

Systems Biology Concentration

Multidisciplinary Research: Interface of Biology, Physics, Chemistry, Biophysics, Mathematics, CS&E.

Modeling & Simulation

Data Driven Analysis and Simulation
Modularity and Multistate Complexes
Modeling cellular processes in space and time; Agent-based Modeling
Stochastic Modeling and Discrete Particles

PIs: *Blinov, Cowan, Loew, Mendes, Moraru, Slepchenko, Vera-Licona*

Optical Imaging

Virtual Microscopy; Fluorescent Correlation Spectroscopy;
Optical Probe Development
Non-linear Optical Microscopy
Single Molecule Imaging

PIs: *Acker, Cowan, Mayer, Mohler, Loew, Rodionov, Wu, Yan, Yu, Carson** (emeritus)

Experiment

Analysis

Theory

Computer Science

Omics analysis

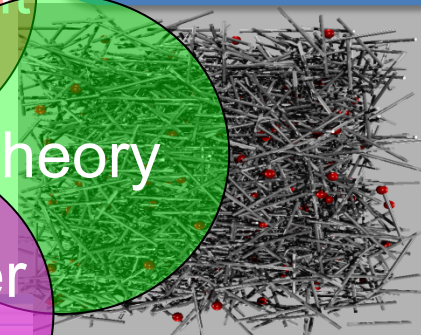
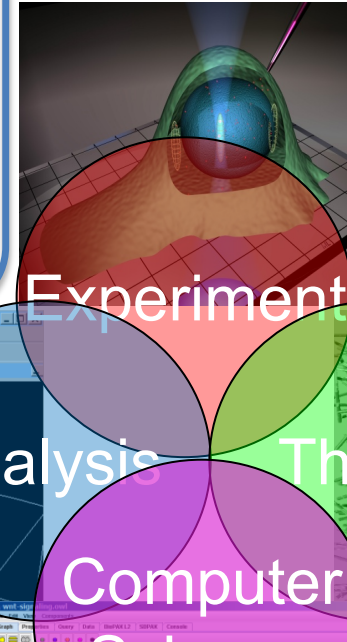
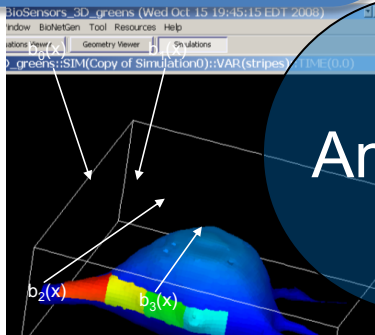
Pathway Analysis; Gene regulatory Networks; Gene expression & Proteomics analysis; Large scale modeling; Molecular Medicine

PIs: *Blinov, Kshitiz, Mendes, Moraru, Vera-Licona*

Cell Biology & Biophysics

Signal Transduction; Biological Signaling Platforms; Single Molecule and Particle Tracking; Cytoskeletal Dynamics and Morphogenesis

PIs: *Cowan, Kshitiz, Loew, Mayer, Mohler, Rodionov, Wu, Yu, Carson**



Systems Biology Area of Concentration:

- ✓ Multidisciplinary Faculty
- ✓ Multi-mentor graduate training
- ✓ Special courses:
 - Introduction to Systems Biology
 - Optical Microscopy and Bioimaging
 - CAM Journal Club/Research in Progress
- ✓ Located in a new state-of-the-art facility (R&D Magazine's "Renovated Lab of the Year 2011")
- ✓ Shares facility with Genetics AoC & Technology Incubator.



Cell Analysis and Modeling Center (CCAM): <https://health.uconn.edu/cell-analysis-modeling/>

Center for Quantitative Medicine (CQM): <https://health.uconn.edu/quantitative-medicine/>

AoC: <http://health.uconn.edu/graduate-school/academics/programs/ph-d-biomedical-science/cell-analysis-and-modeling-graduate-program/>

Program Director: Dr. Michael Blinov (blinov@uchc.edu). Associate Director: Dr. Yi Wu (yiwu@uchc.edu)

