ADVANCING THE SCIENCE OF NURSING
RESEARCH & SCHOLARSHIP 2000-2002
CONTENTS

1 – 2  FROM THE DEAN

3  FROM THE ASSOCIATE DEAN FOR RESEARCH

4 – 13  ENVIRONMENTAL/OCCUPATIONAL/COMMUNITY HEALTH

14 – 17  EMERGING AND RE-EMERGING INFECTIONS

18 – 21  CANCER PREVENTION: EARLY DETECTION AND TREATMENT

22 – 27  CARDIOVASCULAR HEALTH

28 – 32  GERONTOLOGY/AGING

33  TRAUMA/Critical Care

34 – 39  CHILD, WOMEN’S, AND FAMILY HEALTH

40 – 45  INFORMATICS

46 – 47  HEALTH POLICY/HEALTH SERVICES RESEARCH

48 – 51  INTERDISCIPLINARY EDUCATION FOR COLLABORATIVE PRACTICE

52 – 67  FACULTY PUBLICATIONS 1999-2002

68  DISSERTATION TITLES 1999-2002
More than a decade ago, the School of Nursing set out to establish itself as a “house of science” — a center for the discovery and dissemination of knowledge that informs and improves nursing education and practice. Through rigorous scholarship, investment of resources, and recruitment of some of the nation’s top scientific investigators, we have created a research-intensive environment and culture dedicated to the advancement of nursing science.

As the cornerstone of contemporary nursing practice, research must be relevant, timely, and focused on the issues that affect clinical practice and patient care. To this end, the School of Nursing has built a nationally recognized research program around targeted priority health care issues that demand our attention and expertise. The framework for this scientific model, as articulated in the School’s Strategic Plan, is the establishment of research centers of excellence that provide a scientific basis for probing key issues on the nation’s health care agenda. These areas include: environmental, occupational and community health; emerging and re-emerging infections; cancer prevention, detection, and treatment; cardiovascular health; trauma/critical care; gerontology/aging; child, women’s, and family health; informatics; and health policy and health services research.

Recognizing the importance of nursing research as central to our mission—an important first step in reshaping our institutional identity—has required the implementation of several mechanisms of change to help us meet our objectives.

FROM THE DEAN

John Dewey, one of the most influential philosophers of the 20th century, once said: “Every great advance in science has issued from a new audacity of imagination.” Here at the University of Maryland School of Nursing, the advancement of nursing science and research, a seminal component of our strategic vision, owes its astounding success to numerous factors, not the least of which include foresight, imagination, and even—as Dewey suggests—a little daring.
First, the recruitment of senior faculty, whose active pursuit of "cutting edge" research is not only garnering critical funding support, but also providing unprecedented mentoring opportunities for our doctoral students, has contributed to the dynamic spirit of scientific enterprise that pervades the School’s teaching/learning environment, while elevating our stature as a leader in nursing science. Second, the establishment of the Office of Research in 1999 as a research infrastructure to facilitate and support the work of faculty researchers, has been influential in enabling sponsored research programs, attracting funding, and developing a portfolio of distinguished scholarship activities for present and future nurse-scientists. Finally, the recently established Research Advisory Council (RAC) culls the expertise of our senior funded investigators to serve as advocates and ambassadors whose primary objective is to optimize the School’s research culture. Charged with increasing productivity, growth, and strength in our research portfolio and helping to build on our current momentum in this direction, the RAC plays a central role in the current reorganization of our doctoral program, which includes curricular revisions and creating an intensive mentoring experience for doctoral students.

The School’s targeted research program, which parallels major state, local, and national health care priorities, continues to enjoy sponsorship support from state and federal agencies, foundations, and numerous other sources. With more than $13 million in sponsored awards to help advance our research enterprise, the School is making significant contributions to improve the nation’s health, setting benchmarks for contemporary clinical practice, and providing authentic training opportunities for young nurse-scientists.

Success in contemporary health care does not come easily. To achieve effective solutions to the complex health care problems that exist today, nurses must possess not only a capacity for leadership and vision, but also a demonstrated grasp of nursing scholarship that is the foundation of meaningful patient care. Science informs practice. The School of Nursing, by creating an environment that enables and supports scientific discovery for the greater common good, is paving the way to advance new knowledge that will shape, inform, and improve nursing practice for the future. Representing us in this endeavor is a cadre of distinguished nurse researchers who are making landmark contributions to the advancement of health care every day and enriching patients’ lives along the way.

I am very proud of the accomplishments of our outstanding funded researchers, whose state-of-the-art, multidisciplinary, ground-breaking work is playing a vital role in advancing the science of nursing. As we settle into a new millennium of health care challenges and opportunities, the School of Nursing, through leadership and innovation, remains committed to continued progress and eminence in nursing research.

Barbara R. Heller, EdD, RN, FAAN, Professor and Dean of the School of Nursing
At the School of Nursing, we have made a conscious effort to develop a research agenda with great breadth as well as depth, primarily because the more extensive the scientific mission undertaken, the more likely is the potential to discover new knowledge. In addition, we have also realized that greater breadth in our scientific focus increases our potential to engage in multidisciplinary efforts with scientists from other disciplines, a hallmark of a vigorous, outstanding research enterprise.

Promoting interdisciplinary collaboration is an important goal of the Office of Research (OoR) at the School of Nursing. It represents an essential aspect of our aim to promote a substantive research posture at the School, and create a center of excellence that inures both novice and established investigators to a culture of sponsored research.

Established in the fall of 1999, the OoR has made significant strides in its efforts to create a research infrastructure and facilitate and enable the sponsored research programs of the School of Nursing. In its first year of operation, the number of grant submissions from the School increased substantially, as did dollars awarded. By the end of 2001, sponsored awards to the School of Nursing increased to $13 million from a base of $3 million in 1999, representing an increase of more than 300 percent. By providing easily accessible expert consultation and information on topics such as experimental design, outcomes measurement, biostatistics, and regulatory guidelines for sponsored protocols, the OoR has facilitated an increase not only in the number of sponsored grant awards, but affected their nature as well. The proportion of awards represented by research grants rose from 16.3 percent in 1999 to approximately 70 percent in 2002.

The Office of Research has been designed from its inception to play a pivotal role in promoting and sustaining the efforts of our nursing faculty to effectively compete for funded awards. Through these efforts, the OoR will continue to advance the School of Nursing’s mission to effectively develop, train, and equip these exemplary individuals—the next generation of nurse-scientists.

Leonard R. Derogatis, PhD, Professor and Associate Dean for Research
Alison M. Trinkoff, ScD, RN, FAAN, Professor

In response to increased concern among citizens about environmental health hazards and risks in their communities, the School of Nursing is leading innovative research, education, and outreach initiatives that integrate environmental health perspectives into health care delivery, and identify opportunities for multidisciplinary collaboration between the environmentalist and health care communities. In addition, the School is culling the expertise of senior researchers in occupational and community health to expand its research agenda in health care worker safety to better understand the complexity of issues that contribute to adverse affects on the physical and psychological well-being of health care employees.

MAXIMIZING HEALTH CARE QUALITY THROUGH IMPROVED WORKER SAFETY

Professor Alison M. Trinkoff, ScD, RN, FAAN, is expanding her research in occupational and community health with a $1,677,833 grant from the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, (CDC/NIOSH) to study how organizational work factors affect health care worker safety. Cost control measures and reduced staffing in the nursing workforce have forced many nurses to work extended schedules that create negative health and safety consequences. As Principal Investigator on the grant, Dr. Trinkoff is examining the nature and prevalence of extended work schedules for nurses and their relationship specifically to musculoskeletal pain/disorders (MSDs) and needle-stick injuries. The four-year study will include a longitudinal survey of 3,500 nurses working in a variety of settings and their work schedules, exposures, and injuries.

“The ability to identify organizational variables related to nurses’ health, that if modified, could reduce the likelihood of worker injury, is key to maximizing the quality of health care and maintaining a healthy work force,” explains Dr. Trinkoff.

In other research endeavors, Dr. Trinkoff continues to evaluate risk factors in substance abuse among various populations. With a $62,000 grant from YANA (You Are Not Alone), she recently designed a retrospective evaluation to study the effect of client visits to a southwest Baltimore outreach and intervention program for street prostitutes. Although street prostitution and the health risks associated with it are worldwide problems, little research has been initiated to examine and test appropriate interventions. This intervention offers a unique approach to addressing the high-risk behavior as well as the underlying psychological stressors that contribute to prostitution and substance abuse.

