

Annual Newsletter Fall 2019

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Newsletter editor: P. Wolfskill

MESSAGE FROM THE CHAIR



Dr. Aaron Neiman
Professor & Department Chair

The Department of Biochemistry and Cell Biology got off to a rousing start with its 50th anniversary celebration in September 2018. More than 100 former students, postdocs, faculty and technicians gathered on campus to see old friends, hear reminiscences from former faculty and students, and tour the campus and the Department. It was particularly nice that Mel Simpson, the founding chair of the Department, and Marty Freundlich, the first faculty member Mel hired, were both able to join the festivities. They got to see how the project they started in 1968 has grown since those early days and hear about the impact the Department has had on so many people.

In April 2019, the Department participated in the University's first annual Giving Day, a fundraising event where donors can give directly to different units within the University. This effort was a tremendous success, BCB finished behind only the School of Medicine and Athletics in terms of both the number of individual

donors and funds raised, and raised more than \$10,000 for our Excellence Fund. It was both humbling and gratifying how many alumni, faculty, students and friends came forward to support the Department.

The many accomplishments of students and faculty in the Department this year are described in the newsletter. Just to highlight a few: our undergraduate majors continue to do outstanding work. Four of our

Biochemistry graduates in May completed Honors theses; eight received University awards for outstanding achievement and one was named a University Valedictorian. Our faculty and students continue to make significant contributions in many different areas of research. One testament to the significance of the work being done in the Department is our success in obtaining grant support. Six different NIH or NSF grants were awarded to BCB faculty this year, in addition to multiple NIH equipment supplements. Of particular note, Ben Martin was awarded a Pershing Square Sohn Prize for Young Investigators in Cancer Research. The prize provides up to three years of support to allow "early career scientists the freedom to take risks and pursue their boldest research." Congratulations, Ben!

The 50th anniversary of the Department provided an opportunity not only to look back on what has been accomplished, but to think about how to position the Department to continue to thrive for the next 50 years.

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MESSAGE FROM THE CHAIR

(Continued from page one)



Keil Thomas

joined the department as Director of Laboratories in December of 2018. He is responsible for the maintenance and upkeep of departmental equipment and is the point of contact for facilities and capital projects. Prior to joining Stony Brook University, Keil worked for the DNA Learning Center of Cold Spring Harbor Laboratory where, in addition to teaching science workshops to local students, he was responsible for the upkeep and maintenance of five teaching laboratories and two prep spaces including ordering supplies and materials for the workshops. Keil has a Bachelor's of Science from New York University in Molecular Biology.

A long-term trend both in New York and nationally, has been the steady withdrawal of State support for public universities, and we have certainly felt those impacts in the Department. To buffer the Department against these changes and to ensure that in the future faculty and students have the resources they need to continue to do cutting edge research, we have established an endowment fund for the Department. The long-term goal is for the Biochemistry and Cell Biology Endowment for Excellence to provide annual income that will allow the Department to maintain a robust and first-class research environment by supporting student stipends,

maintaining and upgrading equipment and facilities, and recruiting new faculty. This support will be essential to the long-term health of the Department. Next year's Giving Day efforts will be focused on raising funds for the Endowment and I hope you will consider contributing to the Endowment fund.

Sincerely,

Aaron Neiman

Professor and Department Chair

Please visit our website for additional information about department happenings at

www.stonybrook.edu/biochem.

MCB & BSB GRADUATE PROGRAM

The Molecular and Cellular Biology (MCB) and the Biochemistry and Structural Biology (BSB) graduate programs continue to do well. Dr. Steven Glynn took over as the BSB Program Director, while Dr. Wali Karzai continues to serve at the helm of MCB. Wali was honored by the University as the "Graduate Program Director of the Year."

The Fall 2019 class contains 14 students entering the MCB program and 4 students entering the BSB program. The MCB and BSB programs held their joint annual BBQ and "meet and greet" for the incoming graduate students. This event provided an opportunity to meet with faculty, chat with senior students, and play games organized by the second-year students.

The MCB program held its annual Second Year Student Symposium in June at the Hilton Garden Inn. Second year students were given the opportunity to hone their presentation skills and showcase the research work to their colleagues and MCB program faculty.

The annual MCB-BSB retreat was held in September. Several MCB and BSB faculty were invited to speak and present their work.

Speakers included Drs. D. Pisconti (BCB), S. Chowdhury (BCB), E. Boon (Chemistry), M. Seeliger (Pharmacology), H. Kim (Pharmacology), H. Zhan (Medicine), L. Wollmuth (Neuroscience), and M. Bowen (Physiology). All 4th year MCB and BSB students presented posters highlighting their research, which generated much interest among the attendees. Best poster awards at the retreat were given to Qian Zhang and Alexandra Weinheimer. Julie Bettke and Greisly Nunez received awards for outstanding service to the graduate programs.

Sincerely,

Wali Karzai, MCB Program Director &

Steven Glynn, BSB Program Director

Please visit our websites:

www.stonybrook.edu/mcb/

www.stonybrook.edu/bsb/

BIOCHEMISTRY AND CELL BIOLOGY MASTERS PROGRAM

2018 Graduating BCB MS students:

From left, Matthew DiGiovanni, Tianying Chen, Shane Ford, Shiyu Wang, Weijing Gu, Neta Dean (Program Director), Binghao Zhang, Cynthia Converso, Pranab Karki, Chase Cortez and Leonidas Pierakeas. Not shown are Amadi Gatling and Katie O'Connor.

The Biochemistry and Cell Biology MS graduate program reached year eight in 2018! The aim of this program is to prepare our graduate students for careers in the life sciences by providing a strong foundation in both theoretical and practical biochemistry and cell biology. Success is measured by the career outcomes of our students.

By this metric, this program is a success. Thus far, 97% of our Master's students have graduated (77 of 79). 90% completed the program in three semesters. 78% of our graduates have continued in health science

related careers, including Ph.D. programs, medical, dental or veterinarian schools, or as research technicians. Many graduates are currently at top-notch research institutes, including NYU, Johns Hopkins, Cornell, Mt. Sinai,

Rockefeller, Columbia, Stony Brook, Cold Spring Harbor, Scripps, Univ. Utah, Univ. Indiana, and UC Santa Cruz.

The enthusiasm of our faculty to recruit these incoming students into their laboratories is further testament to the quality of the program. We are proud of our students, faculty, and alumni for their efforts in making our BCB MS program a success.

Details can be found on our [website](#).



2018 BCB MS class:

From the left: Ian Miranda, Biao Zhang, Thomas Jannace, William Podolsky, Neta Dean (Program Director), Mohammed Bah, Guangmei Liu, Mohammed Ali, Mckenna Glasheen. Not shown are Jessica Caliendo, Shannon Kanidinc, Paul Geraci, Sebastian Alvarez

THE INSTITUTE FOR STEM EDUCATION (I-STEM)

The Institute for STEM Education

(I-STEM), which is housed in the Biochemistry Department, was founded by David Bynum in 2007, and has grown to become a national leader in STEM education research, teacher education, and community outreach. I-STEM has been an incubator of innovative, interdisciplinary STEM education collaborations with the university and its surrounding communities. I-STEM is now directed by Biochemistry and Cell Biology faculty member Keith Sheppard.

I-STEM has made notable contributions to STEM teaching, research, and policy at the university including:

- Generating more than \$33M in external grant funding, including \$8M in current grant funding.
- Assisting with the educational plans of 12 recent and current NSF Early CAREER awards across various departments at the University.
- Creating a Ph.D. Program in Science Education in 2010, which has now graduated seven students and currently enrolls 30 students.

