

# ADVANCES *in Aging*

## Researchers Focus on Workforce Issues in Long-term Care

Historically, the health, well-being, and satisfaction of health care workers who care for older persons and their relationship to the quality of care patients receive has been a topic of limited study. While connections between worker well being and quality of care for the elderly (including better outcomes) have been made anecdotally, comparatively little data exists to substantiate these observations.

Currently, several faculty members are examining whether the well being (in terms of health, mental health, and satisfaction)

patients admitted for congestive heart failure or diabetes, based on the model of community health workers.

The researchers, with Kelleher as primary investigator, include co-investigators Donald Fedder, DrPH, MPH, from the School of Pharmacy, and Laurence Magder PhD, MPH, from the School of Medicine, and co-investigators from the Johns Hopkins School of Public Health and School of Nursing, and MedStar Health's Visiting Nurses Association (VNA).

For the two-arm study, selected MedStar

survey to collect patient satisfaction data and self-report information on hospital/ER use. HHA job satisfaction, training evaluation, and performance monitoring data will be captured with tools being created by the study team.

The HHAs' coaching will be integrated into the care they already provide, says Kelleher. "For example, if the HHA is helping a patient prepare a meal, they could teach the patient to select foods that are consistent with a healthy diet—as opposed to merely preparing whatever foods are nearby," Kelleher says.

Patients who have HHAs typically live alone or have no one nearby to provide and oversee their care, Kelleher explains. They may have been taught about their disease in the past, but would benefit from the systematic, and reinforcing HHA DMC's education. "Patients would learn more about the management of their own illness and have a greater awareness of signs and symptoms that they might be at risk for a trip to the ER or for re-hospitalization," says Kelleher. HHAs trained as DMCs would also have improved patient assessment skills and act as the eyes and ears of the nurses and would be able to contact nurses in situations of noncompliance.

"If HHA-disease management coaches can produce better patient outcomes, and at the same time experience greater job satisfaction and reduced job-hopping because of their enhanced role and patient impact, this study could produce a new model of home health care delivery," says Kelleher. "It would be a model that simultaneously improves outcomes, makes more effective use of HHAs and RNs—which are both in short supply—reduces service use and related costs, and suggests new ways to design and reimburse for home health care." [cont. pg. 2]



Catherine Kelleher ScD, MPH, MS, RN



Alison Trinkoff, ScD, RN



Charlene Quinn, PhD, RN

of health care workers affects the care of older persons—in either home health, acute care, or nursing home settings—and if it does, what implications these affects may have for health care policy and practice.

### Researchers Explore Expanding the Role of Home Health Aides: Can HHAs Be Disease Management Coaches?

Home health aides typically assist with personal care, mobility, and feeding, but are not trained to monitor or educate patients. Catherine Kelleher ScD, MPH, MS, RN, an associate professor in the School of Nursing, and colleagues recently received a four-year, \$2.5 million grant from AHRQ to study whether home health aides (HHAs) working with RNs could have a greater role in patient care via training as disease management coaches (DMCs) for

HHAs will receive about 150 hours of upfront training in implementing congestive heart failure and diabetes disease management protocols, followed by weekly debriefing and monitoring sessions throughout the study.

In arm one of the study, 300 congestive heart failure and 210 diabetes patients who normally would receive a HHA will be assigned randomly to either an HHA trained as a DMC or a traditional HHA. In arm two of the study, a subset of Medicare patients (600 with congestive heart failure and 600 with diabetes) ordinarily not assigned HHAs will be assigned randomly to either no HHA or an HHA DMC. Patient outcome data will be obtained from various sources, including clinical, administrative and billing data routinely collected by MedStar, and a phone

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### **Does a Good Work Environment Mean Safer Workers and Safer (and Healthier) Patients?**

**Alison Trinkoff, ScD, RN**, a professor in the School of Nursing's Department of Family and Community Health, is the primary investigator, with co-investigator **Meg Johantgen PhD, RN**, an associate professor in the school's Department of Organizational Systems and Adult Health, on a \$695,000 grant from the Department of Health and Human Services' Agency for Healthcare Research and Quality (AHRQ) to examine whether nurse staffing and skill levels and qualities of institutions are associ-

ated with increased worker injuries and adverse patient outcomes.

