

BIOCHEMISTRY & MOLECULAR BIOLOGY TODAY

**UNIV. OF TEXAS
MEDICAL BRANCH**

OCTOBER 2006 NO. 218



Chairman's Message

Welcome to the new layout and design for our Newsletter. Do let us know if you like it or if you have suggestions. We will also be making changes to the content sections beginning with next month's edition.

As we all know, this past September was a time of many changes as we continued the reorganization of our administrative staff to implement adjustment of assignments that will better allow all of us to handle the new software applications, NIH proposal submission, and compliance requirements. I want to thank all of our staff and faculty for their patience and flexibility. I think, with some tweaking, we will end up with an optimal system given our resources.

Congratulations to Brad Thompson on the well deserved award of the Mary and J. Palmer Saunders Professorship for Excellence in Teaching. Well done Brad! Also, at a time of great difficulty in obtaining grants, many of our faculty have done impressively well. And congratulations are in order for Dr. Maki Wakamiya, the Director *ad interim* of the Transgenic Mouse Core Facility, who has just been selected to be the permanent Director of the facility. Dr. Wakamiya is a faculty member in Neu-

rology with a secondary appointment in BMB. We will feature information about the Transgenic Mouse Core in a future newsletter.

Not to be outdone, our graduate students garnered a large array of awards at the well-attended awards luncheon this past week. A new award was the new BCSO student award, the result of a student initiative for a new endowment that was warmly embraced by faculty and alumni making it possible to give an award this October. The ceremony had particular personal significance for me since in response to my dedication of my donation to the memory of my graduate student Mariann Blum (Poco), her family graciously attended the ceremony and gave me the opportunity to share memories of one of my most accomplished and simply wonderful students. To our faculty and alumni I want to extend a personal thank you on behalf of our students for your generosity and support.

Over the next several months faculty committees will examine our policies with regard to compensation and space allocation within the department. In particular, we need to determine what our space needs will be over the next 5-10 years so that we may provide to

the School of Medicine sufficient information to be incorporated into research space expansion plans, which will, in turn, guide strategies for building of research facilities. If you have been asked to serve on one of these committees, we all appreciate your efforts. It is critical that we define long term plans for the growth and success of our department.

During the first week of November our most recently selected faculty members will be visiting us with their families, and we are planning a reception that we may get to greet them and get to know them better and vice versa. The reception will be November 8 in the Faculty Lounge in Old Red, beginning at 5:00 in the afternoon. Look forward to seeing you there.

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Special points of interest:

- Dr. Konkel's column can be found online at www.bmb.utmb.edu/department/rcc/
- Graduate Program Awards Page 2
- Featured abstract can be viewed on page 4 in this edition

Graduate Program News

This year's Orientation event has proven to be the largest ever and was well received by the incoming BBSC first year students.

The Committee's chairs, Jason Vertrees and Suzanne Tomlinson, created the innovative abstract book, a compilation of all the poster abstracts as well as an overview of our curriculum, faculty and students. If you would like to see an example, please stop by the Program office, BSB 111.

The poster winners for the students were:

1st Place Kash Choksi, Papaconstantinou laboratory

2nd Place Jeff Chen, Hilser laboratory
 Andy Chen, Evers laboratory

The poster winners for the post docs were:

1st Place Steve Whitten, Hilser laboratory

2nd Place Lisbell Estrada, Soto laboratory
 Soumita Das, Hazra laboratory

Hearty congratulations to Dr. E. Brad Thompson for being selected by the BMB students for the prestigious GSBS Teaching Recognition Award.

We would also like to congratulate our students on their outstanding success for this year's awards and scholarships.

The Barbara Bowman Memorial Award for Research Excellence was established in 1996 in the memory of Dr. Barbara Bowman, chair of the department from 1967-1981 and recognizes humanity, scholarship and excellence in the pursuit of scientific knowledge by a graduate student within the BMB Graduate Program. This year's winners were Andy Chen (Evers laboratory), Jennifer Crawford (Chan laboratory), Kashyap Choksi (Papaconstantinou laboratory), Paul Evans (Liu laboratory), Rodrigo Maillard (Lee laboratory) and Sergio Santa Maria (Prakash laboratory)

The first Biological Chemistry Student Organization (BCSO) Student Award, established by our students to recognize the importance of outstanding service contributions to the department and Program was awarded to Rodrigo Maillard (Lee laboratory).

