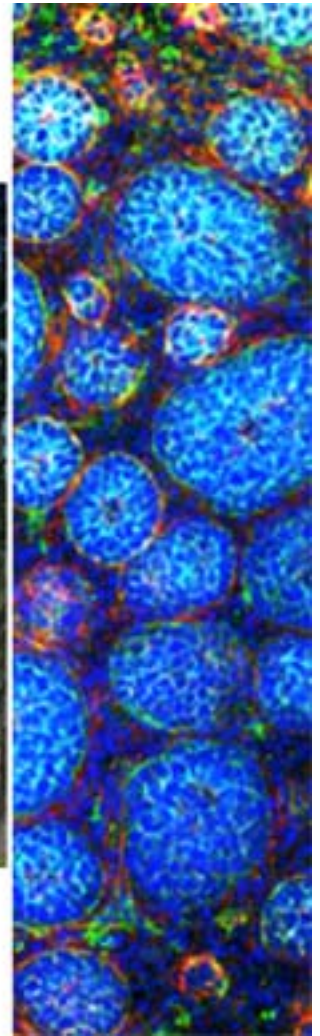


LIFE SCIENCES NEWS



Fall 2015

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LIFE SCIENCES RESEARCH BUILDING

1400 Washington Avenue
Albany, NY 12222

Messages from the Dean:

Dear Colleagues,

It gives me great pleasure to introduce the Life Sciences Newsletter as a forum of communication for our vibrant Life Sciences Research community. When the Life Sciences Research Program was conceived almost a decade ago, it was borne of the philosophy that a collaborative of multidisciplinary researchers would lead to path-breaking discoveries that positively affect human health and quality of life. The key to their success would be proximity, and so the University invested in a facility that would attract and foster a community of talented scientists dedicated to advancing knowledge of, and treatments for, a variety of conditions and diseases.



Today, the Life Sciences Research Building brings together faculty, students, and post-docs from the Departments of Biological Sciences, Chemistry, Physics and Psychology, and The RNA Institute in a dynamic, collaborative environment. Your work in neuroscience, microbiology, RNA science and technology, and molecular and cell biology has resulted in a substantial increase in the College's funded research portfolio, a greater number of patent applications and patents and, most importantly, an expanded and deeper understanding of biomedicine.

I wish to take this opportunity to thank Dr. Al Millis whose years of leadership in the life sciences was essential to get this initiative off the ground. Most importantly, however, I would now like to welcome Dr. Marlene Belfort as the recently appointed Scientific Director of the life sciences research program. I am delighted to have a scholar of her caliber at the helm of this program and, under her guidance, I am sure the future of the life sciences will be filled with even more success stories. This newsletter will serve as a platform to share those stories. I look forward to reading about your exciting work and ongoing successes and wish you all much good luck in your collective endeavor.

Edelgard Wulfert
Dean, College of Arts and Sciences
Professor of Psychology & Collins Fellow

Message from the Scientific Director:

Dear Colleagues,

When I signed on as the new Director of the Life Sciences Research last year, I inherited a vigorous program with excellent Core Facilities and an annual LSR Symposium featuring terrific science presented by students and post-docs. Since then the Core facilities have expanded, and the faculty has coalesced to sponsor cross-cutting events that represent our various communities: JUSIE, the Junior STEM Idea Exchange; WISC, the Workshop for Interaction and Scientific Collaboration; and WISH, for Women in Science and Health. Students and post-docs also organize forums for interaction as we all go beyond the bounds of the LSR building to interact with colleagues in other departments, schools and campuses to create a regional LSR hub. We appreciate all your contributions to the LSR Community.



Marlene Belfort
Distinguished Professor
Director, Life Sciences Research Program

FACULTY NEWS

Welcome New Faculty



Bijan K. Dey, PhD

The RNA Institute

PhD: McMaster

**Post-doc: University of Virginia
School of Medicine**

The role of non-coding RNA in skeletal muscle stem cell biology and muscle degenerative disease like Duchenne Muscular Dystrophy

Email: <bdey@albany.edu>



Gabriele Fuchs, PhD

Biological Sciences

PhD: Witten-Herdecke/Yale

Post-doc: Stanford

Studies how ribosome composition is altered and how it affects protein biosynthesis in mammalian cells.

