

BIOCHEMISTRY & MOLECULAR BIOLOGY TODAY

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BMB
Biochemistry & Molecular Biology

Chair's Message

Our new term brings new faculty to be welcomed. We congratulate Dr. Olivera Nestic-Taylor, who has been appointed to the tenure-track position of Assistant Professor, Biochemistry and Molecular Biology. She will also be the first faculty member appointed in the new Moody Center for Brain and Spinal Cord Injury. And we were pleased to learn a few days ago that Dr. Kevin Rosenblatt has accepted our offer of a joint tenure-track appointment in the Department of Biochemistry and Molecular Biology and the Department of Internal Medicine. Dr. Rosenblatt will be starting here at UTMB in October, and we look forward to seeing him at our next faculty meeting.

We also, of course, have new students to welcome to the Graduate Program and the Department. Our traditional orientation program is scheduled

for Wednesday, September 26. This is an important opportunity to help the new students learn about opportunities in our graduate program and our research labs. The program has been thoughtfully planned and organized by our continuing students. I urge faculty members to make a point of joining some part of the orientation to greet the new students and help introduce them to aspects of our varied activity.

Of equal importance is the review of our Department and graduate program to be undertaken this academic year. Dr. Wayne Bolen will chair the committee making the internal review. This event will determine our opportunities for several years into the future. Your participation will be critical to the process. Please come to our next faculty meeting and we will discuss this further.

Congratulations to Dr. Junji Iwahara, who was notified this month of the acceptance for publication of the [first manuscript](#) on which he is a corresponding author. The work was performed with the assistance of Debashish Sahu, Dr. Iwahara's first graduate student. The article will appear in the Journal of the American Chemical Association, and the abstract is printed [in this newsletter](#).

We were fortunate that Hurricane Humberto's visit to Galveston Island didn't leave very much of an impression. Please remember that it's still the season for us to be at risk of further visits.

-regino

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Special Items of Interest

- [Spotlight - Biological Chemistry Student Organization \(BCSO\)](#)
- [Dr. Konkel's Research Coordinator's Columns Online](#)
- [Graduate Program News](#)

Graduate Program News

New Students: We welcome our newest students to the Program: Rayhan Ahmed (Lee laboratory), Natasha Brooks (L. Elferink laboratory), Daisi Chen (Epstein laboratory), Vincent Dimayuga (Papaconstantinou laboratory), Hung Doan (Evers laboratory), Emilio ReyesAldrete (Morais laboratory) and Scott Silva (Evers laboratory). We also would like to welcome our MD/PhD students who have declared BMB and are in the process of rotating; Sarah Hemauer and David Winters.

Our newest students to the BSCB track are Kurtis Anderson (in rotation with the Watowich laboratory), Jeff Borgeson (in rotation with the Cheng laboratory) and Michal Szymanski (in rotation with the Bujalowski laboratory).

Program Orientation and Party: Our annual BMB Graduate Program Orientation will be held on Wednesday, September 26, 2-4 PM, Levine Hall Dining Room. Our students will be presenting our department's various research strengths, and there will be a poster session to showcase the latest research discoveries. We will also have a party afterwards at the Bistro LeCroy (details will be forthcoming from the Program Office). Come meet the new BBSC and BSCB students and support our highly successful and fun annual event!

Student Awards and Scholarships: We sure have terrific students! Look at who has won the following awards:

William Austin Elam

- ✦ GSO Student Organization Award Scholarship

Paul Evans

- ✦ James E. Beall II Memorial Scholarship Award
- ✦ Marianne Blum, Ph.D. Endowed Scholarship Award

Diana Ferrari

- ✦ Irma Mendoza Scholarship Award
- ✦ Jen Chieh and Katherine Huang Scholarship Award

Raghavendran Kulasegaran Shylini

- ✦ The Biological Chemistry Student Organization Award for Excellence in Community Service

Anasuya Roychowdhury

- ✦ Robert A. Welch Award for Excellence in Graduate Research in Chemistry Scholarship Award

