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Life Sciences Research Building
1400 Washington Avenue
Albany, NY 12222
Message from the Dean and the Scientific Director

We are pleased to bring you the third issue of Life Sciences News, the mouthpiece of the Life Sciences Research community at UAlbany. The Life Sciences Research Program brings together faculty, students, post-docs and staff from the Departments of Biological Sciences, Chemistry, Physics and Psychology, and The RNA Institute in a dynamic, collaborative environment. In this issue we feature accomplishments of our community, summarize recent events and we present upcoming events for this fall and next spring. Most exciting are written contributions from a PhD student in Chemistry and a post-doc in Biology that reflect the vibrancy of our collective endeavor.

Message from the Dean and the Scientific Director

Marlene Belfort
Distinguished Professor
Director, Life Sciences Research

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

FACULTY NEWS
Welcome New Faculty

Morgan Sammons, PhD
Department of Biological Sciences
PhD: Vanderbilt University
Post-doc: University of Pennsylvania
Research Interests: Genetic and genomic dissection of cis-regulation in the p53 tumor suppressor network

Brian D. Adams, PhD
The RNA Institute
PhD: UConn Health
Post-doc: Yale University
Research Interests: Investigate microRNA, and more broadly noncoding RNA biology, within triple negative breast cancer

Message from Dr. Paul Agris

After more than 6 years of implementing the mission and vision of The RNA Institute, with physical space, instruments, people, and programs, I will be taking a one year sabbatical starting September 1, 2016. I will be returning on September 1, 2017. My sabbatical will take me to Duke, UNC and Sirga Biopharma, Inc. (with a new NIH SBIR). Marlene Belfort, who joined the Institute as a Senior Faculty member in 2011 will be the acting-Director during this year.

One of the accomplishments of which I am most proud and which offers me the opportunity of the leave, is that the administrative and scientific staff have become independent in executing the mission and vision of the Institute. Jen Montimurro will oversee the daily operations of the Institute. Lisset Drislane will continue in providing accounting support, as well as some HR support. The positions and responsibilities of Maria Basanta Sanchez, Ken Halvorsen and Sri Ranganathan will continue through their existing grants, projects and collaborations. There is a search committee actively pursuing a new Marketing & Outreach Program Coordinator to maintain the national and international profile of the Institute and its local signature activities. I will be returning once a month to supervise my research group, including a new DOD grant on Type 2 Diabetes.
Faculty highlighted papers

**Dr. Belfort:**


**Dr. Lednev:**

*This paper has been highlighted on a journal cover (shown).*

**Dr. Rangan:**

*This paper was hi-lighted in *Science* Editor's Choice (2016) 352(6281), 49. “Soma regulates germline differentiation”.*

**General Faculty Publications:**  [http://www.albany.edu/lifesciences/doc/Faculty-Publications.docx](http://www.albany.edu/lifesciences/doc/Faculty-Publications.docx)

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**Faculty Grants**

**Paul Agris** is the recipient of a grant from the DoD to study the biochemical relationship between human Type 2 Diabetes and tRNA modification.

**Marlene Belfort** received a 4-year renewal from NIH to continue her work on “Self-Splicing Inteins: Function, Evolution, Application” (years 29-33).

**Marlene Belfort**, along with **Pan Li** and **Gaby Fuchs**, received an administrative supplement from NIH to the grant, “Intron Dynamics in Bacteria”, for purchase of a TIRF microscope for single-molecule analysis.

**STUDENT/POST-DOC AWARDS AND NEWS**

**RNA Fellows**
The University's Ph.D. training program in RNA science is entering its second year. The office of Graduate education in collaboration with Departments of Biology, Biomedical Sciences, Chemistry and the RNA Institute is training exceptional students in RNA Science relating to health and disease. We are happy to announce our second cohort of trainees who have started in the training program beginning this fall.

