



NURSES MAKING THE WORLD BETTER

The University of Pennsylvania School of Nursing is a school of many firsts. It is the first Ivy League school to offer three levels of nursing education, at the bachelor's, master's, and doctoral levels. It is the first nursing school in the nation to offer a Program of All-Inclusive Care for the Elderly (PACE). And it also is the first to have a privately-funded Center for Nursing Research. This early commitment to nursing research illuminates the School's current ethos, the generation of new knowledge to educate scholars and practitioners who will change healthcare from practice to policy. That is the reason for the fresh face of Penn Nursing, *UPfront* — Where Science Leads. Research at Penn informs and influences practice which in turn improves patient outcomes. We are proud of the influence of our research on nursing practice and policy nationally and internationally. From our creation of the first privately funded Center for Nursing Research to today's multiple research centers, Penn Nursing is a leader in developing and advancing nursing knowledge from bench to bedside to global healthcare policy.

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# From Practice to Practice

**A journey of discovery and translation**

**Notes from Afaf Meleis,  
Author, Dean, and Global Ambassador for the Girl Child**



| FROM PRACTICE > > > TO PRACTICE |

► **IF** practice is the heart of our nursing discipline, then science is the mind that shapes and drives it, and caring is the soul and moral imperative that guards and provides its meaning. Together, they provide the intricate framework for the evidence that dictates the care that nurses give. To make a difference in the lives of people, families, communities, and indeed, nations, the journey from practice to practice must be complete.

Practice drives the questions we ask about why people lose their ability to detect the symptoms of hypoglycemia; or why some people with sleep apnea tend to benefit from Continuous Positive Airway Pressure (CPAP) and others do not; or why some nurses tend to deliver safe care while others are not able to; or whether there is a relationship between exposure to insecticides and a person's ability to understand and process and interpret educational messages; or how we provide more effective nursing therapeutics to enhance recovery and healing of wounds for people who are injured with guns; or why pain is experienced differently due to gender or culture. These questions are all stimulated by our nursing practice and framed by our discipline's mission. The journey to answer these questions, as you will see in this issue of *UPfront*, is provided by faculty at Penn Nursing. The inspiring research trajectories described in the following pages include an informative dialogue about the different ways by which translating science is interpreted and practiced, generating approaches to translational science, ranging from translation from animal to human, from bench to patients, from human research to community, and from individual studies to policy changes.

Among the many stimulating questions that result from reviewing this issue of *UPfront* are: what are the best venues for disseminating research? How soon after dissemination should research and evidence be translated? Who should be involved in the translation? And what are the best methods to evaluate the translated research?

These and other questions continue to challenge us at Penn Nursing and create an inspiring environment for our researchers and students. Other critical dialogues that intrigue us are those framed by national trends (decreasing funding from the National Institutes of Health, the Doctor of Nursing Practice degree, the nurse leadership program, the shortage of faculty) and regional trends (new legislation about continuing education, changing certification requirements), and

local trends (best space configuration in our school to meet the future demands of our faculty, staff, and students). There is never a quiet moment in our School, nor is there a lack of vigorous and robust dialogue about our history and how it impacts the present and how it shapes our investment in the future.

Speaking of history, we have two major events coming up for this academic year which we will celebrate in big ways. The first is an October celebration of our School's 120th anniversary. In 1887, the Hospital of the University of Pennsylvania School of Nursing (HUP) was developed from which 5,000 graduated (of our total of 13,000 alumni). Through a series of transformations, the HUP school closed in the late '70s. During this journey, several different programs were developed leading to our current programs which seamlessly progress from a BS to post-doctoral education in nursing. We are also proud of our many joint efforts at our University with other Schools such as Wharton, Law, Arts and Sciences, and the Annenberg School for Communication.

The second major celebration in our School in 2006-7 is the naming of our building for Dean *Emerita* Claire Fagin who was also an interim president of the University from 1993 to 1994. We feel very honored that her name will adorn our building. Naming our building, The Claire Fagin Hall, will happen along with the launch of the public phase of our \$60 million development campaign in a gala on November 30 at the Philadelphia Museum of Art.

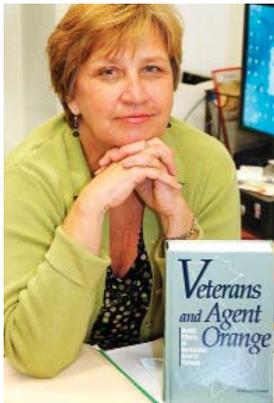
Finally, dear readers, just as we now have a new face for our building (a completed first phase renovation of our lobby and mezzanine level), we have a new face for our publications. This is the first issue of *UPfront* (the University of Pennsylvania at the forefront). We hope you will like our transformation, that you enjoy *UPfront* and that you will join us in our celebrations. Most of all, we hope you participate in our dialogue about translational science and our journey from practice to practice.



**Afaf I. Meleis, PhD, DrPS(hon), FAAN**  
**Margaret Bond Simon Dean of Nursing**  
**International Council of Nurses Global Ambassador for the Girl Child**

# Creating New Knowledge with the Public's Trust for the Public Good

**Introduction by  
Associate Dean  
for Research  
Linda McCauley,  
PhD, RN, FAAN**



This important issue of *UPfront* focuses on translational science – what is it and how it will improve human health. Nurses have always recognized that the patient is at the center of both their care and their science, knowing that research should lead to solutions that patients and healthcare providers can use to improve health. In recent years, the National Institutes of Health has also emphasized the need to focus on major opportunities and gaps in research to develop scientific knowledge that results in tangible benefits for people.

What most people do not realize is how much support from the public contributes to health research discovery in the United States. There is strong public trust in the notion that research will be conducted with resultant benefit for people. In January 2006, *Research!America* published the results of its poll, finding that 6 out of every 10 Americans support greater funding for health research as essential for health and economic prosperity. More than half the members of the U.S. public believe that a greater commitment to research is a way to manage healthcare costs. Without public trust and support, it is doubtful our research programs would be as strong. This issue of *UPfront* highlights significant work that faculty in the Penn School of Nursing are conducting that has strong potential to directly benefit people with improvements for prevention of disease, better health, while promoting healthcare delivery.

While *Research!America* and many other public and private groups have emphasized the need for increased funding for research, the current projections for federal research funding is zero growth. In this issue, we highlight cutting edge Penn research that is being investigated for translation for the public good or major programs of research reflecting national priorities.

Our programs of research reflect the urgent need for discovery to improve the lives and care of our increasingly elderly population. The work of Drs. Mary Naylor, PhD, RN, FAAN, Kathryn Bowles, PhD, RN, and Neville Strumpf, PhD, RN, FAAN is recognized internationally for significant contribution to knowledge that can be applied in the care of elderly patients and families facing major health transitions. Dr. Deborah Watkins Bruner's PhD, RN, work within the Abramson Cancer Center and Dr. Rosemary Polomano's, PhD, RN, FAAN, work with researchers at the Philadelphia Veterans' Affairs Medical Center reflect the urgent need for more clinical trials on effective prevention and treatment strategies for cancer and pain management. Drs. Therese Richmond, PhD, CRNP, FAAN and Marilyn Sommers' PhD, RN, FAAN programs of research reflect the impact of violence on daily life and public health measures to decrease deaths from firearm and other traumatic injuries.

The research that is ongoing at Penn Nursing is dynamic, translational, inspiring – and most important – immediately relevant to the care and health of those here and around the globe. I encourage you to read the outstanding accomplishments of these researchers. As you consider the importance of nursing science to our lives, I urge you to continue to support stellar nursing science.



Linda A. McCauley, PhD, RN, FAAN

# Open Discussion at the Research Roundtable

Some of the nation's top researchers travel the NIH roadmap for translational research in an open discussion locating speed bumps, potholes, and the fastest routes to the creation and translation of new knowledge

The National Institutes of Health recently released its roadmap for translational research which seeks to put "live humans at the center of the spectrum." (NIH website) What that may require in terms of interdisciplinary teams, new models for academic centers, IRB approvals and standards is still a point of discussion for many. Several of the nation's top researchers, based at Penn, discuss these and other issues influencing methods and means to translation, including:

Kathryn Bowles, PhD, RN

Mary Naylor, PhD, RN, FAAN

Therese Richmond, PhD, CRNP, FAAN

Barbara Riegel, DNSc, CS, RN, FAAN

Julie Sochalski, PhD, RN, FAAN

Neville Strumpf PhD, RN, FAAN

Eileen Sullivan-Marx, PhD, CRNP, RN, FAAN

Here are some excerpts of their discussion:

**Dr. Naylor:** For many years, translation of research into practice has generally focused on moving basic science findings into clinical trials. Much less attention has been paid to studies that attempt to promote adoption of findings from clinical trials into the "real world" of clinical practice. The NIH roadmap includes an emphasis on this type of research. Most clinical disciplines, however, are at a very early stage in research efforts aimed at promoting integration, adoption and diffusion of research-based practices.

**Dr. Strumpf:** Is this (focus on translational research) actually undercutting the fundamental premise of science where the investigator looks for new knowledge for its own sake? Presumably, if the science is good, innovative, and builds on the work which preceded it, it will ultimately result in enhancing the public good. Now, as in the past, the notion of translation for me is that science should be relevant.

**Dr. Naylor:** The reality is that often years elapse before findings from rigorous research are integrated into everyday clinical practice and even then adoption is uneven. Consumers of healthcare can't afford such delays. Placing a priority on translational research will help us to understand the reasons for large gaps between the production of important research findings

and its use by providers, health systems, insurers, etc. It also will help us develop new methods to speed up the adoption of important advances in knowledge.

**Dr. Richmond:** So then, what is translational research versus research utilization?

**Dr. Naylor:** Research utilization includes the use of a number of strategies to encourage staff members and other end-users to apply new findings in their work. For example, staff members might synthesize findings from relevant studies and then make the case for changes in clinical standards or practices. Research translation, on the other hand, involves the careful design of studies aimed at increasing the rate and spread of adoption of research-based innovations or models of care. The goal of our projects with Aetna Corporation and Kaiser Permanente Health Plan is not one more test of the APN Transitional Care Model. These projects are designed to promote widespread adoption and diffusion of this model by an insurance organization and a health plan. Such efforts require different methods than those employed in the NIH clinical trials upon which this work is based. In our translation efforts, for example, an expert in organizations is helping the project team to assess the facilitators and barriers to integration and diffusion of a research-based model of care.

**Dr. Riegel:** The barriers encountered in the transplantation of research into real life settings are a major issue in the conduct of translational research. In the public access defibrillation clinical trial, probably our biggest barrier was that people wanted to implement it before the trial began. And, we had sites crossing over based on what they had heard from public media. One site might have been randomized to receive CPR, but then they went out and bought their own AED (Automated External Defibrillator). It illustrates that by the time you get to the point of true translational research there are so many aspects that are coming into the public eye and coming from so many places that people have formed their own opinions before the research begins.

**Dr. Richmond:** At the Firearm & Injury Center at Penn, we have, under review right now, an application for a Centers for Disease Control youth violence center.

It's a community participatory research model. The grants have not yet been awarded but we are meeting with the communities to set up sustainability-ownership work groups. So before we even start with a centerpiece research study, we are already putting into place how we think about sustainability and infusion into real life.

**Dr. Bowles:** I think that the push on translational research is great. It puts a focus and emphasis on what each of us has always thought about when writing and designing our studies, we try to answer the "so what" question. The push to think about translation makes us plan for what we will do with this knowledge when the study is completed, what makes it practical and diffusible into practice.

**Dr. Sochalski:** We need to determine which strategies are needed for dissemination and diffusion. The way that we frame the research question, or design a clinical trial, will impact whether the findings can be implemented and the policy implications. This must be addressed in the design.

**Dr. Sullivan-Marx:** Then again, there's the question of community-based action research. The public good, the questions bubbling up from the community, are at the heart of what community-based action research embraces. We can design questions up front, or perhaps questions bubble up from the community that then turn into a partnership.

**Dr. Strumpf:** I am thinking about two kinds of research that get done in our own school that are enormously complex in terms of translation. One of them is gun violence and the other is HIV/AIDS. Translation can have a political context to it.

**Dr. Richmond:** Also, let's consider what might be the unintended consequences. We've always taught students not to change practice based on results from one study. A body of research- accumulated evidence- can support a change of practice. As I listen and ponder our discussion, I wonder if one of the unintended consequences is moving too quickly.

**Dr. Naylor:** One of the barriers we have encountered is the cultural chasm between research intensive universities and the real world of business, each with their unique sets of goals and values. In our on-going efforts to integrate a research-based model of care in an insurance organization, for example, these differences became apparent in our efforts to negotiate legal contracts. The strong commitment of the leaders in both organizations has been instrumental in addressing this and other barriers.



**Dr. Richmond:** Another barrier is how to embed interventions within the system. In our sites for the trauma center community partnership study, one site excelled because the advisory group was powerful. So interventions would then become embedded within their system.

**Dr. Bowles:** Adoption may require incentives as well. We conducted one study that asked agencies to enroll patients which occurred only with difficulty. In the next study, we planned for and provided reimbursement to agencies and the study is progressing beautifully.

**Dr. Richmond:** Should we consider maximizing incentives while also minimizing disincentives?

**Dr. Strumpf:** There is so much to learn. Another good example about the complexities of translation is all of the attention right now on obesity. Making those findings truly translatable includes attention to family dynamics, to the neighborhoods, to the availability of products in stores, to safe playgrounds where people can exercise. There are so many translational things to think about. Look at exercise: we have had multiple studies of older people and exercise, but if the sidewalks are uneven and if it's not safe to go out, there's a barrier to exercise. There are multiple sets of issues like the ones that we're all talking about – legal, political, economic, social, cultural factors. All have much to do with translation.

**Dr. Richmond:** One of the 10 public health successes of the 20th century was decreased death from motor vehicle crashes. What it took for that to occur was having an excellent data system, scientists' access to the data, a federal agency (National Highway Traffic Safety Administration) created and in charge that could take the data and put out regulations, (e.g. mandatory seatbelts, airbags, improved road design). So if you look at that as a success story, there are multiple things that have to be in place for translation in a broader scope to occur systematically.

**Dr. Riegel:** And one of those things has to be funding for outcomes research or data tracking. I have this nightmare that will move from accumulating research to translating findings into practice – and who chooses what's translated – and we won't monitor what happens. What kind of secondary, unintended effects will occur? We need to be tracking the results so that we can monitor them.

**Dr. Sochalski:** Perhaps what we are starting to see is a new paradigm for research at a school of nursing, that partners the building of the science with diffusion efforts so that your research is not complete until you have done both.

**Dr. Sullivan-Marx:** In the practice world, health systems just want to fix problems. Perhaps they are proceeding in a thoughtful way. Perhaps the dollar will drive quality, or perhaps quality drives the dollar. When we look to these questions of the public good, how do we find a solution to multi-faceted problems.

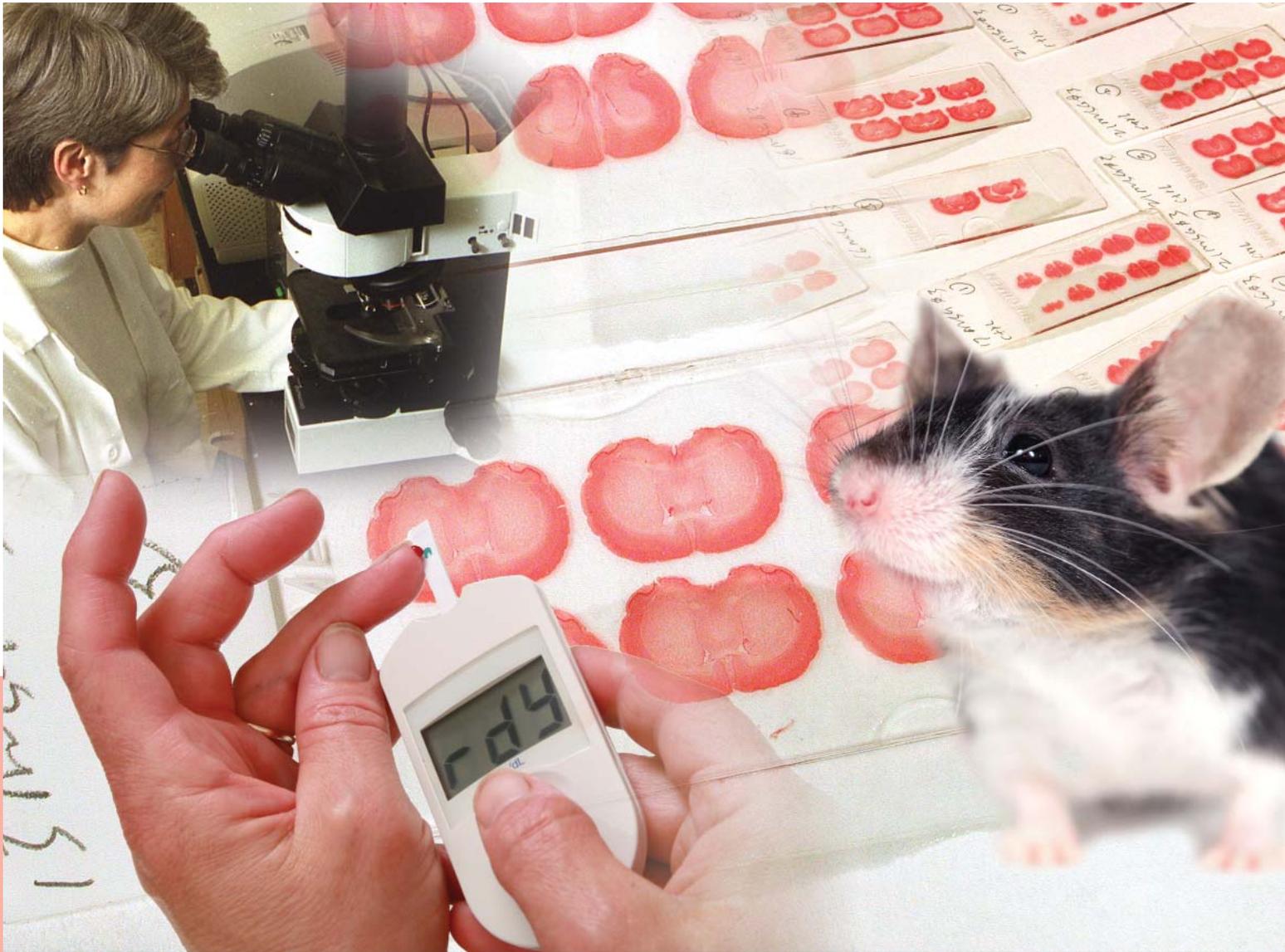
**Dr. Sochalski:** So part of what we're looking at in translational research is that we are on the cutting edge of building the body of knowledge and methods about how we begin. The pathways that we need to go down are not in the research textbook.