Kashyap Choksi

- ✦ Barbara Bowman Memorial Award for Research Excellence
- ✦ Rose and Harry Walk Research Scholarship Award

Sergio Santa Maria Guerra

- ✦ International Student Organization Scholarship Award
- ✦ The Biological Chemistry Student Organization Award for Excellence in Community Service
- ✦ Barbara Bowman Memorial Award for Research Excellence

Corey Theriot

- ✦ Barbara Bowman Memorial Award for Research Excellence
- ✦ Stephen C. Silverthorne Memorial Award
- ✦ Sealy Center on Aging Graduate Student Award

Jason Vertrees

- ✦ Barbara Bowman Memorial Award for Research Excellence

Congratulations to them all!

-Debora Botting, Graduate Program Coordinator

RESEARCH SPOTLIGHT: The Biological Chemistry Student Organization (BCSO)



BCSO
Biological Chemistry
Student Organization

The Biological Chemistry Student Organization (BCSO) was established by former BMB graduate students Scott Larson and Andy Kurtz and is now not only the most active program-centered student organization on campus but also one of the best supported in terms of financial resources and faculty involvement. The organization is a nonprofit student association which works

collaboratively with faculty to foster all-around development of the graduate students enrolled in the Biochemistry and Molecular Biology Graduate Program at UTMB. In addition, the BCSO is active both on the UTMB campus and in the community at large through several initiatives. These include the Pioneering Biological Discovery Seminar Series, the BCSO award, working with Big Brother / Big Sister, and helping the annual Beach Cleanup Weekend.

Pioneering Biological Discovery Seminar Series:

Sponsored by the [Sealy Center for Structural Biology](#) and the [Department of Biochemistry and Molecular Biology](#), this seminar series allows individual students to select and recruit investigators involved in cutting edge science to give a seminar on our campus. These seminars are unique in that they are scheduled and organized entirely by the BMB students themselves. A list of speakers from the previous years' seminar series can be found [here](#).

The 2007 seminar series began with Dr. Isaiah Josh Fidler in June, where he discussed many of the breakthroughs in his lab at M.D. Anderson focusing on cancer metastasis. Our next invitee is Dr. George Somero, Director of Stanford University's Hopkins Marine Station in Pacific Grove, California and the David and Lucile Packard Professor of Marine Science. Dr. Somero is a physiologist who examines the mechanisms that marine organisms use to order to adapt to their environments. Professor Somero's group has shown that adaptation in orthologous forms of enzymes involves amino acid substitutions that lie outside of the active site and which cause changes in conformational flexibility of the proteins. Temperature changes of only a few degrees centigrade are adequate to favor selection for adaptive change, a finding that is relevant to concerns about global climate change. Professor Somero received a Guggenheim Fellowship and is a member of the National Academy of Sciences and a fellow of the American Association for the Advancement of Science. To learn more about his work please visit [Dr. Somero's webpage](#).

BCSO award:

The BCSO award is designed to honor our fellow students in the Department of Biochemistry and Molecular Biology for their constant pursuit of high academic, social and moral standards.

This award is student-nominated and recognizes the positive influence that the student has had on the community and other students alike. For more information on the history of the award and selection criteria please visit the [BCSO student award webpage](#). The BCSO student award fund was created in order to make this award an independent yearly endowment. Thanks to generous contributions from our alumni and faculty the BCSO award fund is just shy of reaching this goal. **To make a donation to the BCSO student award fund, email Ann Anderson at ananders@utmb.edu or call (409) 747-1233.**

BCSO's role in promoting community welfare and awareness:

Since its conception the Biological Chemistry Student Organization has strived for increased awareness and commitment to the welfare of society. Galveston Island gives us great opportunities to realize this important goal. For example, we have volunteered with the Gulf Coast Big Brothers Big Sisters Foundation in order to raise money through activities such as 'Bowl For Kids Sake'. We have students who are volunteers in various mentoring programs in an effort to reach out to bright kids who are socially

Continued on next page

disadvantaged. We encourage you to volunteer and see for yourself how easy it is to make a difference. If you are looking for a means to reach out, we have it all. Visit [the activities-page](#) of the BCSO and you will see that every year we team up with other student organizations to volunteer for the Galveston Beach cleanup, the Galveston County Science and Engineering fairs, the Holiday toy drive and numerous other events which are both fun and educational.

