



Biochemistry & Molecular Biology

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UNDERGRADUATE NEWSLETTER



Dr. Craig Cameron, Paul Berg Professor of Biochemistry and Molecular Biology, has been a member of the BMB faculty since August 1997. The **BMB Undergraduate Newsletter** is delighted to publish its ongoing series of interviews with BMB faculty featuring Dr. Cameron's lab. To learn a little about Dr. Cameron's research and interests and to appreciate what he looks for in accepting undergraduates into his lab, read on:

undergraduate student at Howard University, I first thought that I wanted to translate my interest in biology into a career in medicine. However, my service in the hospital during this time quickly revealed my lack of enthusiasm for dealing with ageing, death and dying issues on a regular basis. My research experiences during this time, however, exposed me to the thrill of discovery. I was an undergraduate student from 1983-1987, and the hottest topic in medicine and biomedical research was AIDS, the discovery of HIV and the development of AZT to treat HIV infection. Watching all of this unfold completely amazed me and led me to pursue a career in virology with the goal of creating antivirals and vaccines to treat and prevent the viral diseases of the future.

1. What is the immediate goal of the research being conducted in your laboratory?

My laboratory studies positive-strand RNA viruses. We are particularly interested in how these viruses replicate their genomes. This class of viruses causes a wide variety of diseases and includes viruses such as rhinovirus, hepatitis C virus, West Nile virus and the SARS virus.

2. What are the possible larger implications/applications for the findings of your research?

Our studies to date have uncovered novel strategies to interfere with the replication of RNA viruses. For example, in collaboration with Professor Blake Peterson in the Department of Chemistry, we have developed nucleotide analogues that either inhibit the viral polymerase from binding natural nucleotides or cause the enzyme to make more mistakes during genome replication. These nucleotide analogues represent important leads for development of novel antiviral agents to treat RNA virus infection. In addition, our studies of viral determinants of viral population dynamics are leading to novel strategies for development of vaccines to prevent infections by RNA viruses. [For more information on Dr. Cameron's research interests, visit <http://www.bmb.psu.edu/faculty/cameron/cameron.htm>]

3. Why did you choose to pursue a career in academic research and why in your particular field?

Since my first life science experiments in elementary school, I've always been fascinated by biology. As an

4. What do you look for in selecting an undergraduate student to do research in your lab?

First, I require that a student have a sincere interest in science and a desire to learn the discovery process. Second, I require that the student make a significant time commitment to the laboratory, on the order of 15-20 hours each week. Research is often a trial-and-error process. Therefore, in order for a student to master the intellectual and technical skills required to contribute to the research objectives of the laboratory, a commitment of time is essential.

UNIVERSITY CALENDAR		
FALL 2007	EVENT	SPRING 2008
Aug. 24-25	NEW STUDENTS	Jan. 12
Aug. 27	CLASSES BEGIN	Jan. 14
Nov. 19-23	THANKSGIVING RECESS	
	NO CLASSES	Jan. 21 Martin Luther King Day
	SPRING BREAK	Mar. 10-14
Dec. 14	CLASSES END	May 2
Dec. 15-16	STUDY DAYS	May 3-4
Dec. 17-21	FINALS	May 5-9
Dec. 22	COMMENCEMENT	May 16-18



Dr. Schlegel Steps Down as BMB Department Head

After 16 years of serving as Head of the Department of Biochemistry and Molecular Biology, Dr. Robert Schlegel has relinquished the duties of the position, effective June 30, 2007. Under Dr. Schlegel's leadership, the BMB Department has grown not only in terms of number of faculty but also in stature within the College, University, and larger scientific community. Dr. Schlegel was instrumental in the development of the 2-semester sequence in Molecular and Cell Biology (BMB/Micrb 251 & 252) that all students in the three majors offered by the Department are required to take. He also nurtured the creation of the Biotechnology major with its two Options in the belief that the greater biotechnology industry would strongly welcome graduates with the didactic and experiential background the program is able to provide. His vision on this matter has been amply rewarded by the high regard BIOTC students have received upon entry into post-baccalaureate careers. Dr. Schlegel also worked diligently in directing the philanthropy of donors toward the creation of scholarships that will support undergraduates long into the future. Dr. Schlegel is particularly gratified by the realization of several scholarships that support undergraduate students as they conduct research during the summer months. The list of other responsibilities, efforts, and initiatives Dr. Schlegel has handled in a myriad of other areas such as graduate education, physical facilities, and personnel issues is much too extensive to describe here. Although it is woefully inadequate, a greatly-deserved **thank you** is extended to Dr. Schlegel upon the completion of his service as BMB Department Head.