We're writing that now with our work.



# Beginning the Process of Translation

Researchers parse the mysteries of life at the molecular level to understand the mechanisms in animals that may one day improve the health of humans



| FROM MOLECULES > > > TO ANIMALS |

► **From** bench to bedside, from Petri dish to people, from animal to human. This is what has been typically meant by translational research. Scientists work at the molecular, then cellular level to test “basic research,” then proceed to applications for animals, and onto humans. The work is translated into practice in order to improve human health as its lasting legacy.

However, this is often thought of as a “medical model.” As nursing science has expanded and evolved to include bench science, it has come to be understood that nurses bring a special perspective to the process as they seek to find the basis for and help explain human behaviors.

In the case of bench science conducted at the University of Pennsylvania School of Nursing, Associate Professor **Nancy Tkacs, PhD, RN** is investigating, at the pre-clinical stage, changes in the brain cells of rats to help determine how the human brain may fail to recognize hypoglycemia, leading to a condition known as “hypoglycemia unawareness.” In the case of Assistant Professor **Karen Badellino, PhD, RN**, the action of enzymes at the cellular level is being examined to determine a possible relationship to type 2 diabetes and atherosclerosis, diseases that, of course, affect millions of persons around the globe.

One approach that contributes to development of new therapies to translate into practice is to work with animal models of human diseases. Some animal research is directly translational, for example, animals with certain diseases are treated with experimental pharmaceutical compounds to test the ability of those drugs to cure or alleviate that condition in animals. This testing is required before testing the same drugs in humans with similar conditions, and leads to benefits for both animals and people. Other types of animal research are considered “preclinical.” One goal of preclinical research is to develop and validate animal models of human diseases or conditions. These models are then used to understand the cellular mechanisms underlying the disease process, leading to development of targeted therapies that are then tested for their effectiveness for treating the disease.<sup>1</sup>

Dr. Tkacs conducts preclinical research related to the hypoglycemic complications of diabetes mellitus. For patients who receive insulin treatment for their diabetes, the goal of therapy is to reduce blood sugar (glucose) to normal levels. However, imbalance between food intake and insulin dose sometimes results in blood glucose dropping below normal, a state termed hypoglycemia. In 1993, the results of the Diabetes Control and Complications Trial (DCCT) were published in *The New England Journal of Medicine*.

The DCCT findings established that “intensive insulin therapy” reduced rates of long-term diabetic complications such as loss of vision and kidney failure, compared to patients receiving standard care. Patients in the DCCT’s intensive insulin therapy group tried to keep their blood glucose as close to normal as possible by taking several insulin shots daily, or by using an insulin pump, and by self-monitoring their blood glucose several times a day. Unfortunately, while intensive insulin therapy reduced several chronic diabetes complications, patients in this group had three times as many episodes of severe hypoglycemia than the control patients.

In the years since the publication of the DCCT results, intensive therapy has become the standard of care for all patients using insulin treatment for diabetes mellitus. In that time, there has also been an increase in rates of hypoglycemia, including the most severe forms of hypoglycemia, resulting in coma and seizures. Hypoglycemia reduces quality of life in patients with diabetes, and increases the cost of the disease by requiring more emergency treatment and causing loss of work days. Perhaps the most frightening aspect of severe hypoglycemia to the patient with diabetes, is that recurrent episodes of hypoglycemia result in “hypoglycemia unawareness,” the loss of the ability to detect the warning signs of falling blood glucose. As these patients lose the awareness that they are going low, they are at increased risk of coma and seizures.

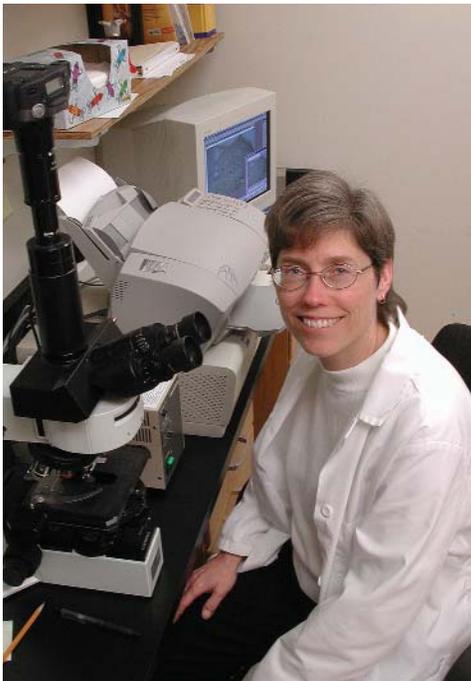
Dr. Tkacs’ work aims to develop a rodent model of hypoglycemia unawareness. How can one compare responses to hypoglycemia in rats, and expect to learn something about recurrent hypoglycemia in humans? First, it is well known that when a human experiences hypoglycemia, certain hormones are secreted that act on liver and muscle cells to help restore normal blood glucose levels. The most important of these hormones are glucagon and epinephrine. Rats also respond to hypoglycemia by secreting glucagon and epinephrine, producing a measurable outcome that is comparable to human studies. Dr. Tkacs has demonstrated that, in adult rats, even a single episode of hypoglycemia leads to reduced epinephrine responses to a second episode of hypoglycemia. Her research also showed that a few brain regions appear particularly vulnerable to hypoglycemia, showing evidence of cell damage

after a single episode of hypoglycemia.<sup>2,3</sup> This work with hormone measures provides evidence that the rodent model has validity for studying responses to recurrent hypoglycemia, in that humans also show reduced epinephrine responses to hypoglycemia after a single episode of prior hypoglycemia.

Hypoglycemia unawareness, however, is more difficult to study in a rodent model. Unawareness in humans is studied by asking them about their usual hypoglycemic symptoms, or by studying them in a clinical research laboratory, inducing hypoglycemia, and surveying them at frequent intervals for hypoglycemic symptoms. While considering how to assess awareness of hypoglycemia in rodents, Dr. Tkacs read a research study on the effects of nocturnal hypoglycemia in patients with diabetes and in control subjects without diabetes. The patients with diabetes, who presumably have experienced many episodes of hypoglycemia in their lives, were much less likely to wake up when hypoglycemia was induced at night than were the control subjects. Waking in response to hypoglycemia, or “hypoglycemic arousal” can be considered the

nighttime equivalent of “hypoglycemia awareness” – that is, that the person becomes conscious of the state of hypoglycemia, and awakens as a result of that perception. This ability appears lost in those patients who have experienced recurrent hypoglycemia due to insulin treatment of diabetes.

Dr. Tkacs has collaborated with Drs. Adrian Morrison and Leszek Kubin, sleep researchers at the University of Pennsylvania School of Veterinary Medicine, to study hypoglycemic arousal in rats. This research team has studied the effect of hypoglycemia on the sleep/wake patterns of rats during the day, when rats, as nocturnal animals, spend most of their time sleeping. Their data indicate that rats do show hypoglycemic arousal. When rats are treated with insulin to induce hypoglycemia in the afternoon, they spend significantly more time awake than on a day when they are treated with saline. In addition, exposure to prior hypoglycemia reduces the wakefulness-inducing effect of a later episode of hypoglycemia, thus, the rats appear to develop hypoglycemia unawareness. Dr. Tkacs and her team now plan to study changes in brain gene expression and protein levels to gain greater understanding of the mechanisms underlying hypoglycemia unawareness in rats. They expect that these experiments will lead to targeted interventions that will help restore the ability of diabetic patients to detect when they are becoming hypoglycemic at night, and alleviate the distress of severe nocturnal hypoglycemia.



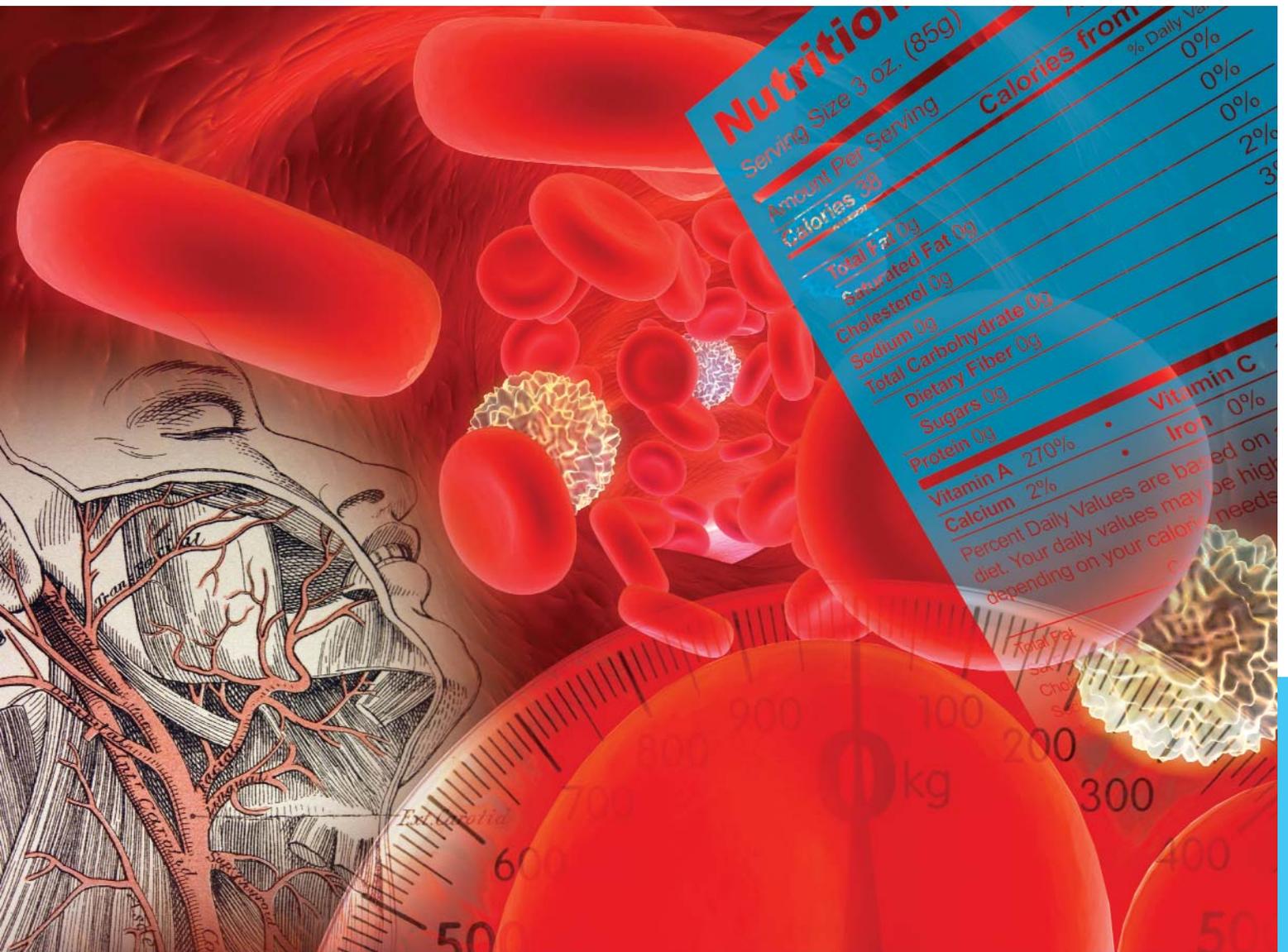
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# Moving Forward

How researchers take what has been learned about animals and use it to improve the human condition



| FROM ANIMALS >>> TO HUMANS |

- ▶ **For** many years, doctors and nurses believed that as people gained weight, their fat cells were inactive depositories. However, research has since shown that fat cells are actually active endocrine organs, secreting angiotensinogen, the precursor of the blood pressure-regulating hormone, angiotensin II, as well as other pro-inflammatory substances called cytokines.

One of these cytokines, tumor necrosis factor alpha, causes an increase in plasma levels of an enzyme, endothelial lipase (EL). EL functions to break down the fat on plasma lipid particles known as lipoproteins with a preference for high-density lipoproteins (HDL), otherwise known as “the good cholesterol.”

Because research already shows that people who exhibit high levels of this EL enzyme are at an increased risk for atherosclerosis, Assistant Professor of Nursing **Karen Badellino, PhD, RN**, is currently working to understand how EL is regulated, as a basis for developing strategies to slow down EL production.

“The goal is to translate the very basic mechanisms of how endothelial lipase works into strategies to control its plasma levels – what nurses and doctors can do about it in people,” she says.

Dr. Badellino is still in the bench stages of her work, which aims to minimize the contribution of endothelial lipase to the development of atherosclerosis, a condition that occurs when the inner walls of the arteries become coated with plaque, fat, cholesterol and other substances that harden over time. As the condition worsens, the walls of the arteries thicken and blood flow slows down.

One way to prevent atherosclerosis, Dr. Badellino says, is to increase the amount of HDL and decrease the amount of bad cholesterol, or low-density lipoproteins (LDL). Her study, however, seeks to increase the amount of good cholesterol by blocking the EL enzyme that breaks it down.

Dr. Badellino is conducting her studies under grants from the National Heart, Lung, and Blood Institute of the National Institutes of Health to “determine the relationship between plasma levels and activity of endothelial lipase and the development of coronary artery disease” and the National American Heart Association “to study the relevance of endothelial lipase to the low levels of HDL found in individuals with metabolic syndrome.”

“The research goes from little dishes to a human study and the outcome of that human study will determine how people change their behavior in order to improve their health – Is weight loss enough [to prevent atherosclerosis] or do you have to be on a low fat diet? And what kind of fat is okay? Those are the questions we need to answer,” says Dr. Badellino.



# Putting Knowledge to Work

Research results about human behavior can be moved to the individual patient or into the broader community to improve patient outcomes



| FROM HUMAN BEHAVIOR > > > TO PATIENT > > > TO COMMUNITY |

- ▶ **While** advances in cancer treatment such as surgery and chemotherapy have saved millions of lives, this comes at a cost to persons who may be left with a number of chronic health issues, including chronic neuropathic pain.

Traumatic injury, from accident or the battlefield, can also produce the same type of pain from nerve injury. Many Americans and their families struggle with ways to manage this disabling form of pain, and ways to prevent and treat chronic pain have become a serious and growing issue for healthcare professionals.

And yet, while the need for research to find better pain management therapies continues to grow, such research, particularly on humans, presents a unique and problematic set of ethical and practical issues for researchers. In the clinical setting, one cannot hurt someone intentionally in order to figure out how to manage their pain, yet such a deliberate action is often at the heart of experimental or laboratory research. Clinical trials, the gold standard for research, are conducted to test which treatments are better than others, but sometimes these are impractical and raise ethical issues. So how do researchers find new information on pain therapies when they cannot conduct these types of controlled studies?

Enter a program of translational research conducted by Associate Professor of Pain Practice **Rosemary C. Polomano, PhD, RN, FAAN**. Her work began at the bench investigating pain response in rats, and has extended to studying human experiences with neuropathic pain both in persons with cancer. And now, the research path has led to the Philadelphia VA Medical Center where she and other Penn investigators will help military anesthesiologists determine whether early aggressive pain therapy for battlefield traumatic injuries in Iraq and Afghanistan leads to better pain outcomes and quality of life in the long run. The research trajectory arcs from the bench to humans to the community and finally to the policy arena as there is great hope that these findings will better inform Congress about how best to allocate healthcare resources on the battlefield.

Earlier in her career, Dr. Polomano sought to explain the mechanism for neuropathy, specifically peripheral neuropathy in rats induced by the administration of paclitaxel or Taxol, a drug commonly used for the treatment of breast cancer. The bench science looked at

the mechanism in rats in order to extend it to an explanation for human pain. Testing the animals for pain enabled Dr. Polomano and fellow researchers to quantify the severity of the neuropathy. Toxicity from chemotherapy drugs causes neuropathy via a mechanism called central sensitization, essentially a neural overload so overwhelming that even following the event, nerves maintain such a heightened level of sensitivity that even a soft touch can render pain.

That same mechanism is thought to be one of the causes of chronic pain resulting from traumatic war injury. While such conditions do not lend themselves to the standards of the clinical trial, pain management for blast or mangled limb injury generally falls into two categories – administering a regional block to the central nervous system or morphine by injection – that then result in two separate cohorts available for study.

In the three-year study, funded with \$750,000 from the U.S. Department of Defense through the U.S. Department of Veterans Affairs, Dr. Rollin (Mac) Gallagher will lead a team of Penn investigators, including Dr. Polomano, and Army investigators, Chester Buckenmaier, M.D., Geselle McKnight, CNA, and Alex Stojadinovic, M.D. to show the long-term implications of effectiveness of regional anesthesia treatments with continuous peripheral nerve block infusions, or a single nerve block, compared to morphine injections. Preliminary data from the Army Regional Anesthesia Combat Casualty Database (ARACCD) on the use of these techniques were so convincing that funding was provided to conduct a full scale study.

“Central sensitization is exactly what I studied in rats receiving chemotherapy neurotoxic agents. It is now time to see if this disturbing process that causes so much pain and suffering can be interrupted with early aggressive interventions,” says Dr. Polomano. “Data from this study will provide the needed information to support the allocation of fully-trained anesthesiologists and nurse anesthetists to deliver regional anesthesia within 72 hours of a blast or mangled limb injury.”

## Center for Gerontologic Nursing Science

This Center, working in partnership with the Hartford Center for Geriatric Nursing Excellence, serves to advance gerontologic nursing and aging research that will improve the quality of life for elders and their caregivers. Researchers design and test models of care that emphasize individualized, patient-centered interventions and demonstrate the unique contributions of advanced practice nurses in the care of at-risk and vulnerable elders and their caregivers.

### Innovation

Informed by Penn Nursing's Living Independently For Elders (LIFE) Program, a comprehensive care program for frail older adults, faculty researchers have examined the caregiving relationship in families, behavioral health interventions, end of life care, cultural experiences in health delivery that have been translated to daily practice in the LIFE Program and disseminated through our Penn Nursing Consultation Service to change practice in real time.

### Policy Impact

Nurse research in injury care for older adults victimized by trauma has been debated in public arenas and established as priority research areas for the Commonwealth. Federally funded leadership and management training for nurses in long term care has led to implementation of models of team building in federal, county, and state supported institutions.

