

Fall 2024 Newsletter



Dear Alumni and Friends,

We have had a remarkably productive year, with several concurrent faculty searches and faculty hires. We are delighted to welcome four wonderful new colleagues to our department, Dr. Jonathan Nelson, Dr. Benjamin Lin, Dr. Kathryn Gunn, and Dr. Lina Carlini.

[Dr. Nelson's lab](#) works on elucidating the molecular mechanisms that monitor the fidelity of genome transmission, [Dr. Lin's lab](#) works on the molecular mechanisms that control cell shape and motility in complex 3D environments, [Dr. Gunn's lab](#) uses biochemical and structural approaches to explore spatiotemporal regulation of metabolic enzymes, and [Dr. Carlini's lab](#) works on intracellular dynamics with a particular focus on dividing eukaryotic cells. This fall and winter promise to be equally exciting, as we have initiated two additional faculty searches at the assistant professor level.

I wish to congratulate Melanie Cragan, a graduate student in the Karzai lab, who was selected as the recipient of the Sanford R. Simon Endowed Fellowship in Biochemistry. We are grateful to Dr. Amy Liao, a BCB graduate program alum in Sandy Simon's lab, for her generous gift to establish the Simon Endowed Fellowship in Biochemistry.

I also wish to congratulate Gabriella Vaccaro, a biochemistry major in David McKinnon's lab, who recently received the 2024 [Barry Goldwater Scholarship](#), a prestigious national award recognizing outstanding undergraduates in math, science, and engineering.

We will continue our efforts to make Biochemistry and Cell Biology stronger, more diverse, and welcoming, and we appreciate your enduring support. I wish to express my heartfelt gratitude to all who have contributed to the BCB Endowment for Excellence in the past year.

Sincerely,

Wali Karzai
Professor and Chair
Department of Biochemistry and Cell Biology

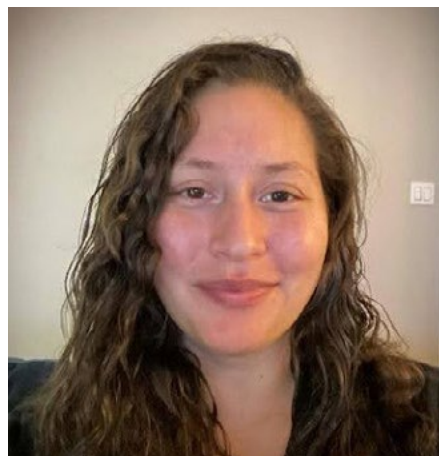


Welcoming Estephany Ferrufino

We are delighted to welcome **Estephany Ferrufino** to the Department as our new Director of Laboratories. Estephany joined us in October 2023 and brings a wealth of experience to this crucial role.

As Director of Laboratories, Estephany is responsible for the care and maintenance of our departmental equipment and serves as the primary point of contact for facilities and capital projects. Before joining SBU she honed her skills as a lab manager at Florida Atlantic University and Lehigh University, where she worked closely with Dr. Johanna Kowalko. Estephany's research focused on developing gene editing tools and her lab management experience included overseeing aquatic facilities, training staff, and coordinating with EH&S, facilities, and IACUC.

A Long Island native, Estephany holds a BS in Biology from the University of Scranton and an MS from Hofstra University. We are thrilled to have her back in the area and contributing to the growth of our department.



PhD Program News

The PhD programs in Molecular and Cellular Biology (MCB) and Biochemistry and Structural Biology (BSB) offer rigorous training in the latest advancements of biological sciences. Our programs prepare graduates for successful careers in both academic research and the biotechnology industry.

Program Leadership

We are excited to announce the arrival of **Sharon Schmidt** as the new Graduate Program Coordinator for both the MCB and BSB programs! Sharon brings a wealth of experience to this role and will be an asset to our programs. Dr. Benjamin Martin continues as MCB Program Director and Dr. Michael Airola continues as BSB Program Director.

Celebrating Achievements

We are proud to acknowledge the following students who graduated with their PhD degrees last year:

- **MCB:** Drs. Mohammed Hoque, Ga-Ram Hwang, Shrestha Padmina, Zhang Qian, Zhe Qian
- **BSB:** Dr. Miaomiao He

Building a Collaborative Community

Our annual joint program retreat at the Old Field Club fosters collaboration and a strong sense of community among MCB and BSB students and faculty.

Welcome Incoming Classes!

We are thrilled to welcome a new cohort of talented researchers:

- 17 students to the MCB program
- 4 students to the BSB program

We invite you to learn more about our incoming students on the program websites.

[MCB](#) | [BSB](#)



BCB MS Graduate Program News

Our Biochemistry and Cell Biology MS program aims to prepare students to succeed in future life sciences careers, including those in biological research, teaching, biotechnology, or further advanced studies in health and life sciences. The success of our program is measured by student outcomes, including retention rates and the number of graduates who go on to successful careers in relevant fields.

The documented track record of our graduates demonstrates our success as well as the value of the strategy we use to foster connections between our students with their peers, mentors, and SBU BCB MS alumni. One hundred percent of our 2022-2023 class graduated within three semesters in Fall 2023. A shout out to those who have already obtained post-graduate positions, including **Victoria Coman** (research scientist in the Neiman lab), **Sara Page** (physician's assistant program at Hofstra, NY), and **Emily de Onis** (research scientist at Terragia, NH). Congratulations to all!

The incoming 2023 class (above) shows equal promise. These students are currently performing research in areas spanning Biochemistry, Cell Biology, and Genetics. The outstanding mentorship these students receive from our faculty as well as those from other departments contributes to their future success. We are proud of our students, faculty, and alumni for their efforts in making our BCB MS program a success.

This year, the Department obtained State approval for an **accelerated BCB BS/MS degree** for Stony Brook biochemistry majors. This accelerated program allows eligible students to obtain a combined BS/MS degree in Biochemistry and Cell biology in five years. **Kai Bou** is the first student to inaugurate this new program and we hope it will attract more like him.

In BCB MS alumni news...Congratulations to **Mohammed Shaaban '18** who was awarded the MIT Innovators Under 35 Award. Mohammed is currently finishing the final year of his PhD studies at the Francis Crick Institute and Imperial College London in the United Kingdom. Another alum, **Cynthia Converso '17** also had a big year...bearing a child, finishing up her PhD thesis in the Luk lab, and getting a job as a high school science teacher at St. Anthony. Congratulations Cynthia!

Sincerely, Neta Dean, Program Director

[Click here for details about the BCB MS program](#)

[Click here for details about our new accelerated BCB BS/MS program](#)



Izza Ilyas



Preet Navi



Michael Schwarz



Kayli Timpano

I-STEM Updates

The Institute for STEM Education (I-STEM), which is housed in our department, was founded 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 collaborations within the university and the surrounding communities. It is presently directed by Biochemistry and Cell Biology faculty member **Keith Sheppard** (pictured, right).

A leading provider of high-quality STEM outreach and student support, I-STEM:

- Has awarded more than \$7M 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.
- Has teaching labs that anticipate having 3000+ student visitors this year. Teaching labs are offered in biology, geoscience, chemistry, sustainable chemistry and physics. Summer programs are offered in all sciences, mathematics, and engineering.
- Has established research and professional development partnerships with the wider scientific community at Cold Spring Harbor Laboratories, Brookhaven National Laboratories, STEM Hub, New York Hall of Science, American Museum of Natural History New York Botanical Garden, as well as NYS schools and community colleges.

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

- Generating more than \$30M in external grant funding, including approximately \$6M in current funding.
- Assisting with the educational plans of 15 current and recent NSF Early CAREER awards across various departments at the university.
- Creating a PhD Program in Science Education in 2010, which has graduated more than 25 students and currently enrolls more than 20 students. A new PhD degree in STEM Education has been created and approved and is offering courses this Fall.
- I-STEM faculty are active in state and national science educational policy activities, serving on editorial boards, writing policy statements, serving on advisory panels, meeting with key state leadership staff.