- Faculty are active in state and national STEM educational policy activities, serving on editorial boards, writing policy statements, serving on advisory panels and meeting with key state leadership staff.

I-STEM is a major provider of high quality STEM Teacher Education:

- Offering a full complement of BS and MAT programs in all STEM education fields and is one of the major producers of STEM teachers in the state.
- I-STEM is the regional hub for the New York State Science and Mathematics Master Teacher program with more than 90 appointed master teachers.
- I-STEM has been awarded the American Physical Society 5+ Award for the last four years for its high production of Physics Teachers.

I-STEM is a leading provider of high quality STEM outreach and student support:

- I-STEM has awarded \$6.4M in fellowships and scholarships to post-doctoral, graduate, undergraduate, and high school students who have been actively involved in research or teaching

in STEM disciplines.

- More than 5,000 students attend our Teaching Labs annually; 85% of Long Island school districts have participated. Labs are offered in biology, geoscience, chemistry, sustainable chemistry and physics. Summer camps are offered in all disciplines of sciences, mathematics, and engineering.
- I-STEM has established research and professional development partnerships with the wider scientific community at Cold Spring Harbor Laboratories, Brookhaven National Laboratories, STEM Hub, American Museum of Natural History, New York Botanical Garden, as well as NYS schools and community colleges.

Dr. Keith Sheppard

Director, Institute for STEM Education
Associate Professor, Biochemistry and Cell Biology



Members of the Algebra 2 PLT met on September 1st to build solar marshmallow cookers. The goal of the activity was to use the algebra skills taught in the Common Core Algebra 2 curriculum, to build parabolic cookers that, when brought outside, would make a toasty marshmallow. Since it was a cloudy day the group didn't get to test the devices, but on the next sunny day ... Thanks to Pam O'Brien for organizing this activity that brings a real-world application into the mathematics classroom.

UNDERGRADUATE AWARDS FOR BCB MAJOR CLASS 2018

The Biochemistry and Cell Biology Undergraduate program had 83 graduates in May. Many honors for our Biochemistry majors were announced at the ceremony.

Biochemistry Department Awards for Outstanding Achievement:

Renee Chen, Janie Choi, Eliona Feder, Brian Ho, Maitreyee Kale, Ryan Kawalerski, Annet Kuruvilla, Gabrielle Paniccia, Alexandra Peterson, Jerin Thomas, Daniel Walocha, Julia Montemage

University Awards for Outstanding Achievement:

Joyce Che, Hussein Harb, Maitreyee Kale, Ryan Kawalerski, Annet Kuruvilla, Gabrielle Paniccia, Jerin Thomas, T'kheya-D'Vreyah Y'israel

Provost's Award for Student Excellence

Gabrielle Paniccia

Chancellor's Award for Student Excellence

Janie Choi, Maitreyee Kale, Ryan Kawalerski, Annet Kuruvilla

Irwin Oster Award for Student Research in Genetics:

Gabrielle Paniccia

NSF GRFP recipients:

Gaby Paniccia, Ann Lin, and Katherine Lo



Goldwater Scholar

Ryan Kawalerski

University Valedictorian:

Renee Chen

Four Biochemistry graduates graduated with Honors and three Biology graduates performed their Honors research in BCB laboratories:

Eilona Feder (mentor: Nurit Ballas)

Gabrielle Paniccia (mentor: Laurie Krug, Molecular Genetics and Microbiology)

Jerin Thomas (mentor: Todd Miller, Physiology and Biophysics)

Daniel Walocha (mentor: Can Senkal, Medicine)

Ononah Ahmed (mentor: David Matus)

Kevin Catalan (mentor: Peter Gergen)

Kelsey Hackett (mentor: Peter Gergen)



Pictured above, Ononah Ahmed celebrates Stony Brook Biology and Biochemistry graduation with Honors with her mentor, David Matus!

SUCCESSFUL ONLINE COURSES!

The Biology Online Program, which administers several of the Dept. of Biochemistry and Cell Biology online courses over the summer (BIO202, BIO310, BIO 314, BIO358 and BIO361), continues to attract students from other universities and educational institutions throughout the U.S. as well as Stony Brook University students. The courses are being recommended by medical schools, health related facilities, and advising from other institutions as academically rigorous courses with high academic integrity and taught by the same faculty teaching at Stony Brook University during our academic year. Thirty two percent of the enrollment in BIO 361 and BIO 310 were students in this category.

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MICHAEL AIROLA

The Airola Lab continues to study enzymes that metabolize lipids. One major focus is the biosynthesis of triglycerides. Triglycerides, or fat, are required for long-term energy storage but when they accumulate excessively cause a range of health problems including obesity, heart disease, and diabetes. Our research is revealing how triglyceride-synthesizing enzymes function and are regulated in atomic detail. The American Heart Association and two grants from the NIH fund this basic research. In addition, PhD candidate Valerie Khayyo was recently awarded a prestigious predoctoral fellowship from the American Heart Association to support her training and research in this area.

This past year we also entered the drug development arena with several new collaborations to develop therapeutics for colon cancer, aggressive breast cancer, and fungal infections that affect patients with HIV/AIDS. The National Cancer Institute and a pilot grant from Stony Brook University fund this research.

In other news, Mike gave invited talks at Southern Methodist University in Dallas TX, the 55th edition of the New York Lipid and Vascular Biology Research Club in NYC, and the Molecular and Cell Biology of Lipids Gordon Research Conference in New Hampshire. Weijing Gu graduated with his Masters degree and joined Proneurotech, a startup company focused on neurodegenerative disease near San Francisco. Valerie Khayyo won outstanding presentation at our Department retreat, while PhD candidate Forrest Bowling won outstanding poster and 1st prize in the newly established and super fun Art competition organized by the Pisconti, Chowdhury, and Luk labs. Graduate student Yong-Mi Choi passed her thesis proposal and is now an official PhD candidate. Lastly, we welcomed Satyam Talele, an undergraduate entering the Honors College at Stony Brook this Fall. Satyam was awarded the Harvard Lyman Award for a 6-week summer fellowship.

PAUL BINGHAM

The first-in-class cancer metabolism drug we discovered here at Stony Brook (CPI-613) has performed well in initial clinical trials (*Lancet Oncol* 2017; **18**: 770–78) and FDA has now approved registrational trials for the drug with pancreatic cancer and acute myeloid leukemia (see NCT03504423 and NCT03504410 at clinical [trials.gov](https://clinicaltrials.gov)). If these trials are as successful as the initial investigational trials, CPI-613 has a chance to become a standard-of-care for these two difficult-to-treat cancers. We also continue to make exciting new basic science progress in understanding how to better deploy this drug family to further improve its clinical impact.

SAIKAT CHOWDHURY

Saikat started his lab (*pictured below*) in Fall 2018 with research technician Liqun Wang and BCB MS student and Fulbright Fellow Mohammed Shaaban. Since then the lab has been using cutting edge cryo-Electron Microscopy (EM) at the newly established cryo-EM core at SBU to understand cytoskeletal protein dynamics and regulation. Research is progressing well, and Mohammed managed to solve few structures. These are also the first high resolution structures from the cryo-EM core. Mohammed presented his work at the BCB departmental retreat and received the best presentation award. He is hoping to get these results published soon. Saikat published two papers from his postdoctoral work, one on Autophagy in PNAS (<https://www.pnas.org/content/115/42/E9792.long>) and another on CRISPR in Molecular Cell (<https://www.sciencedirect.com/science/article/pii/S1097276519300917?via%3Dihub>). The lab doubled in size this summer with Dr. Bojian Ding joining the lab as a postdoctoral associate and Natesh Samaroo (Bio major) joining as an undergraduate researcher. The team in the Chowdhury lab hopes to solve many more structures of various complexes and have a better understanding of the underlying cause of diseases like cancer and developmental disorders in months to come. To know more about the research in the Chowdhury lab one can follow them on <https://www.stonybrook.edu/commcms/biochem/research/faculty/chowdhury/#ResearchDescription> or on Twitter <https://twitter.com/saikatlab>.



