Pain Tolerance in Opioid and Cocaine Abusers

A new wave of researchers examine the biological underpinnings of nursing science.
MESSAGE FROM THE DEAN

When I was appointed dean of the UCLA School of Nursing almost six years ago, one of my priorities was to build a strong cadre of faculty conducting research homing in on the biological underpinnings of nursing science. Nursing science is relatively new compared with other health science disciplines; as a result, it has taken time to expand on the early emphasis on describing and evaluating clinical approaches. But clearly, a science-based profession needs to understand not only the best approaches to patient care, but also the processes underlying illness and health. By shedding light on these processes through laboratory experiments and subsequent clinical trials, biological researchers provide the necessary initial spark that ultimately leads to advances in the patient-care setting.

Why should nurses conduct such research when there is plenty of it going on in basic-science departments outside of nursing? Because we look at these laboratory questions from a unique perspective influenced by our patient-centered training. While a great deal of laboratory research is conducted by non-clinicians focusing on questions of uncertain clinical relevance, nurse scientists are always guided by a desire to solve real-life problems.

As this issue of UCLA Nursing makes abundantly clear, we now have an excellent group of biological and physiological researchers in place. The value of this group goes beyond the individual research efforts, which are certainly important and are described beginning on page 8. These excellent faculty can bounce ideas off of each other. They serve as invaluable resources to our more clinically oriented faculty, and vice versa. And they are vital assets in ensuring that our students receive a well-rounded education focusing not only on clinical phenomena, but also on the mechanisms behind such phenomena.

Moreover, these faculty give our school the infrastructure to encourage like-minded nurses to pursue doctoral studies here. With that in mind, we will establish a Bioscience Research Area within our Ph.D. program beginning next fall. This will provide a formal infrastructure and curriculum so that students can earn a Ph.D. while conducting laboratory-based research…in the School of Nursing, where such research is becoming integral to the development of our science-based profession.

Marie J. Cowan, R.N., Ph.D., F.A.A.N.
PARTING WORDS
Excerpts from speeches at Commencement, Spring 2002.

THE BIOLOGICAL UNDERPINNINGS OF NURSING SCIENCE
A cadre of faculty and doctoral students at the school are breaking tradition by bringing a nursing perspective to investigations of the mechanisms that underlie clinical outcomes.

Peggy Compton: Understanding the Neurochemistry of Pain and Addiction
Lynn Doering: Studying the Impact of Depression on Patients’ Immune Systems
Karen Gylys: Determining What Goes Wrong with Cells in Early Alzheimer’s
Roberta Oka: Finding Relief for Patients Experiencing Peripheral Arterial Disease
Wendie Robbins: Identifying Exposures That Increase Reproductive Risk
Donna Vredevoe: Homing in on the Role of Inflammatory Processes in Heart Failure
Dorothy Wiley: Examining the Immunological Characteristics of Viral Diseases’ Effect on Humans
Mary Woo: Changing the Understanding of Heart Failure Causes — and, Perhaps, Treatment
Doctoral Students Mina Attin and Leah FitzGerald
New Bioscience Ph.D. Program

THE REWARDS OF GIVING
Scholarships at the UCLA School of Nursing
Retirement Income You Can Depend On
**PARTING WORDS**

Excerpts from speeches at Commencement, Spring 2002

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**Theodora Max-Peters**

Representing the A.D.N.-B.S.-M.S.N. Class

Do not go where the path may lead. Go instead where there is no path and leave a trail... (Emerson)

Is this not the most beautiful campus you have ever seen in your life? I knew I was home when on my first day of class I saw the tree that I used to swing from at my nursery school in my native land of Sierra Leone, West Africa.

A metaphor used in one of our secret societies in Sierra Leone is that to be physically present in the initiation grove is to be “under water.” Seeds germinate in water. Ancestral information imparted in the initiation grove allows the learner to root and flower. My experience at the UCLA School of Nursing has been akin to this seed that fell on good ground: absolutely beautifully, enriching, fulfilling, and still blossoming! The possibilities at this university are infinite, and what a privilege it has been for the opportunity to attend! It has been said that you can’t teach an old dog new tricks. I am happy to report to you today that yes, you can!

Our experience has been like a roller-coaster ride. We got in the program all excited, and then we dug in and hung on for dear life until it was over. First we were thrown out into the field by Dr. Lewis to figure out what advanced practice nursing was all about. Then we came back and had roundtable discussions about family practice, cultural diversity, nursing research and nursing management. We made it through the trials of chemistry by the skin of our teeth. By the time we got to public health nursing it felt like being let out of jail! The ride was rigorous but the dividends will last a lifetime.

I would like to thank the nursing faculty and staff whose tutelage enabled us to achieve such an excellent education.

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**Honore Voorman**

Representing the M.S.N. Class

I remember sitting in a “welcome to the big time” informational meeting and hearing from our new instructors how special we were.

Special? Confused was a better word.

I found that many of us knew we wanted to move on in our professional lives to increase our knowledge and accountability, whether at the administration, clinical nurse specialist, or nurse practitioner level. Yet, many of us weren’t sure exactly what the degree meant; it was just time to move forward. So we all began a journey that would take us to a destination we had never arrived at before. From then on, we have all evolved into something that none of us could ever have predicted. All of us have faced the challenges of this master’s program and survived.