Skeletal Biology & Regeneration

Area of Concentration

UConn Health

Biomedical Sciences PhD Program

What you should know about our program

- An area of concentration within the Biomedical Sciences PhD Program
- Explores the cellular, molecular and genetic processes related to skeletal development, skeletal diseases, injuries and their regeneration
- A highly multi-disciplinary program that includes over 25 research labs at UCONN
- A vibrant educational environment that includes scientific symposia, seminar series, social events, and opportunities for outreach

Research Areas

Stem Cells
Cartilage and Bone Differentiation
Osteoporosis
Bone Remodeling
Bone Fracture Repair
Biomaterials
Scaffold Design
Osteoarthritis
Biomechanics
Aging
Limb and Craniofacial Development
Oral Infection and Biofilms
Osteosarcoma and Endocrine Tumors
Drug and Stem Cell Delivery
Rare Skeletal Diseases

To Learn More About Our Program Please Visit:

<http://health.uconn.edu/graduate-school/academics/programs/ph-d-biomedical-science/skeletal-biology-and-regeneration/>

Welcome

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On behalf of the faculty representing the **Skeletal Biology & Regeneration Program**, we would like to welcome you to the UCONN Health Open House.

It's a very exciting time to be in the field of skeletal biology and tissue regeneration. Scientific breakthroughs in a variety of disciplines such as, stem cell biology, genomics, imaging, and tissue engineering have truly revolutionized our understanding of the human skeleton.

A common misconception of visiting students regarding our program is the belief that a background in skeletal biology is needed for entering our program. In reality, we view students educated and trained outside our immediate field as a strength.

Laboratories in *Skeletal Biology and Regeneration* work in human, mouse and zebra fish systems; study transcriptional, post-transcriptional and epigenetic mechanisms regulating gene expression; utilize mouse and iPSC models of human diseases; use novel biomaterials to facilitate drug delivery and defect repair.

All students interested in the Skeletal Biology and Regeneration Area of Concentration must first be accepted into the Biomedical Science PhD graduate program. Once accepted, you will rotate through various laboratories to help you decide on a lab and thesis advisor for your PhD work.

The link for the application is:

http://grad.uhc.edu/prospective/programs/phd_biosci/apply.html

Please contact us if you have any questions about our program. We look forward to meeting you!

Archana Sanjay, PhD
asanjay@uchc.edu
Director of Skeletal Biology & Regeneration

Rosa Guzzo, PhD
guzzo@uchc.edu
Associate Director of Skeletal Biology & Regeneration

The **Neuroscience Graduate Program** at the **University of Connecticut School of Medicine** is an interdisciplinary and inter-departmental program with over 25 faculty members. Research in the program is aimed at understanding the development, organization, function, and dysfunction of the nervous system at the molecular, cellular, systems, and whole animal levels.

Contact Us

Neuroscience Graduate Program

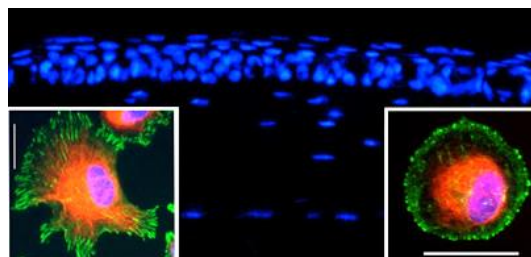
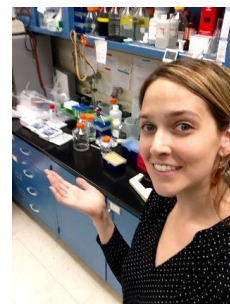
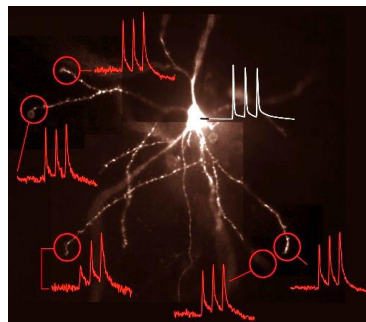
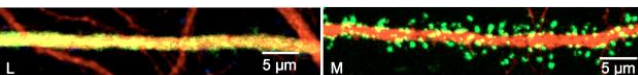
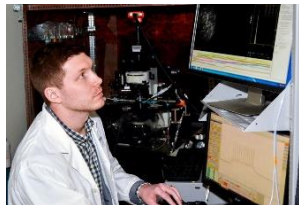
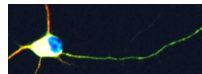
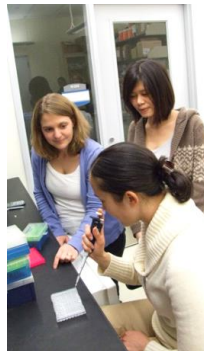
<https://health.uconn.edu/neuroscience>