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VITALY CITOVSKY

Vitaly Citovsky received the *F1000 Faculty Member of the Year 2018 Award*. Vitaly continues to be funded by NIH/NIGMS, NSF/USDA/NIFA, and US-Israel Binational Agricultural Research and Development Fund (BARD). Also, Vitaly was a recipient of a competitive renewal grant from the National Science Foundation (NSF), and supplements from NIH/NIGMS for purchase of a new confocal microscope and from NSF for purchase of a new real-time PCR machine. Vitaly continues to serve on Editorial Boards of *PLOS ONE*, [Scientific Reports \(Nature Publishing Group\)](#), *Biochemical and Biophysical Research Communications (BBRC)*, *F1000 Research*, [Frontiers in Plant-Microbe Interactions](#), *Frontiers in Plant Physiology*, *Plant Signaling & Behavior*, *Communicative and Integrative Biology*, and *Gene Regulation and Systems Biology*, and is a member of the Cell Biology section of *Faculty 1000 Biology*. Vitaly served on the Undergraduate Biology Curriculum Committee, and he continues to serve on the Departmental Awards Committee, the Departmental Executive Committee, the Administrative Review Committee of the University Senate, the CAS Senior Promotion and Tenure committee (PTC-S), and the CAS Academic Judiciary Committee.

LAB MEMBERS-Undergraduate students: Alan Jiang, Chao Feng Zhang, Jody Huie; Sabbatical: Yufei Hu (South China Agricultural University, China); Postdocs: Ido Keren, Benoit Lacroix, Phu Tri Tran

NETA DEAN

The Dean lab continues to study fungal cell wall biosynthesis, in particular focusing on trying to understand the regulation of cell surface protein glycosylation.

Congratulations to Bing Zhao and Shiyu Wang, two BCB MS students in our lab who completed their Masters Degree this year. Shiyu managed to make 2018 very special by both graduating AND giving birth to a lovely baby girl! Shiyu left Stony Brook for Baltimore, where she is currently a Research Assistant in the Department of Biochemistry and Molecular Biology at Johns Hopkins. Bing returned to his home in China and is currently on the job market.

We welcomed several new lab members, including McKenna Glasheen (a BCB MS graduate student), Yexin Su, and Douglas Marr (Stony Brook Biology undergraduates).

DALE DEUTSCH

This year Dale Deutsch will be completing his NIH and Artelo Bioscience funded basic research program. He is happy that his

PhD students and postdoctoral fellows have gone on to interesting jobs. The work that he initiated over the last quarter of a century on endocannabinoids will continue in some related fashion thanks to his colleague (and former student) Dr. Martin Kaczocha and others on campus in Chemistry and Applied Math.

Dale will be starting his 2nd year as a Toll Professor that supports his development of an online course on Cannabis (marijuana). The course covers all aspects from botany, history, sociology to neuroscience and medical applications.

JARROD FRENCH

It was another busy year for the French lab in 2018. There were lots of reasons to celebrate this year with three birth announcements (Yin, King and Tollentino-Collado), three successful PhD defenses (Weijie Zhou, Roger Shek and James Iuliano), some new grants, a bunch of new papers published and several awards. Notably, James Iuliano (co-mentored by Pete Tonge) was awarded the Department of Chemistry Award for Outstanding Doctoral Student, undergraduate student Hussein Harb was selected for an SBU Undergraduate Recognition Award, and Jarrod was given the ACS Infectious Diseases Young Investigator Award by the ACS Division of Biological Chemistry. Two of our newly minted PhD's are off to start the next phase of their careers: Sally (Weijie Zhou) is currently a postdoc at Boehringer Ingelheim in Connecticut, and Roger is working at the Center for Emerging and Re-Emerging Infectious Diseases in Washington. Several French-lab undergrads also moved on: Wilson Nieves-Vasquez (Biochemistry, Physics 2018) is starting a PhD at UCSF in the Fall, Hussein Harb (Biology 2018) is doing an NIH post-baccalaureate fellowship, and Jasper Sim (Biochemistry, McGill University, 2021) is back at McGill to complete his degree. There are several new faces in the lab this year. Joining us are research scientist Shujuan Gao, PhD (Jilin University), MCB graduate student Morgan King, and research technician Alexia Collins. Also new to the lab are two Chemistry BS/MS students, Brandon Graham and YongLe He, both of whom will be starting the MS portion of their studies in the Fall of 2019.

The lab continues to be very fortunate in terms of grant funding. We received NIH and NSF supplements to fund Morgan and Wilson, respectively, an NIH equipment supplement to buy a new Wyatt multi-angle light scattering instrument, and a new \$2.3M multi-PI R01 from the NIH (NIAID), jointly with Nick Carpino (SBU) and Louis Scampavis (Scripps Florida) to discover and develop lead compounds that target the Sts enzymes. Our collaborative and multi-disciplinary

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research team works on a number of projects at the chemistry-biology interface. We work on the structural and molecular determinants of the regulation of nucleotide metabolism; mechanisms of signal transduction in flavoprotein photoreceptors; structure/function studies and drug discovery for the Sts proteins; the development of tools for X-ray crystallography; structure/function studies of herpesvirus tegument proteins; and the identification and characterization of nucleobase/nucleoside transport proteins. For the latest news and updates, please see our lab webpage: <https://sbufrenchlab.wordpress.com/>.

J. PETER GERGEN

Work in the Gergen lab continues to investigate mechanisms of transcription regulation using the framework of the pathway responsible for generating the segmented body pattern of the *Drosophila* embryo with an emphasis on understanding the context-dependent activities of the Runt transcription factor. Recent efforts confirm the functional importance of Runt's interaction with two distinct enhancers of the *slp1* gene and have now turned to investigating the role of Odd-paired, a Zn-finger transcription factor whose activity is differentially affected by Runt on these two *slp1* enhancers. Current work also extends these studies to Runt-regulated enhancers of other genes such as *wingless* and Toll-receptor family members involved in the process of convergence and extension immediately following gastrulation.

Undergraduate Biology majors Kevin Catalan and Kelsey Hackett both graduated with Honors in May of 2019.

Kevin is starting the PhD Program at Johns Hopkins University this fall and Kelsey is taking a gap year to work as a medical scribe prior to applying for medical school. We were excited to welcome back former lab members Shabbir Alam, Kimberly Bell, Michael Higgins, Lisa Prazak, Conrad Tenenbaum and Dan Tracey at the Department's 50th Anniversary Celebration last fall. Outside of the lab, Peter Gergen in his role as the Director of the Biology Program continues to work towards the transformation of undergraduate education. He was a member of a five person team of Stony Brook faculty that attended a STEMwrite Institute at the University of Minnesota in June of 2019 and is working very hard at the moment as Stony Brook prepares to host the 2019 HHMI-funded Northeast Regional Institute on Scientific Teaching from July 28th – August 1st 2019. In between these two events he also took time to attend the 22nd International Runx Conference at Seoul National University in South Korea where he gave a plenary talk 'Context-dependent regulation by Runt – every target is a unique and beautiful snowflake'.

