

The Graduate Report

<http://graduate-school.unc.edu/index.html>



October 2009

LYLES TO PRESENT ALUMNI LECTURE

by Jack Mazurak

Dates to Remember

October 9

Deadline for completion of all requirements for December degree

Research Day Abstracts due to Graduate School Office

October 15

Registration for Spring Semester

October 23

Research Day

November 11

Veteran's Day

November 26

Thanksgiving Day

December 16-18

Fall Semester Exams

December 18

Last day of semester

January 4

Classes begin

January 8

Last Day to register

January 15

Last day to add a course

As an avid angler Dr. Douglas Lyles casts a wide net, fishing for anything that swims. But in his lab he has learned to narrow his focus.

Lyles, professor and chairman of the Department of Biochemistry at Wake Forest University School of Medicine, jokes about how, as an enthusiastic doctoral student in Mississippi, he tried to tackle pox virus before realizing he had to simplify his scope.

"That's a very complex virus," said Lyles, who's returning to his alma mater on October 23 to deliver the Distinguished Alumni Lecture for Research Day.

It wasn't until years after his 1975 graduation from what is now known as the School of Graduate Studies in the Health Sciences at UMMC with a PhD in biochemistry and minors in microbiology and immunology that he began studying vesicular stomatitis virus. The virus, known in lab culture as VSV, affects horses and cattle and is similar to rabies and foot-and-mouth disease.

"VSV is one of the viruses we know the most about because of its relatively simple structure," he said. "The main reason we work on it is not so

much to save the horses and cattle - though I'm sure the vets would be happy if it were - but because it's a tool to understand the viral process and apply it to more complex viruses."

Lyles grew up in Jackson and graduated from Callaway High School. His wife, Mary Fennell Lyles, is also a Jackson native and a graduate of the UMMC.

"We came to North Carolina basically because that's where the jobs were. We interviewed and moved to Winston-Salem in 1978," he said.

Since then they've raised three children, his wife helped form a Gerontology and Geriatrics division in Wake Forest's Department of Medicine and Lyles, while rising in rank, has stayed with VSV.

Specifically, Lyles is researching how an envelope-like membrane that surrounds the virus works. Those envelopes fool host cells into letting the virus inside where it takes over.

Understanding how the virus assembles its envelope could help researchers design antiviral drugs that interrupt the budding process. Narrowing his focus paid off by opening a galaxy of possibilities.



"We could genetically alter (the viral envelopes) to deliver new genes into cells for gene therapy or to get into cells that you want to get rid of; cancer comes to mind," he said.

A second study again exemplifies how Lyles' commitment to focused, basic-science research blossomed into translational opportunities.

An investigation into how a particular viral protein shuts off a host cell's normal response to infection led to a translational project with HIV. By mastering the shut-off mechanism, he wants to get viruses like VSV working as vaccines against other viruses.

But the method could be used to vaccinate people and build immunity. Or to make a better influenza vaccine, he said.

"It's been fascinating," he said of his research journey since graduating from UMMC. "It's kept me fascinated for 31 years."

Lyles will present the Research Day Distinguished Alumni Lecture at noon on Friday, October 23 in the lower Amphitheatre R153.

SPENCE WELCOMES NEW STUDENTS

On August 5, 2009, the new graduate students met in the Student Union for General Orientation and Graduate School Orientation. The meetings provided the students with the opportunity to meet faculty and staff members.

The thirty-five incoming students came from various parts of the country and world.

They came from Mississippi, Louisiana, Georgia and as far away as China, India, Croatia and Lebanon. Approximately 20% of the new students came from outside the U.S.

Dr. Libby Spence, Assistant Dean of the Graduate School, served as the orientation emcee. "It's always exciting to interact with the

students. They come from such varied backgrounds and for one day they all sit side-by-side. The Graduate School is different from the other schools on campus in that after orientation, our students will be spread over twelve programs. They may not see each other again for months," Spence said.

SUMMER PROGRAMS PROVIDE RESEARCH OPPORTUNITIES

Once again the University of Mississippi Medical Center had the privilege of hosting summer programs for undergraduate students interested in research.

The Summer Undergraduate Research Experience Program (SURE) kicked off the summer on June 1. The 10-week program ended on August 7 with oral presentations. Nineteen student researchers participated in this year's program.

