.

With kindest regards,

Clypent & Brubalen

Cliff Brubaker

cliffb@pitt.edu

DEAR ALUMNI AND FRIENDS OF SHRS,

This is the first opportunity to communicate with you since our 35th Anniversary Celebration. I am delighted to report that it was a resounding success. We had occasion to recognize graduates from each of our programs who have distinguished themselves by their accomplishments. We also took this opportunity to recognize our founding Dean, Dr. Anne Pascasio. In addition to her role in developing our School in its formative years and providing a lasting legacy for all of us, Anne has continued as our most generous and devoted contributor. Perhaps some of you will wish to contact Anne and personally acknowledge her role in the development of our School and contribution to your education and careers. Anne can be reached at Friendship Village, 1290 Boyce Road, Apartment C223, Pittsburgh, PA 15241, (724) 942-1509 or at apascasio@fvsh.com



giving

Tim Sell (PhD '04) stopped by my office a few weeks ago to talk about making a donation to the new SHRS Alumni Endowed Scholarship Fund. You may know Tim. He's a post-doctoral fellow in the Department of Sports Medicine and Nutrition and spends much of his time involved in research at the Neuromuscular Research Laboratory.

Tim learned of our scholarship fund campaign when it was launched at the SHRS Alumni Day Reception and Awards Ceremony, and it got him thinking. He had recently won a monetary research award and his initial plan was to donate the money back to the Department of Sports Medicine and Nutrition. Instead, he chose to make it a part of this scholarship fund.

What made Tim's gift so unique is that it was completely unsolicited. It was given with no thought of personal return or recognition. His giving was a totally selfless act. In fact, Tim requested that the gift be recorded as given on behalf of the students in the SM&N Department's Neuromuscular Research Lab. (Because he didn't feel singularly responsible for conducting the research that led to the award, Tim wanted all who were involved to be recognized.)

Before we ended our visit, Tim asked for a separate donor card ... one through which he and his wife could consider making a personal gift. The School of Health and Rehabilitation Sciences and the welfare of future students mean that much to him.

Tim is not alone in this regard. I know SHRS means a lot to many of our alumni, especially those with whom I've had the good fortune to meet in my travels. You tell me how much you value your education and the experiences you had at SHRS and Pitt. A number of alumni, faculty, and staff have already given very generously to the scholarship campaign, and I expect we'll receive more gifts in the coming weeks and months to support this fund. But Tim's interest in philanthropy and in helping future SHRS students told a story that deserved to be shared.

Thanks to Tim and all the other donors whose gifts total 93 percent of our \$75,000 goal. I hope you'll choose to support our future students by joining in this campaign. Your gift, no matter the amount, will make a reality of our dream to award three \$1,000 scholarships to deserving students each year.

If you'd like more information about ways to support the SHRS Alumni Endowed Scholarship Fund or any other area of need, please contact me by telephone at 412-383-6548, by email at pkummick@shrs.pitt.edu, or by postal mail at SHRS, 4031 Forbes Tower, Pittsburgh, PA 15260.

Sincerely Patty Kummick

Director of Development

What made Tim's gift so unique is that it was completely unsolicited.



On the May 10th CBS Evening News, Elizabeth Kaladan reported on the use of adult nasal stem cells in spinal cord regeneration. The experimental treatment is being done in Portugal, with many U.S. patients rehabbing at a Detroit-area hospital. The promise of regenerative medicine – in this case, curing patients with spinal cord injuries rather than simply treating the symptoms resulting from the injury – is intriguing. And while this news story emanated from Lisbon and spanned two continents, a similar story on breakthroughs in regenerative and rehabilitation medicine could have as easily been filmed in Pittsburgh. Here, the McGowan Institute for Regenerative Medicine and SHRS are in a collaboration that is one of the most ambitious regenerative and rehabilitative programs in the nation, coupling biology and engineering.

I've asked Dr. Alan J. Russell, director of the McGowan Institute, to describe the synergies between these seemingly disparate disciplines and the likely outcomes this partnership will produce.

These are exciting times. A cure for diabetes, which afflicts millions of people around the world, is within our grasp. Treatments for Parkinson's and Alzheimer's are only a decade or two away. Accidents that would have paralyzed us may soon be treatable. Diseases like muscular dystrophy, which slowly rips children from their parents, may be reversed. Heart failure may be prevented by minimally invasive delivery of stem cells. The promise of regenerative and rehabilitative medicine is truly astounding.

But to realize the vast potential of tissue engineering and other techniques aimed at repairing damaged or diseased tissues and organs will require a paradigm shift. Not just in how scientists and clinicians treat what some see as the three "islands" of regenerative medicine – medical devices and artificial organs, tissue engineering and biomaterials, and cellular therapies – but how we view the two components that guide the outcome of any medical procedure: the therapy itself – be it cellular, molecular, or surgical – and the rehabilitation.

Currently, the two worlds rarely talk to each other. There is the therapeutic silo and the rehabilitation silo. And while it is widely accepted that multidisciplinary teams are necessary to make optimal progress in any area, few organizations recognize or have the breadth and depth of core competencies to effectively address vertical integration.

However, this is not the case here at the University. Both SHRS and the McGowan Institute are world leaders in their respective disciplines. And we both recognize that our futures are inexorably intertwined. Our goal is not simply to improve communications between regenerative therapy and rehabilitation. We are looking to fuse the two disciplines. We believe that if regenerative medicine is to fulfill its promise, there must be rehabilitation strategies that have been customdesigned to fit the particular therapy. Our vision is that when we're talking about a regenerative therapy, rehabilitation strategies are discussed in the same breath.

Let me give you an example of this thinking and why it is critical to achieving a positive outcome for patients. Dr. Stephen Badylak, director of the Center for Pre-Clinical Tissue Engineering with the McGowan Institute, has invented a remarkable material that is taken from the intestines of a pig. The special material has within it all the signals to tell the body how to heal itself. What he has discovered is that if you use the material in a surgical procedure – say, rotator cuff repair – you cannot follow the traditional rehabilitation regimen of initially immobilizing the limb, then slowly introducing exercise. Instead, in order to get the body to remodel itself, you need to begin exercising vigorously from Day One. You need to apply all the normal forces to that area so that the tissue gets the signals to repair in the normal way. To put it in laymen's terms, rehabilitation is the only way we have to communicate with the cells to remind them why we put them there.

Clearly, what we're talking about is rehabilitation that is beyond the cutting edge. In this case, it is more than understanding the bio-mechanics of rehabilitation. It is understanding how bio-mechanics will impact the cells. And just as regenerative medicine is transforming how we look at disease and disability, so too will rehabilitation be redefined.

Curing patients, rather than treating symptoms, is our final goal. The McGowan Institute, when teamed with the internationally recognized School of Health and Rehabilitation Sciences and the University of Pittsburgh Medical Center, has significant potential to further advance medical research, clinical assessment, and, ultimately, the opportunity for a better quality of life for patients. STUDENT NEWS





Student News

Jason Mayo, a doctoral student in the Department of Physical Therapy, was named Employee of the Month for the artificial heart program at the University of Pittsburgh Medical Center-Presbyterian. Mayo was also the 2005 recipient of the Jessie Wright Award, the highest student honor presented by the Department of Physical Therapy faculty.

Jonathan Pearlman and Yusheng Yang, graduate student researchers in the Department of Rehabilitation Science and Technology, received the 2005 Rory A. Coop/Dion Johnson Paper Award for outstanding research paper. The award was presented at the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) Conference.

Avi Kouzi and **Laurel Rosenbaum**, master's degree students in the Department of Occupational Therapy, were selected as fellows for the 2005 Jewish Healthcare Foundation Patient Safety Fellowship.

Andrea Balsimo, Diana Crea, Megan Dietz, Carrie Hartman, Reena McCormick, Dana Pettit, Laurel Rosenbaum, Michael Smith, Julie Strand, and Rebecca Vasilisin, master's degree students in the Department of Occupational Therapy, were inducted into Pi Theta Epsilon, the national honor society for occupational therapy students.

Stacey Friscia, a master's degree student in the Department of Occupational Therapy, received the Award of Scholarly Excellence at the 2005 SHRS Recognition Day. Alyson D'Ambrosio, Joy Holte, and Daniel Sopata, master's degree students in the Department of Occupational Therapy, received the Award of Professional Excellence at the 2005 SHRS Recognition Day.

Hazel Breland, doctoral candidate, represented the Department of Occupational Therapy at the Pre-Medical Organization for Minority Students (POMS) health professions panel discussion at the University of Pittsburgh in April.

Jennifer Doster, a doctoral student in the Department of Physical Therapy, recently won the Centers for Rehab Services (CRS) Scholarship Award, given annually to a student who displays evidence of leadership in the physical therapy profession. Doster was given the award in acknowledgment of her efforts in leading the fund-raising activities for the Pitt – Marquette Challenge.

Greetings to SHRS Alumni

The SHRS Alumni Board of Directors has been increasingly active in serving the current and future alumni of the programs within SHRS. We are very proud to be co-sponsors of the campaign to establish endowed scholarships for the School, which is detailed in Patty Kummick's article in this issue of FACETS. It is clear already that this initiative will be successful, and, on behalf of the Board, I thank you for your generosity in supporting this worthwhile endeavor. If you haven't already made a pledge, please consider doing so. We are also pleased that this past year saw the dedication of a plaque representing another fund-raising effort of alumni, the new G4 Campaign for the Physical Therapy Department, that raised approximately \$50,000 for the skills lab. Our thanks to all the alumni who contributed to this campaign.

These initiatives are wonderful examples of how alumni can further the mission of SHRS and its individual programs through their personal commitment of time and money. I encourage each of you to consider ways in which you can give back to either the School or your professional program. Every form of support that you provide enables us to expand upon the recognized excellence of the programs within SHRS.