STEVEN GLYNN

During the last year, the Glynn lab has said farewell to long-standing members and welcome to new young scientists. Bojian Ding (BSB) successfully defended her Ph. D thesis in March 2019 and began a post-doctoral position with Dr. Saikat Chowdhury at SBU. Bojian's work on uncovering substrate specificities of the human mitochondrial AFG3L2 protease was published in *Biochemistry* in July 2018. Jasper Cantrell left the lab after 18 months as a research laboratory worker to take a new job as a scientist in the biotech sector. The lab was delighted to welcome Tyler Steele (MCB), Will Podolsky (BCB

Master's), and Dr. Thanalai Poonsiri joined from the University of Liverpool, UK as our first postdoc. Ryan McHugh, an undergraduate Biology and Chemistry major, was awarded the Goldwater Scholarship and a URECA Summer research award to continue his work on the regulation of ATP hydrolysis in AAA+ motors. In addition to our own work on the mechanisms of mitochondrial protein homeostasis, the lab has continued collaborations with Dr. Martin Kaczocha at SBU, and Drs. Gabriel Lander and Luke Wiseman at The Scripps Research Institute.

YUSUF HANNUN

This year Dr. Hannun's lab was well represented at the 10th International Ceramide Conference (iCC) held in Lisbon, Portugal. Dr. Christopher Clarke (from Stony Brook) was an event organizer and Dr. Hannun was joined by present and many past



Dr. Hannun's present and past lab members at ICC conference.

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members of his lab for this photo. The conference's FEBS and Sphingolipid club best research talk award was won by graduate student Prajna Shanbhogue for her talk titled "Mechanism of Ceramide production by neutral sphingomyelinase-2".

Prajna has also been hard at work preparing to graduate. She has published two first author papers this year: one in collaboration with Dr. Michael Airola entitled: "The juxtamembrane linker in neutral sphingomyelinase-2 functions as an intramolecular allosteric switch that activates the enzyme". *J.Biol.Chem.* 10.1074/jbc.RA118.007288; and the other as a review with Dr. Hannun titled: "Exploring the therapeutic landscape of sphingomyelinases." *Handbook of experimental pharmacology*, Springer. 10.1007/164_2018_179.

Recent lab PhD graduate, Justin Snider, took a position at Stony Brook University as Technical Director of the Biological Mass Spectrometry Shared Resource. He will continue his work there on developing novel approaches to measuring lipid flux and to develop targeted proteomics.

We are also welcoming a few new, and a few returning students this summer. Graduate biochemistry student Mohammad Sadeghi recently finished his rotations and has joined our group for his PhD work. High school student Louis Viglietta, as a member of the Simon's Summer Research Program, will be working with graduate student Samia Mohammed, studying the cardiotoxicity effects of doxorubicin. Returning undergraduate student Jonathan Aminov, under the mentorship of Dr. Christopher Clarke, and as part of the URECA Summer Research Program, will be studying the role of DES1 on anoikis resistance in IGR1R and EGFR overexpressed breast cancer.

The lab continues to be busy studying bioactive sphingolipids, their metabolism, regulation, mechanisms, and function.

BERNADETTE HOLDENER

In collaboration with Dr. Robert Haltiwanger at University of Georgia, Bernadette Holdener is investigating the role of a unique disaccharide modification during embryonic development. Mutations in enzymes that add the sugars to target proteins interfere with the tissue organization and organ formation during embryonic development of mice and humans. Understanding the molecular basis for the developmental defects in the mouse mutants will provide a better understanding of what causes common human congenital abnormalities including craniofacial abnormalities, hydrocephalus and chondrodysplasia. These studies were recently partially funded by two NIH R01 grants to Drs. Haltiwanger and Holdener entitled: "Characterization of

POFUT2-mediated O-fucosylation as a Novel, Non-Canonical ER Quality Control System for Thrombospondin Type 1 Repeats" and "Role of Beta3-Glucosyltransferase in a non-canonical quality control pathway." Bernadette presented the results of these studies at the 2018 American Society for Matrix Biology Biennial meeting and was an invited speaker for the 2019 FASEB The Matricellular Proteins in Tissue Remodeling and Inflammation Conference. Daniel Cameron, undergraduate, and Dr. Sanjiv Neupane, postdoctoral fellow, presented posters at the 2019 Northeast Regional Developmental Biology Conference. Daniel Cameron also presented his poster at the 2019 Stony Brook URECA festival. Bernadette continues to co-teach the core Developmental Biology course for the Biology Major Developmental Genetics Biology track with Dr. Thomsen. She continues to serve as the Director of Undergraduate Biochemistry Majors, and also serves on the Biochemistry and Cell Biology Executive, Biology Executive, and IACUC committees and Chairs the Stem Cell Advisory committee. She was also recognized at the 2019 Annual Biochemistry and Cell Biology Department Retreat in the annual art competition for artwork depicting cell differentiation in the growth plate

NANCY HOLLINGSWORTH

Nancy was an invited speaker at the "Emerging Concepts in Chromosome Biology" meeting at the Institute of Molecular Pathology in Vienna, Austria. She participated in an NIH study section dedicated to "Transformative Approaches to Down Syndrome Research." Updates on former Hollingsworth lab members: Ray Suhandynata, a former graduate student, has been working as a postdoctoral scientist in Huilin Zhou's lab at the University of California, San Diego and is about to start a Clinical Chemistry Fellowship at the UC San Diego School of Medicine. Hsiao-chi Lo is the Manager of Regulatory Affairs at Regeneron Pharmaceuticals, Evelyn Prugar is teaching classes at Suffolk Community College and Tracy Callender will be starting a tenure-track faculty position at SUNY Farmingdale in the fall. Two former undergraduates, Saif Laljee and David Chen recently graduated from medical school (NYU and Weill Cornell, respectively) and will be starting residencies in the fall at NYU and UCLA, respectively. Trevor Leong graduated from high school in June and will be working in the lab during summer 2019 before going off to Carnegie Mellon University to study Computational Biology. Xiangyu Chen, a longtime senior research scientist in the lab, has changed fields and recently moved to Pennsylvania to start a job as a data analyst at Vanguard. Nancy's lab currently consists of Lihong Wan (Senior Research Scientist), Bob Gaglione (former Master's student and current Research Technician), Andrew Ziesel (graduate student), Lauren Bednor (undergraduate), and Jason Weng (undergraduate).

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ERWIN LONDON

Erwin presented a talk at the Gordon Research Conference on Membrane Protein Folding, Easton, Mass. July 2019, and is scheduled to present a seminar at the U. of Tennessee, Knoxville in November. He continues to be Principal Investigator on an NIH MIRA award “Transformative Lipid Exchange Approaches to Study Membrane Organization” and an NSF grant “Cyclodextrin-Catalyzed Exchange to Control Lipid Composition and Lipid Asymmetry: From Liposomes to Cells.” Erwin also continues to serve as a member of the Postdoctoral Fellowship Award Committee for the Life Sciences Research Foundation and as a regular Member of the N.I.H. Biochemistry and Biophysics of Membranes Study Section (term 2017-2021). Lab members in mid-2019 included research assistant professor Guangtao Li, postdoctoral research associate, Shinako Kakuda, and Ph.D. students Qing Wang, Pavana Suresh, and Bingchen Li. Ph.D. student Johnna Wellman St. Clair graduated May 2019, and is continuing on in the lab as a postdoctoral associate until August. B.S./M.S. student Sricharan Gumudavelli has also joined the lab.

ED LUK

Ed Luk was on a mission to assemble a new dream team after several Luk lab members moved on to pursue their next endeavors.

