

THE NEWS

BIOCHEMISTRY AND MOLECULAR BIOLOGY

WINTER
2019



Students can now earn degree accredited by ASBMB



This fall, the Department of Biochemistry and Molecular Biology received a prestigious accreditation by the nationally recognized [American Society for Biochemistry and Molecular Biology](#) (ASBMB).

The ASBMB is a non-profit organization that strives to promote biochemistry and molecular biology science and education. Their activities include journal publication, scientific meetings, research and educational advocacy, educational support for all levels, and the promotion of diversity in the scientific workforce. The Society, comprised of over 12,000 members, is based in Rockville, Maryland, and was founded in 1906.

Professor Jennifer Nyborg spearheaded this enormous project alongside faculty and staff, starting in Fall 2017. It took continued persistence, but in August 2018 the department was awarded the full 7-year term of accreditation. It is the first undergraduate biochemistry degree program in Colorado to receive the recognition and joins only 85 programs nationwide currently holding ASBMB accreditation.

The ASBMB review committee considered multiple factors in their decision to confer accreditation to the department. These included the faculty, noted for their excellence in teaching and research, the rich interdisciplinary curriculum, and a required senior thesis. ASBMB also noted that the department strives to incorporate activities within the undergraduate curriculum that develop teamwork skills.

Undergraduate biochemistry students who are interested in obtaining certification by ASBMB must take a research ethics course (BC360) and pass an ASBMB comprehensive examination administered during the spring of their senior year, in addition to their required coursework. The certification is expected to significantly enhance students' credentials as they move on to careers, graduate schools, or other professional programs.

Message from the Chair



This academic year is filled with exciting new happenings in the Department of Biochemistry and Molecular Biology. Our faculty continue to be highlighted for their accomplishments, performing research with international impacts (Ho, Stasevich) and developing innovative educational tools to enhance understanding of biochemical principles for undergraduate students (Hansen, Sholders). Jennifer DeLuca was promoted to full professor – an acknowledgement of her unwavering commitment to the research, teaching and service missions of the department. Very well done and well deserved! As Associate Chair for Graduate Studies, DeLuca is also spearheading a revamp of our graduate curriculum – stay tuned in future newsletters for progress updates.

We are also thrilled to be growing our team of faculty. In January 2019, we welcome our newest faculty member, Soham Chanda, Ph.D. In collaboration with faculty in the interdisciplinary program in Molecular, Cellular & Integrated Neurosciences, Chanda was hired as an Assistant Professor, and will expand BMB research in the neurosciences. We also have a new search underway for an Assistant Professor in the area of biophysics and/or biomolecular interactions. By August 2019, we will have 18 tenure-track faculty.

The timing couldn't be better for strengthening our tenure-track faculty size. Our undergraduate enrollment is at an all-time high, with 111 students in our Fall 2018 incoming class.

We are also rapidly developing online versions of some of our classes and looking at innovative ways to expand our biochemistry offerings to accommodate this growth. Our program was recognized for its focus on the development of durable skills and fundamental knowledge as we strive to create life-long learners with an accreditation by the American Society of Biochemistry and Molecular Biology.

In summer 2018, we launched the first ever “Careers in Life Sciences Workshop,” organized by Professors DeLuca and Ho. Taking advantage of our amazing alumni, this workshop featured presentations on a diversity of careers including agribusiness, therapeutics/pharma, research, entrepreneurship, and government, and was attended by over 80 graduate students, post-docs and staff. If you would like to participate as a speaker in a workshop on careers in the future, please let me know.

It is such an honor and a privilege to be part of this interactive and innovative department, which is committed to unraveling the biochemical, molecular, and cellular mechanisms underpinning a diverse set of problems, while training and mentoring our students, and serving our profession. Kudos to our faculty, students, and staff for everyone's contributions to excellence, and for help in creating an environment that promotes the principles of diversity and inclusiveness.

All the best,

A handwritten signature in blue ink that reads "Laurie Stargell".

Laurie Stargell
Professor and Chair

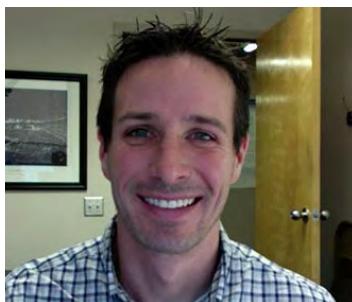
Department Highlights

Research partnership promotes international collaboration



For the past two summers, Assistant Professor Timothy Stasevich has worked in the Cell Biology Unit of the Institute for Innovative Research – a newly formed science consortium at the Tokyo Institute of Technology. Tokyo Tech hires international adjunct professors to promote collaboration as a part of their World Research Hub Initiative. Stasevich is working to build strong and lasting research ties between CSU and Tokyo Tech that will benefit our department and students. Stasevich will partner with Hiroshi Kumura to research the development of new fluorescent probes for live-cell imaging of protein dynamics. The research has enabled them to file a provisional patent for a new live-cell probe, and they are now working on a patent for another probe in collaboration with Wako, a subsidiary of Fujifilm.