Trinkoff and Johantgen are examining three years of administrative data from acute and long term care facilities in three states and looking at the relationship between organizational characteristics of facilities (such as size and non-profit status) and adverse patient outcomes and worker injuries.

The study will provide evidence to support change in the organization of health systems, which are designed to improve the quality and safety of patient care, and at the same time, the health and productivity of workers.

"When I wrote the grant, I felt that if a nursing home is an excellent place to work it will likely be a good place to be a resident," says Trinkoff. "it seemed that the two issues are likely to be related."

### **Pilot Study of Geriatric Aides' Perceptions of Work Environment and Quality of Patient Care**

**Charlene Quinn, PhD, RN**, an assistant professor in the Division of Gerontology in the School of Medicine's Department of Epidemiology, recently completed a GGEAR-funded pilot study of the relationship between geriatric aides' perceptions of their work environment and quality indicators in nursing homes.

In four nursing homes in Maryland, the research team surveyed approximately 100 geriatric aides on their work environment, their beliefs about caring for older adults, and their satisfaction with their profession. They also collected data on quality indicators (such as the presence of pressure sores, the incidence of falls, and incidence of dehydration) for each home.

The key purpose of the study was to design a survey that would be an effective tool for measuring the aides' perceptions of care in nursing homes. "The pilot is unique in that it surveys the aides themselves about their perceptions of quality of care. In most previous research, RNs or directors of nursing are surveyed on these issues," says Quinn. "It adds to our understanding of the beliefs of the frontline nursing home workforce."

The team designed two scales within the overall survey to measure 1) aspects of the work environment including training focusing on clinical conditions common among nursing home residents, and 2) beliefs about caring for older adults and perceptions of what is good care. A third 20-item measure of worker satisfaction was included in the survey. "We were a bit surprised by the results," says Quinn. "Data shows that despite the hard work and low pay, the aides surveyed were relatively satisfied with their profession. Another variable that came out of the study was that aides who felt a sense of accomplishment were more satisfied with their jobs." Because only four

## **Health Workforce Shortage in Long-Term Care Conference to be held at UMB**

On June 4, 2004 the Center for Health Workforce Development at the University of Maryland Baltimore will present the second annual Virginia Lee Franklin Memorial Trust Conference entitled, **Seeking Solutions to Health Workforce Shortages in Long-Term Care: Best Practices**. **Dr. Barbara R. Heller** is executive director of the Center.

The conference will explore the challenges facing the long-term care industry in recruiting and retaining qualified professionals and staff. Interventions and model projects aimed at resolving workplace and workforce issues will be identified and described. Noted speakers will share their perspectives while a poster session will provide an opportunity for participants to disseminate information about the promise of research in developing the long-term care workforce.

Conference speakers include:

**Dr. Charles H. Roadman, II**, President and CEO of the American Health Care Association in Washington, DC; **Dr. Robyn I. Stone**, Executive Director of the Institute for the Future of Aging Services in Washington, DC; **Ms. Carol Brenner**, Director of the Office of Health Care Quality for the Maryland Department of Health and Mental Hygiene; **Edward S. Salsberg**, Center for Workforce Studies, Association of American Medical Colleges; and **Dr. Susan C. Reinhard**, Director of State Solutions at the Center for State Health Policy at Rutgers, The State University of New Jersey in New Brunswick

There is no charge for the conference and contact hours will be available for nurses, nursing home administrators and social workers.

The Center's mission is to assist health care professionals, educators, the health care industry, public policymakers, and other stakeholders in anticipating and responding to health care challenges. An advisory board representing industry, education, government, and the health care professions guides the Center's work.

**For information or to register, visit [www.umaryland.edu/healthworkforce](http://www.umaryland.edu/healthworkforce) or call 410-706-4144.**

nursing homes were included in the study, conclusive evidence is not available to relate the survey data of aides' perceptions and quality indicator measures of the four facilities.

Quinn also noted, "This study is a great example of the collaboration and research training made possible by the GGEAR program." In addition to faculty collaboration (**Jay Magaziner, PhD, MS Hyg** and **Anne Gruber-Baldini, PhD**, both in the Department of Epidemiology and Preventive Medicine, Division of Gerontology in the School of Medicine), the study provided research training opportunities for gerontology doctoral students, **Magda Tolea** and **Dan Andersen**.