“The program focuses on helping women form trusting relationships, enhancing their innate motivation to change, and connecting them with agencies and support services to help them maintain that change,” explains Dr. Trinkoff.
As a follow-up to her landmark study on substance abuse among nurses, Dr. Trinkoff is also evaluating relapse prevention modules in a nurse substance abuse program in Florida. With $28,500 in funding from the Florida Intervention Project for Nurses (IPN), Dr. Trinkoff conducted a survey of more than 700 nurse support group participants enrolled in the nurse recovery program. Specifically, she examined the utility of the program for reducing problems in participants’ lives, and for providing support for recovery from addiction. Another goal of the study is to evaluate the effect of relapse prevention modules on the participant’s ability to avoid relapsing behavior.

“Substance abuse is not exclusive to nursing,” explains Dr. Trinkoff, whose earlier research in this area, sponsored by the National Institute on Drug Abuse (NIDA), provided an illuminating analysis of the prevalence and risk factors for substance abuse in nurses. “By discussing this problem, studies such as these give nurses important steps to follow to get back on the road to recovery, while identifying occupational hazards for the nursing profession.”
ADVANCING OCCUPATIONAL HEALTH SCIENCE

Jane A. Lipscomb, PhD, RN, FAAN, Associate Professor
ADVANCING OCCUPATIONAL HEALTH SCIENCE  With a three-year, $680,413 grant from the Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH), Jane A. Lipscomb, PhD, RN, FAAN, Associate Professor, is directing a study of the effectiveness of the Occupational Safety and Health Administration (OSHA) violence prevention guidelines within the mental health industry. Dr. Lipscomb and Associate Professor, Sara Torres, PhD, RN, CS, FAAN, are collaborating with the New York State Office of Mental Health and the Multi-Union Health and Safety Commission to evaluate the effectiveness of the intervention at four New York mental health facilities. The study will compare pre- and post-assessment assault rates, risk factors for assault, and job satisfaction among staff.

Despite research statistics pointing to pervasive workplace violence, the effectiveness of the OSHA guidelines, established in 1996, has not, until now, been tested in mental health care settings. Dr. Lipscomb’s study will evaluate the cost and benefit of implementing violence prevention programs at mental health facilities and will help to augment scientific knowledge regarding health care worker violence and related occupational health issues.

Dr. Lipscomb is among several School of Nursing researchers whose work is providing the organizational framework for comprehensive nursing research related to occupational and environmental health, while serving as the foundation for future research activities in health care worker safety.

“These initiatives will take us to the next level in building research programs that promote health care worker health and safety,” says Dr. Lipscomb, who sits on the NIOSH Board of Scientific Counselors and is a past chair of the American Public Health Association’s Occupational Health & Safety Section.
“GROWTH IN THE U.S. ECONOMY HAS BEEN FUELED BY THE CREATION OF NEW KINDS OF WORK THAT HAVE IN TURN SPAWNED A SPECIAL, AT-RISK POPULATION AMONG THE POOR, NON-WHITES, IMMIGRANTS, AND WOMEN,” EXPLAINS PROFESSOR CARLES MUNTANER, MD, PhD. HE AND SCHOOL OF NURSING COLLEAGUES DR. JANE LIPSCOMB AND DR. ALISON TRINKOFF HAVE BEEN AWARDED A $742,500 GRANT FROM CDC/NIOSH TO STUDY THE LINK BETWEEN ORGANIZATION OF WORK AND THE PREVALENCE OF DEPRESSION AND MUSCULOSKELETAL DISORDERS (MSDs) AMONG HOME CARE WORKERS.

According to Dr. Muntaner, long-term care, one of the fastest growing industries in the United States, offers an illuminating look at the structure of health care work and its adverse effects on the physical and psychological well-being of health care employees. Depression and MSDs are outcomes of adverse work conditions that inflict major social and economic burdens on workers, firms, and communities, including chronic disability and suicide.

“It is important to consider the combination of working conditions and compensation when examining risk factors tied to the workplace,” asserts Dr. Muntaner, a recognized authority on social inequalities in health.

Results of the study will have major implications for employment policies in home care agencies, with the potential to reduce depression and MSDs among home care workers, as well as the associated loss of productivity.
As Principal Investigator on a $385,000 CDC/NIOSH study on work organization and depression among nurse aides, Dr. Muntaner is examining what is considered to be one of the most physically and possibly, psychologically hazardous workplaces in the United States. Nursing homes possess inherent work organization factors that negatively affect employees, according to the study, now in its third year. Depression, a leading risk factor for disability, is common among nursing home workers who are confronted with such work organization issues as low wages, poor benefits, organizational hierarchy, and the physical and psychological demands of work.
IMPROVING ENVIRONMENTAL HEALTH THROUGH RISK ASSESSMENT AND INTERVENTION

Barbara Sattler, DrPH, RN, Associate Professor
As the movement to include environmental and community health into all levels of nursing education and practice gains momentum, the enhanced master's program will provide the specialty training and knowledge nurses need to gain competency in these areas.

**IMPROVING ENVIRONMENTAL HEALTH THROUGH RISK ASSESSMENT AND INTERVENTION** Barbara Sattler, DrPH, RN, Associate Professor, is spearheading various research and educational initiatives designed to support efforts to aid nurses in identifying and developing appropriate interventions involving environmental health risks. In one such endeavor, she is leading the outreach component of the Hazardous Substance Research Center (HSRC), a new initiative funded by the Environmental Protection Agency (EPA) on a $375,000 subcontract with The Johns Hopkins University. The HSRC will assess and share information on issues that threaten urban livability, results of which will contribute to remediation strategies used to manage urban environmental sites.

“We're looking at the fate and transport of toxic substances with regard to both human health and ecological impacts. Our role is to link the environmentalist and health care communities for the purposes of sharing research and identifying common interests for multi-disciplinary research collaborations,” says Dr. Sattler.

Dr. Sattler is also directing the expansion of the School of Nursing’s graduate program in community/public health with the help of a $430,463 grant from the U.S. Health Resources Services Administration (HRSA), Division of Nursing. A new environmental health track, designed to prepare nurses to assess environmental health-related exposures and health outcomes, will be incorporated into the curriculum. As the movement to include environmental and community health into all levels of nursing education and practice gains momentum, the enhanced master's program will provide the specialty training and knowledge nurses need to gain competency in these areas.

"Nurses are often the first point of contact for patients and, as such, are in a position to provide considerable support," explains Dr. Sattler, adding that program graduates will be prepared to compete for positions in local, state and federal health agencies, as well as careers in occupational health.

In other related projects, Dr. Sattler is directing a three-year, $150,000 grant from the Bauman Foundation to help advance the role of nurses as advocates of safe drinking water. The Bauman grant will help translate public concerns regarding drinking water into policy questions that will be integrated into future nursing research, policy, and practice. She is also collaborating with the American Nurses Association (ANA) and the EPA on a $57,850 grant to produce Web-based continuing education programs on environmental health risks in the home, workplace, and schools.
BUILDING COMMUNITY CAPACITY TO REDUCE ENVIRONMENTAL HEALTH HAZARDS

Claudia M. Smith, PhD, MPH, RN, Assistant Professor

BUILDING COMMUNITY CAPACITY TO REDUCE ENVIRONMENTAL HEALTH HAZARDS

In low-income communities across the country, the health effects of environmental toxins are becoming a major issue of concern, particularly in older homes where the overuse of gas heat, pesticide use, environmental tobacco smoke, and many other factors contribute to poor indoor air quality. As a result, young children are developing serious health problems, including lead poisoning and asthma, at alarming rates. To foster community capacity to assess and reduce environmental health risks in the home through cost-effective protocols, Claudia M. Smith, PhD, MPH, RN, Assistant Professor, is directing a $435,500 grant from the U.S. Department of Housing and Urban Development (HUD) on a one-year Healthy Homes Demonstration and Education Project.

Working with the Association of Community Organization for Reform Now (ACORN), Dr. Smith is targeting homes in Baltimore’s Park Heights neighborhood with asthmatic children under the age of 18. Project objectives include the development and implementation of a cost-effective protocol to screen homes and assess residents’ health status, beliefs, and behaviors related to environmental hazards. The project also intends to build community-based capability to identify, reduce, and evaluate home-based environmental health risks, and to establish an education outreach program to sustain the maintenance of healthy homes in the community.

“This project puts together the necessary components to help reduce environmental health hazards in homes with children,” says Dr. Smith.