### Partnerships

We have entered into partnerships with four national and regional long term care systems (impact on >500 nursing homes) to advise, assist, and implement best practices in care of older adults based on faculty research in culture change in care, individualized care, transitional care, and quality of care approaches to support fiscal goals.

In a keynote presentation at the 2005 scientific meeting of the Association of Professional Sleep Societies, Dr. Elizabeth Nabel, director of the National Heart, Lung, and Blood Institute, became the first person to characterize the work of **Terri E. Weaver, PhD, RN, FAAN**, Associate Professor and Chair of the Biobehavioral and Health Sciences Division at the School of Nursing, as translational.

Specifically, she was referring to Dr. Weaver's clinical trial that examined the impact of the Continuous Positive Airway Pressure machine (CPAP) on daytime sleepiness in milder Obstructive Sleep Apnea (OSA) patients.

Despite the fact that 70 percent of the estimated 10 million OSA patients in the United States have mild to moderate disease, the majority of research on CPAP efficacy focuses on patients who are more severe cases, those who suffer from more than 30 respiratory disturbances per hour of sleep (RDI) each night. Such research has shown the effectiveness of the CPAP device in eliminating RDIs when used by these patients.

"Physiologically, we know CPAP works," said Dr. Weaver, "but does it work on the largest percentage of people who suffer from sleep apnea?"

Her research to improve the daily functioning of the Catnap clinical trial aimed to answer that question. In the international, triple-blinded study, Dr. Weaver examined the effectiveness of CPAP on more than 300 patients with mild and moderate cases of OSA, defined by the American Academy of Sleep Medicine as those who have between 5-15 and 16-30 respiratory disturbances per hour of sleep (RDI), respectively.

She used four sites for the study: the University of Western Ontario in London, Ontario, Canada; the North Shore Long Island Health System in New York; New York University Hospital; and Emory University Hospital in Atlanta, Georgia. At each site, mild to moderate OSA patients who reported daytime sleepiness were randomly assigned into two groups. Half slept with a CPAP machine; the other half, those in the control group, received a sham-CPAP, which looked, sounded and felt like a CPAP, but, of course, did not perform the functions of a real machine.

The study, which began in September 2003, was completed this summer, 25 years after the first CPAP device was used.

Dr. Weaver is currently analyzing the data from her clinical research study to see whether technology that has been proven to work in one population can be translated to another.

Still, final results will prove invaluable. "For healthcare providers to recommend CPAP treatment [in sleepy patients with mild to moderate cases of OSA] and for third party providers to pay for it, we need evidence to show it works," she said.



## Center for Health Outcomes and Policy Research

Over the past 18 years, the Center has been committed to determining through rigorous research the modifiable features of healthcare organizations that produce good patient outcomes and high levels of nurse satisfaction and retention. As our research has provided those answers, we have invested in translating the findings for use by nurses, healthcare managers, and public policy decision-makers. A major component of our translational research is to identify vehicles for testing the application of our research findings in mainstream healthcare organizations. Below are examples of the Center's translational trajectory from research to practice.

### Magnet Recognition

Center researchers built the evidence base over the past 15 years documenting that hospitals known by nurses as good places to work have common organizational characteristics that are associated with higher nurse satisfaction, lower nurse burnout, improved nurse retention as well as lower mortality and higher patient satisfaction. Our research was the catalyst for the development of a formal accreditation program by the American Nurses Credentialing Center in 1990, and our ongoing research of ANCC Magnet Hospitals has helped propel magnet accreditation into a fundamental vehicle for improving the nurse practice environment in the U.S. and internationally. Almost 200 hospitals currently hold Magnet status and hundreds of others are at some stage of the application process. Magnet status has become a criterion for selecting the U.S. News & World Report's *100 Best Hospitals*.

### Hospital Nurse Staffing Adequacy

Center researchers conducted seminal research on the association between better hospital nurse staffing and lower mortality and better nurse retention. With our commitment to translational research, we framed our scientific findings in policy terms using the specific patient to nurse ratios being debated in California in 2002 before state mandated minimum ratio legislation was implemented to illustrate the likely difference in mortality at each different staffing level under consideration. We showed that each additional patient added to nurses' workloads was associated with a

When technology revolutionizes care, it often takes a strong communicator to translate technical concepts to everyday application. For Associate Professor of Nursing **Kathryn Bowles, PhD, RN**, however, the task isn't too much of a challenge.

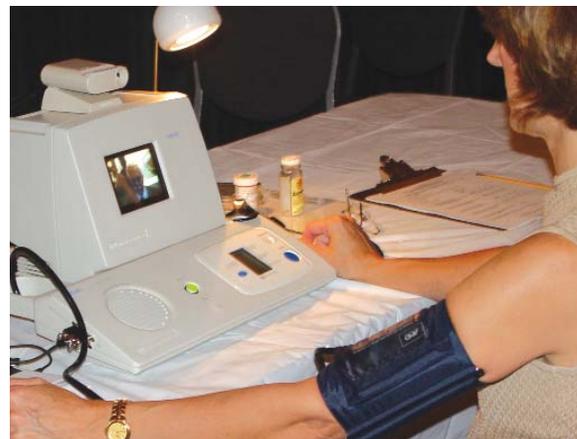
Dr. Bowles, has extensive experience in testing and implementing telehomecare, a new form of technology that utilizes modern telephone communications to support long-distance clinical care for patients who require close monitoring. With the use of telemonitoring, nurses make "video visits" into a patient's home via a monitor that receives and transmits images as well as information about blood pressure, pulse, weight, temperature, blood glucose, and other medical factors.

"Technology is designed to be simple to use," says Dr. Bowles, "and this is not a complicated computer. Patients simply plug it in the wall."

While the device might be easy for patients to operate, translating information also means teaching patients how to monitor themselves daily. The average episode of home care lasts between 45 and 60 days and patients typically meet with a nurse via telehealth two times per week, Dr. Bowles explains. Nurses must therefore teach patients the importance of continued self-monitoring, even after the telemonitoring system has been removed.

"We teach patients to make it part of their daily routine," she says. "They genuinely enjoy using the machines." And if, by chance, they forget to monitor themselves, the nurses know. Each time a patient uses the device, their reading is transmitted to the central homecare agency, with one nurse constantly assessing the data.

Such collaborative effort between nurse and patient makes for better care and clearer knowledge. For example, patients often tell Dr. Bowles, "I understand now what nurses and doctors are looking for because I've been involved with measuring it myself."



So far, evidence indicates that telehomecare enables information to be translated smoothly and effectively, with research showing that rehospitalization rates decrease significantly. Further studies suggest that technology could be the first step in tackling the nursing shortage problem. In the pre-telemonitoring days, one nurse could average approximately five patient visits a day. Now, through the use of the technology, the number of patients a nurse can examine is quadrupled to about 20.

Still, not all homecare agencies utilize this service. "Once research shows that it is cost effective, insurers will be more willing to pay for nurses to use it," she says. And to translate her research into change, Dr. Bowles is currently analyzing the monetary costs saved through increased nurse-patient efficiency and decreased re-hospitalization cases for heart failure patients.

She expects the findings of this study to be even greater than a previous study with diabetics because the former group have substantially higher rates of rehospitalization.

"Telemonitoring will help us address the question of how to provide the best patient care in an environment where nurses are in short supply and healthcare dollars scarce," says Dr. Bowles. "Our current research is focusing on questions of access to ongoing nursing care and how to best translate what we know works into policy. We are also very interested in involving patients in learning how to care for themselves."



7% increase in mortality. The California legislation cited our research, and its passage created the largest natural experiment in nurse staffing change. The legislation and our evaluation of its outcomes represents a classic example of translating research findings into common practice and then conducting research on the feasibility and outcomes of the staffing changes in all hospitals in a large state. Our research is cited in legislative debates in other states now considering nurse staffing legislation.

#### Baccalaureate Education for Nurses

Center researchers have invested in various translational strategies to mainstream our scientific finding that hospitals with a greater proportion of bedside nurses with BSN or higher education experience lower mortality. Our research finding motivated the American Organization of Nurse Executives, representing hospital employers, to issue a policy statement in support of BSN education for bedside nurses. This policy statement has motivated employers to increase their efforts to help their current employees obtain a BSN. Additionally, we published a series of case studies of current efforts of six hospitals to transition their nurse workforce to BSN education to serve as exemplars for other hospitals. We have also taken an active role in providing scientific policy support for legislative initiatives to set the BSN as a licensing requirement. New York State has legislation pending now to give nurses 10 years to obtain a BSN in order to retain their RN license.

## The Barbara Bates Center for the Study of the History of Nursing

The faculty of the Barbara Bates Center for the Study of the History of Nursing undertake cutting edge research from very interesting perspectives. Because of the historical methodological approach, this research offers a foundation for understanding the very essential idea of translational research. All of our research could be considered translational as it is highly interdisciplinary and has direct impact on some of the most important clinical and health policy issues facing American nursing today.

The innovative work of Professor Emerita, Karen Wilkerson, PhD, RN, FAAN examines the history of community-based care translated into the creation of the School's Living Independently for Elders (LIFE) Program. (A Program for All-inclusive Care for the Elderly – PACE.) Using an individualized, interdisciplinary approach to delivering healthcare services, the LIFE Program maintains frail elders in the community. Today the program cares for 527 nursing home eligible elders. As co-faculty director, she used persistent themes from a century of efforts to provide comprehensive care in the community to develop lessons from the past to guide the development of this innovative academic practice model.

A book authored by Adjunct Associate Professor of Nursing Patricia D'Antonio, PhD, RN, FAAN entitled *Founding Friends: Families, Staff, and Patients at the Friends Asylum in Early 19th Century Philadelphia* (2006) is an historical study of an early 19th century insane asylum that places nurses and nursing at the center of an institution's particular history. This story of intricate negotiations and shifting alliances among families, communities, patients, and staff provides a way to begin a meaningful dialogue about the possibilities and problems that arise in any setting where a commitment to individualized care collides with need for the stability of the environment needed to promote such care.

Nightingale Professor of Nursing and Associate Dean for Nursing Research **Linda McCauley, PhD, RN, FAAN** has always viewed herself as a community-based nurse, so when confronted with research instead of day-to-day patient care, she was prepared for the interactive relationships that come with translational research.

"The work that I do really comes out of the practice setting. When I start my work, I am already working with the group that will be affected by it, so translation becomes easier," says Dr. McCauley. "The groups are asking for researcher to help them solve a problem, which is different than traditional research."

Dr. McCauley's work is primarily concerned with how pesticides, especially continuous low levels of exposure, affect communities, particularly children. In a recent study, communities of farm workers wanted her to look at whether pesticides were causing learning difficulties for their children and, if so, how they could change that.

"They knew enough about pesticides to ask questions and be concerned," she says. "My studies take questions the community wants answered and inspects them in scientifically rigorous ways. Then I do two things. I publish in peer review publications, just like any other scientist, but then I develop a message about what I found that is meaningful and relevant and send it back to the community."



That community involvement – the true translation in translational research – is also what excites Associate Professor of Nursing **Therese Richmond, PhD, CRNP, FAAN**, (at right) whose research in firearm injury and death is aimed at its prevention in the first place.

"We wanted to partner with the communities we were studying," says Dr. Richmond. "Our intent was to get local data about gun violence, which is sometimes difficult to do. Then we wanted to involve the community to see whether they understood the magnitude of their problem. They would be the ones eventually taking action. We are just the researchers. They are the community."

Dr. Richmond's group wanted to particularly go into smaller-to-mid-sized communities.

"In Philadelphia, people know they have a problem with gun violence. We weren't sure whether they did in Bethlehem and Allentown, two places we chose to study," she says, about a project that also looked at Youngstown, Ohio, and Cedar Rapids, Iowa.

Strangely enough, she said, the people in Bethlehem and Allentown were willing to believe they had gun violence problems, but thought they were primarily about homicide. When Dr. Richmond's group painstakingly collected all the data, however, the bigger problem turned out to be gun-related suicide.

"We uncovered a new problem for them to deal with," she says. "Gun suicide is a double whammy. First, suicide is not often discussed, then second, when a gun is involved, it becomes even more complex, because guns are a polarizing topic in our society. Finally, suicide by gun is highly lethal."

At first, she says, the community boards that had been set up to aid the study came to the conclusion that there was nothing much they could do about the gun suicide problem.

"If you are old and sick and want to kill yourself, what are we going to do about it? That was the thinking," she says. Then, she says, the data showed that it was not just terminally ill patients committing suicide, but often people in pain, or people who thought they were burdens to their families. The research gave the community a whole new way of looking at the problem. With the community boards, Dr. Richmond and her interdisciplinary team of researchers came up with other alternatives by analyzing data in a different way, that helped them identify points of intervention. These points of intervention highlighted the need for better pain management by healthcare providers, the identification and treatment of depressive symptoms, and better community resources and support for the elderly with non-terminal but serious health problems.

"You don't have to call it translational research for it to be so," she says. "In my mind, anything that goes from basic science to studies to practice is translational. But whatever you call it, it is good science."

Research conducted by Associate Professor Julie Fairman, PhD, RN, FAAN examines the reorganization of nurse's work in hospitals that culminated in the development of critical care units in the 1950s. This work identified the effects hospitals' strategies to economize through minimal nurse staffing had on patient safety, outcomes, and health care economics. This work has been used to inform national legislation to increase the nurse workforce. Her current work on the history of the nurse practitioner movement raises questions about who is best positioned to address the healthcare needs of the American public and how this question is negotiated between public and private interests. This work serves as a foundation for analyzing important health policy questions such as how much education nurse practitioners need and who will pay for it.

As National Research Service Award Fellow, Joy Buck, PhD's research focuses on transitions in care for the dying during the 20th century. This research illuminates how and why tensions between competing social, cultural, economic, and political forces shape the development of research priorities and knowledge development, and its subsequent translation into the clinical arena. It also offers valuable insight into what is required of nurses and nursing to develop new models of care and to assure access to quality care across the lifespan and across care settings.

The work of Jean Whelan, PhD on the nursing workforce serves as a foundation for developing strategies for understanding and responding to the nursing shortage. Her research provides important exemplars of the interplay of private and public actions to overcome the shortage, and the need to understand the historical roots of the issues. The explanations for nursing shortages over time go beyond metrics and include factors upon which the magnet hospital movement developed.



Dr. Linda McCauley similarly stresses that in her work with pesticides she does not like to use the word, “poison” in her studies, primarily because that work, she feels, is done.

“We have the science on poisoning. We know what happens when you have, for instance, lead poisoning from paint,” she said. What she wants to research is what lower levels of things like pesticides are doing to immune systems and the like, especially in children. She does not imagine a dream world with organic food for everyone and open markets curing hunger around the world. “As a scientist, you have to be more cautious and analytical. In this case, it is all tied up in the food you and I expect to eat, what we are willing to pay for it, international trade, a whole range of things.”

What is important for Dr. McCauley, though, is that community members become involved in the solutions to the problems they present. In that regard, she and her researchers have to establish trust.

“Communities have been abused in this kind of way for years,” she said. “Researchers have engaged members of the community and taken their blood and their personal information and so forth and then, when they get the results they want, do not go back and tell the community what they found. In order to build trust, we want to assure them we will do that.”

On the other hand, she admits that the problem in this kind of translational research is that by the time it is finished, the people who originally asked for help may be beyond its question. In the communities she is now studying in New Jersey, for instance, it is likely the children being affected by the pesticides will be grown when the study is completed.

“When Nancy Reagan appealed for more help in treating Alzheimer’s Disease, she knew it wasn’t going to help her husband,” she says. “But I think the community understands that. Even good translational research takes time, not unlike clinical trials, but to see it get to the community it originated with, and with those people’s input, is gratifying.”

As with her colleagues, Professor **Deborah Watkins Bruner, PhD, RN** has a similar take on her research. “I work with national clinical trials, bench to bedside, which combine a traditional translational research model with quality of life outcomes,” said Dr. Bruner.

Currently, Dr. Bruner is studying what different biomarkers will do during cancer therapy. For instance, will continued use of hormones, in prostate cancer therapy cause cognitive dysfunctions?

“Or, say, if certain treatments, such as radiation therapy, used to cure a prostate cancer then also cause inflammations that make it hard to urinate or maintain sexual function, what do we do about that?” she says. “As scientists, we have to understand when we try to cure one thing, there is a broader impact beyond cure that often affects quality of life. Finding what patient or tumor characteristics, treatments or biomarkers predict changes in quality of life and then translating that work to improve quality of life outcomes for patients who are burdened by cancer is what challenges me.”



Associate Professor **Barbara Riegel, DNSc, CS, RN, FAAN** has been translating research findings for public use for most of her career. Specifically, over the past 15 years, she has led a nationwide effort to train laypersons in the use of Automated External Defibrillators (AEDs) and the prospect of immediate lifesaving help for the general public.

“My work has been in translating not simply technology, but [in translating] a practice that we used in a very specific, constrained and controlled manner from the healthcare sector to public use,” she said.

“Historically, only physicians were trained in – and allowed to use – defibrillators. Then nurses began reading electrocardiograms and using defibrillators in hospital settings. Now the technology has developed to the point that the machine reads the rhythm, so no one – not physicians, nurses, or lay people – needs to interpret the rhythm before using a defibrillator,” Dr. Riegel explains. “The machines do it with excellent accuracy.”

That’s where Dr. Riegel’s work comes in. An estimated 340,000 people die suddenly of out-of-hospital cardiac arrest (OOH-CA) every year, and Dr. Riegel’s research has shown that training laypersons to perform Cardiopulmonary Resuscitation (CPR) in conjunction with use of a defibrillator significantly increases survival rates.

In a three-year study, from 2000 to 2003, Dr. Riegel was responsible for training more than 1,200 lay people in 993 non-medical community settings with high estimated risks of OOH-CA, such as office complexes, apartment buildings, shopping malls, and fitness centers. Half of the volunteers received CPR training only; the other half received training in CPR and AED use. The investigators found that the number of cardiac arrest survivors doubled when CPR-trained lay volunteers were also trained in AED use.

“Use of a defibrillator is safe. If the heart rhythm is normal, the defibrillator will not shock so it does nothing to disrupt the normal heart rhythm,” comments Dr. Riegel.



The lifesaving nature of defibrillators has been known for years, but Dr. Riegel’s efforts have been spent on translating this knowledge for public use. Rates of bystander CPR remain low, perhaps because of hesitation to administer mouth-to-mouth resuscitation to strangers. So, now that AEDs, used by the public in conjunction with CPR, are known to be effective, she can see the direct benefits of her work. The ubiquitous presence of AEDs – from airports to gymnasiums to grocery stores – perhaps best highlights how her research has been translated into practice in the community.