I would like to thank the faculty. Here at UCLA we are blessed to have a faculty roster that reads like the Super Bowl of nursing. We have been mentored by nursing’s elite. You have touched each and every one of us individually. Look into our eyes, and see yourselves. You have given the best of your wisdom, your experience, your mentorship, and a lot of love to this class. Thank you for your thoughtful guidance. We can repay you.

We are the future. We are the next faculty, authors, investigators, administrators, inventors, and innovators. We have sacrificed our time with family and friends, and sometimes our sanity, to realize our goals. These past two years have brought us through hours of memorisation, studying, writing, and testing... until that one day in clinical, that moment when it all comes together and you say to yourself, I really am an advanced practice nurse.

You have reached the end of this journey. It is time to pick a new destination because, my fellow colleagues, we have arrived!

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**Dorothy Tullman**

Representing the Ph.D. Class

In thinking about the process of earning a Ph.D., two words, privilege and responsibility, have been running over and over in my mind.

We have been granted the privilege of working toward a Ph.D. at one the world’s top universities. Very few, if any, of us in caps and gowns today were not recipients of financial assistance. Many of us would not be here today without those traineeships, scholarships, grants and fellowships. This assistance was a huge privilege and I believe we have the responsibility to give back to the university what we received.

The mentoring we received here at UCLA has been phenomenal. Nationally and internationally known faculty took hours and hours from their own scholarly activities to help us with ours. We were given home phone numbers, cell phone numbers, and pager numbers to contact them at any time. What a privilege. It is now our responsibility to go and do likewise.

Our research and writing skills have grown exponentially during out time at UCLA. Some of us are in the employ of institutions with the adage of “publish or perish.” But beyond that motivation, we have a responsibility to utilize those skills to expand the knowledge base of nursing and to help meet the health needs of our communities, our country and our world.

Our worldview and sense of community have expanded while we studied here. What greater way to honor that worldview than to volunteer time to meet health needs worldwide.

Finally, ending this Ph.D. journey gives us pause. I believe we have the responsibility to acknowledge that when all is said and done, it is not the degree in and of itself that is so valuable. It is what we have become, what we have learned, and where we go from here.
Events

Chironians Scholarships—Thanks to the kind philanthropy of its annual fund donors, the UCLA School of Nursing is once again proud to be able to award five students Chironians Scholarships. Front row, left to right: Chironian Board members, Dr. Mary Ann Preach (seated) and Dr. Mary Ann Lewis. Back row, left to right: Cathy Tucker (Board Chair), Kay Baker (Associate Dean for Student Affairs and Board Member), and student scholarship recipients Rosemarie Lara, Allison Curtis, Rosie Saran, Michelle Faraday, and Amanda Harris.

For the Record
The Outstanding Faculty Award recently received by Dr. Colleen Keenan marked the second time a UCLA School of Nursing faculty member has been awarded the prestigious honor. The late Dr. Betty Dambacher was the school’s first recipient.

In Memoriam

Mary Ann Preach died quietly in Little Company of Mary Hospital in Redondo Beach, Calif., after a lengthy illness. She came to UCLA in 1962, where she earned her B.S.N. and her M.S.N. in 1963. She obtained her D.Ed. from Nova University in 1984. Mary Ann was a professor of nursing at El Camino College from 1963 until her retirement in 1992. She was actively involved in the California Nurses Association at the district and state levels. Her relationship with the UCLA School of Nursing continued with her active participation in the Chironians fund-raising group, of which she was the chair of the board for the past six years.

Mary Ann saw the world, literally, with her most special friend, Dr. Howard Fishel, traveling with him to places that included Alaska, Europe, Africa, and an “around the world” trip. She will be sorely missed by her remaining family: her brother, Michael Preach of Port Hueneme; her sister, Maggie Davies of Bonita, Calif.; her sister-in-law Patty Preach of Manhattan Beach; and Dr. Howard Fishel of Torrance.

Two years prior to her death, Mary Ann donated $50,000 to the school in unrestricted funds. It is requested that memorial donations be made to the UCLA School of Nursing, “Mary Ann Preach Endowment,” P.O. Box 951702, Los Angeles, CA 90245.

Dorothy Cabniss Lowe, 1908-2002
Dorothy Cabniss Tanner Lowe died July 9, 2002, in Cushing, Okla., following a colorful, interesting and rewarding nursing career. In 1930 she was called to Long Beach for special duty at Community Hospital following the 1933 earthquake. From there she was called to the Los Angeles County General Hospital during a polio epidemic; she contracted polio herself and was told she would never walk again. After many years of recuperation and therapy, she did walk, and attended UCLA where she obtained her Bachelor of Science degree in 1940, walking with leg braces and crutches.

After World War II, Dorothy resumed her education and received her Master of Science in Education degree from Long Beach State University, after which she taught LPNs at Compton College until her retirement from teaching in 1968. But, due to the nursing shortage and her outstanding reputation, she was called after her “retirement” to work at two rehabilitation-convalescent centers in Long Beach as the supervisor of nurses for 20 years, and then part-time thereafter until finally retiring for good at age 87 in 1995. Her nursing license was kept current in both California and Oklahoma until the day she died.
Dr. Mary Woo’s investigations into the relationship between autonomic-cardiac interactions and sudden death risk have broken new ground.

