Fall semester 2011, M2M admitted its second cohort of PhD students from the programs of MD/PhD, Nutrition and Health Sciences, Epidemiology, and Genetics and Molecular Biology. The total number of students in M2M increased to nine.

Four Doctoral Students Join M2M in Fall 2011

Pictured, left to right: Joshua Shak, Lisa Staimez, Jessica Rowell, and Ben Rambo Martin

### BEN RAMBO-MARTIN
**Track: Public Health Genomics: Genetics and Environmental Determinants of Health**

2nd year student, Genetics and Molecular Biology Program, Graduate Division of Biological and Biomedical Sciences (GDBBS). Research interest focuses on using array comparative genomic hybridization to discover copy number variation associated with atrioventricular septal defects in a Down Syndrome (DS) population. This type of congenital heart defect has an increased prevalence in DS 2000x over the general population, strongly implicating the effects of trisomy in sensitizing DS conceptions to congenital heart disease (CHD); analyzing relationships of maternal genotype and maternal smoking to CHD in DS children in a case-control cohort.

Faculty mentors: Drs. Stephanie Sherman and Mike Zwick

### JESSICA ROWELL
**Track: Biomarkers and the Development of Acute and Chronic Diseases**

1st year student, Epidemiology Program, Rollins School of Public Health. She is interested in gene-environment interaction and epigenetics in the context of autoimmunity. Recently, she became interested in the pathogenesis of neurological conditions such as autism and schizophrenia, for which the role of the immune system is beginning to be characterized.

Faculty mentors: Drs. Michele Marcus and Bradley Pearce

### JOSHUA SHAK
**Track: Population Processes and Dynamics of Infectious Diseases**

3rd year student, MD/PhD Program in the Population Biology, Ecology and Evolution Program, GDBBS. Research focuses on examining the dynamics of *Streptococcus pneumoniae* populations in the nasopharynx and how density relates to colonization, carriage, and disease; and exploring the nasopharyngeal microbiome and how the presence and density of different bacterial species affect one another over time.

Faculty mentors: Drs. Keith Klugman and Bruce Levin

### LISA STAIMEZ
**Track: Biomarkers and the Development of Acute and Chronic Diseases**

4th year student, Nutrition and Health Sciences Program, GDBBS. Research interest is on early susceptibility to beta-cell dysfunction and the impact of beta-cell dysfunction on the success of lifestyle interventions for reducing hyperglycemia.

Faculty mentor: Dr. K.M. Venkat Narayan
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M2M: “Understanding human health: integrating biology, behaviors, environments, and populations”  
A Project of Laney Graduate School, Emory University

Words from the M2M Directors  
Dr. Ken Brigham and Dr. Julie Gazmararian

W e are delighted to welcome you to the third year of the Emory Molecules-to-Mankind (M2M) doctoral pathway. M2M is a Burroughs Wellcome Fund supported transdisciplinary training program of the Laney Graduate School that engages existing Emory doctorate programs in providing an educational experience that bridges laboratory and population science. Our excitement about this innovative program continues to grow as the program expands and matures. We are also excited about the addition of our new M2M students this year (see section on new students). Students and faculty interest in the program is burgeoning. Interactions among disparate disciplines epitomized in the M2M 700 seminar series is a unique and stimulating experience that broadly expands our understanding of the human condition conceived. In the past year, we have added new members to the core faculty from the schools of medicine and public health (see section on new faculty). The numbers of students applying to the program increases enormously each year. We are also pleased to have distinguished visiting scientists from across the country spend time with M2M students addressing the special challenges of integrating information and careers among different disciplines. Students in the program have the opportunity to attend meetings relevant to their interests in this country and abroad. The M2M faculty is constantly seeking new training opportunities and experiences for the students in both the classroom and in the field. The experience is a special one and we all feel privileged to have the opportunity to be a part of it. Thanks to who make the program possible.

From all of the M2M faculty, students, and staff.
Happy Holidays!!

New M2M Faculty Join M2M

During the fall semester, two new faculty joined M2M

Dr. Nael McCarty replaced Dr. Ken Brigham as track leader for the Predictive Health track. Dr. McCarty is Associate Professor and Senior Cystic Fibrosis Scientist; Associate Chief for Research; Division of Pulmonology, Allergy/Immunology, Cystic Fibrosis, and Sleep; Department of Pediatrics, Director, Children’s Center for Cystic Fibrosis Research; Scientific Director, Emory-Egleston Children’s Research Center. His research focuses on the structure and function of ion channels and ATP–binding cassette (ABC) transporters, pathophysiology in cystic fibrosis.

