Minority Research & Training

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Rui-Ping Xiao, M.D., Ph.D.: Taking the Challenge and Running With It

For Rui-Ping Xiao, M.D., Ph.D., the most profound influence on her life was the dearest one to her heart — her grandmother. "My grandmother became a widow at age 28 with three children under age 10," remembers Xiao. "She was well-educated, which was very unusual for women in China at that time. She was so strong but always graceful and beautiful."

Xiao spent most of her childhood with her grandmother since her parents' lives were hectic. "My grandmother taught me so much, including Chinese culture, history, and values and told me many wonderful stories," reflected Xiao. "Although the times were difficult, she remained optimistic, always had a smile on her face and prayed daily."

Setting Goals Early

Both her father and grandmother suffered with terrible headaches brought on by hypertension. As Xiao observed her family experience, she realized that if she wanted to help people the best way would be to become a medical doctor. But she ran in to some opposition. "When I was a young girl during the Cultural Revolution, doctors did not have a high social position," said Xiao. "My parents told me to keep my life simple and that

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NIA Dissertation Support: Has It Made a Difference?

This year the National Institute on Aging's (NIA) Minority Research Dissertation Grants in Aging Program is investing $200,000 in the future of eight minority doctoral candidates. These resources will help with their first major research project and improve their success in competing for future funding. But, what does this support *really* mean to these young scientists?

NIA Support: A Lifesaver

Cheryl Talley, who received her Ph.D. from the University of Virginia (UVA) in 1998 believes, "Had there been no support from the Institute, getting my degree would have been much more difficult." She was married and raising four children in Harrisonburg, Virginia, in 1988 when she decided to finish her undergraduate degree. In 1991, Talley began work on her master's and doctoral degrees at UVA in Charlottesville. This meant a demanding daily commute that continued for 6 years. As a commuter student, Talley says she "found it difficult to make the contacts outside of the laboratory that were essential to gathering the resources needed for my research." Here's where the NIA grant was a lifesaver. The aged rats necessary for her research on the role of the peripheral nervous system in age-related cognitive defects were expensive, and the NIA grant provided the necessary resources. In addition, Talley said, "the entire process of applying for the grant enabled me to focus my research and discover my own niche in my field."

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Rui-Ping Xiao, M.D., Ph.D. (Continued)

going to medical school could make my life difficult." In spite of this, Xiao made up her mind to become a doctor. "I set my goal early in life," she said.

In high school Xiao excelled in all subjects. By the time she graduated from high school at age 16, she understood the broad scope of cardiovascular disease. With the support of her family, she set off for medical school, unaware of how difficult the transition would be. At Tong-Ji Medical University, the top medical school in China, she shared a common trait with her classmates — they were all top-ranked students in their high schools. "When I went to medical school, I was depressed because it was different than high school," Xiao said. "There was so much to remember, and I was not very brave."

Xiao found support during that first trying year from her parents and Qui Yin, her high school teacher. They corresponded often and have kept in touch.

"Authority isn't always right -- you have to have the courage to challenge it and not fear it... Collaboration is extremely important in modern science. Learn how to collaborate."

The Attraction of Research

In 1984, Xiao graduated from medical school with the highest honor and completed a medical internship at Tong-Ji Medical University. This was another pivotal point in her career path. "I saw physicians sometimes helpless because they didn't understand the basic mechanisms of the cardiovascular system," Xiao observed. "I thought, 'If I really want to help people I should conduct medical research.'"

After her medical internship, Xiao began working on her master's degree in physiology at the Tong-Ji Medical University's Graduate School, concentrating on brain circulation. She developed a novel method to detect the diaphragm displacement in human and animal models and also investigated the regulatory effects of the respiratory system on brain microcirculation in a rabbit model. She won 2 national awards for her outstanding performance.

During this time Xiao attended an international meeting in China on biomechanics. There, her challenging questions and suggestions impressed Peace Cheng, Ph.D., then a bioengineering graduate student and presenter at the meeting. They married in 1988.

In 1987, after receiving her M.S. degree, Xiao moved to Bejing to begin working toward a Ph.D. at the University of Peking. "I wanted to broaden and sharpen my scientific thinking so I studied single cell physiology and cell-to-cell electrical communication," said Xiao. "I was there a little over 1 year when I realized that if I wanted to be a first-class scientist, I should move to the U.S."

