A word from the director

Welcome to the IMB Newsletter. Our aim is to reconnect with former students, faculty, and associates and bring you up to date on the latest developments and events in the Institute and the MOB Graduate Program.

Stay current by visiting our website at www.sb.fsu.edu for more information.

Please consider donating to the MOB Program so we can reward student excellence with a Kasha Memorial Fellowship Award.

Contact Dr. Peter Fajer at pfajer@fsu.edu for more information on how you can help to continue the rich educational tradition in the MOB Program.

In memoriam: Dr. Michael Kasha, 1920-2013

We are sad to report the death of Dr. Michael Kasha. His influence and importance continues, around the world and at Florida State University. In 1959, Kasha founded the Institute of Molecular Biophysics with an Atomic Energy Commission grant and oversaw the construction of the building, which was renamed the Kasha Laboratory Building in 2001.

Kasha worked tirelessly during his career to promote interdisciplinary and collaborative research among scientists with expertise in different areas. He helped create a place for faculty and students to explore the cutting edge of research in a state-of-the-art facility, which continues to serve as a model for the development of other interdisciplinary programs.

In April of 2014, a celebration of Kasha’s life was held at FSU, attended by family, former students, post-docs, and colleagues.

Kasha’s son and grandson’s musical concert featuring the Kasha guitar were a highlight of the evening. Video and photos of the event are posted on our website, (www.sb.fsu.edu/michael-kasha/)
Focus on faculty: Dr. Beth Stroupe

Dr. Elizabeth Stroupe, an assistant professor in the Department of Biological Sciences, and MOB faculty member, won a five-year NSF Faculty Early Career Development Award. Also known as a CAREER Award, this totals $997,000 to advance her research into what the “Structure and Function of Sulfite Reductase Teach About Fundamental Biology.”

“Specifically, we are interested in a protein molecule called sulfite reductase, which is involved in transforming the element sulfur into the form that can be used by organisms to build molecules and create energy,” Stroupe said.

Using Florida State’s state-of-the-art Titan Krios electron microscope — one of about 20 in North America and Europe — Stroupe is able to take pictures of the components inside cells and to reconstruct the shapes and structures in three dimensions to hypothesize about how they function.

Stroupe was also awarded the FSU 2014 Undergraduate Research Mentor Award with a stipend of $2000 to recognize her commitment to undergraduate research.

MOB welcomes back Lyn Kittle

Lyn Kittle returned to IMB in Dec. 2011, resuming the same job she held in 1996 as academic coordinator for the MOB Program. Her association with IMB goes way back as she worked in labs in both IMB and Chemistry for many years prior to taking on the coordinator position. She works with current MOB Director Dr. Hong Li to continue improving the graduate program.

As the organizer of the first Kasha Award in 1995, she is happy to see that the tradition continues. Kittle enjoys supporting all MOB students and assisting new ones get oriented to Tallahassee, so the transition to their lives as grad students goes as smoothly as possible.

She was also part of the team that designed and created the new IMB website. She is very pleased to be back, among old friends and new, dispensing chocolate to those in need.

Kittle was recently awarded the 2014 Exemplary Employee Award for Student Services, given to one FSU employee each year. Congratulations for this well deserved recognition.

Introducing our newest MOB students

New students participate in a Core Facilities Workshop before classes start. With hands-on lessons in x-ray crystallography, physical biochemistry, protein expression and computational labs, these students are ready to start rotating through labs of interest knowing the basic techniques needed for research.

Karen Corbett
B.S. Chemistry, James Madison University, Harrisonburg, VA

Joe Pennington
B.S. Cell Biology/Biochemistry, University of Maryland

Archishman Ghosh
B.S. Chemistry, Univ. of Calcutta M.S. Biochemistry, Univ. of Calcutta

Joining us in Fall 2014

Souparno Adhikary
B.S. Zoology, Presidents College, Calcutta M.S. Biochemistry, Univ. of Calcutta

Daniel Blackman
B.S. Biochemistry & Physics Edinboro University, Pennsylvania M.S. Biomedical Engineering, Cornell

Travis Hand
B.S. Biology University of Texas at Tyler
Kasha Award and Seminar

Starting in 1995, the Kasha Award has been given annually to an MOB student to recognize and stimulate research and to promote quality scientific writing. The award is named after the late Dr. Michael Kasha, Distinguished University Professor and founder of the Institute of Molecular Biophysics. All MOB students who are primary authors on a published paper in the prior two years are eligible to be nominated by their major professor for the award. Winners are selected by a committee and receive a monetary prize along with having their name on a plaque in the IMB lobby.