Through her partnership with ACORN, Dr. Smith hopes to develop a model for reproducing similar Healthy Homes projects in other cities. A future collaboration in development with the ANA will provide a venue for providing a Healthy Homes continuing education module for nurses nationwide.
ADVANCING NEW SCIENCE IN INFECTIOUS DISEASES

Denise M. Korniewicz, DNSc, RN, FAAN, Professor

The insidious spread of HIV infection, particularly among medically marginalized and underserved populations, and the emergence of infections introduced in the hospital by foreign agents are just some of the areas under scrutiny by School of Nursing researchers. These nurse-scientists, whose landmark studies are paving the way for new treatment interventions to address the destructiveness of emerging and re-emerging infections, are taking research in the area of infection control to new levels during a time of particular vulnerability and concern in the nation and abroad.

ADVANCING NEW SCIENCE IN INFECTIOUS DISEASES  In her extensive work in the areas of infectious disease and barrier protection, Professor Denise M. Korniewicz, DNSc, RN, FAAN, was recently awarded a $1 million grant from CDC/NIOSH to expand her research to provide new directions for better surgical glove manufacturing criteria, and to develop testing standards for quality control in non-latex gloves. In a comprehensive infection control research program that focuses on the evaluation of non-latex examination and surgical gloves as protective barriers, Dr. Korniewicz is currently focusing on health care worker safety, specifically understanding adverse events that occur as a result of non-latex glove usage, and testing glove integrity to protect workers from viruses.

In this 4-year study, a follow-up to her landmark research involving the effectiveness and barrier quality of non-latex gloves as a substitute for natural rubber gloves, Dr. Korniewicz will investigate the factors associated with needle-stick injuries during surgery and their effect on the rate of injury among health care personnel. According to a recent NIOSH report, between 600,000 and 1,000,000 needle sticks occur among health care workers each year, resulting in 1,000 new cases of HIV or Hepatitis B or C.

“A large number of these injuries occur among operating room personnel because they work in a very high risk environment,” says Dr. Korniewicz, adding that exposure to blood-borne pathogens is reported at greater than 50 percent among this population of health care workers.

In addition to her research, Dr. Korniewicz is facilitating research collaborations and increased activity at the School of Nursing's laboratory in infectious diseases to promote additional
interest and scientific study in this area. Working with School of Nursing colleague Ruth Harris, PhD, RN, CRNP, FAAN, and William A. Blattner, MD, Associate Director of Human Virology at the Institute of Human Virology, she is helping to develop education and training programs for Caribbean nurses/midwives in HIV/AIDS prevention. At a recent workshop in Jamaica, Dr. Korniewicz and her research team conducted daily mentored research sessions for participants, who represented 16 Caribbean islands. The workshop was designed to educate Caribbean nurses about HIV/AIDS and to develop a sustainable perinatal HIV/AIDS prevention program.

Between 600,000 and 1,000,000 needle sticks occur among health care workers each year, resulting in 1,000 new cases of HIV or Hepatitis B or C.
Conducted in Spanish, the sessions expose participants, many for the first time, to information on HIV and women’s health.
REDUCING HIV RISK AMONG LATINAS  As Principal Investigator of a three-year, $306,219 study funded by the National Institute of Nursing Research (NINR), National Institutes of Health, Associate Professor Nilda Peragallo, DrPH, RN, FAAN, is studying the high rates of HIV infection among Latinas and ways to promote healthier behaviors. Entitled SEPA (Salud/Health, Educacion/Education, Prevencion/Prevention and Autocuidado/Self-Care), Spanish for “to know,” the study relies on a community-based intervention to further understand the influence of culturally specific gender barriers on HIV prevention behaviors among Mexican and Puerto Rican women. Weekly sessions focusing on Latina health issues and communication and conflict skills, followed by three- and six-month post-assessments, have revealed important psychosocial trends among this population.

“We're learning a lot about some very complex family issues and the lack of HIV support for Latinas,” says Dr. Peragallo. “Some of these women are new immigrants, most are low-income and many are depressed, so raising awareness, particularly at the community level, is very important.”

Cultural and language sensitivity have been critical to the effectiveness of the intervention, which includes information on problem solving, peer support, risk assessment, conflict management, and prevention of violence. Conducted in Spanish, the sessions expose participants, many for the first time, to information on HIV and women's health. Dr. Peragallo hopes that the study will serve as a model for future behavioral interventions aimed at Latino women and other high-risk populations in Central America.

“Cultural tailoring is critical to the effectiveness of interventions in HIV risk reduction,” explains Dr. Peragallo. “We must empower women and minorities with the knowledge and skills they need to make informed decisions.”

Dr. Peragallo hopes that the study will serve as a model for future behavioral interventions aimed at Latino women and other high-risk populations in Central America.
STUDYING GENE EXPRESSION IN TUMOR-ASSOCIATED BLOOD VESSELS IN BREAST CANCER

Sandra McLeskey, PhD, RN, Associate Professor

Because of the increase in incidence, and thus far only partly effective prevention and treatment, annual cancer deaths in the United States are unlikely to decrease substantially in the foreseeable future. Moreover, many more people who survive initial treatment for cancer are dealing with morbidity and disability incurred from treatment or the ongoing effects of residual tumors. Investigators at the School of Nursing are vigorously pursuing different areas of oncology research and making strides in early detection, prevention, and related cancer care issues.

“Tumor-associated blood vessels are important because a large body of research shows that they can predict prognosis for patients with many types of solid tumors,” explains Dr. McLeskey. “This implies that we can use tumor-associated blood vessels as therapeutic targets in future cancer therapies.”

Such forms of treatment, called “angiogenic therapy,” have been shown by Dr. McLeskey and others to cause tumor regression in animal models, and are currently being investigated in humans. However, anti-angiogenic drugs presently under development are not specific for tumor-associated blood vessels, raising the possibility that, with long-term administration, they might damage normal blood vessels. To this end, Dr. McLeskey is trying to find molecular characteristics of tumor-associated vessels that are unique, and therefore could serve as targets for a new generation of anti-angiogenic drugs.
Dr. McLeskey and her collaborators at the Greenebaum Cancer Center at the University of Maryland Medical System are incorporating the animal model of breast cancer that she developed as part of her postdoctoral studies into her research. With a $300,000 grant from the U.S. Army Medical Research and Materiel Command, she is directing a study that will develop a method of studying gene expression in single blood vessel cells from archival pathological specimens. Dr. McLeskey has also been awarded a $334,082 grant from the same program to support her study of the role of a family of clot-dissolving proteins in the process of tumor-associated blood vessel formation.

Dr. McLeskey is trying to find molecular characteristics of tumor-associated vessels that are unique, and therefore could serve as targets for a new generation of anti-angiogenic drugs.
CLOSING THE GAP ON CANCER SCREENING AND TREATMENT FOR MINORITIES

Keith O. Plowden, PhD, RN, Assistant Professor
CLOSING THE GAP ON CANCER SCREENING AND TREATMENT FOR MINORITIES  Reducing the cancer-related health disparities among special populations; namely, African American men, is the primary focus of research conducted by Keith O. Plowden, PhD, RN, Assistant Professor. As Principal Investigator of a $140,000 grant from the NINR, Dr. Plowden is exploring health-seeking behaviors of urban African American men and cultural motivators and barriers to seeking health care.

“Disparity is a multivariate thing,” explains Dr. Plowden. “We need to figure out what those variables are and deal with them.”

By focusing on the role of beliefs and attitudes in determining whether men will become involved in screening, participate in clinical trials, and seek treatment, these cultural barriers can be overcome, according to Dr. Plowden, who is also Principal Investigator of a $71,000, U.S. Department of Defense (DOD) grant examining prostate cancer beliefs among African American males, and the nature of inequalities in cancer screening and treatment. Despite statistics that place them at a higher risk of developing illness than other ethnic groups, urban African American men are less likely to participate in primary and secondary prevention initiatives, citing barriers such as lack of insurance and limited access to health care. Yet early intervention is critical, as the five-year survival rate of prostate cancer patients increases to almost 100 percent with early detection and treatment.

“No one should die of prostate cancer,” says Dr. Plowden. “We need to create an environment where everyone has equal access to care.”

Dr. Plowden, who is also a Cancer Prevention and Control Fellow at the Johns Hopkins Bloomberg School of Hygiene and Public Health, began his work at The Carter Center in Atlanta, Georgia. As a consultant to agencies interested in addressing health disparities, he is exploring the intermingling of faith and health in the African American community.