In 1988, Xiao moved to Puerto Rico as a post-doctoral fellow in the pharmacology department of the Medical School at the University of Puerto Rico. There she studied the interaction between calcium and cAMP on the cell-to-cell electrical communication via gap junctions in heart muscle. Her husband remained in Bejing to finish his graduate training.

Work at the GRC

After reading a paper by Dr. Ed Lakatta, Chief of the Laboratory of Cardiovascular Sciences (LCS) at the NIA Gerontology Research Center and contacting him, Xiao joined his staff in 1990. For 2 years she worked as a post-doctoral fellow in his laboratory studying cardiac excitation contraction coupling. "I knew we had to understand the whole cascade of how the heart works," said Xiao. She also began looking at beta1 and beta2 adrenergic receptor modulation to understand why beta1 receptors decrease during heart failure while beta2 remains the same—a similar phenomenon occurs during aging. "I've become very focused in this field looking at differences in beta1 and beta2 receptors in single heart cells and trying to understand why they are different," explains Xiao.

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Rui-Ping Xiao, M.D., Ph.D. (Continued)

Xiao learned along the way that she needed more education as she zeroed-in on her research interests. "After 3 years in the U.S. I realized I needed more education in molecular biology," Xiao pointed out. "Dr. Lakatta inspired me to focus and helped me find a good Ph.D. program. He's been a role model and encourages me to compete for awards."

In 1992, Xiao completed her post-doctoral fellowship and became a senior staff fellow in the LCS. In 1995, she graduated from the Ph.D. program in the department of physiology at the University of Maryland Medical School. The following year she was promoted to Tenure Track Investigator and Head, Receptor Signaling Unit, LCS.

The Courage to Challenge Authority

Xiao has learned that believing in yourself and challenging authority are essential, especially for women who want careers in science. "Authority isn't always right — you have to have the courage to challenge it and not fear it," advises Xiao. "Also, collaboration is extremely important in modern science. Learn how to collaborate."

Xiao knows that a successful career in science is hard work, with lots of twists in the path that can take a scientist in many possible directions. "Good science requires putting in time," Xiao has learned. "Science deserves 200 percent of your life — you have to enjoy science to give that much of yourself." From experience Xiao advises aspiring scientists to find support in parents, friends, and teachers and to positively deal with problems. She also stresses the importance of looking forward. "Hope is beautiful," Xiao beams.

Xiao remembers what her high school teacher, Qui Yin once wrote during their correspondence that first rocky year of medical school, "If you believe you are smart, take this challenge." She did, and it paid off. ■

Planning for NIA's Future: Research Goals

The NIA has begun work on a 5-year strategic plan for aging research. The plan will describe the Institute's mission, areas of current and future research opportunities, and plans for maintaining health and independence for older Americans. The plan will describe research goals for fiscal years 2001 through 2005 on the biological, behavioral, and social changes that occur with age and their effects on health and disease, with a special emphasis on preventing Alzheimer's disease. A section of the plan will be devoted to research aimed at reducing health disparities among older racial and ethnic populations. The current draft incorporates eight major research goals:

- Prevent or reduce age-related diseases, disorders, and disability
- Prevent Alzheimer's Disease: AD Prevention Initiative
- Maintain and enhance brain function, cognition, and other behaviors
- Maintain physical health and function
- Unlock the secrets of aging, health, and longevity
- Enhance older adults' societal roles and interpersonal support, and reduce social isolation
- Monitor health and economic circumstances at older ages and inform policy and priority-setting related to population aging
- Reduce health disparities among older racial and ethnic populations

A draft of the plan will be posted on the NIA web site (http://www.nih.gov/nia) in the fall of 1999 for public comment. We invite you to review the draft plan and send your comments and suggestions to the NIA using the e-mail address you will find on the web site. ■

Sound Sleep, Better Health: Research Targets Sleep Disorders

You have difficulty falling asleep. Now it's 2:00 a.m. and you're still awake. Finally, you fall asleep but at 4:00 a.m. you're back up, feeling alert. An hour later you still can't fall asleep, and in two hours the alarm will go off. Sound familiar?

What you are experiencing is insomnia. For most of us, sleep patterns change as we age. Our period of deep sleep shortens and we may wake several times each night. Napping and medications might help—or sometimes interfere with—our ability to sleep soundly. Bedtime can easily become stressful.

