



Alumni Profile | Melissa Calmann, PhD



Program: Biochemistry & Molecular Pharmacology

Year of Graduation: 2004

FOR MELISSA CALMANN, PHD, science was never a career option—it was the only natural choice. Honing in on just what type of scientist to become, however, was the challenge. Once a would-be marine biologist or crime scene investigation (CSI) specialist, Dr. Calmann credits the influence of a chemistry teacher for her eventual interest in biology and chemistry, and her decision to earn a bachelor's

degree in biochemistry.

"I really wanted to be a CSI specialist, but when you start looking at career opportunities, you realize how limiting it can be," said Calmann, manager of Chemistry, Manufacturing and Control (CMC) Regulatory Affairs at Janssen Pharmaceuticals, who also minored in criminology. "I never wanted my own lab and the stress of grant writing, but I absolutely loved the lab work I did with Dr. Marinus, who was great." [Martin Marinus, PhD, is a UMMS professor of biochemistry & molecular pharmacology.]

Having worked several internships throughout college, Calmann became a student of the diagnostic business elements of the pharmaceutical industry. "I saw first-hand how difficult it is in industry for people without a PhD," she said. "The people with PhDs are the decision makers, so it became really clear what I needed to do."

Her work for Dr. Marinus has remained integral throughout her career. "He taught me the best thing you can ever teach a scientist—that the way to answer scientific questions is to look at things in a very yes-no fashion," Calmann said. "Whatever that answer was, it took me to the next question. The ability to think like that led me to what I can do now in my career."

Calmann recently returned to the GSBS to speak with students about industry careers and thoroughly enjoyed the homecoming. "I've always loved the environment at UMass Medical School," she said. "It's very welcoming, and you don't see the stereotypical, stuffy scientist there. Going back really is like going home." ■

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The Vibe@

Summer 2012

The Graduate School of Biomedical Sciences

Research Program Scores High National Rank

UMass Medical School was ranked highly by weekly news magazine *U.S. News & World Report* in its 2013 edition of the "Best Graduate Schools" issue. Specifically, UMMS was ranked 48th among top research schools, 46th in the biological sciences and seventh in primary care education. "Our young research program continues to excel with internationally recognized faculty and passionate students who are among the best and the brightest of the next generation of researchers," said Anthony Carruthers, PhD, dean of the GSBS. "Together, we are all creating a program that offers outstanding opportunities for scientific and professional advancement."

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High-Efficiency Power Plant Fuels \$5.6 Million Rebate and Reduced Emissions

IN APRIL, UMass Medical School was awarded \$5.6 million from National Grid—the largest incentive of its kind given by the company in the commonwealth—for an energy-efficient, 14,000-square-foot expansion of its power plant.

At the heart of the expansion is a high-efficiency, 7.5-megawatt, gas-fired combustion turbine and an associated heat recovery system. Since natural gas burns cleaner than oil, and the new jet turbine is highly efficient, the expanded power plant will boost the Medical School's capacity to generate electricity on its Worcester campus while reducing its green-house gas emissions. The power plant also provides a source of energy and power for UMass Memorial Medical Center's University Campus.

"As a public institution, we believe it is incumbent on us to lead by example and manage our growth in ways that limit the impact on our environment," said Chancellor Michael F. Collins. "It takes strong partnerships to meet these challenges. National Grid's incentive program allows us to focus on making investments for the long-term by introducing cleaner technologies to our campus that will pay dividends for the people of the commonwealth for decades to come."

The power plant expansion, built to support the 500,000-square-foot Albert Sherman Center research and education facility currently under construction, will accommodate the increased demand for electricity, steam and chilled water expected when the state-of-the-art building is completed in December 2012. ■

STEPPING INTO INDUSTRY

The presentation *Not Just Research: Finding Alternate Jobs in Pharma* drew 50 GSBS students during a professional development seminar held in March. Guest speaker and GSBS alumna Melissa Calmann, PhD Class of 2004, detailed career paths and opportunities in the pharmaceutical industry. Dr. Calmann, who is manager of Chemistry, Manufacturing and Control (CMC) Regulatory Affairs at Janssen Pharmaceuticals, offered strategies for transitioning between academia and an industry career.