Program Director: Eric Levine, Ph.D.
eslevine@uchc.edu

Associate Director: Stephen Crocker, Ph.D.
crocker@uchc.edu

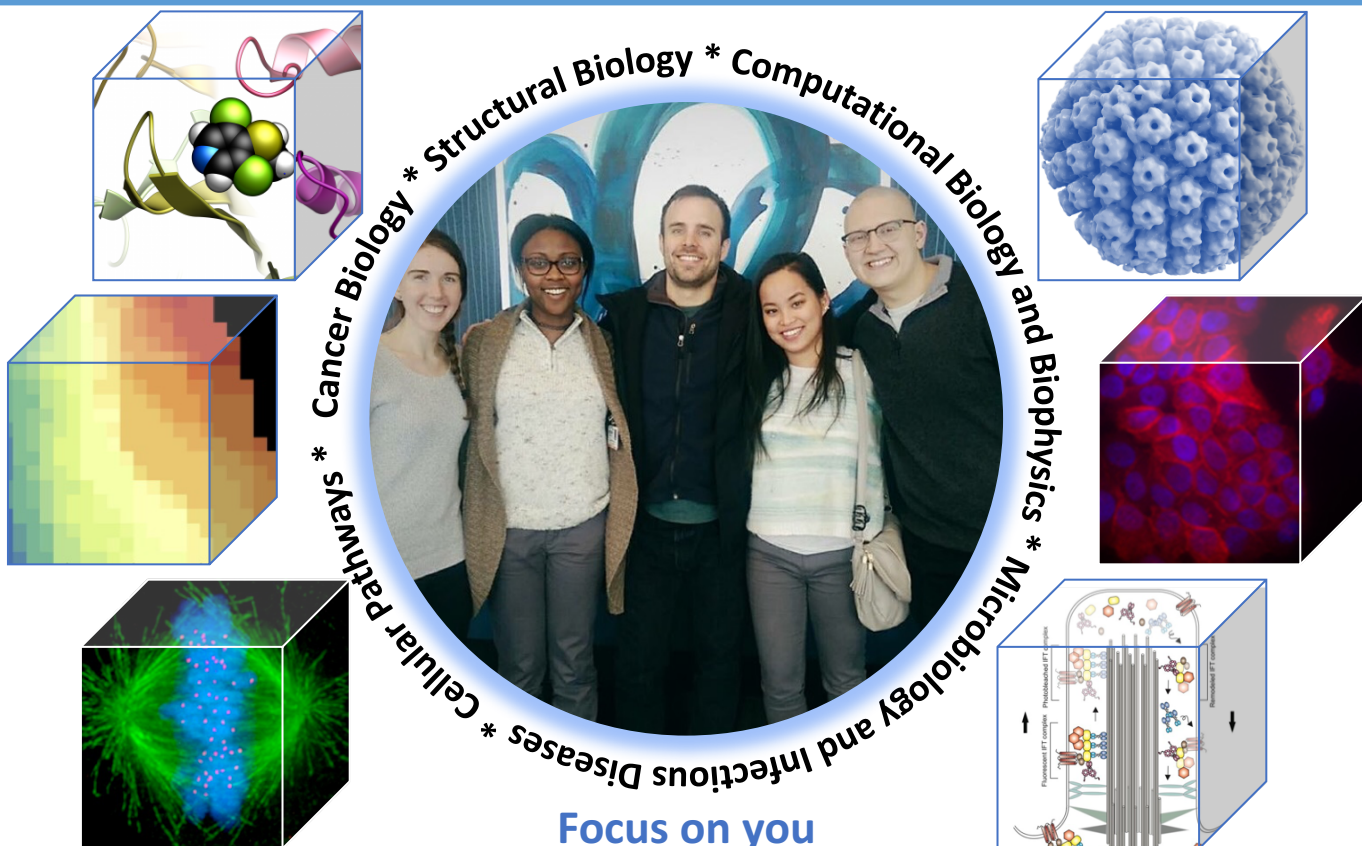
Faculty research interests include:

- Development of neural tissue
- Synaptic integration and plasticity
- Organization of sensory systems
- Injury repair in the visual system
- Regeneration and transplantation
- Neurobiology of Alzheimer's disease
- Glial-neuronal interactions
- Human stem cells models of autism



Molecular Biology and Biochemistry Graduate Program

Students interested in understanding the molecular mechanisms that underlie human disease will find a home in the Molecular Biology and Biochemistry (MBB) Graduate Program. From cancer to host-pathogen interactions, our students study the proteins and pathways involved with an eye toward improving disease diagnosis, prevention and treatment. MBB students are affiliated with the Department of Molecular Biology and Biophysics, which provides a rigorous, yet supportive community of faculty, students and staff to guide them through the Ph.D. degree process.



Focus on you

The primary goal of the MBB Graduate Program is to train students for the broad range of careers available in biomedical science. Whether you pursue a career in academic research, biomedical industry, teaching, government or any of the other careers now available to Ph.D. scientists in biomedical science, we attempt to prepare you with a solid base of knowledge, critical thinking skills and the confidence in your abilities to be successful.

Structural Biology and Biophysics

Inira Bezsonova*
Wolfgang Peti*
Ann E. Cowan
Michael Gryk
Bing Hao*
Jianbin Ruan*

Cancer Biology

Christine Beck*
Irina Bezsonova*
Bing Hao*

Jeffrey Hoch*
Stephen M. King*
Dmitry Korzhnev*
Rebecca Page*
Adam Schuyler*

Computational Biology

Ann E. Cowan
Michael Gryk
Hamid Eghbainia

Mentors

Microbiology and Infectious Diseases

Melissa Caimano*
Bing Hao*
Wendy Mok*
Rebecca Page*

Justin D. Radolf*
Peter Setlow
Sandra K. Weller*
Wolfgang Peti*

Cellular Pathways

Rebecca Page*
Wolfgang Peti*
Ann E. Cowan

Kimberly Dodge-Kafka*
Jianbin Ruan*
Stephen M. King*

More about us:
mbb.uhc.edu

UConn
HEALTH



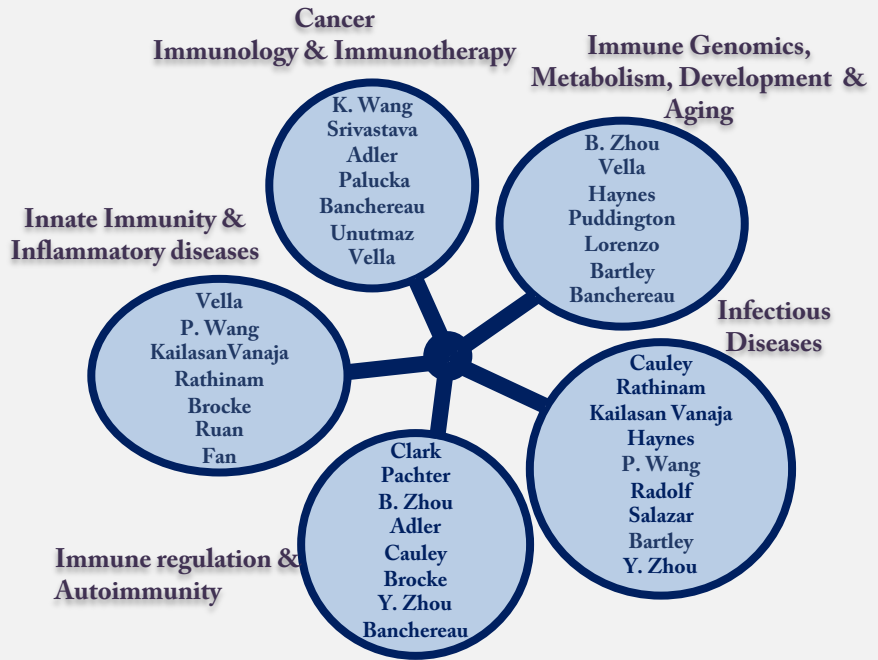
*currently accepting rotation students

IMMUNOLOGY GRADUATE PROGRAM (IGP)

Why IGP?

