Life Sciences Research Symposium VII
September 25, 2015
Life Science Research Building
D’Ambra Auditorium
University at Albany, SUNY Albany, NY

This symposium is jointly sponsored by the Departments of Biological Sciences, Chemistry, Psychology, and Physics, and the Offices of the Dean of the College of Arts and Sciences and the Life Science Research Initiative. Additional support was provided by Krackeler Scientific.

Symposium Organizers: Drs. Melinda Larsen, Biological Sciences and Jia Sheng, Chemistry
Committee members: Jamie Belrose (Biology), Pooja Flora (Biology), Elise Gervais (Biology), Rose De Guzman (Psychology), Elizabeth Peterson (Biology), and Daniel Woods (Biology)

8:00 AM 8:30 Light breakfast and networking
8:30 --- 8:45 Welcome and Opening Remarks:
Prof. Melinda Larsen, co-chair LSRS
Prof. Marlene Belfort, Director of Life Sciences
Prof. Edelgard Wulfert, Dean of the College of Arts and Sciences

Session I talks (Session Chair: Dan Woods, Biology)

8:45 --- 9:00 Chris DeMott (Shekhtman lab, Chemistry)
Finding Inhibitors of Mycobacteria Tuberculosis Using in-cell NMR.

9:00 --- 9:15 Kathryn Sarachan (Agris lab, Chemistry/Biology)
Structural and Biochemical Insights into the Biosynthesis of t6A Post-Transcriptional RNA Modifications

9:15 --- 9:30 Olga Novikova (Belfort lab, Biology)
Intein Clustering Suggests Functional Importance in Different Domains of Life

9:30 --- 9:45 Berenice Dethier (Block lab, Chemistry)
Characterization and Synthesis of Novel Ring-Substituted Thiolanes from Extracts of Crushed Garlic (*Allium sativum*)

9:45 --- 10:00 Hae Ryong Kwon (Larsen lab, Biology)
VEGFR2-positive Vascular Cells Regulate Salivary Gland Epithelial Patterning by Controlling Cytokeratin 5-positive Epithelial Progenitor Cells

10:00 --- 10:15 Kyle Doty (Lednev lab, Chemistry)
A Raman ‘Spectroscopic Clock’ for Bloodstain Age Determination: the First Week After Deposition

10:15 --- 10:30 Coffee break and posters

Session II talks (Session Chair: Rose De Guzman, Psychology)

10:30 --- 10:45 Alicia McCarthy (Rangan lab, Biology)
A Tip of the HAT to the ATAC Complex: Transcriptional Regulation During Oogenesis

10:45 --- 11:00 Ashton D. Lesiak (Musah lab, Chemistry)
From Greenhouse to Drug House: Classification of Mind-Altering Plants by DART-MS

11:00 --- 11:15 Lenka Halamkova (Lednev lab, Chemistry)
Alzheimer’s Disease Diagnostics Based on Raman Spectroscopy of Blood
11:15 --- 11:30 Cathleen Green (Belfort lab, Biology)
SufB Intein of *Mycobacterium tuberculosis* as a Sensor for Oxidative and Nitrosative Stresses

11:30 --- 11:45 Wei Wen (Niu lab, Chemistry)
R/G Editing and Complex AMPA Channels

11:45 --- 12:00 Eric Henderson (Pager lab, Biology)
The DEAD-Box RNA helicase RCK/p54 modulates stability of hepatitis C virus RNA 5' Untranslated Region

12:00 --- 1:00 Lunch and posters

**Session III talks (Session Chair: Pooja Flora, Biology)**

1:00 --- 1:15 Gabrielle Todd (Agris lab, Chemistry/Biology)
Identification of Novel Gram-positive Selective Antibiotics that Target T-box Regulatory Systems

1:15 --- 1:30 Sivaji Gundala (Block lab, Chemistry)
No More Smelling Molecular Vibrations: Invalidity of Olfaction Theories

1:30 --- 1:45 Elise Gervais (Larsen lab, Biology)
A Role for Par-1b in Morphogenesis and Differentiation of the Myoepithelium in the Developing Mouse Submandibular Salivary Gland

1:45 --- 2:00 Muhit Rana (Yigit lab, Chemistry)
Hybridization Chain Reaction on Gold Nanoparticles for Colorimetric Detection of Oncomirs

2:00 --- 2:15 Rupa Choudhary (Sazo lab, Biology)
A Role for SOCS2, a Modulator of Cytokine Signaling, in Successful Optic Axon Regeneration in *Xenopus laevis*

2:15 --- 2:30 Refreshment break and posters

**Session IV talks (Session Chair: Liz Peterson, Biology)**

2:30 --- 2:45 Irfan Khan (Royzen lab, Chemistry)
Image-Guided Chemotherapy Using Magnetic Nanoparticles