Social events organized by the BCSO over the academic year 2006-2007:

If you thought there isn't much to do in Galveston, then you obviously are not aware of BCSO's social events and activities. We never need an excuse to have fun and we take pride in our many organized social events. The summer BBQ at Andy Chen's house (former BCSO chair) was a smashing success, with an excellent turn-out. Last year the BCSO organized and partly sponsored a number of fun cultural and sports events for BMB students such as trip to see Cirque du Soleil, gaming night at the Main Event, a trip to a Rockets basketball game, and rock climbing at Stone Moves. In addition, on the night of our monthly meetings, we meet for drinks and conversation at local hangouts such as Molly's and Old Cellar Bar. The BCSO website is regularly updated with upcoming events and student testimonials of past events. Check it out on your next coffee break!



BCSO's agenda for the academic year 2007-'08:

This year's new officers are Chair Austin Elam, a 3rd year BSCB Ph.D. student; Vice Chair Paul Evans, a 6th year BMB M.D.-Ph.D. student, Secretary Keerthi Gottipati, a 3rd year BMB Ph.D student; and Treasurer Vincent Dimayuga, a 2nd year BMB Ph.D. student. Please feel free to contact them for more information on BCSO activities. **The BCSO meetings are held regularly on the second Thursdays of every month from 12-1pm at BSB Conference Room 2.240.**

With new officers and an equally promising agenda for the ongoing academic year, the BCSO is becoming bigger and stronger. In addition to the activities we have organized in past years, we aim to further strengthen the BCSO in two areas. First, there is a drive amongst students in the department to have increased student/faculty interaction in environments other than the lab or classroom. To facilitate this, the BCSO is planning social events such as a Bowling Night that is currently planned for early-mid October. Second, the BCSO intends to branch out this year and initiate a scientific dialogue with the general public. We aim to do this by organizing a poster session at the Museum of Natural Science in Houston. Further, we plan to invite a prominent political figure to UTMB to meet with students and faculty in our department.

Student committees in BMB/BCSO:

One of the main purposes of our organization is participating in University affairs. The BCSO has various committees formed to distribute the tasks. A list of these committees and their members can be found [here](#). As an organization, we thrive on your support and participation. If you would like to participate in any of the committees listed above, please contact one of the officers via email. **If you want to be added to the BCSO mailing list please email the Secretary at kegottip@utmb.edu.**

IT Briefs - Lisa Pipper

Information Services is now offering departments the option of participating in a refresh program utilizing a 3-year lease cycle. Because departments in the School of Medicine will now bear the total cost of both hardware acquisition and on-going support, each individual department must determine the most appropriate and affordable acquisition/refresh strategy. In BMB, the Chair has formed a special Task Force to assess the issues and recommend appropriate policies and processes for managing departmental IT requirements.

More information will be provided when the Task Force has made its recommendations to the Chair regarding a departmental IT management strategy.



Windows Tip of the Month

Do you always have so many windows open you are not sure which document you were working on last or which one is open? A common windows shortcut is ALT+TAB, also known as task switcher. First press the Alt key, then press Tab, press and release repeatedly to switch between open windows. This shortcut is ideal for active cutting and pasting from one application to another. Alt+tab once will switch to the next application, then alt+tab again once and it will switch back to the previous one. Try it out yourself; if you find it useful, there is a even more powerful task switcher free from Microsoft, downloadable from <http://download.microsoft.com/download/whistler/Install/2/WXP/EN-US/TaskswitchPowertoySetup.exe>. This one will actually display a screenshot of the active applications, handy if working with multiple files of the same type.