- ◆ Immunology is at the forefront of 21st century's approach to treat and control diseases including cancer.
- ◆ The mission of the Immunology Graduate Program is to train the next generation of basic and applied immunologist who will make significant contributions to 21st century medicine.
- ◆ The IGP has trained >120 students, who have secured postdoctoral fellowships in world-renowned laboratories, faculty positions at academic institutions and scientist positions in biomedical industry.

FACULTY AND RESEARCH INTERESTS



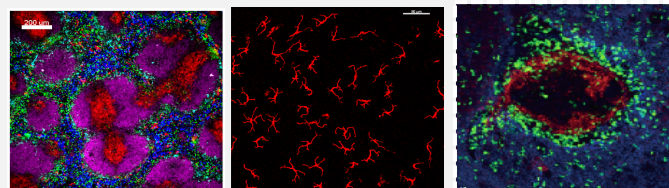
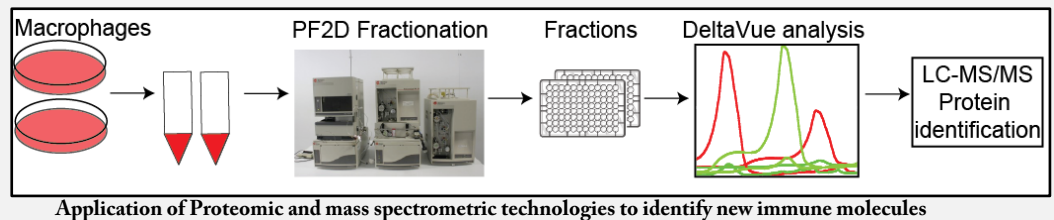
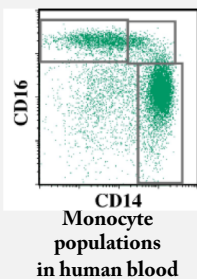
IGP has a vibrant research portfolio focusing on a diverse range of interrelated topics within the fields of infectious disease, autoimmunity and cancer biology.



IGP Retreat



Poster session at IGP Retreat



Confocal microscopic analysis of immune cells

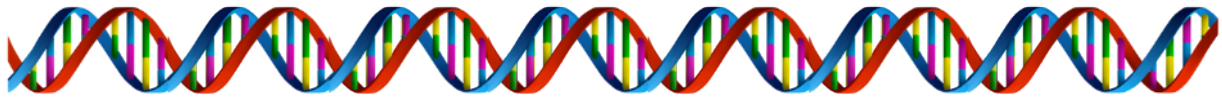
Contact information:

Director: Dr. Vijay Rathinam, D.V.M., P.h.D.
Associate Director: Dr. Adam Adler, Ph.D.

More info: <http://health.uconn.edu/immunology>

UConn HEALTH

UConn THE GRADUATE SCHOOL



Genetics and Developmental Biology

Area of Concentration



Director
Blanka Rogina, Ph.D.

rogina@uchc.edu, 860-679-8771



Associate Director
Justin Cotney, Ph.D.

cotney@uchc.edu, 860-679-8579



Assistant Director
Stefan Pinter, Ph.D.

spinter@uchc.edu, 860-679-3657

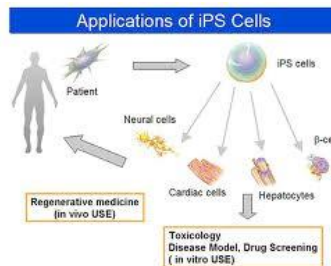
The Genetics and Developmental Biology area of concentration (GDB AoC) provides qualified students with fundamental interdisciplinary training in modern molecular genetics and developmental biology, emphasizing cellular and molecular aspects as well as tissue interactions. Areas of research include the mapping and cloning of human genes responsible for disease, RNA processing (including RNA editing, alternative splicing, antisense regulation, and RNA interference), the molecular mechanisms of aging, signal transduction pathways, microbial pathogenesis, developmental neurobiology, cell differentiation, musculoskeletal development, morphogenesis and pattern formation, reproductive biology and endocrinology. Faculty members are from several basic science and clinical departments and study a wide range of organisms including yeast, parasites, worms, fruit flies, birds, mice, zebrafish and humans. Students are encouraged to obtain in-depth training in molecular genetics and developmental biology. The GDB AoC prepares students to compete for job opportunities in traditional medical and dental school departments as well as a productive research career in either academia or industry.