**Marissa Louis** – Biological Sciences – Dr. Pager

**Botros Toro** – Biological Sciences – Dr. Li

**Justin Waldern** – Biological Sciences – Dr. Belfort

**Carlos Andino** - Chemistry – Dr. Chen (interim)

**Ryan McDowell** - BMS – Dr. McDonough

**Casey Warszycki** – BMS – Dr. McDonough

[http://www.albany.edu/rna-training/fellows16-17.shtml](http://www.albany.edu/rna-training/fellows16-17.shtml)
Student/Post-doc Awards

Rachel Cary (Pager lab) gave a talk to the FASEB Virus Structure and Assembly meeting in Steamboat CO, July 17-22. The title of her talk was: “Zika virus modulates the landscape of RNA modifications during infection”. She received a travel award from the RNA Institute and FASEB to attend this meeting.

Kyle Doty (Lednev Lab), PhD candidate and a Graduate Research Fellow of the National Institute of Justice received the 2016 Graduate Student Award from the New York Section of the Society for Applied Spectroscopy (NYSAS). The award consists of $500, a plaque and a one-year membership in the Society for Applied Spectroscopy.

Pooja Flora (Rangan Lab) won first prize for the graduate student talk at NESDB 2016 held in Woods hole MA.

Cathleen Green (Belfort Lab) is the recipient of the Great Dane Award, the President's Award for Leadership.

Christopher Lennon (Belfort Lab) was awarded a 2 year NRSA Postdoctoral Fellowship from the NIH.

Mohammed Ali Nasrallah (Rangan Lab) won the Undergraduate poster prize at the Sigma-Aldrich RNA Symposium.

Katarina Tluckova (Rangan Lab) won first prize for Post-Doc poster at Northeast Regional Meeting of the Society of Developmental Biology (NESDB) 2016 held in Woods hole MA and the Post-Doc poster prize at the Sigma-Aldrich RNA Symposium.

Maitreyi Upadhyay (Rangan Lab) won the David Shub Award (2016) on behalf of the Dept. of Biological Sciences, SUNY, Albany for extraordinary achievements in the RNA world.

Ville Vare (Agris Lab) received a scholarship from the League of Finnish American societies.

Valleys and Peaks by Christopher Lennon, Post-doc (Belfort Lab)

Often students spend 6+ years doing nothing but research. Then some realize that they don’t like bench work. I have found that science is full of peaks and valleys. The heart-pounding excitement of a new discovery one day can be followed by the heart-wrenching agony of failure at (seemingly) simple tasks the next. Sometimes these peaks seem to reach high above the clouds, while other times the valleys feel like the bottom of the ocean. I was very fortunate during graduate school at the University of Wisconsin-Madison to have an amazing training environment and successful set of projects. In 2013 after earning my Ph.D. in Cellular and Molecular Biology, I had reached the summit of a daunting peak, and I felt like I could someday have my own lab, maybe the most intimidating mountain to climb for a young scientist.

I went to start a postdoc at the University of Michigan with a full head of steam. After about a year, on paper, things were going well. I had a project completed to write up, a new one beginning, and a fellowship from the NIH to fund my work. But for a variety of reasons, my instincts told me that the environment and field were totally wrong for me, and I had to get out. I was stuck in a deep dark ocean trench, unsure if I would ever emerge to feel the sun again. From a personal standpoint, leaving Michigan meant moving my wife and two children to start over. While my kids are young, and my wife incredibly supportive, I had to seriously question whether following my dream was worth it. Professionally, leaving meant starting from scratch on my research, giving back a fellowship that I had worked so hard to secure, and undoubtedly ruffling some feathers. Should I go for another postdoc?

While I had certainly lost my footing in Michigan on my climb, I was determined to keep moving. Hoping an earlier offer of a postdoc position from the Belfort lab was still available, I contacted Marlene and crossed my fingers. After a year in the Belfort lab here at SUNY, I have no doubt I made the right choice for my family and career. My research has gone well in a field I love, I was able to get a totally new fellowship from the NIH, and I have a wonderful training environment and dedicated mentor concerned with my success.