Publications & Grant Awards

Sanjeev Choudhary, Muping Lu, Ruwen Cui, and **Allan R. Brasier**. Involvement of a Novel Rac/RhoA GTPase-NF- κ B Inducing Kinase (NIK) Signaling Pathway Mediating Angiotensin II-Induced RelA Transactivation. Mol. Endocrinol. published June 26, 2007, doi:10.1210/me.2006-0465

Ramana, K.V., Tammali, R., Aramati, B., Reddy, B.M., Bhatnagar, A. and **Srivastava, S.K.** Aldose reductase regulated TNF-alpha production is essential for high glucose-induced vascular smooth muscle cell growth. Endocrinology 148: 4371-4384, 2007.

Ramana, K.V., Yadav, U.C. and **Srivastava, S.K.** Aldose reductase inhibition prevents endotoxin-induced uveitis in rats. Invest. Ophthalmol. & Vis. Sci. (In Press).

Grants

Dr. Papaconstantinou was awarded a Supplement to the Pepper Center Grant, titled "Proteomics analysis of the muscle contractile apparatus in Vastus lateralis muscle of hemiparetic stroke patients".

To have your publication or award included in the monthly newsletter, please send the information directly to Lisa Pipper (lpipper@utmb.edu) by the 1st of each month.

Awards and Announcements

Several BMB faculty members have been elected or appointed to serve on UTMB or SOM standing committees.

SOM Admissions Committee (elected)	Dr. Tom Wood (2007-2010)
SOM Appointment and Promotion Committee (appointed)	Dr. Lillian Chan (2007-2010)
SOM Executive Committee, Member-at-large (elected)	Dr. Cheryl Watson (2007-2008)
SOM Faculty Performance Evaluation Committee (elected)	Dr. Shakeel Ansari (2007-2010)
SOM Nominating Committee (elected)	Dr. Cheryl Watson (2006-2008)
UTMB Faculty Senate, Senator (elected)	Dr. Bob Fox (2007-2009)

Dr. Olivera Nestic-Taylor has been appointed to the tenure-track position of Assistant Professor, Biochemistry and Molecular Biology. She is the first faculty member appointed to the new Moody Center for Brain and Spinal Cord Injury. Dr. Nestic-Taylor was selected through an international search managed by Dr. Sankar Mitra.

Dr. Nestic-Taylor already has several significant research achievements to her credit. She is a Co-Principal Investigator for an NIH R01 grant on "MRI of Angiogenesis in Spinal Cord Injury", and she has received grants from the TIRR Foundation for two separate projects. She received the Erica Nader Award from the American Spinal Injury Association in June 2007 for her investigation of proteins that contribute to edema and syringomyelia after spinal cord injury.

Dr. Nestic-Taylor's lab will be located on the 7th floor of MRB.

Dr. Sankar Mitra was appointed to the Journal of Biological Chemistry editorial board for 5 years.

Faculty on the Road

Dr. Cheryl Watson traveled to several meetings and research sites in recent weeks:

Women's Health Institute, August 6-8 to Virginia Commonwealth University, School of Medicine, Richmond VA

Washington, D.C. on August 15-17 for Breast Cancer Study Section of DOD Impact Awards.

NIEHS Meeting, Raleigh-Durham, NC on August 26-29

Women's Health Center, University of North Carolina School of Medicine, Chapel Hill, NC on August 29-31.

Dr. Sankar Mitra traveled to University of Kentucky on Sept 10 to give a seminar titled "Repair Interactomes for Oxidative Damage in Mammalian Genomes".



To have your travels included in the monthly newsletter, please send the information directly to Lisa Pipper (lpipper@utmb.edu) by the 1st of each month.

Administrator's Notes

Next Steps in Fire Alarm Upgrade Process in the Basic Science Building

Beginning on or about Monday, September 25, the contractor will begin the installation of new devices to replace non-working or non-compliant items or to provide better fire detection or alarm signaling in a specific space. (For example, a number of new speaker/strobe devices are being added on the second floor where it is currently impossible for most of the occupants to hear the alarm when it's activated.) Installation of some of the new devices will be done inside laboratories and, in some cases, even inside cold rooms. In this phase, the workers are only attaching the new devices and running a pipe to the ceiling for later installation of the cable. In a subsequent phase, the devices will actually be connected to the main system.

