For the second year, the M2M Program has sponsored an annual half-day retreat for the program’s students, faculty and staff. The Emory Conference Center Hotel provided the perfect atmosphere in a rustic yet elegant setting for the students to relax, interact, and converse with the faculty directors and track leaders about their M2M studies.

Reflecting on the retreat, M2M student, Ben Rambo-Martin remarks, "Above all, the retreat impressed on us all the excellent caliber of students in the program. It is an unparalleled experience in graduate education to be in this community of students with such broad research pursuits, all culminating in a single goal to improve human health. Each member's success reflects the openness and encouragement that the M2M program provides and gives each of us the inspiration to persevere in our own interests, to ask novel questions, and to truly believe we can change the status quo regarding human health."

Students provide updates on their studies

The first part of the retreat provided an opportunity for the students to present their current research and future academic plans and progress in the M2M Program. Student presenters were: Pierre Ankomah, Alaine Broadaway, Katie Coakley, Ben Rambo-Martin, Michael Mina, Amanda Mummert, Jessica Rowell, Joshua Shak and Lisa Staimez.

Also attending the retreat were the incoming cohort: Catherine Bozio, Mary Bushman, Carla Moore, Erica Smearman and Huakang Tu.

Following the student presentations, there was discussion between the students and faculty. This provided opportunity for the students to express their feelings about any challenges and other issues that they face as a student studying in both lab and population sciences.

“One of the outstanding assets of the M2M program is the quality of the students, and that was really evident in their presentations. The presentations were not simply "turnkey" or mundane, they all required a vision beyond a single discipline” says Dr. Brad Pearce, Public Health Genomics track leader.

Social hour bonds students

At the end of the retreat, students and faculty gathered in the bowling lanes of the conference center to unwind, bowl, play games, and interact with the faculty in an informal setting. This also gave the students an opportunity to meet the new students who will join M2M in the fall.
We have completed another year exploring the territory that connects laboratory and population science. Each year in this growing young innovative graduate education program brings experiences that enrich the effort and recognize its success. There was general agreement among our students and faculty that the M2M seminar series this past semester set a new standard of excellence.

The Burroughs Wellcome Fund, which supports this program and two others, held a meeting of leaders of the three programs at their North Carolina Headquarters. We are proud of the great accomplishments and progress made by our program since it began in fall 2010. We will host a meeting of all three programs in Atlanta in the coming year that will include students and faculty from all of the programs.

We selected five new M2M students from among a large number of highly qualified applicants. These outstanding students will bring new depth and breadth to the program. The number and quality of applicants is evidence of the program’s growing popularity.

Dr. Bruce Levin, professor of biology and one of the leaders of the M2M Infectious Disease track, was elected to the National Academy of Sciences. This is the highest honor awarded to academic scientists and Bruce is only the fourth Emory faculty member to receive this honor. Congratulations, Bruce, well-deserved! We are proud to be your colleagues in the M2M effort.

Changes are afoot for the coming year. Dr. Ken Brigham, a founding director of M2M, will transition to emeritus status September 1st. A book, “Predictive Health: How We Can Reinvent Medicine to Extend our Best Years” that he co-authored with Emory Chancellor, Dr. Michael Johns, draws from experience with the M2M program; it will be published in October.

Dr. Nael McCarty, an exceptionally gifted scientist and educator with a passion for teaching and extensive experience with graduate education at both Emory and Georgia Tech, will replace Ken in the M2M program leadership.

Additionally, Debbie Byrd was promoted to Associate Director of Academic and Student Services. The M2M faculty and students are so appreciative of Debbie’s hard work and dedication with coordinating our program.

So, welcome to the next phase of this rapidly developing innovative program in graduate education. We remain convinced that interdisciplinary educational experiences are the real opportunities for fostering discovery. We are privileged to be partners with you in blazing that trail into the future.

Have a wonderful summer!

We are now on Facebook, but we need for you to LIKE us @ Molecules To Mankind, Emory University

M2M is on the web! www.m2m.emory.edu

M2M: “Understanding human health: integrating biology, behaviors, environments, and populations” A project of Laney Graduate School Emory University

Congratulations! Dr. Bruce Levin Elected to National Academy of Sciences

In April, the National Academy of Sciences announced the election of 84 new members and 21 foreign associates in recognition of their achievements in original research. With the election, the academy now has 2,152 members and 430 foreign associates. Among the awardees is our very own Dr. Bruce R. Levin, Samuel Candler Dobbs Professor in the Department of Biology. This is a richly deserved honor and a representation of the outstanding faculty of M2M.
M2M student research spotlight

Pierre Ankomah, M2M Infectious Diseases Track

Pierre is an MD/PhD student in the Population Biology, Ecology and Evolution program within the Graduate Division of Biological and Biomedical Sciences. Joining the M2M’s first cohort in fall 2010, Pierre is part of the Population Processes and Dynamics of Infectious Diseases track.

He is broadly interested in the a priori evaluation of multi-drug treatment regimens with respect to their efficacy in clearing bacterial infections and their ability to minimize the likelihood of multi-drug resistance arising during therapy. In one facet of his research, he combined mathematical modeling with in vitro experiments using *Mycobacterium marinum* (a model organism for *M. tuberculosis*) and five different antibiotics to conduct pharmacodynamic assessments of two-drug antimycobacterial chemotherapy. All drug pairs that he examined exhibited the same general biphasic drug-drug interaction properties. At low concentrations, the two drugs were less effective than anticipated from their individual pharmacodynamic properties; but as their concentrations increased, the interactions became relatively more synergistic. Using computer simulations incorporating these empirically estimated pharmacodynamic functions, he evaluated the relative efficacy of different combinations of first- and second-line TB drugs in terms of their ability to clear an infection and minimize acquired resistance.