I-STEM is a major provider of high-quality science teacher education:

- Offers a full complement of BS and MAT programs in all science education fields and is one of the major producers of science teachers in the state
- Is the regional hub for the New York State Master Teacher program, presently catering to more than 90 appointed master teachers.
- Working with the Department of Physics, it has been awarded the American Physical Society 5+ Award for seven of the last nine years for its high production of physics teachers.

2024 Undergraduate Biochemistry Majors

2024 Ward Melville Valedictorians (GPA 4.0)

- Christopher Jannotta
- Jason Linzer
- Devin Lobosco
- Zachary Phelps

2024 Biochemistry majors graduating with distinction, May and August

(45 of 92 total)

- 18 *Summa Cum Laude* graduates (3.85 GPA min)
- 15 *Magna Cum Laude* graduates (3.70 GPA min)
- 12 *Cum Laude* graduates (3.50 GPA min)

2024 Phi Beta (biochemistry major graduates)

- Michael Buffardi
- Robert Kocovic
- William Lannigan
- Nicholas Minasian
- Zachary Phelps

2024 SUNY Chancellor's Award

- Devin Lobosco

2024 Stony Brook University Provost's Award

- Zachary Phelps

2024 Raymond Jones Award in Cell Biology

- Amber Mullins

2024 Excellence in Biochemistry Award

Awarded to 10 graduating seniors who excelled in academics, research and service as biology and/or chemistry teaching assistants:

- Virgil Ballew
- Jonathan Caradonna
- Xinyu Han
- Christopher Jannotta
- Jason Linzer
- Devin Lobosco
- Nicholas Minasian
- Amber Mullins
- Zachary Phelps
- Kiyoshi Shiomitsu

2024 Biochemistry major graduates completing an honors thesis:

- Ya Jing Chen (Advisor Dr. Peter Gergen)
"Protein S Expression in Origami B (DE3) Cells"
- Xinyu Han (Advisor Dr. Neta Dean)
"Analysis of a Novel Modification on *Candida albicans* Glycoproteins"
- Christopher Jannotta (Advisor Dr. Patrick Hearing)
"The Role of Adenovirus Protein VII in Abating Host Antiviral DNA Detection and Response Pathways"
- Jason Linzer (Advisor Dr. Maria Nagan)
"Analysis of Stem Region Helices in Molecular Dynamics Studies of RNA Folding"
- Nicholas Minasian (Advisors Drs. Tad Koga and Maya Endoh)
"Reversible Activity and Renaturation of Proteinase K Protease for Polylactic Acid Degradation"
- Amber Mullins (Advisor Dr. Dongyan Tan)
"Regulation of Chromatin Through the Linker and Macrodomein of Histone Variant MacroH2A1.1"
- Zachary Phelps (Advisor Dr. John Haley)
"Receptor Tyrosine Kinase Signaling Cross Talk Between EGFR and cMET in NSCLC"



Wali Karzai, BCB Chair and Zachary Phelps, the 2024 Banner Bearer for Biochemistry

2024 graduates from other majors completing an honors thesis in the Department of Biochemistry and Cell Biology labs

- **Morgan Fish:** Characterizing Transposition Events of the PlacW Enhancer Trap from the *Drosophila melanogaster* 18 wheeler Locus (Advisor: J Peter Gergen)
- **Daniel Forkan:** Effect of Pair-Rule Genes on Regulation of the *sloppy paired* Promoter (Advisor: J Peter Gergen)

2024 Biochemistry and Biology majors on the 2023-2024 iGEM (International Genetic Engineered Machines) team:

Mentor: Dr. Peter Gergen

- Fritz Ebner, Biology major
- Varun Gambhir, Biology major
- Hua Huang, Biology major
- Ethan Kim, Biochemistry major
- Yuxuan Lin, Biology major
- Nadia Mathew, BME major
- Wendy Zeng, Biology major

2024 Summer undergraduate research awards to biochemistry majors: Explorations in STEM

- Isabelle Irizarry-McAdam - mentors: Dr. Irene Solomon, Physiology and Biophysics; and Dr. Marvin O'Neal, Undergraduate Biology

Velay Fellowship for Women in Science

- Manahil Kashi, (Dr. Maya Shelley, Neurobiology and Behavior)

URECA Fellowships

- Shaheryar Ahmad, (Dr. Quinton Bruch, Chemistry)
- Jerome Cai, (Dr. Gábor Balázs, BME)
- Michael Cupit, (Dr. Chi-Kuo Hu, BCB)
- Stacey Jiang, (Dr. Sandeep Mallipattu, Medicine)
- Mayur Talele, (Dr. Stuti Sharma, BCB)
- Ethan Kim, iGEM Team (Dr. Peter Gergen, BCB)

URECA Biology Alumni Research (U-BAR) Award

- Kai Bou, (Dr. Martin Kaczocha, Anesthesiology)
- Athena Choi, (Dr. Maya Shelly, Neurobiology and Behavior)
- Mohammad Rahim, (Dr. Lonnie Wollmuth, Neurobiology and Behavior)

Mitchell Wortzman Undergraduate Research Award:

- Mariam Hassan (Dr. Martin Kaczocha)

SUNY SOAR Program (administered by CIE)

- Mingrui Cui, iGEM team, (Dr. Peter Gergen)
- Karissa Lopez, (Dr. Yusuf Hannun, Cancer Center/ Medicine)
- Adan Piracha, (Dr. Zhishan Wang, Pathology)
- Saged Shaaban, (Dale Drueckhammer, Chemistry)

2024 Undergrad summer research awards to other majors working with Biochemistry and Cell Biology Faculty

CHHABRA -URECA Fellowship

- Tetiana Nika, Biology major (Dr. Chi-Kuo Hu, BCB)

Explorations in STEM

- Genesis Ceron, Biology major, iGEM team (Dr. Peter Gergen, BCB)

Velay Fellowship for Women in Science

- Isabella Janowiz, Biology major (Dr. Bernadette Holdener, BCB)

URECA

- Isabella Berger, Biology major (Dr. Kathryn Gunn, BCB)

Denise Loring Undergraduate Research Award

- Maryam Elfeky, Political Science major, iGEM team (Dr. Peter Gergen, BCB)

Steven Galson Undergraduate Research Award:

- Manual Marques Vilar, Information Systems major, iGEM team, (Dr. Peter Gergen, BCB)

Faculty Updates

Michael Airola, *Associate Professor*

The lab continues to study lipid metabolism, fat storage and mobilization, and develop new antifungal therapies. Mike continued as the Program Director of the Biochemistry and Structural Biology PhD Graduate Program and the Fall Course Director for Undergraduate Biochemistry.

Mike also expanded his involvement in the American Society of Biochemistry and Molecular Biology (ASBMB):

- being elected as the co-Director of the ASBMB Lipid Research Division
- continuing to co-organize the ASBMB Lipid Research Seminars
- joining the editorial boards of the Journal of Biological Chemistry and the Journal of Lipid Research.

He presented talks at the American Diabetes Association Conference in Orlando, FL and the FASEB Phospholipids Conference in St. Paul, MN.



