

Scholars in the Graduate School under the direction of Marilyn Morris, associate dean for graduate and postgraduate education and professor of pharmaceutical sciences.

Morris wants to build a community for postdocs, who she says can be isolated in their labs. In a first step toward that goal, UB's Sigma Xi research symposium this April will include for the first time a postdoc section with posters and presentations.

"Postdoctoral scholars enhance the reputation of the university, so it is important to support them," Morris says.

A VIEW FROM BOTH SIDES OF THE LAB

When she was asked to serve on the UB postdoctoral education advisory committee that recommended the formation of the new office, Gabriela Popescu, assistant professor in the Department

of Biochemistry, was eager to participate because "the topic interests me a lot." And she was ideally placed to assess the UB postdoc experience, having been a postdoctoral associate in Anthony Auerbach's group from 2000 to 2004.

After earning a Ph.D. in biochemistry at UB, working on retinoid metabolism, Popescu wanted to pursue a developing interest in the literal workings of the mind. She needed to learn biophysics and physiology to complement her expertise in protein chemistry. She would have looked for a postdoc position elsewhere—for the variety of experience that she would recommend to her own students—but moving her school-age children was a roadblock.

"I was very fortunate to find the best possible match with Tony Auerbach," she says. "He was well known and well funded." She worked in his lab for a year, recording activity in a particular molecule in a neurotransmitter, then went to work on her own interest in NMDA receptors.

Auerbach told her that what she was proposing to investigate would be very difficult and that she should try it for six months and move on if it didn't work out. It did work out. He secured an NIH training grant to fund her work, which eventually resulted in publications in *Nature Neuroscience* and in *Nature*. Discussing her findings, an article in *Trends in Neuroscience* said the work "extends our understanding of NMDA kinetic behaviors and emphasizes the potential complexity of their synaptic and extrasynaptic responses."

Popescu is very enthusiastic about NIH's new Pathway to Independence Award, which provides funding for two years of postdoctoral work, followed by three years of support as an independent researcher.

UB-JOHNS HOPKINS SHUTTLE

Indrajit Roy, who earned his Ph.D. at the University of New Delhi, took a postdoc position in the Institute for Lasers, Photonics and Biophotonics in 2000 and conducted research on nanoparticles as delivery vehicles in medicine. He moved down to Johns Hopkins to work in the same capacity with a cancer research group to get more experience on the medical side of nanomedicine.

While he was at Johns Hopkins, Roy stayed in contact with his UB mentor, Paris N. Prasad. In 2004, when the National Cancer Institute announced a program of funding for nanotechnology-based platforms for cancer diagnosis and therapy, Roy participated in writing a proposal that brought a \$3.46 million grant to UB and Johns Hopkins for research aimed at developing nanotechnologies for earlier diagnosis and more effective treatment of pancreatic cancer. Roy came back to Buffalo to work with Prasad on that grant, as well as on other projects including nanoparticle-based multi-probe systems for medical imaging.

Roy's publications include a 2005 article in the *Proceedings of the National Academy of Science* on using nanoparticles as DNA carriers.

"Postdoctoral associates play a critical role here, not only in carrying out institute research but in helping to determine the direction of that research," says Prasad, who directs the institute.

AUTHOR, CO-INVENTOR, FACULTY MEMBER

"Postdocs are in a dependent position in which they are mentored and advised by the PI or group leader. While they grow scientifically they increasingly contribute intellectually to the ongoing project," according to Thomas Szyperki, professor of chemistry and a world-leading researcher in the field of structure determination of biological macromolecules using nuclear magnetic resonance spectroscopy.