Lu Sun, a former PhD student, after finishing a stint in the Luk lab as a postdoc, landed a job in the biotech industry. She is now a Research Scientist at EpiCypher, an emerging biotech company that develops molecular tools for chromatin biology-related research. **Chitra Mohan**, another former PhD student, defended her thesis in December 2018. Chitra developed a novel disulfide crosslinking approach for probing protein-protein interactions inside yeast and human cells. Her paper was published in *eLIFE* in August 2018 and was selected as the cover article. She is now a postdoc in Jessica Tyler’s lab at Weill Cornell. This fall, **Tailai Li**, who graduated with Honors in Biochemistry and received the Raymond Jones Cell Biology Award, will begin training as a medical doctor at the SUNY Downstate College of Medicine. Another former undergraduate student **Emily Richters** has recently been accepted into the Marine Biological Laboratory at Woods Hole to work as a research assistant.

Leonidas (Louie) Pierrakeas, after completing his MSc thesis work with Ed, continues to work in the lab. Louie has grown into an excellent biochemist and has made major contributions on several projects studying the molecular mechanisms of histone mark deposition and removal. Earlier this summer, **Cynthia Converso** and **Scott Yang**, both outstanding first-year students in the MCB program, have decided to join Ed’s lab. Cynthia is studying how cells decorate

chromatin with histone marks near promoters to prepare genes for transcription. Scott is working on a project understanding the role of the transcription machinery in removing histones from promoters. More recently, **Gina Singh** has begun her summer research project in the Luk lab. Gina is a Simons Summer Research Fellow and a rising high school senior from the Pembroke Hill School in Missouri.

Finally, Ed has successfully renewed his R01 grant for another 4 years. He is also grateful to learn that he will be receiving the State University of New York Chancellor’s Award for Excellence in Teaching later this fall.

BENJAMIN MARTIN

As of the summer of 2019, the Martin Lab consists of high school student Eddie Dai, undergraduates Sam Escobar and Minah Hong, BCB Master’s student Shannon Kanidinc, Pharmacology rotation student Angela Derosa, Ph.D. students Arwa Al Anber, Alex Larkin, Rob Morabito, Eric Paulissen, and Zheng Sun, technicians Neal Bhattacharji, Katherine Lo, Maria Gacha Garay, and Stephanie Flanagan, and Postdoctoral Fellows Becca Adikes and Nick Palmisano, who are both working jointly in the Martin lab and the lab of Dave Matus. The lab hosted Tim Fulton for the month of May. Tim is a Cambridge University Ph.D. student who received a Company of Biologists travel fellowship to work in the lab as part of an ongoing collaboration with Ben Steventon’s lab in the Genetics Department of Cambridge University. Ben Martin and Dave Matus were successful in acquiring stage 2 funding for their Damon Runyon-Rachleff Innovation award, which provides two more years of funding for their research examining how cell cycle state affects the invasive phenotype of both normal cells and cancer cells. The lab is also investigating the mechanism by which circulating tumor cells are able to exit blood vessels and populate new tissues and organs during metastasis. The rest of the group is continuing with research related to neuromesodermal progenitors, which are an important stem cell-like population of cells that are critical for the formation of the vertebrate body plan and also serve as an excellent in vivo model of broad stem cell related questions. Katherine Lo, who spent her entire undergraduate career working in the lab and stayed on as a technician for a postbac year, will be leaving to start her Ph.D. at Northwestern University. Katherine received a NSF predoctoral fellowship this past year which will become active when she starts at Northwestern. The lab also graduated BCB master’s student Tianying Chen, who is now working as a technician at Yale University, and genetics Ph.D. student Brian Kinney, who is currently a postdoctoral fellow at Cold Spring Harbor Laboratory.

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B. Martin (l); D. Matus (r)

DAVID MATUS

2019 has been off to a great start for the Matus lab! Our Simons Summer Research Program high school students from last summer, co-mentored with Ben Martin, were honored at the local, national and international level, with Matthew Weltmann finishing in 4th place for the Cellular and Molecular Biology Division at the Intel International Science and Engineering Fair (ISEF). Additionally, Angie Jang and Matthew were both Regeneron Science Talent Search Scholars, finishing in the Top 300 for this prestigious national prize. We're hoping to continue the tradition, welcoming Nithin Parsan to our lab for this summer's Simons program. Not to be outdone by our high school students, undergraduate Ononah Ahmed graduated with honors from Stony Brook this fall, mentored by postdoctoral fellow, Dr. Rebecca Adikes, studying actin dynamics during cell migration, and was recently featured as a URECA (Undergraduate Research & Creative Activities) researcher of the month! We're happy to have Ononah continue in the lab as a post-baccalaureate as she prepares for her next career steps. Her mentor, Rebecca continues to work on ALL the projects in the Matus lab, including a Betty and Gordon Moore Foundation funded project studying the symbiotic relationship between algae and the local spotted salamander species, using advanced light sheet microscopy to image this fascinating relationship. Third and fourth year Genetics program students, Taylor Medwig-Kinney and Jayson Smith just submitted our lab's first pre-print to *bioRxiv*, describing how different transcription factors function together to drive a cell invasion program. Taylor was also just awarded a prestigious predoctoral fellowship from the National Institute of

Health which will support the next three years of her PhD research! Postdoctoral Fellow, Nicholas Palmisano also received a prestigious fellowship from the American Cancer Society in January, funding the next three years of research where he will be examining the interplay between cell cycle state and invasive behavior in *C. elegans* and in zebrafish while working in the Martin lab. Nick's undergraduate mentee, rising Stony Brook senior, Rumana Rahman, is supported this summer as a Sass Foundation Arena Scholar and URECA, pursuing her senior thesis research on the role of histone deacetylases during cell invasion. Continuing in the lab, Mike Martinez is starting

his third year in the Pharmacology PhD program as part of the Medical Scientist Training Program and is about to submit his first manuscript describing an improved protocol for targeted protein depletion in *C. elegans*. Genetics student, Abraham Kohrman is finishing up his dissertation research on visualizing cell cycle state live and we're excited to see him be our first PhD graduate in 2020! The lab also welcomes new post-bac Nicholas Weeks, who recently finished an undergraduate degree at Rochester University. We're really looking forward to a fun and productive rest of 2019 and a fantastic 2020!

AARON NEIMAN

The Neiman Lab currently consists of Jae-Sook Park (Research Scientist), Leo Bemena (Postdoctoral Scholar), Kai Zhang (Technician), Greisly Nunez (PhD student) and Mohamed Bah (Master's student). Chase Cortez finished his Master's thesis this year and is now working at Regeneron in upstate New York. Greisly Nunez received an NIH diversity supplement that will support her graduate work for the next two years.

There was a wonderful turnout of Neiman lab alumni at the Departmental 50th anniversary. Alison Coluccio, Esmá Ucisik-Akkaya, Erin Mathieson, Hui-Ju Yang, Hideki Nakanishi, Hiroyuki Tachikawa, and Sai Zhou were all able to come from as far away as Taiwan and as near as Stony Brook. And so everyone could have flashbacks to their time in the lab, the day after the 50th celebration, we held (possibly) the world's first mini-symposium focused on sporulation in yeast.

The lab continues to focus on the process of spore formation in

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S. cerevisiae and has also developed a second area of research in the functions of the Vps13 protein and the different neurodegenerative disorders that result from Vps13 dysfunction in humans. In January, Aaron presented a seminar on the laboratory's work at the Department of Cell Biology at Yale.