Among other things, the UCLA School of Nursing associate professor developed a new method of heart rate variability analysis, called Poincare plots, that represented the first heart rate variability technique to be an independent predictor of sudden death risk in advanced heart failure patients. She is now examining the relationship between sleep, heart rate variability and brain activity. Her methods, including mapping the central nervous system response to autonomic challenge in heart failure patients using magnetic resonance imaging of the brain, have led her to the important discovery that gray matter cell loss occurs in specific brain sites in advanced heart failure patients.

But despite these impressive credentials, Woo and a number of other equally impressive researchers at the school continue to encounter surprised looks from some observers who are not accustomed to seeing nurse scientists conducting research outside the realm of the psychosocial.

“It’s amazing how many physicians and physiologists come to me and say, ‘You’re a nurse and you’re doing this?’ ” observes Woo, the school’s associate dean for research. “My response is, ‘Of course, and we need more of it.’ Psychosocial issues are important, but nurses do not have purely psychosocial practices. The vast majority of our patients are coming to us for biologic/physiologic problems, and it’s critical that we have the science in place to understand what impacts our interventions are going to have.”
The traditional scope of nursing research into education and strictly clinical issues is unnecessarily limited, agrees Dr. Karen Gylys, a neuroscientist and assistant professor at the school who focuses on the early biochemical events in Alzheimer’s disease. “If nurses take care of people who are ill, our studies should involve the entire spectrum of biomedical research,” she asserts.

Although she is a basic researcher, Gylys points out that her background as a practicing nurse continues to influence her work. “I approach everything I do, even in the laboratory, as a nurse with an interest in fundamental clinical issues,” she says. “Having an understanding of the clinical issues that other basic scientists don’t necessarily have is a great strength.”

Even when participating in basic research with other clinicians, nurses add something unique to the collaboration, including a focus on the whole patient – both physiological and psychosocial. Explains Dr. Roberta Oka, an assistant professor at the school who is working with physicians on a laboratory study involving the impact of the natural amino acid L-arginine on circulation in peripheral arterial disease: “What I bring is a focus on not just the mechanism, but also how it affects the patients’ quality of life. Just because we change the physiology doesn’t mean we will actually affect what people can do and how they feel.”

Dr. Peggy Compton, whose neurophysiological research on pain and opioid addiction has led to an increased understanding of the role of individual differences in human pain and addiction responses, believes it was her training as a nurse – she was a clinical nurse specialist in a surgical hospital ward – that enabled her to make these important discoveries. “Previously, there was pain literature on how opiates work and a separate addiction literature on how opiates work,” Compton says. “It took a nurse – who looks at patients in their entirety, and whose job it is to manage addicts’ pain – to make the connection.”

Nurses’ natural role as conduits who interface with a variety of health care disciplines gives them another advantage when it comes to basic research, notes Woo, who says she would not have ventured into the research areas that led her to the important findings mentioned above if she had not had conversations with researchers from other departments on campus. “Our faculty in particular are very willing to go outside of our school and our profession and collaborate with researchers from other fields,” she explains.

Because the field of biological nursing research is relatively new, it has taken time to develop the critical mass of personnel and experience needed to attract sufficient funding. That day has finally arrived, Woo contends. “Even 10 years ago, most schools of nursing were lucky to have one biologic researcher,” she says. “Now most have several, and our school is fortunate to have a core group with very strong research trajectories.”

On the following pages, we highlight the research of eight UCLA School of Nursing faculty members and two doctoral students who fit this category. While they have different focuses, they share an interest in biological and physiological mechanisms that underlie clinical outcomes.
Peggy Compton: Understanding the Neurochemistry of Pain and Addiction

Dr. Peggy Compton has broken new ground with research exploring the neurochemistry of human pain and addiction – specifically the excitatory amino acids and endogenous opioids that are active in both processes. Pain and addiction are both critical areas of nursing, Compton notes – pain being among the most common symptoms suffered by patients, and addictive disease being a strong predictor of diminished health. Compton’s contribution has been to show how the presence of one affects the expression of the other, in that both are mediated by mu-opioid receptor activation.

Compton, who treated addicted patients as a clinical nurse specialist, was motivated by her desire to provide adequate pain relief to methadone-maintained patients, who are at high risk for suffering the painful consequences of addictive disease, as well as for pain undertreatment. “Patients who are addicted to opiates have decreased tolerance for pain, so managing that pain is extremely challenging,” she says. Beginning at a time when the literature was sparse, Compton initially demonstrated a significant correlation between methadone maintenance and decreased pain tolerance in known opiate addicts.

Since that time, she has examined the directionality of this relationship: Does opioid use cause the lower pain threshold, or are opiates particularly appealing to individuals with poor pain tolerance? Following this line of inquiry, Compton has studied the genetic differences in human pain and addiction response, describing the role of the mu-opioid receptor gene in both. She has also evaluated the impact of methadone detoxification on pain tolerance (initial results suggest that tolerance is improved as patients are detoxed), and is currently comparing three different pain medicines in an effort to determine the mechanisms by which addicts have increased sensitivity to pain.

“Understanding these underlying mechanisms can also help non-addicts,” Compton says. “These changes in addicts’ pain systems may also be taking place in patients with chronic pain who are taking opiates for pain relief. One major question is how to tell whether we’re turning these patients into addicts.” By learning more about the neurochemistry of pain and addiction, Compton hopes to provide answers.