The study is being reviewed for publication. ■

Please see article on "Seeking Solution to Health Workforce Shortages in Long-Term Care: Best Practices" Conference on page 2.

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## UMB Claude D. Pepper Center Undergoes Annual External Review

The University of Maryland Baltimore's Claude D. Pepper Older Americans Independence Center was funded by the National Institutes of Health- National Institute of Aging in August 2001 for five years at \$8.5 million. Under the leadership of **Andrew P. Goldberg, MD**, Principal Investigator, and **Jay S. Magaziner, PhD, MSHyg.**, co-Principal Investigator, the Center conducts research involving more than 40 investigators from five academic institutions in the study of the mechanisms by which exercise rehabilitation affects ambulatory performance, musculoskeletal and neural (brain) function, quality of life and community-based daily activity in older persons disabled by hemiparetic stroke, hip fracture, cardiovascular and neurodegenerative diseases.

The Pepper Center hosted its second External Advisory Committee (EAC) peer review in the winter of 2003. Center investigators presented the results of the exciting research which both senior and junior faculty have accomplished as part of the UMB Pepper Center grant. The EAC includes nationally recognized scientists with expertise in rehabilitation medicine, gerontology, neuroscience and muscle metabolism:

■ **Neil Alexander, MD**, Professor, Director Mobility Research, Division of Geriatric Medicine at the University of Michigan Medical Center, and Ann Arbor GRECC, Ann Arbor, Michigan.

■ **Scott Brown, MD**, Director of the Department of Rehabilitation Medicine at LifeBridge Health, Sinai Hospital, Baltimore, Maryland.

■ **Rebecca Craik, PhD, PT**, Professor and Chair, Department of Physical Therapy, Arcadia University, Glenside, Pennsylvania.

■ **Barbara J. de Lateur, MD, MS**, Professor and Director, Department of Physical Medicine and Rehabilitation, Johns Hopkins University School of Medicine., Balt. Maryland.

■ **Susan Donaldson, PhD, RN**, Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland.

■ **Randolph (Randy) J. Nudo, PhD**, Director and Professor, Landon Center on Aging, University of Kansas Medical Center, Kansas

■ **Luigi Ferrucci, MD, PhD**, Clinical Director of the NIH/NIA Gerontology Research Center, Baltimore, Maryland.

■ **Patrick G. De Deyne, PhD, MPT**, Staff Engineer, Soft Tissue Technology Group of DePuy Biologics, Johnson & Johnson Company, Raynham, Massachusetts.

■ **Lana Konigsberg, PharmD, RPh**, Scientist for Cardiovascular Disease, Boehringer-Ingelheim Pharmaceuticals, Inc. New Jersey

**Andrew P. Goldberg, MD** introduced the EAC review with an overview of the Center's research examining the mechanisms by which treadmill exercise and rhythmic bilateral upper extremity arm training affect ambulatory function, neuromuscular performance and quality of life in hemiparetic stroke patients, the effects of home exercise on physical function in hip fracture, and the use of robotics for stroke rehabilitation. **Jay Magaziner, PhD, MSHyg**, Co-Principal Investigator of the Center reviewed the mentored research-training program for junior faculty gerontology scholars in clinical, epidemiological and biomedical aspects of interventional rehabilitation research in aging. Center resources currently support pilot projects by 1) Lyndon Joseph, PhD, Assistant Professor in Medicine examining the effects of exercise on muscle mechanisms regulating insulin action in the elderly (mentors Alice Ryan, PhD, Andrew Goldberg, MD) 2) Larry Forrester, PhD Assistant Professor in Physical Therapy and Rehabilitation Sciences studying impedance-controlled ankle robotics for gait rehabilitation after stroke, (mentors Richard Macko, MD, Daniel Hanley, MD), 3) Denise Orwig, Ph.D., Assistant Professor in Epidemiology and Preventive Medicine assessing treatment fidelity in the [cont. pg. 4]

## Third Annual Aging and Women's Health Research Poster Day

Over 130 students, faculty and staff crowded historic Westminster Hall for the Third Annual Aging and Women's Health Research Poster Day sponsored by the University of Maryland Center for Research on Aging and the Women's Health Research Group. Co-sponsors of the annual event are the Geriatrics and Gerontology Education and Research Program, UM Claude D. Pepper Older Americans Independence Center and the VA Geriatric Research, Clinical and Education Center.