“The African American culture is centered around the church,” explains Dr. Plowden. “We need to cultivate ways to use that knowledge to improve health outcomes in the community.”
ENHANCING TREATMENT AND PSYCHOSOCIAL OUTCOMES FOR CARDIAC PATIENTS

Sue Ann Thomas, PhD, RN, FAAN, Professor

Nurses play a central role in the promotion of health and prevention of illness in people across the life span. One of the most important areas of health promotion is the identification of individuals who are at risk for developing serious cardiovascular illness. Social isolation, stress, and depression are just some of the risk factors for myocardial infarction, stroke, and sudden cardiac death. Research in cardiovascular health at the School of Nursing highlights risk intervention, treatment, and rehabilitation processes for heart disease patients and those at risk for cardiovascular disease.

ENHANCING TREATMENT AND PSYCHOSOCIAL OUTCOMES FOR CARDIAC PATIENTS Professor Sue Ann Thomas, PhD, RN, FAAN, has been involved in cardiovascular nursing research for more than 30 years. Her early studies of the influence of psychological and social factors on cardiac function laid the foundation for her current research, a $525,000 study sponsored by NINR entitled A Psychosocial Factor Outcome Study in Sudden Cardiac Death. The project aims to identify the psychological and social factors that predict survival in patients with congestive heart disease. Specifically, the three-year study is an analysis of such factors as depression, stress, anxiety, social support, and pet ownership on patient outcomes.

“This is a particularly strong study because it allows us to evaluate the controlled heart failure of patients in a national clinical trial,” says Dr. Thomas, whose subjects have been culled from a National Heart Lung and Blood Institute (NHLBI), National Institutes of Health, clinical trial. “In addition to being strong in its science, this study allows for the collaborative treatment of these patients.”

In the clinical trial, various treatments to prevent sudden death in congestive heart failure are being tested, including anti-arrhythmic drugs and automatic defibrillators. Dr. Thomas’ study is evaluating the psychosocial factors in sudden death in coronary artery patients. Her findings are a welcome contribution to this area, considering the current dearth of scientific knowledge about congestive heart failure as a cardiac disease.

“Although today we are able to treat congestive heart failure more effectively, 50 percent of patients will die of sudden cardiac death,” explains Dr. Thomas. “We are examining which psychosocial factors can also predict someone who has heart failure.”
Dr. Thomas is collaborating with countless national and international cardiologists to improve psychosocial outcomes for cardiac patients. Her earlier study of the correlation between depression and death generated a wave of treatment for depression in patients post heart attack.

“In addition to medical treatment, greater social support is needed to help these patients live longer,” says Dr. Thomas, adding that she hopes to build future depression studies on this work.

Various treatments to prevent sudden death in congestive heart failure are being tested, including anti-arrhythmic drugs and automatic defibrillators.
UNDERSTANDING THE CELLULAR PHYSIOLOGY OF STRIATED MUSCLE

Christopher W. Ward, PhD, Assistant Professor
For more than seven years, Assistant Professor Christopher W. Ward, PhD, has studied the role of calcium handling in normal and diseased striated muscle and, more specifically, the molecular determinants of these calcium-handling processes. During his postdoctoral work in the Department of Biochemistry and Molecular Biology at the University of Maryland School of Medicine, Dr. Ward collaborated with a team of researchers to probe subcellular calcium signaling mechanisms in striated muscle. Currently, as Principal Investigator of a five-year, $646,650 grant from the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMSD), National Institutes of Health, Dr. Ward is continuing his research by examining the local regulation of calcium release from intercellular calcium storage organelles—the sarcoplasmic reticulum.

“The myoplasmic regulation of calcium is important for cell contraction, gene expression, and cell death,” explains Dr. Ward. “Further understanding of the basic processes by which calcium is regulated within the cell could be valuable to our understanding of normal muscle function, muscle adaptation, or dysfunction due to specific disease processes.”

Dr. Ward’s efforts to better understand this basic release mechanism are bolstered by collaborative efforts on the University of Maryland Baltimore campus, regionally, nationally, and internationally. He hopes to use these findings in the cellular physiology of striated muscle to advance the knowledge of muscle in an integrated whole-body system. This approach could possibly lead to new therapeutic and/or pharmacological strategies in the treatment of disease.
DEVELOPING POPULATE-SPECIFIC APPROACHES TO CAD RISK FACTOR REDUCTION

Nalini Jairath, PhD, RN, Associate Professor

As an extension of her research in risk intervention in cardiovascular disease, Associate Professor Nalini Jairath, PhD, RN, is identifying the effect of race and ethnicity on risk reduction behaviors. As the innovator of MINDSET (Minority, Diet & Sedentary Behavior Trial), a culture-based approach to modifying dietary and behavior patterns known to increase risks of coronary artery disease (CAD), Dr. Jairath has proposed an intervention based on the perceptions, knowledge, and skills of African American women regarding CAD risk and risk reduction strategies. MINDSET addresses the symbolism and origins of certain dietary food habits, the roles and responsibilities of African American women within their families and communities, and the safety, time, and economic considerations that influence behavioral change.

“Gender seems to influence the physiology of risk, but behavioral patterns play a role as well,” says Dr. Jairath, noting that African American women are at a higher risk of developing CAD than their white female and/or African American male counterparts.

Identifying the gender and cultural factors that predispose certain populations to higher incidences of cardiovascular disease is an important clinical concern, particularly for advanced-practice nurses who play a critical role in disease risk reduction. Dr. Jairath’s research proposes to evaluate the effects of a nurse-managed intervention on controlled hyperlipidemia. The study, supported by data from her earlier NINR-sponsored research, focuses on a nurse-directed intervention model aimed at decreasing sedentary behavior in coronary artery bypass surgery patients.
“Our goal is to show that psychosocial measures are significant independent predictors of mortality and risk of hospitalization,” says Dr. Stull. “If you can double your ability to predict risk simply by asking a few questions, then you can target those patients and increase the level of interventions.”

Dr. Stull is also working with colleague Ann Marie Spellbring, PhD, RN, on a $56,301 grant funded by the Maryland Board of Nursing to evaluate medication administration practices in assisted-living facilities in Maryland.

“If you can double your ability to predict risk simply by asking a few questions, then you can target those patients and increase the level of interventions.”
DEVELOPING INTERVENTIONS TO PROMOTE HEALTHY AGING

BARBARA M. RESNICK, PHD, RN, CRNP, FAAN, ASSOCIATE PROFESSOR

Nursing interventions for adults and elderly persons require effective methodologies for sustaining physical and psychological health and well being, as well as thorough comprehension of the challenges of their caregivers. As the adult population over age 65 is projected to double to nearly 70 million over the next three decades, health care priorities in the field of gerontology continue to capture the attention of providers, practitioners, and health policymakers. Gerontological nurse scientists at the School of Nursing are pursuing research activities aimed at prolonging independence, good health, and quality of life for seniors.

As Principal Investigator of a $1.9 million, National Institute on Aging (NIA), National Institutes of Health, study involving older women recovering from hip fracture surgery, Dr. Resnick is testing the effectiveness of home-delivered intervention in increasing exercise behavior. The Exercise Plus Program combines visits by an exercise trainer with motivational interventions to enhance efficacy expectations, exercise behavior, and activity in post-hip fracture patients. The study, now in its second year, is part of the Behavioral Change Consortium, a group of 15 research programs funded by the National Institutes of Health that share a focus on behavioral change. In addition, Dr. Resnick was recently awarded a $95,000 minority supplement to support her continued work on the NIA study.

Dr. Resnick is also involved in testing the motivation component of the Exercise Plus Program in another NIA-funded study that focuses on improving function, bone, and muscle strength in older women post-hip fracture. This feasibility study, conducted by Jay Magaziner, PhD, MSHyg, Professor and Director of the Division of Gerontology, Department of Epidemiology and Preventive Medicine at the University of Maryland, School of Medicine, tests the impact of the home-based exercise program on bone density and muscle strength, as well as a variety of functional outcomes, mood, quality of life, and efficacy expectations related to exercise.

These studies are tantamount to the discovery of interventions and rehabilitative methods that will improve recovery outcomes for hip fracture patients. According to Dr. Resnick: “Hip fracture is a major public health problem. More than 50 percent of patients do not return to pre-fracture functional levels within a year following the injury.”
As a research consultant to the Jonan Foundation and Erickson Retirement Communities, Dr. Resnick is also collaborating on several projects that promote successful living in continuing care settings. In one such study, she continues to test the outcomes of a restorative care nursing program involving older adults who have completed a course of skilled rehabilitation, or who demonstrate a sudden decline in function related to a fall or an exacerbation of a degenerative disease.