In translating this research, Dr. Riegel finds that a common misconception needs to be overcome. Unlike what’s seen on television, using an automated external defibrillator is safe. If the heart rhythm is normal, the defibrillator will not shock, so it does nothing to disrupt the normal heart rhythm, comments Dr. Riegel.

“Really moving the technology into the public, we hope can help solve one of our most devastating health problems, sudden cardiac death,” she says. “The way it’s being translated into practice is through its transition into community use and public policy. People are no longer questioning whether laypersons can be trusted to use defibrillators. People now view AEDs in the same light as CPR. And the good news is that using both CPR and AEDS is even more effective.”

# Changing for the Better

Effecting real change by implementing what has been learned into policy through legislation, third party payers, or professional standards



| FROM HOSPITAL > > > TO HOME > > > TO POLICY |

► **For** the scientists gathered at a recent Penn roundtable on nursing research, it soon became clear they were not just talking about the latest buzzword for a decades-old idea. Rather, these eminent investigators realized “translational research” is a fresh approach with new methodology that could be a crucial missing link to ensuring that knowledge from science takes root in everyday policy.

"For years, our team has engaged in a number of innovative efforts to have findings from our program of research influence the care of high risk, chronically ill elders and their families in this country. With support from Penn's Center for Technology Transfer, we tested a variety of business models. We prepared policy briefs, testified on the Hill, but kept confronting a host of barriers," explains **Mary Naylor, PhD, RN, FAAN**, a roundtable panelist and Penn's Marian S. Ware Professor in Gerontology. "While frustrated at times, we never lost sight of the goal. We were determined to make a proven approach to care accessible to the growing numbers of older adults who need it." It is just such a strong commitment to improving the quality of healthcare that is motivating more researchers to enter board rooms of healthcare insurers and purchasers. Armed with data, "they are prepared to show how their interventions or models of care can work within that system and make a difference for the people they serve," she says.

Translational research involves "studies designed to increase the rate and speed of adoption" of scientific findings into healthcare organizations, Dr. Naylor explains. A major goal, Dr. Naylor says, is to "promote widespread diffusion of proven interventions." As the potential for real change is fasttracked, results can be achieved much sooner than through legislation.

For nearly two decades, Dr. Naylor has led a multidisciplinary team of distinguished scholars to develop an innovative, transitional form of hospital-to-home care in which advance practice nurses (APNs) establish a relationship with an older adults and family caregivers soon after hospital admission; design the discharge plan in collaboration with the patient, the patient's physician and family members; and implement the plan in the patient's home following discharge, substituting for transitional nurse follow-up.

The "hand-off" from hospital to home has often been linked to breakdowns in care for older adults who are coping with multiple chronic conditions and complex treatments, Dr. Naylor explains. Up to one-third of rehospitalizations for these patients are considered preventable. Poor communications among providers across healthcare agencies, inadequate patient and

caregiver education, poor continuity of care, and limited access all have impacted negatively on the quality and costs of care. Indeed, a recent Institute of Medicine report targeted care coordination as one of 20 national priorities for action.<sup>1</sup>

Findings from three clinical trials led by Dr. Naylor and funded by the National Institute of Nursing Research<sup>2</sup>, "have consistently demonstrated the ability of the APN Transitional Care Model to improve quality and substantially decrease healthcare costs" for high-risk elders, Dr. Naylor notes. Compared to standard care, coordination by APNs led to increased time until first re-hospitalization, fewer re-hospitalizations, shorter hospital stays, and better patient satisfaction. Moreover, following a four-year trial with a group of elderly patients hospitalized with heart failure, the APN Care Model cut total hospitalization costs by more than \$500,000, compared to a group receiving standard care, for an average savings of approximately \$5,000 per Medicare patient.

As part of their efforts to use research findings to change the care of vulnerable chronically ill elders in this country, Dr. Naylor approached John W. "Jack" Rowe, MD, then president and CEO of Aetna, the healthcare insurer. Within a few weeks, Dr. Naylor was presenting the case for the APN Transitional Care Model to Randall S. Krakauer, MD, Aetna's National Medical Director, and a major translational research effort was launched. With the support of several foundations<sup>3</sup>, study findings have led Aetna to test the APN Care Model with a sample of their beneficiaries in the Philadelphia and Chicago areas. Kaiser Permanente, another nationally recognized health plan, is testing the model in northern California. If successful, the leaders of these organizations will seriously consider widespread adoption of the model in their respective organizations. "These projects are not only testing our team's ability to translate what we have learned from rigorously controlled clinical trials into the real world of clinical practice, but also the capacity of an insurance organization and health plan to integrate this approach to care into their existing systems," Dr. Naylor explains. The partnerships include assessments by an organizational expert to identify both facilitators and barriers to further promote successful diffusion.

One of the team's primary goals is to package the tools of translation – web-based training modules and a clinical information system – to enable widespread adoption by other insurers and health systems as well as to facilitate changes in health policy needed to reimburse this approach to care.

Dr. Naylor is also the director of The Robert Wood Johnson Foundation's (RWJF) sponsored Interdisciplinary Nursing Quality Research Initiative (INQRI), a five-year, \$10 million program (in collaboration with Dr. Mark Pauly of Penn's Wharton School, co-director, and Dr. Lori Melichar, RWJF program officer). Launched last August, INQRI is designed to generate, disseminate and translate findings from studies conducted by interdisciplinary teams focused on establishing the relationships between nursing and quality with a special focus on hospital settings. "Despite nursing's pivotal role in the delivery of healthcare," says Dr. Naylor, "there is little rigorous research that demonstrates causal relationships between nursing care and high-quality patient outcomes. INQRI will support projects that examine these relationships and, in doing so, uncover opportunities to make important clinical, health system and policy changes."

As part of Penn's Marian S. Ware Alzheimer Program and with support provided by a National Institute on Aging grant<sup>4</sup>, Dr. Naylor is leading an interdisciplinary team in developing, implementing, and evaluating a care coordination model for cognitively impaired older adults and their family caregivers within the University of Pennsylvania Health System.

Cognitive impairment is a major health problem complicating the care of an increasing number of hospitalized elders. These patients are particularly vulnerable to systems of care that fail to meet their needs. The timing is excellent for rigorous research aimed at identifying care management strategies that will contribute to high quality, cost-effective outcomes for these patients and their caregivers.

Additionally, in collaboration with Karen Wilkerson, PhD, RN, FAAN, Lois Evans, DNSc, RN, FAAN and others, she has successfully established the only PACE (Program of All-Inclusive Care for Elders) program in the country operated by a school of nursing.

In other venues, Penn nursing science already has dramatically cut the lag time between the production of new research and its translation into national policy.

In July 2004, Associate Professor of Nursing, **Ann E. Rogers, PhD, RN, FAAN**, published her research findings on nurse fatigue and patient safety, which concluded that the risks of making an error increased when work shifts were longer than 12 hours, when nurses worked overtime, or when they worked more than 40 hours a week.

By year's end, Dr. Rogers' findings were used in the language of the Veterans Affairs' Health Personnel Enhancement Act of 2004. "It is in the sense of Congress," the Act states, "to encourage the Secretary of Veterans Affairs to prevent work hours by nurses providing direct patient care in excess of 12 consecutive hours or in excess of 60 hours in any 7-day period..." The recommendation stemmed directly from an Institute of Medicine report, *Keeping Patients Safe: Transforming the Work Environment for Nurses*, one of the first publications to discuss Dr. Rogers' findings on nurse staffing and fatigue.

Normally, it can take seven years on average for research findings to be put into practice, but the compelling nature of the IOM report, which detailed Dr. Rogers' research, influenced workforce policy in the VA system, the largest national employer of nurses, within months of publication.

Further, in winter 2005, the Joint Commission on Accreditation of Healthcare Organization (JCAHO) included three fatigue-related requirements in its Proposed 2006 National Patient Safety Goals. First, the document recommended that hospitals assess the degree to which fatigue impacts safety and care, and

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4. National Institute on Aging, [1R01AG023116-01A1].

then take action to minimize such impact. It also called for educating staff on how to recognize fatigue as well as strategies to minimize and manage it. Finally, the proposals advocated for additional support services for staff working shifts of more than 12 hours.

JCAHO's rationale for the proposed requirements? "Research shows that the risk of making error significantly increases when a work shift exceeds 12 hours, when overtime [is] worked or when work hours exceed more than 40 hours a week." Although the document does not ban nurses from working over 40 hours a week or longer than 12 consecutive hours, it highlights the potential impact of fatigue, and that, according to Dr. Rogers, "is a positive start" to addressing the challenges of the hospital workplace.

The research on nurse staffing has also prompted an unusual collaboration between the Washington State Nurses Association and the Hospital Organization in Washington, which are working to establish an agreement on work hours and staffing concerns. Locally, the Hospital of the University of Pennsylvania, one of the premier research hospitals in the nation, has banned 16-hour shifts.

Dr. Rogers has an explanation for such rapid translation of her findings: "I think it's just something people can understand," she says. "It makes sense."



In April 2006, Penn Nursing took another step as an important advocate for change. At its retreat meeting that month, Penn's Consortium for Health Workforce Research and Policy established the Council on Physician and Nurse Supply, a national, multidisciplinary group of policy leaders from academic institutions and healthcare organizations dedicated to studying trends in the supply and demand of physicians and nurses. Co-chaired by **Linda Aiken, PhD, RN, FAAN, FRCN**, the Claire M. Fagin Leadership Professor in Nursing, Professor of Sociology and director of Penn's Center for Health Outcomes and Policy Research, and Richard Cooper, MD, of the Leonard Davis Institute for Health Economics at Penn, the Council's ultimate goal is to inform decision-making to achieve greater self-sufficiency in the U.S. healthcare workforce. By examining data and providing targeted policy analysis and recommendations, the Council aims to link policies that impact the supply of physicians and nurses domestically and internationally. In particular, the Council will work to understand the domestic and global implications of U.S. workforce policy.

The fundamental problem is that there are simply not enough English-speaking nurses and physicians produced worldwide to meet the combined demand of developed and developing countries. In the U.S., which employs half of all nurses and physicians in English-speaking countries, projected shortages are as many as 800,000 nurses and 200,000 physicians by 2020-2025. "The crisis in developing countries is numerically smaller but proportionally greater, and it is exacerbated by the migration of physicians and nurses from those countries to the U.S. and other developed countries," note Drs. Aiken and Cooper in the recommendations from the April retreat, *Human Resources for Health: National Needs and Global Concerns*. Among the chief targets, the recommendations address nurse and physician education capacity, source nation stability, financial systems and other professional rewards impacting employment and retention of healthcare workers, promotion of coherent immigration policies, and developing the political will in the U.S. and elsewhere to incorporate principles of global responsibility into national policies on human health resources. The retreat was supported by the Rockefeller Foundation and the University of Pennsylvania.

The Council on Physician and Nurse Supply will hold its first meeting at Penn in October 2006.

# Completing the Circle

While not on the roadmap, researchers consider the value of implanting what has been learned into the curriculum to inform new generations of leaders in research, today's students



| FROM RESEARCH > > > TO RESULTS > > > TO CLASSROOM |

- ▶ **As** a School of Nursing dedicated to educating the next generation of nurses, putting new knowledge into the classroom and then to work is of critical importance.

The essence of translational research is “how do we put what we know from clinical research into the real world and does it still work?” says Professor of Pediatric Nursing **Jane Barnsteiner, PhD, RN, FAAN**, who fills a dual role as a faculty member at the School of Nursing while holding a hospital appointment. Presciently developed decades ago, the clinician educator model now embodies the idea of translational research.

As Director of Translational Research at the Hospital of the University of Pennsylvania (HUP), Dr. Barnsteiner is now uniquely poised between research and practice, where “real world” conditions can act as an unmanaged variable to tweak research results from the clinical trial.

“For example, if we have developed evidence-based practice guidelines for care of patients with foley catheters, one would expect no infection. But what if the infection rate is high? Does this mean the guidelines are not being followed? Or that there is something in the care environment that is unique? Translation research looks at what happens in the real world with different populations under different circumstances,” says Dr. Barnsteiner.

Dr. Barnsteiner describes translational research as beginning in the laboratory, “at the bench,” where studies at the cellular level provide information on the mechanisms that can influence disease. The findings, found in the Petri dish, or from animal investigation, then can move to applications for humans. That can be determined by how the application functions at the bedside or at the community level in research studies requiring Institutional Review Board (IRB) approval or through an academic center or team comprising researchers from multiple disciplines. If successful, these findings are then implemented broadly, translated into a wider population through the benefit of legislation, third party payer organizations, or the implementation of professional standards. To close the loop, new knowledge or best practices are incorporated into curricula to influence the next generation of practitioners.

To that end, Dr. Barnsteiner has been selected to participate in the Partnerships for Quality Education initiative, begun by The Pew Charitable Trusts and continued by The Robert Wood Johnson Foundation, to identify “competencies clinicians need to be successful in the evolving world of healthcare and supporting academic programs to incorporate them into their curricula.” (RWJ website)

### **Post-doctoral Opportunities**

Through the **Hartford Center of Geriatric Nursing Excellence** directed by Neville Strumpf, Penn sponsors both John A. Hartford Foundation Pre- and Post-Doctoral Scholars.

Through **The Center for Health Outcomes and Policy Research** directed by Dr. Linda Aiken, Penn sponsors a large interdisciplinary NINR-funded pre-and post-doctoral training program in health outcomes research preparing scholars for careers in health services research. Fellowships are for 2 years with an option for a 3rd year. Applicants must be U.S. residents.

Through the **Hampton-Penn Center to Reduce Health Disparities**, directed by Dr. Loretta Jemmott, Penn offers several innovative post doctoral training opportunities. Applications will be due by December 16th, 2006 for the Summer Nursing Research Institute. Fellows who are accepted to the Institute will participate in an intensive mentorship program for 2 years with meetings here at PENN for 2 weeks each May.

Another traditional post-doctoral training opportunity is offered through this Center. Applications for a fellowship for the 2007 academic year are due by December 16th, 2006.

# Claire Fagin Distinguished Research Award 2006



**Dr. Jemmott with her family**

## **Loretta Sweet Jemmott, PhD, RN, FAAN**

### **Safe Sex Saves Lives: Engaging the Global Community in HIV Prevention**

"I knew I wanted to be a nurse when I was in the second grade," said Loretta Sweet Jemmott, PhD, RN, FAAN, the van Ameringen Professor in Psychiatric Mental Health Nursing, director of the Center for Health Disparities Research, and an assistant provost for Gender and Minority Equity Issues at the University of Pennsylvania.

Struck by a car, she spent weeks in the hospital recuperating and re-learning how to walk. Dr. Jemmott recalled that the nurses were kind, nurturing, and supportive during her recovery, especially when she missed her parents. (It wasn't until later that the research of Claire Fagin, the namesake of the distinguished researcher award, provided the research which changed hospital practice to allow for parental "rooming in" with their hospitalized children.)

Dr. Jemmott told the story of her life and research career before an audience of more than 200 well-wishers, including Philadelphia Councilwoman Blondell Reynolds Brown, state Sen. Vincent Hughes, and U.S. Rep. Chaka Fattah. The Congressman noted Dr. Jemmott is a distinguished scholar who, as a young girl from West Philadelphia, might have been "written off." Now, she is one of the nation's leading HIV prevention researchers, producing 61 articles in peer-reviewed journals.

Following her recovery, Dr. Jemmott's next challenge as a schoolchild was being bused in the effort to achieve school integration. However, in Dr. Jemmott's case, the lunchroom wasn't integrated and she was then bused back to her neighborhood school at noontime. Her parents urged her to persevere in the new school and to attend an integrated middle school and high school.

"Several of my classmates at the time were getting pregnant, and I wanted to stamp out teen pregnancy," said Dr. Jemmott, reporting that she went to Planned Parenthood for information to distribute to her friends,

thus becoming a peer sexual health counselor at 16. "It's okay to say 'no,' but if you say 'yes,' be safe," she reported telling her classmates.

These early experiences, knowing what nursing care means to a patient, learning perseverance, and influencing friends' behavior, later birthed an ambitious research program which, in partnership with her husband Penn professor John Jemmott, PhD, has reached across America and several oceans, to South Africa, Jamaica, Puerto Rico, and in coming months, to Botswana.

"We know that we need to create interventions that work and to do that we need to involve the community. Without effective interventions, we could lose an entire generation of adolescents, particularly on the African continent," said Dr. Jemmott.

Dr. Jemmott's program of research seeks to:

- Elucidate the social psychological factors that underlie HIV risk associated with sexual behavior
- Identify the particular conceptual variables that are most important to achieving intervention-induced sexual behavior change
- Identify theory-based, culture-sensitive, developmentally appropriate strategies to reduce HIV risk-associated sexual behaviors
- Answer practical questions about the most effective way to implement HIV risk-reduction interventions with ethnic minority youth
- Test the effectiveness of such interventions using scientifically rigorous methodologies and experimental designs
- Disseminate effective research-based behavioral interventions to community-based organizations, schools, clinics.

Tracing her research trajectory, Dr. Jemmott found in 1992 that her HIV risk-reduction "Be Proud! Be Responsible!" curriculum could change behavior in adolescents in a randomized controlled trial involving 157 African American male adolescents. The results, published in the

*American Journal of Public Health*, reported that more than 80 percent of the young men had experienced sexual intercourse and that the intervention reduced the frequency of sexual intercourse, increased condom use, and resulted in fewer sexual partners.

In 1994, Dr. Jemmott's HIV risk-reduction curriculum was adopted as a model by the U.S. Centers for Disease Control and Prevention (CDC) and, later repeatedly selected as a national curriculum as well as for a national Trainer of Trainers program for educators, nurses, and state Departments of Health. The latter program was attended by representatives from 26 states in 1996.

In a series of NIH funded randomized controlled HIV risk-reduction intervention trials, Dr. Jemmott and her team continued to conduct studies to answer important questions regarding the best way to intervene to reduce HIV risk-related sexual behavior. For instance, they wanted to know: did the facilitators need to be the same gender and ethnicity of the participants to achieve the same effect?

They conducted a study, involving nearly 500 African American male and female adolescent, and slightly more than half were sexually experienced with a mean age of 13. Using her "Be Proud! Be Responsible!" curriculum, the researchers found the effects of the earlier study were replicated regardless of the facilitator's gender, race, and the gender of the group.

But which messages worked best? And who is most effective in getting the message heard? These were the questions of the next study.

A group of even younger adolescents (mean age 11.8) was gathered in West Philadelphia, nearly equally divided between males and females. A quarter were sexually active. The researchers tested three interventions: abstinence-based, safer sex, and health promotion.