Twenty Research Experience Opportunity (REO) students funded by a grant from the University of Southern Mississippi worked in laboratories throughout the campus. Many of the REO students participated in the SURE final seminar.

For additional information about these summer programs, please visit the following websites:

SURE

<http://graduate-school.umc.edu/index.html>

REO

<http://mfgn.usm.edu/>



GRADUATE SCHOOL UPDATE

Welcome to the Fall Semester 2009. Since this time last year we have seen many changes. The Graduate School moved from quarter hours to semester hours, the student information system was updated, Peggy Maclain retired from the Graduate School and Deborah Renfro joined the Graduate School staff.

The Medical Center implemented the new Student Connections software for UMMC student information. This system makes online applications and admissions a reality. Students will register online Spring 2010. Faculty will have access to student admission data, class rosters, student data, online registration, online grades, academic policies, portfolios and support for SACS accreditation. This automation is a major step forward for all schools.

After 22+ years with the Graduate School, Peggy Maclain, Executive Assistant, retired. We wish Peggy well in her new life. On July 1, 2009, Deborah Renfro joined the Graduate School as the new Executive Assistant.



GSB Officers 2009–2010

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In addition to the many changes, there are some challenges ahead of us. SACS accreditation is well underway and the UMMC review is scheduled for 2011. We are in the process of compiling information from Alumni, faculty, and students.

On Tuesday, September 15, the School of Graduate Studies in the Health Sciences Alumni Chapter hosted a welcome supper in the Student Union for the new graduate students. The wet weather did not dampen the spirit of the occasion. All participants enjoyed southern fried catfish and chicken with all the trimmings. It was a great opportunity for the new students and their guests to mix and mingle with the Graduate School administration and Alumni Affairs staff.

Upcoming events include Research Day in October and the Graduate School Holiday Open House later in the semester.

Again—welcome back to our returning students and for those who are here for the first time—we welcome you. We are excited to have you with us as we greet another academic year filled with changes, challenges and adventures.

ALUM AIDS IN SWINE FLU EFFORT

by Jack Mazurak



ceived a bachelor's degree in Biology from Millsaps College. In 1981 he graduated from UMMC with a doctorate in Microbiology. As a doctoral student in Mississippi he studied the herpes virus' ability to cause cancer.

That research turned into post-doctoral studies at Princeton University and the State University of New York at Stony Brook. "I was trying to understand why certain genes are turned on and off," Robinson said.

On faculty at University of Texas Southwestern Medical School Dallas in the mid 1980s, he studied gene activation in herpes to better understand how the virus infects people, lies dormant and causes outbreaks later.

The academic experience led to a position at the National Cancer Institute where he worked on HIV. Robinson switched to private industry in 1992 to work in vaccine development.

The route back to public service came through Major General Philip Russell, a researcher and physician who formerly directed the Walter Reed Army Institute of Research and the Army Research and Development Command. "(He) started twisting my arm to set up a pandemic influenza program," Robinson said with a laugh. Robinson bit and began a new career facet.

While serving as deputy director of BARDA's Influenza and Emerging Disease Program, Robinson and his team worked on a H5N1 avian flu vaccine. Their efforts led to development, procurement and stockpiling of the world's first H5N1 vaccine approved for humans and a citation by Time Magazine as the No. 1 medical breakthrough in 2007.

When the H1N1 pandemic began, BARDA used part of its playbook from the 2007 H5N1 avian flu outbreak. "We modified the H5N1 contracts we had with them previously. They started working on H1N1 in early June. We're projected to have a campaign begin in mid October, if we can start sooner, certainly we will. There are five vaccine manufacturers licensed in the U.S. for influenza," he said.

Growing the vaccines was one important step in production. It's a process traditionally done in chicken eggs, but increasingly is switching to cultivation in cells. "We've supported the cell-based technology for three straight years. It allows the vaccine to be available sooner and the product yield can be greater so you have less vulnerable people," he said. "Most other vaccines are made in cells, not eggs. So we're supporting that."

Though influenza is the disease of the moment, one of BARDA's biggest objectives is Project Bioshield, a comprehensive, all-hazards approach to protecting the public. Threats to the U.S. population include small pox and botulism outbreaks, along with anthrax botulism, radiological and nuclear attacks.