In addition, Dr. Resnick has received a $50,000 award from the American Medical Directors Association (AMDA) to test the effect of two Clinical Practice Guidelines developed by an interdisciplinary group within the AMDA. The guidelines, which are being implemented in approximately 35 long-term care facilities in Maryland, take a strong interdisciplinary approach to improving the care of older adults in these settings.

The Exercise Plus Program combines visits by an exercise trainer with motivational interventions to enhance efficacy expectations, exercise behavior, and activity in post-hip fracture patients.
PROMOTING IMPROVED HEALTH OUTCOMES AMONG ETHNIC CAREGIVERS

Sandra J. Fulton Picot, PhD, RN, FAAN, Associate Professor

PROMOTING IMPROVED HEALTH OUTCOMES AMONG ETHNIC CAREGIVERS In research funded by NINR comparing the health status of African American caregivers versus non-caregivers, Associate Professor Sandra J. Fulton Picot, PhD, RN, FAAN, and Sonya Ziporkin Gershowitz, Endowed Chair in Gerontological Nursing, is making important discoveries regarding the psychological and physiological mechanisms that affect stress and stress responses. Using a sociopsychophysiological model (SPPM) of the stress process, Dr. Picot hopes to uncover environmental, family, and care-giving factors, as well as personality attributes that affect stress. In particular, the study assesses measurable parameters such as marriage, parenting, job satisfaction, community and family context, situational and individual demands, and the personality trait neuroticism, to determine their connection to blood pressure, positive and negative moods, and related stress disorders.

With more than 80 percent of African American women undertaking care-giving responsibilities, Dr. Picot’s research holds important implications to develop and target interventions relative to the health of African American women. The study is also culling the expertise of School of Nursing researchers in other disciplines, including behavioral and community health, gerontology, and women’s and family health, to provide a more comprehensive analysis of trends in caregiver health status.

In a separate investigation, Dr. Picot is also examining the influence of caregiver status and compliance with antihypertensive drugs on blood pressure of African American caregivers. The project, supported by grants from Merck Pharmaceuticals and the Geriatric and Gerontology Education and Research (GGEAR) program at the University of Maryland Baltimore, and conducted in collaboration with the University of Maryland School of Pharmacy, will highlight clinical implications for nurses, physicians, and pharmacists, each of whom plays a role in the treatment and support of patients with hypertension.
As the Associate Director for Education and Evaluation for the Baltimore VA Geriatric Research Education and Clinical Center (VA GRECC), Marianne Shaughnessy, PhD, RN, CRNP, GNP, Assistant Professor, is responsible for providing ongoing education in gerontology and geriatrics to VA clinicians throughout the greater Baltimore area and mid-Atlantic region. Through this $61,000 Intergovernmental Personnel Assignment (IPA), Dr. Shaughnessy, who recently completed a VA Postdoctoral Fellowship to examine the effect of a structured exercise program on stroke patients’ recovery, also facilitates the dissemination of new research and information coming from the GRECC.

In her ongoing research on functional recovery after stroke, Dr. Shaughnessy continues to probe the relationship between exercise and functional improvement in stroke survivors. By evaluating the effect of a structured exercise program on stroke patients’ physical and emotional functions, she is broadening understanding of the role of the brain’s executive functions in recovery.

“Understanding the connection between exercise and functional improvement in stroke survivors is important in helping them to maintain independence and quality of life,” says Dr. Shaughnessy, who is also collaborating with colleague Barbara Resnick, PhD, RN, CRNP, FAAN, on modifying a home-delivered exercise intervention for hip fracture patients to study its effect on stroke survivors.
Advocating on Behalf of the Elderly

Ann Marie Spellbring, PhD, RN, Associate Professor

Advocating on behalf of the elderly For more than three decades, Ann Marie Spellbring, PhD, RN, Associate Professor, has been involved in research and educational and clinical initiatives that have helped shape the field of gerontology. She is currently spearheading several research projects focused on improving and maintaining quality of life for senior adults.

In response to the critical nursing shortage in long-term care, Dr. Spellbring is leading a $90,000 grant from the John A. Hartford Foundation that will enhance gerontology and geriatric nursing education for students in the School of Nursing's RN to BSN on-line option. She has developed a new, three-course concentration that will help RN students synthesize the proficiencies of long-term care, while providing hands-on treatment and management experience.

"Acquiring and retaining skilled professionals is critical to providing safe and high quality care to residents in the long-term care setting," explains Dr. Spellbring, citing shortages and high turnover as sources of significant national problems. "Nursing staff must possess essential core competencies in order to provide safe resident care in a cost-effective manner and to ensure regulatory compliance," she says.

Dr. Spellbring's background in clinical services and evaluative research has placed her at the forefront of several studies involving quality of care. In a cooperative effort with the University of Maryland's schools of medicine and pharmacy, she recently completed a study on strategies for safe medication management among elderly residents of the Congregate Housing Services Program (CHSP). The $39,191 study, funded by GGEAR, united the efforts of many service providers and public and private agencies in an effort to identify issues related to medication management and mismanagement.

"Our findings will impact on future policy-making decisions in Congregate Housing Services," says Dr. Spellbring.

Medication administration is also the focus of a $56,301 study conceived of and funded by the Maryland Board of Nursing. Dr. Spellbring, Principal Investigator of the study, is evaluating medication administration practices in assisted-living facilities throughout Maryland. The goal of the study is to determine an appropriate time interval for registered nurses to perform an on-site review of medication administration practices in these facilities.
**DEVELOPING CLINICAL DISPLAYS TO IMPROVE TRAUMA OUTCOMES**

Karen Johnson, PhD, RN, CCRN, Assistant Professor

Trauma, which ranks as the leading cause of death for individuals up to age 40, is projected to continue its dramatic rise, as medical practice in the field improves significantly and the number of trauma patients reaching the hospital alive continues to grow. These and other trends, including an aging population, and technological advances in health care, place an enormous burden on trauma and critical care nurses, who play a central role in hospital-based practice.

“Equipment in the ICU provides clinicians with a minute-by-minute monitoring of physiological data that are critical to assessing the patient’s status,” explains Karen Johnson, PhD, RN, CCRN, Assistant Professor. “We need to introduce more mechanisms to reduce medical errors and to help novice nurses and doctors think more critically in the ICU.”

To this end, Dr. Johnson is collaborating on a project to develop an innovative clinical display for trauma management. With funding for a pilot study from the National Medical Technology Testbed, Inc., she has developed and tested a static prototype display. Dr. Johnson now intends to expand her evaluation and testing of the clinical display and compare its effects with traditional ICU clinical monitoring systems on trauma clinicians’ recognition, diagnosis, and treatment of critical events.

“This is a multidisciplinary collaboration with immediate clinical applications that will facilitate decision making right at the bedside,” explains Dr. Johnson.
A NEW PERSPECTIVE ON THE TREATMENT OF SEXUAL DYSFUNCTION

Leonard R. Derogatis, PhD, Professor and Associate Dean for Research

The prevention of health and developmental problems in children and youth, along with improvements in long-term health outcomes for families in high-risk communities are just some of the targeted areas of research led by investigators at the School of Nursing. Through education, research, practice, and advocacy, nurses are developing and promoting new models of evidence-based community practice that move beyond traditional boundaries of health care delivery to better serve the needs of children and women of all ages.

There are two major changes that have taken place over the past three decades that are having a salutary effect on the treatment of these conditions now, and in the near future,” says Dr. Derogatis, who also holds joint appointments at both the University of Maryland School of Medicine and the Greenebaum Cancer Center at the University of Maryland Medical System. “First, we have a much clearer understanding of the fundamental mechanisms that underlie sexual function/dysfunction, and second, the spectrum of pharmacologic and other interventions soon to be available to treat these conditions is growing almost exponentially.”

Currently, Dr. Derogatis is the Principal Investigator on a series of innovative clinical drug trials for the treatment of sexual dysfunctions, including a $73,362 multicenter Phase III trial sponsored by Nexmed Pharmaceuticals to evaluate the efficacy of a new topical application for the treatment of erectile disorder in men. Following this project will be a $78,500 open-label, one-year safety trial of the same compound. In the area of female sexual dysfunction, Dr. Derogatis has been awarded a $190,000 grant from Pfizer, Inc., to participate in a multinational Phase III trial of a pioneering new compound.
that may prove effective in the treatment of sexual desire/sexual arousal disorders in postmenopausal women. In addition, he is Principal Investigator on a $110,000 pair of clinical trials sponsored by Procter & Gamble Pharmaceuticals, also directed at evaluating the efficacy of a new treatment regimen for hypoactive sexual desire disorder in surgically and naturally menopausal women.