Email: <gfuchs@albany.edu>



Wendy Turner, PhD

Biological Sciences

PhD: Cornell

Post-doc: Berkley

Ecology and Evolution of Infectious Diseases

Email: <wcturner@albany.edu>

Faculty awards and honors

Marlene Belfort – 2015 Keynote Speaker, Mobile Genetic Elements in silico, in vitro, in vivo. Woods Hole, MA

Eric Block - 2016 recipient of the American Chemical Society's Ernest Guenther Award in the Chemistry of Natural Products

Haijun Chen - 2014/15 FAHA, Fellow of the American Heart Association

Gerd-Uwe Flechsig—keynote lecture at The 7th International Workshop on Surface Modification for Chemical and Biochemical Sensing, SMCBS'2015 in Poland.

Annalisa Scimemi - Travel award from Frontiers in Cellular Neuroscience for Top Reviewer 2015.
- Chairing a Minisymposium at the Society for Neuroscience meeting in Chicago on Oct 17th—21st.
- Organized a Society for Neuroscience Hudson-Berkshire Chapter meeting in Rensselaer on 09/14/15.

Welcome Returning Faculty

Dr. Cheryl Frye returned from a 2-year leave where she gained experience administering a program to enhance biomedical research and healthcare delivery in Alaska.

Faculty Editorial Boards

Marlene Belfort – Editor-in-chief of BMC journal Mobile DNA.

Haijun Chen—FAHA, Fellow of the American Heart Association

Gerd-Uwe Flechsig –joined the editorial board of Heliyon, a new Elsevier journal.

Jun Wang - Associate Editorial Board of TECHNOLOGY, a new journal for all biotechnologies.

Joanna Workman - Joined the editorial board of Hormones and Behavior.

Faculty Publications

<http://www.albany.edu/lifesciences/doc/2015-Faculty-Publications.pdf>

STUDENT/POST-DOC NEWS

Rui Wang, Jia Sheng's lab, **received a postdoc fellowship** from Simons Foundation, beginning in April.

Student Awards

Juliana Agudelo (Chemistry) - recipient of a 2015 Initiatives for Women (IFW) award

Berenice Dethier (Chemistry) - recipient of a 2015 Initiatives for Women (IFW) award

Christina Dubceac (Chemistry) - 2015 recipient of Eli Lilly/Women Chemists Committee Award.

Kelly Gordon (Chemistry) - recipient of a 2015 Initiatives for Women (IFW) award

Cathleen Green (Biological Sciences) – Marine Biological Laboratory scholarship for attendance of Molecular Mycology course 2015

Muhit Rana (Chemistry) - 2014-2015 GSEU Professional Development Award

Neil Robertson (Chemistry) - 2015 RNA Institute Travel Award for presentation at 250th American Chemical Society National Meeting.

In Spring Semester, Gerd-Uwe Flechsig's lab had 4 visiting DPhil students from Oxford University, UK.

The Graduate Students in Science (GSS) is a multi-disciplinary organization focused on providing information about traditional and alternative science careers. Events provide opportunity for networking and professional development through seminars, workshops, and community outreach .

Interested in joining? Come to the fall interest meeting on October 8th at 5PM in ES 108 (food provided) or e-mail <gss@albany.edu>.

Next seminar is by alumnus Louis Culot, who will share his experience with transitioning from the bench to entrepreneurship. October 7th at 3 PM in LSRB 1143.