Jason Vertrees (Hilser laboratory) won the Loen Bromberg Award for Outstanding Peer Reviewed Student Paper.

Kash Choksi (Papaconstantinou laboratory) won the Zelda Zinn Casper Endowed Scholarship.

Graduate Program News (cont.)

Paul Evans (Liu laboratory) won the GSBS Associates Travel Award presented in memory of Christina Fleischmann.

Jennifer Rodriguez-Rivera (Dineley laboratory) won the Sealy Center on Aging Graduate Student Award.

Sergio Santa Maria (Prakash laboratory) won the University Federal Credit Union Scholarship and the University Federal Credit Union GSO Award.

Rodrigo Maillard (Lee laboratory) won the Robert A. Welch Award for Excellence in Graduate Research in Chemistry.

Corey Theriot (Mitra laboratory) won the University Federal Credit Union Dean's Award for Service.

We would like to welcome our new BSCB students, Sai Gandham and Debashish Sahu as well as our BMB students, Pavani Gangavarapu, Keerthi Gottipati, Gabriela Kulp, Abhisek Mukherjee, David Saenz, and Travis Schrank.

Administrator's Notes

Update on InfoEd, Front-end System for Electronic Proposal Submission to NIH

Along with Dr. David Konkel, a small group of administrative staff members has been working with OSP to test the current version of InfoEd, which is slated to be implemented as UTMB's "front-end" to the NIH system for electronic proposal submission. Our expert users encountered some significant difficulties in the testing they performed, and they provided detailed feedback on their findings to the system programmers. Dr. Konkel relates that there are still numerous questions to be worked out by both NIH and UTMB around the processes to be used for electronic submission. Our administrative staff members will continue to be involved in the testing, and we will provide more information as it becomes available. Thank you to Donna Masters and Wanda Smith for their thoughtful work on this important task.

-Marianne Miller



PUBLICATIONS, GRANTS & AWARDS

Publications:

- Negi, S., Kolokoltsov, A.A., Schein, C.H., Davey, R.A. and Braun, W. Determining functionally important amino acid residues of the E1 protein of Venezuelan equine encephalitis virus. *J. Mol. Model.* 12:921-929, 2006.
- Schein, C.H., Oezguen, N., Volk, D.E., Garimella, R., Paul, A. and Braun, W. NMR structure of the viral peptide linked to the genome (VPg) of poliovirus. *Peptides* 27(7):1676-1684, 2006.
- Muralidharar, B.K., Negi, S., Chin, C.C., Braun, W. and Halpert, J.R. Conformational flexibility of mammalian cytochrome P450 2B4 in binding imidazole inhibitors with different ring chemistry and side chains. *J. Biol. Chem.* 281(12):8051-8061, 2006.
- Midoro-Horiuti, T., Schein, C.H., Mathura, V., Braun, W., Czerwinski, E.W., Togawa, A., Kondo, Y., Oka, T., Watanabe, M., Goldblum, R.M. Structural basis for epitope sharing between group 1 allergens of cedar pollen. *Mol. Immunol.* 43(6):509-518, 2006.
- Schein, C.H., Ivanciuc, O. and Braun, W. Structural database of allergenic proteins (SDAP). *Food Allergy* (S.J. Maleki, ed), ASM Press, Washington, D.C., pp. 257-283, 2006.
- Awasthi, Yogesh C. *Toxicology of Glutathione Transferases*. Boca Raton, FL, CRC Press, Taylor & Francis Group, 2006.
- Jezewska, M.J., Marcinowicz, A., Lucius, A.L., and Bujalowski, W. DNA Polymerase X from African Swine Fever Virus. Quantitative Analysis of the Enzyme – ssDNA Interactions and the Functional Structure of the Complex. *Journal of Molecular Biology* 356:121-141, 2006.
- Lucius, A.L., Jezewska, M.J., and Bujalowski, W. The Escherichia coli PriA Helicase Has Two Nucleotide-Binding Sites Differing in Their Affinities for Nucleotide Cofactors. 1. Intrinsic Affinities, Cooperativities, and Base Specificity of Nucleotide Cofactor Binding. *Biochemistry* 45:7202-7216, 2006.
- Lucius, A.L., Jezewska, M.J., Roychowdhury, A., and Bujalowski, W. Kinetic Mechanisms of the Nucleotide Cofactor Binding to the Strong and Weak Nucleotide-Binding Site of the Escherichia coli PriA Helicase. 2. *Biochemistry* 45:7217-7236, 2006.
- Lucius, A.L., Jezewska, M.J., and Bujalowski, W. Allosteric Interactions Between the Nucleotide-Binding Sites and the ssDNA-Binding Site in the PriA Helicase – ssDNA Complex. 3. *Biochemistry* 45: 7237-7255, 2006.
- Bujalowski, W. Thermodynamic and Kinetic Methods of Analyses of Protein – Nucleic Acid Interactions. From Simpler to More Complex Systems. *Chem. Rev.* 106, 556-606, 2006.