In addition to these projects, Dr. Derogatis maintains an active research program on the development of outcomes measures. With a $74,300 grant from the American Foundation for Urologic Disease (AFUD), he is involved in developing a brief self-report scale, the Female Sexual Distress Scale (FSDS), to measure sexually related personal distress, a central construct in the diagnosis of female sexual dysfunctions.

We have a much clearer understanding of the fundamental mechanisms that underlie sexual function/dysfunction, and the spectrum of pharmacologic and other interventions soon to be available to treat these conditions is growing almost exponentially.
COLLABORATING ON STRATEGIES TO PROMOTE HEALTHY CHILD AND FAMILY DEVELOPMENT

Linda Thompson, DrPH, RN, FAAN, Associate Professor and Associate Dean for Policy & Planning

The School of Nursing’s Center for Community Partnerships for Children and Families, directed by Linda Thompson, DrPH, RN, FAAN, Associate Professor and Associate Dean for Policy & Planning, is involved in several projects designed to promote healthy outcomes for individuals and families in high-risk communities. Partnering with stakeholders in the business, political, and faith communities who are working to help strengthen families and youth, the center, funded by a $200,000 annual appropriation from the State of Maryland, is working to develop and implement sustainable program models.

Currently, Dr. Thompson is directing the Obesity Prevention Program for Preschool Youngsters, an $85,000 grant sponsored by the Maryland Statewide Health Network. The study will encompass the design and testing of an obesity prevention intervention for preschool children attending Head Start centers in West Baltimore. The intervention includes parental health-promoting behavior education, Head Start teacher education, and activities to promote obesity prevention behaviors among preschoolers.

“Studies point to the prevalence of obesity in approximately 35 to 40 percent of children by the time they reach adolescence, a trend that increases among inner-city minority children,” explains Dr. Thompson, adding that childhood obesity is associated with short- and long-term morbidity and mortality, including risks for Type 2 diabetes and cardiovascular disease. “This intervention targets the treatment of childhood obesity through diet and exercise, as well as ameliorating the social and psychological problems associated with this condition.”
SUPPORTING SAFE MATERNAL AND INFANT HEALTH

Cara Krulewitch, PhD, CNM, RN, Assistant Professor, is identifying trends in homicide deaths among women of childbearing age, pointing to trauma as a leading cause of maternal mortality. Homicide deaths, ranked sixth for women aged 25-44 years, and second for women aged 15-24 years, are often related to domestic violence, where the perpetrator is known. With a grant from the American College of Obstetricians and Gynecologists, Dr. Krulewitch is analyzing records from the Medical Examiners’ Office in Maryland to learn more about data on the relationships between victims and their perpetrators.

“Mortality during the childbearing years is just a small window into the extent of violence that may occur during this important period of a woman’s life,” says Dr. Krulewitch.
FOSTERING FAMILY HEALTH AND WELL-BEING

Rosemarie Satyshur, DNSc, RN, Assistant Professor

Cesarean birth, shown to have a substantial negative effect on dyadic adaptation, now accounts for more than 21 percent of all births in the United States, and has been linked with potential for abuse and punitive discipline.

FOSTERING FAMILY HEALTH AND WELL-BEING Although a growing body of research promoting the benefits of maternal-infant bonding has gone a long way to improve family health, there has been limited research to evaluate the effect of Cesarean birth on this adaptive process. To this end, Rosemarie Satyshur, DNSc, RN, Assistant Professor, has evaluated the relationship between maternal-infant dyad adaptation and selected variables in first-time mothers experiencing unplanned Cesarean births. Based on a model of parent-child-environment interaction, the study measured mothers’ interactions with their infants during socialization within 48 to 72 hours after delivery.

“Our goal was to set up a positive experience between mother and baby, where their interactions became causal, as if they were one unit working together,” explains Dr. Satyshur.

Cesarean birth, shown to have a substantial negative effect on dyadic adaptation, now accounts for more than 21% of all births in the United States, and has been linked with potential for abuse and punitive discipline. Dr. Satyshur hopes to reverse this trend by expanding her research within the community and using it as a tool for promoting healthy families.
APPLYING DISCOVERY-BASED METHODOLOGIES TO DATA MANAGEMENT AND ANALYSIS

Patricia A. Abbott, PhD, RN, FAAN, Assistant Professor

The School of Nursing, home of the first nursing informatics program in the nation, is developing advanced clinical technology to revolutionize patient care. Nursing informatics research at the School promotes the development of clinical information systems that strengthen communication, improve patient safety, and enhance overall health management. Paralleling the changing needs of the health care environment, nursing informatics focuses on integrating new technologies into existing organizational systems to improve the quality and efficiency of patient care.

APPLYING DISCOVERY-BASED METHODOLOGIES TO DATA MANAGEMENT AND ANALYSIS  “EXCELING IN INFORMATICS MEANS THAT YOU HAVE TO PUSH THE ENVELOPE,” ASSERTS PATRICIA A. ABBOTT, PhD, RN, FAAN, ASSISTANT PROFESSOR. IN HER RESEARCH IN HEALTH CARE INFORMATION MANAGEMENT, SPECIFICALLY DATA MINING, DR. ABBOTT IS FORGING NEW PATHWAYS IN METHODOLOGIES THAT WILL IMPROVE THE QUALITY AND PROCESSES OF PATIENT CARE.

Data mining, or connectionist machine learning techniques, is an emerging approach to knowledge discovery in massive collections of health care data. Dr. Abbott is applying this methodology, also known as Knowledge Discovery in Databases (KDD), to analyze trends and patterns in nursing home data, specifically investigating the high rate of patient transfer to acute care facilities.

“We are relying on trend and pattern analysis to learn more about what it takes to improve care and contain costs in the long term care population,” explains Dr. Abbott.

Dr. Abbott is replicating the use of KDD methodology in a separate study involving bone marrow gene sequence analysis in leukemic patients. Working on a $16,428 grant with the Greenebaum Cancer Center, she is testing the use of machine learning techniques on a large gene sequence database as a means of classifying and predicting the two forms of leukemia.

“Within each bone marrow sample, there are over 7,000 gene sequences,” explains Dr. Abbott. “In that data is the key to improving treatment regimes for leukemic patients. The challenge lies in working with such huge data however, because traditional analytic approaches do not work.”

This detailed level of genetic analysis, relatively new to nursing science, will significantly affect the way patients are diagnosed and treated. KDD will play a vital role in harnessing the complex and multidimensional information necessary to enhance health management.
Recently elected to the Board of Directors of the American Medical Informatics Association, Dr. Abbott has also been awarded a $20,000 grant from the Maryland Applied Information Technology Initiative (MAITI) to assist with programming and recruitment efforts to increase the number of information technology workers in Maryland.

In other research, Dr. Abbott is studying the effect of Internet connectivity on mobile health units in supporting field-based clinics, managed and operated by the School of Nursing and staffed by nurse practitioners, faculty and students. The five Governor’s Wellmobiles of Maryland provide primary and preventive health care services to underserved populations in rural communities throughout the state. With $40,000 in funding from the National Library of Medicine (NLM), Dr. Abbott is working to connect, via wireless Internet, these remote providers to online evidence-based knowledge resources.

This detailed level of genetic analysis, relatively new to nursing science, will significantly affect the way patients are diagnosed and treated.
MANAGING HEALTH CARE PROCESSES THROUGH INFORMATION TECHNOLOGY

Kathleen Charters, PhD, MSSM, BSN, Assistant Professor

ADVOCATING ON BEHALF OF THE ELDERLY  Kathleen Charters, PhD, MSSM, BSN, Assistant Professor, is applying technology and informatics education to enhance health care worker training and practice. In one area of her work, she is developing a software program that, through centralized information retrieval and analysis, will assist health care providers in managing high cholesterol in their patients. Using hand-held technology, such as personal digital assistant (PDAs), physicians and nurse practitioners will be able to extract data from multiple systems on a broad range of patient wellness issues to help determine appropriate levels of care.

“I am particularly interested in learning how this new technology will change provider behaviors and support them in using cholesterol medications more effectively,” says Dr. Charters.