The results, published in 1998 in *The Journal of the American Medical Association*, showed that in the first three months after the interventions, the abstinence intervention delayed the adolescents' first sexual encounter and reduced sexual frequency; and the safer sex intervention increased condom use. However, 12 months post intervention, only the safer sex intervention results were maintained. For all interventions, results were unrelated to whether the facilitator was a peer or an adult.

Based on that study, in 2001 the CDC selected the two HIV risk-reduction intervention curricula, "Making Proud Choices: A Safer Sex Approach to Reducing HIV/STD and Teen Pregnancy" and "Making a Difference: An Abstinence Approach to Reducing HIV/STD and Teen Pregnancy" to be disseminated as national models. To date CDC's DASH has selected seven HIV risk-reduction curricula and Dr. Jemmott developed three of the seven and is the only nurse curriculum developer.

In this era, 25 years into the AIDS epidemic, Dr. Jemmott says, "when it comes to designing HIV risk-reduction interventions for adolescents from various cultural groups, we do not have to reinvent everything." Some of what was learned from working with adolescents has been replicated, following the proven process of beginning with focus groups to "learn the code of their streets," to get to know and understand the population of interest, developing questionnaires, redesigning and tailoring the intervention to what has been learned, pilot testing the intervention, evaluating results, and disseminating effective curricula.

As time has gone on, Dr. Jemmott has implemented her curricula in other countries, but only after a careful process rendering it culture-specific.

In her NINR-funded research on women, Dr. Jemmott's nurse-led primary care clinic-based HIV risk reduction curricula "Sister to Sister" found that it reduced HIV risk related sexual behavior, including unprotected sexual intercourse. Most important, it reduced the incidence of STDs at the 12-month follow-up. These findings will be published in the *American Journal of Public Health* in October 2006. In addition, the CDC is translating, replicating, and disseminating this curriculum in public health departments in the Southern region of the U.S.

Years and miles from West Philadelphia, the research trajectory has grown to include projects involving women-to-women, mothers-to-sons, church-based, clinic-based, and community-based interventions, and lastly, to interventions in other cultures in other countries, notably, retooling the curricula to the African language of Xhosa and the youth of South Africa. Projects are also underway in Jamaica and Puerto Rico, where the researchers first learn, from the adolescents themselves about the culture they live in before beginning the process of change.

For HIV risk-reduction programs to be effective, we must remember that "the answer lies in the community," said Dr. Jemmott.

# Leading from the Top

**Penn Nursing prides itself on cultivating the next generation of nursing leaders, and faculty teach by example.**

This spring, Associate Professor of Cardiovascular Nursing, Class of 1942 Endowed Term Professor, and Associate Dean for Academic Programs Kathleen McCauley, PhD, CS, RN, FAAN and Professor of Primary Care Nursing Ann L. O'Sullivan, PhD, CRNP, FAAN completed terms as president of the American Association of Critical Care Nurses (AACN) and the National Organization of Nurse Practitioner Faculties (NONPF), respectively. Nearly simultaneously, Associate Professor of Nursing Terri E Weaver, PhD, CS, RN, FAAN began her term as chair of the American Lung Association board (ALA).



**Kathleen McCauley**

Dr. McCauley's tenure focused on the creation of healthy work environment standards for hospitals stressed by the ongoing shortage of nurses. "There's no white horse coming to save our units, we have to do it ourselves," Dr. McCauley noted. As the largest specialty organization in nursing, AACN determined that eliminating toxic work environments was essential for its members and the profession. The six standards (skilled communication, true collaboration, effective decision-making, appropriate staffing, meaningful recognition and authentic leadership) provide a clear direction for nurses and others to use in creating the kind of work environment where excellent nursing practice can thrive. Her theme as president, "Live your contribution," enabled her to emphasize the importance of staying current with an ever-growing body of knowledge, working together to achieve better results, and mentor new nurses, while remembering the difference a nurse makes. "Leaders, and faculty teach by example," she says.



**Ann L. O'Sullivan**

Dr. O'Sullivan's presidency reflected direct involvement with the shaping of many new national standards for advanced practice nurses. Under her guidance, NONPF revised curricular guidelines and core competencies for nurse practitioner education, updated national taskforce criteria for evaluation of nurse practitioner programs, and developed an advanced practice nursing consensus paper in concert with 21 other organizations. In addition, Dr. O'Sullivan's position as president of one of the organizations leading support for the Doctorate in Nursing Practice as a clinical doctoral degree required her to promote the degree nationally.

Being at the helm of national organizations, "helped me to bring hot national issues to the students and faculty at Penn," says Dr. O'Sullivan.



**Terri E. Weaver**

As Dr. Weaver settles into her term as Chair of the national Board of the American Lung Association, she looks forward to implementing strategies to reduce tobacco-related disease, diminish smoking in children, decrease the incidence of asthma, improve care of individuals with chronic lung disease, and increase air quality. "As the third nurse – and the first academic nurse – Chair of the ALA, I welcome the opportunity to affect lung health on a wide scale and be intimately involved on a national level," Dr. Weaver says. Building on six years of membership on the board, and more than 25 years with the ALA, her presidency will also focus on increasing research funding to facilitate improvements in the quality of life of individuals with lung disease and to find cures.

Penn Nursing "should be in the forefront of shaping national and local health policy and advocacy for improving health and quality of life of the public and patients that we serve," Dr. Weaver says.

**This has been a busy year for faculty. New faces are joining the faculty and several longstanding members have moved on both within and out of the School. As always, many have received awards and honors for their life-changing work. Here is a sample of the highlights:**

Two faculty members have joined the ranks of full professors. One familiar face, **Sarah Hope Kagan, PhD, RN, FAAN**, a clinician-educator, is now Professor of Gerontological Nursing whose clinical scholarship focuses on care of older adults who have cancer, particularly those who have cancer of the head and neck. Her work has earlier been recognized through a John D. and Catherine T. MacArthur Fellowship. Known as the “genius” award, it has only been awarded to two nurses – Kagan and Penn alumna Ruth Watson Lubic.

A face that is both new and familiar has returned to the School. **Deborah Watkins Bruner, PhD, RN**, who received her PhD from Penn Nursing, has returned as Professor of Nursing. Dr. Bruner is known for her work in prostate cancer risk and treatment outcomes. Her work also focuses on patient decision-making and empowerment regarding treatment options and how they correspond to quality of life and other patient-reported outcomes. Dr. Bruner has worked with two of the National Cancer Institute-sponsored clinical trials cooperative groups for 17 years and is a Vice Chair for Outcomes Research in the Radiation Therapy Oncology Group. This work has led to her research into methods to improve the recruitment of cancer patients to participate in clinical trials, especially those from various ethnic groups. With these specialties in mind, she will be the director of a Recruitment, Retention, and Outreach Core Facility at the Abramson Cancer Center of the University of Pennsylvania Health System.



**Dr. Sommers**



**Dr. Boullata**

Familiar faces leaving the School include **Dr. Karen Buhler-Wilkerson, PhD, RN, FAAN**, a noted historian with a special expertise on home care. Dr. Buhler-Wilkerson played a watershed role at the School when she and two other faculty members founded a day care program for the frail elderly, Living Independently for Elders (LIFE). That program, which offers comprehensive nursing home level care for elders during the day enabling them to stay in their own homes, now cares for 500 elderly in impoverished neighborhoods of Philadelphia. In her astonishing 34 years at Penn, Dr. Buhler-Wilkerson’s research has sensitively considered complex and nuanced interaction among caregivers, physicians, nurses, hospitals, payers, and others.

Dr. Buhler-Wilkerson’s departure also left open the directorship of the Barbara Bates Center for the Study of the History of Nursing. **Julie A. Fairman, PhD, RN, FAAN**, Associate Professor of Nursing, and Class of 1940 Bicentennial Term Professor, will be taking over as the new center director. Her work has included a noted history of critical care. She is currently writing a book on the nurse practitioner movement.

Two new faculty are joining the School this fall. Professor of Nursing **Marilyn S. Sommers, PhD, RN, FAAN** brings with her a specialization in risk reduction and injury prevention research. She develops and tests interventions to reduce injury, with a particular focus on health compromising behaviors such as problem drinking and risky driving in young adults. She also has developed innovative techniques using digital image analysis to quantify injuries following sexual assault. This work, which has the potential to create a paradigm shift in the forensic examination after rape, has the potential to change injury outcomes as well as those in the criminal justice system. In so doing, her work seeks to reduce the human and financial cost of injury.

Associate Professor of Pharmacology & Therapeutics **Joseph Boullata, PharmD** is conducting innovative work in a previously neglected area of science including drug-nutrient interactions. His work seeks to understand the influence of competition between nutrient and drug absorption via intestinal transporters and the dosing of weight-based drugs in obesity. His work includes a reference textbook on these and other topics. The second edition, now in process, seeks to describe “pharmacokinetic and pharmacodynamic properties of individual drugs in obese patients, clarifying pharmaceutical properties of parenteral nutrition admixtures, and describing the influence of individual drugs on nutrient status.”

# 2006 Keynotes and International Presentations

## Linda Aiken

*Outcomes in Nursing: Professional Challenge and the Impact on Healthcare*, Third International Nursing symposium. Sao Paulo, Brazil. September 2005.

*International Nurse Migration: Balancing Global Demands for Nurse*, ICN Conference – A Call to Action: Ensuring Global Human Resources for Health. Geneva, Switzerland. March 2006.

## Jane Barnsteiner

*Evidence Based Nursing Practice*, International Congress on Nursing. Monterrey, Mexico, October 2005.

*Transforming Practice in Healthcare: Applying the Evidence*, The University of Hong Kong, Hong Kong, China. March 2006.

## Kathryn Bowles

*Developing a Decision Support System for Discharge Referrals*, NICHE Leadership Conference. New York, New York. February 2006.

With Holmes, J., Liberatore, M., Naylor, M., Nydick, R., Heil, E., and Clark, K., *Using Clinical Data to Generate Expert Knowledge and Build Decision Support*, 16th International Nursing Research Congress, Renew Nursing through Scholarship. Kona, Hawaii. July 2005.

With Martin, K.S., *Three Decades of Omaha System Research: Providing the Map to Discover New Directions*, The 9th International Congress on Nursing Informatics. Consumer-Centered Computer-Supported Care for Healthy People. Seoul, Korea. 2006

With Martin, K.S., Elfrink, V.L., Monson, K.A., *Introducing Standardized Terminologies to Nurses: Magic Wands and other Strategies*, The 9th International Congress on Nursing Informatics. Consumer-Centered Computer-Supported Care for Healthy People. Seoul, Korea. 2006

With Dansky, K.H., *Outcomes of a Telehealth Research Program with Chronically Ill Home Care Patients*, The International Nursing Conference on Prevention and Management of Chronic Conditions: International Perspectives. Bangkok, Thailand. January 2006.

## Sean Clarke

*Nursing Outcomes Research: A Tool to Promote Humanism in Nursing Practice?* [French], Secrétariat internationale des infirmières et infirmiers de l'espace francophone. Quebec City, Canada. May 2006.

*Nurses and Patient Rescue: Safety Research in Practice*. Champions of Patient Safety: Our Time, Our Watch Conference. Rush Copley Medical Center, Aurora, IL. April 2006.

*Can Better Work Environments Make Health Care Safer?* 2006 Alumni and Professional Education Conference, The Quality of Work Life and the Quality of Patient Care. Simmons College, Boston, MA. April 2006.

*Future Directions for Nursing Outcomes Research: Challenges, and Opportunities*. 4th National Conference of State Nursing Workforce Leaders. Jersey City, NJ. April 2006.

*Research on Nurse Staffing and Patient Safety: State of the Art*, Presentation at Invitational Meeting on Using Databases to Evaluate the Quality of Nursing Care. Catholic University of Leuven, Belgium. February 2006.

*International Hospital Outcomes Study: Comparing Swiss and International Finding*, Presentation at Rationing of Nursing Conference. University of Basel, Switzerland. September 2005.

*Research on Nurse Staffing and Patient Safety and Its Implications for Public Policy*, Marian Barrett Lecture, University of Melbourne School of Nursing, Melbourne, Victoria, Australia. July 2005.

## Margaret Cotroneo

*Caring for the Future Health of Families and Communities: Strategies for Changing Healthcare Systems*, 10th Anniversary Celebration. University of Witten/Herdecke Institute for Nursing Science, Germany. May 2006.

## Janet Deatrick

*Advanced Practice Nurses' Perceptions of Family Management of Childhood Brain Tumor Survivors*, 9th International Conference on Long-Term Complications of Treatment of Children & Adolescents for Cancer. Niagara-on-the Lake, Ontario, Canada. June 2006.

With Kathleen, K., Grey, M., and Dixon, J., *Predicting Children's Adaptation to Childhood Chronic Illness*, Western Institute for Nursing. Albuquerque, New Mexico. April 2006.

## Julie Fairman

*Exploding Perceptions: The American NP Movement, 1965-1980*, Annual Spring Colloquium. University of Ottawa, School of Nursing, Ottawa, Canada.

*Watchful Vigilance: American Critical Care, 1950-1970*. Colloquium Series, East Carolina University. March 2006.

## Sarah Kagan

*Geriatric Nursing – Creating Principled Care*, Grantham Hospital Department of Nursing. Hong Kong, SAR, China. (invited) April 2006.

*Palliation in Gerontological Care – Key to Optimal Function*, Hong Kong Nurses Association – Gerontology. Hong Kong, SAR, China. (invited) April 2006.

*Progress with Your Thesis*, Karolinska Institute Department of Nursing. Stockholm, Sweden. (invited) January 2006.

*Envisioning Nursing Scholarship*, Karolinska Institute Department of Nursing. Stockholm, Sweden. (invited) January 2006.

*Gero-Oncology Nursing in the United States: Caring for Older Adults across the Trajectory*, Grantham Hospital Seminar on Palliative Medicine. Hong Kong, SAR, China. (invited) November 2005.

*Invisible Symptoms? Invisible Patients?*, The Fifth Hong Kong Nursing Symposium on Cancer Care in conjunction with The Third Pan-Pacific Nursing Conference. Hong Kong, SAR, China. (invited) November 2005.

With Fairman, J. S., and Beeber, A. S., *Examining Intersections of Chronic Illness, Life History, and Stand Point Analyses*, International Qualitative Methods in Aging Symposium. World Congress of Gerontology. Rio de Janeiro, Brazil. June 2005.

## Kathleen McCauley

*Transitions in Health: Building Bridges through Science*, Health Science Research Symposium 2006, Community Based Approaches to Crossing the Health Care Quality Chasm. Scranton Temple Residency Program. Scranton, PA. April 2006.

*Engage and Transform: Creating Healthy Work Environments.* Emerging Concepts in Cardiovascular Care. The Fred and Lena Meijer Heart Center, Spectrum Health, Grand Rapids, MI. March 2006.

*Trends in Cardiovascular Nursing,* Washoe Medical Center, Reno, NV. March 2006.

Critical Care Spring Symposium, Inland Northwest Chapter of AACN. Spokane, WA. March 2006.

*AACN Health Work Environment Standards: A Journey to Excellence,* Third Annual National Patient Safety Conference: Safe Practices for Quality Health Care in Philadelphia, University of Pennsylvania School of Nursing, Philadelphia, PA. December 2005.

*Engage and Transform Your Work Environment,* University of Hong Kong Department of Nursing. November 2005

*Engage and Transform Your Work Environment: Creating a Healthy ICU.* Seventh Annual Critical Care Nursing Symposium: Innovations in Care, SUNY Upstate University Hospital. Liverpool, NY. October 2005.

*Engage and Transform: Collaboration and Better Work Environments.* Cardiovascular Nursing Update 2005, Clarian Health Partners, Indianapolis, IN. October 2005. White River Chapter, American Association of Critical Care Nurses (AACN), Muncie, IN. October 2005.

*Live Your Contribution, Our Quest for Excellence,* AACN's National Teaching Institute. New Orleans, LA. May 2005.

*Live Your Contribution,* Concepts in Critical Care 2005: A Critical Care Compendium, AACN., Pittsburgh, PA. April 2005; Greater Memphis Area Chapter AACN. Memphis, Tennessee. April 2005; Odyssey Critical Care Conference, Greater Richmond Area Chapter, AACN, Richmond, Virginia, March 2005; Setting the Pace 2005 Cardiovascular Nursing Conference, Emory HealthCare. Atlanta, Georgia. March 2005; Midwest Critical Care Conference, Northwest Chicago Chapter, AACN. Chicago, Illinois. March 2005.

*A Breath of Fresh Air:* Advanced Ventilatory Management Conference, West Michigan Chapter AACN. Grand Rapids, Michigan. March 2005.

*Teamwork: Critical for Patient Safety,* Winter Council of Chapter Representatives - American Thoracic Society, Chapter Administrators - American Lung Association. Phoenix, AZ. February 2005.

## **Afaf Meleis**

*The Discipline in Interdisciplinarity: Theory, Evidence, and Human Capacity for the Future,* Centennial Celebration, School of Nursing. American University, Beirut, Lebanon. July 2005.

*Women with Global Voices* panel, PA Governor's Conference for Women. Philadelphia, PA. November 2005.

*The Tao of Nursing Science and the DNP,* National Advisory Council for Nursing Research. National Institute of Nursing Research, National Institutes of Health. Bethesda, Maryland. January 2006.

*Safe Womanhood in a Challenging Global Environment,* Schools of Nursing & Public Health. University of North Carolina, Chapel Hill, NC. February 2006.

*On Integrating and Deconstructing Disciplines: Nursing Scholarship and the DNP,* American Association of Nurse Anesthetists, Assembly of School Faculty Meeting. Newport Beach, CA. February 2006.

*Safe Womanhood in an Unsafe World,* Johns Hopkins University. Baltimore, MD. March 2006.

*Safe Womanhood in an Unsafe World,* Uniformed Services University of the Health Sciences. Bethesda, MD. March 2006.

*Safe Womanhood in an Unsafe World,* Valiance Lecture. Penn State University School of Nursing. State College, Pennsylvania. March 2006.

*Expanding Nursing Scholarship Globally: Partnership, Policy, and Peace,* Eastern Nursing Research Conference, Cherry Hill, NJ. April 2006.

With Siantz, M.L., *Integrating Cultural Competence in Educational Practice: From Passion to Policy,* The CA Endowment Conference on Integrating Cultural Competence into Nursing Education and Practice. Los Angeles, CA. May 2006.