In 1994, Compton found that opioid and cocaine abusers have a lower pain threshold than ex-abusers as measured by the length of time they are able to tolerate cold-pressor pain.
Lynn Doering: Studying the Impact of Depression on Patients’ Immune Systems

At the interface between biologic and behavioral aspects of patient care, Dr. Lynn Doering is studying how depression affects physiological indicators related to the immune system. Initial evidence suggests that people with depression have reduced immune function. Doering is focusing on these patients’ reduced number of so-called natural killer cells – cells that play a role in the immune system’s first line of attack when it recognizes foreign agents such as viruses, tumor cells and certain bacteria.

She has homed in on women who have had cardiac bypass surgery – a traditionally understudied group given that, because the severity of cardiac disease in women was not always well appreciated, past research has focused primarily on men. “We know these women tend to show symptoms of depression following surgery, but little is known about the nature of that depression or the impact it has on their physical recovery,” Doering explains. Doering is assessing women for depression immediately after cardiac bypass surgery and periodically after they leave the hospital, comparing the function of natural killer cells in depressed women with non-depressed women and tracking the patients to determine whether more infections and infectious complications occur in women who are depressed than in women who are not.

She has found that as many as one in five women suffer major or minor depression within the first month following bypass surgery, and that many women feel OK mentally at the time they leave the hospital but then take a downturn at some point after returning home. “These women need more assessment and follow-up,” Doering says. “They also need to know that these things happen frequently and to be reassured that things will get better and that they’re not the only ones who feel like they’ve been hit by a truck.” One arm of Doering’s research includes a pilot study in which the women identified with depression are treated using cognitive behavioral therapy, a present-oriented, problem-focused approach. “This helps people restructure their view of a problem and see it in a different way,” Doering explains. “It fits very well with the kinds of things nurses do.”
Karen Gylys: Determining What Goes Wrong with Cells in Early Alzheimer’s

Researchers know all too well what the brain of a person with Alzheimer’s disease looks like – but only after years of damage has been done. “Typically we see the brain of someone who has died of the disease, which is approximately 30 years after disease onset,” says Dr. Karen Gylys. Far less is known about what goes wrong in cells in the disease’s earliest stages. Gylys’ lab is seeking information about these early processes – information that would be extremely valuable given that current therapies for Alzheimer’s are aimed at late-stage patients (which is when the bulk of diagnoses take place), and have relatively modest effects. “What everyone wants are therapies that will block development and progression of Alzheimer’s disease symptoms, but unfortunately, very little is known about the early pathophysiologic pathways,” Gylys notes.

In collaboration with researchers at the Sepulveda VA Medical Center, Gylys is exploring the feasibility of two potential treatment strategies for Alzheimer’s disease. One is to enhance clearance of amyloid beta, the “bad-guy” protein that builds up in Alzheimer’s lesions; the second is to prevent “synaptopathy,” the loss of synapses in the terminal regions of neuronal cells. These approaches represent two of the six broad therapeutic strategies recently identified in a *Science* article as priorities for Alzheimer’s disease researchers to explore.

Gylys’ lab uses animal models and postmortem human tissue to examine what goes wrong and the sequence of events that take place when amyloid begins to build up in brain cells. “In the early stages, we think that some forms of the amyloid beta peptide are cleared by the brain and some aren’t,” she says. “A central question for us is, what are the details that affect whether the brain is able to break it down, or whether it builds into plaques.” Scientists have also learned that synapses are lost before cells actually die. Targeting these “nerve terminals,” Gylys and colleagues have focused on how the gene apolipoprotein E influences the way neurons respond to the amyloid beta peptide. “One of the theories for why ApoE is associated with Alzheimer’s has to do with it being part of a clearance mechanism,” Gylys explains. Preliminary findings from her lab indicate that ApoE enhances uptake of the amyloid beta protein into nerve terminals – a central hypothesis among dementia researchers for years, but one that had not previously been tested.
Peripheral arterial disease (PAD), a manifestation of atherosclerosis, is a problem of poor blood flow in the arteries that is particularly prevalent among the elderly. Approximately one in four individuals over 70 is said to have it, but studies suggest PAD is underdiagnosed, so the actual prevalence is probably higher. The most common complaint among people with PAD is claudication, or pain in the legs while walking as a result of the poor circulation. But L-arginine – an over-the-counter amino acid commonly sold at health food stores and other outlets – has shown promise as a remedy, both in animal models and in improving circulation for patients with coronary artery disease. Studies of the effects of L-arginine therapy for PAD have been minimal. Now, Dr. Roberta Oka is collaborating on research to see whether L-arginine can improve PAD patients’ circulation, walking ability and quality of life, and to isolate the most effective dose.

L-arginine is the precursor to nitric oxide, the most potent vasodilator in the body. Oka is testing its impact at 3, 6, and 9 grams (as well as using a placebo group). In the future, she intends to address whether lowering lipids in PAD patients with high LDL cholesterol produces an effect as powerful as L-arginine, or whether arginine produces an added effect even when lipids are lowered.

Oka has long had an interest in the impact of lifestyle modification on individuals with cardiovascular disease. As a postdoctoral scholar, she attended a talk in which animal studies with L-arginine were described. “I was interested in exercise capacity for heart failure patients, and I was intrigued by the idea that you could give people a dietary supplement and improve their ability to walk,” she recalls. After determining the impact of L-arginine on individuals’ circulation and spelling out the most effective dosages, she hopes to help establish the supplement as a tool that could be prescribed to patients. “To do this, we need to understand why it works and who it works for, and to determine whether it not only changes the physiology of the blood flow, but also has an impact on people’s quality of life and their ability to do things,” she says.