This award recognizes excellence in our current students but also highlights the research of one of our alumni as an invited speaker.

2014 Kasha Seminar speaker:
Dr. Randal Ketchem
1995 MOB graduate & 1996 winner of the Kasha Award

Dr. Randal Ketchem was a member of the Tim Cross lab at FSU and is currently a Scientific Director in Biologics within Therapeutic Discovery at Amgen, located at the Seattle campus. He leads the Protein and Antibody Optimization group, which is primarily responsible for protein-based therapeutic design, engineering and optimization. This level of engagement on early research and therapeutic development allows Ketchem to collaborate across many disciplines, from discovery and early lead development to therapeutic development across multiple biological disciplines to manufacturability assessment and even into the clinic. His work has resulted in multiple publications and patents, all with the ultimate goal to treat and cure grievous illness.

This year’s Kasha Award was won by Alexis Cocozaki for his paper “Structure of the Cmr2 subunit of the CRISPR-Cas RNA silencing complex” Structure. 2012 Mar 7;20(3):545-53. doi: 10.1016/j.str.2012.01.018.

Cocozaki was a student of Dr. Hong Li. He graduated in 2013 and is now a post-doc at AstraZeneca Pharmaceutical Co. in Boston.

Moving on—2013 & 2014 MOB graduates

Left to right: Kerem Bingol, Ohio State University (Rafael Bruschweiler); Myriam Badr, Rutgers University (Bryant Chase); Nancy Ramia, University of Massachusetts Medical School (Hong Li); Alexis Cocozaki, AstraZeneca Pharmaceutical Co. (Hong Li); Nabanita Das, University of Colorado Medical School (Tim Cross); Dylan Murray, National Institutes of Health (Tim Cross).

We wish our friends well and urge them and all alumni to keep in touch.
I N S T I T U T E  O F  M O L E C U L A R  B I O P H Y S I C S

Highlighting MOB student achievements

Liam Longo studies protein folding and design in the Michael Blaber Lab at the Florida State College of Medicine. In 2013, his work was awarded the Protein Science Best Paper Award, the Kasha Award for Best Paper, and received a recommendation by the Faculty of 1000 as being of “outstanding” importance.

Longo has represented FSU and the MOB program as an invited speaker at the 2013 Annual Symposium of the Protein Society and on Capitol Hill as a student advocate for the American Society for Biochemistry and Molecular Biology urging congressional representatives to increased funding for the NIH and NSF. To date, Longo has first-authored six papers and is included as a co-author on three papers. He is looking forward to continuing his career in the field of computational protein design.

Hanaa Hariri is a fifth-year student in Dr. Scott Stagg’s lab. Her research focuses on solving the structure of COPII coated vesicles using cryogenic electron microscopy. She has won several awards for presentations on her research. Hariri has also distinguished herself for her leadership of the FSU chapter of Graduate Women in Science (GWIS) organization. An article by Hariri, “Can Women in Science Live Happily Ever After?”, was published in the American Society for Cell Biology Post and named as one of their top five articles of 2013.

New MOB student Karen Corbett was a 2012 winner of a prestigious Goldwater Scholarship as an undergraduate and is now a member of Dr. Wei Yang’s lab conducting free energy simulations of biomolecules. Current projects include simulating enzymatic reactions and determining the pKa of internal residues using the orthogonal space random walk and the on-the-path random walk sampling schemes.

Q. What’s at the end of an FSU rainbow?
A. Garnet and Gold, of course!

For a long time Austin Schwartz knew that he wanted to pursue both a PhD in Molecular Biophysics and an MBA. He just needed to find the right place to do so. After interviewing at many schools, he decided that FSU was the university where he could best pursue his goals. Schwartz has always wanted to pursue research and create something novel in the laboratory, and ultimately start his own company.

After enrolling in the MOB program, he worked with the program chair and dean of the graduate school so that he could become enrolled in the MBA program. With the support of the university, MOB program, and his research advisor Dr. Debi Fadool, he is the first student at FSU to pursue both a PhD and an MBA at the same time.