Another initiative of the Board and the School is to provide support for alumni to come together at professional meetings under the sponsorship of SHRS. We will be piloting this program in the coming year, so we encourage you to keep your eyes open for these gatherings. We extend our appreciation to Dean Brubaker for his support of this initiative.

CALENDAR of Events

June 24-26 The 28th International

Conference for the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) The RST reception will be held at the conference on Saturday, June 25. Atlanta, Ga. October 21-22 Pennsylvania Physical Therapy Association

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Therapy Association Annual Conference The SHRS Alumni Society will host a welcome reception on Friday, Oct. 21, from 4:30 to 6:30 p.m. Seven Springs Mountain Resort Conference Center Champion, Pa.

Planning to attend the **2005 Homecoming festivities?**

Want to meet up with other SHRS alumni, faculty, and staff?

Let Juli Gasperi, SHRS Office of Recruitment, know which events you plan to attend, October 21-23. And we'll do what we can to arrange a special SHRS alumni gathering sometime during the weekend.

Contact Juli by mail at SHRS, 4022 Forbes Tower, Pittsburgh, PA 15260, by phone at 412-383-6556, or by email at juli@shrs.pitt.edu.

Other activities we have been involved in include the 35th Anniversary Celebration that was held in April, and the recognition of distinguished alumni that occurred as part of the program. The Board extends its congratulations to each of these most deserving alumni for their achievements. The accomplishments of our alumni reflect positively on SHRS and our programs and help us to enhance our status as one of the preeminent health and rehabilitation schools in the United States. This status is critical to attracting the best and brightest candidates to our professional schools, and assuring our continuing leadership in these fields.

The Board was also very happy to find out that, as a result of these many initiatives, the Pitt Alumni Association recognized our efforts with their PAA Banner Award, which recognizes outstanding achievements across a range of alumni outreach activities. We are indebted to our vice president, Neil Szuminsky (SHRP '76, SHRP '80), for coordinating our application for this award. If you are not currently a member of the Pitt Alumni Society, please consider joining. Applications can be obtained at www.alumni.pitt.edu

Lastly, I would like to extend the Board's thanks to our outgoing immediate past president, Paul Rockar, (SHRP '81), for serving our alumni and SHRS since 1996. We greatly appreciate his commitment to furthering the success of the Alumni Society and the School during his service on the Board of Directors.

With best regards, Kall R. Gibson (P) '76 and '83)



Living and Loving with Diabetes Janis Roszler (CDN '85)



It all starts at that life-changing moment when the doctor hands you the test results that show you have diabetes. In the weeks, months, and years to follow, there may be times when it's hard to keep a positive attitude. Around every corner you hear commentary about your eating habits,

lack of exercise, and weight. Day after day, living with diabetes can become a constant challenge instead of a lifestyle.

Janis Roszler, RD, CDE, LD/N, specialized in diabetes and nutrition counseling for 10 years before developing gestational diabetes while she was pregnant. Fortunately, after her son was born, she no longer had the disease. But, her short experience of living with diabetes changed her entire perspective on the disease. For the first time in her life, she was testing her blood daily and constantly watching what she ate. Roszler realized the overwhelming effects that diabetes can have on individuals as well as entire families. As a result, she began to focus her counseling practice on quality of life instead of rules and regulations.

Roszler has developed numerous methods to help her patients meet their personal health goals so that they may fully enjoy life. Every week while hosting her talk radio show, Janis' Jump Start, in southern Florida, her listeners make a week-long commitment to a healthy

behavior. These range from going to bed before a certain time every

night to lowering their caffeinated coffee intake by one cup a day. After one week, listeners may choose to renew their pledge or try a different one.

"It's easy success!" says Roszler. "We have to try things one step at a time. Our problem is that we're too hard on ourselves. Take a New Year's resolution for example. That's a commitment you're making for the rest of your life. When you fail, you end up devastated and quit. But, when my listeners achieve their weekly pledge, it's wonderful! They're incredibly proud of themselves."

Roszler believes that every subject relates to health - and she means every subject. She has even had a financial expert as a guest on her radio show. How do health and finances relate? According to Roszler, someone might be dealing with financial worries and that's going to affect his or her quality of life. A financial expert can tell listeners how to make ends meet and help reduce their stress levels.

Roszler has also spoken at numerous conferences around the world. Even though she's the expert, she learns quite a bit from her international audiences. During a recent visit to the Middle East, she was lecturing about a simple meal-planning method, which she calls the "plate method." As she explained how to use a plate as a measuring tool for breakfast, she put up a slide with pictures of various breakfast foods. But, these were foods typical of an American

breakfast. Hands went up like it was an auction. Everyone wanted to know, "Where are the vegetables?" Roszler had forgotten that, in the Middle East, vegetables and cheeses are normal breakfast foods. It was an interesting reminder that different cultures make different food and health choices. Roszler says that even though the United States heavily exports food behaviors that maybe aren't necessarily healthy, such as fast food, there are still many differences in diets.

Roszler's lectures don't stop with food. One of her most talked about subjects, which she discusses in her book, The Secrets of Living and Loving with Diabetes, is sex. Roszler says that when it comes to open discussions about sex, some cultures are more comfortable than others. She adds that sex is an important topic in a relationship whether people want to talk about it or not, especially since people with diabetes sometimes lose their sexual appetite or ability to perform. In her article, "Talking Sex (and Diabetes) on the Other Side of the World," Roszler states:

> "Have you ever given a speech about sex in a foreign language? I did. I just returned from a fabulous trip to Israel. I spotted some blushing when I discussed the side effects that poorly controlled diabetes can have on a person's sex life, but that didn't scare me. Too many people are

continued



shy about discussing these things and don't get the help they need. Rachel, my translator, mentioned the name of an Israeli physician who specializes in sexual issues. Everyone rushed to write down his number! There are numerous treatments today for diabetes-related sexual complications. Blush all you want. Diabetes should not ruin your sex life."

Roszler's success stems from her contagious personality. Her positive attitude alone attracts numerous listeners to her radio show. In the future, she hopes to write another book and have her talk radio show become syndicated.

Roszler credits the School of Health and Rehabilitation Sciences and its Clinical Dietetics and Nutrition program for much of her success. "At Pitt, instructors had their feet in the real world. It wasn't just textbook material. What I learned about counseling skills was incredibly valuable and right on the money. I appreciated the variety of classes, the quality of the teachers, and the quality of the students," says Roszler.

Roszler lives in Miami Beach, Florida, with her husband of 23 years. They have four children, two of whom are still in high school. Roszler's hobbies are exercising and – not surprisingly – belly dancing. For further information on her studies or to contact Roszler, visit her Web site at www.dearjanis.com.

Alumni News

Denise Dunyak, MSIS, RHIA (HIM '81) was appointed to a second term as Regional Director of the University of Pittsburgh Alumni Association. Dunyak has worked at Siemens (formerly Shared Medical Services), since 1986. She presently serves as the national market manager for the health information management product portfolio.

Tiffany Gaetano (HIM '05) has accepted the position of Solution Delivery Consultant with Cerner Corporation in Kansas City, Mo.

Michael Kozachuk (HIM '05) has accepted the position of Associate Implementation Consultant with SoftMed Systems, Inc., in Silver Spring, Md.

Amanda Rider (CSD '04) is currently living in Durán, Ecuador, as a missionary and volunteer for the Foundation Rostro de Cristo (Face of Christ). Durán is one of the most economically disadvantaged areas of Ecuador and the mission is to live in solidarity with the economically poor, sharing in their joys and struggles, and to serve the community in the best way according to their abilities.

Janis Roszler, RD, CDE, LD/N (CDN '85) has recently released a new book, The Secrets of Living and Loving with Diabetes. She also writes an advice column in Diabetes Positive! Magazine, monthly columns for eDiets.com and Diabeteshealth.com and hosts a weekly health radio program, Janis' Jump Start! on 1470 AM. in south Florida. She was recently a guest on the new dLifeTV diabetes talk show on CNBC.

Neil Szuminsky (MT '76, HRP '80), vice president of the SHRS Alumni Society, represented the School at the University of Pittsburgh Alumni Association Banner Awards luncheon on April 30. Szuminsky was instrumental in the application process through which the School received this banner award

Lesia Tkanchenko (HIM '05) has accepted the position of Associate Implementation Consultant with SoftMed Systems, Inc., in Silver Spring, Md.

Pam Toto (OT '89, '96) was elected a fellow of the American Occupational Therapy Association (AOTA). She received her award at the annual AOTA conference in Long Beach, Ca., in May. Toto is also an instructor in the SHRS Department of Occupational Therapy.

Karen Wager, DBA (HIM '82) is the co-author of a new textbook, Managing Health Care Information Systems: A Practical Approach for Health Care Executives. She is an associate professor in the Department of Health Administration and Policy at the Medical University of South Carolina in Charleston, where she is celebrating her 20th year of employment.

Erika Young (CSD '04) is in Kenya working with the Peace Corps and is assisting the staff at the Audiological Assessment Facility near her school. As part of her work, Young has held a workshop to help educate people about the causes of hearing loss. A popular myth in some parts of Africa is that eating too many mangos can cause people to become deaf.



As has become customary, The SHRS Alumni Society provided snacks for students during finals week. Students expressed their appreciation of the gesture.



Faculty and Staff Update

Dr. Mervat Abdelhak, associate professor and chair, Department of Health Information Management (HIM), has been doing extensive traveling and lecturing in her role as president of the American Health Information Management Association (AHIMA).

Dr. Diane Helsel, instructor, Department of Sports Medicine and Nutrition, successfully defended her doctoral dissertation, "Comparison of self-monitoring techniques for tracking eating and exercise behaviors."

Dr. Kevin Conley, program director and instructor, Department of Sports Medicine and Nutrition, successfully defended his doctoral dissertation, "Effects of selected modes of prophylactic support on reflex muscle firing following dynamic perturbation of the ankle."