Introduced by **Jay Magaziner, PhD**, co-Director of the UM Center for Research on Aging, **Sue Levkoff, PhD**, Harvard University Schools of Medicine and Public Health provided the key note address. Her topic was *The Challenges of Recruitment & Retention of Minority Older Persons*.

Forty-six posters were submitted for evaluation this year representing the research of pre and post-doctoral students and junior faculty in the fields of basic science/bio medical research and social science/behavioral/clinical research. Each poster presenter provided a ten minute oral presentation of the research represented on the poster to two faculty members from the University of Maryland Baltimore and/or University of Maryland Baltimore County campuses. The posters were evaluated and scored by the faculty judges based on the following criteria: Identification of Research Problem, Appropriate Research Design, Interpretation of Results, Appropriate Analysis of Data, Oral Discussion of Research, Scientific Importance of Findings to Aging and/or Women's Health Research, Global

Impression of Research Project and Presentation and Poster Effectiveness.

This year's winners are:

### PRE-DOCTORAL BIO-MEDICAL/ BASIC SCIENCE

- **1st Place:** Leann Massey, BS, Molecular and Cell Biology Program, School of Medicine
- **Honorable Mention:** Sharmila Nabar, MS, PT, Department of Physical Therapy, School of Medicine

### PRE-DOCTORAL SOCIAL SCIENCE/ CLINICAL/BEHAVIORAL

- **1st Place:** Steven Blume, MS, Pharmaceutical Services Research, School of Pharmacy
- **Honorable Mention:** Pia Inguito, MSN, RN, Adult Health, School of Nursing

### POST-DOCTORAL/JUNIOR FACULTY BIO-MEDICAL/BASIC SCIENCE

- **1st Place:** Eleni Sarlani, DDS, PhD, Department of Biomedical Sciences, Dental School
- **Honorable Mention:** Volha Rudnik, MD, PhD, Medical and Research Technology, School of Medicine

### POST-DOCTORAL/JUNIOR FACULTY SOCIAL SCIENCE/CLINICAL/BEHAVIORAL

- **1st Place:** Elizabeth Hill-Westmoreland, PhD, RN, Epidemiology & Preventive Medicine, Division of Gerontology, School of Medicine
- **Honorable Mention:** Vasana Cheanvechai, MD, Vascular Surgery, School of Medicine

The award ceremony was presided over by **Patricia Langenberg**, Director of the Women's Health Research Group.

[from pg. 3] Pepper Center, (mentors Jay Magaziner, PhD, MSHyg, Barbara Resnick, PhD, CRNP), and 4) Carwile LeRoy, MD, Clinical Instructor in Neurology and Rehabilitation Medicine, examining the efficacy of progressive rate training (PRT) post stroke, (mentor Richard Macko MD).

This overview was followed by a series of presentations by Center researchers summarized below:

■ **Denise Orwig, PhD**, Co-Director of the Epidemiology and Recruitment Core reported on the Center's recruitment strategies for stroke patients and its use of a tracking database to maximize the efficiency

of recruitment and patient enrollment into Center research projects. She noted that continual evaluation of our recruitment strategies, tracking of subjects with time-sensitive and medical issues affecting eligibility, and streamlining of the enrollment process were critical to maximizing the cost-effectiveness of patient enrollment.

■ **Richard Macko, MD**, Associate Professor Dept of Neurology and Principal Investigator presented findings from the Intervention Development Study (IDS-1) entitled "Task-Oriented Treadmill Training in Hemiparetic Stroke". He indicated that preliminary findings from this important study show that treadmill exercise is safe,

and when compared to the control, dose-matched condition of stretching and low intensity walking it improves cardiovascular fitness and ambulatory function, and increases insulin sensitivity to reduce the risk of type 2 diabetes in chronic stroke.