Michael Airola and lab members

Airola Lab Member Updates

- Declan Wallace graduated with his MS degree in December 2023
- Jiyao Chai joined the lab from the MCB PhD program
- Taisha Elizaire was selected as a SUNY SOAR scholar
- Rideeta Raquib co-organized Career Exploration for Scientists symposium
- Khalayi Aywa was selected as a Snyder Scholar
- Doug Marr continued in GSO leadership, which helped obtain hoodies for MCB students
- Franceine Welcome was elected as a co-organizer for the 2025 GRS lipid conference
- Shujuan Gao's manuscript was published in PNAS, which resulted in Mike losing a break-dancing bet
- The lab won several poster awards: Lingshuang (Dept Retreat), Doug (MCB/BSB retreat), Franceine (GRC Lipids), and Taylor (Dept Retreat)
- Current lab members continuing in the lab include Dr. Shujuan Gao; PhD students: Lingshuang Wu, Taylor Rahn, Doug Marr, Franceine Welcome, Rideeta Raquib, Khalayi Aywa, and Jiyao Chai; and undergraduate Taisha Elizaire

Ivet Bahar, Professor and Director Laufer Center for Physical and Quantitative Biology

The Bahar lab is continuing to do research on a broad range of topics, from structural biology to systems biology, genome 4D modeling and drug discovery, in addition to computational tool development driven by fundamental AI- and physics-based methods, all funded by several NIH projects.

We have made significant progress in developing allosteric modulators of parathyroid hormone receptor (PTHr, a GPCR), in addition to developing new therapies against triple negative breast cancer (in collaboration with Emory).

A patent application for a Covid-19 drug has been approved, based on AI-driven quantitative systems biology studies led by our lab, in collaboration with the U of Pittsburgh and UCLA, and another patent application on PTHr drug discovery has been filed. We also initiated new collaborations with several faculty in the Department, including Drs. Liu, Sharma, Neiman, and Gunn.

We have concluded this year our Human Frontiers Science Project (HFSP) in collaboration with colleagues at Cambridge U, Victoria U (Canada) and Tsinghua U (Taiwan), which resulted in a major publication that highlighted the power of single-molecule nanoaperture-based tweezers integrated with in silico approaches for exploring the effect of mutations on protein structure and dynamics.



Dr. Bahar with lab members, Carlos Ventura, Chem PhD student; Satyaki Saha, BSB PhD student; and Isabelle Kwan, MD/PhD student who attended the HFSP conference at Cambridge U, UK.

Paul M. Bingham, Associate Professor with Zuzana Zachar and Shawn D. Stuart

We continue to make encouraging progress on the basic science supporting the clinical targeting of the altered metabolism of cancer cells. We have improved our understanding of the detailed mechanisms and basis of clinical performance of CPI-613, the lead compound in a first-in-class drug family we invented and patented here at Stony Brook. This drug selectively targets several major features of the mitochondrial metabolism of tumor cells.

As part of this work, we extensively reviewed the role of lipid metabolism reconfiguration in tumor cells and resistance to cancer drugs, including CPI-613 family agents [Bingham, P.M. & Zachar, Z. Toward a unifying hypothesis for redesigned lipid catabolism as a clinical target in advanced, treatment-resistant carcinomas. *Int. J. Mol. Sci.* 2023, 24, 14365.

CPI-613 drug cocktails are currently in several, diverse Phase II and Phase III clinical trials. We are continuing to extract lessons about the behavior of this drug family from the successes and failures of elements of this trial program.

Moreover, we are developing second-generation members of the CPI-613 drug family. Our approaches are designed to exploit the substantial progress in understanding crucial details of the mechanisms of action of this drug family and of their vulnerability to drug resistance. Our progress to date points to a straightforward, practicable route to very substantial improvement in performance in new drug family members.

Research faculty member in our group, Dr. Shawn Stuart, continues to also expand his role in the extensive teaching program we have built around our seminal theoretical work on human evolution, behavior, and history. This includes his role as co-instructor with Paul in the large undergraduate BIO358 Spring and Summer courses.

Lastly, Isis Roman and Isabel Martin are two Masters students (MAT BIO) carrying out research projects under an NSF-sponsored program to expose future teachers to advanced research. David Li carried out a cancer metabolism research project and graduated from Stony Brook with Honors. David will be attending SBU medical school beginning in the Fall.

Vitaly Citovsky, Distinguished Professor

Vitaly continues to be funded by NIH, NSF, and BARD. He was a recipient of a new grant from the US-Israel Binational Agricultural Research and Development Fund (BARD).

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, and Communicative and Integrative Biology. Vitaly is a member of the Cell Biology section of Faculty 1000 Biology (H1 Connect) and the Advisory Board of the Faculty 1000 Biology (H1 Connect) Plant Science Gateway.

He served on the Departmental Faculty Search Committee, the Genetics Graduate Program Admissions Committee, the Genetics Graduate Program Qualifying Exam Committee, the Administrative Review Committee (ARC) of the University Senate, the CAS Senior Promotion and Tenure Committee (PTC-S), and the CAS Academic Judiciary Committee, and continues to serve on the Departmental Awards Committee. Vitaly also served on the OVPR Seed Grant Panel.

Neta Dean, Professor

Research in the Dean lab continues to focus on protein glycosylation and its regulation during fungal cell wall synthesis. The Dean lab welcomes a new member, Muneeza Fatima (SBU Undergraduate) who will join Kevin Zhao in the Fall.

We also bid farewell to Xinyu Han and Kareem Halwah (Stony Brook University Biology undergraduates) both of whom graduated in 2024. Kareem presented his research results at the annual URECA symposium. Xinyu Han was recognized for her academic, service and research excellence as a recipient of the Outstanding Achievement Award in Biochemistry during the Biochemistry Commencement ceremony.

We wish both Xinyu and Kareem the best of luck as they begin their next journey through Medical School.

Kathryn Gunn, Assistant Professor

The Gunn Lab officially opened its doors at SBU in January 2024! The lab has gotten off to a great start in the Center for Structural Biology - with lots of help from our neighbors, the Glynn and Sharma labs. The lab is continuing to grow, and we currently have a lab technician and two undergraduate researchers.

We're looking forward to welcoming rotation students and hiring a postdoc in the next year.

Special congrats to Isabella Berger, a rising senior at SBU, who received a URECA fellowship to fund her research in the lab over the summer. Dr. Gunn also successfully transitioned her K99 grant to an R00 with the NIGMS. We're thrilled to have started our work characterizing spatiotemporal regulation of metabolic enzymes and excited to see what the next year will bring.



Isabella Berger, an undergrad URECA fellow and Kathryn Gunn

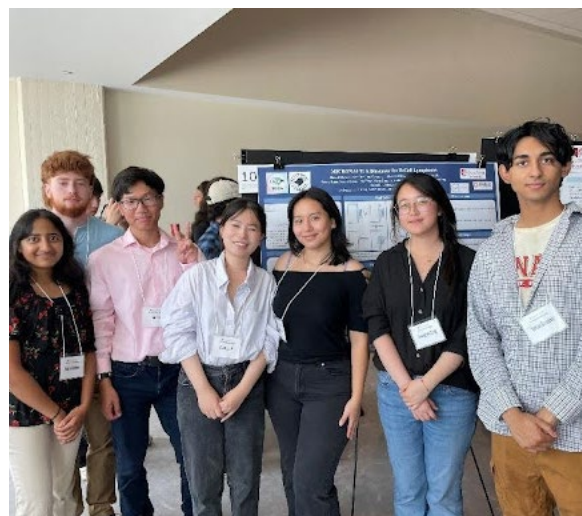
Peter Gergen, Distinguished Service Professor

Research in the Gergen lab continues to focus on the regulation of transcription by the *Drosophila* transcription factor Runt. Work on a manuscript investigating the role of the Odd-paired (Opa) transcription factor in enabling Runt-dependent activation remains underway with an extensive analysis of beautiful ChIP-Seq data generated by Yasuno Iwasaki and studies on the effects of mutagenizing binding sites for Opa in an enhancer that mediates both activation and repression by Runt. Yasuno continues to be an effective mentor to undergraduates in the lab, including Morgan Fish and Daniel Forkan who both graduated with Honors this last May based on an honors theses done in the lab. We were also pleased to learn that recent Gergen lab graduate Megan Italo (BIO BA with Honors, 2023) is returning to Stony Brook as a first-year medical student in the Renaissance School of Medicine this year. In other alumni news, student Ziaqiao Xu, who completed OPT training as a post-baccalaureate student in 2019 has started a PhD program in Biostatistics at George Mason University.