DADA PISCONTI

Dada Pisconti joined the BCB Faculty in Fall 2018 and has spent the last 10 months setting up the lab, recruiting staff and students and getting the research going. [The Pisconti lab](#) is now composed of: Dada (PI), Fiona Jones (postdoc with two Master's degrees, one from Lancaster University and one from Liverpool University, both in the UK, and a PhD in Biochemistry from Liverpool), Gahyun Lee (technician and Stony Brook alumnus), Jessica Caliendo (Master's student, BS from the University of New Haven), five undergraduate students (Zaroon Ahmad, Adanna Ibeku, Thomas Kuriakose, Fabrizio Quintanilla and Riah Sharma) and a high school student (Hannah Stein). The lab is currently focused on five projects, all revolving around muscle stem cell biology. Fiona and Hannah are defining the mechanistic details of muscle stem cell response to insulin. This project was sparked by a recent phosphoproteomics analysis of muscle stem cells and may help us understand more about the role of muscle stem cells in the onset and progression of diabetic myopathy. Fiona is also collaborating with Gahyun and Adanna on a project aimed at testing a novel therapeutic approach for the treatment of Duchenne muscular dystrophy. Preliminary (and encouraging) results from this project were presented at the last annual meeting of the Muscular Dystrophy Association, held last April in Orlando, FL. Check [here](#) for more details. Jessica, Thomas, and Fabrizio, with help from Gahyun, are investigating the physiological roles of the tumor suppressor protein p53 in muscle stem cell differentiation and self-renewal. This project follows up on an [article](#) we published last year in *Stem Cell Reports*, the official journal of the International Society for Stem Cell Research (ISSCR), that was featured by [F1000Prime](#). Riah and Gahyun are validating novel biomarkers that we have recently identified for monitoring the progression of Duchenne muscular dystrophy. And, last but not least, Zaroon is working on characterizing the molecular mechanisms involved in chronic muscle pain that is associated with conditions such as fibromyalgia and ME/CFS. Hopefully all these stories will become interesting publications very soon, stay tuned!

SANFORD SIMON

Sandy Simon's lab remains dedicated to testing and evaluation of natural products that modulate multiple functions of skin cells. For the past five years these efforts have been led by Shilpi Goenka, a graduate student in the Biomedical Engineering graduate program, who has played a major role in characterizing the mechanisms by

which a family of chemically modified derivatives of curcumin, the active component of turmeric, alter the multiple functions of human melanocytes. Her efforts have culminated in a patent, "Inhibition of melanogenesis by chemically modified curcumins," Goenka, S. and Simon, S.R., that has been awarded by the U.S. Patent Office, on which she is first author. This work was supported in part by an ongoing collaboration with the company, Biocogent, Inc., housed in the Long Island High Technology Incubator on the Stony Brook campus and has been funded for the last five years by the Stony Brook Center for Biotechnology through their Applied Research and Development Award program. Shilpi has also characterized the antimelanogenic and antioxidant activities of other natural products and has forged successful collaborations with Biocogent and other companies that specialize in incorporation of bioactive materials into products for personal care.

STEVEN SMITH

Steven Smith stepped down in May as the BSB Graduate Program Director, although continues as the director of the Center for Structural Biology. The new cryo-EM facility in the CSB has completed its first year in operation with the first structures being generated by Saikat Chowdhury, a new faculty member in the department. In the lab, Andreyah Pope received her doctoral degree in May for research on the visual receptor rhodopsin. She will stay on as a Post-doctoral Scientist. Omar Sanchez-Reyes is planning to complete his work on ligand activated G protein-coupled receptors this year as well. Brandon Irizarry, another BSB graduate student in the lab, is focusing on the amyloid proteins involved in Alzheimer's disease. He is working with Elliot Crooks who completed his MS degree in December and joined the lab as a doctoral student this summer.

GERALD THOMSEN

The Thomsen lab continues to pursue an understanding of how cell-cell interactions, signaling pathways and gene regulatory circuits affect cell fate decisions and pattern formation during animal development and regeneration. We use the African Clawed Frog *Xenopus* as a vertebrate model and the sea anemone *Nematostella vectensis* as a cnidarian model for development and regeneration. The last two years of research have focused on two areas. One is a continuation of long term investigations into how signaling by growth factors is regulated in the context of early development (primarily in *Xenopus*), and the other is a newer line of research into mechanisms that regulate regeneration in sea anemones and *xenopus* tadpoles.

The signaling research has focused on generating and evaluating mutant strains of *Xenopus tropicalis*, with partial or full loss of function generated with CRISPR/Cas9 in genes that our lab has

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been studying in recent years in *Xenopus* development: a GTPase named GTPBP2 which functions in BMP and Wnt signaling, two mRNA splicing factors, wbp11 and pqbp1, which regulate FGF signaling, and the Smurf ubiquitin ligases that regulate TGF-beta signaling and various other pathways. we also have returned to have a new look at Vg1, a TGF-beta family member that Jerry studied as a Postdoc. In collaboration with Jerry's first graduate student, Marko Horb and his lab at the National *Xenopus* Resource (at MBL in Woods Hole) we have generated F1 and F2 lines of *X. tropicalis* mutants in these genes and have begun phenotypic and molecular characterization of those mutant embryos. Stay tuned.

The regeneration research has been aimed at understanding how a *Nematostella* polyp can regenerate its whole body, with our approach being to characterize the genetic, cellular and morphological events occurring in a small fragment of the polyp "foot" or physa as it regrows its "head" (mouth, tentacle and associated structures) and body. We have defined a staging series (Bossert, Dunn & Thomsen 2015; Bossert & Thomsen 2017), and we have recently been uncovering the growth factor requirements for head regeneration (recently submitted). *Xenopus* tadpoles have joined the regeneration studies to determine whether mechanisms necessary for sea anemone regeneration are operating in tadpole tail and limb regeneration. Since cnidarians and vertebrates last shared a common ancestor about 550 million years ago, our studies will help inform whether regenerative mechanisms in either organism are unique or have been conserved over the course of evolution.

In the past academic year Jerry was an invited speaker (and banquet musical guest performer) at the 70th annual British Society of Developmental Biology meeting at the University of Warwick, UK in April 2018 (recordings at BSDB.org/2018/06/15/meeting-report). He also attended and presented posters at the 2018 Society for Developmental Biology (SDB) meeting in Portland, OR and the 2019 Northeast SDB meeting in Woods Hole, MA. Jerry participated in outreach events in the past year including "Frog Embryo Day" at the Port Jefferson Elementary school where students get literally hands on with *Xenopus* adults and eggs, and up close with tadpoles. (See photo on page 23.) He did a similar presentation at the Eastern Long Island Mini Maker Faire in Port Jefferson this past June.

Researchers in the lab over the past two academic years included: Scientists Dr. Yasuno Iwasaki (through 2017, now in Peter Gergen's lab) and Dr. Pat Bossert (current); Master's students Biao Zhang (current) and Issau Cruz-Gutierrez (now in SBU Dental School); post-baccalaureate researchers Michelle

Chan (now in U. Colorado dental school) and Matthew Lee (now in NYIT Medical school); and undergraduates Mickey Ciminelli, Zane Sullivan and Roenell Costanzo. We are also proud to say that Serena Lee from Syosset High School, who did regeneration research in the lab in 2017-18, was a national semi-finalist in the 2019 Regeneron Science Talent Search.