Grants:

“Risk assessment of food allergenicity by a database approach.” Principal Investigator: Dr. W. Braun; Agency: U.S. Environmental Protection Agency; Type: ORD NCER; Period: 10/01/06 - 09/30/09.

“Integration of novel computation methods in structure-based design in antibacterial and antiviral inhibitors”. UK/US Collaborative Initiative in Bioscience (US Collaborator: C.H. Schein/UK P.I.: R.A. Bryce); Agency: Department of Trade and Industry Bioscience Unit; Period: 02/01/06 – 10/31/06.

New - ONLINE Version
Research Coordinator's Corner
www.bmb.utmb.edu/department/RCC/

FEATURED ABSTRACTS BY OUR FACULTY

[An Intradermal Environment Promotes a Protective Type-1 Response against Lethal Systemic Monocytotropic Ehrlichial Infection](#)

Heather L. Stevenson, Jeffrey M. Jordan, Ziad Peerwani, Hui-Qun Wang, David H. Walker, and Nahed Ismail

Ixodes ovatus (IOE) were evaluated using a model that closely reproduces the pathology and immunity associated with tick-transmitted human monocytotropic ehrlichiosis. C57BL/6 mice were inoculated intradermally or intraperitoneally with high-dose highly virulent IOE or intraperitoneally with mildly virulent *Ehrlichia muris*. Intradermal (i.d.) infection with IOE established mild, self-limited disease associated with minimal hepatic apoptosis, and all mice survived past 30 days. Intraperitoneal (i.p.) infection with IOE resulted in acute, severe toxic shock-like syndrome and severe multifocal hepatic apoptosis and necrosis, and all mice succumbed to disease. Compared to i.p. infection with IOE, intradermally infected mice had a 100- to 1,000-fold lower bacterial load in the spleen with limited dissemination. Compared to mice infected intraperitoneally with IOE, i.d. infection stimulated a stronger protective type-1 cell-mediated response on day 7 of infection, characterized by increased percentages of both CD4₊ and CD8₊ splenic T cells, generation of a greater number of IOE-specific, gamma interferon-producing CD4₊ Th1 cells, and higher levels of tumor necrosis factor (TNF- α) in the spleen but lower concentrations of serum TNF- α and interleukin-10. These data suggest that under the conditions of natural route of challenge (i.e., i.d. inoculation), the immune response has the capacity to confer complete protection against monocytotropic ehrlichiosis, which is associated with a strong cell-mediated type-1 response and decreased systemic production of pro- and anti-inflammatory cytokines.

FACULTY ON THE ROAD

Dr. Darrell H. Carney

- August 01-03, 2006, Denver, CO to attend the 03rd Annual Symposium of the American Heart Association council on Basic cardiovascular Sciences – Translation of Basic Insights Into Clinical Practice.