Peter Gergen is now starting his 15th year as the Director of the Undergraduate Biology Program and continues to serve on the Undergraduate Council of the University Senate and a Provostial General Education Advisory Committee. He was a member of the Re-accreditation Steering Committee for the Middle States Commission on Higher Education and served as co-Chair with Shelley Germana, Senior Associate Provost for Undergraduate Education on the sub-committee for Standard 4: Support of the Student Experience. The Middle States site visit in April was successful and resulted in a report stating that Stony Brook meets all standards of accreditation and all requirements of affiliation. The site visit team identified no requirements and no recommendations and offered numerous commendations.

Gergen remains involved with the National Institute on Scientific Teaching (NIST), a 501(c)(3) non-profit corporation dedicated to transforming STEM education through the training and support of faculty in implementing evidence-based instructional practices. He has been on the NIST Executive Committee as Treasurer for two years and will complete this term in 2024. In a related effort, Gergen was a co-PI on an NSF IUSE (Improving Undergraduate STEM Education) Level 1 award involving SUNY colleagues at Binghamton and Geneseo that termed in early 2024. The workshops and programs developed during this period form the foundation for a NSF IUSE Level 2 proposal submitted in July of 2024 that has the goal of accelerating adoption of high impact educational practices throughout the SUNY system and now involves collaborators from more than a dozen SUNY institutions.

One example of a high impact practice is having students become involved in research, an area that has been a major focus of Gergen's efforts as Director of the Biology Program. A total of 70 Stony Brook undergraduates received support to do research in the biosciences in the summer of 2024. Contributions to the Biology Program provided a total of \$49,500 towards stipends for seventeen of these undergraduate researchers, including thirteen awards cost shared with the URECA program and full support for four named Undergraduate Research Awards. One of the named awards, the Ellen Geis Undergraduate Research Award, was created by Maria Pasquale (BS Biochemistry, 1986), the former Executive Vice President and General Counsel for the Incyte Corporation in honor of her mother. We were delighted to have Maria Pasquale return to Stony Brook as the Alumni Speaker for the Biology and Biochemistry Convocation Program in May 2024. While here, Maria had the opportunity to meet with both the 2023 and 2024 recipients of the Ellen Geis Undergraduate Research Awards. Genesis Ceron, the 2024 Ellen Geis award recipient, is one of 15 students on the Stony Brook 2024 iGEM (International Genetically Engineered Machines) team. This team is very much looking forward to presenting their project on developing a bacterial biosensor for microRNAs at the Giant Jamboree in Paris in October. Although the Olympics will be in the rear view by then, Dr. Gergen is looking forward to joining them in Paris this fall.



Members of the Stony Brook 2024 iGEM team

Steven Glynn, Associate Professor

The Glynn lab continues to investigate how mitochondria achieve quality control of their essential protein and lipid components. Recently, we have been examining how degradation signals, initially discovered in yeast mitochondrial proteins, may be conserved in humans, and how proteases control the flux of phospholipids between mitochondrial membranes.

In April, Mariella Quispe-Carbajal presented her work at the Protein Homeostasis in Health and Disease meeting at Cold Spring Harbor Labs. A.J. Sillato, a former Master's student and lab technician left the lab in July to join the Biochemistry graduate program at Columbia University. We wish A.J. all the best in his future studies after three years in our lab.

Michelle Yang joined the lab as an undergraduate researcher in February and successfully received a URECA Summer fellowship to study the interaction between mitochondrial proteases and their substrates.

Bernadette Holdener, Professor

In collaboration with Dr. Robert Haltiwanger at University of Georgia, Dr. Holdener is investigating the role of protein glycosylation in embryonic development. The Holdener lab uses mouse mutations to determine why sugar modifications on groups of proteins with Thrombospondin type I repeats (O-linked glucose-fucose disaccharide) or Epidermal Growth Factor motifs (O-glucose) are important for embryo development.

Mutations that block these modifications alter the physical properties of the extracellular environment and impact morphogenesis, cell migration, and differentiation. Understanding the molecular basis for the developmental defects in the mouse mutants will provide a better understanding of what causes common human birth defects including craniofacial and skeletal abnormalities, hydrocephalus, and lung and cardiovascular abnormalities.

Bernadette and Dr. Thomsen continue to co-teach the core Developmental Biology course for the Biology Major Developmental Genetics track. She serves as the Director of Undergraduate Biochemistry Majors, is a member of the Biochemistry and Cell Biology Executive committee and Chairs the Stony Brook University Stem Cell Research Oversight committee.

Holdener lab members include: Richard Grady (lab manager), Dr. Sanjiv Neupane (research scientist), Kaitlyn Donnelly (technician), Isabella Janowicz (undergraduate), Angelina Almiroudis (undergraduate), and Samantha Sita (BCB MS program).

In July 2023, Dr. Holdener attended and presented the lab's research at the Elastin Gordon Conference. Isabella Janowicz, an undergraduate in the lab, was the recipient of a 2024 Frances Velay Women and Science Research Fellowship. Dr. Sanjiv Neupane's (research scientist) 2024 Journal of Biological Chemistry article was selected for Editor's Pick.

Holdener Lab Alumni Updates:

Former Undergraduate Subha Aggarwal in Fall 2024 will be entering a Master's program in Molecular Life Sciences at Wageningen University and Research in the Netherlands. Former undergraduate, Daniel Cameron is enjoying being on the dry lab/computational side of things as a bioinformatician at NYU Langone (since Fall 2023). He's also been involved in single cell RNA sequencing projects related to pancreatic cancer. Dr. Lance Lee, former graduate student and now Associate Professor of Pediatrics at Sanford School of Medicine of the University of South Dakota, received the 2024 Dedicated Teacher Award from the Department of Pediatrics at the USD School of Medicine. Dr. Christina Leonard, former graduate student, is CEO and Principal Consultant for Wenatchi Group, Inc, and the Scientific Strategist for the National Cord Blood Network. Wishing success for Dr. Janet Lighthouse, former graduate student and now Assistant Professor at St. John Fisher University who is preparing to submit her tenure review package. Andrew Sillato, former Undergraduate in the lab is joining the Biological Sciences PhD program at Columbia this coming fall!

Nancy Hollingsworth *Distinguished Teaching Professor*

2024 marks the 30th anniversary of the Hollingsworth lab! Nancy's lab continues to be funded by a NIH MIRA grant. Nancy presented a poster at the 2024 Meiosis Gordon Conference. She was asked to be a "guest coach" for the Stony Brook Seawolves Baseball team where she had the honor of throwing out the first pitch (unfortunately right into the ground!).

Nancy was a Faculty Marshall for the 2024 Biochemistry/Biology undergraduate commencement ceremony. She hosted Marlies Rossman, a former "honorary" Hollingsworth lab member, for a departmental seminar. Marlies recently started as an Assistant Professor at the University of Rochester Medical Center.

Alumni news

Undergraduates:

- Saif Laljee completed medical school at NYU and is currently doing a GI fellowship there
- Jonathan Caradonna graduated with a BS in Biochemistry this year with the honor of "Outstanding Achievement in Biochemistry". He will be starting a PhD program in Bioinformatics in the fall at North Carolina State University.
- Jason Weng passed his qualifying exam in the PhD program in Biophysics at UC Berkeley.

Master's students:

- Sara Page completed her Master's degree in Biochemistry and Cell Biology and is now enrolled in a Physician's Assistant Program at the New York Institute of Technology.

Cody Cheng, a high school student who is a long-time member of the lab, was selected to participate in the Partners for the Future Program at Cold Spring Harbor Laboratory starting in summer 2024.

