

# Robert Wood Johnson MEDICINE



## Research: The Strength of Leadership

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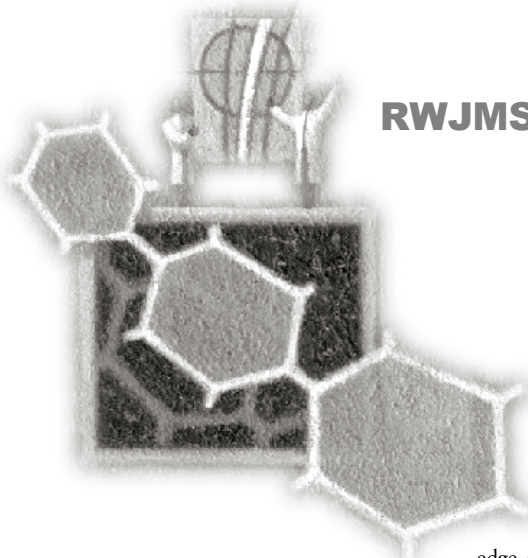
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## RWJMS Students Take Time-Out for Research

**M**any UMDNJ-Robert Wood Johnson Medical School faculty members pursue innovative research at the cutting edge of medical science. So it's no surprise that a growing number of RWJMS students are following their professors' examples, even when it means taking time off from medical school.

Jay Zampini, for example, worked at RWJMS in the laboratory of Siobhan Corbett, MD, assistant professor of surgery, studying integrin-mediated induction of cyclooxygenase-2 (COX-2) in human monocytic leukemia cells. Currently a third-year student, he spent a year as a student scholar between his second and third year at RWJMS. "I studied what happens to one of the cellular processes of a certain type of blood cell (monocyte) as it interacts with the extracellular matrix," he explains. This

*Jay Zampini '02 spent a year as a student scholar between his second and third year at RWJMS.*



research is helping to define the role of COX-2 in the body's inflammatory response.

Taking time out for research is "the best decision I've made in my educational career," Zampini says. "The first two years went by so fast, it's all a blur; you do not really have a chance to process the science in the context of medicine. Doing research gave me a chance to step back and think about and get a bigger picture of what I am actually learning."

Rachel Sargent also pursued research with an RWJMS faculty member. After finishing her third year of medical school, she received a Howard Hughes Medical Institute Research Training Fellowship, which permitted her to do basic research under the guidance of Arnold B. Rabson, MD, professor of molecular genetics and microbiology, at the Center for Advanced Biotechnology and Medicine. Their research project is titled "Role of NF- B2 transcription factor alterations in the pathogenesis of cutaneous T-cell lymphoma." The human nf b2 gene is located on a region of human chromosome 10 and is rearranged in several lymphoid malignancies. A common feature of nfkb2 gene rearrangements in the lymphomas is the production of abnormal NF- B2 proteins. Sargent's research with Dr. Rabson suggests that the production of abnormal NF- B2 proteins results in loss of normal regulation of NF- B2 target genes, which may play a role in the oncogenesis of lymphomas.

Sargent has returned to medical school this fall and will graduate with the class of 2001. "I cannot tell you how fortunate I am to have had the opportunity to work under Dr. Rabson's guidance," she says. "I think my time working on this project has been well invested. I have had the unique opportunity to not only get a medical education but also to get some sound training in the field of molecular genetics." After graduation, Sargent's plans include a pathology residency and a career in pathology, with an emphasis on biomedical research.

Unlike Zampini and Sargent who did their research at RWJMS, some students travel to distant sites. For example, Susan Jane Adamcik, a third-year student, took a week-long trip to Cuba last year, sponsored by a grant from the MacArthur Foundation. She was chosen as the American medical student representative to accompany an exchange delegation of four physicians from the United States.

During the visit, the delegation met with physicians, government officials, public health specialists, community workers, and numerous others. Although Cuba is in many ways a "third world country," Adamcik learned that the Cuban government makes health care both a priority and a right for all Cubans. Indeed, with Cuba's emphasis on community-based and preventive medicine, its statistics on infant mortality are better than those in the U.S. "It was an extremely moving experience for me," Adamcik says. "I was able to recapture some of the feelings that made me decide to go into medicine."

Closer to home, Jennifer Nicholson, a fourth-year student, spent last year at the National Institutes of Health in Bethesda, Maryland, through a Clinical Research Training Program fellowship given to medical students who have finished their third year. Nicholson worked with Jack Yanovski MD, PhD, chief of the Unit on Growth and Obesity of the Developmental Endocrinology Branch of the National Institute of Child Health and Human Development (NICHD). "I was mainly involved in a study of the safety and effectiveness of Orlistat (brand name Xenical), a new weight-loss medication that is FDA-approved for use in adults," she says. "This medication works by preventing the absorption of 30% of the fat in one's diet, thus making each meal a lower-calorie meal."

Nicholson monitored African-American and Caucasian adolescents who were participating in a weekly weight-loss edu-



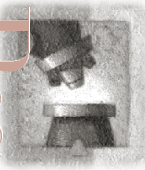
cation program. "My responsibilities ranged from scheduling the kids' appointments, to analyzing data, to helping with weekly group sessions," she explains. "I learned about multiple aspects involved in doing clinical research, plus I really enjoyed working directly with the kids." Nicholson's previous research experience had been mostly in the laboratory. "I found that intellectually stimulating, but I really wanted to participate in research that involved patient contact and that gave results that could be immediately applied to improve patients' lives," she says. Nicholson plans to go into pediatrics and to pursue a career in academic medicine.