"For some threats we stockpile ahead of time like anthrax antitoxins," Robinson said. Others, such as influenza, can't be. BARDA coordinates with the Centers for Disease Control, state, county and local governments to distribute vaccines, antitoxins and therapies should an outbreak happen.

With so many potential threats, one wonders how Robinson sleeps. "It's a team that makes it happen," he said. "We've got a great team across BARDA and with the Assistant Secretary for Preparedness and Response. We work with the federal,

state and local governments."

Robinson said that UMMC was a great place to study. "At the time I was there it was at the cusp of maturity with all the department heads Dr. Arthur Guyton brought in, including Dr. Charles Randall (former Department of Microbiology chairman)," he said.

Since earning his PhD from UMMC, the graduate program has increased enrollment and in 2001 became the School of Graduate Studies in Health Sciences. That growth, he said, could not have been better timed.

Just as Robinson's job keeps him working on the next generation of preventative measures and cures, the country's universities need to keep working on the next wave of scientists. "The next generation of people who are going to work in the biomedical industry aren't there, is the thinking in the industry. We just have a shortage right now of facilities and people," he said. "That's why it's good to see strong graduate programs moving forward," he said of the Graduate School at UMMC.

"Providing the next generation is so important to our country, our economy and our knowledge base and UMMC can be a part of that."

~ Robin Robinson

"Providing the next generation is so important to our country, our economy and our knowledge base," he said. "And UMMC can be a part of that."

One of the nation's top scientists and a prominent player in the development of the forthcoming H1N1 swine influenza vaccine is Mississippi native Dr. Robin Robinson, a graduate of what is now the School of Graduate Studies in the Health Sciences at UMMC.

As director of the Biomedical Advanced Research Development Authority (BARDA), an organization within the U.S. Department of Health and Human Services, Robinson promotes the development of vaccines, treatments and therapies for a range of public-health emergencies.

Since June, the BARDA office has helped develop, license and move the H1N1 flu vaccine into private-sector mass production. The vaccine is scheduled to go public next month.

Federal administrators tapped Robinson in April 2008 for director of BARDA. Scientific research and development experience across a range of fields – academia, private-sector labs and in government – helped prepare him for the job.

The man at BARDA's helm grew up on the Gulf Coast and in Canton and re-

MACLAIN RETIRES

June 30, 2009, was a bittersweet day filled with celebration and sadness for the School of Graduate Studies in the Health Sciences (SGSHS). After 22+ years with the Graduate School, Peggy Maclain, our Executive Assistant, retired.

To many people, Peggy was the Graduate School. She had experienced the leadership of one Director and two Deans. Her love for the students was extremely evident and their love for her was obvious. Peggy had been their constant source of support and guidance for many years.

Well, Peggy has now put away all of her thesis and dissertation guidelines and replaced them with loads of toys and games. You see, once Peggy found out that there was another granddaughter on the way, she knew what she wanted to do. She is now a stay-at-home Grandma taking care of Emily and new baby Carly.

If you have ever had the opportunity to talk with Peggy, then you know about Emily. Peggy shared Emily stories on a daily basis—something she did or something she said. Emily is quite a little character and definitely a charmer. The bond between the two is amazing.

So you see—even though we miss Peggy and her tremendous wealth of knowledge, we are extremely happy for her and her new career as “Grandmother Extraordinaire.”



RENFROE JOINS SGSHS STAFF

When the position of Executive Assistant was advertised by the School of Graduate Studies in the Health Sciences, Deborah Renfroe knew that this would be a job she could really sink her teeth into!

Two years ago, Deborah spent several months in a similar administrative position in the School of Nursing. She enjoyed her daily interaction with the students as well as the faculty and staff.

When she left the School of Nursing, Deborah moved into the role of HR Analyst in the Human Resources Employment office at the Jackson Medical Mall. “I enjoyed my position in HR and I cherish the friendships I made there, but I missed the daily interaction with the students and faculty as well as the hustle and bustle of the UMMC campus,” Deborah said.

On July 1, 2009, Deborah joined the administrative staff in the Graduate School. She hit the ground running at a very busy time of year. “It’s been busy, hectic, challenging and fun. I’m glad to be back on the academic side of UMMC.”