Dr. Alicia Koontz, assistant professor, Department of Rehabilitation Science and Technology, won the Liberty Mutual 2004 Best Paper Award for her article, "Scapular Range of Motion in a Quasi-Wheelchair Push," published in the International Journal of Industrial Ergonomics.

Bruce Baker, adjunct associate professor, Departments of Communication Science and Disorders and Rehabilitation Science and Technology, was the recipient of the Pittsburgh Business Times Healthcare Hero Award in Innovation and Research. Baker was recognized for his development of Minspeak, a breakthrough system enabling people with unintelligible speech to communicate in a functional and efficient manner.

Dr. Rory Cooper, professor and chair, Department of Rehabilitation Science and Technology, was among 10 inaugural inductees into the Spinal Cord Injury (SCI) Hall of Fame. The SCI Hall of Fame was created to celebrate and honor those individuals who have made significant contributions to quality of life and advancements toward a better future for all individuals with spinal cord injury. Cooper was recognized in the assistive technology category.

Dr. Chris Dollaghan, professor, Department of Communication Science and Disorders, was appointed chair of the Advisory Committee on Evidence-Based Practice for the American Speech-Language-Hearing Association.

Connecting Across the Curriculum Faculty Team Assessments er, M.A. CCC-A and Kristina English, Ph.D. CCCmmunication Science and Di Dr. Kristina English, assistant professor, and Dr. Elaine Mormer, instructor, Department of Communication Science and Disorders, presented a poster at the Audiology

Education Summit in Fort Lauderdale, Fla., this past January. The summit was co-sponsored by the Council on Academic Accreditation, the Council of Academic Programs in Communication Sciences and Disorders, and the American Speech-Language-Hearing Association.



Dr. Catherine Palmer, associate professor, Department of Communication Science and Disorders, chaired the 2005 American Academy of Audiology National Convention in Washington, D.C. More than 6,700 audiologists participated in 28 featured sessions, 51 instructional courses, 44 research podium presentations, 120 research poster sessions, and 25 exhibitor courses in the group's largest-ever exhibit hall. Senator Tom Harkin (D-lowa), co-author of the Americans with Disabilities Act, addressed the general assembly supporting direct access for patients to audiologists and highlighting his lifelong work in access for individuals with disabilities.

Dr. Nancy A. Baker, assistant professor, Department of Occupational Therapy, presented a day-long lecture, "Ergonomics and the Dental Health Practitioner," at the School of Dental Medicine in March.

Dr. Joan C. Rogers, professor and chair, Department of Occupational Therapy, presented the keynote address, "I Can as a Symptom of Health," at the Gulf Coast University Alzheimer's Conference in March 2004.

Denise Chisholm, assistant professor, Department of Occupational Therapy, and Cathy Dolhi, Pitt alumnae, presented a two-day workshop entitled Putting Occupation in Practice & Fieldwork at the Gateway Occupational Therapy Education Council (GOTEC) in St. Louis, Mo., in March.

Dr. Anthony Delitto, associate professor and chair, Department of Physical Therapy, and Dr. James J. Irrgang, assistant professor, Department of Physical Therapy, were invited speakers at the New York Physical Therapy Association (NYPTA) Annual Conference in Albany, N.Y., in April. Delitto addressed the audience about current concepts in lower back pain, and Irrgang spoke about current concepts for evaluation and treatment of the shoulder.

(L to R) Marshall Matz, American Academy of Audiology lobbyist; Senator Tom Harkin (lowa-D); and Catherine Palmer, associate professor, CSD, and convention chair.

Dr. Sara Piva, instructor, Department of Physical Therapy, received a PhD in Rehabilitation Sciences in the Department of Physical Therapy in April 2005.

Dr. Jennifer Brach, assistant professor, Department of Physical Therapy, received a New Investigator Award from the American Geriatric Society in May 2005.

Dr. Joseph Myers, assistant professor, Department of Sports Medicine and Nutrition, received the National Athletic Training Association Research and Education Foundation Freddie H. Fu New Investigator Award at the National Athletic Trainers Association Convention in Indianapolis, In., in June 2005.

Dr. Valerie Watzlaf, associate professor, Health Information Management, will assist the American Health Information Management Association (AHIMA) in studying the use of health information to address health care fraud. Watzlaf is one of the principal investigators for the task, involving the descriptive study of the issues and the steps in the development and use of automated coding software that will enhance health care anti-fraud activities.

shrs 35 YEARS OF TOUCHING LIVES

Alumni, faculty, staff, and friends gathered to celebrate SHRS's 35th anniversary and recognize award-winning alumni at the SHRS Alumni Day Reception and Awards Ceremony, Saturday, April 19, 2005.











of Richard Bowling 3. Paul Rochar, Guy Guimond

5. Keynote Speaker John Siciliano 6. Dean Cliff Brubaker, Peter DeComo 7. Dean Cliff Brubaker, Dr. Audrey Holland 8. Dr. David Perrin, Dean Cliff Brubaker

9. Paul Rockar, Neil Szuminsky

13. Dr. Audrey Holland, Dr. Rory Cooper, John Siciliano, Dean Cliff Brubaker

Dr. Kate Seelman, Dr. Hisaichi Ohnabe,

Mark Rauterkus, Dr. Catherine Palmer 2. Dr. Anne Pascasio, Joyce Bowling, wife

4. Dr. Malcolm (Mick) McNeil, Dean Cliff Brubaker

- 14. Dean Cliff Brubaker, Dr. Valerie Watzlaf
- 15. Paul Rockar, Dr. Jack Katz
- 16. Award winners: Guy Guimond, Neil Szuminsky, Peter DeComo, Pam Toto, Dr. Sean Shimada, Dr. Jack Katz, Dean Cliff Brubaker, Dr. Anne Pascasio, Judy Dodd, Dr. Audrey Holland, Dr. David Perrin, Dr. Valerie Watzlaf, Joyce Bowling





In the **Departments**

Communication Science and Disorders student members of the National Association of Future Doctors of Audiology (NAFDA) won second place in the Audiology Trivia Bowl held at the NAFDA and American Academy of Audiology (AAA) Convention in Washington, D.C. This was the first time a student team bested practicing audiologists.

Communication Science and Disorders student members of NAFDA sponsored the third annual AAA Encore Conference in April. Guest speakers included **Pamela Dickinson**, Cochlear Corporation Inc., and **Dr. Kristina English**, assistant professor, Department of Communication Science and Disorders.



The Department of Rehabilitation Science and Technology (RST) and Dr. Kate Seelman, associate dean for disability programs and professor, assisted members of the organizing committee for the Pittsburgh Theological Seminary in planning an April conference, titled "A Conference on People with Disabilities in Seminaries and Congregations." Seelman presented at the conference and RST faculty provided background information on work occurring at the Center for Assistive Technology and the Rehabilitation Engineering Research Centers at SHRS.

The **Department of Communication Science and Disorders** recently hosted a "Teaching Audiology" conference focusing on "The Art and Science of Teaching Amplification." The event was conducted by nationally recognized educators in the field of amplification including **Dr. Catherine Palmer**, associate professor, Department of Communication Science and Disorders.

Physical therapy students participated in the annual Pittsburgh-Marquette Challenge for the eighth consecutive year. Jen Doster led this year's efforts by sponsoring three continuing education courses, raising over \$27,000 for the Foundation for Physical Therapy. Pitt has been the top fund raising school since 1999.



The Pitt chapter of NAFDA was named Outstanding Chapter for the 2004–05 school year by the organization's national board. In its third year, the chapter was recognized for its dedication to advances in the field of audiology and for the continuous support it provides to graduate students of the audiology program in the **Communication Science and Disorders Department**.

Human Engineering Research Laboratory (HERL) faculty, staff, and students had 28 papers accepted for presentation at the 2005 Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) Conference. Two scientific paper award winners were from HERL – Jen Mercer for her paper, "Effect of Weight on Wheelchair Propulsion Over Various Surfaces," and Yusheng Yang for his paper, "Start-Up Propulsion Biomechanics Using a Prototype Ergonomic Pushrim." Elizabeth Leister and Megan Yarnall from HERL received honorable mentions for their papers, "Effectiveness and Use of Tilt-in-Space and Recline Wheelchairs" and "Wrist Range of Motion During Lateral Transfers Among Persons with Paraplegia," respectively. Other scientific paper winners from the Department of Rehabilitation Science and Technology included Ashley Rotko, JongBae Kim, and Marissa Ammer (honorable mention).

Four faculty members and two doctoral candidates from the Department of Occupational Therapy presented at the American Occupational Therapy Association Annual Conference in Long Beach, Ca., May 12-15: Nancy A. Baker, assistant professor, presented a poster entitled Measuring Personal Computer Keyboarding Style, Obtaining Content Validity and Reliability, and, with a colleague, a workshop entitled Everyday Evidence: Outcome Measurement in Occupational Therapy; Teresa Brininger, doctoral candidate, presented the workshop Effectiveness of Conservative Interventions for the Treatment of Carpal Tunnel Syndrome; Denise Chisholm, assistant professor, and Cathy Dolhi, Pitt alumnae, presented Focusing on Occupation Throughout the Occupational Therapy Process and Academic and Community Partnerships with Rebuilding Together; Mary Lou Leibold, assistant professor, presented a poster entitled Baby Boomers: What Do They Want, Need, and Expect For Their Own Elder Care?; Joan C. Rogers, professor, Margo B. Holm, professor, and Ketki Desai, doctoral candidate, Tamara L. Mills, Pitt alumnae, and colleagues presented Performance-based Assessment for Independent Living: The PASS and FEW Tools.

Northern Speech Services, Inc. – Northern Rehabilitation Services (NSS – NRS), in collaboration with the **Department of Occupational Therapy**, provided "Improving Upper Extremity Motor Recovery Following Stroke: A Novel Approach to Stroke Treatment Using the SaeboFlex Arm Training Program" on May 13–14, 2005.

