Drs. Salim S. Abdool Karim and Quarraisha Abdool Karim, core Department of Epidemiology faculty, led a study published in the July issue of Science. The results, which were announced at the XVIII International AIDS Conference in Vienna to a standing ovation, showed that use of the anti-viral gel Tenovofir before and after sex greatly reduces the risk of HIV infection and infection with herpes virus.

The study involved 889 South African women, who were instructed to use the gel within 12 hours before sexual intercourse and again within 12 hours afterward. After 12 months, there were 50% fewer instances of HIV infection among women who used the gel compared with the placebo group. After two and a half years, there were 39% fewer cases among those using the Tenovofir gel. The degree of protection was proportional to the degree to which the women complied with the instructions. Women who reported using the gel more than 80% of the time they engaged in sexual relations had a 54% reduction in HIV infection, whereas those who used the gel less than half the time had a 28% reduction.

This is the first evidence of a successful vaginal microbicide that can limit the spread of HIV and has substantial implications for HIV transmission worldwide. In particular this work has implications for sub-Saharan Africa where, according to U.N. estimates, about 60% of HIV cases occur in women.

This work is resonant in the Department for many reasons. First, it represents a true "game changer", led by our faculty, in the field of infectious disease epidemiology, one of our core areas of strength. Second, it builds on our Department’s long history of engagement in South Africa. Members of our Department have had solid links in and have worked in South Africa for over 30 years, through our Fogarty international training program and our research role in the Centre for the AIDS Programme of Research in South Africa (CAPRISA). Third, the work of Drs. Abdool Karim builds on a long intellectual tradition in the Department calling for female controlled means of HIV prevention. As far back as 1990, in a seminal paper in the American Journal of Public Health, Dr. Zena Stein suggested, "Greater emphasis is urged for research on preventive methods women could use, including the possibility of a topical virucide that might block transmission through the vaginal route." (Stein, 1990, p. 460)


MESSAGE FROM THE CHAIR

Dear colleagues,

Welcome to Two by Two, the Epidemiology Department newsletter. This newsletter inaugurates a new look for the Department of Epidemiology. Thank you to all the faculty and staff who have been instrumental in helping us get here.

This newsletter focuses on one of the core aims of our Department, **innovative scientific contribution**. It is then fitting that our lead story is the remarkable news of Dr. Salim Abdool Karim and Dr. Quarraisha Abdool Karim’s recent game changing publication of evidence for the first efficacious vaginal microbicide that can be used to minimize HIV transmission.

The next few pages highlight some of the exciting work that is happening in each of our six departmental clusters. We cannot possibly list all the active projects and promising directions in which the clusters are engaged. The summary here of a few of these projects aims to ensure that we all, as faculty, are aware of projects underway in the Department, and that our colleagues in MSPH, CU, and beyond are aware of our work. In so doing we hope to encourage intra- and interdisciplinary collaboration and generate increased opportunities for synergy both within the Department and worldwide: a crucial element in our endeavor to produce innovative science.

In the coming months we will be hosting visits from prospective faculty members invited by our departmental recruitment committee. Our goal is to bring on new faculty who will complement our areas of strength. As these candidates come through the Department we welcome all faculty engagement and value input into our assessment of the candidates’ strengths.

I hope you enjoy the newsletter. As always I would like to thank all those who have contributed to the newsletter and in particular Ms. Barbara Aaron and Ms. Erin Gilbert without whose work this newsletter would not be possible.

Warm regards,

SOCIAL EPIDEMIOLOGY
THURSDAY, SEPTEMBER 9 10:00-11:30 AM
THURSDAY, SEPTEMBER 30 10:00-11:30 AM
THURSDAY, OCTOBER 14 12:30-2:00 PM

PSYCH / NEURO EPIDEMIOLOGY
THURSDAY, SEPTEMBER 16 12:30-2:00 PM
THURSDAY, OCTOBER 14 12:30-2:00 PM

LIFECOURSE EPIDEMIOLOGY
TUESDAY, SEPTEMBER 7 1:00-2:30 PM
TUESDAY, OCTOBER 5 1:00-2:30 PM
TUESDAY, OCTOBER 26 1:00-2:30 PM

EPIDEMIOLOGY INNOVATION
WEDNESDAY, SEPTEMBER 8 12:00-2:00 PM
WEDNESDAY, SEPTEMBER 29, 2010 12:00-2:00 PM
WEDNESDAY, OCTOBER 26 3:30-5:00 PM