> *"Evidence indicates that African-American women have more difficulty falling asleep or waking too early than do their male or Caucasian counterparts. They also have more difficulty finding relief."*

While sleep complaints are common among older adults, few studies have examined these conditions in minority populations. The NIA, however, is supporting a number of investigators who are turning their attention to sleep disturbances among older African-Americans.

Results of research from the NIA suggest that when compared to their Caucasian counterparts, African-Americans have a lower prevalence of night-time waking. Interestingly, studies by NIA grantee Dr. Sonia Ancoli-Israel of the University of California at San Diego have found that African-Americans report less satisfaction with sleep, more difficulty falling asleep, more daytime sleepiness, and more frequent morning headaches than Caucasians.

While the reasons for these findings are not completely understood, scientists theorize that coexisting health conditions may be the culprit, especially since many serious problems, such as diabetes, cardiovascular disease, hypertension, and stress, affect African-Americans disproportionately.

Ancoli-Israel has also found that older African-Americans have more severe sleep-disordered breathing—or sleep apnea than older Caucasians. This sleep disturbance causes a person to actually stop breathing, wake up, and then fall asleep again. The pattern can repeat itself over and over. Ancoli-Israel is now conducting studies about the possible relationship between hypertension and sleep-disordered breathing among African-Americans.

"We know that sleep-disordered breathing is associated with hypertension, and that hypertension is very common in African-Americans, especially among older African-Americans," says Ancoli-Israel. "For these individuals, sleep-disordered breathing also appears to be more severe. What we would like to know then is whether the two are related, or if they are independent of each other."

Ancoli-Israel's 5-year research project is in its fourth year and consists of home visits, interviews, sleep recording, and evaluations in an effort to accumulate data about the sleep patterns of 70 African-American individuals.

"The project is still ongoing, so it is too early to draw conclusions," says Ancoli-Israel. "Clearly, though, something different is going on in African-Americans when it comes to blood pressure and sleep patterns. We need much more research in order to find out just what those differences are." ■

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This is an administrative document.

Research on Sleep in the Hmong Community

Sleep disturbances are rarely serious or even fatal. However, one troubling syndrome is called obstructive sleep apnea. Perhaps hundreds of times during a night, the sleeping person is unable to breathe, awakens, and resumes breathing. Although the condition can be mild, it can also be chronic and progressive. In 1981, another disorder, called Sudden Unexplained Nocturnal Death Syndrome, caught the attention of the Centers for Disease Control and Prevention. It is now the subject of NIA-funded research. Mysteriously, this disorder affects Hmong refugees now living in the United States and overseas.

The word Hmong (pronounced *mong*, as in the word 'song') means "free" and commonly refers to one of several Laotian hill peoples native to northern Laos. In 1959, the Hmong became the focus of U.S. attention and were recruited for military purposes. As the war in Southeast Asia progressed, the Hmong eventually formed the backbone of the resistance movement in northern Laos. Thousands of Hmong eventually fled Laos as refugees and spilled into Thailand and other countries. Many now live in the United States where they continue their struggle to adapt to unfamiliar American culture: music, language, food, and beliefs.

Changing Societal Views

Societal views on aging is one area where traditional Hmong culture differs from the American perspective. Traditional Hmong society was built around the clan system, and leadership was determined by status within the clan. In Laos, clan leaders tended to be older males, and while life there was difficult, older adults enjoyed a level of honor, respect, and deference unequalled in American society. Here, the Hmong remain close-knit, but many young Hmong-Americans are pulling away from the traditional values of their elders.

In 1975, with the end of war in Southeast Asia, thousands of Hmong refugees settled in U.S. cities. Shortly thereafter, an alarming incidence of sudden death among Hmong men in their 20s and 30s was reported. The death rate associated with the phenomenon was 100 times higher than that of non-Hmong.

Hmong Community in Wisconsin

One area where several Hmong communities are located is Wisconsin. "The Hmong community was aware of this phenomenon and they were petrified," says NIA grantee Dr. Terry Young, a sleep expert at the University of Wisconsin at Madison, who now studies breathing problems during sleep among the Wisconsin Hmong community. "It was very frightening to them."

The Hmong are not accustomed to Western medicine, and some attributed the deaths to a spirit which came and sat on the victim's chest, stealing his life away.