Oka is confident that L-arginine can make a difference for a population that has minimal treatment options. “We’ve already seen the benefits in clinical practice,” she notes. “We just need to gain a better understanding of which individuals will benefit.”
Wendie Robbins: Identifying Exposures That Increase Reproductive Risk

As a nurse practitioner working in rural public health clinics, Dr. Wendie Robbins noticed a disparity in families who had experienced poor reproductive outcomes that made her suspect links to environmental or occupational exposures. “I began to really think about the potential influence of the environment on reproductive health,” she says. “We would travel long distances through flat desert to get to one particular clinic, and as we approached the community you would see a plume of dense smoke coming from the main industry in town, a copper smelter, drifting over the surrounding homes. You couldn’t help but wonder whether some of the clinical outcomes you were encountering in the community were related to that particular exposure.” Robbins decided that pursuing a career as a nurse scientist would enable her to make contributions that might prevent many tragic reproductive outcomes from occurring and promote health for parents and children.

At her UCLA School of Nursing lab, she evaluates human sperm cells for chromosomal abnormalities resulting from environmental, occupational or lifestyle exposures. Her studies have looked at the effects of organophosphate pesticides, air pollution, tobacco smoke, alcohol, caffeine, cancer chemotherapeutics and the antiretroviral agents used for HIV infection. Among other things, she has found that certain chemotherapy drugs increased aneuploidy – an abnormal number of chromosomes – in sperm cells for a period of time after treatment. Conceptions resulting from these sperm cells could suffer adverse health problems. Robbins found that these patients’ sperm chromosomes returned to pre-treatment levels within six months following therapy. She has also found that exposure to air pollution and tobacco smoke can lead to aneuploidy of the sex chromosomes – subtle changes suggesting the need for further study. Aneuploidy can be transmitted to the offspring through sperm resulting in defects such as Down syndrome. It is a leading cause of miscarriages but if the pregnancy survives, it is the largest single genetic cause of mental retardation and developmental disabilities in humans.

While continuing to conduct research looking at chromosome numbers in sperm cells, Robbins’ group has recently expanded to examine oxidative damage in sperm and how that affects the way DNA chromatin is packaged in the mature sperm cell. “This is very important because the way the packaging occurs at the beginning of sperm maturation affects the way unpackaging occurs in the egg and the way genes are then transcribed to guide normal development of the embryo,” she explains. One of Robbins’ Ph.D. students, Karen Young, is now looking specifically at oxidative damage in sperm resulting from air pollution. Meanwhile, Robbins is heading a group studying sperm cells in relationship to occupational exposure to boron in China.

“By better understanding people’s reproductive risks from various exposures, we can take measures to reduce those risks and prevent negative reproductive effects from occurring, and promote healthy outcomes for parents and children,” she says.
Dr. Donna Vredevoe has found that fully one-third of patients with advanced heart failure have deficiencies in natural killer lymphocytes – cells important in immunity to tumors and viruses. Her recent studies have sought to determine the causes of this deficiency. She has found one particularly interesting culprit: interleukin 6, an inflammatory cytokine that is significantly elevated when natural killer cell activity decreases.

“Whenever you’re dealing with an in vivo system you’re not likely to get a clean cause-and-effect finding,” Vredevoe says. “But inflammatory processes seem to be significant contributors to the immunodysfunction.”

The idea that inflammatory processes may be involved in some forms of heart failure adds support to a hypothesis that has been advanced recently by other researchers, some of whom have gone so far as to suggest that a certain amount of heart failure could be prevented with the use of antibiotics. “It’s a leap, but that’s where our research and the research of others is beginning to go,” Vredevoe says. “It’s an exciting direction. Almost all of the focus up to now has been on preventing cholesterol and other plaque-building factors that create an inflammatory-type response in the blood vessels. Although it’s important to continue that focus, perhaps there are other inflammatory processes that are also contributing, and if we can attack those, it could mean a whole new approach.” Even in the best-case scenario, Vredevoe doesn’t expect the anti-inflammatory approach to be effective for all forms of heart failure. But it may have particular value, for example, in some types of cardiomyopathy whose slow build-up appears to be related to inflammation.

Vredevoe is currently focusing on the molecular mechanisms underlying the inflammatory interaction. Once that’s understood, she intends to explore whether certain individuals are genetically predisposed. “So much of the cytokine production is ultimately controlled by genes,” she explains. “It’s possible that people who are hyper-responders are more susceptible to not only heart failure, but also other diseases, including certain cancers, in which IL-6 has been found to be elevated.”
Born 1945

Dr. Dorothy Wiley focuses on the immunological characteristics of how particular viral diseases affect humans. Her interest in the immunopathogenesis of disease began more than a decade ago, when she did her doctoral dissertation on the Multicenter AIDS Cohort Study. At the time, there was debate as to whether the progression of HIV disease was totally dependent on the virus. “Most experts felt that there was little you could do behaviorally to affect the course of your disease,” Wiley recalls. That thinking changed with subsequent research, including Wiley’s own work in defining the rapid loss of CD4 cells that was more likely to occur in men with high ejaculate exposure.