With McCauley, K., *To DNP or Not to DNP: That is the Question. (Not),* American Association of Colleges of Nursing Conference on Critical Care Nursing. Anaheim, CA. May 2006.

*Magnet Hospitals: Research, Criteria, and Evidence-Based Practice,* Queen Emma Nursing Institute. Honolulu, HI. June 2006.

## **Mary Naylor**

*Patient Choice and Responsiveness: Moving Towards a Patient-Centered Health Care System,* The Commonwealth Fund 8th International Symposium. Washington, D.C. November 2005.

## **Rosemary Polomano**

*The Future of Post-Operative Pain Management: Implications of Technological Advances: A Nurse's Perspective,* 11th World Congress on Pain, International Association for the Study of Pain. Sydney, Australia. August 2005.

## **Barbara Riegel**

*Issues Encountered by Nurses Caring for Cultural Diverse Populations with Heart Failure,* Resourcing Global Health conference. Glasgow Cateonian University, Scotland. June 2006.

## **Ann Rogers**

*Your Place in Patient Safety: Your Work Hours,* Michigan Nurses Association Annual Meeting. Ann Arbor, Michigan. October 2005.

*Staff Nurse Fatigue and Patient Safety,* Kansas State Nurses Association Annual Meeting. Topeka, Kansas. October 2005.

## **Eileen Sullivan-Marx**

*Directions for the Development of Nursing Knowledge,* International Congress 50th Anniversary University of Navarra Nursing School, Development of Nursing Knowledge and Its Integration in Professional Practice. University of Navarra, Pamplona, Spain. May 2005.

## **Lorraine Tulman**

With Fawcett, J., *Development of the Comprehensive Inventory of Functioning-Cancer.* Sigma Theta Tau 17th International Nursing Research Congress. Montreal, Canada. July, 2006.

## **Connie Ulrich**

*21st Century Nurses: Healthcare's Visionary Global Leaders?* Ordem Dos Enfermeiros. Lisbon, Portugal. November 2005.

*Ethical Issues in the Recruitment of Hospitalized Patients.* 23rd Quadrennial Congress, International Council of Nurses. Taiwan, Taipei. May 2005.

# Faculty Honors and Awards 2005-2006

## **Linda Aiken**

Armenian Church of America (Eastern) and the Fund for Armenian Relief Award 2005; Research!America Raymond and Beverly Sackler Award; 2006 Baxter International Foundation Prize for Health Services Research; Honorary Doctorates, University of Florida and State University of NY



## **Jane Barnsteiner**

Sigma Theta Tau International Dorothy Garrigus Adams Award 2005

## **Kathy Brown**

Fellow, Philadelphia College of Physicians

## **Karen Buhler-Wilkerson**

2005 Sigma Theta Tau International Pinnacle Award

## **April Chmielinski**

Excellence in Critical Care Practice Award, Southeast Chapter of the American Association of Critical Care Nurses

## **Sean Clarke**

Fellow, American Academy of Nursing

## **Christopher Coleman**

Award for Commitment to Health and Wellness in the African American Community, Community Care Behavioral Health Organization

## **Charlene Compher**

2006 Award for Excellence in Clinical Dietetics

## **Patricia D'Antonio**

Fellow, American Academy of Nursing; 2005 Best of Journal of Nursing Scholarship

## **Claire Fagin**

American Academy of Nursing Civitas Award 2005

## **Karen Hirschman**

Research Investigator Award, American Alzheimer's Association; Helen Rehr Award, Social Work in Health Care

## **Arlene Houldin**

Expert Alumni Award for Clinical Excellence

## **Sarah Kagan**

Sigma Theta Tau International Marie Hippensteel Lingeman Award 2005; Excellence in Care of the Older Adult with Cancer Award, Oncology Nursing Society

## **Lenore Kurlowicz**

2006 Leadership Award, International Society of Psychiatric Mental Health Nurses; Fellow, American Academy of Nursing

## **Anne Keane**

National Institutes of Health Science Education Partnership Award

## **Carol Ladden**

Higher Education Resource Service Bryn Mawr Summer Institute Awardee

## **Joan Lynaugh**

American Academy of Nursing Living Legend Award 2005

## **Linda McCauley**

American Association of Occupational Health Nurses Slack Publisher's Golden Pen Award

## **Barbara Medoff-Cooper**

Colket Endowed Chair, The Children's Hospital of Philadelphia/University of PA SoN; Outstanding Researcher Award, Association of Women's Health, Obstetric and Neonatal Nurses; Outstanding Alumni Award in Nursing Research, The College of New Jersey



**Dean Meleis helps present the American Association of Colleges of Nursing Award to U.S. Senator Arlen Specter.**

## **Afaf Meleis**

Robert E. Davies Award, Penn Professional Women's Network; Elected Honorary Fellow, Royal College of Nursing, United Kingdom

## **Mary D. Naylor**

Elected, Institute of Medicine

## **Victoria Rich**

University of Pittsburgh Distinguished Alumnae Award; Fellow, American Academy of Nursing

## **Barbara Riegel**

American Heart Association Lembright Award 2005

## **Julie Sochalski**

Governor's Appointment, Member, PA Health Care Cost Containment Council; Higher Education Resource Service Bryn Mawr Summer Institute Awardee

## **Diane Spatz**

The Children's Hospital of Philadelphia Nursing Leadership Award 2005

# Grants

## Research Grants

### Linda Aiken

*Beyond quick fixes: evidence based policy analysis*  
The Robert Wood Johnson Foundation (#049530)  
2/1/2004-7/31/2005  
Principal Investigator: **Linda Aiken**

*Center for nursing outcomes research*  
National Institutes of Health (5-P30-NR-005043)  
2/15/2000-4/30/2010  
Principal Investigator: **Linda Aiken**  
Co-Investigators: **Susan Gennaro, Barbara Medoff-Cooper, Douglas Sloane, Sean Clarke, Mary Naylor**  
Pilot Projects: **Nancy Hanrahan, Arlene Houldin, Barbara Riegel, Stella Volpe, Eileen Lake, Jeannie Cimiotti, Robyn Cheung, Sean Clarke, Diane Spatz, Terri Weaver, M. Katherine Hutchinson**

*How nursing affects the volume-outcomes relationship*  
National Institutes of Health (2-R01-NR-004513-07A1)  
9/30/2004-5/31/2009  
Principal Investigator: **Linda Aiken**  
Co-Investigator: **Julie Sochalski**

*Neutropenia outcomes: nurse staffing and environment effects*  
Oncology Nursing Society  
10/1/2003-9/30/2006  
Principal Investigator: **Linda Aiken**  
Co-Investigator: **Christopher Friese**

*Nursing intervention for HIV regimen adherence among the seriously mentally ill*  
National Institutes of Health (5-R01-NR-008851)  
9/1/2003-5/31/2008  
Principal Investigator: Michael Blank  
Co-Investigators: **Linda Aiken, Nancy Hanrahan**

*Outcomes of nurse practice environments*  
National Institutes of Health (2-R01-NR-004513)  
10/1/2004-3/31/2009  
Principal Investigator: **Linda Aiken**  
Co-Investigators: **Sean Clarke, Douglas Sloane, Eileen Lake, Herbert Smith**

*Temporary nurse staffing, hospital organization and nurse and patient outcomes*  
American Staffing Association  
2/1/2005-10/31/2005  
Principal Investigator: **Linda Aiken**

### Karen Badellino

*Human endothelial lipase in cardiovascular disease*  
National Institutes of Health (1-K23-HL-074967)  
9/1/2004-8/31/2007  
Principal Investigator: **Karen Badellino**

*The role of endothelial lipase in HDL metabolism in individuals with metabolic syndrome*  
American Heart Association (#0435279N)  
7/1/2004-6/30/2008  
Principal Investigator: **Karen Badellino**

*University of Pennsylvania diabetes endocrinology research center*  
National Institutes of Health (5-P30-DK-019525-28)  
7/1/2002-3/31/2007  
Principal Investigator: Mitchell Lazar  
Co-Investigators: **Karen Badellino, Nancy Tkacs**

### Kathryn Bowles

*Empowering elders through technology*  
Pennsylvania State University (The Robert Wood Johnson Foundation)  
9/1/2003-8/31/2005  
Principal Investigator: Kathryn Dansky  
Co-Investigator: **Kathryn Bowles**

*Factors to support effective discharge decision-making*  
National Institutes of Health (5-R01-NR-007674)  
9/15/2001-8/31/2005  
Principal Investigator: **Kathryn Bowles**

*Managing chronic illness: comparing telemonitoring and telephone interventions*  
Centers for Disease Control (R01-DP0000215-01)  
9/1/2005-8/31/2006  
Principal Investigator: **Kathryn Bowles**

*Promoting self-care using telehomecare: impact on outcomes*  
National Institutes of Health (5-R01-NR-008923-02)  
9/8/2005-5/31/2009  
Principal Investigator: **Kathryn Bowles**  
Co-Investigators: **Mary Naylor, Barbara Riegel**

### Sean Clarke

*Organizational climate and hospital patient/nurse safety*  
National Institutes of Health (1-K01-NR-007895)  
7/1/2002-6/30/2005  
Principal Investigator: **Sean Clarke**

### Charlene Compher

*A study of the efficacy and safety of teduglutide in subjects with parenteral nutrition (PN) dependent short bowel syndrome (SBS)*  
NPS Allelix Corporation (#CL0600-004)  
8/25/2004-5/31/2006  
Principal Investigator: **Charlene Compher**

*Impact of intravenous proton pump inhibitors on ostomy output and nutrient absorption in the home TPN patient with short bowel syndrome*  
Wyeth Pharmaceuticals, Inc. (#3001A-200041)  
8/31/2004-12/31/2006  
Principal Investigator: **Charlene Compher**

*Oleic acid effects on transit and absorption in SBS*  
National Institutes of Health (5-R03-DK-062841)  
7/1/2003-6/30/2006  
Principal Investigator: **Charlene Compher**

### Norma Cuellar

*A comparison of type 2 diabetes with/without RLS*  
American Association of Diabetes Educators  
5/1/2004-5/1/2006  
Principal Investigator: **Norma Cuellar**

*The use of alternative medicine for the sleep disorder restless leg syndrome*  
Christian R. and Mary F. Lindback Foundation  
6/1/2005-12/1/2006  
Principal Investigator: **Norma Cuellar**

*The use of alternative medication for the sleep disorder RLS*  
Office of the Vice Provost for Research-University Research Foundation Award  
7/1/2006-6/30/2007  
Principal Investigator: **Norma Cuellar**

### Patricia D'Antonio

*Nursing history review*  
American Association for the History of Nursing  
1/1/1992-12/31/2006  
Principal Investigator: **Patricia D'Antonio**

*Nursing in the US: a history of people and places*  
National Institutes of Health (5-G13-LM-008199)  
6/1/2004-5/31/2007  
Principal Investigator: **Patricia D'Antonio**

**Janet Deatrick**

*Assessing family management of childhood chronic illness*  
Yale University (R01-NR-008048)  
5/1/2003-2/28/2007  
Principal Investigator: Kathleen Knaff  
Co-Investigator: **Janet Deatrick**

*Family management and survivors of childhood brain tumors*  
Oncology Nursing Society  
3/15/2005-3/15/2007  
Principal Investigator: **Janet Deatrick**

**Susan Gennaro**

*Mechanisms for preterm birth in African American women*  
National Institutes of Health (1-R03-NR-008548)  
8/15/2003-7/31/2005  
Principal Investigator: **Susan Gennaro**

**Ellen Giarelli**

*Transition to self to self management of a chronic genetic disorder in adolescents*  
National Institute for Health (R01-NR-00892)  
9/30/2005-7/31/2007  
Principal Investigator: **Ellen Giarelli**

**Karen B. Hirschman**

*Enhancing brain health awareness*  
Commonwealth of Pennsylvania  
1/1/2006-6/30/2006  
Principal Investigator: Jason H. T. Karlawish  
Co-Investigator: **Karen B. Hirschman**

*Healthy actions for persons with dementia program*  
University of Pittsburgh (600637-1)  
1/1/2006-6/30/2006  
Principal Investigator: John Q. Trojanowski  
Co-Investigator: **Karen B. Hirschman**

*Redesigning the hospice medicare benefit for persons with advanced dementia*  
Alzheimer's Association (RG-05-13570)  
11/1/2005-10/31/2007  
Principal Investigator: Jason Karlawish  
Co-Principal Investigator: **Karen B. Hirschman**

**Arlene Houldin**

*Enhancing connection: helping the mother with breast cancer support her child*  
University of Washington  
6/1/2002-3/31/2006  
Principal Investigator: Frances Lewis  
Co-Investigator: **Arlene Houldin**

*Experiences of colorectal cancer patients and their caregivers*  
Oncology Nursing Society  
9/15/2003-9/15/2005  
Principal Investigator: **Arlene Houldin**

**M. Katherine Hutchinson**

*Parental influence of adolescent sexual risk behaviors: comparing Catholic and non-Catholic parochial and public families*  
Office of the Vice Provost for Research - University Research Foundation Award  
3/1/2006-2/28/2007  
Principal Investigator: **M. Katherine Hutchinson**

**Loretta Sweet Jemmott**

*AIDS clinical trial unit*  
National Institutes of Health (5-U01-AI-032783)  
1/1/2000-12/31/2006  
Principal Investigator: Pablo Tebas  
Co-Investigator: **Loretta Sweet Jemmott**

*Church-based parent-child HIV prevention project*  
National Institutes of Health (5-R01-MH-063070)  
7/1/2001-6/30/2006  
Principal Investigator: **Loretta Sweet Jemmott**  
Co-Investigators: **M. Katherine Hutchinson**, Freida Outlaw

*The generalizability of HIV risk reduction strategies*  
National Institutes of Health (5-R01-HD-039109)  
9/30/1999-8/31/2006  
Principal Investigator: John Jemmott  
Co-Investigator: **Loretta Sweet Jemmott**

*Hampton Penn Center to reduce health disparities*  
National Institutes of Health (1-P20-NR-008361)  
9/30/2002-6/30/2007  
Principal Investigator: **Loretta Sweet Jemmott**  
Co-Investigators: **Janet Deatrick, Susan Gennaro, M. Katherine Hutchinson, Barbara Medoff-Cooper, Lorraine Tulman**

*HIV prevention trial unit*  
National Institutes of Health (5-U01-AI-048014)  
7/1/2000-6/30/2006  
Principal Investigator: David Metzger  
Co-Investigator: **Loretta Sweet Jemmott**

*HIV sexual risk reduction for Black drug-using women*  
National Institutes of Health (1-R01-MH-64407)  
9/25/2001-8/31/2006  
Principal Investigator: **Loretta Sweet Jemmott**  
Co-Investigators: **M. Katherine Hutchinson, John Jemmott**

*HIV/STD prevention interventions for Black adolescents*  
National Institutes of Health (5-R01-MH-062049)  
9/10/2000-8/31/2005  
Principal Investigator: John Jemmott  
Co-Investigator: **Loretta Sweet Jemmott**

*HIV/STD risk reduction for African American couples*  
National Institutes of Health (5-U10-MH-064394)  
4/1/2002-1/31/2007  
Principal Investigator: John Jemmott  
Co-Investigator: **Loretta Sweet Jemmott**

*South African adolescent health promotion project*  
National Institutes of Health (5-R01-MH-065867)  
9/20/2002-7/31/2007  
Principal Investigator: John Jemmott  
Co-Investigator: **Loretta Sweet Jemmott**

*Translating proven interventions for underserved and emergent high-risk populations: the sister to sister project*  
Centers for Disease Control & Prevention (U65-PS-00024)  
5/1/2006-4/30/2007  
Principal Investigator: **Loretta Sweet Jemmott**



Linda H. Aiken



Karen O. Badellino



Jane H. Barnsteiner



Deborah E. Becker



Joseph Boullata



Kathryn H. Bowles

**Eileen Lake**

*Nurse staffing and adverse events on inpatient units*  
National Institutes of Health (R01-NR-00906)  
8/1/2005-7/31/2006  
Principal Investigator: **Eileen Lake**

**Lisa M. Lewis**

*Exploring beliefs, attitudes, and perceived behavioral control associated with medication adherence for African-Americans with hypertension*  
Office of the Vice Provost for Research-University Research Foundation Award  
3/1/2006-2/28/2007  
Principal Investigator: **Lisa M. Lewis**

**Terri Lipman**

*Evaluation of linear measurement in an inpatient pediatric setting*  
Pediatric Endocrinology Nursing Society  
8/1/2004-7/31/2006  
Principal Investigator: **Terri Lipman**

*Management of pediatric type 2 diabetes*  
The Children's Hospital of Philadelphia  
9/20/2001-2/28/2009  
Principal Investigator: Charles Stanley  
Co-Investigator: **Terri Lipman**

**Linda McCauley**

*Analysis of home dust for pesticide residues*  
University of Illinois-Chicago (R01ES11377)  
2/01/06-01/31/07  
Principal Investigator: Victoria Persky  
Co-Investigator: **Linda McCauley**

*Biomarkers of pesticide toxicity among teen farmworkers*  
Centers for Disease Control and Prevention (5-RO1-OH-008057)  
1/1/2004-9/29/2006  
Principal Investigator: **Linda McCauley**

*Genes and environment: education to involve communities*  
National Institutes of Health (5-R25-ES-012089)  
1/1/2004-7/31/2007  
Principal Investigator: **Linda McCauley**  
Co-Investigator: **Connie Ulrich**

*National children's study - Vanguard Centers*  
The Children's Hospital of Philadelphia  
National Institutes of Health (09470)  
10/01/05-09/30/06  
Principal Investigator: Donald Schwarz  
Co-Investigator: **Linda McCauley**

*Reducing pesticide exposure in minority families*  
National Institutes of Health (5-R01-ES-008707)  
1/1/2004-7/31/2006  
Principal Investigator: **Linda McCauley**

**Barbara Medoff-Cooper**

*An export center of excellence for inner city health*  
National Institutes of Health (5-P60-MD-000209)  
9/30/2002-7/31/2007  
Principal Investigator: Shiriki Kumanyika  
Co-Investigator: **Barbara Medoff-Cooper**

*Feeding behaviors and energy balance in infants with CHD*  
The Children's Hospital of Philadelphia  
12/1/2005-8/31/2006  
Principal Investigator: **Barbara Medoff-Cooper**

*Feeding behaviors and energy balance: infants with CHD*  
National Institutes of Health (2-R01-NR-002093-01A1)  
9/6/2002-5/31/2007  
Principal Investigator: **Barbara Medoff-Cooper**