Life Science Research Symposium Award Winners

Krackeler First Place (Oral): Kyle Doty (Lednev, Chemistry) & Gabrielle Todd (Agris, Chemistry/Biology)

Krackeler First Place (Poster): Arun Richard Chandrasekaran (Halvorsen, RNA Institute), Kara DeSantis (Larsen, Biology) & Maruda Shanmugasundaram (Lednev, Chemistry)

Runner-Up (Oral): Alicia McCarthy (Rangan, Biology) & Neil Robertson (Yigit, Chemistry)

Runner-Up (Poster): Mustafa Balcioglu (Yigit, Chemistry), Stefania Bellini (Scimemi, Biology) & Zeinab Hosseini (Larsen, Biology)

RNA Fellows

The University launched a Ph.D. training program in RNA science. The office of Graduate education in collaboration with Departments of Biology, Biomedical Sciences, Chemistry and the RNA Institute will train exceptional students in RNA Science relating to health and disease. We are happy to announce our first cohort of trainees who have started in the training program beginning this fall.

Rachel Cary – Biological Sciences – Dr. Pager

Alicia McCarthy – Biological Sciences – Dr. Rangan

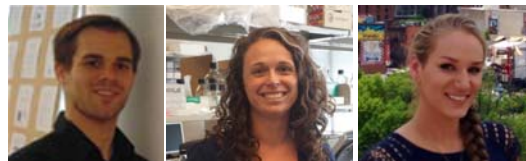
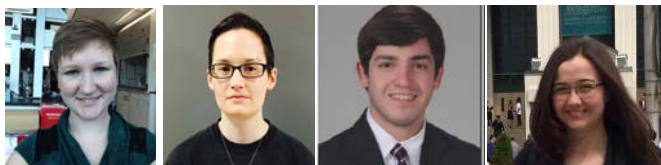
Patrick Blatt – Biological Sciences – Dr. Rangan

Rebecca D'Esposito - Chemistry – Dr. Fabris

Neil Robertson - Chemistry – Dr. Yigit

Lauren Cooper - BMS – Dr. Wade

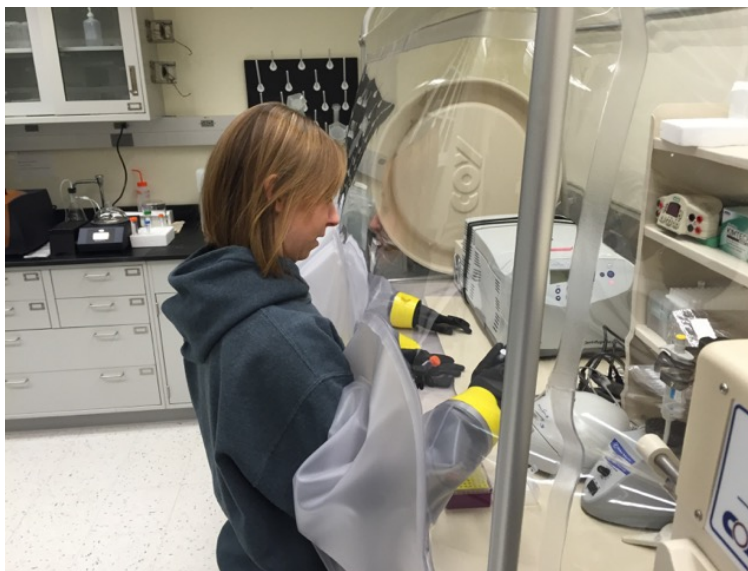
Rachel Nelson – BMS – Dr. Pata



<http://www.albany.edu/rna-training/fellows.shtml>

CORES

For questions and use instructions, please see Dr. Kim DeWeerd <kdeweerd@albany.edu> or Dr. Vladimir Ermolenkov <vermolenkov@albany.edu>



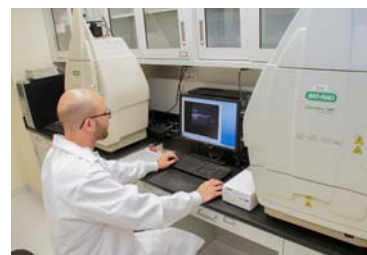
New instruments in the Molecular and Tissue Core

(Dr. Kim DeWeerd <kdeweerd@albany.edu>)

BioRad Chemidoc MP – This is an updated version of the Chemidoc XRS imager that has been in the Molecular Biology Core for the last ten years. It uses the new software, Image Lab, instead of the Quantity One software. It has an updated CCD camera and the filters in the cabinet are internal and controlled by the software. The software is particularly useful for setting up protocols to optimize gel focus, development time, molecular weight estimation and quantitation of unknowns from standards on the same gel. The Chemidoc MP is located in room 1023.