Department of Occupational Therapy faculty, including Denise Chisholm, assistant professor, Mary Lou Leibold, assistant professor, Elizabeth Skidmore, assistant professor, Pam Toto, instructor, and first year MOT students, Andrea Balsimo, Christine Churma, Diana Crea, Megan Dietz, Alaina Gourley, Shannon Hellested, Linda Hwang, Amy Krzeszewski, Nicole Marko, Jessica Starzynski, Shiona Thompson, Rebecca Vasilisin, and Kristy Yosky, participated in National Rebuilding Day in April 2005. They rebuilt homes of low-income homeowners in Allegheny County. Prior to rebuilding homes, the students and faculty worked with the contractor and homeowner to identify the needs and safety issues, as well as to make recommendations for environmental accommodations.

The Department of Physical Therapy will begin admissions to its Transitional DPT Program in the Summer 2005.

Judith (Judy) Heumann of the World Bank has been selected as the second annual Thornburgh Family Lecturer in Disability Law and Policy. The lecture is scheduled for Thursday, February 9, 2006. Heumann was the assistant secretary for the Office of Special Education and Rehabilitative Services from 1992 to 2001.

IN MEMORIAM Timothy Joseph Lucas

Even though his life was a short one, everyone who knew Timothy Joseph Lucas agrees that he lived life to its fullest. His fiancée, Dr. Kim Crawford, program director of Clinical Dietetics and Nutrition, says, "Tim was an unbelievable man with many interests and talents and the world was truly a better place with him here." Lucas died February 27, 2005, from brain cancer at the age of 44.

"Tim loved everything about life and had a passion for the outdoors," says Crawford. "If given the choice, he opted to hike, camp, garden, explore, or take long walks through the woods with his dogs. He transformed the natural findings that he collected in the woods, on beaches, and along rivers into incredible bookshelves, tables, chairs, wall hangings, picture frames, and so much more. Tim was also a fitness enthusiast and spent many evenings after work playing basketball, volleyball, running, and lifting weights."

His passion for the outdoors, combined with his love of photography, provided him the incentive to travel and experience new places. Among his favorites were the Canyonlands in Utah, the Smokey Mountains, and Olympic and Yellowstone National Parks. "He was a professional photographer, and he took gorgeous pictures on these wonderful journeys."

Lucas earned a bachelor of science in Business Administration from Utah State University and a master of arts in Journalism from the University of Colorado. Five years ago, he began his career at the University of Pittsburgh working for the Occupational Therapy Department. He was later employed at the Dietetics and Nutrition Department, and, for the past three years, at the Department of Communication Science and Disorders. He was an administrator and would often write grants, review budgets, and sort through clinical paperwork, among other things. He was honored by Dr. Cliff Brubaker, dean of the School of Health and Rehabilitation Sciences, for completing five years of service to SHRS and the University of Pittsburgh.

His coworkers describe him as a quiet man, but with a great sense of humor, who was in love with life and would do anything for anyone. Even though his job forced him to be highly organized, they often got a chuckle looking at his office, which was characterized by piles of paper, "sticky notes" galore, and an endless supply of recycled scrap paper – for he was an avid recycler.

Elaine Mormer, a colleague, described one of her favorite memories of Tim: "Since Tim had a great appreciation for recycling old things, he jumped at the chance to visit the Pitt surplus department with me when we were refurbishing my office. He was totally enchanted as he scampered around the big dusty warehouse, exploring every nook and cranny for old hidden treasures."

Cheryl Messick, director of CSD Clinical Education, calls Tim "a man who was satisfied with a simple life." She says, "if we can just carry on this one gift from Tim, we'll all be at peace, and his memory will be for a blessing."

Visiting Tomorrow's Leaders **Today**

Choosing a college is a big decision. Overnight, choices of what to wear to school in the morning are overshadowed by a range of life-changing choices. High school seniors vacillate about whether to move away or stay close to home; weigh the pros and cons of tuition, housing costs, financial aid packages, and college loans; and consider a host of other important questions. And on top of it all, they also have to decide what to study.

Fourth-year Emergency Medicine program students Jackie Martin and Dave Hershey remember these pressures all too well. As high school seniors, both were interested in a health-related profession, but neither knew just what that profession would be.

But thanks to an emergency medicine course taught by Dr. Walt Stoy, program director and professor, Emergency Medicine program, and his most recent class of students, other high school students in the Pittsburgh area following in their footsteps will be armed with the vital information about Pitt's Emergency Medicine program they need to make an educated and successful career choice

The class, titled "Professional Issues in EMS", challenges students to examine an issue confronting the emergency medicine profession as a whole, or the EM program at Pitt. "Students have been writing papers and studying in the classroom throughout their college experience," explains Stoy. "But I want to give all of my students a practical, working knowledge. And I want them to appreciate how they work together in a team."

Based on a series of brainstorming discussions, Stoy's students decided to focus their efforts on increasing awareness of the Pitt EM program in the local community. And they decided the best way to do this was by going to prospective students.

The class began by gathering marketing information about the program and prepared an information packet to be

schools. They approached counselors within Pitt's College of Arts and Sciences and high school guidance departments about how they could best distribute the information. The packets included literature about the profession and contained detailed biographies of the program's professors.

But the class went a step further, designing an eight-page booklet

"If we can help incoming freshman gauge the profession and curriculum better, we've done our job."

of articles about the program and the lifestyle of an EMT-in-training. Topics range from the mundane to the highly pragmatic, with one article summarizing the opportunities available for clinical work and another detailing the advantages of an EMS degree for a pre-Med.

To pay for the printing of the booklet and other materials, the students held several fund raisers at a STAT MedEvac Golf Outing, and hosted a comprehensive "Tools and Talent" Workshop at the annual Center for Emergency Medicine Conference at the Pittsburgh Marriott City Center. The group also held a silent auction at the Emergency Medicine

Service Institute Weekend at Seven Springs Mountain Resort. In all, the students raised enough money to visit 10 area high schools, as well as to subsidize next year's class project.

Remembers Martin, "I had no idea what to expect about the EM program at Pitt when I enrolled. The experience was incredibly rewarding, but it turned out to be much more challenging than I anticipated, and it would have been good to know about the intensity of the clinical work prior to starting. If we can help incoming freshman gauge the profession and curriculum better, we've done our job."

Continues Hershey, "The students we come in contact with could be future EMS leaders. It's our job to make sure they know about all the possibilities that exist by earning a degree at Pitt."



Unraveling the Mysteries of Low Back Pain

For most of the modern era of medicine, low back pain was a mystery to physicians. Many patients would visit their doctors complaining of pain, but would be unable to link their discomfort to any specific cause. They had not been in an accident, and they hadn't overexerted themselves. What's more, they were unable to point to any episode in the past that could have led to their malady. It was as if their phantom pain crept up out of the blue.

With no direct cause of the pain and no medical history, it was all but impossible for general practitioners to offer any constructive treatment for low back pain. Doctors are trained to associate cause with effect, and with no cause they were powerless to offer a substantive diagnosis. The best they could offer was temporary relief. And in most cases, the nagging pain would return in a matter of days.

It wasn't until the late 1970s that sufferers of low back pain would begin to find lasting relief, thanks to two University of Pittsburgh professors, Rick Bowling and Dick Erhard. Their research led to a revolutionary classification system that dispelled the myths of conventional thinking about the low back, forever changing how physicians diagnose and treat low back pain and how those who cope with it learn to recover.

THE EARLY YEARS

Bowling and Erhard, both of whom are now retired, began studying back pain shortly after graduating from D.T. Watson in the mid-1960s. They were interested in the burgeoning manual therapy field – which comes from the same vein as osteopathy and chiropractic interventions and is based on one-on-one, hands-on therapeutic interactions. However, the fledgling science was underdeveloped in the United States, so Bowling and Erhard were forced to travel internationally to receive proper training.

Remembers Erhard, "We spent the greater part of the early 1970s in Europe and took our final competency tests in the Canary Islands. It was a great experience and it gave us a new perspective on studying the back that would serve as the foundation of our later studies."

Upon their return to the states, Bowling and Erhard joined the ranks as adjunct faculty members at the University of Pittsburgh School of Health Related Professions where they embarked on what would later be recognized as groundbreaking low back research.

Their first joint publication, "The Recognition and Management of the Pelvic Component of Low Back and Sciatic Pain," published in the Bulletin of the Orthopedic Section of the American Physical Therapy Association in 1977, gave a hint at what was to come. The study focused on anatomical landmarks in people in a weight-bearing position and attempted to determine the role of these landmarks in low back pain; it was an examination of posture as a cause of back pain, and it paved the way for future research on other non-injury-related causes of low back pain.

OPPORTUNITY KNOCKS

In 1980, Erhard was accepted into chiropractic school in St. Louis, where he hoped to get yet another perspective on researching the back. Dr. Stephen J. Rose, a professor at Washington University and a close friend of Bowling and Erhard, received a contract from the National Institute of Occupational Safety and Health (NIOSH) to develop a highly accurate classification system for low back pain patients. The goal was that patients' diagnoses would be the same every time

"Our observation of patients in the waiting room shed more light on their condition than the layman would think."

they were examined, even with different practitioners performing the exams.

Explains Erhard, "We took special care to rule out anatomical classifications, such as slipped disks, in most of our patients. The goal of the research was to consistently classify patients with biomechanical back pain that physicians had previously had a very hard time diagnosing."

Working out of St. Louis, Rose, Bowling and Erhard recruited 54 patients to participate in their study and set out to form a classification system based on a half-dozen different "syndromes" – a name given to the groups because the word syndrome was the generic name given to diseases prior to the discovery of bacteria in the Dark Ages. "It was the mid-1980s and people were

still struggling with low back pain for which there was no known cause, so to call our classifications 'syndromes' seemed rather apt."

