It’s hard to believe that we have started another school year. September, not January, always feels like the new year to me and this year there’s lots of news to share for the new school year.

This September, we welcomed 97 new second year undergraduates who will call themselves Biochemists for the rest of their days and 24 new graduate students. The cream of the respective crops apply to these programs and so the successful new recruits have my congratulations. Welcome aboard!

Over the summer we have also seen some extraordinary new infrastructure completed. The Michael G. DeGroote Institute for Infectious Disease Research officially opened its doors in the newly constructed second floor of the M. G. DeGroote Centre for Learning and Discovery. Our own Professor Gerry Wright is the Director of the Institute and also responsible for leading and implementing a new $20 million dollar Canada Foundation for Innovation (and Ontario Research Fund) infrastructure grant that is the new Centre for Microbial Chemical Biology, also on the second floor. The facility is a remarkable collection of state of the art infrastructure for research at the interface of chemistry and biology and gives McMaster a tremendous advantage in this emerging and important interdisciplinary space.

In an effort led by staff member Donna Marfisi, we have a new departmental website with a fresh look. It’s streamlined and has much of the information that undergraduates, grad students and post-doctoral trainees are looking for. And thanks to our Associate Chair of Graduate Studies, Professor Justin Nodwell, it also features podcasts to explain the program and highlight our students and new infrastructure. Check it out!

More news came over the spring and summer in the form of top performances from our students and faculty. Our Biochemistry undergraduates hauled in more than $250,000 in individual awards, including Kirandeep Bhullar who won the Dubeck Biochemistry award. Our graduate students continue to do extremely well in securing scholarships including Suzanne Osborne who one of five prestigious Vanier Scholarships that went to McMaster University students. Not to be outdone by our trainees our faculty also have been decorated, including Mick Bhatia who won the Canadian Society of Biochemistry, Molecular & Cellular Biology Young Scientist Award and Felicia Vulcu who received a McMaster Students Union Merit Award for teaching. Congratulations to all.

Finally, it’s with real sadness that we witnessed the passing of Prof Richard Haslam in the spring of this year. A Professor Emeritus and long time Joint Member, Richard was an outstanding biochemist who enjoyed an accomplished career of scholarship in research and education. He remained very active in research on eukaryotic signal transduction well after his retirement in 2003. His commitment to his trade was inspiring and his passing reminds us to seize the day.

My best for this academic year!

Eric Brown, Chair
I would like to extend a warm welcome to the 97 new students who have joined us in level II and to those who have recently transferred into our program. You have become a member of a dynamic and distinctive program. In the first government-mandated review of the Biochemistry program that was conducted this past spring, the review team found our undergraduate program to be ‘excellent overall’. You will find that student-centered learning is the mainstay of our Biochemistry program which is supported by dedicated and innovative faculty, staff and teaching assistants. In a survey that was completed as part of the Program Review, recent graduates praised the benefits of our program and expressed that the education they received had prepared them for their future careers. My sincere thanks to absolutely everyone who participated in the review process!

We are very pleased to announce that we have acquired space for Biochemistry students in the Health Sciences Centre ‘Home Base’ located in the lobby of the Ewart Angus Centre. This is in response to the Undergraduate Program Review which identified the need for a dedicated gathering place for students to socialize and work on group projects. The space is currently undergoing renovations, and we hope to open it to students next month!

We would like to congratulate all of our award and scholarship winners this past year. In 2008-09, Biochemistry students held 189 individual awards that totaled in excess of $250,000. The top prizes were awarded to Kirandeep Bhullar (Dubeck Biochemistry Award), Dina Aboutouk (Society of Chemical Industry Merit Award) and Pavel Antiperovitch (Canadian Society for Chemistry Prize).

We would also like to congratulate Dr. Felicia Vulcu who received the MSU Merit Award during her first year of teaching. Merit Awards are awarded to first or second year instructors and is designed to recognize and encourage new instructors whose teaching abilities and contribution to the McMaster community have been significant, effective and are therefore worthy of distinction.