Schwartz was awarded a $1500 grant in June 2014 from the Bryan Robinson Memorial Endowment for the Neurosciences of the Tallahassee Memorial Hospital Foundation for his research proposal “Magnetic Targeting to the Olfactory Bulb as a Modulator of Metabolism.”
Spotlight on IMB core facility: X-Ray Facility

The X-ray Crystallography Facility provides training, assistance, and expertise for crystallizing and determining three-dimensional structures of macromolecules using in-house x-ray diffractometers. Equipment includes Rigaku rotating anode generators, R-Axis IV++ and marCCD detectors, Oxford Cryocoolers, and crystallization chambers. In June 2014 the FSU Office of Research awarded IMB researchers $49,000 to acquire an ARI Crystal Gryphon Robot, an automated liquid handler.

XRF provides access to the third-generation synchrotron x-rays at SER-CAT beamline 22 in the Advanced Photon Source at Argonne Lab for remote x-ray data collection and processing.

Dr. Hong Li, a frequent user of the facility says, “We are very pleased with the state-of-the-art equipment and dedicated staff that contributes to the success of our students and research projects.”

2014 Caspar Lecture - Dr. Xiaowei Zhuang

We were pleased to host Dr. Xiaowei Zhuang of Harvard University and a member of the National Academy of Sciences for the annual Donald L.D. Caspar Lecture.

The title of her lecture was “Bioimaging at the nanoscale—Single-molecule and super resolution fluorescence microscopy.”

A rare Steuben Octron glass sculpture was presented to Dr. Zhuang by Dr. Caspar, also a member of the National Academy. The sculpture by Lloyd Atkins is a truncated tetrahedron. An image of an icosahedron (an object with 532 symmetry), formed from internal reflection of the triangular faces, appears on viewing a hexagonal face of the object.

IMB News & Updates

Dr. Wei Yang (MOB / Chemistry & Biochemistry) won an FSU 2013 Developing Scholar Award, given to mid-career associate professors who have been singled out by their peers for recognition. In 2014, Yang, with his collaborator, Dr. Liangqing Zheng (IMB), got a top performance in the blind test competition on a receptor-ligand binding prediction challenge with their orthogonal space tempering algorithm.

Welcome to Dr. Huan He. She is a mass spectrometry expert and will be facilitating our usage of the instruments in the College of Medicine.

Regina Ware, IMB office manager, won the 2013 FSU Exemplary Service Award and was a finalist for the 2013 Gabor Superior Accomplishment Award.

Ed Kirkland has retired after 19 years as the Institute’s Technical/Research Designer & Master Jack-of-all-Trades. A party in his honor at the home of Dr. Tim Logan brought together many people to wish him well. His humor, good cheer, and excellent woodworking skills are greatly missed.

Congratulations to Dr. Scott Stagg, (MOB / Chemistry & Biochemistry) on his promotion to Associate Professor with tenure. Stagg’s research uses three-dimensional electron microscopy to determine the structures of large biological molecules.

Dr. Claudius Mundoma, director of the IMB Physical Biochemistry Core Facility, has been awarded a Carnegie African Diaspora Fellowship by the Carnegie Corp. of New York to collaborate with the University of Johannesburg to develop integrated core facilities.

Dan Stibling conducts research in computational chemistry in Dr. Wei Yang’s lab. In 2012 he received a prestigious Goldwater Scholarship, awarded to the nation’s brightest college sophomores and juniors in STEM fields. Following his graduation with a BS Honors degree in Chemistry from FSU in 2014, he is now working on a second degree in Computational Biology at FSU.

Dr. Richard Bertram’s (MOB / Mathematics / Neuroscience) computational group works with experimental labs in a range of areas including neuroscience, endocrinology, and neuroendocrinology. He runs his own experimental lab that performs in vivo and in vitro studies on regulated hormone secretion in which experiments are largely guided by mathematical models. Bertram serves on the editorial board of Biophysical Journal, the official journal of the Biophysical Society.

Dr. Kenneth Taylor is winding down his work with Dr. Ken Roux on the structure of the Env spikes on HIV and SIV and starting a collaboration with Dr. John Trinick on the structure of the Z-disk of striated muscle. He has served recently on a pair of NIGMS Council advisory panels reviewing the Protein Structure Initiative and the program on the Structural Biology of Aids.
Check out the new IMB website!

WWW.SB.FSU.EDU

The new website was launched in early Fall 2013 and is filled with up-to-date information about the faculty, staff, postdocs, and students of IMB.

Learn about the MOB Graduate Program, current events, seminars, awards, news, and more.

The photo archives are extensive, and you just might find yourself in a few pictures!