The examination was broken into two distinct steps. The first, the waiting room examination, entailed the completion of the usual insurance and medical forms and a body diagram indicating where the patient's pain was most severe and where there was numbness or tingling. The patient also filled out a pain intensity diagram that rated their localized pain on a zero to 10 scale, and a questionnaire regarding episodes of low back pain and the events that may have precipitated these episodes.

A more covert function of the waiting room exam began when the patient's name was called and he or she got up to walk to the examination room. "Our observation of patients in the waiting room shed more light on their condition than the layman would think. If there were chairs available, but a patient was standing, we knew immediately that the patient didn't have a high tolerance for the sitting position. Similarly, patients who struggled to get out of their seat gave us an idea of what may have been troubling them. And aside from the obvious benefit of having an early look at patient maladies, we were able to see them without them knowing it."

Once in the exam room, Erhard and other experts examining patients would begin to key into specific low back episodes, asking questions about the pain and inquiring about what – if anything – may have directly led to the episode. "A patient may say, 'I have this low back pain that makes me crooked and I've had it on average once a year for the past nine years and the last time it began to hurt was not long after I picked a pencil up off the ground.' This information, coupled with more Q&As, gave us corroborating evidence to determine which of six classifications this particular patient fell into."

The next step was the physical examination.

INSIDE THE SYSTEM

Each of the six classifications focused on a different biomechanical diagnosis and identified the specific intervention that would be used to treat it.

The first, and most obvious, is the lateral shift category. Describes Erhard, "These people's hips are in one position and their shoulders are in another. Generally, this condition is caused by muscle spasms which, in turn, are caused by a muscle, an instability or a disc." To correct lateral shifts, Erhard says, you must correct the frontal plane deformity, either manually or on an autotrac table. "Once corrected, we gave the patient a brace to prevent him from bending forward, and in a few days he should be as good as new."

The next category, extension, requires backward bending exercises to alleviate their pain. "In this case, we would try to centralize the person's symptoms. If the patient was experiencing pain in their right buttocks, we would instruct them to perform exercises that would move that pain into the middle of their lumbar spine, which would leave them in excellent shape to get better."

Flexion is the next category, and is most commonly caused by stenosis, a narrowing of spaces in the spine that contributes to pressure on the spinal cord. Erhard explains, "Literally, we asked the patient to flex, which gives them more room between their vertebrae." The manipulation category means that a patient's pain worsens when he or she is asked to move their back, but the pain subsides when he moves back to a starting position. "Of the six categories, this is the most chiropractic or osteopathic intervention, because the practitioner must manually help with the intervention," Erhard notes. Finally, the immobilization category is usually a sign of too much back movement. It can be caused by a disc that has lost its integrity or loose ligaments. "These patients very often experience severe pains caused by minimal perturbations, usually caused by something that may have happened to them a long

The fourth category is traction, a category for people who do not improve as a result of extension or flexion treatment. These patients have pain below the knee and neurological problems like altered reflexes or parasthesis. "These patients have the most serious low back problems and, should the traction treatment fail to work, their only alternative is the operating room."

> The research on the classification system was published soon after the three-year study's completion in 1986 and spawned a paradigm shift in how clinicians were iagnosing and treating low back pain.

time ago. The intervention here is pretty simple: exercises to strengthen the muscles and reprogram the nervous system to better protect the lumbar spine."

A LASTING LEGACY

The research on the classification system was published soon after the three-year study's completion in 1986 and spawned a paradigm shift in how clinicians were diagnosing and treating low back pain.

But Erhard insists that there were many people besides himself, Bowling, and Rose who deserve a share of the credit. "Drs. Tony Delitto and Jay Irrgang participated in the study, and Dr. Rosemary Scully, then chair of the Physical Therapy Department of the School of Health Related Professions, offered our initial introduction to Dr. Rose. There are a great many people who contributed to our success."

Says Delitto, chair, Department of Physical Therapy, "The truly dynamic thing about this classification system is that it allows physicians to treat low back pain without even knowing what caused it. Rick Bowling and Dick Erhard's work paved the way for a new tier of back research and made the work we do today on the low back possible. They were innovators in the field and the SHRS family will always be proud of their achievement."



Keying In On Repetitive Motion Injuries



Dr. Nancy A. Baker, assistant professor in the Department of Occupational Therapy, has been paying attention to hands for years, specifically as they interact She observes and analyzes them She videotapes them. She covers them with sensors to capture data through high-tech motion-capture equipment, all in an effort to develop repetitive motion injuries along with other musculo-skeletal problems when using a computer,



and analyzing data that will guide the therapeutic process.

heights that tend to keep the arms and wrists in a neutral or natural position," says Baker. "The current research on computer use gives us pretty good data right down to

> down to the fingers." Baker notes that there

Baker's first step was to create a reliable, clinically useful instrument to collect data on typing motion and function. She has collected videotapes of more than 50 subjects, and uses these tapes to test the rater reliability of the instrument with help from various colleagues and master's level students in the department. While making some final adjustments to the questions on her research instrument, Baker has moved into the second phase of the project.

As an occupational therapist, one of Baker's particular areas of interest is ergonomics, the science of fitting tasks and working environments to workers. Her long-time focus on the ergonomics of the computer keyboard resulted in a K-01 career grant award from the National Institute for Occupational Safety and Health (NIOSH) to study this distinct area of function and produce a useful tool for collecting

Much is unknown about the causes of typing-related workplace injuries like carpal tunnel syndrome, a debilitating injurty that affects the wrist. What researchers do know is that certain postures seem better than others for reducing the chance of injury. "We can recommend chair positions that put less stress on the neck, back, or arms, and keyboard

the wrist, but I wanted to look at the whole arm,

> has been some research on finger tapping which looks at individual fingers in isolation - but this does not take into account the complexities of computer keyboard use. Her mandate is to observe and quantify the whole range of motions used in typing. Through both the visual and the technological media, Baker is observing things like personal keyboard style, start and stop ranges, speed of movement, efficiency of motion, how joints are working together, and idiosyncrasies of style such as a claw-like arch of the hand or an extended pinky or thumb.

"Step two is the test for validity of the instrument," says Baker. "I have been using VICON motion-capture technology, which gives me extremely high-precision data that I can then compare to the data reported by my raters while using the research instrument."

The final step will be to take the instrument into the field and rate people both with and without musculoskeletal complaints, and compare them to see if certain items are more sensitive at identifying these problems. In other words, if the instrument proves to be accurate in gathering critical data, then it can eventually be used to guide diagnosis, treatment, training, and, ultimately, prevention. "We can then begin to tie this instrument to ergonomic keyboards in a useful way," adds Baker. "There is a wide variety of ergonomic keyboard styles out there, but very little to help guide us in determining which

> may be helpful to individuals with certain kinds of pain or disease."

A great research project is, by nature, a collaborative effort, and Baker's keyboard ergonomics study is no different. As her mentor for the K-01 grant, Dr. Mark Redfern, professor in the

Bioengineering Department, has been extremely generous, both in lending his expertise and his laboratory complete with VICON equipment. Dr. Rakié Cham, an assistant professor in Bioengineering, has helped Baker with the daunting task of analyzing the reams of data produced by motion-capture technology. Dr. Suzanne Lane, professor in the Psychology in Education Department, has assisted Baker in designing the mechanics of the study instrument. In the School of Public Health, Dr. Evelyn Talbot, professor of Epidemiology, and Dr. Nancy Sussman, assistant professor in the Department of Environmental and Occupational Health, will contribute enormously to the second phase of the study, which requires case control elements similar to an epidemiological study.

Occupational therapists watch people in their natural environment. They analyze how people move in order to find ways to improve function. And while motion-capture data bring a new level of detail and precision to the research process. Baker emphasizes that there will always be a need for the therapist's eye. "By combining technology and experience - data and knowledge - we'll end up with better diagnostics and better therapeutic outcomes, and that's what it's all about."

One of Baker's particular areas of interest is ergonomics.





We do it every day. Raise our arms when we slide on a shirt. Stuff a suitcase in an overhead airplane bin. Comb our hair. Shoot a basket. Put up our hand in class. It's the rotator cuff, where the tendons and muscles attach to the bone in our shoulder, that allows us to raise, lower, and rotate our arm repeatedly and efficiently. Yet few of us realize that by performing these very routine yet very critical functions over a lifetime, we actually may be increasing our chances of developing a rotator cuff tear.

While typically it's a sports injury or a fall on an outstretched arm that causes a rotator cuff tear, for many adults, it happens without warning and can be extremely problematic. According to Dr. Joseph Myers, associate director of the Neuromuscular Research Laboratory (NMRL), rotator cuff tears are the most common shoulder pathology that orthopedic surgeons see in their practice.

In spite of the high prevalence of rotator cuff tears and the recognized difficulty performing functional overhead tasks, Myers says that to date, minimal research have what they consider a healthy shoulder, but not realize they may has been done to determin what is hindering these patients' ability have some type of rotator cuff injury, whether it's a fray, tear, or just to perform them. "Several factors could contribute," he explains. the normal wear and tear that occurs over a lifetime. "Anything from the loss of range of motion, loss of strength, poor To help further identify the poor functional outcomes, self-reporting scapular kinematics, or even the result of pain could be what is assessments, or paper surveys, will be given to every patient. These limiting their ability to maneuver their arm. Additionally, it's not are similar to the functional outcome scales used by orthopedic known if the functional impairment results solely from the presence surgeons. They will show where the patient is experiencing pain of the rotator cuff tear or from the accompanying shoulder pain." or difficulty. It is hypothesized that the patients will demonstrate abnormal shoulder movement, altered muscle activation, decreased strength, and a restricted range of motion.

TWO PHASE RESEARCH

With support from Dr. Scott Lephart, director of the NMRL and chair of the Department of Sports Medicine and Nutrition, and two physicians from UPMC Sports Medicine, Dr. James Bradley and Dr. Patrick McMahon, Myers is currently conducting the first of two phases of a two-year study on rotator cuff tears funded by the Aircast Foundation. The study will extensively evaluate what factors contribute to the dysfunction in patients between the ages of 45 and 70 with symptomatic, full-thickness rotator cuff tears.