User Guide:

<http://www.bio-rad.com/webroot/web/pdf/lsr/literature/10022469.pdf>



BioRad NGC-10 FPLC – This an FPLC that will be used primarily for preparative purification of protein, DNA or RNA. Users will have the option of using pre-packed ion exchange and gel filtration columns or can pack larger columns with hydrated resins available in the Molecular Core. It can use up to four buffers, one column and its spectrophotometer measures at either 255nm or 280nm. We hope to set up the system in a large refrigerator to perform purifications at 4 0° C. The NGC-10 is located in room 1013.

Brochure:

http://www.bio-rad.com/webroot/web/pdf/lsr/literature/Bulletin_6608.pdf



BioRad CFX-384 real time PCR themocycler - The BioRad CFX384 uses five filtered LEDs to excite fluorophores and five filtered photodiodes to detect covering a 450-690 nm emission/excitation range. The instrument is fairly easy to operate and analysis is also user friendly. The CFX384 is located in room 1022.

Brochure:

http://www.bio-rad.com/webroot/web/pdf/lsr/literature/Bulletin_6096.pdf



Coy Laboratories anaerobic chamber – The chamber is designed to work with cells and macromolecules that are sensitive to oxygen. The anaerobic chamber maintains an atmosphere of 97% N₂ and 3% H₂ through catalytic removal of O₂ gas with a palladium catalyst and using an airlock to bring samples or materials in from outside of the chamber. This ensures an anoxic environment from which to prepare samples or microorganisms that are sensitive to oxygen. The chamber is located in room 1022.



Leica VT-1200S Vibratome - The vibratome is used to prepare histology samples for microscopic analysis. The speed that the vibratome sections material can be adjusted from 0.01 to 1.5 mm/s and the amplitude of sections can be adjusted from 0 to 3 mm in increments of 0.05 mm. The vibratome is located in room 1094.



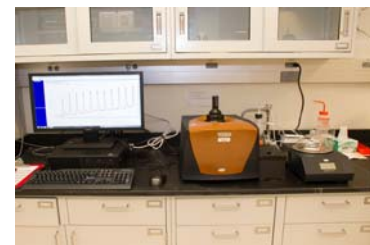
User Guide:

http://drp8p5tqcb2p5.cloudfront.net/fileadmin/downloads/lbs/Leica%20VT1200%20S/User%20Manuals/Leica_VT1200-VT1200S_IFU_1v4C_en.pdf

New instruments in the Structural Chemistry Core

(Dr. Vladimir Ermolenkov <vermolenkov@albany.edu>)

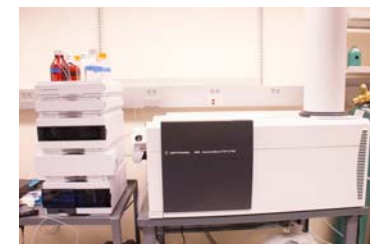
Nano ITC – This is an isothermal titration calorimeter with the low-volume sample and reference cells. The sample volume range for Nano ITC is 300-700 µl. The injection syringe capacity is 50 µl. The minimum injection volume increment is 0.06 µl. ITC measurements can be performed in the temperature range of 2-80 °C. Nano ITC can be used for study of ligand binding phenomena, enzyme-substrate interactions, and interactions among components of multimolecular complexes. The technique allows determination of the binding affinity, stoichiometry, and entropy and enthalpy of the binding reaction in solution. The ITC Run software is used to control the operation of the calorimeter. Experimental data are treated in the Nano Analyze software. The Nano ITC instrument is located in room 1022.