**Mary Naylor**

*Coordinating care between hospital and home: translating research into practice, phase II*  
The Commonwealth Fund  
8/1/2005-10/31/2007  
Principal Investigator: **Mary Naylor**  
Co-Investigators: **Kathryn Bowles, Kathleen McCauley**

*Enhancing care coordination*  
National Institute of Aging (R01 AG023116-01A1)  
09/15/2005-8/31/2010  
Principal Investigator: **Mary Naylor**  
Co-Investigator: **Kathryn Bowles, Kathleen McCauley, Lenore Kurlowicz**

*Interdisciplinary nursing quality research initiative*  
The Robert Wood Johnson Foundation  
10/1/2005-9/30/2008  
Principal Investigator: **Mary Naylor**

*Patients' and families' home care service priorities*  
National Institutes of Health (R01-CA-10954)  
8/1/2005-5/31/2006  
Principal Investigator: David Casarett  
Co-Investigator: **Mary Naylor**

*Transitional care for elders: expanding the model of care*  
Jacob and Valeria Langeloth Foundation  
5/15/2006-6/30/2008  
Principal Investigator: **Mary Naylor**  
Co-Investigators: **Kathryn Bowles, Kathleen McCauley**

**Ann O'Sullivan**

*The mom program*  
The Children's Hospital of Philadelphia (530-02-01)  
1/6/2005-5/31/2006  
Principal Investigator: **Ann O'Sullivan**

**Jennifer Pinto-Martin**

*Center of excellence for autism epidemiology*  
Centers for Disease Control & Prevention (U10/CCU320394)  
9/30/2001-9/29/2006  
Principal Investigator: **Jennifer Pinto-Martin**  
Co-Investigator: **Ellen Giarelli**

*The epidemiology of autism in a low birthweight cohort*  
National Institutes of Health (RO1-MH07380)  
3/1/2006-2/28/2009  
Principal Investigator: **Jennifer Pinto-Martin**

**Mary Powell**

*Sharing clear health messages*  
Pfizer Scholars Grants  
7/1/2005-7/1/2007  
Principal Investigator: **Mary Powell**



**Christine K. Bradway**



**Linda P. Brown**



**Deborah Watkins Bruner**



**Karen Buhler-Wilkerson**



**Linda Carrick**



**Jeannie P. Cimiotti**

### Therese Richmond

*Alcohol, firearms, and adolescent gunshot injury risk*

National Institutes of Health  
9/20/2005-7/31/2009  
Principal Investigator: Douglas Wiebe  
Co-Investigators: **Therese Richmond**

*Case-control study of alcohol outlets & firearm violence*

National Institutes of Health  
(5-R01-AA-013119)  
8/1/2002-4/30/2007  
Principal Investigator: Charles Branas  
Co-Investigator: **Therese Richmond**

*Major depression following minor injury*

National Institutes of Health  
(5-R01-MH-063818)  
4/1/2002-3/31/2007  
Principal Investigator: **Therese Richmond**

*Project safe neighborhoods (PSN) research partner*

U.S. Department of Justice Assistance  
(#2003-GP-CX-0110)  
4/7/2003-9/30/2006  
Co-Principal Investigators: **Therese Richmond**, Charles Schwab

*Reducing firearm injury through interdisciplinary and community partnership*

The Joyce Foundation  
5/1/2001-6/30/2006  
Principal Investigator: Charles Schwab  
Co-Principal Investigator: **Therese Richmond**

*The Philadelphia gun crime deterrence study*

The Joyce Foundation  
12/30/2005-12/29/2007  
Principal Investigator: **Therese Richmond**

### Barbara Riegel

*Nurse-delivered focused education and counseling intervention to decrease delay in seeking treatment*

University of California, San Francisco  
(5-R01-NR-007952)  
9/1/2002-2/28/2006  
Principal Investigator: Kathleen Dracup  
Co-Investigator: **Barbara Riegel**

### Ann Rogers

*Neurobehavioral effects of partial sleep deprivation*

National Institutes of Health  
(5-R01-NR-004281)  
5/1/2004-1/31/2009  
Principal Investigator: David Dinges  
Co-Investigator: **Ann Rogers**

*Staff nurse fatigue and patient safety*

Agency for Healthcare Research and Quality  
(5-RO1-HS-11963)  
9/30/2001-9/29/2005  
Principal Investigator: **Ann Rogers**  
Co-Investigator: **Linda Aiken**

### Julie Sochalski

*Home care medication management for the frail elderly*

University of Wisconsin-Milwaukee  
4/01/2006-1/31/2011  
Principal Investigator: Karen Marek  
Co-Investigator: **Julie Sochalski**

*Improving quality and efficiency: coordinated care benefit for Medicare beneficiaries with heart failure*

Commonwealth Fund  
7/1/2005-9/30/2006  
Principal Investigator: **Julie Sochalski**  
Co-investigator: **Barbara Riegel**

*Nurse staffing and patient outcomes in the VA*

U.S. Department of Veterans' Affairs  
(V663P-5946)  
10/1/2002-9/30/2005  
Principal Investigator: Anne Sales  
Co-Investigator: **Julie Sochalski**

*Predicting pediatric risk of death after hospitalization*

The Children's Hospital of Philadelphia  
(20640-01-01)  
8/1/2003-7/31/2006  
Principal Investigator: **Julie Sochalski**

*Quality of nursing care and outcomes of hospitalized patients*

Leonard Davis Institute of Health Economics, University of Pennsylvania  
9/1/2005 – 8/31/2006  
Principal Investigator: **Julie Sochalski**

### Diane Spatz

*Breastfeeding promotion at primary care in University City*

The Pennsylvania Department of Health  
7/1/2004-6/30/2006  
Principal Investigator: **Diane Spatz**

*Breastfeeding promotion at primary care Market Street*

The Pennsylvania Department of Health  
7/1/2005-6/1/2007  
Principal Investigator: **Diane Spatz**

*Support for low-income breastfeeding: cost and outcomes*

Johns Hopkins University (R01-NR-007675)  
3/1/2003-8/31/2006  
Principal Investigator: Linda Pugh  
Co-Investigator: **Diane Spatz**

*The use of human milk and outcomes of infants with congenital surgical anomalies*

The Center for Nursing Outcomes Research-University of Pennsylvania  
5/1/2006-4/30/2007  
Principal Investigator: **Diane Spatz**

### Neville Strumpf

*Center for Gerontologic Nursing Excellence*

The John A. Hartford Foundation, Inc.  
(2000-0094)

1/1/2001-12/31/2005  
Principal Investigator: **Neville Strumpf**  
Co-Investigators: **Lois Evans, Mary Naylor**

*Renewing the commitment for innovative leadership development & capacity building in geriatrics*

The John A. Hartford Foundation, Inc.  
1/1/2001-9/30/2010

Principal Investigator: **Neville Strumpf**

*Leadership in creating and disseminating innovations for frail vulnerable elders*

The John A. Hartford Foundation, Inc.  
1/1/2001-12/31/2005

Principal Investigator: **Neville Strumpf**  
Co-Investigators: **Lois Evans, Mary Naylor**

Pilot Projects: **Valerie Cotter, Eileen Sullivan-Marx, Karen Buhler-Wilkerson**



Sean P. Clarke



Christopher L. Coleman



Charlene W. Compher



Valerie T. Cotter



Deborah Cross



Norma G. Cuellar

### **Eileen Sullivan-Marx**

*Health education in West Philadelphia*  
First Hospital Foundation  
1/1/2005-6/30/2006  
Principal Investigator: **Eileen Sullivan-Marx**

*Outcomes of an exercise program for older African American women in a PACE model*  
Commonwealth of Pennsylvania  
1/1/2006-12/31/2009  
Principal Investigator: **Eileen Sullivan-Marx**

*Visiting Nurse Service of New York scholars program*  
Visiting Nurse Service of New York  
9/1/2003-8/31/2006  
Principal Investigator: **Eileen Sullivan-Marx**  
Co-Investigator: **Kathryn Bowles**

### **Nancy Tkacs**

*Hypoglycemic brain injury and loss of hypoglycemic arousal*  
Diabetes Research Foundation  
(5-2005-966)  
9/1/2005-8/31/2006  
Principal Investigator: **Nancy Tkacs**

### **Connie M. Ulrich**

*Ethical issues encountered by nurses and social workers*  
National Institutes of Health  
1/1/2006-5/31/2006  
Principal Investigator: **Connie M. Ulrich**

### **Stella Volpe**

*Changing cafeteria portion sizes to prevent weight gain*  
National Institutes of Health  
(5-R03-DK-063991)  
1/1/2004-4/30/2006  
Principal Investigator: **Stella Volpe**

*School-based prevention of type 2 diabetes in children*  
National Institutes of Health  
(5-U01-DK-061230)  
3/1/2004-2/28/2011  
Principal Investigator: Gary Foster  
Co-Investigators: **Stella Volpe, Terri Lipman**

### **Terri Weaver**

*Impact of CPAP on functional outcomes in milder OSA*  
National Institutes of Health  
(5-R01-HL-076101)  
9/1/2003-6/30/2007  
Principal Investigator: **Terri Weaver**

*SCOR in neurobiology of sleep and sleep apnea*  
National Institutes of Health  
(2-P50-HL-060287)  
9/1/2003-8/31/2008  
Principal Investigator: Allan Pack  
Co-Investigator: **Terri Weaver**

### **Jean C. Whelan**

*Never enough: nurse supply and demand, 1900-1965*  
National Institutes of Health  
(G13-LM-00840)  
8/1/2005-7/31/2008  
Principal Investigator: **Jean C. Whelan**

*Nursing, history and healthcare: a website*  
National Institutes of Health  
(G13 LM 008295)  
4/15/2006-3/31/2009  
Co-Investigators: **Karen Buhler-Wilkerson, Jean C. Whelan**

### **Institutional Training Grants**

*2004-2005 Independence Blue Cross Nurse Scholars Program for PhD students*  
Pennsylvania Higher Education Foundation  
7/1/2004-6/30/2005  
Principal Investigator: **Anne Keane**

*2004-2005 Nursing Education Grant Program - Supplemental*  
Pennsylvania Higher Education Foundation  
7/1/2004-6/30/2005  
Principal Investigator: **Anne Keane**

*2005-2006 Johnson & Johnson promise of nursing for Pennsylvania gala*  
Pennsylvania Higher Education Foundation  
7/1/2005-6/30/2008  
Principal Investigator: **Anne Keane**

*2005-2006 Nursing Johnson & Johnson promise of nursing for Pennsylvania gala*  
Pennsylvania Higher Education Foundation  
7/1/2005-6/30/2006  
Principal Investigator: **Anne Keane**

*Advanced Education Nursing Traineeships*  
Health Resources and Services Administration (A10-HP-00072)  
7/1/2002-6/30/2005  
Principal Investigator: **Anne Keane**

*Advanced training in nursing outcomes research (T32)*  
National Institute for Health  
(2-T32-NR-007104)  
6/1/1999-3/31/2009  
Principal Investigator: **Linda Aiken**  
Co-Investigators: **Sean Clarke, Loretta Sweet Jemott, Julie Sochalski**

*Collaborative programs in nursing and peace and conflict studies with the University of Ibadan, Nigeria*  
The John D. and Catherine T. MacArthur Foundation (03-80302-000-GSS)  
1/1/2004-12/31/2005  
Principal Investigator: Peter Conn  
Co-Investigator: **Norma Lang**

*Creating careers in geriatric advanced practice nursing*  
American Association of Colleges of Nursing  
7/1/2002-6/30/2008  
Principal Investigator: **Neville Strumpf**

*Delaware Valley Geriatric Education Center*  
U.S. Department of Health & Human Services (5-D31-HP-070144)  
7/1/2001-6/30/2006  
Principal Investigator: Mary Ann Forciea  
Co-Investigator: **Lois Evans**

*Development of a palliative care minor*  
The Arcadia Foundation  
6/1/2003-5/31/2006  
Principal Investigator: **Neville Strumpf**

*Geriatric nursing education project*  
American Association of Colleges of Nursing  
7/1/2002-6/30/2005  
Principal Investigator: **Neville Strumpf**

*Master's education in occupational environmental health*  
Center for Disease Control and Prevention (T01/CCT310445)  
7/1/2005-7/30/2007  
Principal Investigator: **Linda McCauley**



**Janet A. Deatrick**



**Phyllis M. Dubendorf**



**Dawn Durain**



**Lois K. Evans**



**Julie A. Fairman**



**Ellen Giarelli**

*Pain in older adults with Parkinson's Disease*  
Academy of Nursing  
7/1/2006-6/30/2007  
Principal Investigator: **Neville Strumpf**  
Co-Investigator: **Lisette Bunting-Perry**

*PA Higher Education Foundation Graduate Nursing Education Grant-Spring 2006*  
Pennsylvania Higher Education Foundation  
1/1/2006-6/30/2006  
Principal Investigator: **Anne Keane**

*Research on vulnerable women, children and families*  
National Institutes of Health  
(5-T32-NR-007100)  
5/1/1998-2/29/2008  
Principal Investigator: **Susan Gennaro, Janet Deatrick**  
Co-Investigator: **Loretta Sweet Jemmott**

*University based nurse anesthesia program*  
Health Resources and Services Administration (1-D09-HP-04061)  
9/1/2004-6/30/2007  
Principal Investigator: **Anne Keane**

## Conference Grants

*Bridging the cultural canyon: Strategies to reduce health inequities for American Indians*  
Novo Nordisk Pharmaceuticals, Inc.  
4/1/2005-3/31/2006  
Principal Investigator: **Terri Lipman**  
Co-Investigators: **Kathleen Burke, Rosalyn Watts**

*Bridging the cultural canyon: Strategies to reduce health inequities for American Indians*  
National Institutes of Health  
(1-R13-DK-071454)  
6/1/2005-5/31/2006  
Principal Investigator: **Terri Lipman**  
Co-Investigators: **Kathleen Burke, Charlene Compher, Stella Volpe, Rosalyn Watts**

*Firearm & Injury Center at Penn (FICAP) national research collaborative meeting on firearm violence*  
The Joyce Foundation (#05-28290)  
4/1/2005-9/30/2005  
Principal Investigator: **Therese Richmond**

*Geriatric mental health nursing: State of the future conference*  
van Ameringen Foundation, Inc.  
1/1/2005-12/1/2005  
Principal Investigator: **Lois Evans**

*Modeling the built and social environments for health, development and behavior research*  
Penn Institute for Urban Research  
2004-2007  
Principal Investigator: Dennis Culhane  
Co-Director: **Stella Volpe**

*Penn summit on global issues in women's health: Safe womanhood in an unsafe world*  
Bill and Melinda Gates Foundation  
(#36122)  
3/24/2005-3/24/2006  
Principal Investigator: **Afaf Meleis**

*Penn summit on global issues in women's health: Safe womanhood in an unsafe world*  
Carnegie Corporation of New York  
(#D05131)  
4/1/2005-3/31/2006  
Principal Investigator: **Afaf Meleis**

*Post-doctoral nurse scientist training research*  
Agency for Healthcare Research and Quality (016295-01)  
2/1/2006-2/21/2007  
Principal Investigator: **Linda McCauley**  
Co-Investigator: **Kathleen Burke**

*State of the science nursing approaches to the late and long-term sequelae of cancer and cancer treatment*  
Agency for Healthcare Research and Quality (R13-HS-01607)  
7/8/2005-7/7/2006  
Principal Investigator: **Arlene Houldin**

*Summit on American Indian healthcare: Bridging the cultural canyon*  
Lifescan, Inc. (HCC00748A)  
4/1/2005-9/30/2005  
Principal Investigator: **Terri Lipman**  
Co-Investigators: **Kathleen Burke, Rosalyn Watts**

*The summit on American Indian health care*  
The Robert Wood Johnson Foundation  
(053048)  
6/1/2005-11/30/2005  
Principal Investigator: **Rosalyn J. Watts**

## Practice Grants

*Building RN training skills for geriatric education excellence*  
Health Resources & Services Administration  
(1-D62HP01912)  
9/1/2003-6/30/2006  
Principal Investigator: **Eileen Sullivan-Marx**  
Co-Investigators: **Linda Carrick, Kathleen Burke, Rebecca Phillips, Rosalyn Watts**

*Health education in West Philadelphia*  
First Hospital Foundation  
1/1/2005-12/31/2005  
Principal Investigator: **Eileen Sullivan-Marx**

*Issues in nutrition, exercise and fitness-promoting physical activity in elementary school children of West Philadelphia Center partnerships,*  
University of Pennsylvania  
2005-2006  
Principal Investigator: **Stella Volpe**

## Pre/Post Doctoral Fellowship Awards

*African American grand family HIV prevention identifying needs, barriers, and concerns*  
Hampton University (#05-060)  
10/31/2004-8/31/2005  
Principal Investigator: **Judith Cornelius**

*Critical analysis of nursing home management styles and identification of management strategies aimed at producing constructive work cultures*  
The John A. Hartford Foundation, Inc. through the American Academy of Nursing  
7/1/2006-6/30/2007  
Principal Investigator: **Katherine K. Hostved**  
Mentor: **Lois Evans**

*Developing and testing a cultural model for long-term female urinary incontinence*  
The John A. Hartford Foundation, Inc. through the American Academy of Nursing  
9/1/2005-7/31/2006  
Student: **Christine Bradway**  
Mentor: **Neville E. Strumpf**



Wendy D. Grube



Mary K. Guidera



Nancy P. Hanrahan



Karen B. Hirschman



Genevieve Hollis



Arlene D. Houldin

*Doctoral degree scholarship in cancer nursing*  
American Cancer Society (DSCN-03-202-01-SCN)  
8/1/2003-7/31/2005  
Fellow: **Christopher Friese**  
Mentor: **Linda Aiken**

*Doctoral degree scholarship in cancer nursing*  
American Cancer Society  
8/1/2002-7/31/2005  
Fellow: **Margaret Crighton**  
Mentor: **Sarah Kagan**

*The effects of informal caregivers on the outcomes of older adults receiving home healthcare*  
American Nurses Foundation (#2004021)  
10/1/2004-9/30/2005  
Fellow: **Eunhee Cho**  
Mentor: **Julie Sochalski**

*Factors affecting the negotiation of cancer pain treatment among African Americans*  
Oncology Nursing Society  
3/15/2004-9/14/2006  
Fellow: **Salimah Meghani**  
Mentor: **Arlene Houldin**

*Functional status and motor activity in PPD*  
National Institutes of Health (F31-NR-00897)  
9/1/2005-6/30/2006  
Student: **Barbara E. Posmontier**  
Mentor: **Lorraine Tulman**