CHRONIC DISEASE EPIDEMIOLOGY
FRIDAY, SEPTEMBER 17 12:00-1:00 PM
FRIDAY, OCTOBER 22 12:00-1:00 PM

UPCOMING SEPTEMBER — OCTOBER

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<th>DATE</th>
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<td>FRIDAY, SEPTEMBER 17, 2010</td>
<td>FACULTY MEETING</td>
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<td>FRIDAY, SEPTEMBER 24, 2010</td>
<td>DEPARTMENT SEMINAR: RICHARD MAYEUX, MD</td>
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<td>FRIDAY, SEPTEMBER 24, 2010</td>
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<td>WEDNESDAY, SEPTEMBER 29, 2010</td>
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<td>WEDNESDAY, OCTOBER 13, 2010</td>
<td>CUEGR: CONRAD KEATING, MSC, PGCE</td>
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<td>FRIDAY, OCTOBER 15, 2010</td>
<td>FACULTY MEETING</td>
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<td>FRIDAY, OCTOBER 22, 2010</td>
<td>DEPARTMENT SEMINAR: STUDENT PRESENTATIONS</td>
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Assistant Professor of Epidemiology, Lisa M. Bates, SM, SD joined the Department following a two-year stint as a Robert Wood Johnson Foundation Health and Society Scholar (RWJ HSS) at Columbia.

Dr. Bates’ scholarship exemplifies, in many ways, an interdisciplinary and global approach to population health. Following training in demography and social epidemiology at the Harvard School of Public Health, Dr. Bates continued to pursue a dual research program that focused, in South Asia, on the intersections of poverty, gender inequality and social change as they impact women’s health; and, in the U.S., on the social determinants of immigrant health trajectories. Currently, she is preparing to embark on a major new study in Bangladesh [funded by NICHD with a 1st percentile priority score] utilizing mixed-methods primary data collection to follow a cohort of newly-married adolescent girls. The study will seek to understand the impacts of dramatic increases in girls’ education, which have led to gender parity in enrollment, on women’s risk of intimate partner violence. This study, which unites a team of investigators from varying fields and multiple institutions in the U.S. and Bangladesh, promises to inform and extend analyses of the health consequences of “acculturation.” Additionally, Dr. Bates and colleagues are co-editing a Special Issue of Social Science & Medicine showcasing innovative and interdisciplinary approaches to gender and health scholarship.

Since joining the Department in 2007, Dr. Bates has continued to be involved with the RWJ HSS program as a core faculty member. This role, along with her affiliation with the Columbia Population Research Center, has facilitated ongoing collaborations with faculty at the downtown campus. Part of Dr. Bates’ mandate in joining the Department was to enhance education and scholarship in the field of Social Epidemiology at Mailman. In this vein, she inaugurated a new course, Social Epidemiology, in Spring 2009, which has been over-subscribed and very favorably evaluated both years it has been offered, reflecting growing student interest in this area. Concurrent with this course, and under the auspices of the Center for Study of Social Inequalities in Health, Dr. Bates has organized school-wide screenings of the award-winning documentary, “Unnatural Causes.” Each video segment is followed by an hour-long moderated discussion, providing students an opportunity to engage with faculty in an informal setting around a substantive area of mutual interest. Also in affiliation with the Inequalities Center, Dr. Bates convenes a monthly Society and Health Journal Club bringing together faculty, post-docs, and advanced doctoral students from across the school. Dr. Bates will continue these efforts as a member of the new Social Epidemiology Cluster in the Department (see page 12) and as part of an initiative she has spearheaded, in close collaboration with colleagues in Epi and SMS, to develop a new cross-departmental track in social determinants of health. This effort seeks to improve the synergy and depth of course offerings at Mailman in this field and to strengthen the school’s ability to attract, support, and mentor students interested in social epidemiology.

FACULTY PROFILE
LISA M. BATES

FACULTY
APPOINTMENTS AND PROMOTIONS

Alan Brown, MD was promoted to Professor of Clinical Psychiatry and Clinical Epidemiology on July 1, 2010

Pamela Collins, MD was promoted to Associate Clinical Professor of Epidemiology and Psychiatry on July 1, 2010

Ryan Demmer, PhD was promoted to Assistant Professor of Epidemiology on August 1, 2010
Anthony Diaz, clerk B, has been with the Department since 2003, but this year it’s almost like he has a new job. He has moved to the 7th floor of the Allan Rosenfield building, which, as the administrative hub of the epidemiology academic program, houses the largest number of faculty, students and administrators.