Dr. Richard Frisque Assumes Duties as Acting Head of BMB

While the BMB Department conducts a nation-wide search for a new department head, Dr. Richard Frisque, Professor of Molecular Virology, has been appointed interim department head by Dean Larson. Dr. Frisque came to Penn State in 1982 as Assistant Professor of Microbiology. He is very familiar with the undergraduate program, is a strong advocate for high quality undergraduate and graduate education, and has



Frisque continued –

served as Co-Director of Graduate Education in the Integrative Biosciences Program. Students can rest assured that Dr. Frisque will pay close attention to the undergraduate program and to curricular issues that may bear on the quality of their education.

3 Graduates Serve as Standard-Bearers at Spring Commencement

At the SP07 commencement ceremony, graduates from each department in the Eberly College of Science are recognized individually. A single outstanding student is nominated by each department to carry the standard of their major in the ceremony. As the BMB Department awards degrees in three majors, it nominates three students. The BMB Department was honored to have **Anastasiya Yakhnina** carry the standard for the BMB major. She was escorted by Prof. Kenneth Keiler. For the Microbiology major, **Kathleen Carey** had the honor, and she was escorted by Dr. Carl Sillman. Last but not least, **Priyanka Jain** carried the banner for the Biotechnology major, and she was escorted by Ms. Beatrice Sirakaya. Congratulations on this honor, and thank you for serving the Department in this way.

6 Students Receive Summer Research Awards

It is always a pleasure to recognize students who have been selected to receive support to conduct research during the summer. The funds that support these students come from a combination of endowments established by individuals and through outright gifts from corporations. For SU07, 6 students were able to carry out their research on a full time basis with the support provided by these awards. It is our hope that they have accomplished much over the summer. The students who received awards and the faculty members in whose labs they worked are: **Linda Blase** (4th MICRB) in Dr. Booker's lab; **Gurangad Chandok** (3rd BMB) in Dr. Krasilnikova's lab; **Michael Evangelista** (6th BMB) in Dr. Babitzke's lab; **Noah Rolleri** (6th BMB) in Dr. Pugh's lab; **David White** (6th BMB) in Dr. Santy's lab; and **Mei Zhou** (9th BMB) in Dr. Tan's lab. CONGRATULATIONS TO ALL!!

Attention Clinical Laboratory Science Students with $\geq 5^{\text{th}}$ Semester Standing

Early in Fall semester, an informational meeting for CLS students of Junior standing or higher is held to review topics that include professional opportunities, selection of and admission to a clinical site, grading policy, and a timeline for applying to clinical sites. This year's meeting for interested students who will have completed all University-based courses by the end of SP08 will be held on Thursday, September 13th, at 7 p.m. in 101 S. Frear. If you cannot attend this meeting, please contact Dr. Mohr as soon as possible. Students who think they may be interested in this program or who simply want to learn more about the profession are also invited to attend.

Let's Party!!

At the start of each Fall semester, the BMB Department and its student clubs sponsor a mixer for all students who are new to Penn State or to University Park, that is, all First Year students and transfer students. Come meet BMB faculty, staff, student club officers and some of your peers in an informal setting with refreshments provided. The Mixer will be held on **Thursday, September 6**, starting at **3:30 p.m.** and ending around 5:30 p.m. The Mixer will be held in the courtyard between North and South Frear. Besides having a good time, this may be an opportunity to meet your academic and/or professional advisors in an informal, casual setting and to begin some relationships that may last even beyond the four years of undergraduate study. In case of inclement weather, the Mixer will be held in the lobby between North & South Frear. Oh, and did we mention free food will be available!!

North Frear to Close for Renovation

A total renovation of North Frear will necessitate closure of the entire building beginning in SP08. Because North Frear houses the instructional labs for biochemistry and biotechnology, it will be necessary to relocate these labs for the duration of the renovation. Current plans call for the biochemistry labs to move to Davey Lab and the biotechnology labs to move to the Forestry Resources Lab at the corner of Hastings and University Drive. Being in temporary facilities may also necessitate some modification of lab experiences and require some extra patience on the part of students in dealing with expected and unexpected inconveniences. A number of BMB faculty will also be relocated to temporary quarters during the construction. Advisees of these faculty members will be notified of the temporary office location once that issue has been fully settled. It is anticipated the renovations will take about 18 months to complete.