Reporting Possible Hazards or Safety Concerns

The Office of Occupational Safety and Fire Prevention encourages UTMB faculty, students, and staff to report potential hazards in buildings and on campus grounds as well as "near misses" related to unsafe conditions. Information can be provided anonymously by completing the online "Near-Miss Hazard Report", available [here](#). All reports are investigated and responses are posted on the [Environmental Health and Safety website](#).

For questions and concerns relating to laboratory safety, call Environmental Health and Safety at 772-4191. The "Overview of Safety Policies and Procedures for UTMB Investigators" is available [here](http://www.utmb.edu/ehs/B&C/New%20PI/Publication_6_13_06.pdf). (www.utmb.edu/ehs/B&C/New%20PI/Publication_6_13_06.pdf)

What to do if a UTMB faculty or staff member is injured at work or elsewhere on campus

If the injury requires emergency medical services, call the Campus Police at 772-1111 to request an ambulance. The employee's supervisor and the Departmental Administrative Office should be informed as soon as possible.

Except in emergencies, the injured employee (or an associate) should follow three steps immediately:

- 1) Inform the employee's supervisor and the Departmental Administrative Office,
- 2) Call the Employee Injury Management Office (409) 772-1892 to report the injury,
- 3) Complete Part 1 of the "Employee Injury Statement" (forms are available in the Departmental Administrative Office) and return it to the supervisor for entry of additional information and transmittal to the Employee Injury Management Office. (If the supervisor is not available, staff members in the Departmental Administrative Office will help complete and transmit the form.) The employee must keep a copy of the completed form.

If non-emergency medical assessment or treatment for the injury is needed, care can be obtained from the Employee Health Clinic, Urgent Care Clinic, UTMB specialty clinics, or a physician the employee chooses. **(Students are encouraged to visit the Student Wellness Center.)** A copy of the "Employee Injury Statement" must be given to the provider at the time of the visit.

Please talk with Margie Wronski or me if there are any questions about reporting employee injuries.

- Marianne Miller

Featured Abstract by BMB Faculty**TROSY-based z-Exchange Spectroscopy:****Application to the determination of the activation energy for intermolecular protein translocation between specific sites on different DNA molecules**

Debashish Sahu¹, G. Marius Clore², Junji Iwahara^{1*}

¹Department of Biochemistry and Molecular Biology, and Sealy Center for Structural Biology and Molecular Biophysics, University of Texas Medical Branch, Galveston, Texas 77555-0647.

²Laboratory of Chemical Physics, National Institute of Diabetes and Digestive and Kidney Disease, National Institutes of Health, Bethesda, Maryland 20892-0520.

A two-dimensional TROSY-based z-exchange 1H-15N correlation experiment for the quantitative analysis of kinetic processes in the slow exchange regime is presented. The pulse scheme converts the product operator terms Nz into $2NzHz$ and $2NzHz$ into $-Nz$ in the middle of the z-mixing period, thereby suppressing the buildup of spurious semi-TROSY peaks arising from the different relaxation rates for the Nz and $2NzHz$ terms and simplifying the behavior of longitudinal magnetization for an exchanging system during the mixing period. Theoretical considerations and experimental data demonstrate that the TROSY-based z-exchange experiment permits quantitative determination of rate constants using the same procedure as that for the conventional non-TROSY 15Nz-exchange experiment. Linenarrowing as a consequence of the use of the TROSY-principle makes the method particularly suitable for kinetic studies at low temperature, thereby permitting activation energies to be extracted from data acquired over a wider temperature range. We applied this method to the investigation of the process whereby the HoxD9 homeodomain translocates between specific target sites on different DNA molecules via a direct transfer mechanism without going through the intermediary of free protein. The activation enthalpy for intermolecular translocation was determined to be 17 kcal/mol.

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