Today, Wiley’s research group is focused on the immunological intersection of HIV and human papillomavirus (HPV). She is the principal investigator of a large trial of a vaccine for a sexually transmitted disease, and is also conducting an anal cancer screening study, looking at the occurrence of abnormal anal tissues that often result from HPV. Her current interest includes following HIV-infected men who have or have not been taking the highly active antiretroviral drug cocktail over time to determine whether certain immunological characteristics affect their risk for developing cancers.

“We’ve known that women with HIV infection tend to develop high-grade dysplasias, or very abnormal Pap tests,” Wiley says. “Now, we’re interested in whether there is an association in gay men between inter-anal papilloma virus infection and anal cancers.” It’s unclear, she explains, why some investigators are finding that HIV-infected men who take the drug cocktail seem to be more likely to show the negative effects of the papilloma viruses. Understanding these relationships is the focus of Wiley’s most recent work.
Mary Woo: Changing the Understanding of Heart Failure Causes — and, Perhaps, Treatment

Using magnetic resonance imaging studies, Dr. Mary Woo and colleagues are altering the understanding of heart failure pathophysiology and, potentially, therapy. Heart failure is the number-one discharge diagnosis for patients over the age of 65; it is the only cardiovascular disease for which morbidity is not declining in the United States. “Now that we have these great medications and devices, patients are less likely to die of heart failure than they were previously, but instead they’re experiencing sudden death,” Woo says. “Researchers who have tried to understand why this is the case have been frustrated.”

But, using MRI to study the relationships between sleep, brain function, and heart failure, Woo came across what may turn out to be a major lead: a significant loss of gray matter in certain regions of the brains in heart failure patients. For example, major brain-cell loss occurs in the deep cerebellar nuclei, which is primarily involved in controlling breathing and motor coordination; and in the insula lobes, areas that control the autonomic nervous system. These findings raise tantalizing questions for further study. Disturbances in breathing during sleep have been correlated with mortality; the cerebellar cell loss provides a possible explanation. Changes in the autonomic nervous system are also correlated with mortality, “but we never knew where those changes were occurring,” says Woo. “We tended to look at the periphery, but if in fact the changes are related to the severe damage that has occurred in the insula lobes, that might explain why these people are dying.”

Particularly intriguing is the insight Woo’s findings offer on the efficacy of angiotensin-converting enzyme (ACE) inhibitors. These drugs have conferred significant survival benefits to heart failure patients for reasons that have never really been understood, says Woo. “Hydralazine lowers blood pressure just as well, but it doesn’t provide the same survival benefit,” Woo notes. “The reason, it turns out, may be that ACE inhibitors cross the blood-brain barrier while hydralazine does not. Perhaps to affect survival, you need to affect these areas of the brain.” Woo believes that if she can verify in a large sample that ACE inhibitors are influencing the brain in the ways she suspects, it might point researchers toward a new class of drugs that could improve survival, and possibly even disease progression, in heart failure patients.
Doctoral Students Go Back to Basics To Better Understand Clinical Problems

As a clinical nurse treating patients in cardiac electrophysiology at Cedars-Sinai Medical Center, Mina Attin became interested in the mechanism underlying the cardiac arrhythmias she saw in her patients. “When a patient has persistent symptoms despite any treatment, you want to know why you couldn’t help that person,” she says. “But in the clinical environment, you are too busy treating patients to have time to sit down and investigate why they are having that problem in the first place.”

So, after more than three years of working with patients in invasive cardiac electrophysiology as well as helping to implement clinical trials with anti-arrhythmic medications and defibrillation, Attin enrolled in the UCLA School of Nursing’s Ph.D. program, where she can pursue the answers to fundamental questions underlying her patients’ pathologies. Attin, a third-year doctoral student, is studying calcium ion channels in an effort to improve understanding of the mechanisms behind ventricular fibrillation, a cause of sudden cardiac death. “Sudden cardiac death is a complex problem,” she explains. “In research, we are able to step back and think about what’s going on. One study or one researcher won’t provide the answer, but we can attempt to piece it together, step by step, through basic studies.”

Leah FitzGerald came to the doctoral program under experiences similar to Attin’s. A nurse practitioner for seven years with the Digestive Disease Center at UCLA, FitzGerald was seeing patients with functional gastrointestinal disorders such as irritable bowel syndrome (IBS). “I realized that I had hit the glass ceiling,” she says. “I would have some really good ideas for research, but without the doctorate, I couldn’t get funding to test them.”

FitzGerald is studying the stress response in women with IBS. Specifically, she is comparing the spinal fluid in IBS patients and controls to determine whether certain hormones known to be related to stress – including one that has never been measured in this patient population – are elevated in IBS. Her results could provide new targets for drug development.

Both FitzGerald and Attin credit the school’s faculty with keeping them on track and grounded through the challenging program, particularly their advisors, Dr. Donna Vredevoe and Dean Marie Cowan, respectively. “I could have all of the necessary qualities – persistence, motivation, high-quality work – but if I didn’t have the faculty’s support, I don’t think I could survive in the program,” Attin says.
School Meets Growing Demand By Establishing Bioscience Ph.D. Program for Fall 2003

To meet the growing interest among students and an increasing demand among granting agencies and the community, the UCLA School of Nursing has established a Bioscience Research Area within the Ph.D. program, giving doctoral students the opportunity to gain special expertise in physiological research.

When the school’s bioscience Ph.D. specialty program begins enrolling students next fall, it will be the first program of its kind within a school of nursing, says Dr. Peggy Compton, a member of the school’s faculty who has led the effort in creating the program.