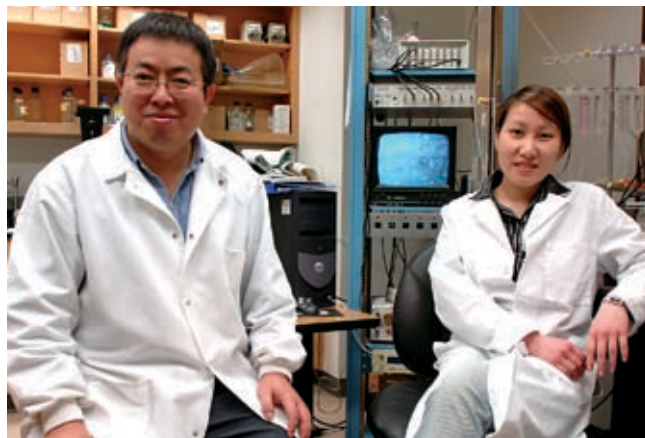
Szyperki points to the career of a particularly productive postdoc, Hanudatta Atreya, lead author on an article published in the *Proceedings of the National Academy of Science* that is considered a seminal paper in the field. Atreya holds a patent with Szyperki for a method for determining the structure of proteins. Szyperki credits the grant-making by the National Science Foundation as a valuable long-term investment in the postdocs who are employed in labs supported by those grants.

This fall, Atreya's research record under Szyperki landed him a tenured position on the faculty of the Indian Institute of Technology in Bangalore, India.

MAKING THE LAB WORK

In Zhen Yan's busy lab, five postdocs, two graduate students and two technicians conduct research in the field of molecular and cellular mechanisms for the regulation of ion channels and synaptic transmission in central nervous system neurons. In the six years since she joined the Department of Physiology and Biophysics, Yan has built a productive lab that publishes extensively.

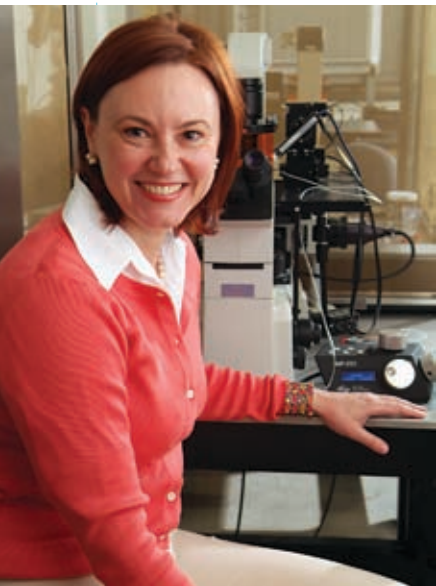
Two of her postdocs, Wenhau Liu and Eunice Y. Yuen, were lead and second authors respectively on a paper published in the Nov. 13 issue of *Proceedings of the National Academy of Science* describing the mechanism of a particular kind of molecular receptor in the prefrontal cortex that may eventually yield a better understanding of certain neuropsychiatric disorders. (Nobel Prize laureate Paul Greengard was a co-author on the paper.)



 WENHAU LIU AND EUNICE YUEN IN ZHEN YAN'S LAB RECENTLY PUBLISHED THEIR RESEARCH IN THE PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCE.

Liu is a molecular biologist who recently moved from a postdoc position in the lab of Jian Feng in the same department so that he could learn physiology and Yan could strengthen her lab's capability with his expertise. Yuen earned her Ph.D. under Yan and decided to stay in the lab. She says that she got interested in translational research as an undergraduate physical therapy major working in neurological rehabilitation.

While postdocs usually spend between three and five years training and doing research in one or more labs before becoming faculty members or independent researchers, a few make the jump more quickly. Jeffrey Berman, who earned a Ph.D. at UB in the field of structural engineering, and who already had an impressive record of publication in such places as the *Journal of Structural Engineering*, was a postdoctoral associate at MCEER, working under MCEER director Michel Bruneau for less than a year before accepting a position as assistant professor in the Department of Civil and Environmental Engineering at the University of Washington. Berman left a number of articles currently in review in his wake that will eventually catch up with him in Seattle.



 GABRIELA POPESCU PUBLISHED TWO PAPERS IN NATURE WHEN SHE WAS A UB POSTDOCTORAL FELLOW.

PHOTO: DOUGLAS LEVERE

PHOTO: NANCY PARISI