Dr. Brad Pearce replaced Dr. Michele Marcus as track leader for the Public Health Genomics track. Dr. Pearce is faculty in the Department of Epidemiology, Rollins School of Public Health. His lab investigates the role of genetics, infections, immune interactions and behavioral factors in the etiology of complex diseases, including autism, schizophrenia and preterm birth. His work is collaborative and cross-disciplinary, combining pre-clinic pharmacology with translations and epidemiological research.

M2M Faculty News

In September, Dr. Venkat Narayan, M2M faculty, attended the United Nations General Assembly for a High Level Meeting (HLM). This conference was dedicated to global non-communicable diseases (NCD) to draw attention and action to the growing public health interest in chronic diseases, such as cardiovascular diseases, type 2 diabetes, cancers, and chronic obstructive pulmonary diseases. Government delegations of all member states and civil society representatives attended the HLM.

Congratulations to M2M Executive Faculty

Nael McCarty, PhD  
Research Mentor of the Year 2011, Department of Pediatrics, School of Medicine  
K.M. Venkat Narayan, MD/ MSc/MBA  
Faculty Mentor Award 2011, GDBBS
M2M Student Research Highlights

Amanda Mummert Recognized in Science Journals

Amanda Mummert is in the Predictive Health Track, Anthropology PhD Department. Her research was recently recognized in the science magazines upi.com, Science News and earthsky.org which featured articles about Amanda’s research in anthropology (June 2011). The articles reported that when populations around the globe started turning to agriculture around 10,000 years ago, regardless of location and type of crop— the height and health of people declined, probably because of an increase in disease and a rise in nutritional deficiencies. These were the findings of an Emory University team led by Amanda, who conducted a comprehensive review of studies on stature and health during the Agricultural Revolution.

Michael Mina Studies at St. Jude Children’s Hospital This Semester

The impact of influenza vaccination on secondary bacterial respiratory infections at both the individual and population levels are the focus of 2nd year M2M fellow, Michael Mina’s dissertation work. For the past few months, Michael, an MD/PhD student in the Population Biology, Ecology and Evolution program, Population Processes & Dynamics of Infectious Diseases track within the GDBBS has been spending his days at the St. Jude Children’s Research Hospital in Memphis, TN to study the interactions between influenza vaccinations, influenza virus and pneumococcal bacteria. Using mouse models of influenza-pneumococcal coinfection along with genetically altered ‘luminescent’ bacteria and a highly sensitive specialized camera to visualize the location of bacterial infections in a live mouse, Michael is investigating both the short- and long-term impacts of live-attenuated influenza vaccines (LAIV’s or commonly referred to by their brand name “FluMist”) on individual and population dynamics of bacterial infections. These types of unintended yet very important ecological and public health consequences of vaccinations, incorporating multiple species and classes of organisms are largely, if not entirely unexplored and under-appreciated. These are the questions that Michael Mina is currently investigating at the St. Jude Children’s Research Hospital. He hopes to have some initial answers to these questions within the coming months.

Bacterial respiratory pathogens including Pneumococcus and MRSA are responsible for a greater number of childhood deaths worldwide than any other class of infectious diseases, including AIDS, malaria and TB combined.

Student Awards 2011

Pierre Ankomah
GDBBS PBEE Student Scholar of the Year

Michael Mina
GDBBS PBEE Outreach

Lisa Staimez and Dr. Venkat Narayan Quoted in The Hindu National Paper

Lisa Staimez, Biomarkers Track, Nutrition and Health Sciences program, GDBBS, was quoted in The Hindu, a national paper in India for her preliminary research results in the Diabetes Community Lifestyle Improvement Program. Focused on beta cell function, insulin secretion, and glycemia, the research may “lead to new ways of preventing diabetes in the specific ethnic group - is it possible to boost the function of those cells in time?” (The Hindu, 7/6/2011). Dr. Venkat Narayen was also quoted in the article.

Visiting Scientist Series 2011 and 2012—Dr. Allen Roses of Duke University to Visit M2M and Health Sciences Community

M2M and Emory Departments Sponsor Dr. Paul Ehrlich in April 2011

Each year, the M2M Program sponsors a Visiting Scientist Series in order to bring outstanding scientists and experts in the various fields of health science to lecture and meet with the M2M students to discuss various topics on scientific interdisciplines.