Current members of the Hollingsworth lab are Lihong Wan (Senior Research Scientist), Bob Gaglione (technician and former Master's student), Raunak Dutta (BSB Graduate student), Tyler Nagosky and Craig Chen (undergraduates).



Second from left, Nancy throws out the first pitch as guest coach

Chi-Kuo Hu, Assistant Professor

Our lab has had an exciting year. We have established our single-cell transcriptomic database of killifish embryonic development and the dormant state of diapause. With the work of Jason Chan, we have been awarded a grant from the Center for Healthy Aging. Our graduate students Nate Sweet and Eric Girardi have been teaching in the Lightsheet Workshop at Albany. We had Yasmine Addo join us as a research specialist. We have also recruited many talented undergrads with different expertise to the lab, including Tetiana Nika and Michael Cupit from Biology, Ramizah Tayiba and Aadithyaa Balasubramanian from Applied Math, and Jasper Zeng from Computer Science. Tetiana and Michael have been both awarded the Chhabra-URECA Fellowship and URECA Scholarship respectively.

Erwin London, Distinguished Professor

Erwin's NIH MIRA award "Transformative Lipid Exchange Approaches to Study Membrane Organization" ended its second of five years. He continued to serve as a member of the Postdoctoral Fellowship Award Committee for the Life Sciences Research Foundation and joined the editorial board of *The Journal of Membrane Biology*. He also continues as a member of the Biochemistry and Cell Biology Department Executive Committee, and is course director of MCB 517, Biomembranes and BSB 512, Structural Biology and Spectroscopy.

Lab members in mid-2024 included research assistant professor Guangtao Li, postdoctoral research associate Shinako Kakuda, and PhD students Betty Du and Bingying Xia. Erwin is also a co-advisor (with Todd Miller) for Antonio Torlentino and Sanjna Rana.

Benjamin Lin, Assistant Professor

The Lin Cell Dynamics Lab officially opened its doors in the fall of 2023. The lab focuses on uncovering the molecular basis of non-canonical cell migration strategies used during development and cancer from the following vantage points: actin cytoskeleton structure-function, signal transduction, traction force generation, and metabolism.

Our lab leverages *Drosophila* genetics and live-cell imaging to study how cells behave in their native context. Current members include Justin Palermo (Postdoctoral fellow), Francesco Castelli (MCB PhD Student), and undergraduates Nikhil Pasumarthi, Maelle Aubry, Katherine Yo, and Andrew Chen. Rising sophomore Zoe Jiang received a career center internship to perform research in the lab over the summer.

The lab welcomed Richmond Asare-Bediako (Research Support Assistant) and high school student Rachel Braverman in July 2024. Ben received an American Cancer Society Institutional Research Grant from the Stony Brook Cancer Center and an NIH MIRA grant.



Jonathan Nelson, Wali Karzai, Kathryn Gunn, Stuti Sharma, Ben Lin

Ed Luk, Associate Professor

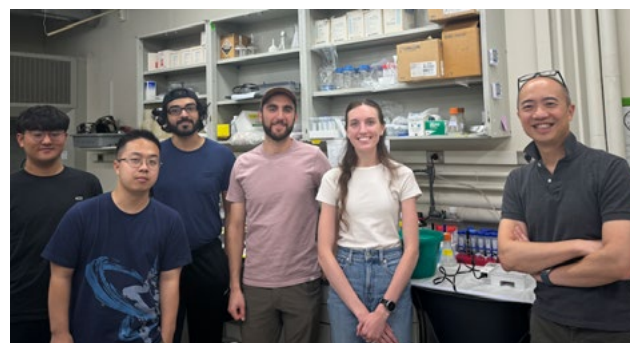
Luk and his lab continue to study the regulation of chromatin structure and gene expression. The team comprises Leonidas (Louie) Pierrakeas, Cynthia Converso, Emily de Onis, Lirong Chen, Bhargava Chintam, Shalvi Chowdhury, Andrew Hwang, and Wet Yang.

Louie, Cindy, and Lirong are PhD students in the Molecular and Cellular Biology (MCB) program. Cindy's project focuses on understanding the targeting mechanism of a chromatin remodeling enzyme in yeast. She discovered that the genome is encoded with instructions that direct remodeling activities to specific chromosome sites. Her manuscript is currently under revision, and she defended her thesis in August. Louie

collaborates with Cindy, making major contributions to her paper by identifying alternative targeting sites of the chromatin remodeler. Currently, he continues his own project on variant chromatin particles. Lirong, a first-year PhD student, joined the Luk lab in May and will be co-mentored by Dr. Ben Martin on a project involving a zebrafish transcription factor.

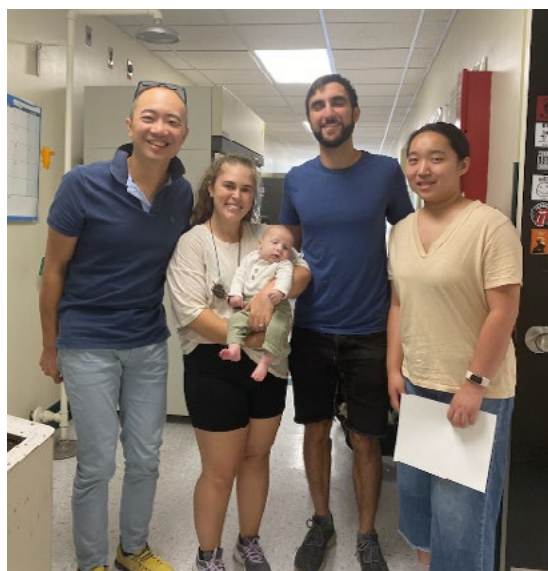
Emily de Onis, having completed her MSc thesis on developing a 'plastic-eating' yeast, continued to work in the lab as a technician. She has made exciting discoveries regarding novel chromatin binding sites in the yeast genome and has accepted a position at Terragia Biofuel. Bhargava, a computer scientist, is developing a machine learning model to identify very short protein coding sequences. Shalvi, Andrew, and Wet, who joined as technicians, are working very hard to learn various molecular biology techniques.

Finally, Ed received a favorable score on his MIRA grant application and was invited to give seminars at the Memorial Sloan Kettering Cancer Center in September 2023 and Rutgers University in February 2024.



Above: Andrew Hwang, Wet Yang, Shalvi Chowdhury, Leonidas Pierrakeas, Emily de Onis, Ed Luk

Below: Ed, Cynthia Converso, Leonidas Pierrakeas, Lirong Chan



Benjamin Martin, Professor

The Martin Lab performs research to address questions related to cancer metastasis and stem cell biology using zebrafish as a model system and currently receives funding from the NIH.

The lab consists of technicians Wan Zhang and Calvin Yu, PhD students Rob Morabito, Sam Stettensch, Courtney Tello, Sabrina Hafeez, and Lirong Chan, undergraduates Aman Mistry, Julia Zhu, Darren Wang, Colman Shaver, and Gianna Ferraro, and high school students Andy Qin and Celia Lane. Several of these members are new.

Sabrina and Lirong recently joined the lab after performing rotations, and are part of the MSTP and MCB programs, respectively. Darren joined this past fall, and Colman and Gianna are new this summer. All the undergraduate students attend Stony Brook except for Gianna who goes to the University of Rochester.

High school students Andy and Celia are part of the Simons Summer Research Program and are here from Indiana and Mississippi, respectively. PhD student Rob Morabito participated in graduation ceremonies in May and plans to officially graduate in August of 2024. Sam Stettensch and Courtney Tello are both NIH F31 predoctoral fellows, and Aman Mistry and Darren Wang have URECA fellowships from Stony Brook that will fund them for their summer research in the lab.

The lab said goodbye to several members this past year. Ryan Swick received his MS from the Biochemistry and Cell Biology Master's program. Frederick Peetz received his BS and will join the Stony Brook Molecular and Cellular Biology PhD program this fall.