“We’re understanding a lot more about the cellular and molecular mechanisms of disease, as well as the role of genetics,” says Compton. “As a result, nurse scientists need to become more fluent in the biological sciences. This program will train the next generation of leading nurse scientists in these important fields, and will ensure that knowledge in these areas is not obtained in isolation but in the context of our appreciation of the human being as a whole.”

In recent years, there has been a consistent proportion of doctoral students at the school with physiological dissertation studies, Compton explains. Meanwhile, research funding agencies have increasingly sought to award grants to nurses asking biological questions. Under Dean Marie Cowan, the school has also increased the number of bioscience-oriented faculty.

“The idea is to develop a curriculum that makes it easier for a person to get a Ph.D. in nursing while conducting laboratory-based research,” says Dr. Karen Gylys, a nurse and member of the school’s faculty whose doctorate is in neuroscience. “It’s very important that the biological underpinnings of the clinical events nurses encounter are not excluded from the spectrum of nursing research. There is a growing recognition that nursing is based on biomedical and life science, and that we need to have people who are not only familiar enough with those fields to teach students, but who conduct research in those areas as well.”
It was with great sadness that the School of Nursing learned earlier this year of Robert Van Brunt’s passing. Betty and Bob Van Brunt have long been known at the school for their outstanding contribution to student scholarship supported by an endowment they established in 1979. Known as the Karen Van Brunt Memorial Scholarship, this fund honors the memory of their daughter, a student at the school who was tragically killed in an accident in 1964 at the age of 21. With ongoing donations over the years from the Van Brunts and their family and friends, this fund – a living testament to Karen’s spirit – has touched the lives of more than 65 students who have had need of financial assistance to complete their education.

The School of Nursing is grateful to the Van Brunts for the inspiring legacy they created in Karen’s name and for their vision in providing a gift of $100,000 through their estate to augment the existing endowment.*

Betty and Bob’s kindness, compassion, and desire to help others extended well beyond the boundaries of UCLA. As members of Westminster Presbyterian Church, they frequently visited the elderly and homebound, and were well known and loved in their community of Altadena.

Betty and Bob Van Brunt are survived by three children and 10 grandchildren (including Shoshana Van Brunt, pictured above with Associate Dean Adeline Nyamath). To make a donation to the Karen Van Brunt Memorial Scholarship, please contact Sharon La Pointe at (310) 206-3662 or lapointe@support.ucla.edu.

*As with all endowments, only a portion of the income from the fund is available for the designated purpose, ensuring growth of the principal and the fund’s continued existence.

Endowed funds can be established at the UCLA School of Nursing at a minimum level of $50,000.

When Dean Lulu Wolf Hassenplug and a small cadre of dedicated faculty established the UCLA School of Nursing in 1949, they created both a legacy and a challenge. Their legacy is a preeminent school with superb faculty, outstanding students, and a commitment to public service. Their challenge to future generations is to share their vision and carry their spirit into the 21st century. Today, individuals who make major gifts to the school honor the efforts of those remarkable pioneers and reap rich personal rewards.

Continuing the Legacy

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Margaret Brown spent a long and fulfilling career as a registered nurse working for more than 50 years in a variety of professional settings. In August 1942, she began a 36-month nursing program at the Methodist Hospital School in Sioux City, Iowa. The last six months of her training were spent at a military hospital at the end of World War II. If the war had not ended, she would have been a navy nurse. Instead, she began her career in a hospital setting as night charge nurse on a maternity ward. She worked OR, ER, and everything in between.

Mrs. Brown relocated to California and her career continued in hospitals and clinics, then she spent almost 20 years working for an obstetrician-gynecologist in Orange County. She finished her career working at the Student Health Services Center at Fullerton Community College. After “retiring,” Mrs. Brown worked part time for Chapman College Student Health Services until December 2001, when she retired again.

Mrs. Brown had always hoped she would have an opportunity to return to school to attain a baccalaureate degree in nursing; life circumstances kept her from realizing this goal. However, due to the generosity of Mrs. Brown’s daughter and son-in-law, the Margaret H. Brown endowed scholarship has been established in Mrs. Brown’s name with a gift of $50,000. This fund, established by Michael and Marianne Murphy, ensures that single-parent nursing students in the bridge program (A.D.N.-B.S.-M.S.N.) have the financial assistance to make the dream of a nursing degree a reality.

Marianne Murphy is a graduate of UCLA’s Theater, Film and Television School and Michael Murphy has undergraduate, master’s, and Ph.D. degrees from UCLA’s Department of Economics.

The School of Nursing is proud to announce the establishment of a scholarship fund made possible by a generous donation from the Jumpei Watanabe Memorial Foundation and Fujiko Watanabe. The donation will assist students primarily in the gerontology specialty.

The late Mr. Watanabe came to the United States with a vision of establishing a business in the industry he loved and in which he had spent his entire adult life. After 10 years of hard work and with his motto of “enjoy your business,” he had successfully established a thriving business.

Unfortunately, several years ago, Mr. Watanabe passed away after receiving excellent nursing care from dedicated nurses in Japan. This inspired Mrs. Watanabe to establish the foundation as a tribute to his memory. The donation is a means of assisting students inspired to enter the nursing profession with a focus on caring for the elderly. For this purpose, the foundation and Mrs. Watanabe have made a generous gift of $100,000 to create an endowment to be known as the Jumpei Watanabe Memorial Endowment.