Using hand-held technology, such as personal digital assistant (PDAs), physicians and nurse practitioners will be able to extract data from multiple systems on a broad range of patient wellness issues to help determine appropriate levels of care.
EVALUATING CLINICAL INFORMATION SYSTEMS TO IMPROVE PATIENT SAFETY

EVALUATING CLINICAL INFORMATION SYSTEMS TO IMPROVE PATIENT SAFETY  The advent of information technology and its use in acute care settings over the last 20 years has created dramatic changes in many areas of patient care. One such area, computerized medication administration, is the focus of research being conducted by Brian Gugerty, DNSc, RN, Assistant Professor. Dr. Gugerty has developed a Clinical Information System Questionnaire (CISQ), which has been administered at several hospitals in New York state, to measure staff perception of the implementation of clinical information systems. He is modifying the questionnaire to analyze the implementation of medication administration modules in response to medical mistakes. The resulting evaluation tool will be known as the CISQ-Medication Administration (CISQ-MA).

“The leading cause of medical mistakes is medication errors,” explains Dr. Gugerty. “Medication errors account for more than 7,000 deaths annually, and hospital costs of preventable adverse drug events are about $2 billion annually.”

Increased concern over medication errors has prompted the Institute of Medicine to establish goals of reducing medication errors by 50 percent by the year 2003, and to encourage incremental improvements in medication administration between 2003 and 2008. The latter goal, requiring an assessment of the more complex causes of medication errors, as well as improvements in the implementation of medication administration modules of clinical information systems, will be addressed through the CISQ-MA.
INTEGRATING INFORMATION TECHNOLOGY AND RESOURCES INTO CLINICAL PRACTICE AND RESEARCH

Carol A. Romano, PhD ’93, MS ’85, BSN ’77, RN, BC, CNA, FAAN,
Deputy Chief Department of Clinical Research Informatics, National Institutes of Health

INTEGRATING INFORMATION TECHNOLOGY AND RESOURCES INTO CLINICAL PRACTICE AND RESEARCH

As Deputy Chief of the Department of Clinical Research Informatics (DCRI) at the Clinical Center, National Institutes of Health, Carol A. Romano, PhD, RN, BC, CNA, FAAN, oversees a new department that is responsible for processes and systems that directly affect users in the research and care delivery settings. Her work focuses on the analysis and evaluation of clinical research informatics needs and requirements, the development of design options that support clinical research, and the implementation and management of responsive information technology solutions.

“Our focus is not on the ‘hardware’ but rather on the information management and applications of new technologies as they relate to the support of clinical research and clinical care,” explains Dr. Romano, who is also a part-time faculty member at the School of Nursing, where she was significantly involved as an architect of the first nursing informatics program in the nation.

Dr. Romano recently completed an evaluation study of the clinical use and impact of wireless technology, the findings of which support the safety and expanded use of wireless workstations for electronic medical record and online policies and education and information resources for physicians and nurses. She remains active in grant review processes, particularly with the Agency for Health Care Research and Quality’s TRIP initiative (Translating Research Into Practice) and the Department of Health and Human Services, Health Resources and Services Administration (HRSA).
ENHANCING ELECTRONIC COMMUNICATION EFFECTIVENESS IN MILITARY NURSING

Doctoral student Caterina E.M. Lasome, MSN/MBA, MHA, RN, Major, U.S. Army Nurse Corps

The advent of information technology and its various processes for communication has affected the efficiency, productivity, and overall effectiveness in communication in many organizational settings. Electronic mail, in particular, has become the communication tool of choice, often replacing interpersonal contact and thus omitting nonverbal cues that are sometimes key to understanding and interpreting intended messages between sender and receiver.

Supported by a grant from the TriService Nursing Research Program, doctoral student Caterina E.M. Lasome, MSN/MBA, MHA, RN, Major, U.S. Army Nurse Corps, is evaluating the effect of e-mail on superior-subordinate relationships in military nursing, and the consistency between perceptions versus actual messages sent via e-mail.

“When you are on active duty, the mission is best met when first-line supervisors and subordinates perform as a team. Clear communication is a key component of establishing and maintaining that relationship,” explains Major Lasome.

Major Lasome plans to expand her study to provide direction for the effective use of e-mail across all military services in peace and wartime scenarios, and to identify variables for future research in this area.
SHAPING HEALTH POLICY SOLUTIONS IN WORKFORCE DEVELOPMENT

Barbara R. Heller, EdD, RN, FAAN, Professor and Dean of the School of Nursing

Against a landscape of change in health care—including the rise of managed care, a growing demand for health services among underserved populations and a shrinking pool of professional resources—health services research plays a critical role in evaluating outcomes to patient care. Investigators at the School of Nursing are conducting research that develops and presents evidence-based information on health care outcomes, quality, cost, use, and access. The shortage in the nursing workforce is under particular scrutiny, as investigators undertake definitive studies to document the shortage and evaluate effective approaches to alleviating this crisis.

“The Nursing Workforce Project fills an urgent need for sophisticated and timely research to inform and guide public policy,” asserts Dr. Heller, who serves as Principal Investigator on the study. “Effective public policy must rest on a foundation of reliable and up-to-date quantitative and qualitative data.”

In a related project, Dr. Heller is involved in developing an innovative curriculum designed to enhance the leadership competencies of practicing nurses who are enrolled in RN to BSN or RN to MS programs. With $76,000 in funding from the Helene Fuld Health Trust, the Leadership...
Competence for the New Millennium Program will provide an intensive, mentored educational experience to augment the training and preparation of future nurse leaders.

“This innovative leadership development program demonstrates the School's commitment to nursing education by integrating the efforts of key stakeholders in helping to evolve and advance the role of nursing in our rapidly changing health care industry,” explains Dr. Heller, who also serves as Vice Chair of the Maryland Statewide Commission on the Crisis in Nursing.

Effective public policy must rest on a foundation of reliable and up-to-date quantitative and qualitative data.
BOLSTERING INTERDISCIPLINARY EDUCATION AND PRACTICE TO IMPROVE COMMUNITY HEALTH

Marla Oros, MS, RN, Associate Dean for Clinical and External Affairs

The School of Nursing is developing prototypical education models that foster interdisciplinary education through collaborative practice. Working in partnership with health professions schools across the disciplines, the School is developing innovative multidisciplinary initiatives that identify, develop and integrated managed care experiences into the curriculum. These and other clinical practice programs are preparing students in nursing and other health professions to work in collaborative teams within a managed care environment, with an emphasis on delivering optimum care to underserved children with complex health care needs.

“We’re training future health care professionals to work together,” explains Ms. Oros. “The challenge is to develop the most efficient methods of health services delivery in a managed care environment that will produce better health outcomes, while reducing costs.”

The program, Fostering Interprofessional Education and Practice: Caring for Children with Complex Health Care Needs, focuses on managing the chronic and complex medical needs of patients at the Pediatric Ambulatory Center (PAC), which is jointly operated by the schools of nursing and medicine. An interdisciplinary algorithm for the diagnosis and management of chronic conditions, such as asthma, will be used in the clinic to structure the team intervention and as a model for care.

In another important community health project, Ms. Oros is directing a $156,000 project grant from the Health Resources and Services Administration (HRSA) and the Substance Abuse and Mental Health Services Administration (SAMSHA) to establish an interdisciplinary faculty development program with a primary emphasis on alcohol and drug abuse prevention. Project Mainstream, which is
The challenge is to develop the most efficient methods of health services delivery in a managed care environment that will produce better health outcomes, while reducing costs.

administered by the Association for Medical Education and Research in Substance Abuse (AMERSA), aims to improve health professional training in substance abuse by expanding discipline-specific education for faculty, practitioners, and students. The three-tiered curriculum will include seminars, Web-based education, and hands-on training in the PAC.

“The HRSA/SAMSHA grant enables us to identify strategies for including substance abuse in primary care education,” says Ms. Oros. “Primary care providers across the disciplines are the first line of communication with teenagers, children, and young adults. We need to offer health professionals the tools for screening and early identification of problems associated with addiction,” she adds.
EVALUATING THE EFFICACY OF TECHNOLOGY IN HEALTH PROFESSIONS EDUCATION

Louise S. Jenkins, PhD, RN, Associate Professor and Director, Graduate Studies

EVALUATING THE EFFICACY OF TECHNOLOGY IN HEALTH PROFESSIONS EDUCATION

With two grants from the Maryland Higher Education Commission (MHEC)—one for $150,000 and one for $85,041—Associate Professor Louise S. Jenkins, PhD, RN, is collaborating with David B. Mallott, MD, Associate Dean for Medical Education at the University of Maryland School of Medicine, to develop and implement a series of interdisciplinary faculty workshops emphasizing the use of technology in teaching. Under the banner of the Institute for Teaching and Learning Through Technology in Health Sciences and Human Services, this professional development series will unite School of Nursing faculty from across the disciplines with their colleagues at other institutions in discussions involving the development of electronic courses, uses of educational technology in the classroom and in clinical teaching, and the transference of coursework to the World Wide Web. According to Dr. Jenkins, the institute will serve as the foundation for future teacher training in technology, and provide opportunities for educational research in the health sciences and human services arenas.