Aaron Neiman, Professor

This September marks the 25th anniversary of the Neiman Lab. In honor of that, here are some updates on lab alumni that I have heard from recently.

Hiroyuki Tachikawa (visiting professor) has moved from Univ. of Tokyo to a position in the Department of Sport and Wellness at Rikkyo University, also in Tokyo.

Hideki Nakanishi (post-doc) is a Professor at Jiangnan University in Wuxi, China.

Erin Zeituni (PhD student) is a preclinical services program manager for the Bacteriology and Mycology Branch of NIAID.

Robert Policastro (masters student) completed his PhD at Indiana University. After two years at eGenesis, he is now working as a Senior Computational Biologist at an in vivo gene editing startup, Ensoma.

Esma Ucisik-Akkaya (PhD student) is working as VP and Medical Strategy Director at VML Health in New Jersey.

Liang Jin (PhD student) is a computational biologist at AbbVie, working primarily on 'omics data analysis supporting biomarker and drug target discovery.

Leo Bemena (post-doc) is working for Charles River Laboratories in Quebec.

Katie Donnelly (masters student) is in her 3rd year in the Genetics PhD Program here at SBU working in Ando Van der Velden's laboratory.

Greisly Nunez (PhD student) is studying programmed cell death as a post-doc in the laboratory of Doug Green at St. Jude's Research Hospital.

The current group in the Neiman Lab grew a bit this year. Joining Jae-Sook Park (Research Assistant Professor), Rolf Sternglanz (Professor Emeritus), and Kai Zhang (Ph.D. Student) are Victoria Coman, Nilufer Dilmen and Daniel Sanya. Victoria completed her master's degree in December and joined the lab full time as a technician. She is continuing to work on the role of lipids in spore wall assembly. Nilufer also came onboard this winter as a new technician, she is focusing on regulators of Vps13 activity. Daniel Sanya arrived last fall from France as a new post-doc. He is restarting our efforts to investigate cell wall assembly in the pathogenic yeast *Candida dubliniensis*.

Last October, Aaron and Jae-Sook attended the 11th International Meeting on Neuroacontocytosis Syndromes in Homburg, Germany to present her latest work on the mechanism of lipid transport by the Vps13 protein. In December, Kai gave a poster on his studies of the yeast spindle pole body at the ASCB meeting in Boston.



Drs. Aaron Neiman and Rolf Sternglanz at the Olympics

Jonathan Nelson, Assistant Professor

The Nelson lab opened its doors in the CMM building in September 2023 to begin research investigating how a 'genomic parasite' called a retrotransposon is repurposed to support genome stability. Since joining the department, a full-time lab technician, Jackson Chen, has joined the lab, and several Stony Brook University undergraduates have started research projects.

Dr. Nelson attended the Genetics Society of America Allied Genetics Conference and presented a seminar at the Penn University Center for Genome Integrity to share the work being started in the lab. We are looking forward to the lab continuing to grow and make exciting discoveries over the next year!

Dada Pisconti, Associate Professor

This has been a fruitful year for the Pisconti lab. We have received a new NIH grant to study how the microenvironment around muscle stem cells changes during muscle regeneration thanks to the action of immune cells that are attracted to the site of injury by the damage itself. We already know that disrupting the very first steps of the inflammatory response leads to a failure to regenerate by impairing remodeling of the extracellular environment and muscle stem cell activation. With this new funding, we aim to discover the underlying molecular mechanisms of this phenomenon. And we are hiring! If you know anyone who is interested in working with us, let us know!

We have completed two projects. The objective of the first project that we have completed this year was to establish whether there is a link between an important myokine, irisin, which plays key roles in metabolism, and development of type 2 diabetes. Through systematic meta-analysis of clinical research of the last 15 years, we were able to establish that irisin is decreased in diabetic patients, regardless of their BMI. Since irisin is produced during physical activity, our data further support the need to stay active and exercise to prevent development of type 2 diabetes and control its progression. This story is under review in the *Journal of Cachexia, Sarcopenia and Muscle Communications*, and available as a preprint on bioRxiv.

The second project we have completed, in collaboration with colleagues at Nofima Institute in Oslo, Norway, is a deep phenotyping of chickens affected by the muscle pathology commonly known as wooden breast. The etiology of this disorder, which causes suffering to the affected birds and millions of dollars in lost revenue to farmers, is unknown.

We discovered that some co-receptors of the syndecan family are dramatically perturbed in the muscle of more severely affected birds, which could explain most, if not all, the pathological signs observed in wooden breast. This work has been published in *Frontiers of Physiology*.

The other projects are moving on and two more papers are now in the final stages of writing, we hope to submit them by the end of the summer and have them published by this time next year – stay tuned!



Scary Muscle Biology in the Pisconti Lab - Halloween 2023. Hana, Michael, Rachel, Lucie, Dada, Sandra, Maisha, John, and Kelly

Stuti Sharma, Assistant Professor

The Sharma lab is officially up and running! The lab's first hire was a research technician, Andrew Hillowe, who came to us from Martin Kaczocha's lab. Caitlin Bricault, a BSB student who did her third rotation in the lab also decided to join us. The lab is making quick progress and we are looking forward to collecting our first cryo-EM dataset soon. Mayur Talele, a sophomore biochemistry major, joined us for the summer and is learning to purify proteins.



Stuti, right, hosted the annual BCB department retreat; shown with Courtney Tello judging the poster contest.

Gerald Thomsen, Professor

Jerry Thomsen's lab celebrated 30 years at SBU and continues to study mechanisms underlying animal development and regeneration. The past year has been especially *Nematostella* and *Xenophilic*, as the lab has been screening for genes that regulate regeneration in the starlet sea anemone (*Nematostella vectensis*) and African clawed frog (*Xenopus laevis*). *Nematostella* can regenerate its entire body, and *Xenopus* tadpoles can regenerate their tail and other tissues and organs, making these attractive model systems for discovering genes that regulate regeneration and mechanisms that might have been conserved during evolution. Understanding regeneration in *any* organism has the potential to impact regenerative medicine for human benefits, but the question of how some animals can faithfully rebuild tissues and organs, while others cannot, is just plain cool.

Over the last year and a half, the lab has been using "chemical genetics" to identify molecular targets required for sea anemone polyp and tadpole tail regeneration. The approach is to amputate tissues from these animals and expose the amputees to small organic molecules (typically inhibitors) whose molecular targets (typically proteins) are well known. Many of these chemicals are pharmaceuticals or experimental reagents with well understood target specificities and mechanisms of action. Thus, chemicals that have effects on regeneration immediately suggest candidate targets for validation with more traditional genetic and biochemical methods (e.g. Crispr knockout; *in situ* expression, enzymatic detection). One major project using this approach has been spearheaded by Dr. Pat Bossert, a Research Scientist who has been investigating whether and how autophagy regulates regeneration in *Nematostella*, based on some early findings (Bossert & Thomsen 2017, *J. Vis. Expt.*). Pat and a BCB Master's student, Alex Kozikowsky (MS in 2023) did follow-up studies with more selective autophagy inhibitors and reagents to visualize autophagic activity *in situ*. She is also investigating potential links between autophagy and nutrient mobilization or stem cell functions during regeneration.

Another major project is a screen of small molecule libraries to identify chemical "hits" that block or enhance regeneration using *Nematostella* polyp fragments and amputated *Xenopus* tadpole tails. Nearly 2,000 compounds have been screened over the last 1.5 years, and there are plenty of primary hits to follow up on. The project is funded by an R03 grant from the NIH (1R03HD104961), and has been driven by Master degree and undergraduate students.