"You may come out of school with no industry experience and many companies require you to have that experience," she said. "You need to network, get out to events, reach out to people and figure out ways to break into industry. There are lots of ways to connect with people and to learn about the different rigors because industry science is very different than academic science."

Professional development seminars are held monthly, except for July and August, and are co-hosted by the Office for Postdoctoral Scholars and the GSBS.

American Academy of Microbiology Recognizes Three UMMS Scientists

Three UMass Medical School faculty members have been elected to the American Academy of Microbiology through a highly selective peer-review process based on scientific achievement and original contributions to the field of microbiology. Roger J. Davis, PhD, Howard Hughes Medical Institute Investigator, the *H. Arthur Smith Chair in Cancer Research* and professor of molecular medicine and biochemistry & molecular pharmacology; Douglas T. Golenbock, MD, professor of medicine and microbiology & physiological systems; and James Reid Gilmore, PhD, professor of biochemistry & molecular pharmacology, are among 80 microbiologists elected in 2012 to fellowship in the American Academy of Microbiology, the honorific leadership group within the American Society for Microbiology (ASM). They join more than 2,000 fellows representing all subspecialties of microbiology, including basic and applied research, teaching, public health, industry and government service.

The mission of the academy is to recognize scientists for outstanding contributions to microbiology and provide microbiological expertise in the service of science and the public. It serves as a resource to governmental agencies, industry, the ASM and the larger scientific and lay communities.



Nobel Laureate Urges Class of 2012 to “Go Out and Save the World”

LIBERIAN PRESIDENT ELLEN JOHNSON SIRLEAF made an impassioned plea to 71 Graduate School of Biomedical Sciences (GSBS) graduates to use their skill and compassion to “save the world” during her address at the 39th UMass Worcester Commencement exercises on Sunday, June 3. The GSBS awarded three master’s degrees and 64 PhDs. Four MD/PhDs also were awarded.

“We must have the courage to be brave in action. Use your knowledge and skills, continue to make a difference. For that is your calling,” said Johnson Sirleaf, a 2011 Nobel Peace Prize winner. “You are the counterpoint to the pain of the world.”

In addition to Johnson Sirleaf, one student from each school spoke. GSBS graduate Allison Keeler, PhD, told her fellow graduates, “In a world where science is often mistrusted or misunderstood, we must be ambassadors who explain our work and advocate for the role of science in society. I ask that you advocate not only for your patients but also for science that will provide future therapies that will greatly improve your patients’ lives.”

This year’s class of graduating students was the largest in UMass Worcester history, totaling 248 graduates. In addition to the degrees awarded by the GSBS, the School of Medicine awarded 111 MDs and the Graduate School of Nursing awarded 50 master’s degrees, six post-master’s certificates, four doctor of nursing practice degrees and six PhDs.

Full coverage of Commencement 2012 activities can be found online at www.umassmed.edu/news/commencement/2012. ■

Biomedical Graduate Students Take Science on the Road



EACH SPRING during Innovation Month in the Worcester Public Schools, the Regional Science Resource Center (RSCR) conducts a series of events that expose middle school students to future career opportunities in science, technology, engineering and math (STEM) in a way that is fun and engaging. In April, GSBS students, an MD/PhD candidate and a postdoctoral fellow conducted hands-on science experiments in seventh grade classrooms across the city.

Outfitted with all the laboratory equipment and supplies needed for the experiment, they taught kids at University Park Campus School how to

extract DNA from an onion—a simple yet elegant technique that connects everyday objects to scientific discovery and makes something seemingly abstract real. Each student got to bring home a plastic pipette filled with onion DNA to show and tell their families what they learned about cell biology, genetics, biochemistry and what real scientists look and sound like.