Young teamed up with a young Hmong graduate student, named Se Xiong, who was enrolled in the University of Wisconsin's epidemiology program. The two embarked on a research project consisting of home visits, interviews, questionnaires, and home sleep monitoring.

"What we hope to learn is if the sudden death among younger men represents a distinct cardiopulmonary disorder, or whether the Hmong actually have a very high risk of sleep apnea that exacerbates underlying cardiac abnormalities," says Young of her work, now in its second year.

Sleep Disorders Research

In her study, Young compares the sleep disorders and sleep patterns of Hmong men and Hmong women, but also compares them to those of non-Hmong people. The project will also determine whether Hmong women, compared to Caucasian women, have a higher prevalence of sleep disorders during mid-life.

Young joins many scientists, authors, members of the media, and other Americans who continue to explore various aspects of the Hmong refugee experience. Her project represents a unique Federal investment in the health of a minority population. She observes, "Many of the Hmong were shocked to learn that the U.S. Government was interested in them and was willing to spend money to investigate their health." ■

Spero Manson, Ph.D.: Putting Medical Anthropology to Work for Aging Research

Picture a young Chippewa woman growing up on the Turtle Mountain Reservation in North Dakota in 1900. Could she have imagined then that she would marry a Greek immigrant and that almost one hundred years later her first grandson would be a medical anthropologist? NIA grantee Dr. Spero Manson, Director of the Native Elder Research Center in Denver, Colorado, one of the Resource Centers for Minority Aging Research (RCMARs), is all that and more. The Center is supported by NIA, the National Institute for Nursing Research, and the NIH Office of Research on Minority Health.

That young Indian woman, Florence Martin, met and married Spero Manson's grandfather, who had immigrated to the United States in 1906. Born in Washington state, Manson himself spent the first 4 years of his life on the same reservation. Then the family moved westward and eventually settled in Seattle where Manson attended high school.

"Seek out educational experiences that will increase your likelihood of developing mentoring relationships with concerned, enthusiastic health professionals."

The first grandson of the 67 grandchildren of Florence and the immigrant Spero, Manson said he was "supposed to be a medical doctor and enrolled at the University of Washington as a pre-med student." However, a lecture on Samoan health problems after the introduction of a Western-style diet, led Manson to see "a mirror of my own childhood and an explanation for the epidemic rise of health problems in the American Indian population." He changed his major to medical anthropology and received his B.A. degree in 1972.

Anthropology Studies in Minnesota

Manson received a master's degree in anthropology from the University of Minnesota in 1975. There, he was "very fortunate to be able to study under Drs. Harvey Sarles, E. Adamson Hoebel and Robert Spencer, leaders in anthropology, the latter two specializing in American Indians and Alaska Natives." Manson's thesis evolved from his work with the Native American patients in a mental health clinic who often did not return after the first visit. He looked at the complex issues involved--issues ranging from the clinic's lack of cultural knowledge about their patients to the absence of an outreach program and American Indian staff members.

Next, Manson traveled to Pakistan to study traditional healers under a Fulbright-Hays Predoctoral Student Grant and later a National Science Foundation fellowship. His advisors had urged him to broaden his experience by working outside of his own cultural environment for a time.

In 1978 Manson became Research Director of the National Center for American Indian and Alaska Native Mental Health Research at Oregon Health Sciences University and 2 years later received his Ph.D. from the University of Minnesota. In Oregon he met his first academic mentor and continuing patron, Dr. James H. Shore, one of the first psychiatrists in the U.S. Public Health Service's Indian Health Service. Shore's direction and support "was critical to my understanding of larger issues in the field and to my learning to work with various constituencies." Shore moved to the University of Colorado Health Sciences Center (UCHSC) in 1985 and recruited Manson there the following year.

While in Oregon, Manson also met Dr. Shirley Margolis-Cullen of the National Institute of Mental Health (NIMH). For 8 years he worked with Margolis-Cullen on NIMH scientific review committees which "were vital to my academic development. They allowed me to see the cutting edge of research in my field and to learn how to write a grant application."