Giang T. Nguyen, MD '00, participated in many research projects while he was a student at RWJMS. He also found that doing one research project led to another, and then to several others. In the summer of 1995, after his first year of medical school, he worked with Sindy Paul, MD, MPH, at the New Jersey State Department of Health and Senior Services, Division of Epidemiology and Infectious Disease, doing research on hospital risk factors for impen-

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*After graduation in 2001, Rachel Sargent's plans include a pathology residency and a career in pathology, with an emphasis on biomedical research.*

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## RWJMS Students Take a Time Out for Research

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em-resistant Gram-negative bacilli blood isolates. During the 1996-97 academic year, Nguyen participated in another research project, this time at the National Cancer Institute with Drs. Thomas R. O'Brien and James J. Goedert. His project, entitled "Phenotypic expressions of CCR5 D32/D32 homozygosity," focused on persons with a genetic mutation that makes them immune

to most types of HIV infection. "We concluded that efforts to pharmacologically mimic this genetic mutation would be unlikely to cause major deleterious health effects," Nguyen explains. As first author of the study, he presented these findings at the Eighth European Congress on Clinical Microbiology and Infectious Disease, in Lausanne, Switzerland, and published the full report in the journal *JAIDS*.

In December 1999, Nguyen completed another project with Dr. Goedert at the National Cancer Institute, titled "Smoking patterns among patients with coagulopathies enrolled in the Multicenter Hemophilia Cohort Study." This study was performed as part of his master's in public health degree. His advisor was Dan Wartenberg, PhD, associate professor of environmental and community medicine.

Nguyen also has worked on a project to determine how medical schools handle issues related to minorities, advocacy, and medical student rights. He compiled results from a national survey of lesbian, gay, bisexual, and transgender physicians to assess residency training environments for persons of minority sexual orientations. Both of these projects were funded by the American Medical Student Association, for which he served as chair of a National Standing Committee on Advocacy.

"Fitting research into my medical school coursework was a challenge," Nguyen admits, "but I had a great deal of support. The folks at Academic and Student Affairs — for example, Paul Mehne, PhD, associate dean for academic and student affairs, here at the Camden campus — were very helpful in allowing me some flexibility. Having a lot of responsibilities on my plate also helped me to balance my priorities and gauge my abilities." According to Nguyen, "The busier you are, the more efficient you are, but of course, you have to busy yourself with something that excites and motivates you."

Nguyen graduated from medical school this year and began his residency in family practice at Thomas Jefferson University in Philadelphia. He hopes to incorporate patient care, teaching, public health research, and advocacy into his future career. **M**

### Systolic Hypertension Risk Studied

A landmark study, encompassing five years and approximately 13,000 patients at 1,100 sites in 16 countries is being led by researchers at UMDNJ-Robert Wood Johnson Medical School, where the principal investigator is John B. Kostis, MD, professor and chair, Department of Medicine. Dr. Kostis holds the John G. Detwiler Endowed Chair in Cardiology

The OPERA (Omapatrilat in Persons with Enhanced Risk of Atherosclerotic Events) study, sponsored by Bristol-Myers Squibb, is a large-scale morbidity and mortality clinical trial studying omapatrilat (a cardiovascular compound under development by B-MS) in the management of patients with early stage or borderline isolated systolic hypertension (ISH).

Dr. Kostis, who reports he has been trying to get funding for such a study for 10 years, says Stage 1 ISH is a common occurrence in people over 60 years of age and increases the risk of both morbid and mortal events. To date, there have been no studies to evaluate the mortality and morbidity benefits of treatment.

"There has been increasing awareness of the importance of systolic blood pressure," he says. "However, systolic blood pressure is not controlled in the majority of hypertensive persons. Part of the problem is there is no proof Stage 1 ISH should be treated. The OPERA study is important

because it will settle that question."

ISH is a form of high blood pressure that potentially places millions of people at risk of heart attack, stroke, heart failure and death. It affects approximately 15 to 20 percent of those past 60. Although traditionally, more concern was focused on treatment to reduce diastolic blood pressure, recent evidence suggests systolic pressure may have as much bearing on cardiovascular risk, if not more.

The study defines ISH as a reading of 140 to 159 mm Hg (130 to 149 mm Hg in diabetic patients) with a diastolic blood pressure under 90 mm Hg. Patients enrolled in the study will be at least 65 years of age, have blood pressure within the program guidelines and have no exclusionary criteria such as previous heart attacks or heart failures indicating they should be treated.

Dr. Kostis reports there will be 120 sites in the U.S. More than 150 volunteers were seen or scheduled through August 2000 at the RWJMS clinical center.

"Omapatrilat is effective in reducing both systolic and diastolic blood pressure," Dr. Kostis reports. "We are encouraged that the study will prove a clinical benefit in reducing mortality, heart failure, heart attack and stroke in addition to lowering blood pressure."

— R.R.