Aaron Sholders places at Virtual Reality/Augmented Reality Create-a-thon



Congratulations to [Aaron Sholders](#) for sponsoring the third-place team in the annual Vice President for Research VR/AR [Create-a-thon](#)! The project proposes creating “a virtual reality version of a protein modeling platform much like what is seen in pymol, JsMol, or chimera.” This virtual reality “space” would enable scientists to load Protein Data Bank files and manipulate these structures using cartoon, space-fill, surface representations, wireframe, and other modeling depictions. This project could revolutionize how scientists approach structure-based drug design. Furthermore, such a tool could drastically advance our ability to educate future scientists, starting as early as grade-school, in the field of macromolecular structure and function. [Read more.](#)

BMB welcomes new neurosciences faculty member



This January, we will welcome Soham Chanda, Ph.D. as our newest Assistant Professor! Soham is widely trained, having received a B.S. in Microbiology, an M.Sc. in Biophysics and Molecular Biology from the University of Calcutta, an M.S. in Biological Sciences, and a Ph.D. in Neuroscience from

SUNY Buffalo. His postdoctoral research was performed at Stanford University in the laboratories of Marius Wernig and Thomas Südhof, who received the Nobel Prize in Physiology or Medicine in 2013.

Chanda's research is in synapse formation and specification, currently focusing on the role of the neuroligin family of transmembrane cell adhesion molecules. Neuroligins are often mutated in autism spectrum disorders, and Chanda will explore these clinical applications in animal models and through using cultured neurons derived from fibroblasts obtained from human subjects. In his post-doc, he has published 12 papers, including four first-author papers in *Proceedings of the National Academy of Sciences*, *Stem Cell Reports*, *Nature*, and *Journal of Neuroscience*. Chanda will contribute to our instructional needs in the areas of cell biology, molecular genetics, and neurobiology.

Neurosciences undergraduate wins Astronaut Scholarship



Congratulations to Ben Fixman for being selected for the prestigious [Astronaut Scholarship](#)! Ben works in the laboratory of Professor Jim Bamburg, under mentorship of Laurie Minamide, in the Department of Biochemistry and Molecular Biology. Thanks to CSU alumni and Astronauts Mary Cleave (B.S. Biology) and Kent Rominger (B.S. Civil Engineering), [Colorado State University was included](#) on the list of eligible universities that could compete for Astronaut Scholarships. This prestigious award of up to \$10,000 is given to a select group of scholars in the STEM disciplines.

Ben, accompanied by Jim and Laurie, attended the award ceremonies in Washington D.C., where he presented his research and received recognition alongside the other 49 Astronaut Scholars at the Innovators Gala. This fundraising event raised nearly \$100,000 toward future scholarships, with \$20,000 in direct contributions. Mary Cleave started the ball rolling by standing up and pledging \$5,000.

If you are interested in supporting neurosciences, please consider giving to the [Dr. James Bamburg and Laurie Minamide Undergraduate Research Fellowship](#).

**Want to see more news from the
College of Natural Sciences at CSU?**

visit www.natsci.source.colostate.edu

CONNECT WITH US |

Robert W. and A-Young M. Woody Lecture Series



On June 11, Professor Wes Sundquist from the University of Utah delivered the 2018 Woody Lecture, focusing on his research into the structure and biochemistry of the ESCRT proteins. These proteins play major roles in the assembly of enveloped viruses such as HIV, and facilitate membrane rearrangements and vesicle formation during intracellular transport.

The [Lecture Series](#) was established by Robert and A-Young Woody to enable the department to invite distinguished scientists to campus to deliver lectures and to meet with faculty, students, and postdoctoral research associates. If you are interested in supporting the lecture series, please consider giving to the [Robert W. and A-Young M. Woody Lectureship in Biochemistry and Molecular Biology Endowment](#).

Careers in Life Sciences Workshop



This summer, the Department of Biochemistry and Molecular Biology, College of Natural Sciences, and the Office of the Vice President for Research office presented a first time ever Careers in Life Sciences Workshop, organized by Professors Deluca and Ho. The workshop provided graduate students and post-docs in the life sciences with information on careers that do not follow the traditional academic professorial route, as well as advice on how to navigate pathways to these careers. The full-day workshop focused on past alumni from the department and/or faculty labs. There were over 80 attendees that heard from 15 different speakers, listed below.

Thank you to participants for making this successful! If you are a past alumnus and would like to participate next year, please let us know, CNS_BMB@mail.colostate.edu.