Dr. Levin says, “Pierre is awesome. His PhD dissertation research is on the pharmacodynamics and within-host population dynamics of multi-drug treatment of *Mycobacterium, Staphylococcus* and *E. coli* infections. Just this past year Pierre has given invited talks at conferences in Elimina, Ghana, The University of California at Berkeley, Princeton University, and a Keystone Conference on tuberculosis treatment and resistance in Kampala, Uganda. Indeed, Pierre’s professional travel accumulation of frequent flyer miles would be envied by any sought-after senior investigator.”

11Alive News interviews M2M student Joshua Shak

A recent case about a local Georgia woman, Aimee Copeland, who contracted a bacterium called *Aeromonas hydrophilia* was the focus of a TV interview with Joshua Shak and other Emory researchers on 11Alive TV on May 18. Joshua is a student in the MD/PhD program and in M2M’s Population Processes and Dynamics of Infectious Diseases track. He was consulted by 11Alive because he reported a very similar case to Ms. Copeland’s in the January 2011 issue of the *Journal of Clinical Microbiology*.

For the past month, Aimee has been recovering in a Georgia hospital after a ziplining accident in the Little Tallapoosa River where she cut her leg. She was diagnosed with necrotizing fasciitis, commonly called “flesh-eating disease.” She has since then lost a leg, two hands and a foot. Many people asked if the water in the river was safe. 11Alive dropped off samples with Joshua and Emory’s Center for Global Safe Water to test for bacteria in samples from the Little Tallapoosa, a swimming pool, and a water tap. Joshua and the other researchers reported that there was indeed *Aeromonas* in the river water, but that is a bacterium that you would find in almost any untreated water and the levels of *Aeromonas* change daily. The main risk is how you are exposed to it. “You have to be cautious when there is a deep cut or traumatic wound” Joshua told 11Alive.

M2M 700 spring 2012 seminars feature superb experts

The M2M 700 course serves as a guided tour of the existing research in areas that bridge population and laboratory sciences. The purpose of the course is to help students to gain broad familiarity with the existing research, and to help them develop the analytical skills necessary to critically evaluate and integrate work in their research areas.

Experts Lead Sessions

The spring semester 2012 was a particularly rewarding experience for the students. “The M2M seminars this spring gave us the opportunity to personally interact with some of the highest caliber of health scientists in the country. I leave each week inspired and excited. I know I could not get these opportunities if it weren’t for M2M”, remarks M2M student, Alaine Broadway.

Guest lecturers consisted of: RSHP Dean James Curran (pictured above), Dr. Nael McCarty, School of Medicine (SOM), Pediatrics; Dr. Peter Wilson, SOM, Cardiology; Dr. William Foeg, Professor Emeritus, SPH, Global Health; Dr. Aryeh Stein, SPH, Global Health; Dr. John Hardman, President and CEO/Director, The Carter Center; Dr. Jeff Koplan, VP, SPH, Global Health Institute; Dr. Carlos del Rio, SPH, Global Health; Dr. Walt Orenstein, SOM, Infectious Diseases; Dr. Larry Anderson, SOM, Pediatrics; and Dr. Stuart Zola, Director, Yerkes Primate Center.

Each semester, a major part of the seminars consist of discussions led by faculty experts. Some of the spring semester topics were: The Basics of an IRB Proposal; CITI Training; The Role of Laboratory Science in Public Health and Vice Versa; Memory, Monkeys and Magic; The Carter Center; The History of AIDS; and Global Health. To gain insight on the topic of “Testing for Fear Potentiation”, the students visited the Veterans Administration Hospital with Public Health Genomics track leader, Dr. Brad Pearce. The session was led by Dr. Erica Duncan, SOM, Department of Psychiatry.

Dr. Allen Roses visits M2M

Each year the program invites a Visiting Scientist who is an expert in a particular field in lab and population sciences. This year, Dr. Allen Roses of Duke University was selected as Visiting Scientist and came to Emory on March 25 and March 26. On Sunday, faculty and students welcomed him at a reception at the home of Dr. Peter Wilson. The following day, Dr. Roses led an informative M2M700 seminar discussion on “Alzheimer’s and the TOMM40 Study”. Later that day, Dr. Roses gave a lecture to the health sciences community on Alzheimer’s. Dr. Roses is internationally known and has established an international reputation for his work in pharmacogenetics, exploratory drug discovery, and clinical neuroscience.
The main emphasis of the meeting was to discuss what kinds of people will be needed to serve the needs of human health, to serve the needs of basic research and to drive science and fill other roles in industry, academe and government. Each program talked about what they have learned so far about what their trainees desire from their educations, what barriers they face in taking on problems that lie between traditional population approaches and traditional bench approaches, and breaking the barriers and bridging gaps between what historically have been separate approaches to science.

Meeting attendees
Those attending the conference from M2M were co-director, Dr. Ken Brigham; Predictive Health track leader, Dr. Nael McCarty; and staff members, Jennifer Vazquez and Debbie Byrd. The meeting was facilitated by Dr. John Burris, BWF President, and Dr. Victoria McGovern, BWF Senior Program Officer. Also attending were key BWF staff and representatives from the National Institutes of Health (NIH) and other U.S. governmental agencies.

“The meeting enabled us to interact with faculty and staff from the other programs and to learn about the dynamics of each program. I thoroughly enjoyed meeting the folks from BWF and touring their beautiful facilities,” says Debbie Byrd, M2M Associate Director.

Focus of the meeting
The agenda for the one-day session was “Training Needs Where Population Sciences Meet the Bench”.

Questions or comments about the M2M newsletter?
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