“We are learning things that will help us for the future and will hopefully impact the quality of education in health sciences and human services, and ultimately patient care, throughout Maryland,” says Dr. Jenkins.

In her role as Director of Graduate Studies, Dr. Jenkins is also involved in initiatives designed to expand and enhance learning experiences for nursing students. At the new Center for Clinical Education and Evaluation, a program jointly sponsored by the schools of nursing and medicine, health professions students are trained and evaluated through the use of simulated clinical experiences, while simultaneously being exposed to future opportunities in research.
FACULTY PUBLICATIONS 1999-2002

ABBOTT, Patricia A.
Assistant Professor


ARNOLD, Elizabeth C.
Associate Professor


B

BARLOW, Amy R.
Clinical Instructor


C

CHARTERS, Kathleen
Assistant Professor


DEROGATIS, LEONARD R.
Professor
Associate Dean for Research


G

GUGERTY, BRIAN
Assistant Professor


H

HAUSMAN, KATHY A.
Assistant Professor


HELMER, BARBARA R.
Professor & Dean


HERRON, DOROTHY G.
Assistant Professor


F

FOUNTAIN, LILY
Clinical Instructor


Jennings, Louise S. Associate Professor


Jennings, Carole P. Assistant Professor


**JOHANTGEN, Meg E.**
Assistant Professor


**JOHNSON, Karen**
Assistant Professor


**JOHNSON, Peter G.**
Assistant Professor


**KELLEHER, Catherine**
Associate Professor


KORNIEWICZ, Denise M. Professor


KRULEWITCH, Cara J. Assistant Professor


L

LEMAIRE, GAIL
Assistant Professor


LIPSCOMB, JANE A.
Associate Professor


M

MAZZOCCO, GAIL O.
Assistant Professor


McENTE, MARGARET A.
Associate Professor


McLESKEY, Sandra W.
Associate Professor


Zhang, L., Kharbanda, S., McLeskey, S. W., & Kern, F. G. (1999). Overexpression of fibroblast growth factor 1 in MCF-7 breast cancer cells facilitates tumor cell dissemination but does not support the development of macrometastases in the lungs or lymph nodes. Cancer Research, 59, 5023-5029.

MECH, Ann B.
Assistant Professor


MILLS, Mary Etta E.
Associate Professor


MUNTANER, CARLES
Associate Professor


Perry, L. A. Associate Professor


Perry, L. A. Associate Professor


Picot, S. J. Associate Professor


SATTLER, BARBARA
Research Associate Professor


SATYSHUR, Rosemarie D.
Assistant Professor

SHAUGHNESSY, Mary Anne
Assistant Professor

SHAUGHNESSY, Mary Anne
Assistant Professor

SPELLBRING, Ann Marie T.
Associate Professor


TILBURY, Mary S.
Assistant Professor

THOMAS, Sue Ann
Professor


THOMPSON, LINDA S.  
Associate Professor


TORRES, SARA  
Associate Professor


TRINKOFF, ALISON M.  
Professor


**W**

**WALTZ, Carolyn A.**

Professor


**WARD, Christopher**

Assistant Professor


**WOOLEY, Alma**

Visiting Professor

Dissertation Titles
1999-2002

1999
Brown, Raymonde Ann
“Anger, Denial, and Cardiovascular Reactivity in Postmenopausal Women”

Jones, Tamara
“A Descriptive Study of Nursing Interventions for Disruptive Behaviors in Elderly Subacute Patients”

Lee, Wen-Lin
“The Relationship Between Primary Appraisal, Coping, and Subjective Well-Being in Chinese Elderly with a Diagnosis of Congestive Heart Failure”

2000
Bickford, Carol J.
“The Computer-based Patient Record (CPR): An Ethnographic View”

Boonyasopun, Umaporn
“Ways of Promoting a Healthy Community: A Critical Ethnography of Rural Thai Women”

Curran, Christine Ruth
“A Comparison of Computerized Graphical Display Formats for the Titration of Sodium Nitroprusside”

Corey-Lisle, Patricia K.
“The Impact of the State of Maryland Medicaid Mental Health Care carve-on for Access-to-Care for Patients in a Suburban Health Care System”

Davenport, Joan Marie
“The Experience of New Nurses Beginning Critical Care Practice: An Interpretive Phenomenologic Study”

1999
Feeney, Elaine Ruth
“Cost and Utilization of Health Services for Substance Dependent Women Before and After the Initiation of Substance Dependence”

Han, Hae-Ra
“Parental Coping with Childhood Cancer”

Kennedy, Martha M.
“An Exploratory Analysis of Patient and Institutional Attributes as Predictors of Duration of Mechanical Ventilation”

Ley, Cathaleen D.
“The Relationships Among Coping Strategies and Depression and Anxiety in Adult Blood and Bone Marrow Transplantation Patients”

Marschke, Penny L.S.
“Quality of Life of the Radical Retropubic Prostatectomy Patient and His Wife”

Miller, Marilyn J.
“Recognition and Referral of Patients with Depressive Illness in a Primary Care Setting”

2001
Collins, Theresa L.
“Readiness Estimate and Deployability Index Revised for Air Force Nurses (READI-R-AFN): Psychometric Evaluation”

DiBartolo, Mary
“Appraisal, Coping, Health-Related Hardiness and Self-Perceived Health in Spousal Caregivers of Individuals with Dementia”

Dorsey, Susan G.
“Mechanism of Hippocampal Neuron Death in the Trisomy 16 Mouse: Failure of BDNF Survival Signaling”

Geiger-Brown, Jeanne
“Problem Burden Change Over Time in Treatment for Recovering Nurses”

Greene, Amanda
“Predictors of Breast Cancer Screening in Women with Chronic Conditions”

Jamison, Mary Susan T.
“Failure to Thrive in Older Adults: Prevalence and Outcomes in Long-Term Care”

Joslin, Susan Lynn
“The Influence of Nursing Home Characteristics on the Accuracy of the Long Term Care Minimum Data Set”

Reifsnyder, Joanne Susan
“Enabled Life Closure and the Hospice Presence”

2002
El-Masri, Maher M.
“Predictors of Nosocomial bloodstream Infections Among Trauma Patients: A Model Testing Approach”

Jones, Sandra N.
“Age of First Time Substance Experience by Age 12”

Warren, Joan
“Educational Policy/Differentiated Practice Models/Continued Competence/Certification”

Zhou, Qiuping
“Missing Value Imputation Methods on Parameter Estimates and Psychometric Property of Likert Measures”
RESEARCH ADVISORY COUNCIL

Research Advisory Council (RAC) culls the expertise of our senior funded investigators to serve as advocates and ambassadors whose primary objective is to optimize the School’s research culture. Charged with increasing productivity, growth, and strength in our research portfolio and helping to build on our current momentum in this direction, the RAC plays a central role in the current reorganization of our doctoral program, which includes curricular revisions and creating an intensive mentoring experience for doctoral students.

CONTRIBUTORS

The University of Maryland School of Nursing, Office of Communications, publishes Advancing the Science of Nursing: Research and Scholarship biennially. We welcome your comments, which can be e-mailed to: padams@son.umaryland.edu.

Barbara R. Heller, EdD, RN, FAAN
Dean and Professor

Patricia D. Adams
Assistant Director for Media Relations and Publications

Leonard Derogatis, PhD
Jacqueline Gordon
Leslie Lichtenberg
Bing Bing Qi
Office of External Affairs, University of Maryland Baltimore
Contributors

Joe Rubino
Eric Stocklin
Gilden Integrated

The J. W. Boarman Co., Inc.

Printing
Founded in 1889, the University of Maryland School of Nursing is one of the leading research institutions in the nation. Pioneering the use of innovative technologies, the School of Nursing enrolls approximately 1,500 students in its baccalaureate, master’s, doctoral and continuing education programs. Consistently ranked among the top ten by U.S. News and World Report, the School emphasizes the integration of research, teaching and clinical practice, and serves regional, national and international audiences. The School, headquartered in Baltimore, offers programs in Cumberland, Cambridge, Hagerstown, Shady Grove and Waldorf. More information can be found at www.nursing.umaryland.edu.