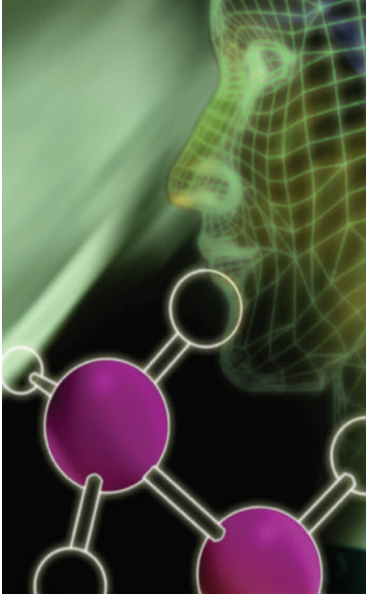




Molecules to Mankind: "Connecting lab and population sciences to create a new kind of biomedical scientist"

M2M Connection



DR. KENNETH BRIGHAM, M2M FOUNDER AND DIRECTOR, RETIRES FROM EMORY



Ken Brigham, MD, Retires on Sept 1, 2012

Dr. Kenneth Brigham retired from Emory University in September. Dr. Brigham not only served as Director of M2M, but also devoted ten years of faithful service to Emory University as Vice President for Predictive Health and Director of the Center for Health Discovery and Professor in the School of Medicine.

Dr. Ken Brigham's vision to tie in lab and population sciences

In 2007, the Burroughs Wellcome Fund announced a new institutional training award designed to stimulate new connections between the population and lab sciences to provide support for graduate training at schools in the U.S. Dr. Brigham answered the call by developing a proposal which was awarded in 2009 entitled: Human Health: Molecules to Mankind.

About his experiences as Director of M2M, Dr. Brigham comments, "I had the distinct privilege to work with an intimidatingly brilliant group of faculty in developing the M2M program a few years back. The concept of bridging laboratory and population sciences excited several of us but I don't think we anticipated what a bright and interesting group of students such a program would attract. For me it was the interactions with a diverse group of core faculty and students who were anxious to think beyond disciplinary borders. The program has flourished. The support of Dean Tedesco has been constant and crucial to the program's success. I am personally richer for the experience, as I believe are the other involved faculty and the students. The generosity of the Burroughs Wellcome Foundation made it possible to get the program off the ground, and its continued success is inevitable given the commitment of the faculty and Dean Tedesco and the incredible success of the students. It feels very good to leave the leadership in the hands of Nael McCarty and Julie Gazmararian. I am honored to have had the opportunity to be a part of this unique and *avant garde* graduate educational program".

Dr. Brigham Co-Authors New Book

Dr. Brigham, along with Dr. Michael M.E. Johns, who also retired from Emory, co-authored a new

book entitled, "Predictive Health: How We Can Reinvent Medicine To Extend Our Best Years". Their book hit the bookstores in hard copy in October 2012. The M2M program sponsored a book signing and book review session for Dr. Brigham and Dr. Johns in early October at an M2M 700 class. *Read more about Dr. Brigham at kenbrigham.com*

Looking toward the future DR. NAEL MCCARTY NOW LEADS M2M

Effective September 1, Dr. Nael McCarty assumed his new role as Director and M2M 700 faculty instructor for the program. For the past few years, he has served as track leader for the M2M Predictive Health Track. Dr. Julie Gazmararian, co-Director of M2M expresses, "I am looking forward to working closely with Nael McCarty as we seek continued support to sustain and develop the M2M program. His leadership and vision will further strengthen our program." Dr. McCarty is Marcus Professor of Cystic Fibrosis (CF); Associate Professor and Senior CF Scientist, Division of Pulmonology, Allergy/Immunology, CF, and Sleep; and Director, Emory+Children's Center for Cystic Fibrosis Research. He was also chosen Research Mentor of the Year 2011 by the Department of Pediatrics, School of Medicine.



"I am very excited about taking on the job of Director of the M2M program, following Ken Brigham's retirement. The program represents a brilliant vision of where transdisciplinary, transformational graduate education in biomedical sciences should be going over the next decade. The students and faculty in M2M are top-notch, and it is a great pleasure to work with these colleagues on behalf of these students," Dr. McCarty says.

Dr. McCarty's research lab focus is on Molecular Physiology of Membrane Proteins. His research centers on understanding how channels, transporters, and receptors work to control the function of cells, tissues and organisms. His lab group works at several levels of organization to understand and control the lethal disease Cystic Fibrosis.

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M2M: "Understanding human health: integrating biology, behaviors, environments, and populations"

A project of
Laney Graduate School
Emory University



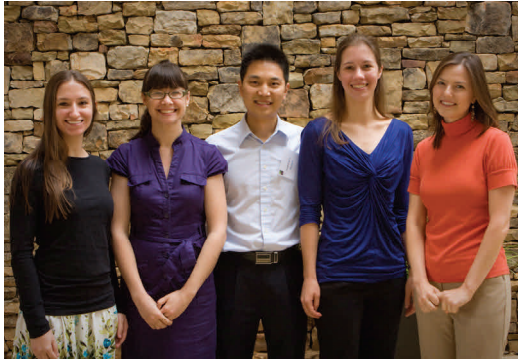
We are now on Facebook, but we need for you to LIKE us @
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M2M is on the web!

www.m2m.emory.edu

Five PhD Students Join M2M in Fall Semester



Pictured left to right: Erica Smearman, Catherine Bozio, Huakang Tu, Mary Bushman and Carla Moore.