In the course of a day, Anthony greets and guides dozens of students, faculty and staff. “I’m a people person,” he says. “I meet a lot of interesting people in this job, and I like learning about their lives, their travel, their research, and their classes.”

Anthony’s job is 100% service. He makes sure that the front desk, mail-and-copy room, and pantry are immaculate and running smoothly. He helps students find their way around, accepts packages for them, and teaches them how to use the large office equipment. He supports the academic programs by creating student files, preparing class materials, collecting homework and completed exams, and distributing graded materials. He assists faculty and senior administrative staff, copying documents for grant submissions making deliveries and scanning and faxing critical materials. He manages large mailing jobs for ongoing research programs and provides back-up when staff members in the various clusters are out of the office. “Whatever it takes,” says Anthony. “I’m here to please the people. We can’t make everybody happy all the time, but we can try.”

Faculty member Ryan Demmer is among the many people who appreciate Anthony’s flexibility and alacrity: “Anthony is resourceful and a quick problem solver. He always finds a way to get the job done rather than a reason it can’t be done. For those reasons, among others, I greatly appreciate Anthony despite his loyalty to the Yankees.” [It should be noted that Dr. Demmer is from Minnesota and a die-hard Twins fan.]

Anthony also works closely with his supervisor, administrative manager for operations Ebony King, to facilitate office moves and renovations, monitor office conditions, maintain equipment, and troubleshoot problems. Ebony feels fortunate to have Anthony on her team: “I’ve had the opportunity to watch him grow on and in the Department since 2003 and though he started off shy and reserved, he has blossomed. Anthony has an impeccable work ethic and his willingness to do anything asked of him regardless of its challenges is an asset to any company. He’s a stand-up guy and a team player. Sometimes you need laughs to deal with the day-to-day and Anthony delivers with his great sense of humor.”

Anthony really enjoys working with and for Ebony, sharing her approach to efficiency, timeliness and customer service. “We’re on it. I like to say that and mean it,” says Anthony. “That’s what it’s about for me here.”

When he’s not on the job, Anthony is a homebody. He likes spending time at home with his young son, Izrael, and with Naly, Izrael’s mom, an office manager at an X-ray and MRI clinic with whom Anthony has lived for the past seven years. Like any two-year-old, Izrael can sometimes be a handful, but Anthony handles that challenge with a smile, too. “I’m enjoying life through his eyes.”

STAFF PROFILE
ANTHONY DIAZ

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STAFF APPOINTMENTS AND PROMOTIONS

Melissa Tracy, MPH was appointed as Project Coordinator on May 1, 2010

Ebony King was promoted to Administrative Manager of Operations on May 15, 2010

Ann Johnston, MPH was promoted to Associate Director of the Breast Cancer Registry on June 1, 2010

Liliane Zaretsky, BA was promoted to Associate Director for Academic Programs on June 1, 2010

Abdulrahman El-Sayed, BS was appointed as Project Coordinator on June 15, 2010

Manuela Ceballos, BS was appointed as Technician B in the Columbia Center for Youth Violence Prevention on June 15, 2010
Targeted interventions needed for patients with prescriptions for anxiety medication

As prescriptions for anxiety medications have increased in recent years, so too have their nonmedical use; whether there is an elevated risk of nonmedical use of these medications among those to whom they are prescribed is unknown. In a paper published in the July issue of the American Journal of Psychiatry, several members of the Epidemiology Department presented data from a national sample consisting of close to 35,000 adult participants in the National Epidemiological Survey on Alcohol and Related Conditions. The study showed that prescription for anxiety medication is associated with nonmedical use of these medications. The study points to the need for interventions targeting nonmedical use of prescription anxiety medications among patients with prescriptions, while at the same time taking care not to reduce medications for patients who will benefit from them.


Arsenic in drinking water increases risk of mortality

In Bangladesh, 35-77 million people are chronically exposed to arsenic in their drinking water, a problem experienced by millions of people worldwide. Analysis of data from the Health Effects of Arsenic Longitudinal Study (HEALS), a prospective study following close to 12,000 people living in Araihazar, Bangladesh, was published in the July issue of the Lancet and found that chronic arsenic exposure through drinking water was associated with an increase in the mortality rate. HEALS is the first prospective study to investigate the association between arsenic exposure and mortality rate at the individual-level. Follow-up data from this cohort will be used to assess the long-term effects of arsenic exposure and how they might be affected by changes in exposure.