■ **Jill Whitall, PhD**, Professor in the Department of Physical Therapy and Rehabilitation Sciences reported the findings of IDS-2: "Bilateral Arm Training with Rhythmic Auditory Cueing (BATRAC) in Chronic Stroke". She reported that in patients who completed BATRAC there is neural activation and improved upper extremity functioning, but not in patients receiving the dose-matched, standard of care physical therapy. She showed the brain functional magnetic resonance imaging (fMRI) scans suggest that the location of the thrombotic lesion, i.e., cortical vs. sub-cortical, and the degree of hemiparesis may predict those subjects most likely to benefit from BATRAC. **Daniel Hanley, M.D.**, Professor, Department of Neurology, Johns Hopkins University presented the fMRI analyses of **Andres Luft, M.D.** co-investigator from Tubingen, Germany. He reported that their early results show that neuroplasticity occurs in both hemispheres in some patients completing IDS-1 and IDS-2; however, subsets of patients with subcortical injuries appear to be less responsive to the interventions. He indicated that future goals will be to determine the anatomic predictors of the functional responses to the neuroplastic changes with intervention, and the durability of the improvements in upper and lower extremity function.

■ **Larry Forrester, PhD**, Assistant Professor in the Department of Physical Therapy and Rehabilitation Sciences presented results from his pilot study examining the effects of short-term exercise on lower extremity central nervous system (CNS) excitability in stroke patients. Using transcranial magnetic stimulation of the leg muscles, he showed that stretching causes a significant rise in excitability of the unaffected leg, whereas a comparable amount of treadmill exercise depresses CNS responses in both legs. He interpreted these findings as suggesting that stretching may have a somesthetic effect on neuroplasticity to

enhance CNS responsiveness during stroke rehabilitation.

■ **Sandra McCombe-Waller, MS**, Assistant Professor, Department of Physical Therapy and Rehabilitation Science, reported findings of her pilot study examining central motor control mechanisms associated with hand dominance and their adaptability to unilateral and bilateral arm training. She used paired-pulse transcranial magnetic stimulation to demonstrate that the cortical inhibitory and facilitatory responses of the cerebral hemispheres of non-disabled right and left handed adults to biceps activation, and the adaptive plasticity of these processes following short-term bilateral arm training are similar despite strong hand dominance. She interpreted these findings as supportive of Dr. Whittall's findings that one of the mechanisms by which bilateral arm training improves upper extremity function is through neuroplasticity.

■ **Carwile LeRoy, MD**, Department of Neurology and Rehabilitation Medicine reported findings of his pilot study examining the efficacy of progressive rate training (PRT) to build strength, improve ambulatory function and facilitate neuromuscular contraction after stroke. He explained that PRT is a rate-based resistive training approach that increases power output of the lower extremities by increasing the speed of bilateral knee flexions and extensions against a constant weight. His early results show that PRT increases total work, average power output, ambulatory capacity and muscle strength of both the paretic and nonparetic leg, suggesting that it may be an effective method of rehabilitation following stroke. **Kathleen Michael, MSN, CRRN**, Doctoral Candidate at Johns Hopkins School of Nursing, and Program Manager for the Pepper Center reported on her studies examining the effects of hemiparetic stroke on community-based walking in 44 patients using portable step activity monitors. Her findings show that the fitness levels of the stroke patients are 50% lower than sedentary controls, and submaximal exercise testing shows they use more energy during the simple task of walking. She found that hemiparetic stroke patients take fewer steps per day than sedentary adults,

and on average, patients with faster walking speeds and better balance take more steps per day. Ms. Michael plans to restudy the patients after the treadmill training intervention to determine whether increased fitness and duration on a treadmill translates into greater home and community-based free-living activity.

■ **Charlene Hafer-Macko, MD**, Assistant Professor, Department of Neurology reported on her pilot study examining skeletal muscle metabolism in chronic hemiparetic stroke. She indicated that her preliminary findings show the self-selected walking speed of stroke patients is inversely related to the fast myosin heavy chain (MHC) composition of the atrophic, paretic leg. Although the fast MHC fibers are atrophic relative to slow fibers, Dr. Hafer-Macko showed there is a paradoxical compensatory hypertrophy of fast and slow MHC fibers in both legs, perhaps due to the loss of functioning motor units. She plans biopsies in these subjects after treadmill training to determine whether these changes are the result of neurological damage or metabolic abnormalities in muscle caused by deconditioning.