In the fall semester 2012, the M2M Program welcomed five new students from various programs in the Graduate Division of Biological and Biomedical Sciences (GDBBS) and the Rollins School of Public Health (RSPH). Below is a description of each student's research.

Catherine Bozio

2nd year student, Epidemiology, RSPH, Infectious Diseases Track

Catherine is interested in learning mathematical modeling to further investigate within-host and between-host dynamics. Thus, for a research rotation, she started working with a mathematical modeler at CDC to gain more theoretical knowledge and practical experience of this skill. She has now started to test existing techniques for infectious disease epidemic analysis. Specifically, she is learning how to program deterministic and stochastic models to conduct a Bayesian analysis. Finally, she will construct a mathematical model focused on the effects of spacing and timing of DTaP doses on vaccine effectiveness and herd immunity.

Mary Bushman

2nd year student, Population Biology, Ecology and Evolution, GDBBS; Infectious Diseases Track

The goal of Mary's current research is to characterize the

within-host dynamics of mixed-strain infections of *Plasmodium falciparum* (malaria parasites) and use mathematical modeling to examine the impact of these dynamics on the evolution of drug resistance. Specifically, she is interested in whether drug resistance imposes a fitness cost, which may result in competitive suppression of resistant parasites when mixed infections go untreated and/or competitive release (expansion of resistant parasites) when mixed infections are treated. Depending on the intensity of such effects and other epidemiological factors, such dynamics may impede or accelerate the spread of resistance in the parasite population.

Carla Moore

4th year student, Nutrition and Health Sciences, GDBBS, Predictive Health Track

Carla's research explores the effects of psychosocial stress on cardiometabolic outcomes and obesity risk among socially-housed female rhesus monkeys. Specifically, she is investigating how both chronic stress and acute stress influence appetitive behaviors, markers of inflammation, and hypothalamic-pituitary-adrenal axis activation when animals are restricted to a standard laboratory chow diet compared to when they are given continuous access to highly palatable food. Preliminary

data suggest that the dietary environment may have significant, differential effects on relationships of interest, and results from the present investigations will inform future studies that delineate the neurobiological mechanisms underlying stress-induced eating.

Erica Smearman

4th year student, Behavioral Sciences and Health Education, RSPH; MD/PhD, Predictive Health Track

Erica's research focuses on the bio-psycho-social approach to the study of human behavior and the application of intervention, including assessing the impact of prenatal and early life exposures on child development and the influence of biological (genetic) and psychosocial factors on adolescent risk taking behaviors.

Huakang Tu

3rd year student, Epidemiology, RSPH; Biomarkers Track

Huakang's research focus is on the application of functional biomarkers in stomach cancer prevention. Gastric cancer is the second leading cause of cancer death worldwide. The goal of his current project is to investigate whether four candidate serum biomarkers (pepsinogen 1, pepsinogen 2, gastrin-17, and anti-Helicobacter pylori IgG antibody) in combination would have sufficient sensitivity and specificity for screening for gastric diseases including gastric cancer and its precursors, and whether the combination is associated with risk of gastric cancer in a large (n=15,953) cohort in China.

Amanda Mummert Elected M2M Student Rep



In November 2012, the M2M students elected Amanda Mummert as Student Representative for M2M. This is the first time the program has had a student serve in that capacity. The student rep will be a liaison between the students and M2M faculty and will attend the faculty meetings during a designated portion of the meeting. This will be an excellent avenue for the students to voice their opinions on certain topics that affect them as students in further strengthening the program. "Amanda has a great amount of enthusiasm for M2M, and I believe she will be a great person to represent the students" remarks Dr. Michelle Lampl, Amanda's faculty track leader in the Predictive Health Track. Amanda is a third year student in the Anthropology PhD program, and is a 3rd year M2M student. "I am looking forward to serving as the student representative. I think it will help to both streamline and improve communications between students and faculty," Amanda says about new her role in the program. Her PhD academic focus is on skeletal development and health disparities and a professional focus on health care quality and outcomes measurement. "Amanda has a genuine passion for the success of the M2M program and will bring in a great amount of enthusiasm and support that will benefit the program as a whole. She is a member of the first cohort who started in fall 2010, and has been a tremendous asset to the program" comments Debbie Byrd, M2M Associate Director.

Outstanding M2M 700 Speaker Series for Fall 2012

The fall semester M2M 700 showcased several dynamic speakers. Below is a list of faculty presenters and their topics.