Michelle MacDonald
Associate Chair,
Undergraduate Program
Graduate Program Update

After 7 years of sustained growth, the Biochemistry and Biomedical Sciences graduate program has taken a year to cool off, consolidate gains and establish what we believe will be a new steady state for recruitment. This year, our September class included 24 new students – accounting for graduating students, our total now rests at 124 in-time students. Having exceeded the goal we set five years ago of doubling our graduate enrolment, we expect that any future growth will be slower.

However this does not mean that recruiting efforts are at a standstill! We remain committed to attracting the best young minds in Canada and from around the world. One of our longer terms goals is to bring a larger number of students in from outside Ontario. At present, >80% of the students in our graduate program are graduates of Ontario universities, with about half of those coming from schools other than McMaster. While this is a healthy balance, it seems unlikely that we will be able to significantly increase the proportion of top students from Ontario schools, given the competition from other universities.

We have several strategies for bringing out-of-province students into our program. For example, where funding permits, we will pay the airfare of qualified applicants who wish to visit with prospective supervisors or attend our graduate open house. We are also experimenting with new media approaches to marketing our program by including podcasts on our new website. These feature student success stories, descriptions of our research infrastructure, information about our program and related materials. The hope is that this approach will appeal to and inform the young people we are most interested in bringing in. These podcasts will, we hope, bring a human touch to students who have not yet visited the university including those who are in other provinces.

Meanwhile, our in-program students continue to thrive. This year we awarded three impact awards for high-impact publications: these went to Lieven Billen, Suzanne Osborne and Chand Mangat. Suzanne Osborne won a very prestigious Vanier Scholarship, one of five in this university. Two of our international students were also recognized for their outstanding work: Yu-Seon Chung and Soumaya Zlitni were both recognized with the newly minted Dean’s Awards for top international students.

Justin Nodwell
Associate Chair, Graduate Program

Welcome back to another academic year! The past few months have been quite exciting, with the unveiling of the Centre for Microbial Chemical Biology and its amazing infrastructure for the study of small molecule probes of biology in June 2009. The Michael G. DeGroote Institute for Infectious Disease Research is also slated to have its Grand Opening Symposium on October 24, 2009, with an excellent mix of talks and posters describing outstanding science. Further infrastructure developments continue with the start of construction for the new Farncombe Family Digestive Health Research Institute.

Our department continues to be incredibly successful in capturing research funding. In the last 10 years, our funding base has grown an order of magnitude, from less than $4 million to its current level of almost $27 million! Even more impressive is the increase in the last year alone, from $10.3 million to the current level of $26.7 million, largely due to successful infrastructure applications to CFI, OMRI and OICR. The quality of our trainees is evident in the increase in studentship and fellowship awards from last year to this, from $378.4K to $497.2K! Congratulations to all, and keep up the great work!

We have just been through the first round of CIHR applications that were subjected to mandatory internal peer review through the Faculty of Health Science, in order to improve the quality of the applications and to ensure that none was turned back on technicalities related to CIHR’s zero tolerance policy. Since we had previously instituted this process at the department level, things went smoothly despite new and significantly tighter deadlines to obtain institutional approvals. A similar process will apply to the upcoming NSERC competition.

A note about safety; although we avoided a Workwell audit due to our vigorous attention to improved compliance, we cannot become complacent about safety. It is the responsibility of each PI to ensure that all workers are trained before they start to work in the lab, and that their training is documented. If you are not sure whether you have the right kind of training for your work, please check the FHS Safety office website (http://fhs.mcmaster.ca/safetyoffice/) or drop by to ask them (they are on the first floor of the HSC building, around the corner from the purple elevators in 1J11) for more information. Much of the training requires yearly updates (including fire, WHMIS
and biosafety), many of which can be done online followed by the completion of a quiz. New legislation regarding biosafety (Bill C-11) was recently approved, and affects anyone who works with biohazardous materials. More information on Bill C-11 and its implications can be found on the website above.