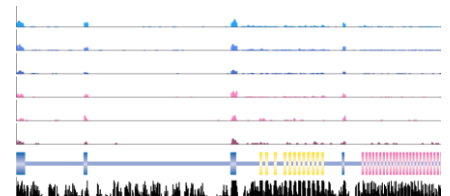
Diverse Model Systems



43 PhD Students
13 MD/PhD & 2 DMD/PhD candidates

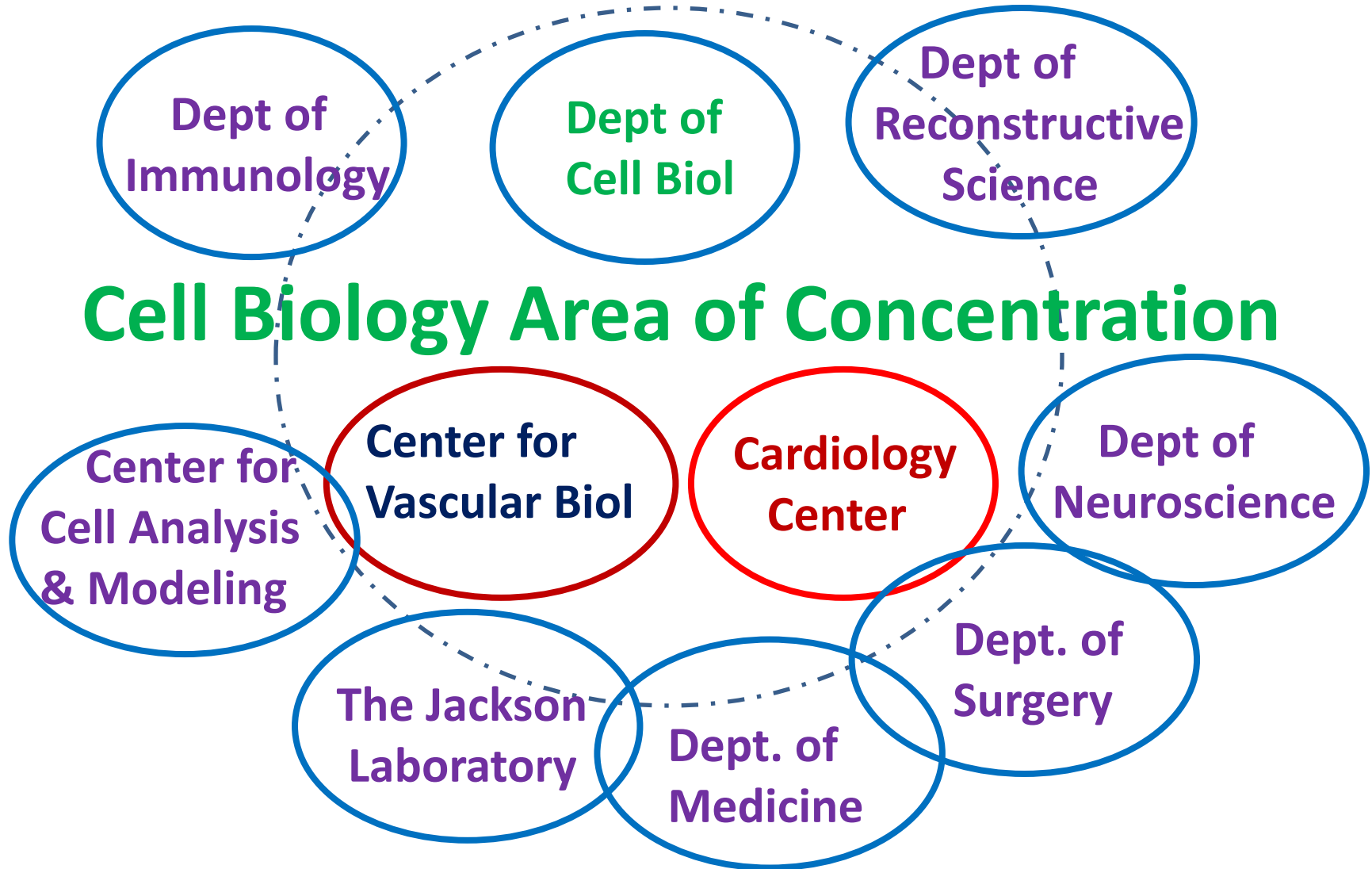


Stem Cell Research



Comprehensive Computational
Genomic Analysis

Where are Cell Biology Labs?