Bruce Levin, PhD, Samuel C. Dobbs Professor, Biology; Faculty Track Leader, Infectious Diseases

Topic: Current Topics in Infectious Diseases

Robert Davis, MD, MPH, Director of Research, Kaiser Permanente

Topic: Epidemiology and Health Services Research at Kaiser Permanente Georgia

John Burris, PhD, President, Burroughs Wellcome Fund

Topic: The Changing World of Careers in Science

Arlene Stecenko, MD, Director, Division of Pulmonology, Allergy/Immunology, Cystic Fibrosis and Sleep, Emory Children's Center

Topic: Unraveling the Mysteries of Cystic Fibrosis Diabetes

Robert Bostick, MD, MPH, Professor of Epidemiology, Rollins School of Public Health, Professor of Hematology and Medical, School of Medicine and Winship Cancer Institute

Topic: Calcium, Vitamin D, and Biomarkers of Risk for Colorectal Neoplasms

Kenneth Brigham, MD, former M2M Director and Vice President for Predictive Health and Michael M.E. Johns, MD, former Chancellor, Emory University and Executive Vice President for Health Affairs

Topic: Predictive Health: How We Can Reinvent Medicine to Extend Our Best Years

Burroughs Wellcome Fund Sponsors Student Symposium, May 14-16, 2013



The Burroughs Wellcome Fund is an independent private foundation dedicated to advancing biomedical sciences by supporting research and other scientific and educational activities.

Burroughs Wellcome Fund, the grantor for the M2M Program, is sponsoring a symposium for the three Programs Unifying Population and Laboratory-Based Sciences (PUP) schools. The three schools are: Emory, the University of Texas Health Sciences Center at Houston, and the University of California at Los Angeles. Invited attendees are students, faculty and administrators from the three programs. Also attending will be the three new PUP schools: Albert Einstein College of Medicine of Yeshiva University, Boston University and Johns Hopkins University Bloomberg School of Public Health.

The symposium will take place May 14-16, 2013.

Expected to be a different kind of experience, the conference will feature prominent keynote speakers, case study competition and poster competition. This will give attendees from the three programs an opportunity to network and learn from each other. The main focus will be to provide a challenging and intellectual event for the students.



M2M Student, Carla Moore, Guest Speaker at National Diabetes Conference in Madrid, Spain

The International Scientific Committee of Madrid's World Congress on Prevention of Diabetes and its Complications (WCPD) invited Carla Moore to give a lecture at the 7th Annual World Congress entitled "Social Structure, Diabetes Risk and Prevention: Learning from Non-human Primates". She accepted the invitation and was a guest speaker at the conference that took place in Madrid, Spain from November 11-14, 2012.

Carla comments, "This was an ideal opportunity to merge lab-based science with population-based science since I was able to present information about our novel, non-human primate model of chronic social stress to a group of medical professionals who specialize in clinical research." The M2M Program partially sponsored Carla to attend the conference.

Carla also notes that "Sharing my research with a more clinically-based audience allowed me to better elucidate the relevance of my project to human populations. Additionally, sharing information about this model may facilitate future collaborations between lab-based and population-based scientists who are interested in the effects of chronic stress on a number of physiological and behavioral outcomes."

Way to go, Carla!



Each semester, as part of the M2M 700 seminar/class, the M2M students participate in a field trip experience to a medical or scientific facility in the Atlanta area. On September 24, the students visited the Predictive Health Institute's Center for Health Discovery and Well Being located at Emory Midtown Hospital. The students took part in three outstanding and informative lectures by faculty presenters on the topics of on-going data collection and research at the center as well as protocol information for data users.

Faculty presenters:

Dean Jones, PhD, Professor/Director, Biomarkers Lab; Co-Director, School of Medicine, Pulmonary Division

Greg Gibson, PhD, Professor/Director, Center for Integrative Genomics, Georgia Institute of Technology

Arshed Quyyumi, MD/FAAC, Professor, School of Medicine, Cardiology

M2M Hosts Retirement Reception



Pictured left to right: Dr. Julie Gazmararian, M2M Co-Director, Dr. Ken Brigham, and new M2M Director, Dr. Nael McCarty.

In August, the M2M students, faculty and staff gave Dr. Brigham a retirement reception. He will certainly be missed by all whose lives he touched!

M2M Summer Picnic Brings Together Students, Faculty and Staff

In July, a very fun and relaxing event occurred for the Program—the M2M students, staff and faculty enjoyed a wonderful afternoon at the Emory Student Activity Center, Clairmont Campus. With music playing in the background, the group dined on picnic food, mixed and mingled, and some swam in the pool adjacent to the picnic area. The students prepared the delicious desserts.

**Spring Semester 2013
M2M 700 Class Schedule**

**Mondays from 12:30-2 pm
Room 4001, CNR**

- January 14
- January 28
- February 4
- February 11
- February 18
- February 25
- March 4
- March 18
- March 25
- April 1
- April 8
- April 15



ANNUAL RETREAT
Friday, April 26, 2012
12noon-5:00pm

**Questions or comments about the
M2M Connection newsletter?**

Contact Managing Editor,
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*The M2M Connection is published each
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