Dr. David G. Gorenstein

- August 07-09, 2006, Detroit Michigan to attend the American Association for the Advancement of Science, State of Michigan 21st Century Jobs Fund.

Dr. Bruce A. Luxon

- August 16, 2006, Houston, TX to attend a meeting at M.D. Anderson Cancer Center.

Dr. E. Brad Thompson

- August 11-18, 2006, Salsbury Cove, ME to work at the Mt. Desert Island Biological Laboratory in collaboration with the NIEHS Center Director.

- August 20-24, 2006, Puerto Rico to present the seminar entitled, "MAPKs aid glucocorticoid receptor structure/function" as an invited speaker at the University of Puerto Rico.



FACULTY ON THE ROAD (cont.)

Dr. Cheryl S. Watson

- July 29 – August 03, 2006, Tucson, AZ to Chair a symposium session entitled, "Methods for Study of Mechanisms of Action for Steroids and Thyroid Hormone".

Dr. Darrell H. Carney

- September 12-16, 2006, Pisa, Italy to attend the 16th Annual Meeting of the European Tissue repair Society, "Innovation in tissue repair: from the lab to the patient".

Dr. Alexander Kurosky

- August 27-September 10, 2006, Lille, France to attend the 16th Annual Methods in Protein Structural Analysis meeting.

Dr. John Wiktorowicz

- September 19-21, 2006, Washington, DC to attend the National Heart, Lung and Blood Institute Proteomics Principal Investigators and Center Manager Groups Meeting.

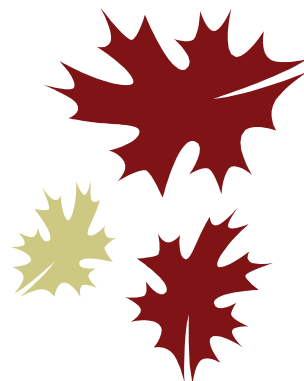
Dr. Darrell Carney, 16th annual Innovation in Tissue Repair meeting, Sept. 13 – Sept. 16, 2006

Dr. David Konkel, Beckman-Coulter MD Anderson Symposium on Proteomics and Cancer Research, Sept. 19, 2006

Dr. Alex Kurosky, National Heart, Lung, Blood Institute Proteomics Principal Investigators and Center Manager Groups meeting, Sept. 19 – Sept. 21, 2006

Dr. Regino Perez-Polo, Symposium speaker at ISDN meeting, Aug. 24 – Aug. 27, 2006

Dr. Cheryl Watson, Membership Committee meeting for the Endocrine Society, Sept. 8 – Sept. 10, 2006



WELCOME NEW EMPLOYEES

Dr. Alexey Gribenko, Assistant Professor

Sundar Victor, Systems Analyst II with Dr. Allan Brasier

OCTOBER BIRTHDAYS

Dr. Ghulam Ansari – 4th

Debora Botting – 21st

Dr. Wlodzimierz Bujalowski – 17th

Rodrigo Diaz-Espinoza – 21st

Dr. Robert Fox – 3rd

Dr. David Gorenstein – 6th

Rose Griggs – 31st

Martha Harris – 21st

Audrey Hart-Van Tassell – 28th

Angelina Johnson – 3rd

Shagufta Khan – 14th

Agnieszka Marcinowicz – 27th

Donna Masters – 6th

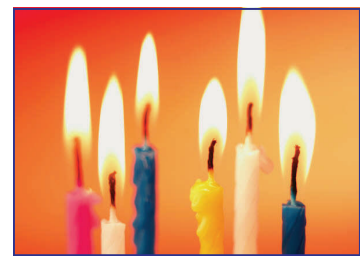
Manjit Saini – 9th

Heidi Spratt – 16th

Dr. Anoma Somasunderam – 10th

Betty Sordahl – 3rd

Jittima Weerachayaphorn – 6th



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Our Department is home to a broad spectrum of research activities and expertise. Our most singular quality is a culture of interdisciplinary research and collaboration. We believe that teaching and research are interdependent activities, and so give high priority to the education of our graduate students and postdoctoral fellows.


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The University of Texas Medical Branch