My goal is to have my own productive lab in an academic setting someday. As any grad student or postdoc knows, the odds to become a tenured faculty member are quite intimidating. There are a lot of bright, talented and ambitious postdocs out there competing for exceedingly few positions, not to mention difficulty in securing funding. While this peak may seem unattainable at times, and I don’t know if I’ll scale this mountain, I know that the summit always seem to emerge if I keep climbing.
BUILDING AND CORES NEWS

The Molecular Core and Chemistry Core have received several new instruments in the last year. Most of the new instruments are listed on the Core Facilities Web Page (http://www.albany.edu/lifesciences/core_facilities.shtml).

Two instruments that were recently purchased are a Licor C-Digit luminometer scanner and a Qubit spectrophotometer. The Licor C-digt is designed to scan western blots that are treated to produce chemoluminescence. It is more sensitive than the Typhoon or Chemidoc imagers and the photo developers in the dark rooms. The Qubit spectrophotometer is a fluorimeter that measures the concentration of protein, DNA and RNA in very small volumes after reacting them with specific fluorophores. It is the benchmark spectrophotometer for measuring DNA concentrations of samples prior to submitting them for Next Generation Sequencing.

This summer 2 of 4 -80oC freezers that are in the Tissue and Molecular Cores were defrosted. There are new guidelines for storage of materials in -80oC freezers. http://www.albany.edu/lifesciences/doc/Freezer-Policy.docx

Temperature of the Building: The Life Sciences laboratories are individually temperature controlled. If your lab needs to make a change in temperature, please contact Jessica Moran. Also, looking ahead to fall and winter, please feel free to let Jessica Moran know if there is anywhere you feel energy may be saved by adjusting temperature settings.

Monitors: If you have any Life Sciences related information you would like to share on the electronic announcement monitors in Life Sciences, please submit to Jessica Moran. PowerPoint and jpg files work best. Larger monitors will be installed.

Student Entrepreneurship by Tony P. Hoang, Graduate Student (Chen lab)

My mom would always bring home broken electronics from Goodwill and I used to enjoy fixing them for my family. But I never considered myself an inventor; instead I always wanted to be a scientist ever since I was little from watching Bill Nye the science guy on PBS (we didn't have cable). So after graduating with a B.S. in Chemistry, B.S. in Biochemistry and a M.S. in computational chemistry, I figured I should continue down that track and I joined Dr. Alan Chen's (chemistry) lab to do molecular simulations. But try as I might to ignore it, the tinkerer in me (that loved to build things) never left, so I personally purchased my own 3d printer.

I helped design a series of scientific instruments ranging from a 'smart' gel-electrophoresis apparatus that automatically shuts off the power supply when a sample has been optimally separated to a ‘smart’ centrifuge monitoring system that turns off the centrifuge when the sample has sedimented out of solution. I have also developed, for my doctoral dissertation, a next generation, high throughput single molecule instrument capable of collecting a year’s worth of data in minutes.

A few patents later, people started to understand what I was doing and I had a lot of requests to help with their projects. I wanted to commercialize my inventions to facilitate research for other scientists so I thought the Blackstone LaunchPad Business Competition would be a great opportunity to test my concepts. I was encouraged to participate by Dr. Stephanie Black (Business School) who was working with the Life Sciences to commercialize the technology. I was introduced to Antoinette Fraser (biology) by Dr. Black and Antoinette provided a great deal of help in writing the business plan - I couldn't have written it all without her. Dr. Black also gave me a crash course in how to make a business and how to present in front of investors.

