

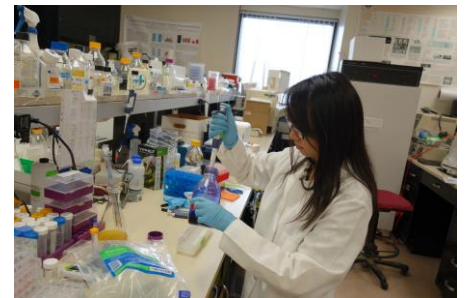
October 2017

IN THIS ISSUE

A Message from the Chair

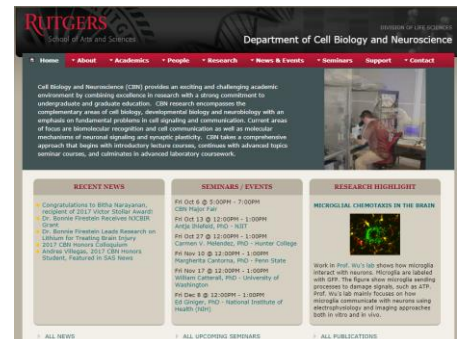
Welcome to the Fall issue of the Department of Cell Biology and Neuroscience (CBN) newsletter. This is an exciting time for CBN and we would like to keep you, our current and former students, trainees and faculty updated on the department. In this newsletter, we have included a feature on one of our newest faculty members, a detailed history of the department from the formation of Rutgers University to the current, as well as news about recipients of a new CBN undergraduate award, through a newly established Auerbach Academic Achievement Awards endowment. The featured faculty, Dr. Wei Dai is a structural biologist specializing in the use of cutting edge cryo-electron microscopy, a research area that was just honored by the Nobel committee. We are excited to have the opportunity to share current progress in the department towards our research and teaching missions with you through this newsletter. Best wishes for the semester.

With warm regards,



History of the CBN Department

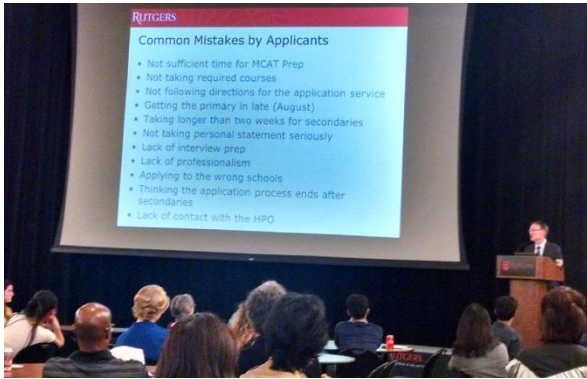
Learn more about the CBN Department and how it came to be today! Page 3



We're Getting a New Website!

Keep an eye out for our new website! We are in the process of migrating over and expect to have our new website soon.

RECENT NEWS



CBN Major Fair

We recently held our first annual CBN Major Fair on October 6th, for students who are interested in CBN and are already majoring in CBN. The event introduced the CBN major and also explored career opportunities for majors. Representatives from CBN, the Health Professions Office (HPO), Career Services, as well as CBN student organizations – RU WINS (RU Women in Neuroscience), RU Brain Society, and the CBN Student Society.



2017 FALL SEMINAR SERIES

Join us for our 2017 Fall Seminar Series!

September 8th 3PM: Qian Cai, Rutgers University

September 15th 3PM: Kelvin Kwan, Rutgers University

October 13th 12PM: Antje Ihlefeld, NJIT

October 27th 12PM: Carmen V. Melendez, Hunter College

November 10th 12PM: Margherita Cantorna, Penn State

November 17th 12PM: William Catterall, University of Washington

All are held in Nelson D406, Open to all.
For more details, visit us at cbn.rutgers.edu.

Faculty Feature

Q & A with Wei Dai, PhD

Dr. Dai carried out her graduate studies at Baylor College of Medicine, and worked as a postdoctoral associate at the National Center for Macromolecular Imaging for six years before joining Rutgers. She has been instrumental in establishing the first cryo-electron microscopy and tomography facility at Rutgers.



How did you become interested in science?

Growing up, I performed well on subjects like mathematics, physics, and biology. I like to view the world through curious eyes and I always wanted to know, “why?” As I went through college and had exposure to the various fields, I discovered structural biology. It’s cool! I love that we can see a protein and, from that, understand something about how it works.

As a student did you do undergraduate research?

Yes! As a junior in college, I was fortunate to participate in a project initiated by Dr. Yunlong Zhou, a distinguished professor at Department of Plant Science, Beijing Normal University, to study hormones secreted by a moss strain. It took us two years to quantify and characterize the functional roles of the secreted hormones. The results of this project were published before I graduated.

What are you researching?

We use cutting edge imaging tools (cryo-electron microscopy and correlative light/electron microscopy) to visualize in 3D protein aggregates that cause Huntington’s Disease. We can see how the machinery inside the cell is affected by this pathogenic protein. Structures of intracellular macromolecular complexes are usually heterogeneous and dynamic, functioning through interactions with other cellular components. In our research, we study the structures directly when they are inside the cell. By this way, we resolve the structure without artificial manipulations. We can capture snapshots of the complex in action, and the results often provide information on cross-talk of the complexes with their cellular partners during disease pathogenesis.

What do you like about being at Rutgers?

The list is long, but these are the top three:

1. Rutgers has a long-standing tradition of excellence in structural and computational biology. It is the home of the RCSB Protein Data Bank, and a member of EMDatabank.
2. I am surrounded by colleagues with active research in cell biology, neuroscience, cancer research, immunology, et al. - a rich network for collaboration.
3. Brilliant and hard-working undergraduate and graduate students.