Brochure:

<http://www.tainstruments.com/pdf/brochure/Nano-ITC.pdf>

Agilent 6530 Accurate-Mass Q-TOF LC/MS – This is a quadrupole time-of-flight mass spectrometer coupled with Agilent 1260 HPLC and designed for profiling, identifying, and characterizing low molecular-weight compounds and biomolecules. It provides >20000 mass resolution and wide mass range of up to 20000 m/z. High-performance characteristics enable the 6530 Q-TOF system to support different applications such as proteomics, metabolomics, impurity testing, product degradation studies, forensics, food safety, and environmental analyses. Agilent's MassHunter Workstation software facilitates processing of data generated by the 6530 Accurate-Mass Q-TOF LC/MS. Data mining and navigation capabilities enable efficient analyses of complex MS data. The Agilent 6530 Accurate-Mass Q-TOF LC/MS instrument is located in room LS1151. Use of this instrument is not included in the general Core Fee. A separate charge system is being established. Please see Vladimir.



Brochure:

http://www.agilent.com/cs/library/brochures/5989-9397EN_LO.pdf

Lab and Safety tips from the Cores and Environmental Health and Safety

<http://www.albany.edu/lifesciences/doc/Laboratory-and%20Safety-Tips-from-the-Cores.pdf>

SPONSORED EVENTS

Biological Sciences Seminars

http://www.albany.edu/biology/news_and_events/events/main.shtml#102915

Chemistry Seminars

http://www.albany.edu/biology/news_and_events/associated_docs/Fall%202015%20Seminar%20Listing%20Chemistry%20Department.pdf

The RNA Institute – upcoming New Grants Committee Mini-Symposium and the VPR office’s Grant Writing Workshop

<https://www.rna.albany.edu/new-grants-committee-rna-institute-presents/>

Neuroscience Events

<https://sites.google.com/site/sfnhudsonberkshire/home>

JUSIE (Junior STEM Idea Exchange) : The second season of **JUSIE**, with assistant professors from all of CAS, will begin on October 9 at 12.30, Life Sciences Building, RM 1010

Women in Science and Health (WISH)

The group will be sponsoring Lydia Contreras' talk. The group in turn offers a framework for mentoring female post-doctoral fellows, graduate students and undergraduates in the STEM fields. WISH was established in 2014 by Elga Wulfert, Professor of Psychology and Dean of the College of Arts and Sciences, and Marlene Belfort, Professor of Biology and Scientific Director of the interdisciplinary Life Sciences Research Program. Junior and senior faculty members team up monthly for interdisciplinary scientific presentations and discussions of gender equality and work-life balance.

On Oct 29th, **Lydia Contreras** will present both an RNA-centric seminar at 1:30pm and a talk “Starting a Science Career and Learning How to Jump the Hurdles” at 3pm in LSRB 1144. Dr. Contreras is on the faculty at UT Austin.



Casey Schwartz, science writer

October 6 (Tuesday) seminar — 4:15 p.m., D’Ambra Auditorium, Life Sciences Building (LSRB 2095)

Reading — 8:00 p.m., Huxley Theatre, NYS Museum, Cultural Education Center, downtown Albany



Casey Schwartz is the author of the new book, *In the Mind Fields: Exploring the New Science of Neuropsychology* (2015), a witty, accessible, and entertaining introduction to new developments in brain science—notably the reconciliation of neuroscience and psychoanalysis. Scott Stossel, editor of *The Atlantic*, called it “a brilliant and enthralling exploration of a scientific and philosophical conundrum that has preoccupied thinkers from Descartes to Freud to Oliver Sacks: the relationship

between brain and mind.” A graduate of University College London with an MA in neuroscience, Schwartz has worked as a science and health reporter for *Newsweek/The Daily Beast* and other publications.

Co-sponsored in conjunction with the launch of UAlbany’s Women in Science and Health group (WISH), in association with the RNA Institute and the School of Public Health

University at Albany
College of Arts and Sciences



- Please check out the new Life Sciences website: <http://www.albany.edu/lifesciences/>.
- With facilities questions please contact Jessica Moran at 518-437-4414 or <jemoran@albany.edu>.

LIFE SCIENCES NEWS

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<mmulligan@albany.edu>.