We have an interesting mix of departmental seminar speakers lined up for our Tuesday seminars this year, but there are still some openings available. If there is a scientist whose work you admire, or someone with whom you would like to initiate a collaboration that you want to invite, please let us know and we will help to facilitate the process. Postdoctoral fellows are also welcome to present their work in this time slot; please see Esther Martin for available dates. There are also monthly Brainstorming sessions available for faculty, to air new and crazy ideas for feedback; if you want to present, let Julie Paul know and she will schedule you in. Best of luck with your research this year, and if there are any issues related to research that you need to discuss, feel free to contact me (burrowl@mcmaster.ca).

Lori Burrows
Associate Chair, Research

Events

Biochemistry Graduate Reception
(June 9, 2009)
Biochemistry & Biomedical Sciences celebrated with Biochemistry graduates of the undergraduate program on June 9, 2009 at a reception in the Ewart Angus Centre.

Annual Departmental Picnic at Webster’s Falls (June 26, 2009)
On Friday, June 26, 2009, under sunshine and blue skies, students, staff and faculty enjoyed a picnic at Webster’s Falls. Congratulations to the Magarvey Lab for taking first place in the Biochemistry Science Olympics!
Welcome/Welcome Back BBQ (September 16, 2009)
The Department would like to thank the following companies for their generous support of our Welcome/Welcome Back BBQ on September 16, 2009.

Monetary Donations:
- New England Bio-labs Canada
- Bio-Rad Laboratories Canada Ltd
- Nelson Education Ltd.

Donated Goods:
- Beckman Coulter Canada Inc
- DiaMed Lab Supplies Inc

Once again, many thanks to Mary Margaret Strong for organizing this event!

Dr. Richard Haslam, professor emeritus, passed away on May 15, 2009. Dr. Haslam's research focused on signal transduction pathways that regulate cells involved in cardiovascular disease, in particular blood platelets. Dr. Haslam was a major contributor to the graduate programs in Health Sciences. He served as Chair of the Health Sciences Graduate Programs from 1994 to 1998.

Dr. Radhey Gupta
In November, Dr. Gupta is going to Alexandria, Egypt, as an invited speaker to attend the conference “Darwin’s Living Legacy: Evolution and Society” that is being organized by the British Council. After that, he will be spending a week at the University of Kuwait as an invited Professor to take part in a Bioinformatic Course-workshop. From Kuwait, he will be going to India, where he will be speaking in a symposium “Contemporary issues in Biology” being held on December 3rd and 4th at the University of Mysore. During this period, he will also be visiting several scientists in Delhi and Bangalore.

The opening of the IIDR has resulted in some lab moves to the second floor of the Michael Degroote Centre for Learning and Discovery.

The Wright, Brown and Magarvey labs and Hlgh Throughput Screening Lab have all moved into their new quarters.

Dr. Radhey Gupta
In November, Dr. Gupta is going to Alexandria, Egypt, as an invited speaker to attend the conference “Darwin’s Living Legacy: Evolution and Society” that is being organized by the British Council. After that, he will be spending a week at the University of Kuwait as an invited Professor to take part in a Bioinformatic Course-workshop. From Kuwait, he will be going to India, where he will be speaking in a symposium “Contemporary issues in Biology” being held on December 3rd and 4th at the University of Mysore. During this period, he will also be visiting several scientists in Delhi and Bangalore.

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Graduate Awards

Cystic Fibrosis Foundation
Melissa Ayers (Burrows Lab)
Carmen Gitner (Burrows Lab)

Canadian Breast Cancer Fdn. (PhD)
Maria Kondratayev (Hassell Lab)
Leanne Stalker (Wynder Lab)

Canadian Breast Cancer Fdn. (MSc)
Hetan Brahmbhatt (Andrews Lab)
Andrew Giacomelli (Hassell Lab)

CIHR Vanier Scholarship
Suzanne Osborne (Coombes Lab)

CIHR Doctoral
Casey Fowler (Li Lab)
Sean Jackson (Junop Lab)
Lindsay Kalan (Wright Lab)
Lindsay Matthews (Guarne Lab)
Lise Munsie (Truant Lab)
Patricia Taylor (Wright Lab)

CIHR MSc
Mark Fuller (Trigatti Lab)
Alexandra Perri (Brown Lab)