PHYSIOLOGY GRADUATE STUDENT RECEIVES THREE AWARDS FOR RESEARCH



We have always heard about people seeing double—but in the case of Sydney Murphy, graduate student in Physiology—she has always seen everything in triplicate—three car seats, three high chairs, three cribs. You see, Sydney is only one in a set of triplets born to Billy and Rhonda Roberts. Her sister, Lyndsay, is a fourth year medical student at UMMC

and her brother, Jason, owns a business in Madison.

Sydney was born into a family of scientists. Her Grandfather was an organic chemist, who worked for 60 years in sugar research, and her father received a degree in chemistry. Sydney’s Grandfather was once commissioned by one of the world’s most famous soft drink companies to eliminate the problem they were having with the sugar separating from the beverage. According to Sydney, “My Grandfather was always letting us do experiments in the kitchen. He definitely inspired and motivated me.” One of her favorite experiments was creating her own rock candy. “He made sure we understood how the candy would form before we were allowed to eat it. He had a way of making sugar crystallization sound interesting, even to a 5 year old,” Sydney said with a smile.

In college, Sydney began

working as a student researcher in the Mississippi Genome Exploration Laboratory on the campus of Mississippi State University. “That’s where I realized that I would love to do research for a living,” she said. Now in her fourth year, Sydney plans to graduate in May, 2010 with her doctoral degree in Physiology and Biophysics. Her goal is to complete a postdoctoral fellowship and then continue to work in medical research. “I would like to teach at a medical college where I could continue basic science research while having the

opportunity to interact with clinicians in that field,” she said.

Within the last six months, Sydney has received three awards for her research: Outstanding Presentation Student Award, Gulf Coast Physiological Society/APS; DSI – Water and Electrolyte Homeostasis Trainee Finalist Award for APS at 2009 the Experimental Biology Conference; and New Investigator Travel Award for the Council for High Blood Pressure Research. In July of this year, Sydney was awarded an American Heart Association Pre-doctoral Fellowship Grant.

When asked about life in general Sydney commented, “Well, I’ve been married for three years to my husband Camp, and we have our first child, a 150 pound Harlequin Great Dane named Jackson—so, life is good.”

*“...I realized
that I would
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~S. Murphy

Two Students Receive Conerly Scholarship

Emily Gilbert and Peter Mittwede, two new MD/PhD students at UMMC, were awarded the A. Wallace Conerly, MD Scholarship. The Conerly Scholarship provides a stipend and full tuition for medical students enrolled in the MD/PhD Program. This program is designed to train the next generation of physician-scientists.

Emily received her bachelor's degree from Millsaps College while Peter received his bachelor's degree from Belhaven College. Both are currently enrolled as first-year Medical students. After their second year of Medical School, both students will complete three years of research with the Graduate School. After three years of research, they will return to Medical School to complete years three and four.



Emily Gilbert



Peter Mittwede

Seven Mississippi Resident's Receive Full Tuition Scholarships

Seven graduate students received both a Graduate Assistantship from the School of Graduate Studies in the Health Sciences at the University of Mississippi Medical Center and an Ing "Ike" Ho Scholarship. The Ho Scholarship is a full tuition recruitment scholarship awarded for outstanding academic achievement.



Misty Davis received her associate's degree from Hinds Community College and her bachelor's degree from Mississippi State University. While attending the School of Graduate Studies in the Health Sciences, she will study Biochemistry.



Matthew Dukes received his bachelor's degree from the University of Mississippi. While attending the School of Graduate Studies in the Health Sciences, he will study Physiology.



Jeremy Freeman received his bachelor's degree from Auburn University. While attending the School of Graduate Studies in the Health Sciences, he will study Physiology.



Hanna Johnson received her bachelor's degree from Mississippi College. While attending the School of Graduate Studies in the Health Sciences, she will study Biochemistry.



Daniel Lyons received his bachelor's degree from Belhaven College. While attending the School of Graduate Studies in the Health Sciences, he will study Biochemistry.



Erin Taylor received both her bachelor's and master's degrees from Mississippi State University. While attending the School of Graduate Studies in the Health Sciences, she will study Microbiology.



Stephanie Willis received her associate's degree from Hinds Community College and her bachelor's degree from Belhaven College. While attending the School of Graduate Studies in the Health Sciences, she will study Neuroscience.

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