A joint venture was created from the Business School and the RNA Institute that helped me propel myself into the competition. I was very excited about the support from the RNA Institute that allowed me to use my creativity in a productive manner. The experience was wonderful, I was able to combine my engineering skills that I learned from growing up and my science education and applied it towards my PhD research. Now that my team won first place, I plan to use the money to launch the company by the end of summer and obtain interest from investors. I’m also in the process of pitching my inventions to larger companies for potential outlicensing or buy-out agreements. I’m pretty excited to find out what happens next because it seems the sky is the limit with the right ideas, mentorship and enthusiasm. (http://www.albany.edu/news/71512.php)
**Group News**

**WISH:** March 2016 - Dr. Lorriane Gudas, Weill Cornell Medical College, presented a seminar entitled, "RAR Selective Agonists for the Prevention and Treatment of Cancer and Diabetes". Dr. Sho-Ya Wang hosted this seminar and Dr. Guda discussed “work/life balance” at a WISH luncheon. April 2016 - Assistant Professor Dr. Andrea Lang and Ph.D. candidate Rosimar Ríos-Berríos, Department of Atmospheric and Environmental Sciences, gave a Work-Life Balance presentations to faculty post-docs and students at the WISH meeting.

**JUSIE LIGHTNING EVENT:** This forum called JUSIE is the JUnior STEM Idea Exchange. In April, as a part of JUSIE initiative, Paolo Forni and Prash Rangan organized a speed talk event where 21 Assistant professors from CAS participated. The event was introduced by Dean Elga Wulfert and was very well attended. Each participant gave a 5 min. talk where they distilled the essence of their research for a broad audience. The event had the focused objective of exchanging ideas and exploring collaboration opportunities. Interactions were vibrant and several participants adjourned to a local watering hole to continue their dialog, a sure sign of success.

**COFFEE SOCIAL:** Dr. Gaby Fuchs has organized a coffee social on the first Monday of each month. The event has been successful in terms of social and scientific interactions among the LSRB community. Also, the baking has been first class, with everything from baklava through hamantashen and tiramisu to German coffee cakes.

**Upcoming Fall Coffee Socials:**
- September 12 – Fabris lab
- October 3 – Pager lab
- November 7 – Royzen lab
- December 5 – RNA institute PIs (Ken, Maria, Bijan, Brian)

**Upcoming Events**

**Biological Sciences:** [http://www.albany.edu/biology/news_and_events/events/main.shtml](http://www.albany.edu/biology/news_and_events/events/main.shtml)

**Chemistry:** [http://www.albany.edu/chemistry/docs/Spring%202016%20Seminar.pdf](http://www.albany.edu/chemistry/docs/Spring%202016%20Seminar.pdf)

**Hudson Valley RNA Club (HVRC):** [http://www.hudsonvalleyrnaclub.org/meeting-schedule/](http://www.hudsonvalleyrnaclub.org/meeting-schedule/)
The RNA Symposium, [https://www.rna.albany.edu/4th-annual-rna-symposium-rna-science-applications/](https://www.rna.albany.edu/4th-annual-rna-symposium-rna-science-applications/), on Friday March 17 (during Spring Break) will be keynoted by Tom Steitz, Jeanne Lawrence, Melissa Moore and Maria Barna. In addition, Erik Sontheimer a new member of the SAB, Tom Gingeras, and Marlene Belfort will be chairing three of the four sessions. The Workshops starting in the evening of Mar. 15 and continuing Mar. 16 will include miRNA detection using nanoswitch technology, RNA modified nucleoside analyses (both of which will allow you the potential of bringing your own RNA samples for analysis), and RNA Dynamics: Structural Modeling through Simulation workshop.

Mark your calendars - 8th Life Science Research Symposium!!!

November 4, 2016

These inaugural lectures are part of a two-day collaboration between the University at Albany and Rensselaer Polytechnic Institute (RPI).

October 25 & 26, 2016

Featuring Nobel Laureate Thomas R. Cech, Ph.D.
Distinguished Professor, University of Colorado Boulder
Director, University of Colorado BioFrontiers Institute
Investigator, Howard Hughes Medical Institute

([www.albany.edu/science-engineering](http://www.albany.edu/science-engineering))
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>.