Two groups of patients are being put through a series of tests that will

assess each of the characteristics that are vital for the rotator cuff to function. The study will specifically look at tears in two of the four muscles, which originate from the scapula and together form a single unit allowing the rotator cuff to help lift and rotate the arm and to

stabilize the ball of the shoulder within the joint. Patients with full-thickness tears of the supraspinatus muscle comprise the first group, while the second group includes patients with full-thickness tears of both the supraspinatus and the infraspinatus muscles. The goal of the study is to identify the biomechanical, neuromuscular,



and pain factors that impair the overhead function in these patients.

"We try measuring all variables to see which ones best predict a poor functional outcome, such as a loss of range of motion. We also inject the shoulder with lidocaine to control pain so that we may determine if the factors we find are a result of the pain the patient has in his or her shoulder or if it's because of the mechanical disruption to the tendon itself," says Myers. "It may not necessarily be a mechanical disruption of the tendon. In fact, many individuals who have asymptomatic rotator cuff tears don't even know it."

Myers says that someone who is 70 years old may



The two groups of individuals with tears will be matched with a third group. This group will be comprised of healthy individuals who are relatively the same age, height, and weight as those with tears. They will function primarily as a resource for comparing injured and uninjured shoulders.

BUILDING ON PAST RESEARCH

In regards to past studies, Myers says that "researchers have only looked at pieces of the problem. Some have looked at how much flexibility or range of motion someone has. Others have looked at strength and

Continued on page 38

CLINICAL DIETETICS AND NUTRITION

Getting Physical with Diabetes

Paula Harper, a registered nurse, longdistance runner, and bicyclist, was at the top of her game in the early 1980s. She ran marathons and competed in 100-mile bike races. But she had one personal obstacle that was challenging her potential - type 1 diabetes. Even as a medical professional, there were many things about managing her diabetes that were beyond her knowledgebase. But Paula had a solution: the Diabetes Exercise and Sports Association (DESA), a nationwide network of health care professionals and people with diabetes, which she founded in 1985. Through the network, anyone with diabetes - especially those who are active – can get detailed information on the steps they should take to manage their diabetes while engaging in

After learning about the organization and attending a DESA conference in Baltimore, Lisa McDermott, a registered dietitian, certified diabetes educator, and instructor in the Department of Sports Medicine and Nutrition's Clinical Dietetics and Nutrition program, set out to host one of DESA's nationally lauded workshops at Pitt. "The mission of DESA runs parallel to the spirit of SHRS and our work to help people overcome challenges and live healthy, active lives. The more I became familiar with DESA, the more I recognized the intrinsic fit it had with the people and the mission of our School."

various forms of exercise or physical activity.

The conference, held in May at the UPMC Sports Performance Center, featured experts from all corners of the University of Pittsburgh as well as people with diabetes offe bee with Afte boa dial of C Edu stra

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Dr. Bret H. Goodpaster., a physician in the Division of Endocrinology and Metabolism in the Department of Medicine, reviewed some of the latest research that has been conducted in the field of diabetes. The crowd was thrilled by his slides depicting a trip he took to Antarctica to study the metabolic and physiologic changes that occurred in two diabetic hikers. The group then heard from Dr. Kim Crawford, program director of clinical dietetics and nutrition, Department of Sports Medicine and Nutrition, who spoke about the relationship between nutrition, exercise, and diabetes, and Dr. Daniel Edmundowicz, associate professor of Medicine and director

offering firsthand advice on how they have been able to live healthy, high-quality lives with the help of exercise.

After an introduction by Bill King, a DESA board member and marathon runner with diabetes, Marilyn Clougherty, the coordinator of Children's Hospital of Pittsburgh Diabetes Education Program, spoke about exercise strategies for children with diabetes, and

"The mission of DESA uns parallel to the spirit f SHRS and our work to help people overcome challenges and live healthy, active lives." of Preventive Cardiology and Outpatient Services at UPMC's Cardiovascular Institute. Dr. Edmundowicz discussed cardiovascular risk factors in diabetes.

After a tour of the Pittsburgh Steelers and University of Pittsburgh Training Facility, the focus of the conference shifted to speakers who have learned how to create a synergy between diabetes and a lifestyle that includes exercise.

Rick Philbin, an insulin pump wearer and avid exerciser, and Sue DeVito, a registered nurse, discussed how to incorporate smart insulin pumps into sports, and King explained how to achieve a balance between the mind, body, and soul for a more healthy and active lifestyle.

To wind down the conference – and to give the audience an opportunity to delve deeper into the complex topics of the discussion – McDermott held a "question and answer" session with a panel of health care professionals and competitive athletes with diabetes. The discussion was moderated by Nicole Johnson-Baker, Miss America 1999, who has diabetes.

"DESA is a wonderful organization, and I was grateful to be able to work together with them to plan this event," explains McDermott. "We had a super turnout of clinicians, individuals with diabetes, and their families. I think that everyone who attended walked away with a greater understanding of the intricacies involved in making exercise an integral part of the management of diabetes."

Basic **Training**

When Dr. Rory Cooper, distinguished professor and chair, Department of Rehabilitation Science and Technology and director of the Human Engineering Research Laboratories (HERL), and Dr. Paul Pasquina, residency director and chief of Physical Medicine and Rehabilitation and medical director of the Amputee Program at Walter Reed Army Medical Center, first met in December 2003, neither had any hint of the broad-based collaboration that would occur between their respective programs only a few short years down the road.

Cooper, a member of the VA Prosthetics and Special Disabilities Populations Advisory Committee, was visiting amputee patients at one of Walter Reed Army Medical Center's (WRAMC) treatment wards. And Pasquina ran the Amputee Program. While the two did little more than exchange hellos during their first meeting, they would go on seeing each other on several occasions in the ensuing years, each time learning a little more about the groundbreaking work they were doing that shared so many similarities.

Explains Pasquina, "At WRAMC, we're charged with helping wounded soldiers get back to their highest level of function. Many of our patients have amputations or spinal cord injuries, and Dr. Cooper has spent much of his career with patients with the same injuries. After we kept seeing each other at the same conferences and meetings and started to discuss our work, we began to talk about how we could work together."

The first manifestation of their joint efforts was the "State-of-the-Science Workshop: Wheelchair Research and Clinical Practice Featuring Wheelchair Skills Training."

According to Department of Defense figures, by April 2005, 11,888 American servicemen and women were wounded in Operation Iragi Freedom and Operation Enduring Freedom, the two primary missions in the war in Irag and Afghanistan. And for many of these soldiers, the first stop on the road to recovery is Walter Reed Army Medical Center in Washington, D.C, the U.S. Army's premier medical center.

Explains Dr. Pasquina, "The goal of the State-of-the-Science Workshop is to promote research, optimize medical care, and improve education for patients and their families as well as the clinical staff within the Department of Defense and VA. We initially chose wheelchairs because of the uniqueness of the discipline and the specialized expertise of Dr. Cooper and the HERL staff. Furthermore, while we strive for optimizing prosthetic fitting for our amputees, many will continue to incorporate wheelchairs to aid in their mobility. We were excited to show them the advances in wheelchair technology that has developed over the last decade."

While some 120 people attended the workshop, it was also teleconferenced to audiences at other medical centers in Georgia, New York, North Dakota, and Texas.

The workshop kicked off with several HERL students and faculty members discussing their research and explaining how it could be

"At WRAMC. we're charged with helping wounded soldiers get back to their highest level of function."

the benefits of training physiatrists and other rehab professionals in research and assistive technology service delivery. Dr. Alicia Koontz, a HERL research health scientist, explained the benefits of ultra-light wheelchairs and walked the audience through the manual wheelchair selection and fitting process, and HERL clinical coordinator Rosemarie Cooper did a comprehensive review of seating cushions and pressure management. To wrap up the discussion, Erik Wolf, a Department of Rehabilitation Science and Technology doctoral candidate, discussed his power-wheelchair research and clinical practice and offered a number of power-chair technologies as examples of the broad range of technology available to the public.

used to help wounded veterans. Dr. Michael

Boninger, HERL medical director, talked about

After a short lunch, which included an overview discussion by Cooper about the VA Rehabilitation Research and Development Centers and the research being conducted there, the group made its way to the obstacle course.

Explains Cooper, "One of the most impressive things to people who aren't familiar with manual wheelchairs is the level of mobility that can be achieved with them. And an obstacle course tends to achieve the desired effect - people get really excited."



The obstacle course consisted of stairs, a horizontal ladder, ramps, platforms, a doorway, hemp rope - even a piece of plywood with other obstacles screwed into it. Cooper navigated the course and then sped through it while being timed, demonstrating the skills that can be attained with a manual chair with some willpower and practice.

"Besides demonstrating skills that you can master in a wheelchair, we also showed our wounded soldiers the technology that is available to them should they enter civilian life. The VA and HERL are committed to working on state-of-the-art equipment to help them if they should need it," noted Cooper. "We're there for them, and we want them to know it."

Based on the overwhelming success of the first State-of-the-Science Workshop, Cooper and Pasquina arranged two more. The first, on traumatic brain injury, was held in April with equal fanfare, and the second, Research to Clinical Practice for Spinal Cord injury, was held in late May.

Says Pasquina, "These workshops have cemented the relationship between the VA and WRAMC, but they are just the first step in a collaborative approach to research and dissemination that should last for a long time."