These research presentations were received with enthusiasm by the External Advisory Committee. They were impressed by the conduct of the research in the Center, the exciting mechanistic approaches to the study of the effects of exercise rehabilitation on neural function, muscle metabolism and community-based activity in older persons with chronic stroke, and the resources for the research training of junior investigators in aging, rehabilitation medicine, metabolism, and epidemiology. Dr. Goldberg indicated that in the next year Center investigators will strive to expand the recruitment population to increase the generalizability of the study subjects, conduct of more mechanistic studies of the effects of treadmill training and BATRAC on neural, muscular and physical function using TMS and fMRI, and examine inflammation, oxidative stress and the molecular mechanisms affecting muscle damage and metabolic functioning in the paretic lower extremity. ■

## The Nurse and Participant

### *The Research Team Essentials*

To explore a scientific hypothesis, one must control for interfering factors and test in a measurable and reproducible way. To introduce humans in this equation is to add a new level of complexity. Research nurses at the Baltimore VA Medical Center, Division of Gerontology assist in the implementation of research through the Claude D. Pepper Older Americans Independence Center (OAIC) and the Geriatrics Research, Education and Clinical Center (GRECC). They maintain the integrity of the research while focusing on the "human factor"—the participant. The team of nurses includes **Gretchen Zietowski, Kathie Brandt, Joyce Evans, and Ivy Dorsey.**

The nurses must balance fulfilling the requirements of the protocols and the participants' goals from the research while ensuring the safety and dignity of these individuals. By the completion of a research protocol, the nursing staff strives to empower the participants to decrease their risk of cardiovascular disease complications and improve the functionality and quality of their lives. To achieve these lofty goals, the nurses must tap into the common desire of the participants to restore or reclaim their bodies and their lifestyle changed by a stroke, obesity or lack of exercise. These are the areas of research concern in the OAIC and GRECC. As most people grow older they realize that in order to remain vital and independent they need to make significant changes in their lifestyle. Without intervention, many of these individuals are aware of the possibility of severe or debilitating illness. The OAIC and the GRECC hope to provide the interventions and enable the participants to accomplish them.

One individual who serves as an excellent example of the benefits of research participation is **Norma Wyatt**, who attended a women's health fair at the VA. She knew she wanted to lose weight but didn't have the resources or knowledge to *[cont. pg. 6]*



Norma Wyatt exercising at  
GRECC/Pepper Center Senior  
Exercise Rehabilitation Center.

[from pg. 5] fulfill her goal. While attending the health fair she spoke to the Division's nurses and decided to join a study, which addressed the issue vital to her well-being—weight loss.

The participants in the OAIC and GRECC studies receive many benefits. Some of which include: free medical care and tests, free use of the exercise facility, a sense of altruism, social interaction with peers and access to the latest treatments as well as receiving a great deal of personal attention from dietitians, physicians, nurses and exercise physiologists. Some of the benefits, such as weight loss can only be experienced due to the determination of the participants. After enrolling in our studies, participants are expected to fully participate in their treatment, those that don't, fail. Norma said "the nutritionist keeps the class interesting and teaches me all the ways to do what's right for me. Most of all, she lets it be known that it is really up to me, the choice is mine."

The researchers must keep in mind that the participants are volunteers who endure poking, prodding and scanning, while the team gathers the evidence of what obesity and the consequences of a sedentary lifestyle can do to one's body. The nurses collect and analyze samples of fat, muscle and blood, and take pictures of brain activity, bone density, lean body mass and intra-abdominal fat. They measure resting metabolic rates, cardiovascular fitness, balance, gait economy and glucose stimulated

insulin responses. An essential role of the nurses is to explain all the procedures; the science behind them and the significance of each. Bridging the gap between the scientific research community and the layperson is challenging at times. Although subjects may not know if they have an ApoE4 allele or not, they realize that this research adds to the growing body of knowledge of the effect of a lifetime of obesity or sedentary lifestyle.

Since the participants are involved in a research project for at least one year, the nurses become part of their lives in a way primary healthcare providers cannot. Research dictates objectivity, however the nurses are trained to not only see the subject as a data point, but also to see the participant as a mother, husband, provider or survivor. The nurses, along with the entire research team, provide strong encouragement throughout the studies. For example, they rejoice with them over a 5 lb weight loss or walking 20 paces without a walker. In the beginning of a study, the participants rely on staff encouragement since the rewards of a weight loss and exercise program are usually not seen immediately. Norma felt what kept her motivated initially was the exercise physiologists. "We made a promise to each other. I never wanted to let them down. Every ounce I lost was awarded with stickers, smiles and congratulations. They were there when I needed to talk. I needed to know that someone cared and I felt that they did."