NSERC CGS Doctoral
Sara Andres (Junop Lab)
Clinton Campbell (Bhatia Lab)
Wendy Mok (Li Lab)
Kathryne Taylor (Mossman Lab)

NSERC CGS M
Mac Mok (Junop Lab)
Monica Pillon (Guarne Lab)

NSERC PGS Doctoral
Colin Cooper (Coombes Lab)
Seiji Sugiman-Marangos (Junop Lab)

OGS
Steven Ahn (Nodwell Lab)
Sarah Allison (Brown Lab)
Kirandeep Bhullar (Wright Lab)
Arryn Craney (Nodwell Lab)
Ahmad Jomaa (Ortega Lab)
Pui Lau (Li Lab)
Jennifer Lee (Li Lab)
Yulia Shulga (Epand Lab)

OGSST
David Mulder (Coombes Lab)
Geordie Stewart (Brown Lab)

Recent Graduates

MSc Defence

Name: Edward Morrison
Supervisor: Paul Berti
Date: February 26, 2009
Title: “Characterizing a Potent New Inhibitor of NeuB, a Sialic Acid Syntase”

Name: Scott Bindner
Supervisor: David Andrews
Date: April 14, 2009
Title: “Effects of Lipids on Kinetics of Bid and Bax Induced Membrane Permeabilization”

Name: Andrew Sage
Supervisor: Geoff Werstuck
Date: June 25, 2009
Title: “Mechanisms of Atherosclerosis in Diabetes Mellitus: Defining the Role of ER Stress and GFAT”

Name: Inas Radhi
Supervisor: Gerry Wright
Date: July 6, 2009
Title: “Anticancer Drug Resistance in Environmental Bacteria”

Name: Ted Sewell
Supervisor: Eric Brown
Date: July 17, 2009
Title: “The Wall Teichoic Acid Polymerase TagF is Non-Processive in Vitro and Amenable to Study Using Steady State Kinetic Analysis”

Name: Michael Lung
Supervisor: Richard Epand
Date: July 22, 2009
Title: “Investigations Into the Lipid Acyl Chain Selectivity of Mammalian Diacylglycerol Kinase Epsilon”
Recent Graduates Contd...

Name: Branislav Pichna  
Supervisor: Geoff Werstuck  
Date: August 14, 2009  
Title: “Investigations Into the Effects of Hyperglycaemia on Endothelial Cell Dysfunction and Thrombosis”

Name: Emily Lorenzini  
Supervisor: Radhey Gupta  
Date: August 26, 2009  
Title: “Studies on Chlamydiae-Specific Type III Secretion System Proteins: CT668, CT670, CT671”

Name: Stuart Menzies  
Supervisor: Alba Guarne  
Date: August 27, 2009  
Title: “MukBEF: A complex relationship”

Name: Eder Portillo  
Supervisor: Lori Burrows  
Date: September 3, 2009  
Title: “Understanding the Role of FimV in the Type IV Pilus System in Pseudomonas aeruginosa”

Name: Tyler McNicholl  
Supervisor: Guiseppi Melacini  
Date: September 21, 2009  
Title: “Inter-Domain Communication in the Regulatory Subunit of Protein Kinase A (PKA) as Revealed by Nuclear Magnetic Resonance (NMR)”

PhD Defence

Name: Mark Pereira  
Supervisor: Eric Brown  
Date: October 29, 2008  
Title: “Investigating the Biosynthesis of the Teichoic Acid Polymer in B. Subtilis and S. Aureus”

Name: Jaeok Park  
Supervisor: Radhey Gupta  
Date: November 6, 2008  
Title: “Activators and Inhibitors of Adenosine Kinase and Ribokinase”

Name: Morag Stewart  
Supervisor: Mick Bhatia  
Date: November 12, 2008  
Title: “Functional heterogeneity within human embryonic stem cell cultures”

Name: Ryan Noyce  
Supervisor: Karen Mossman  
Date: November 25, 2008  
Title: “Characterization of the interferon regulatory factor 3-mediated antiviral response following enveloped virus particle entry”

Name: Nancy Sheeler-McKenzie  
Supervisor: Justin Nodwell  
Date: January 12, 2009  
Title: “Antibiotic Regulation and Production in Streptomyces Bacteria”