In April 2011, M2M brought in Paul Ehrlich, PhD, renowned scientist from Stanford University. He met with the M2M students. Dr. Bruce Levin and the M2M students hosted him for dinner.

M2M co-sponsored Dr. Ehrlich along with other Emory health sciences departments, for a lecture to the health sciences community.

Dr. Lita Proctor Visits M2M Students in December 2011

On December 1, Lita Proctor, PhD, coordinator, Human Microbiome Project, National Human Genome Research Institute of the National Institutes of Health, met with the M2M students.

Dr. Proctor is responsible for coordination of the Human Microbiome Project (HMP) which is a 5-year, trans-NIH Common Fund Initiative to create a community resource for this field. These resources include microbiome-associated microbial genome sequences, phylogenetic and functional gene sequence data from the microbiomes of healthy dults and phylogenetic and functional gene sequence data from the microbiomes of gut, skin and urogenital diseases with a microbiome association.

M2M to Sponsor Dr. Allen Roses of Duke University in March 2012

Allen D. Roses, MD

Dr. Roses has established an international reputation for his work in pharmacogenetics, exploratory drug discovery, and clinical neuroscience. Dr. Roses serves in several capacities at Duke University as the Jefferson-Pilot Professor of Neurobiology and Genetics, as Director of the Deane Drug Discovery Institute, and as Senior Scholar at the Fuqua School of Business.

He will lead a discussion on the topic of “Alzheimer’s and the TOMM40 Study” at an M2M700 seminar on Monday, March 26, 2012. He will also give a lecture to the health science community at 4pm on the same day in the CNR building.
Predictive Health Symposium 2011

The Seventh Annual Symposium on Predictive Health was held on Friday, December 2nd in the Boyton Auditorium in the Rollins School of Public Health, which focused on health and the human microbiome and the microbiome’s connection to chronic disease and immunity.

The human microbiome consists of the micropic organisms such as bacteria, fungi and viruses, which reside throughout the body.

Sponsored by Emory-Georgia Tech Predictive Health Institute and the Atlanta Clinical and Translational Science Institute, the symposium featured speakers from Case Western University, GA State University, University of Florida, GA Tech, Emory, and the National Institutes of Health.

“There’s increasing information that the human microbiome is a critical player in many of the chronic diseases we’re interested in,” said Dr. Ken Brigham, director Emory/Georgia Tech Predictive Health Institute. “The information about the human microbiome and its relationship to disease is exploding.”

Important Dates to Remember—Fall 2011 through Spring 2012

- December 1, 2011— M2M students meet with Dr. Lita Proctor, NIH
- December 2, 2011— Predictive Health Symposium, CNR auditorium
- December 5, 2011— Last M2M700 session for the semester
- December 8, 2011— M2M Holiday Reception, Le Giverny Restaurant
- December 23-26, 2011— Christmas Holiday—University Closed
- December 30-31, 2011— New Year’s Eve Holiday—University Closed
- January 2, 2012— New Year’s Day Holiday—University Closed
- January 16, 2012— ML King Holiday—University Closed
- January 18, 2012— Emory University, Spring Semester 2012 Begins
- January 23, 2012— M2M700 seminar begins
- March 12-16, 2012— Spring Break
- March 26, 2012— M2M Hosts Dr. Allen Roses, Duke University at M2M700 seminar @12:30pm and general lecture @4:00pm
- April 20, 2012— 12 pm - 5:00 pm, Annual M2M Retreat
- April 30, 2012— Last M2M700 seminar for Spring Semester
- May 14, 2012— End of Spring Term

Questions or comments about the M2M newsletter?

Contact Managing Editor, Debbie Byrd
debbbie.byrd@emory.edu

The M2M Connection is published each fall and spring.

Mark Your Calendar for 2012

M2M ANNUAL RETREAT
Friday, April 20, 2012
12 pm – 5:00 pm
Emory Conference Center

Spring 2012 Semester Schedule
M2M 700

Mondays from 12-2 pm, Rm 4001, CNR (except Feb. 27, Rm 3001)

January 23
January 30
February 6
February 13
February 20
February 27 (Rm 3001)
March 5
March 12— Spring Break (No class)
March 19
March 26
April 2
April 9
April 16— (No class)
April 20 (Annual Retreat)
April 23
April 30