2018 Presenters

Kasey Bensen, Ph.D. – Dir. Translational Science, Caris Life Sciences

Jarred Bultema, Ph.D. – Founder & Principal, Kunnig Consulting

Stu Field, Ph.D. – Bioinformatics Scientists, SomaLogic

Kevin Flynn, Ph.D. – Senior Scientist, BioTechne

Melissa Coates Ford, Ph.D. – Senior Scientist, Merck

Geoff Guimaraes, Ph.D. – Technical Representative, Zeiss Microscopes

Jill Livengood, Ph.D. – Senior Scientist, Takeda

Lindsey Long, Ph.D. – Assistant Professor, Oklahoma Christian Univ.

Mr. I. Marsden, M.S. – Mergers & Acquisitions, Pfizer

Ada Ndoja, Ph.D. – Postdoctoral Fellow, Genentech

Mike Resch, Ph.D. – Research Scientist, National Resource Energy Lab

Gary Schorth, Ph.D. – Vice President, Illumina

Troy Sorensen, Ph.D. – Seed Manager, Western Potatoes, Inc.

Ty Vaughn, Ph.D. – Vice President Global Regulatory, Monsanto

Andrea Voth, Ph.D. – Science Writer, National Cancer Institute

Faculty News

Jeffrey Hansen Awarded Provost's N. Preston Davis Award for Instructional Innovation



Professor Hansen won the [N. Preston Davis Award for Instructional Innovation](#) for the development of interactive online graphical tools (JSMOL tutorials) to teach structural biochemistry in BC401 (Comprehensive Biochemistry I). The JSMOL tutorials provide visual content to students, explaining concepts of molecular structure as they relate to function. The texts are hyper-linked to a graphical interface from a widely accessible web-based platform, allowing students to manipulate and evaluate a protein and/or nucleic acid structure in an interactive and visual manner. Hansen is advancing the efforts of the original Chime tutorials created by Emeritus Professor David Fahrney, who created an undergraduate and graduate scholarship. If you are interested in supporting the scholarship, please consider giving to the [David E. Fahrney Undergraduate and Graduate Scholarship in Biochemistry Endowment](#).

P. Shing Ho Awarded CSU Scholarship Impact Award; Asian/Pacific American Cultural Center Outstanding Faculty/Staff Award



This year, [Professor Ho](#) was recognized by the [CSU Asian/Pacific American Cultural Center](#), and also awarded the [CSU Scholarship Impact Award](#), which acknowledges scholarly work that has had a major impact in the world. He is known for defining and understanding molecular interactions called halogen bonds. Ho and colleagues have found that different halogen atoms in organic and biochemical structures can form non-covalent interactions with other atoms that are analogous to hydrogen bonding, but could be much stronger. His research has demonstrated that a halogen bond can be engineered to direct the conformation of a macromolecule that has a higher stability than a comparable hydrogen bond. Ho's group has applied this special interaction as a tool to engineer molecular structures, including the design of inhibitors and drugs. He is currently serving as a program director at [NSF for the Chemistry of Life Processes](#) program.

Professor Jennifer DeLuca Promoted to Professor



In the summer of 2018, [Jennifer DeLuca](#) was promoted to professor. Professor DeLuca started working with the Department of Biochemistry and Molecular Biology in January of 2007. Her research focuses on the process of mitotic cell division, and her laboratory examines the molecular mechanisms of chromosome segregation. Her work addresses how aberrant cell division is linked to the initiation and progression of cancer, and how mitotic proteins can be used as targets for cancer therapeutics. DeLuca was a recipient of the Basil O'Connor Starter Scholar Award from the March of Dimes in 2007, and was named a PEW Scholar in the Biomedical Sciences in 2009 for demonstrating exceptional promise in advancing research regarding human health. In 2011, she was named a CSU Monfort Professor, and in 2017 was honored with the Graduate Student Advising and Mentorship Award. DeLuca's research is currently supported by grants from the National Institutes of Health, the National Science Foundation, and the Cancer League of Colorado.



BMB Alumni,

We value your input and would love to hear from you! How are things on the career front? Did you get a promotion, start a new job or company? Take an amazing adventure? Did you graduate (again) or have a special event happen in your life? Please share your updates and pictures with CNS_BMB@mail.colostate.edu – your news may appear in an upcoming BMB newsletter!

Support the Department

Your support of the department is incredibly valuable. Please consider making a difference to today's students, faculty, facilities, and programs at whatever level is right for you. Thank you!

For more information on giving, please contact Simone Clasen, Associate Vice President of Philanthropic Operations.

College of Natural Sciences
1801 Campus Delivery
Fort Collins, CO 80523-1801
Phone: (970) 491-0997 | Mobile: (970) 214-9938
simone.clasen@colostate.edu
www.natsci.colostate.edu

GIVE
NOW

STATE YOUR PURPOSE

• THE CAMPAIGN FOR COLORADO STATE UNIVERSITY •



Colorado State University

An equal access and equal opportunity university