Not content only to lend a helping hand to deserving students, Mrs. Watanabe has also made a commitment to provide additional funds annually for research into diseases common among the elderly, and related programs.

“I hope the donation helps in the education and growth of nurses who can provide compassionate and sensitive nursing care,” states Mrs. Watanabe.
Ensuring a Healthier Tomorrow

Almost 10 years ago, Bea Levin established a $50,000 charitable trust that provides her with lifetime income. After her lifetime, an endowed fund will be created to support the School of Nursing and its programs.

However, Mrs. Levin’s commitment to improving health care does not stop there. Always looking forward, she has chosen to make an additional gift of $20,000 through a charitable gift annuity. By doing so, Mrs. Levin has made a gift that is not only a lasting contribution to the school, but also a simple and proven technique for securing a lifetime income and enjoying an immediate charitable income tax deduction.

“Education is absolutely fundamental in the field of health care,” states Bea Levin. “I want to do everything I can today to make for a healthier tomorrow.”

Over the course of almost 35 years with the L.A. County Department of Health Services, Mrs. Levin’s nursing career focused on health prevention, particularly in the areas of maternal health and epidemiology. Toward the end of her career, she served as a nurse administrator in a health clinic.

Still a vital participant in her community of Laguna Woods, Mrs. Levin tutors at the local elementary school. In addition, she provides mentorship and financial assistance to promising high school students from underprivileged backgrounds who wish to pursue a college education.

A Gift of the Heart

An overview of the much-appreciated donation from Dolores and Dr. Forest Grunigen graced the pages of this publication a year ago, acknowledging the $30,000 gift made to the school in the couple’s name. It is a pleasure to recognize their continued philanthropy with this issue.

This year, Dolores Grunigen has not only made an additional gift of $25,000, thus creating an endowed scholarship for students to be known as the Dolores and Forest Grunigen Scholarship Endowment, but she has also established a charitable remainder trust at the $100,000 level.

Dolores Grunigen and her late husband, Dr. Forest Grunigen, were close friends of founding dean Lulu Wolf Hassenplug, whom they greatly admired. For many years, the Grunigens worked as legislative advocates for medicine in Sacramento, appointed by the governor to establish valued and valid medical regulations and guidelines pertaining to allied health care providers such as physician assistants, nurse practitioners and emergency medical technicians. Their involvement in the nurse practitioner bill promoted the expanded role of NPs.

“Being a frustrated teacher, and like Johnny Appleseed, I promote education whenever I can,” explains Dolores. “My employment experience has provided me with the opportunity to impart the knowledge gained in my years of raising children; education through college degrees; experience and personal contact with professionals, the public, and governmental agencies; interaction with the state legislature and public sector; and, finally, with my own personal finances and those with whom I fund-raise. All of these endeavors have been a part of my lifetime challenges, goals, and accomplishments.”
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AT THE UCLA SCHOOL
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We wish to express our appreciation to the donors who have contributed the following scholarship funds for students in the UCLA School of Nursing:

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RETIREMENT INCOME YOU CAN DEPEND ON

With the ups and downs of the market over the past few years, and the low interest rates being earned on CDs, many alumni and friends have taken advantage of the Charitable Gift Annuity Program at UCLA to create a steady dependable income that will last for a lifetime.

Not only can you count on a quarterly distribution that remains the same year in and year out, but also the payment rate can be as much 12% depending upon your age.

AN INCOME YOU CANNOT OUTLIVE

The chart below shows the various UCLA rates in effect for selected ages. The figures are related to a one-life gift annuity.

THE OLDER YOU ARE THE HIGHER THE RATE!

<table>
<thead>
<tr>
<th>AGE</th>
<th>RATE</th>
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<tbody>
<tr>
<td>70</td>
<td>7.2%</td>
</tr>
<tr>
<td>75</td>
<td>7.9%</td>
</tr>
<tr>
<td>80</td>
<td>8.9%</td>
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<tr>
<td>85</td>
<td>10.4%</td>
</tr>
</tbody>
</table>

For two individuals, the rates are somewhat lower because payments are made for their combined lifetimes.

ADDITIONAL BENEFITS:

Not only do you receive an income you cannot outlive, but you also are entitled to an income tax charitable deduction in the year you make the gift. In addition, there is also a possibility that a portion of the annuity payment will be tax-free.

YOUR LEGACY AT THE SCHOOL OF NURSING

Perhaps the very best part of the gift annuity is your ability to support the School of Nursing without endangering your retirement income. In fact, you may find that just the opposite is true: you may actually realize an increase in your retirement income if you use low yielding, highly appreciated stock to establish your gift annuity.

To explore the personal rewards and financial benefits of giving to the UCLA School of Nursing, please call Sharon LaPointe at 310-206-3662, email lapointe@support.ucla.edu or visit the UCLA Office of Planned Giving Web site at www.giftplanning.ucla.edu

Or, please complete and mail this coupon to:

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YES, I would like to learn more about the rewards and financial benefits of giving to UCLA School of Nursing through a UCLA Foundation Charitable Gift Annuity.

I also would like information concerning other gift-planning options.

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It is important to us that we acknowledge you properly. If an error has been made in the listing of your name or gift, please contact Sharon La Pointe at (310) 206-3662 or e-mail lapointe@support.ucla.edu