Four students in the Master of Arts in Teaching Biology were recruited to the project in the summers of 2023 (Stephanie DeNicola and Alanna Schwartz) and 2024 (Holly McNair and Elizabeth Von Brook) as recipients of iSTEM-sponsored, NSF funded Robert Noyce Research Fellowships. These students worked full time in the lab during their summer appointments and continued the research part-time as they progressed toward their MAT degrees. They were joined in these screening efforts by BCB student Jack Rogers (MS 2022) and Biology undergraduate Claire Seeling-Branscomb (BS 2024). The upcoming year will include validation tests of the most promising hits, using *Nematostella* and *Xenopus* tadpole regeneration assays. In addition to pursuing the usual funding mechanisms, the Thomsen lab welcomes support from private funding ([hit that "support us" button on the Department's homepage](#)).

In the teaching realm, Jerry continues to teach BIO 325, Animal Development, with Bernadette Holdener in the Fall semester, and BIO 327, Developmental Genetics, with Peter Gergen in the Spring semester. As noted above, he sponsors iSTEM-MAT students in the lab during summers and has one or two Master's or undergraduate students in the lab at any given time. Personnel in the lab between Fall 2022 and Fall 2024 included Dr. Pat Bossert (Research Scientist 2011 to present), Jack Rogers (MS 2022), Alex Kozikowski (MS 2023), Claire Seeling-Branscomb (BS 2024), and the Noyce Fellows Stephanie DeNicola and Alanna Schwartz (2023-24), and Holly McNair and Elizabeth Von Brook (2024), all awarded the MAT in 2024.

Lonnie Wollmuth, Professor

Synapses are specialized structures that control the flow of information between cells in the brain. Alterations in synaptic transmission contribute to neurological and psychiatric diseases, such as autism, epilepsy, intellectual disability, and schizophrenia. Research in the Wollmuth group addresses biophysical, structural and physiological mechanisms underlying fast synaptic transmission in the brain, focusing predominantly on those synapses that use glutamate as a neurotransmitter. We have a strong interest in disease mechanisms and focus much of our work on how missense mutations in the genes encoding synaptic proteins lead to brain dysfunction. We also collaborate with Dr. Helen Hsieh, a pediatric surgeon at SBU Medicine. Details of our research program and activities can be found at our webpage, [here](#).

Our group had a successful year. We published 3 primary research papers and a book chapter. I also gave talks at the Forum for Discovery for the Lupus Research Alliance in NYC and general talks to families with *GRIN* disorders in NYC and Denver Colorado. The *GRIN* families have children who have missense mutations in the genes encoding NMDA receptors, a prominent synaptic protein. These children display a variety of symptoms including autism and intellectual disability. A major phenotype is seizures, and in collaboration with Dr. Howard Sirotkin at Stony Brook, we have been investigating the basis for these seizures and potential routes for treatments.

Two new post-docs joined the lab: Amalia Napoli, who is working on how NMDA receptors affect early brain development, and Bohdan Kysilov, who is studying how missense mutations in NMDA receptors lead to altered function. Christie Aprea is a new PhD student in our group.

NoteWorthy



Gabriella Vaccaro, a biochemistry major in the Honors College, was recently announced as a 2024 recipient of the [Barry Goldwater Scholarship](#), a prestigious national award recognizing outstanding

undergraduates in math, science, and engineering.

Since the spring semester of freshman year, Gabriella has been working under the mentorship of Dr. David McKinnon (Neurobiology and Behavior) and Dr. Barbara Rosati (Physiology and Biophysics); and has gained experience in the McKinnon-Rosati Laboratory doing bioinformatic analysis of high throughput data as well as

experience doing wet lab work on research projects centered on single cell genomic analysis (scRNA-seq, scATAC-seq, and CITE-seq).

Gabrielle participated in the Explorations in STEM Summer 2022 program and the URECA Summer 2023 program; has presented at the URECA and Summer Symposia; and served as a TA for General Chemistry (August 20-December 2022). She plans to pursue a PhD in biological science and computational biology and will be applying to graduate programs in the fall.

Thinking back on how large a part research has played in her undergraduate experience and the value of getting an early start, Gabriella reflects: *"For me, Explorations in STEM kind of kick-started everything in terms of my research. During the summer I was able to go into the lab every single day, and that really impacted how much I was able to learn and get done. I also learned so much from going to and hosting the journal clubs and reading a lot of papers. It helped prepare me for explaining academia and how to make a poster – and eventually with applying for external scholarships such as the Goldwater scholarship."*



On January 24, 2024, the University President hosted a Service Recognition Luncheon honoring faculty and staff for their years of dedication to the University. Celebrating milestones was BCB Department Administrative Specialist, Pamela Wolfskill (pictured right), on her 25 years and Gerald Thomsen (pictured seated middle) on 35 years in the Department of Biochemistry and Cell Biology.



Spring 2024 Annual Department of Biochemistry and Cell Biology Annual Retreat at the Waterview and Port Jefferson Country Club

Alumni Corner

1970s

Alexander Hindenburg '74, BS Biochemistry

Associate chief hematology oncologist Perlmutter cancer center NYU Long Island. Best doctor Castle and Connelly.

Eugene M Durso '76, BS Biochemistry

Retired...Had a wonderful career working in the Industry of Phamaceuticals and BioMedical Instrumentation.

1980s

Scott Meisel '81, BS Biochemistry

Retired from 35 years as an anesthesiologist.

Regina R Monaco '82, BS Biochemistry

Started a research company, Center for Dynamical System Studies (CDSS). Collaborating at CUNY, studying how the potassium ion channel works. What thermodynamic role does water have?

Eleanore Wurtzell (Elli Katz) '82, PhD Molecular Biology; Advisor Masayori Inouye

My laboratory at CUNY Lehman College and the CUNY Graduate Center investigates carotenoid biosynthesis in plants, a research endeavor that supports sustainable solutions to global Vitamin A deficiency.

In 2024, I travelled to Japan to receive the Trevor Goodwin Award from the International Carotenoid Society, in recognition of my lifetime achievement in carotenoid biochemistry research. I am honored to be the first woman and the first US scientist to receive this prestigious award. [Click here to read more news and details.](#)

Douglas A. Ballan '86, BS Biochemistry

Always grateful to the department. Remembering professor Sei Sujishi "Read the question! English 101!"

Teiichi Furuichi '86, Visiting PhD Student; Advisor Masayori Inouye

I was a Visiting Graduate Student at the Department of Biochemistry from 1983 to 1986. Currently, I am an adjunct professor at the Department of Biological Science, Tokyo University of Science in Japan.

David Stollow '87, BS Biochemistry

Earned PhD from Baylor College of Medicine 1993. Post doc NIH 93-96.

1990s

JoAnn Meerschaert '94, PhD Cellular and Developmental Biology, Advisor Martha Furie

I was in the last year of BCD (Cellular and Developmental Biology program) before it merged with Biochemistry. This May (2024) I retired as a Full Professor, after 25 years at Saint Cloud State University.

Alex Rai '94, BS Biochemistry; '00 PhD MCB; Advisor David Helfman

I am currently a Professor in the Dept. of Pathology & Cell Biology at Columbia University, and oversee the Clinical Chemistry Service at the Columbia University Irving Medical Center, am Co-Director of the Automated Core Laboratory and Director of the Special Chemistry Laboratories. My research focuses on developing new clinical laboratory tests. We discover, validate, and translate new exosome- and extracellular vesicle-based biomarkers into clinical tests useful for the management of cancer patients.

Michael Stebbins '94, BS Biology; '00 PhD Genetics; Advisor: Jerry Yin

Dr. Stebbins left the bench in 2001 and worked as a Senior Editor at Nature Genetics before heading to Washington to work in science policy. He worked for Senate Minority Leader, Harry Reid (D-NV), where he led the effort to reverse President Bush's ban on funding of certain kinds of embryonic stem cell research, forcing President Bush's first veto. He then worked in the White House Office of Science and Technology Policy for seven years during the Obama Administration and authored eight executive orders and other directives to federal agencies on a range of issues from open science, Veterans mental health, preserving pollinators, and antibiotic resistance. He now has his own consulting practice and authored and pushed through the proposal to create a new Federal agency modeled on DARPA and focused on health, called ARPA-H.