“It’s an exciting lab that they remember and talk about,” said University Park science teacher Caitie Dwyer-Huppert. Among many ‘oohs’ and ‘ahs’ as the experiment progressed, one voice was heard saying, “This is the best lab we’ve ever had!” ■

Champion Fund a Marathon for Runners and Researchers Alike

SCORCHING, RECORD-BREAKING temperatures did little to deter GSBS student Anna Serquiña, MD, in her quest to complete the Boston Marathon in April in support of the UMass ALS Champion Fund. “Since college, the Boston Marathon has been my goal because it’s the oldest marathon in the world,” she said. “I also wanted to do something special for UMass before I graduate with my PhD this summer. When I heard about this opportunity, I thought it was the perfect way to accomplish both goals.” Dr. Serquiña was one of a team of eight runners who ran for the Champion Fund and collectively raised more than \$65,000.

The UMass ALS Champion Fund is a movement to drive awareness and funding

for the ALS research breakthroughs happening at UMass and in the laboratory of Robert H. Brown Jr., DPhil, MD, one of the world’s leading and most promising ALS researchers. Former Massachusetts Gov. Paul Cellucci announced last year that he had been diagnosed with ALS and that he would lead the Champion Fund.

The Champion Fund aims to help Dr. Brown, who is treating Gov. Cellucci, and his colleagues pursue ALS research leads and breakthroughs right now that might otherwise take years to attract funding from traditional sources. “Within three to five years of diagnosis, ALS patients suffer a horrible death. It is such a cruel disease and it doesn’t get much federal funding,” said Serquiña, who had practiced as a



family physician in her native Phillipines before pursuing her PhD at the GSBS. “Dr. Brown’s discoveries are creating opportunities for treatment, and I want to support his work.”

More information about the Champion Fund can be found online at www.umassals.com. ■

Grants Help Speed Technology Development

In April, University of Massachusetts President Robert L. Caret announced \$225,000 in grants to UMass researchers for investment in new technologies through the University’s Commercial Ventures and Intellectual Property (CVIP) Technology Development Fund. Two UMass Medical School scientists are among the nine recipients of the grants, which are given annually to faculty members across all five campuses to accelerate commercialization of their early-stage technologies in a wide range of disciplines, including the life sciences, chemistry, material and engineering.

Trudy G. Morrison, PhD, professor of microbiology & physiological systems, received funding for her project *Development of Methods for Large-Scale Production of Virus-like Particle Vaccine Candidates*. Dr. Morrison’s lab has developed a novel vaccine platform that can be used to produce vaccines for a wide variety of infectious agents causing disease in humans. The technology

involves the use of virus-like particles as a platform for a generation of vaccines for various pathogens. Using this technology, they have accomplished successful preclinical trials of a vaccine for respiratory syncytial virus. The CVIP funding will help the team define methodologies for economical, large-scale production of their vaccine candidates.

“The CVIP Technology Development Fund is an important resource for the translation of basic science studies to clinical applications,” said Dr. Morrison.

William Kobertz, PhD, associate professor of biochemistry & molecular pharmacology, received CVIP funding for his project *Fluorescent Visualization of Potassium Efflux from Living Cells*. The CVIP funding will help his team validate a new class of potassium-sensitive fluorophores to be used to fluorescently

visualize potassium efflux from neuronal, muscular and cardiac potassium channels.

“Before the CVIP funding, my postdoctoral associate and I were essentially developing this new idea we had on a shoe-string budget,” said Dr. Kobertz. “With this financial support, we can work full time on our technology with the goal of visualizing potassium ions emanating from cells, and someday, from living organisms.”

Awards this year also went to faculty members from the Amherst, Dartmouth and Lowell campuses. Since the CVIP program was launched nine years ago, it has funded 66 projects, resulting in new licenses, the creation of four new companies, and more than \$3 million in additional research funding for the recipients. ■

CALENDAR OF EVENTS

September 13 Convocation 10 a.m. – noon Campus Green, UMass Medical School	September 13 Investiture 5 – 6 p.m. Campus Green, UMass Medical School
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Event information can be found on the alumni website at <http://alumni.umassmed.edu>.