*Identifying and evaluating barriers to walking or bicycling in African Americans of low-income in West Philadelphia*  
Penn Institute for Urban Research  
2004-2006  
Student: **Elizabeth Staebler**  
Faculty Advisor: **Stella Volpe**

*Improving physical and functional outcomes of critically ill older adults*  
The John A. Hartford Foundation, Inc. through the American Academy of Nursing  
7/1/2005-8/31/2007  
Student: **Michele Balas**  
Mentor: **Therese Richmond**

*Improving nursing home care through palliative care*  
The John A. Hartford Foundation, Inc. through the American Academy of Nursing  
7/1/2006-6/30/2007  
Principal Investigator: **Rebecca Trotta**  
Mentor: **Neville E. Strumpf**

*Incidence of postpartum depression in mothers of infants admitted to a neonatal intensive care unit and the relationship to breastfeeding*  
Holz Award  
8/1/2005-5/30/2008  
Fellow: **Nicole Hitti**  
Faculty Advisor: **Diane Spatz**

*Interdisciplinary geriatric research: a study of group culture to identify facilitators and barriers of successful collaboration*  
The John A. Hartford Foundation, Inc. through the American Academy of Nursing  
7/1/2004-6/30/2006  
Fellow: **Stacen Keating**  
Mentor: **Mary Naylor**

*The lived experiences of Korean immigrant caregivers after nursing home placement of their elderly non-English languages (NELS) relatives with dementia*  
American Nurse Foundation (2005084)  
11/14/2005-11/14/2006  
Student: **Eui-Hi Kong**  
Faculty Advisor: **Lois Evans**

*Masters degree scholarship in cancer nursing*  
American Cancer Society (MSCN-04-166-01-SCN)  
8/1/2004-7/31/2007  
Student: **Brooke Slater**  
Mentor: **Arlene Houldin**

*Master's scholarship in cancer nursing*  
American Cancer Society (CN-06-232-01)  
8/1/2006-7/31/2008  
Fellow: **Monica Ploof**  
Sponsor: **Janet Deatrck**

*Menstrual cycle and insulin sensitivity in diabetes*  
National Institutes of Health (5-F31-NR-008179)  
9/1/2002-7/31/2005  
Fellow: **Kimberly Trout**  
Mentor: **Nancy Tkacs**

*Nurse practitioner legislation and access to healthcare*  
National Institutes of Health (1-F31-NR-008302)  
8/1/2003-7/31/2006  
Fellow: **Deborah Ann Sampson**  
Mentor: **Julie Fairman**

*Obstructive sleep apnea: African American perceptions*  
National Institutes of Health (F31-NR-00931)  
9/30/2004-9/29/2007  
Student: **Amy M. Sawyer**  
Mentor: **Terri Weaver**

*Older Black women's stories of hypertension treatment with physicians*  
The John A. Hartford Foundation, Inc. through the American Academy of Nursing  
7/1/2005-6/30/2006  
Student: **Sadie Mitchell**  
Mentor: **Eileen Sullivan-Marx**

*Organizational culture, nursing care delivery and nursing home resident outcomes*  
The John A. Hartford Foundation, Inc. through the American Academy of Nursing  
7/1/2005-6/30/2007  
Student: **Jennifer Bellot**  
Mentor: **Lois Evans**

*Parental beliefs about neonatal clinical trials*  
National Institutes of Health (F31-NR-00896)  
9/8/2005-8/31/2006  
Fellow: **Frances R. Ward**  
Sponsor: **Janet Deatrck**

*Physical activity determinants and behavior in older breast cancer survivors*  
American Cancer Society (CN-05-183-02)  
8/1/2006-7/31/2007  
Student: **Carrie M. Stricker**  
Mentor: **Neville Strumpf**

*Sharing clear health messages*  
Pfizer Scholars Grant  
7/1/2004-6/30/2006  
Mentor: **Linda Aiken**  
Fellow: **Mary Powell**

*Variables affecting heart failure self-care management in the workplace*  
Johns Hopkins University  
3/1/2006-5/31/2006  
Fellow: **Victoria S. Dickson**  
Mentors: **Barbara Riegel, Linda McCauley**



**M. Katherine Hutchinson**



**Loretta Sweet Jemmott**



**Sarah H. Kagan**



**Anne Keane**



**Lenore H. Kurlowicz**



**Mary Ann Lafferty-DellaValle**

# Publications

## Abraham, Ivo

Milisen, K., Abraham, I., Siebens, K., et al. representing the BELIMAGE Group (in press). Work environment and workforce problems: A cross-sectional questionnaire survey of hospital nurses in Belgium. *International Journal of Nursing Studies*.

Abraham, I.L., & MacDonald, K.M. (in press). Postapproval drug safety (Letter). Health Affairs. See also longer version (e-Letter): Abraham, I.L., & MacDonald, K.M. (accepted for publication). Of one \$56M apple and many uncounted oranges: Spending on postapproval drug safety. (<http://content.healthaffairs.org/cgi/eletters/25/2/429>).

Steeman, E., Moons, P., Milisen, et al. (including Abraham, I.) (in press). Implementation of discharge management for geriatric patients at risk for readmission and institutionalization. *International Journal for Quality in Health Care*. Abraham, I.L. (2006). Alzheimer's Disease. *Nursing Clinics of North America*, 41(1), xi-xiii.

Abraham, I.L., MacDonald, K.M., & Reel, S.J. (in press). The business plan: A development and management tool. In S.J. Reel & I.L. Abraham (eds.), *Business and legal essentials for nurse practitioners*. St. Louis, MO: Elsevier.

Abraham, I. L., Nadzam, D.M., & MacDonald, K.M. (in press). Managing quality of care by measuring performance. In S.J. Reel & I.L. Abraham (eds.), *Business and legal essentials for nurse practitioners*. St. Louis, MO: Elsevier.

Abraham, I.L., & MacDonald, K.M. (in press). Managing growth, thinking beyond the box: The (not-so-obvious) opportunities and the (not-so-hidden) dangers. In S.J. Reel & I.L. Abraham (eds.), *Business and legal essentials for nurse practitioners*. St. Louis, MO: Elsevier.

Reel, S.J., & Abraham, I.L., (eds.) (in press). *Business and legal essentials for nurse practitioners*. St. Louis, MO: Elsevier.

Rothberg, M., Abraham, I., Lindenauer, P.K., et al. (in press). Improving nurse to patient staffing ratios as a cost-effective safety intervention. *Medical Care*, 48, 785-791. Abraham, I.L., MacDonald, K.M., & Nadzam, D.M. (2006). Measuring the quality of nursing care to Alzheimer's patients. *Nursing Clinics of North America*, 41(1), 95-104.

MacDonald, K.M., Vancayzeele, S., Deblander, A., & Abraham, I.L. (2006). Longitudinal observational studies to study the efficacy-effectiveness gap in drug therapy: Application to mild and moderate dementia. *Nursing Clinics of North America*, 41(1), 105-117.

Abraham, I.L. (2006). Dementia and Alzheimer's Disease: a practical orientation. *Nursing Clinics of North America*, 41(1), 119-127.

Abraham, I.L. (2006). Alzheimer's Disease. *Nursing Clinics of North America*, 41(1), xi-xiii.

Siebens, K., Dierckx de Casterlé, B., Abraham, I., et al. (2006). The professional self-image of nurses in Belgian hospitals: A cross-sectional questionnaire survey. *International Journal of Nursing Studies*, 43, 71-82.

Abraham, I.L., & De Geest, S. (2005). Applied research. In J.J. Fitzpatrick & M. Wallace (eds.), *Encyclopedia of Nursing Research (2nd ed.)*. New York, NY: Springer.

Abraham, I.L., & Wasserbauer, L.I. (2005). Experimental research. In J. J. Fitzpatrick & M. Wallace (eds.), *Encyclopedia of Nursing Research (2nd ed.)*. New York, NY: Springer.

Abraham, I.L., & Wasserbauer, L.I. (2005). Quasi-experimental research. In J.J. Fitzpatrick & M. Wallace (eds.), *Encyclopedia of Nursing Research (2nd ed.)*. New York, NY: Springer.

Milisen, K., Foreman, M.D., Hendrickx, A., et al. (including Abraham, I.L.) (2005). Psychometric properties of the Flemish translation of the NEECHAM Confusion Scale. *BMC Psychiatry*, 5, 41-50.

Fulmer, T., Paveza, G., Vandeweerd, C., Guadagno, L., et al. (including Abraham, I.) (2005). Neglect assessment in urban emergency departments and confirmation by an expert clinical team. *Journal of Gerontology: A. Biological Sciences and Medical Sciences*, 60, 1002-1006.

## Aiken, Linda

Cheung, R., Aiken, L.H. (in press). Hospital initiatives to support a better-educated workforce. *Journal of Nursing Administration*, 36(7/8).

Clarke, S.P., Aiken, L.H. (in press). More nursing, fewer deaths. *Quality and Safety in Health Care*.

Aiken, L.H. (2006). Effects of workplace environments for hospital nurses on patient outcomes. In G. Lobiondo-Wood and J. Haber (eds.), *Nursing Research: Methods and Critical Appraisal for Evidence-Based Practice*. St. Louis, MO: Mosby.

Aiken, L.H. (2005). Nurses' Expanding Roles. In *Leading Change in the Health Care System*. Hartford, CT: Aetna.

Aiken, L.H. (2005). Optimizing the contributions of nurses to healthcare quality. *Japanese Journal of Nursing*, 30(4), 56-59.

Aiken, L.H. (2005). Nursing: The unfinished patient safety agenda. *AHRQ WebMandM*.

## Badellino, Karen

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Badellino, K. and Jin, W. (2005). Endothelial lipase and the regulation of HDL metabolism. In C.J. Packard, & D.J. Rader (eds.), *Advances in Translational Medical Science: Lipids and Atherosclerosis*. Philadelphia: Taylor & Francis.



Eileen V. Lake



Lisa M. Lewis



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Maria M. Magro



Kathleen McCauley



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### **Barnsteiner, Jane**

Barnsteiner, J.H., Burke, K.G., Rich, V.L. (2005). The state of the science on safe medication administration. *American Journal of Nursing*, 3(suppl), 1-56.

Barnsteiner, J., Walton, M.K. (2005). Milk depots, yarn trusses and pediatric nurses. *Urologic Nursing*, 25(3), 160-161.

Phillips, J., Barnsteiner, J.H. (2005). Clinical alarms: improving efficiency and effectiveness. *Critical Care Quarterly*, 28(4), 317-323.

### **Becker, Deborah Ellen**

Becker, D., Kaplow, R., Muenzen, P., et. al. (2006). Activities performed by acute and critical care advanced practice nurses: American Association of Critical Care Nurses Study of Practice. *American Journal of Critical Care*, 15(2), 130-148.

### **Bowles, Kathryn**

Bowles, K.H., Martin, K.S., Naylor, M.D. (2006). Using the Omaha system to describe what is inside the black box. *International Journal of Nursing Terminologies and Classifications*, 17(1), 21.

Bowles, K. (2005). Barriers and facilitators of collaborative management of heart failure. *The Gerontologist*, 45 (special issue II), 592-3.

Bowles, K.H. & Clark, K. Discharge planning. In M.D. Mezey, M.M. Bottrell, et. al. (eds.), *The Encyclopedia of Elder Care: The Comprehensive Resource on Geriatric and Social Care*. New York, NY: Springer.

### **Bradway, Christine**

Zurakowski, T., Taylor, M., & Bradway, C. (in press). Effective teaching strategies for the older adult with urological concerns. *Urologic Nursing*.

Scanland, S. & Bradway, C. (in press). The older postmenopausal woman. In S. A. Orshan (ed.), *Maternity and Women's Health Nursing*. Philadelphia, PA: Lippincott, Williams & Wilkins.

Bradway, C. & Barg, F. (in press). Developing a cultural model for long-term, female urinary incontinence. *Social Science and Medicine*.

Bradway, C. (2006). Evaluation and management of urinary incontinence in older adults (web-based module). Produced for the Health Resources and Services Administration (HRSA Contract No. HHS230200432030C): University of Minnesota School of Public Health. [Also found at: <http://breeze4.umn.edu/p78804604/>]

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### **Brown, Linda Phillips**

Brown, L., Bair, A., & Meier, P. (in press). Does federal funding for breastfeeding research target our national health objectives? *Journal of Pediatrics*.

### **Bruner, Deborah Watkins**

Konski, A., Watkins-Bruner, D., Feigenberg, S., et. al. (in press). Using decision analysis to determine the cost-effectiveness of intensity modulated radiation therapy in the treatment of intermediate risk prostate cancer. *International Journal of Radiation Oncology, Biology, Physics*.

Konski, A., Pajak, P., Movsas, B., et. al. (including Watkins-Bruner, D.) (in press). The disadvantage of men living alone participating in radiation therapy oncology group (RTOG) head and neck trials. *Journal of Clinical Oncology*.

Bruner, D.W. (in press). Measurement of vaginal length: Development and reliability of the vaginal sound – a gynecologic oncology group study. *International Journal of Gynecological Cancer*.

Konski, A., DeSilvo, M., Hartsell, W., et. al. (including Watkins-Bruner, D.) (in press). Continuing evidence for poorer treatment outcomes for single male patients: re-treatment data from RTOG 97-14. *International Journal of Radiation Oncology, Biology, Physics*.

Bruner, D.W., Barsevick, A., Tian, et. al. (in press). Randomized trial results of quality of life comparing whole abdominal irradiation and combination chemotherapy in advanced endometrial carcinoma: a gynecologic oncology group study. *Quality of Life Research*.

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Konski, A., Sherman, E., Krahn, M. et. al. (including Watkins-Bruner, D.) (2005). Economic analysis of a Phase III clinical trial evaluating the addition of Total Androgen Suppression (TAS) to radiation versus radiation alone for locally advanced prostate cancer (RTOG 86-10) *International Journal of Radiation Oncology, Biology, Physics*, 63(3):788-94.

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Hartsell, W.F., Scott, C.B., Bruner, D.W., et. al. (2005). Randomized trial of short versus long-course radiotherapy for palliation of painful bone metastases. *Journal of the National Cancer Institute*, 97(11):798-804.

Watkins Bruner D., Linton, S., Konski, A., et. al. (2005). Successful strategies for African American recruitment to prostate cancer research. *International Journal Cancer Prevention*, 1(4): 295-306.



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**Mary D. Naylor**



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## Cimiotti, Jean

Cimiotti, J.P., Haas, J.P., Saiman L., et. al. (in press). The influence of staffing on bloodstream infections in the neonatal intensive care unit. *Archives of Pediatrics & Adolescent Medicine*.

Cimiotti, J.P., Haas, J.P., Wu, F., et. al. (in press). The prevalence and clinical relevance of *Staphylococcus warneri* in the neonatal ICU. *Infection Control and Hospital Epidemiology*.

Cimiotti, J.P., Quinlan, P.M., Larson, E.L., et. al. (2005). The magnet process and the perceived work environment of nurses. *Nursing Research*, 54(6), 384-90.

Feja, K.N., Wu, F., Roberts, K., et. al. (2005). Risk factor for candidemia in critically ill infants: a matched case-controlled study. *Journal of Pediatrics*, 147(2), 156-61.

Milislavljevic, V., Wu, F., Cimiotti, J., Haas, J., et. al. (2005). Genetic relatedness of *Staphylococcus epidermidis* from infected infants and staff in the neonatal intensive care unit. *American Journal of Infection Control*, 33(6), 341-347.

Larson E.L., Cimiotti J.P., Haas J., et. al. (2005). Gram-negative bacilli associated with catheter-associated and non-catheter-associated bloodstream infections and hand carriage by healthcare workers in neonatal intensive care units. *Pediatric Critical Care Medicine*, 6(4), 457-461.

## Clarke, Sean

Baerholdt, M., Clarke, S.P. (2006). Internet research in an international context. *Applied Nursing Research*, 19(1), 48-50.

Clarke, S.P. (2006). Organizational climate and culture factors. *Annual Review of Nursing Research*, 27, 255-272.

Clarke, S.P. (2006). Commentary on West et. al.: Overcoming the barriers to patient-centered care. *Journal of Clinical Nursing*, 15(5), 645-646.

Clarke, S.P., Aiken, L.H. (2006). More nursing, fewer deaths. *Quality and Safety in Health Care*, 15(1), 2-3.

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Clarke, S.P. (2005). Staffing the organization for excellence. In *From front office to front line: Essential issues for health care leaders*. (113-144). Oakbrook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations.

## Coleman, Christopher

Coleman, C.L., Holzemer, W.L., Eller, L.S., et. al. (in press). Gender differences in the use of prayer as a self-care strategy for managing symptoms in African Americans living with HIV/AIDS. *Journal of the Association of Nurses in AIDS Care*.

Coleman, C.L. (in press). Health beliefs and high risk sexual behavior among HIV infected African American men. *Applied Nursing Research*.

Cederbaum, J.A., Coleman, C.L. (in press). HIV prevention programming: understanding HIV risk reduction needs of African American substance abusing men. *Journal of the Association of Nurses in AIDS Care*.

Coleman, C.L. (2006). Spirituality: an ongoing search for meaning: implications for mental and physical health. *Issues in Mental Health Nursing*, 27(2), 113-115.

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Coleman, C.L., Guest Ed. (2006). Special issues: Spiritual and religious activities: Implications for improving mental health. *Issues in Mental Health Nursing*, 27(2), 113-213.

Kemppainen, J., Eller, L.S., Bunch, E., et. al. (including Coleman, C.L.). (2006). Strategies for self-management of HIV-related anxiety. *AIDS Care*, 18(6), 597-607.

Coleman, C.L., Hummel, D. (2005). Sexual orientation a predictor of depressive symptoms among HIV infected Black men: A descriptive correlational study. *Archives in Psychiatric Nursing*, 19, 236-241.

## Compher, Charlene

Compher, C., Frankenfield, D., Roth-Yousey, L., et. al. (2006). Best practice methods to apply to measurement of resting metabolic rate in adults, a systematic review. *Journal of the American Dietetic Association*, 106(6), 881-903.

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Barbara J. Riegel



Ann E. Rogers



Cynthia C. Scalzi

Compher, C. (2005). Hepatic P-glycoprotein changes with total parenteral nutrition. *Journal of Parenteral and Enteral Nutrition*, 28(1), 63.

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### **Cotter, Valerie T.**

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### **Cuellar, Norma**

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Dobson, A. & Cuellar, N. (in press). The use of ropinirole in RLS: Implications for advanced practice nurses. *Nurse Practitioner*.

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# Where Science Leads

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