The goal is to gradually move the source of motivation from external to internal so that the participants can take ownership of a lifestyle that is best for them.

Due to the frequency of contact, the research staff may be the first people participants go to for advice ranging from "a spot that doesn't look right" to "a funny feeling in my chest". The research nurses triage and assist in diagnosing diabetic ulcers, occult cardiovascular disease, thrombophlebitis, DVT, plantar fasciitis, PSVT's, and Raynards disease. They are also there to emotionally support the participants when they must cope with a dying parent or newly diagnosed spouse. Conversely, many participants serve as inspiration as well. Their courage is observed when they accept chronic illnesses, and still choose a positive outlook on life. There is a wealth of experience and knowledge that this geriatric population provides the research team, which enriches the professional team both professionally and personally.

At the completion of the study, the team may say goodbye but not usually forever. Most studies bring participants back yearly for a one day evaluation. Many participants continue to be in contact with the team for years through phone calls or stopping by while in the hospital.

The team hopes that at the conclusion of a study the participants will have the personal tools necessary to keep improving the quality of their lives. Norma Wyatt has made significant changes to her lifestyle. She is exercising 3-4 times a week as well as eating heart healthy. She exclaimed, "My blood pressure is good, my cardiovascular condition is great, my cholesterol is good, I don't have diabetes and most of all, I like myself again. My self-esteem is high and my personal appearance has improved. I can even keep up with my grandchildren now."

Through this type of teamwork, the nurses know that they are contributing to the growing body of research on obesity, stroke, diabetes and sequela of CVD so that the population as a whole will benefit from sacrifices of these volunteers. ■

### SCHOOL OF MEDICINE WELCOMES NEW FACULTY



**Elisa R. Braver, PhD**

has just joined the National Study Center for Trauma and Emergency Medical Services as an Associate Professor of Epidemiology and Preventive Medicine. She holds a doctorate in epidemiology from The Johns Hopkins University.

Her research interests include older drivers and other older road users. She has just published a paper on the risks of older drivers and others sharing the road with them, including pedestrians, passengers in the same vehicle, and occupants of other vehicles. Her other gerontology research has included estimating the relative contribution of fragility versus crash over involvement in explaining the elevated rates of death per mile among older drivers, as well as examining trends in crash involvements among older drivers. In addition, her recent research has investigated the efficacy of side airbags and frontal airbags by driver age.

**Joseph Finkelstein, MD, PhD** is an Assistant Professor in the Department of Epidemiology and Preventive Medicine. He also holds a secondary appointment in the Division of Pulmonary and Critical Care Medicine at the Department of Medicine. Dr. Finkelstein directs Chronic Disease Informatics Group at the Division of Biostatistics and Bioinformatics which is involved in a multidisciplinary research of computer-mediated primary and secondary prevention of chronic health conditions. The primary focus of his research interests is development and evaluation of new computer and telecommunication technologies to facilitate management of chronic health conditions. He serves as a Principal Investigator of several telemedicine evaluation projects funded by NIH and private foundations. Dr. Finkelstein directed a postdoctoral program in Medical Informatics at Boston University during his 4-year tenure there.

**David Russ, PT, PhD**, recently joined the Department of Physical Therapy and Rehabilitation Sciences (PTRS). Dr. Russ completed his doctorate in applied physiology at the University of Delaware's Biomechanics and Movement Science program in 2001. His dissertation research focused on mechanisms of skeletal muscle fatigue, with a particular emphasis on metabolism, as studied by magnetic resonance spectroscopy. He arrives at the University after a 2-year postdoctoral research position at the University of Massachusetts-Amherst. During that time, he began applying the skills he acquired in his doctoral training to the study of skeletal muscle function in the elderly.



**Federico Villagra, MS, PhD**

joined the PTRS faculty in July 2003, after completing a postdoctoral research work at the University of Newcastle upon Tyne (United Kingdom).

Villagra's Masters and PhD are from the University of Birmingham, United Kingdom. During his PhD, Villagra investigated neurophysiological aspects of human tremors, including Parkinson's disease and Essential tremor. During his recent postdoctoral work, he investigated how peripheral or central nervous system damage early in life can affect subsequent brain development and lead to patterns of brain organization and function that differ greatly from normal. Dr. Villagra is currently involved in understanding the principles and mechanisms underlying upper and lower extremity stroke rehabilitation and contributing to provide a scientific basis for treating this population and other neurological disabilities.