LONNIE WOLLMUTH

Synapses are specialized structures that control the flow of information between neurons in the brain. Alterations in synaptic transmission contribute to numerous neurological and psychiatric diseases, such as epilepsy, autism, and schizophrenia. Research in the Wollmuth group addresses molecular and biophysical mechanisms underlying fast synaptic transmission in the nervous system specifically those synapses that use glutamate. Much of our work is done in collaboration with Dr. Helen Hsieh, a pediatric surgeon at SBU Medicine. Details of our research program and activities can be found at our webpage (www.wollmuthhsieh.com).

Our group has had a busy and successful year. Drs. Johansen Amin (Program in Molecular and Cellular Pharmacology/MSTP) and Camillo Ferrer (Program in Neuroscience) graduated and either went back to Medical School (Johansen) or moved on to a post-doc (Camillo, Cornell -Weil). Dr. Thiru Vaithianathan obtained a faculty position (Assistant Professor) at the University of Tennessee Health Science Center. Undergraduate Trevor Van Brunt (Spring, 2019) completed his Honors thesis and graduated.

A number of scientists have joined our group over the past year: Dr. Christina Joselovitch (post-doc), Miaomiao He (PhD student, Program in Biochemistry and Structural Biology), Guangmei Liu (Master's student, BCB), Gabriela Mercurio (Master's student, Biophysics & Physiology), and Trevor Van Brunt (technician).

Graduate students/post-docs in our group presented posters at the Society for Neuroscience meeting in San Diego, CA (Gabrielle Moody, Kelvin Chan); Biophysical Society meeting in Baltimore, MD (Johansen Amin); Conference on Ionotropic Glutamate Receptors at McGill University (Kelvin Chan, Gabriella Moody, Noele Certain); and Gordon Research Conference on Excitatory Neurotransmission (Kelvin Chan).

I gave invited seminars at the Winter Conference on Brain Research (Vancouver, BC); Dept. of Biology Alumni Speaker, Portland State University (Portland, OR); Biophysical Society, (Baltimore, MD); and Ionotropic Glutamate Receptor Conference, McGill University).

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Joanne Souza was recently interviewed and filmed for a documentary to be aired in February, 2020 with the EBS (Educational Broadcasting System) of South Korea. The program project is for EBS Docuprime and is exploring human nature related to money, violence, art, religion, and sexual behavior based on evolutionary theory. The host of the program is Dr. Jaeseung Jeong, a neuroscientist from KAIST, a South Korean national research university. The request came as a result of the Stony Brook University TED talk featuring Joanne Souza and Paul Bingham and the popularity of their book regarding Social Coercion Theory which has been recently translated into Korean.

RECIPIENTS OF AWARDS 2018-2019

Ed Luk: Chancellors Award Excellence in Teaching

2019 PROMOTIONS

Yusuf Hannun: Promotion to Distinguished Professor

Amy Saas: Received Permanent Appointment

Jarrold French: Promotion to Associate Professor

Dada Pisconti: Promotion to Associate Professor with Tenure

NEWLY FUNDED GRANTS 2018-2019

David Matus and Ben Martin: "Cell cycle regulation of cellular behaviors associated with cancer metastasis" Damon Runyon-Rachleff Innovation Award

Jarrold French: R01 Grant "Optimizing the Immune Response by Targeting the STS Enzymes" National Institute of Allergy and Infectious Disease

Bernadette Holdener: R01 Grant "Role of Beta-3-Glucosyltransferase in a Non-Canonical Quality Control Pathways" National Institute of Child Health and Human Development

Ed Luk: R01 grant "Mechanisms of Chromatin Remodeling at RNA Polymerase II Promoters" National Institute of General Medical Sciences

Sanford Simon: ARaD award: "Evaluation of Hydrogenated Curcumins as Skin Brightening Agent with Novel Antimelanogenic and Antioxidant Activities" Biocogent, Inc and SB Center for Biotechnology

Vitaly Citovsky: NSF Grant "Pathways for Colonization of Plant Genome by Agrobacterium"

Vitaly Citovsky: NSF Grant "Role of Histone Modifying Enzymes in Regulating Alternate Active Versus Silent Gene Expression in Plants"

Aaron Neiman: R01 Grant "Assembly and Function of the Yeast Spore Wall" National Institute of General Medical Sciences"

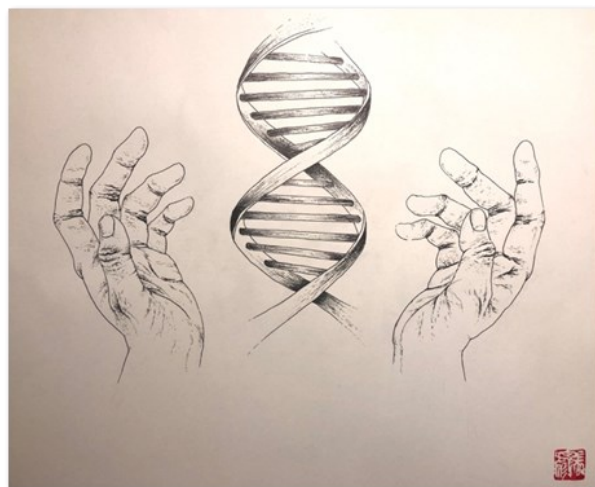
Daniel Moloney: R25 Grant "BioPREP: Biology Partnership in Research and Education Program." National Institute of General Medical Sciences.

ANNUAL RETREAT



Faculty and graduate students at the annual retreat.

This year's annual BCB Retreat featured a new activity: an art competition! Everyone in the department, students and staff, was invited to submit a piece of artwork representing something related to research in a biology field. The choice of medium and topic were left entirely to the artist. The evaluating committee, composed of Dada Pisconti, Ed Luck, Saikat Chowdhury and Jerry Thompson, received about 20 entries, spanning from paintings to photos to wall-mountable crafts. The committee had a real hard time ranking the entries because they were all very beautiful. In the end, three categories were awarded a prize: faculty, students and staff. The faculty award went to Bernadette Holdener for her photo "*Transitions*," and the prize for Bernadette was a squeaky chicken. The staff award went to Diane Rodriguez for her painting "*Alzheimer's Twilight Zone*," with a more serious prize than that prepared for the faculty award: the prize for Diane was a gift card. Lastly, the student award featured a third place, which was shared by Cindy Converso (graduate) with the painting "*Building Blocks*," and Biao Zhang (graduate) with the drawing "*Far Beyond*." Both Cindy and Biao received a gift card. The second place for the student awards went to Daniel Cameron (undergraduate) with the photo "*Patterns of Life*," and the prize for Daniel was a gift card. Last but not least, the first place went to Forrest Bowling (graduate) with the photo "*Under the Microscope*." The prize for Forrest was also a gift card.



ART COMPETITION WINNER

Far Beyond (2019) by **Biao Zhang**

Pencil and charcoal on paper

From the artist: "My piece is fully hand-drawn. I put a lot of detail on the hands because I think it represents the complexity of biochemical research and the hardship of conquering research tasks. The DNA double helix represents our field of study. The whole piece is two hands holding the DNA double helix, it means I embrace the spirit of discovery of science."

ALUMNI NEWS

Below are some recent updates from BCB alumni. Please send us word of what you are up to at:

Biochemistry_Alumni@stonybrook.edu

Melanie Ehrlich (PhD '71): Hi from New Orleans. Ken, my husband (SB, PhD, Chemistry) and I are still in New Orleans and doing research on epigenetics. Now we have the fun of working together. We have a daughter, son-in-law and three grandkids in Indianapolis.

Roger Miesfeld (PhD '83): I was recently inducted as a University Distinguished Professor in the Department of Chemistry and Biochemistry at the University of Arizona.