The obstacle course consisted of stairs, a horizontal ladder, ramps, platforms, a doorway, hemp rope – even a piece of plywood with other obstacles screwed into it.





the challenges and Rewards of Clinical Education

Although he doesn't look the part, Andrew Chambers falls into the category of the "non-traditional" student. At 25, he has already seen four years of active duty as a diesel mechanic in the Air Force, and graduated in May with his B.S. in Rehabilitation Science and a unique specialization in orthotics and prosthetics (O&P). An orthotist is specially trained and educated to provide patients with custom

designed, fabricated, modified, and fitted external orthoses – orthopedic braces – as well as providing related patient care. A prosthetist brings the same training, skill, and service to patients with external prostheses or artificial limbs.

On the advice of his aunt, a nurse practitioner, Chambers entered Pitt aiming for a career in physical therapy. But in October 2003, during a PT internship at UPMC Rehabilitation Hospital in Squirrel Hill, he met Rick Relich, a certified prosthetist/orthotist (CPO). Chambers watched Relich work with an above-the-knee or "AK" amputee, fitting the patient with his first prosthetic leg for inpatient rehabilitation.

"I got a taste of the instant gratification that sometimes happens in this field," says Chambers. "One of the greatest rewards for those in the O&P field is watching people move from despair to hope. You just see it in their eyes, the first time they get up and walk again, after maybe thinking they never would." Rich Hoolahan never doubted it, though. After losing his right leg below the knee in a motorcycle accident, Hoolahan woke up in the hospital and started fighting his way back. After two years of using his prosthetic leg, he's riding, driving, working, and raising "heck" like he always did.

Hoolahan has worked with Relich at Union Orthotics & Prosthetics

"One of the greatest rewards for those in the O&P field is watching people move from despair to hope." since the accident. It's there that Chambers – through a little tenacity and the generous support of Union's president, Jon Leimkeuhler, CPO – earned an apprenticeship. Through this learning opportunity, Chambers was exposed to the mechanical processes of O&P from the ground up.

The first step in fitting Hoolahan's new prosthesis – his second, to accommodate changes in his residual limb – is to create a plaster cast of his amputation site. Once this negative cast hardens, it is removed, then filled

with plaster to create a positive – the model around which Chambers will build the new prosthesis. After sculpting to add plaster to pressure-tolerant areas and remove plaster from pressure-sensitive areas, Chambers moves to the molding station. Sheets of thick plastic are heated and quickly draped over the plaster cast, then form-fitted with a strong vacuum. Once the plastic mold is cut off and the seam bolted together, Chambers finishes the rough edges.







A combination of careful measurements, space age materials, and highly engineered hydraulic joints results in Hoolahan's new

prosthesis. He tries out the diagnostic socket to check fit and function. After the CPO makes any necessary adjustments, the prosthesis is finished, including any cosmetic details like Hoolahan's Harley Davidson® insignia.

Finally, the prosthetist and patient get together for a definitive fitting. "I've noticed that really good practitioners can see the nuance of the patient's gait," says Chambers. "You can read the journals and really know your technical stuff, but, ultimately, it's very subjective."

Relich adds, "We watch for the relationship of

the prosthesis to the whole body, and the relationship of the knee to the foot. We look for a natural, aesthetic gait. And we do a lot of give and take with the patient. We want to make it easier to live with a disability. Better yet, we want to make a difference, every day, in our patients' lives." The same basic process is used to create orthotic devices. The Union shop is full of pediatric leg braces, for children with cerebral palsy,

"We want to make it easier to live with a disability. Better yet, we want to make a difference, every day, in our patients' lives." spina bifida and other musculo-skeletal disorders, as well as spinal braces for scoliosis patients. These are areas of specialty for the Union O&P team.

"When I started to explore this path, Dr. Ray Burdett, who is the assistant dean of undergraduate programs and was my advisor, really embraced it. So I have him to thank for what I think will be a great career," says Chambers, who will soon begin a two-year program at the University of Washington in Seattle that will culminate in him earning his

CPO designation. He'll then embark on a career in a field that boasts that 100 percent of its graduates find employment.









"Kids who stutter are not only more likely to be bullied, but also bullied more frequently.
 We see it as clinicians, and it's backed up by research," says Dr. J. Scott Yaruss, associate professor, Department of Communication Science and Disorders, clinical research consultant at Children's Hospital of Pittsburgh, and co-director of the Stuttering Center of Western Pennsylvania. "Bullying can adversely affect self-esteem. It can cause general coping disabilities, which may significantly undermine therapy and the child's ability to say what he wants to say."

Bully-Proof

It's a rare and lucky child who has never had to deal with a bully. Studies indicate that 58 percent of elementary school children report being bullied at one time or another, and 32 percent say they are bullied at least weekly. It may be an even greater problem for children who stutter.

COMPLICATIONS AND IMPLICATIONS OF BULLYING

Kids who are bullied are at risk for reduced school performance, emotional or behavioral disorders, depression, and other problems. For kids who stutter, bullying or inappropriate teasing compounds the anger, shame, embarrassment, and guilt they may already feel. And a child who stutters is limited in his or her ability to respond to a bully. When a child is upset or under stress, he or she is that much more likely to stutter. "It's a double-whammy for these kids," adds Yaruss.

He believes that clinicians should be dealing with these issues as part of therapy, but finds that many do not feel comfortable or have the tools to address bullying experiences that happen outside the therapy room. So Yaruss and several colleagues decided to write a manual for children who stutter and the adults who work with them. The first edition of "Bullying and Teasing: Helping Children Who Stutter" was published in 2004 by the National Stuttering Association (NSA).

UNDERSTANDING STUTTERING

"I wanted to use this guide to help adults including teachers, parents, and speech language pathologists (SLPs) – understand some basic things about kids who stutter," says Yaruss. "Stuttering is a fluency disorder that is neither the child's fault nor associated with any learning disability or emotional disorder. Yet kids who stutter often live in constant fear of embarrassment. They will do all sorts of things to avoid the surface

behavior – stuttering – that feeds the negative emotions that are the real manifestations of the disorder."

Often, kids will tense their muscles, blink their eyes, turn their heads, stomp their feet, and make fists, trying not to stutter. They may not raise their hands in class and may avoid talking on the phone. When they are in a restaurant, they may order an item they can say, instead of what they really want to eat. "Unfortunately, these avoidance behaviors can exacerbate stuttering and make the child look even more 'different,'" notes Yaruss. "In therapy, we give kids concrete strategies they can use to minimize the likelihood of stuttering. We can also provide tools to help them cope with bullying and inappropriate teasing."

COPING WITH AND RESPONDING TO BULLYING

When confronted with bullying, the first place a kid may go is to his or her parents, whose reactions might range from confrontational to dismissive. Neither is recommended in Yaruss's manual.

"Helping children cope with bullying is a complex and complicated task, but there are concrete steps parents and other adults can take to 'bully-proof' their child," Yaruss says. "A parent needs to understand and empathize with the situations the child faces and create an environment of support and acceptance. Then Mom or Dad can begin to help the child become less affected by bullying by fostering a sense of self-esteem and personal power. Of course, all of this is supported by strategies that help the child manage his stuttering more effectively so that, ultimately, he can say what he wants without being concerned about his stuttering."

Yaruss continues, "The bully is looking to 'get a rise' out of the victim as well as 'entertain' the bystanders. When a child doesn't believe the bully's comments, he or she can start to withstand the effects of bullying. Then, he is ready to employ rational and useful strategies that undermine the bully's motivation."

Continued on page 38



PHYSICAL THERAPY



in **Education**

The Department of Physical Therapy's run as one of the top PT programs in the country has not gone unnoticed. Its notoriety has led to student and faculty awards at conferences and association meetings across the country and much-needed grant dollars at home. Its dominance has also been a source of pride for long-departed

alumni and a source of jobs for newly departed graduates. And eager to keep the program in high standing, the program's friends and alumni have given back in a big way.

Their donations have taken the form of the state-of-the-art G-4 Skills Lab in Forbes Tower. Renovations were made possible through contributions to the G-4 Clinical Skills Laboratory Fund, initiated by physical therapy alumni exclusively for this purpose. The fund and lab were named for the original PT lab on the ground floor of Pennsylvania Hall. The new lab combines clinical practice equipment with advanced AV technology to create a facility worthy of a top-tier program.

According to Dr. George Carvell, professor and associate dean of Graduate Studies and Research, the first skills lab as

neither properly equipped nor situated to function as a high-end PT lab. "The space was adequate," he explains, "but we were always contending with the support beams that were situated throughout the room and the age of the technology."

The transition to the new lab, though, brought a whole new range of teaching possibilities.

Carvell, who headed up the technological outfitting of the space, installed a fully automated AV system, complete with a new Sympodium dual-data projection setup with matching split display screens. "The system is complex enough to allow us to connect laptops or play movies on VHS tapes. From what our students say,

the system is 'professor proof.'"

For the second s

Blackboard software can be easily utilized by professors in the classroom, allowing in-class access to PowerPoint lectures and other course materials. The system is also equipped with a document camera enabling faculty members to shoot 2-D book images or transparencies as well as 3-D images of joints or bone structures for class study.

New physical therapy equipment also was added to the skills lab, which boasts more area than the former facility. The fund bought a full range of PT tables and therapeutic exercise equipment for musculoskeletal, neuromuscular, and vestibular treatment interventions. Among the other clinical equipment was a set of closed-end stairs for gait training, therapeutic exercise balls, bands and tubing, bolsters and wedges for patient positioning, dumbbells and a weight rack, and other assistive devices.

Says Carvell, "This lab is a great representation of how positive our graduates feel about our program. Knowing that their contributions went directly to its creation makes my job teaching in it all the more fulfilling."













Taking Control of Your Life

The Terri Schiavo case dominated headlines and polarized America this spring, raising ethical, religious, and political questions rarely seen on one judicial stage. At issue: whether Terri's husband or her parents had the legal right to make medical decisions on her behalf.

An advance directive for health care, more commonly known as a living will, or a durable power of attorney for health care would have given her doctors the information – and documentation – they needed to carry out her wishes.