The History of the Department of Cell Biology and Neuroscience

By Kathleen Scott, PhD.

The Department of Cell Biology and Neuroscience has its origins in a long tradition of research and teaching in the biological sciences that began in the early days of Rutgers College, as Queens College was renamed in 1825. The first evidence of formal study of the biological sciences at Rutgers was in 1830, when [Lewis Caleb Beck](#), a noted botanist and chemist, was appointed Professor of Chemistry and Natural History (Cole, 1962). It is not clear exactly what courses Dr. Beck taught, but they likely included some human physiology and botany. He probably taught in [Van Nest Hall](#), which was built in 1847, and included a laboratory for Dr. Beck's classes and Museum (Cole, 1962). Following Dr. Beck's death in 1853, he was replaced as Professor of Chemistry and Natural Sciences by [George H. Cook](#).

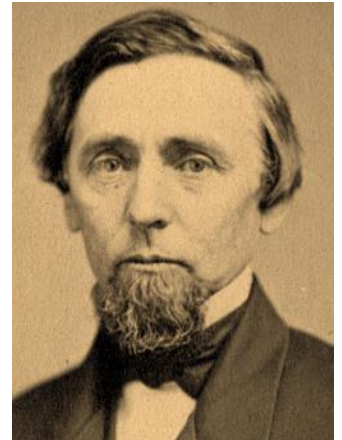
The later part of the nineteenth century was a time of growth in the sciences and marked by two significant events for the biological sciences at Rutgers: the appointment of [Julius Nelson](#) as professor, and the appearance of the first course of study that could be considered a biology "major" in the catalogue of 1888-89. The four-year "course" in biology included such subjects as invertebrate zoology, agricultural zoology and botany, and osteology (Cole, 1962). Over the next two decades, course offerings in "biology" continued to grow, adding such areas as bacteriology and neural physiology and biochemistry, following the rapid expansion of biological knowledge (Cole, 1962). This growth continued into the early 20th century, with the 1919 catalogue showing 37 different courses in biology. By the late 1920's, Rutgers College had four departments in the life sciences: Bacteriology (later Microbiology), Botany, Physiology and Biochemistry, and Zoology.

In the years following, the departments continued to grow, and the Department of Physiology and Biochemistry split to form two separate departments as those areas diversified and became more complex. As the life sciences expanded and diversified, the faculty in the

departments began to discuss reorganization and possibly consolidation of the life sciences departments in New Brunswick. During this period the departments offered a diverse series of courses, many of which our students would recognize today.

Under the leadership of [Edward Bloustein](#) in the 1970s, discussions concerning reorganization and consolidation of the faculties of the separate colleges (Rutgers, Douglass, and Livingston) took place across campus. The decision was ultimately made to create a Department of Biological Sciences as part of the consolidated Faculty of Arts and Sciences formed in 1981. The new department of Biological Sciences brought together tremendous research strength in cell biology and neuroscience, genetics, and ecology and evolution. During the next decade, as these research foci solidified and grew, department members again began to discuss reorganization along disciplinary lines and in 1998, the department adopted the name [Cell Biology and Neuroscience](#).

The Department of Cell Biology and Neuroscience brought together faculty with research interests in cell biology and neuroscience who had formerly been in the Rutgers College Departments of Zoology, Botany, and Physiology, the Livingston Biology Department, and the Douglass Biology Department. These research foci have continued to grow, and today the department includes 32 faculty and research faculty. The department offers a major in cell biology and neuroscience, as well as a wide range of elective courses taken by majors across the life sciences, including immunology, systems physiology and histology.



George H. Cook – an early Professor of Chemistry and Natural Sciences at Rutgers



Richard Swann Lull, the first Rutgers biology major, who went on to have a distinguished career as a paleontologist at Yale .

For the full version of the article, visit www.cbn.rutgers.edu.

References

- Cole, William H. Biology at Rutgers. Address presented at the dedication of Nelson Biology Laboratory, 1962. [Leslie Stauber papers](#), Rutgers University Archives.
- [Our History: How George H. Cook Shaped Rutgers.](#)
- [A Historical Sketch of Rutgers University.](#)
- [Guide to the Leslie A. Stauber Papers, 1927-1973](#), David L. Chadbourne, Shelley A. Myer, and Caryn Radick, March, 2004, Special Collections and University Archives, Rutgers University Libraries.

Auerbach Academic Achievement Award

The Department of Cell Biology and Neuroscience is pleased to announce the Auerbach Academic Achievement Award. Named in honor of Professor Sidney Auerbach, this award recognizes CBN seniors with an exemplary academic record. Dr. Auerbach was a Professor and Academic Advisor who played a valuable role working with CBN students for many years. Professor Auerbach retired in 2017.

In the graduating class of 2017, there were eight recipients of the Auerbach Academic Achievement Award: Juhi Farooqui, Anna Chen, Parth K. Patel, Miloni Parekh, Avery Lee, Ethan Bloomer, Michael Boateng, and Clare Cutri-French. All eight of these students graduated with an impressive cumulative GPA of 4.0.

The Auerbach Academic Achievement award is the first benefit of the new CBN Awards Fund. This fund will support academic awards and scholarships for CBN students' education, particularly those with distinguished academic records, as well as awards recognizing exemplary research accomplishments by CBN faculty. Professors Mike Kiledjian, Ron Hart, Wise Young, and Patricia Morton established the CBN Awards Fund with initial donations reaching more than 50% of our goal.



Your donations to the CBN Awards Fund will help to recognize our outstanding students and provide support for leading biomedical research accomplishments.



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