Name: Matthew Henderson  
Supervisor: David Andrews  
Date: March 9, 2009  
Title: “A Study of the Biogenesis of Endoplasmic Reticulum Resident Tail-Anchored Proteins”

Name: Lieven Billen  
Supervisor: Yingfu Li  
Date: April 9, 2009  
Title: “Characterization of the Molecular Mechanisms of Bcl-XL Anti-Apoptotic Function”

Name: Ken Schlosser  
Supervisor: Yingfu Li  
Date: April 17, 2009  
Title: “Understanding In Vitro Selection and the Functional Limits of RNA-Cleaving DNAzymes”

Name: Anna Bowes  
Supervisor: Geoff Werstuck  
Date: June 24, 2009  
Title: “Investigation into the Role of Glycogen Synthase Kinase-3 in Hyperglycemia-induced Atherogenesis”
Eric Brown
Chand Mangat and Ted Sewell each received a Freeman Award for their seminars in the student seminar series. Alex Perri was the recipient of a CIHR scholarship.

Brownies were out in force this spring and summer attending conferences in the United States and Europe. Indeed, Maya Farha and Soumaya Zlitni were both recipients of Poster Awards at the Bio-organic Chemistry Gordon Conference in New Hampshire.

Dr. Brown gave talks at the Gordon Research Conferences on Bio-organic Chemistry and Enzymes, Coenzymes & Metabolic Pathways in the spring. And he was recently invited to join the Institute Advisory Board of the Institute of Infection and Immunity.

Finally, the Brownies have a new website - brownlab.ca. Check it out!

Brian Coombes
The Coombes lab would like to welcome two new individuals to their team, postdoctoral fellow Dr. Ana Pilar and PhD student Sarah Reid.

We are also proud of our student successes in recent scholarship competitions - Congratulations to Suzanne Osborne (CIHR Vanier Canada Graduate Scholarship), David Mulder (OGSST) and Colin Cooper (NSERC-PGS) for their well-deserved awards.

Richard Epand
The Epand lab has had a very rewarding and productive year.

Mike Lung has been awarded an M.Sc. and the work of his thesis is now in press in J. Biol. Chem. Yulia Shulga has received one of the few OGS Fellowship given to non-Canadian students. She has been successful in coming out with papers in J. Molec. Biol., J. Biol. Chem. and Biochemistry. Raquel Epand has been innovative in starting some new research directions and has published 9 manuscripts, including 3 first-author papers thus far in 2009 in journals such as Biophysical Journal and Antimicrobial Agents and Chemotherapy. She continues to function as a valuable resource for students from this Department and others.

Dr. Epand has been busy telling the rest of the world about some of these exciting developments. He has presented invited seminars at the Department of Biological Chemistry, The Johns Hopkins University; the Institut de Recherches Cliniques de Montreal; the Bioenergetics Subgroup Symposium at the annual meeting of the Biophysical Society and at the Centro Nacional de Biotecnologia, Universidad Autonoma de Madrid.
Alba Guarne
The Guarne Lab has been out and around presenting the work accomplished during the winter. Lindsay presented a well-received talk at the DNA Replication and Repair Symposium in Buffalo and Yu Seon headed off to the Gordon Research Conference in Chromosome Dynamics.

Dr. Guarne gave an invited presentation at the ASM Conference on DNA Repair (Whistler, BC) and presented a poster at the CSH Eukaryotic Replication and Repair Meeting.

Congratulations to Yu Seon, Vivian and Lindsay on her first-author manuscripts in NAR, Molecular Carcinogenesis and Acta Cryst. F.

Kuddos to Lindsay and Monica for her well-deserved scholarships from CIHR and NSERC. Yu Seon made the lab proud by winning the Karl Freeman Award to the best PhD seminar of 2008-2009.

We also welcome two new graduate students this year, Stacey Saucier coming from University of Ottawa and Jessica Wong from Queen’s University.

Karen Mossman
Kathryn Taylor (a PhD candidate) received the Alexander Graham Bell Canada Graduate Scholarship from NSERC for 2009-2011.