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Spero Manson, Ph.D. **(Continued)**

Encouraging Young Scientists

Manson enjoys not only research, but also working with young people interested in the field of Native American health. He has many opportunities for this in the UCHSC Department of Psychiatry as Professor and Head of the Division of American Indian and Alaska Native Programs. The Division includes 6 national centers, all founded by Manson. One of these, the Native Elder Research Center, funded in 1997, seeks to close the gap in health that exists between Native elders and nonminority older people. Toward that end, Center staff target American Indian/Alaska Native investigators for career development, work to ensure the participation of Native American communities in research, and recruit American Indian/Alaska Native investigators into aging research. Manson's accomplishments were recently acknowledged by two prestigious awards: the American Public Health Association's Rema Lapouse Mental Health Epidemiology Award (1998) and the University of Washington's Walker-Ames Visiting Professorship (1999-2000).

Advice to Native Youth

Manson believes that "each of us has to bring along junior colleagues and help them to contribute to their field." To those American Indian youth considering a career in his field, he has the following advice. "Become computer literate. Expose yourself to a wide array of social and cultural issues and settings; work in community-based programs. Seek out educational experiences that will increase your likelihood of developing mentoring relationships with concerned, enthusiastic health professionals. Come to see novel, challenging situations as opportunities for growth rather than as threats to yourself. Don't personalize criticism; search for the lessons within, discard the rest."

Manson has strong personal ties to the American Indian culture, but "just because you're Native American doesn't mean you have a God-given ability to relate to others in that community. You must be a good self-teacher, learn to read the scene, and look for common interests to create a win-win situation for all."

Manson is obviously happy where his career path has taken him. When asked what he would have done differently, he responded, "Not a thing!" That young Greek man who almost one hundred years ago bravely left his homeland to create a new life in America would certainly agree, and the Indian woman he married would be proud of her grandson's strong ties to the American Indian culture and community. ■

If You Have Questions -- We Have Answers.

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NIA Dissertation Support (Continued)

Today Talley is an assistant professor of psychology at James Madison University, where she continues her basic animal research.

Yvonne Eaves is another recipient who believes the NIA support was a "big stepping stone in my career." She received her Ph.D. from the University of Michigan, Ann Arbor, in 1998. In the course of her dissertation research on caregiving in rural African-American families, Eaves made almost 50 trips to conduct in-person interviews with numerous families in rural North Carolina. The NIA grant helped with her travel costs and enabled her to pay the families a small participation fee. She was able to have the tapes of her interviews transcribed, to present her research at nurses research conference, and to return to Ann Arbor for meetings with her dissertation committee.

Eaves is now an assistant professor at the University of North Carolina Chapel Hill, School of Nursing.

For Stephanie D. Taylor, who also studied rural older people, the NIA grant paid for mailings, long-distance telephone surveys, and travel between Ohio State University (OSU) and the Appalachian areas of southern Ohio. She hired a consultant who helped her gain the cooperation of the rural Appalachian community she was studying. Taylor says the grant is "a great mechanism to support graduate students that have an interest in minority elderly research. It got me into 'the loop'." She received her Ph.D. from OSU in 1996.

Now at the University of Michigan, Ann Arbor, Taylor is an assistant professor in the College of Pharmacy and a pilot investigator at the NIA/NIH Michigan Center for Urban African-Amercian Aging Research.

Funds Defray Costs

Purchasing research materials was the main way Colin K. Combs used his NIA dissertation grant. "This support is particularly important when a lab is not well funded," he believes. Combs' dissertation research focused on developmental regulation of tau phosphorylation. The antibodies and timed-pregnant rats he needed were expensive, but essential. The NIA grant helped defray these costs and enabled him to present his research at an international conference. He received his Ph.D. from the University of Rochester in 1996.

Combs completed an NIH post-doctoral fellowship in the Alzheimer's Research Laboratory at Case Western Reserve University School of Medicine. He thinks writing a grant and going through the review process early in his career was invaluable. "It is best to get that training as early as possible," Combs suggests, "it makes the process much less intimidating."

Share Your Experiences

If someone you know is beginning to work on a doctorate in aging research and is interested in one of these grants, he or she should consult the NIH Guide to Grants and Contracts. Dr. Robin A. Barr also has information on currently available Requests for Applications. Contact:

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From basic animal research to studies of social issues, support for doctoral studies fills many needs for beginning investigators. Of equal importance, it initiates a relationship between the scientist and the Institute which may continue for many years. To share your thoughts about how an NIA grant affected your career, contact:

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