A major sticking point in the case was her husband's assertion that Terri had specifically expressed her wishes about being on life support in the event of an accident. He contended that she did not want to be kept alive indefinitely with a feeding tube. However, without written proof to back it up, the desire could not be substantiated.

A living will instructs doctors on the extent to which they should administer life-sustaining treatment for someone who has had an accident or another life-threatening event. And it only applies to individuals in a terminal condition or a state of permanent unconsciousness. The document can also designate whether or not a person will want specific medical procedures, such as mechanical respiration or tube feeding or other forms of artificial or invasive hydration or nutrition. Living wills take effect only when a person is judged by doctors as being incompetent, a term defined by one's inability to make or communicate decisions about him or herself.

A health care durable power of attorney is a little different. It gives control of medical care to a person designated by the patient. In some cases, the agent simply acts on the patient's behalf, communicating with doctors based on health care decisions that had been made in advance. Should medical questions







arise that had not been considered, the agent must make decisions that are consistent with earlier identified directions.

Explains Patricia Anania Firouzan, assistant professor, Department of Health Information Management, "If you have a strong opinion on whether or not you'd like to be on a feeding tube or a mechanical respirator, it is crucial that you complete a living will or assign the responsibility of your health care to a power of attorney."

But despite the consequences of leaving one's fate up to chance, a relatively small percentage of Americans have signed an advance directive.

According to Anania Firouzan, only 25 to 40 percent of Americans have a living will, though any high school graduate, married person, or adult over the age of 18 can have one prepared. And the only requirements to ensure that it is valid in court are a witness and a signature.

Says Anania Firouzan, "Once a living will has been signed, it becomes part of your medical record when you provide a copy to your medical care giver. It is available to clinicians in the event it is ever needed for health care decisions."

She continues, "Nothing positive came out of Terri Shiavo's case. But I do think it raised awareness for a medical document that most Americans would rather have than be without. I think over the next year there will be an increase in the number of people requesting information about living wills and power of attorney documents."

More information on completing a living will is available at www.aging.state.pa.us/aging/lib/aging/ Advance_Directives_brochure2.pdf



Bully-Proof

Yaruss adds that the therapist can and should play a key role in this process. In addition to supporting a child's self-esteem, the therapist can offer alternative ways of reacting. "Therapists can help desensitize a child to his or her own stuttering, then can move into techniques that develop appropriately assertive responses to bullying," says Yaruss. "These responses, which have been referred to as 'verbal judo', deflect a bully's aggressive behavior without causing harm or aggravating the situation."

Examples of verbal judo include the "Squeaky Wheel" technique, in which the child responds with the same phrase over and over:

Bully: "You're a stutter-baby." Child: "So?" Bully: "You can't talk right." Child: "So?"

Another technique allows the child to acknowledge the bully's comments but demonstrate that they aren't meaningful:

Bully: "Hey, you don't talk right!" Child: "Yeah, you're right, but I'm working on it."

STUTTERING AS A SPECIALIZATION

While it appears that the number of children who stutter remains stable from year to year, more of these children are being identified and treated. This is good news for specialists like Yaruss, who has worked within the profession to increase the number of board-recognized stuttering specialists. Today, there are less than 300, but according to Yaruss, it's catching on.

"It's not a neat and tidy disorder," he says. "It may by controlled for a time, then show up again unexpectedly. It's very unsettling for a therapist. As a mentor, I ask therapists interested in this area of specialization to focus on the broader educational and social implications and help kids develop skills they can use effectively throughout life."

HELP IS AVAILABLE

The NSA is the largest support group in the country for people who stutter. Yaruss works closely with them, helping to spread an educational message throughout the therapeutic community and into communities at large.

"Evidence demonstrates that when teachers, parents, or kids intervene, bullying diminishes. Many schools have zero-tolerance policies that reduce bullying and may get the bullies into therapy of their own," says Yaruss. "But if, through classroom presentations and parent/teacher education, we can educate more people about stuttering, we can also help kids deal with its social implications."

Copies of "Bullying and Teasing" are available through the NSA. You can reach them at 1-800-We-Stutter or on the Web at www.WeStutter.org.

Reaching Above and Beyond continued

other variables. But, what we are doing is looking at all of those variables and comparing them to the patients' self-reporting assessment." By comparing all of the factors with the tests and patient assessments, he and his team will be able to determine where the functional deficits are actually occurring in the patients.

In the end, the results of the study will allow physicians and therapists to implement rehabilitative interventions, either as a means of conservative treatment, or prior to and following surgical treatment. The interventions will specifically address the deficits identified, thereby improving functional outcomes.

"By identifying the factors that contribute to the dysfunction in patients with rotator cuff tears, we'll be able to develop a more accurate treatment plan faster than in the past. This will be valuable to the patient who maybe cannot brush aside daily responsibilities nor afford several months off work, to the employer who is paying insurance premiums, and ultimately to entire families, who will be alleviated of stress and concern," says Myers.







Professor Meisel is the director of the Center for Bioethics and Health Law at the University of Pittsburgh School of Law and an authority on the legal aspects of informed consent and the right to refuse medical treatment. His most recent book, The Right to Die: The Law of End-of-Life Decision-making, is in its third edition.

What are the best and worst possible outcomes that could result from the recent Terri Schiavo case, in terms of the right-to-die issue?

 $A^{\rm In}$ my opinion, the best possible outcomes would be twofold: First, on an individual level, it's my hope that more people will sign advance directives so their wishes become known, and more people designate someone to make decisions for them when they can no longer make them for themselves. Second, on a larger, societal level, a good outcome would be a clearer understanding of hopeless or untreatable conditions and how that relates to quality of life as measured by the patient himself or herself. That ought to be the determinant factor, not how quality of life might be measured by others.

What is the difference between passive and active euthanasia?

 $A^{\rm The \ term \ passive \ euthanasia \ is \ rarely \ used}_{\rm in \ law. \ It's \ what \ we \ would \ more \ commonly}$ refer to as withholding or withdrawing medical treatment, which I think describes it far better. When we make a conscious decision to withhold life-sustaining treatment based on a patient's request, it hastens his or her death in a passive way. When we withdraw treatment, the term "passive" is somewhat ironic, because, as in Terri Schiavo's case, you have to engage in an act. You have to pull a tube or turn off a ventilator. It's not really passive. What's important legally, however, is that the cause of death is the patient's underlying illness or injury.

In the case of active euthanasia, the cause of death is not a limitation of treatment, but some act or intervention that hastens death. There are two different forms: One is commonly called physician-assisted suicide, in which the patient takes a lethal substance, usually prescribed by a doctor, and ends his or her life. The other is often called "mercy-killing," in which the patient requests that another person cause his or her death, for example by giving a lethal injection. It is generally assumed that, of the two, assisted suicide gives the patient more control over the timing and manner of one's death, because the patient performs that act. Those who are morally opposed to active euthanasia often see the two forms as equivalent, but there are many who support assisted suicide but not "mercy killing."

Dialogue A Conversation with Alan Meisel, JD

How can a clinician make distinctions between a patient who is dying and one who is living with a disability?

 $A^{\rm There\ is\ no\ clear\ line.}$ What one person sees as a disability, another may view as a terminal condition, and the truth is it may be both. There are many conditions that lead to death inevitably, but in a prolonged fashion, and there is also great variability in the quantity of life that can be expected with conditions such as ALS, multiple sclerosis, and other degenerative neurological conditions. Often, as time passes, a patient becomes more disabled. But there is no clear line that morally, medically, or legally distinguishes between living with a disability and dying.

Q What about the difference between a basic right and an extraordinary medical measure?

A The thinking on food is that we're obligated to make it available for those who can't get it for themselves. Then we must ask whether or not feeding tubes constitute food in the same sense that eating by mouth does. Feeding tubes are recognized from a legal perspective as medical procedures, so patients have the right to refuse

them. The issue that's come up in Schiavo and other cases is, to some extent, bogus. People say, "We're starving them," when we withhold or withdraw a feeding tube. Yet we don't say, "We're choking them," when we remove a ventilator. The tube is there to treat a condition – the inability to eat. The ventilator treats the inability to breathe. What's most important is not what caused the condition or what treatment is available, but what does the patient want? When a patient can tell you, it's easier to make decisions. When they can't, it's much more difficult, and that's why advance directives are so important.

> Many things guide end-of-life decisionmaking: law and legal precedent, medical policy, family discussion, and patient wishes Is there a hierarchy to that list, which medical practitioners should keep in mind?

A In terms of law and precedent, the process differs considerably depending on who's involved. Decisions have to be tailored to individual situations. We must consider a patient's diagnosis and prognosis and ability to participate in decision-making, as well as the different

personalities of family members and even the patient's treatment team. It is really impossible to prescribe hard and fast rules. There are rules but they are general.

In the final analysis, law governs, but it too is cognizant of these variables. And again, a patient's advance directive can make things much more clear

How should clinicians advise their patients, *I* if asked, about how to make sure that their wishes are communicated and carried out by the medical community?

▲ I think it's entirely appropriate for health care A professionals of any type to provide patients with facts and advice. In fact, certain facilities such as hospitals, nursing homes, and hospices are required to provide patients with information about advance directives. This does not impose an obligation on any professional, but certainly if asked and even if not – if it's done in the right way - I don't see any problem in telling patients who haven't thought about it that they really should.

Q Do you recommend any resources that clinicians can use to learn more?

A Locally, the Allegheny County Medical Society has an advance directive form and informational booklet on its Web site, which were created by a committee made up of members of the Medical Society and the Allegheny County Bar Association. It's one of the best, simplest resources around. You can access it at www.acms.org/lw/livwill6.pdf.

The other advice I have for anyone is that merely filling out an advance directive form is not enough. You've got to give it to your doctor. You have to give it to the person you name as your health care agent. You should also give a copy to close family members. Even though they are not going to be in authority, they could challenge decisions, and you want them to understand your wishes and know who speaks on your behalf. It also gives you a chance to answer their questions about your wishes.

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