What do we offer?

**We offer a comprehensive training program leading to a PhD
In Biomedical Sciences with specialization in Cell Biology.**

Research Areas:

Cell Organelle

Cardiovascular Biology

Brain Injury & Repair

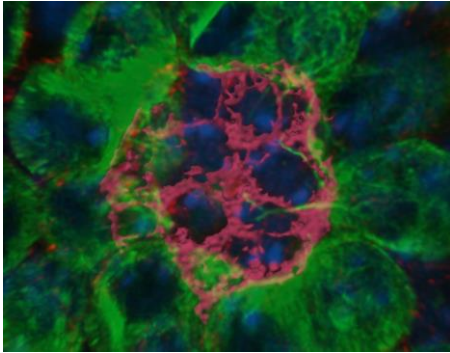
Stem Cell Biology

Cancer Biology

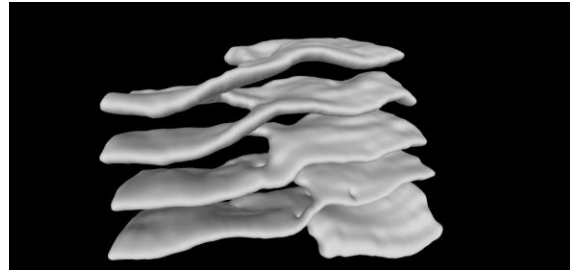
Signal Transduction

Reproductive Biology

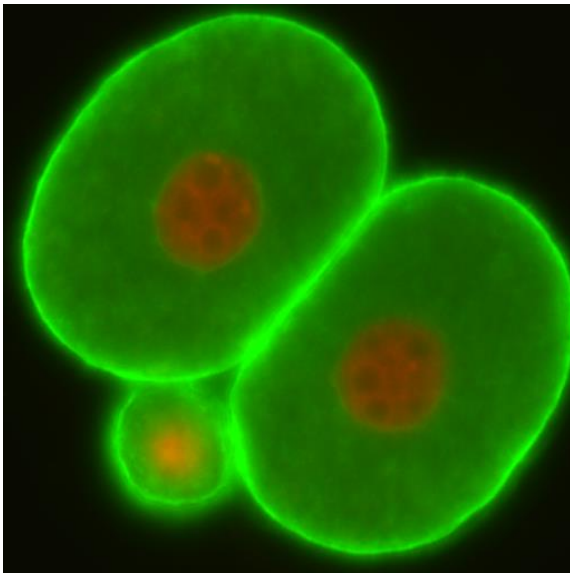
Computational Biology



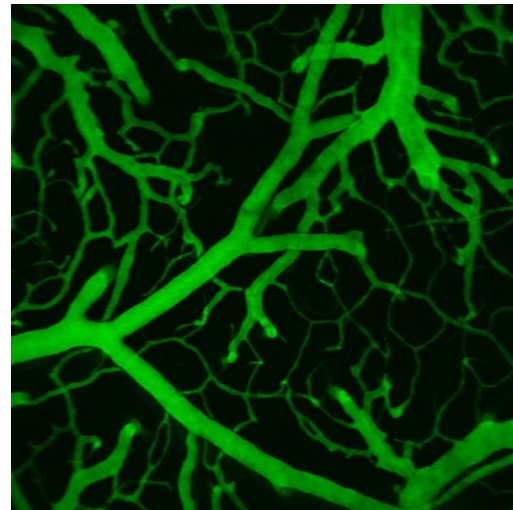
Signaling through nanotubes in Stem Cell Niche (Dr. Mayu Inaba's Lab)



"Car Garage" stack organization of the Golgi Apparatus (by Dr. Mark Terasaki)



Embryo in the making (by Dr. Lisa Mehlmann)



Brain Vasculature by Two-Photon Imaging