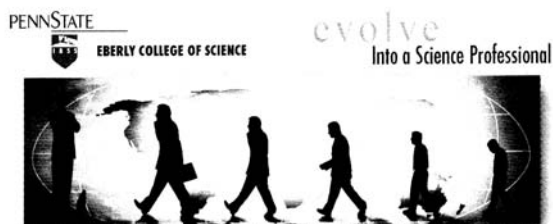
Thinking of Study Abroad or Co-operative Education?

If you are entering your sophomore or junior years, and if you have toyed with the idea of studying abroad or participating in a cooperative education experience, now would be an excellent time to begin the preparation process.

If you are thinking about study abroad...you will want to investigate the myriad possibilities that are available. The International Programs office in 410 Boucke has lots of information and many advisors to help with the selection and planning process. Within the Eberly College of Science exists a special exchange program that involves about 10 sister institutions, most of which are in the United Kingdom, but also include schools in Canada, France, Germany, New Zealand and Singapore. Science courses offered at these institutions have already been evaluated for equivalence to PSU courses, so you can plan your schedules knowing in advance how the courses will transfer to your PSU transcript and what requirements they will fulfill in your curriculum. Visit www.science.psu.edu/scienceabroad or www.international.psu.edu for more information.

...and if you are thinking about co-operative education...you will want to visit the College's co-operative education office in 108 Whitmore where you will find assistance in identifying and selecting possible co-op sites. Many students do not realize that co-op can involve research positions as well as product development, quality control, manufacturing and many other divisions of industry. Students participating in a co-op experience have a much greater appreciation for how the science they study in the classroom actually finds its way into the day-to-day practices of commercial enterprises. They may also come to see more clearly what subject areas they will want to pursue when they return to campus. Interested students should appreciate that the co-op program requires two periods in industry with at least one semester back in the classroom between the two co-ops. A big plus for the co-op program is that students are paid during the experience and it usually takes care of the problem of finding a summer job for at least two summers. Most students choose to undertake a co-op in one of the many biopharmaceutical industries that are located in Pennsylvania and surrounding states. For more information, visit www.science.psu.edu/coop

News Flash... Info session for Science Externships, Science Co-op, Study Abroad



Attention all Eberly College of Science students
interested in learning more about:

Science Externships Science Co-op Study Abroad

Information Session will include program overviews, a student panel,
and time for your questions.

Wednesday, September 5th @ 6:30 PM
100 Life Sciences Building (Berg Auditorium)

www.science.psu.edu/coop • www.science.psu.edu/scienceabroad
108 Whitmore Lab - 814-865-5000



Attention Biotechnology Majors & Students Interested in Biofuels

On September 4-5, Penn State is hosting an event called

Crossover that will showcase bioenergy research at the University. In a concept called **Fields to Wheels**, all the steps in the process from photosynthesis to energy production and utilization will be presented in a series of presentations, live demonstrations and interactive poster presentations. In addition, a series of keynote addresses and panel discussions will be included, featuring collaborations with industry, other universities, and government agencies. Topics that will be of interest to students in the Biotechnology major and to those who appreciate the importance of molecular biology and microbiology in this enterprise include: **Plant Transformation, Saccharification and Fermentation, Separations Technology, Chemical Catalysis, and Byproduct Recovery & Utilization**. Wrapped around these technologies are the social, economic, and ethical frameworks needed for bioenergy programs to achieve their potential. The event will take place in the HUB-Robeson Center. **Crossover** might be a great program to explore between classes on September 4-5. To learn more about **Crossover**, go to <http://www.bioenergy.psu.edu/crossover2007/>
MARK YOUR CALENDARS!!

Dates for your calendar:

Date/ Time	Meeting	Place
Sept. 4 -5	Crossover Program	HUB-Robeson Center
Sept. 5 6:30 pm	Science Externship, Co-op & Study Abroad Info Session	100 Life Science Berg Auditorium
Sept. 6 3:30 pm	BMB Mixer	North/South Frear Courtyard
Sept. 13 7:00 pm	BIOTC CLS Info Session	101 South Frear
Sept. 17-21 1:00 pm – 6:00 pm	Fall Career Days	Bryce Jordan Center

This publication is available in alternative media on request.

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