The laboratory just received 5 years of funding from the Canadian Breast Cancer Research Alliance for 2009-2014.

Joaquin Ortega
Congratulations to Joel Kooistra for his successful graduation with a MSc degree in September 2008. His research as a graduate student appeared in the June 2009 issue of The Journal of Alzheimers Disease.

Continuing with publications, Ahmad Jomaa’s last paper was featured on the cover of the March issue of The Journal of Bacteriology. This study characterizes a regulated self-destruction mechanism in the bacterial HtrA protease with interesting parallelism with the Star Wars movie.

Dr. Ortega has been busy in the meanwhile writing reviews about the HtrA protease and the Rvb AAA+ proteins for J. Bacteriology and Biochemistry and Cell Biology journals, respectively.

Last summer Dominic Li and Kevin Cheung attended the International Conference in AAA proteins in Toronto. Kevin gave a well-received talk at the conference about his recent work on the structure of the Rvb 1/2 complex.

Dr. Ortega went to Germany in August where he was invited to speak at the Ribosome Synthesis conference.

Finally, we would like to congratulate Ahmad Jomaa for his recent Ontario Graduate Scholarship.

Dino Trigatti
Congratulations go out to Mark Fuller who was awarded a CIHR Banting and Best Canada Graduate Scholarship.

Mark Fuller, Aishah Al-Jarallah and Omid Dadoo presented their work at the Canadian Cardiovascular Congress in Toronto in October 2008 and Omid won the moderated poster award.

Mark and Omid also each presented their work at the International Symposium on Atherosclerosis in Boston in June 2009.

We welcome Aishah back to the lab and congratulate her on the birth of her daughter Aljoori earlier in the year.

We also welcome Yu Pei to the lab, who just joined as a graduate student in September, and Dr Yi Zhang who joined as a postdoctoral fellow in March 2009.

Ray Truant
Lise Munsie has published a paper on actin dynamics in Nature Methods. Lise has also been elected as the Chair of the 2011 student Gordon Conference on CAG triplet Repeat Diseases. This is an international conference supported by the NIH.

Boris Zhorov
Ricky Cheng made the October cover of Journal Biological Chemistry. On The Cover: Block of L-type calcium channel by devapamil. The focus of pore helices (ribbons) in repeats I (not shown), II (cyan), III (green), and IV (pink) attracts the ammonium group. A calcium ion is bound between the selectivity filter glutamates and devapamil. The drug is H-bonded to tyrosines of inner helices I1IS6 and IVS6, as well as an engineered Tyr of I1IS5. Tyr of I1IS5.
First off, welcome to Biochemistry, undoubtedly one of the best programs at McMaster! The McMaster Biochemistry and Biomedical Sciences Society is dedicated to improving your Biochemistry experience by providing important information relevant to academics as well as coordinating social events.

Our main goal this year is to unify the students in our program all the way from 2nd to 4th year. A couple of the events coming up in the near future include Biochemistry Phoenix Night, meet the profs night, clothing sales as well as a variety of intramural teams. In second semester we will be having careers night, lab tours, as well as our year end formal. So make sure you listen to announcements in class and come out and participate to make the best of your year.

If you have any suggestions or concerns with regards to society events, please feel free to e-mail us at macbiochem@gmail.com.

Good luck with the semester and we hope to meet you all soon!

Michael Lunardo and Tamara Krneta
BBSS Co-Presidents 2009-2010

2009 was an exciting year for the BBS GSA! The Annual Photoscavenger Hunt, the Clothing Drive, and prize-filled pub nights made for a busy spring. The Science Olympics, held during the departmental picnic in June, hilariously tested the skills of everyone from undergrads to professors. Congratulations to the Magarvey lab for their victory!

The 1st Annual Emma Griffiths Spirit Award was also presented at the picnic to the lab that accumulated the most points throughout the school year. Congratulations to the inaugural winners, the Nodwell lab, and runners-up, the Coombes lab and the Wright lab! The BBS GSA meets the first Thursday of every month at 4pm in HSC 4H1 and all grad students are welcome. Stay tuned for more information on the 2nd Annual Departmental Holiday Party and other great events!