**Carol Sztalryd Woodle, PhD** joined the Division of Gerontology, Department of Medicine after spending the last five years at the National Institute of Diabetes and Digestive and Kidney Diseases demonstrating the importance of the role of Perilipin in the mechanism of Lipolysis. There are strong evidences that link poorly regulated lipolysis and subsequent elevated circulated

NEFA and increased lipid droplet storage in non adipogenic tissues with pathological states such as Diabetes type II. Consequently, an understanding of lipolysis regulation is essential to identify approaches to intervene in diabetes and other severe complications of obesity. Her future research will focus on molecular aspects of metabolism of intracellular neutral lipid droplets of adipocytes and other cells, their formation and breakdown by lipases.

### FACULTY KUDOS

**Barbara Hansen, PhD**, Professor, Department of Physiology received a five-year 2.9 million grant renewal from the National Institute on Aging for an ongoing contract entitled, "Obesity, Diabetes & Aging Animal Resource."

**Alan Shuldiner, MD**, Professor, Departments of Medicine and Physiology and his colleagues in the Division of Endocrinology, Diabetes and Nutrition received a five-year \$3.4 million R01 grant from the National Institutes of Health to clone a type 2 diabetes gene on chromosome 1 in the Old Order Amish.

**Thomas J. Tittelbach, PhD**, Division of Gerontology, Department of Medicine won the First Place Presidential Poster Award at the American Geriatrics Society meeting held in Baltimore in May, 2003. The poster, "Racial Differences in the Associations of Regional Fat Cell Size to the Metabolic Abnormalities of the Insulin Resistance Syndrome in Postmenopausal Women" was submitted in the Body Composition category. Dr. Tittelbach's poster also one first prize in last year's annual Aging and Women's Health Research Poster Day.

### A Web-based, Health-Promoting Community for Older Adults

Ten years ago, the idea of older adults using computers to learn about and improve their health was theoretically, fascinating, but not perceived as practical. For one thing, at the time, most seniors were not computer literate, and even if they were, Internet technology itself was not sophisticated enough to support such an endeavor. By 2004, however, seniors' computer literacy and Internet technology have both evolved to make this interaction a real possibility. **Eun-Shim Nahm, PhD, RN**, an assistant professor in the School of Nursing's Department of Organizational Systems and Adult Health, is focusing her research on how the World Wide Web can be leveraged as a tool for older adults to promote their health.

"Technology has evolved quickly," says Nahm, who first became interested in older persons and technology more than ten years ago when she came to the U.S. from Korea. "Computers intrigued me then and helped me bridge language and cultural gaps. I believe that computers, especially the Web and e-mail, can assist older adults, too,

especially those who live alone."

Since then, Nahm, working with **Barbara Resnick, PhD, RN, CRNP**, an associate professor in the same department, has conducted several studies of older adults and their comfort level with technology and has become an expert on how this population learns and becomes acclimated to computers and the Web. "Older adults have specific usability issues. How they see and navigate the Web is different from the way younger people do," Nahm says. "These usability issues must be addressed first to help older adults embrace technology."

Using her findings from these studies, Nahm's current research focuses on developing a prototype health-promoting virtual community specifically designed for older adults. With the Web as her platform, and osteoporosis/hip fractures as her focus, Nahm is creating a community that melds disease prevention, education (in the form of education modules, which she is currently developing and testing), and social support (via online support groups), with a library of condition-specific research papers. This health Web site will incorporate video, audio clips, discussion boards, and e-mail.

In addition to developing this health Web site, Nahm also emphasizes the importance of assessing outcomes of these sites. "Recently, federal and professional organizations have developed various health Web sites, many at considerable cost. But do we know how effective these sites are at maintaining and promoting the public's health?" Nahm asks.

Eventually, Nahm believes her health-promoting community model can be built upon and taken to the next level: incorporating disease-monitoring and telemanagement functions. She expects that fast-growing telehealth technologies will enhance the capability of this site.

"This type of community could be a delivery method for health-monitoring and health maintenance for other conditions the elderly experience, such as diabetes or heart disease," Nahm says. "That's where I see the health-promoting community heading." ■

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