Prashant Ponda '95, BS Biochemistry

Dr. Ponda is the Director of Allergy and Immunology and serves on the Board of Directors of ENT and Allergy Associates, one of the largest physician-owned private practices in the United States.

Jennifer Roecklein-Canfield '96, PhD MCB;
Advisor: Stan Fields

Dr. Roecklein-Canfield was selected as a 2024 Fellow of the American Society for Biochemistry and Molecular Biology.

Anna Chan '99, BS Biochemistry

I am a Family Medicine Doctor.

Ellen Hoffman '99, BS Biochemistry; '03 MD

My lab published two papers last year investigating the function of autism-associated genes in the developing brain using a zebrafish system: Weinschutz Mendes et al. (2023) Cell Reports and Jin, Neelakantan et al. (2023) STAR Protocols

2000s

Joseph DiBernardo '00, BS Biochemistry

Practicing endodontics in Smithtown NY.

Lance Lee '04, PhD MCB; Advisor: Bernadette Holdener

An Associate Professor in the Department of Pediatrics at the University of South Dakota Sanford School of Medicine, Dr. Lee received the department's Dedicated Teacher Award for 2024 in recognition of his support of graduate and undergraduate students.

Jonathon Stallings '05, PhD MCB;
Advisor: Mario Rebbecchi

Dr. Stallings was appointed as Chief Data Scientist at the Defense Health Agency's Joint Trauma System (JTS). The JTS, a Center of Excellence, is dedicated to advancing trauma care for military personnel by implementing and refining evidence-based practices to enhance survival rates and recovery outcomes for the wounded. Under his leadership, the JTS aimed to harness the power of data to drive innovation in trauma care protocols, ensuring that the most effective treatments were identified and applied swiftly and accurately.

By leveraging his skills in data analysis, he helped optimize resource allocation, streamline medical procedures, and ultimately improve patient outcomes. His work facilitated a deeper understanding of trauma care trends and outcomes, enabling the JTS to continuously refine their practices based on solid data-driven insights.

Dr. Stallings' contributions were crucial in fostering a culture of continuous improvement and innovation within the JTS. As a result, military medical services were better equipped to provide the highest standard of care to those who risked their lives in service to their country.

John Ang '06, BS Biochemistry

Since graduating, I received a medical degree from SUNY Downstate and completed a pediatric residency. I am currently working as a general pediatrician for the NYC Health and Hospital, serving an underserved Brooklyn.

Erin Mathieson Zeituni '09, PhD MCB
Advisor: Aaron Neiman

I've been working at NIH's National Institute of Allergy and Infectious Diseases for eight years now, where I serve as a preclinical services program manager for the Bacteriology and Mycology Branch. I basically wear two hats at work. For one, I communicate with anti-infective product developers designing novel drugs, vaccines, and diagnostics targeting hospital-acquired bacterial infections, invasive medical mycoses, and biodefense bacteria. We work together to identify if there are gaps in their programs that they need help filling in order to get to their next bucket of funding. For my other hat, I manage federal contracts that provide studies to fill these gaps in developer's programs. Studies range from MICs, to in vivo animal models of infection, to in vitro or in vivo toxicology, and manufacturing. Each project brings a unique perspective and I'm in a constant state of learning and adapting.

2010s

Jennifer DeLeon '17, PhD MCB; Advisor: Wei Xing Zhong

Dr. DeLeon was promoted to Senior Assistant Editor at Genome Research Cold Spring Harbor Laboratory Press.

Mohsen Ahmed '17, BS Biochemistry

I matched into a residency training position for neurosurgery at Stony Brook University.

2020s

Jennifer Thalappilil '23, PhD MCB;
Advisor: David Tuveson

Dr. Thalappilil has a scientist position as a Scientific Writer for the Division of Gastrointestinal Oncology at Dana-Farber Cancer Institute.

We'd love to hear from you! Drop as an email at biochemistry_alumni@stonybrook.edu and we'll include your update in the next Newsletter.

New Fellowships

IMSD Merge

- Alma Quijano, PhD student

Scholars in Biomedical Science

- Yangle Yu, PhD student

Turner Fellowship

- Hatice Baysai, PhD student
- Kevin Moti, PhD student
- Kevin Shionarain, PhD student

Simon Fellowship

- Melanie Cragen

In Memoriam

Michael S. Christensen '71, PhD Molecular Biology **Advisor: Vince Cirillo**

Dr. Christensen passed away April 16, 2022 of complications from Parkinson's Disease. One of the first graduates of the PhD program in Molecular Biology, he founded and operated Springhouse Skin Research Inc., an applied dermatological research business, until his retirement in 2015. Survivors include his wife Norma, three children, and five grandchildren.

Judith Campisi '79, PhD Biochemistry **Advisor: Carl Scandella**

After obtaining both her undergraduate, BS Chemistry, and doctoral degrees at Stony Brook, Judy went on to become a leading figure in the field of cellular senescence and aging working at Lawrence Berkeley Laboratories and then the Buck Institute for Research on Aging. Her accomplishments were recognized by election to the National Academy of Sciences in 2018.

Frank Erk, Professor Emeritus

The Department recently learned of the passing of Frank Erk, Professor Emeritus on May 2, 2023 at the age of 98. Dr. Erk was a founding member of the Biology faculty at Stony Brook in 1957, eventually joining the Biochemistry department after its creation in 1969. He retired as a Professor of Biochemistry and Cell Biology in 1990. Survivors include three daughters and five grandchildren.

Philanthropy Corner

We continue to strive to build endowment funds to ensure a strong and stable future for the research and teaching missions of the Department.

Giving Day

Our 2024 Giving Day drive was buoyed by a \$20,000 matching gift from Stuart and Gloria Hollingsworth that helped inspire gifts from more than 100 friends and alums. Additionally, we earned a \$10,000 bonus from the University for having the third most donors of \$100 or more of any unit on campus. All told our campaign raised more than \$56,000 for the Departmental endowment. Our sincerest thanks to all who contributed to this success!

Endowment Pledge from the Neiman/Hollingsworth families

To encourage the building of endowment funds, New York State is currently providing a 50% match to endowment gifts of \$100,000 or more. The Neiman and Hollingsworth families have pledged a collective donation of \$110,000 towards the Departmental endowment. When completed, New York State will provide an additional \$55,000 as a match to this contribution.



Wali Karzai, Melanie Cragen and Aaron Neiman

Francisco-Anderson Family Fund for Undergraduate Research

Biochemistry alumnus Dr. Paul Anderson '78, and his wife Dr. Loise Francisco-Anderson have donated \$250,000 as an endowment to support undergraduate research. This gift is also eligible for the state match and when fully funded will support three fellowships annually for undergraduates doing biological research.

First and Second Simon Fellowships Awarded

Philanthropic gifts to the department have both an immediate and lasting impact. Last year, Amy Liao '93 PhD generously endowed a Graduate fellowship in honor of her advisor Sanford Simon to annually provide one year of stipend support for a 3rd or 4th year PhD student doing their thesis research in a BCB faculty member's lab.

The first Simon Fellow was awarded last fall to Louie Pierrakas of Ed Luk's lab to support his studies of chromatin organization. The second Simon Fellow was recently announced as Melanie Cragen who is pursuing her doctoral research with Wali Karzai exploring how a protease recognizes its substrates.



Louie Pierrakas and Amy Liao

Thank you for your support!

Please consider giving to the [Biochemistry and Cell Biology Fund for Excellence](#), which provides funds for immediate use, or to the [Endowment for Excellence in Biochemistry and Cell Biology](#), in support of the long term health of the Department.

[Visit our website](#)