2:45 --- 3:00 Katarina Tlucova (Rangan lab, Biology)
Determining the Role of Secondary Structure of 3'UTR in Translational Control

3:00 --- 3:15 Neil Robertson (Yigit lab, Chemistry)
Enhanced mirna Detection Using Graphene and Oligonucleotide Nanodevices

3:15 --- 3:30 Jason Biegel (Pager lab, Biology)
Functional and RISC Interacting domains in the Cellular Helicase RCK/p54 are Critical for Hepatitis C Virus Gene Expression

3:30 --- 3:45 Jinhong Pan (Shekhtman lab, Chemistry)
Small Molecule Inhibitors Against RAGE

3:45 --- 4:15 Keynote: Dr. Sharon Sequeira, Ph.D., (American Type Culture Collection, Manassas, VA)
Academia to Industry: Navigating the Abyss

4:15 --- 5:45 Poster Session / Happy Hour
Odd numbered posters will be presented 4:15-5:00 pm and even numbered posters 5:00-5:45 pm

5:45 --- 5:50 Awards: Jia Sheng, co-chair, LSRS
Presentation of Krackeler Scientific-sponsored awards for best talks and posters
Sharon Sequeira, M.S., Ph.D. is a Cell Biology Specialist and Supervisor at the American Type Culture Collection (ATCC) in Manassas, VA. The ATCC was established in 1925 to support scientific research as a repository for microorganisms, cells, viruses, clones, and vectors. ATCC is the world's largest biological resource center, with access to over seven million different strains. Previously, she was a Research Scientist and Postdoctoral Fellow working with Melinda Larsen, Ph.D. in the Department of Biological Science at the University at Albany, SUNY. She earned her Ph.D. in Biomedical Science at the Center for Excellence in Cancer Genomics, School of Public Health, University at Albany, SUNY working with Dr. Julio Aguirre-Ghiso in 2008. Dr. Sequeira earned her M.S. degree in Biochemistry from T.N. Medical College, University of Mumbai, India in 2001 and her B.S. in Zoology and Biochemistry at St. Xavier’s College, University of Mumbai, India in 1998. Dr. Sequeira has authored 13 research manuscripts and a book chapter and is an author on a patent application. During her postdoctoral work, she was the recipient of a NRSA Postdoctoral Fellowship Award, from the National Institutes of Health and a Thermo-Fisher Scientific Entrepreneurship Business Venture Fund Award. Dr. Sequeira was previously the winner of a best speaker award at the University at Albany’s Life Science Research Symposium.
### Poster Session

**4:15 PM - 5:45 PM**

Presenters of odd numbered posters, please stand by your posters from 4:15-5 and even posters from 5-5:45.

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<td>Belfort</td>
<td>Danielle Kelley</td>
<td>Intein evolution in mycobacteriophage with implications for regulatory control</td>
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<td>Scimemi</td>
<td>Stefania Bellini</td>
<td>Neuronal Glutamate Transporters Regulate Cross-Talk Between Glutamatergic and Dopaminergic Circuits</td>
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<td>A genetic system to establish interaction networks affecting group II intron retrotransposition in bacteria</td>
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<td>Halvorsen</td>
<td>Arun Richard Chandrasekaran</td>
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<td>J. Wang</td>
<td>Muhan He</td>
<td>High-Throughput production of multifunctional suspension microarrays by massive coding of dissociated elements</td>
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<td>Maitreyi Upadhyay</td>
<td>Wnt4 regulates stem cell differentiation in Drosophila via the canonical and the non-canonical pathway</td>
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<td>Translational regulation of polar granule component promotes germ line stem cell differentiation</td>
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<td>Patrick Blatt</td>
<td>Identifying regulators of polar granule component</td>
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<td>Repression of polar granule component by the miRNA pathway controls germline stem cell fate</td>
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<td>Tianyu He</td>
<td>Flower Power: Carboranyl Cysteine Florets on the Pathway to Novel Brain Tumor Treatments</td>
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<td>Musah</td>
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<td>One mint gets you high, one mint keeps you low- Identifying salvia divinorum and other sage species</td>
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<td>Crystal structure studies of 2'-5'-linked RNA</td>
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<td>Differential expression of progesterone receptor in PRA and PRB knockout mice during perinatal development</td>
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<td>Allyssa Phillips</td>
<td>Exposure to Bisphenol A (BPA) during development induces progesterone receptor expression in the medial preoptic nucleus of female rats</td>
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<td>Nanofiber/basement membrane scaffolds support a ckit-positive salivary epithelial progenitor population</td>
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<td>The Transcription Factor AP2-epsilon (Tfap2e) Regulates The Expression of Vomeronasal Receptor Genes</td>
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<td>Katarzyna Biala</td>
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