Cheryl Moss-Mellman (BS '83): I continued at Stony Brook for medical School. I'm now the Director of Clinical Breast Services at the Christine E Lynn Health and Wellness Institute in Boca Raton. I run the high risk breast clinic and the Moving Forward Clinic for our breast cancer survivors. I also promote the importance of personalized breast cancer risk assessment and individualized breast surveillance.

Ellen Hoffman (BS '97): I am a child psychiatrist and psychiatric geneticist directing a lab at Yale School of Medicine focusing on the functional analysis of risk genes in autism.

Lance Lee (PhD '04): I am currently a faculty member in the Pediatrics & Rare Diseases group at Sanford Research (since 2010), a private research institution in Sioux Falls, SD. In addition to being the PI of my research lab, I also serve as Director of Higher Education for Sanford Research (since 2015). In this role, I oversee graduate student training opportunities at Sanford Research through affiliated programs at the University of South Dakota and South Dakota State University, direct the Sanford Program for Undergraduate Research (an umbrella summer program that also includes an NSF REU Site and an NIH R25-funded program), and coordinate the postdoctoral career development program. I also hold a full academic appointment as Associate Professor of Pediatrics at the University of South Dakota Sanford School of Medicine and an adjunct appointment as Adjunct Associate Professor of Chemistry & Biochemistry at South Dakota State University.

Pegine (Peg) Wahlrad (PhD '04): I'm currently running my lab in molecular parasitology in the York Biomedical Research Institute at the University of York.

Updates on former Holdener lab members: Brian Benz, MS, former SBU BCH major and MCB MS student, is starting his second year of graduate school at The University of Pennsylvania, studying breast cancer recurrence and metastasis in Dr. Lewis Chodosh's lab in the Department of Cancer Biology.

Michael Feldman, MD, PhD, who participated in our lab as a high school student, finished his Pulmonary and Critical Care Medicine fellowship at Harvard/MGH in June 2019, and was promoted to Faculty Instructor at Harvard Medical School.

Christina Leonard, former PhD student, is currently Business Development Manager for the Division of Cellular Therapy and Biological Products at Bloodworks Northwest

Sam Katz—A Fulbright U.S. Student Program scholarship afforded [Sam Katz '13](#) the opportunity to conduct biomedical research at the Berlin Institute for Medical Systems Biology (BIMSB) in Germany. He is now immersed in his final year of PhD study at the National Institutes of Health (NIH) and the University of Cambridge. His BIMSB project was entitled "Identification and Characterization of Skin Cell Inducer and Associated Regulatory Factors," which focused on "Direct Reprogramming," a novel approach to looking at ways to convert a mature cell into another without making the cell behave like a stem cell first.

Pictured right: Sam Katz speaks at a Lasker Foundation Lessons in Leadership event. (Photo: Leslie E. Kossoff/LK Photos)



50TH ANNIVERSARY CELEBRATION



Founding Chairman of the Department of Biochemistry and Cell Biology, Mel Simpson and former chair Masayori Inouye

Below, long time faculty member Sanford Simon (r) and Mark Foster.



Above: Rolf Sternglanz, Distinguished Professor Emeritus



Right: Martin Freundlich, the first BCB faculty member hired by Mel Simpson and his wife Ann Sutton.

HAPPENINGS



The Biochemistry and Cell Biology contingent at the Northeast Regional Society for Developmental Biology Meeting at Woods Hole, Massachusetts. Pictured from left to right are Arwa Al Anber, Abraham Kohrman, Sanjiv Neupane, Daniel Cameron, Fiona Jones, Maria Gacha Garay, Alex Larkin, Becca Adikes, Jerry Thomsen, Katherine Lo, Ononah Ahmed, Ben Martin, Dada Pisconti, Zheng Sun, and Dave Matus



Above: new crew members of the **Luk Lab**. From Left:

Ed, Louie, Scott, Cynthia, and Gina.

Frog Day at Port Jefferson Elementary with Prof. Gerald Thomsen.



Quite an achievement!

Andreyah Pope (Smith Lab) and Bojian Ding (Glynn lab) took home the Poster Prize awards at the winter meeting of the New York Structural Biology Discussion Group. This meeting brings together all of the structural biology labs in New York City and the surrounding areas. Andreyah's poster was entitled "NMR spectroscopy reveals allosteric coupling across the transmembrane domain of rhodopsin." Bojian's poster was entitled "Unique structural features of the mitochondrial AAA+ protease AFG3L2 reveal the molecular basis of activity in health and disease."

Thank you!

The Department of Biochemistry and Cell Biology thanks the following faculty, alumni and friends for their generous gift commitments in the last fiscal year.

Phil Armitage	Lydia Dedora	Stuart Hollingsworth	Benjamin Neiman	Joanne Souza
Jim Andress	Matthew DiGiovanni	Dimitri Joseph	Emma Neiman	Johnna St. Clair
William Asch	Laura Dougherty	Carol Juliano	Leah Neiman	Rolf Sternglanz
Jack Ballantyne	Karen Ehrmann	David Kaback	Sanjiv Neupane	Patricia Stohr-Hunt
Lauren Bednor	Susan Erster	Wali Karzai	Hengyao Niu	Kenneth Storch
Zewditu Bekele-Arcuri	Jarrold French	Mitchel Klass	Henry Ng	Sherry Sussman
Justin Bell	Bob Gaglione	Chien Lam	Emmanuel Nketiah	Ann Sutton
Mary Bernero	Zhiyun Ge	Lance Lee	Lisa Nisbett	Hiroyuki Tachikawa
Paul Bingham	Peter Gergen	Janet Lighthouse	Nihal Okan	Gerald Thomsen
Brigitte Borhi-Zahn	Steve Glynn	Pei-Chen Lin	Jennifer Parla	Gloria Tuccillo
Gerard Bouguignon	Hana Goto	Danielle Liu	Jae-Sook Park	Krithika Venkataraman
Alex Brennan	Greg Golling	Erwin London	Alice Pisconti	Lihong Wan
Debbie Brown	Pamela Green	Qiao Lu	Dada Pisconti	Anthony Winiski
Greg Caputo	Weijing Gu	Harvey Lyman	Irene Poster	Pamela Wolfskill
Jean-Luc Chaubard	Robert Haltiwanger	Kenneth Marcu	Evelyn Prugar	Lonnie Wollmuth
Xiangyu Chen	Yusuf Hannun	Benjamin Martin	Diane Rodriguez	Perry Woo
Saikat Chowdhury	Bernadette Holdener	David Matus	Arun Samson	Sulan Xu
Nilda Concepcion-Thomas	Charles Holdener	Luke McGoldrick	Scott Sanford	Hui-Ju Yang
Cynthia Converso	Thomas Holdener	Abbey McKay	Nisson Schechter	Zuzana Zachar
Neta Dean	Gloria Hollingsworth	Hideki Nakanishi	Bradyn Schiffman	Yu Zhang
	Nancy Hollingsworth	Leor Needleman	Roger Shek	Andrew Ziesel
	Paul Hollingsworth	Aaron Neiman	Sanford Simon	

Their contributions support the research and teaching missions of the Department of Biochemistry and Cell Biology in many ways. The Excellence Fund is used to support the research and teaching mission of the Department. Uses of this fund include: assisting faculty with the acquisition of new, key pieces of equipment; providing funds for graduate student travel to scientific meetings; and providing funds for undergraduate and Masters student research. We also host a weekly outside seminar program that brings outstanding scientists from other institutions to exchange ideas with our faculty and students. Finally, the fund supports the annual Departmental retreat where students and faculty can describe their research and foster interactions within the Department.

Please consider support of the Department of Biochemistry and Cell Biology.

How to Donate

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