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Top: In 2007, over 2 million people used prescription tranquilizers or sedatives nonmedically in the month prior to being surveyed.1

Left: 12.6 percent of Bangladesh households, or about 20 million people, still drink water containing elevated levels of arsenic.2


2. RUMA, PAUL. (2010, MARCH 22). BANGLADESH NEEDS ACTION ON ARSENIC-TAINTED WATER—UN. REUTERS. RETRIEVED FROM ALERTNET.ORG/THENEWS/NEWSDESK/SGE62L0E9.HTM
Study results give hope for pregnancy after breast cancer

The American Cancer Society data estimates that more than 55,000 women younger than age 50 were diagnosed with invasive or in situ breast cancer during 2009; approximately 1 in 208 of these will be less than 40 years old. As the mean age of the mother at first birth has increased in the USA, the question of childbirth after breast cancer is increasingly relevant. In the paper "Is Pregnancy After Breast Cancer Safe?", authors studied the survival of breast cancer patients both with subsequent pregnancy and without using careful matching strategy to avoid potential survival bias. The study, which was recently published in the Breast Journal, found that there is no significant increase in risk of breast cancer recurrence or decreased survival associated with subsequent pregnancy. However, subgroup analysis suggests that this may vary according to stage at diagnosis, histologic characteristics, disease free interval prior to subsequent pregnancy, and other factors such as genes and hormonal variation.


Colonoscopy controversy

A new commentary in the Journal of the American Medical Association (JAMA) raises questions about whether colonoscopies are better at preventing deaths from colon cancer than other methods. "Over 20 years have passed since we first started suggesting colonoscopy for screening, and we still don’t have adequate data to back the long-held belief that it is superior to other methods," says the commentary’s co-author, Dr. Alfred Neugut, Professor of Epidemiology in the School of Public Health, Professor of Medicine in the College of Physicians and Surgeons, Associate Director for Population Sciences at Herbert Irving Comprehensive Cancer Center, and Co-Director of the Cancer Prevention Program at New York Presbyterian Hospital. The commentary follows three recent studies that suggest that colonoscopy is no more effective than sigmoidoscopy, an earlier, less costly and less intrusive screening tool with fewer complications.


SUBMITTED GRANTS
DEPARTMENT OF EPIDEMIOLOGY, JANUARY–AUGUST 2010

ASSISTANT PROFESSOR

ASSOCIATE PROFESSOR

PROFESSOR

0 10 20 30 40 50 60
JANUARY-FEBRUARY MARCH-APRIL MAY-JUNE JULY-AUGUST
Dr. Dhritiman Mukherjee entered the Epidemiology MPH program in the fall of 2009.

Dhritiman V. Mukherjee received his bachelor’s degree in biopsychology from The University of North Carolina at Chapel Hill. He received his master’s degree in biodefense in 2007 and his PhD in microbiology and infectious diseases in 2009 from George Mason University. His doctoral work focused on induction of blood-brain barrier permeability by bacterial proteases and their contribution to cerebral hemorrhages in bacterial meningitis. Immediately following his doctoral work, he pursued his interests in public health and moved to NYC where he started working with Dr. Elaine Larson investigating the transmission of H1N1 among college students. He is working full-time with both Drs. Larson and Frank Lowy, looking at the risk factors for the spread of drug-resistant *Staphylococcus aureus* in NY State prison systems, on which he is also completing his practicum. Besides his commitment to medical sciences and public health, Dr. Mukherjee enjoys music, photography, traveling, and outdoor activities with his family and friends.

**BRIEF MENTIONS**

**Katherine Keyes’ Baby**

Aiden Nathaniel Wild was born July 7, 2010 to postdoctoral research scientist Dr. Katherine Keyes and her husband Jeff Wild. Aiden weighed 7 lb 13 oz and measured 19.5 inches long. According to his proud parents, and anyone who has met him, he is “dazzlingly handsome and incredibly gifted”. Congratulations to the new family!

**Tonisha Alexander’s Baby**

Born in the early morning of July 11, 2010 to Epi staff member Tonisha Alexander and her husband Reggie Alexander, Kaedon Michael Alexander arrived in this world measuring 18 inches long and weighing 5 lb 15 oz. Both mother and son are happy and healthy. Congratulations to Tonisha and family!

**Lipkin Appointment**

The U.S. Centers for Disease Control and Prevention (CDC) named Dr. Ian Lipkin, the John Snow Professor of Epidemiology, co-chair of its National Biosurveillance Advisory Subcommittee (NBAS). As the sub-committee to the CDC, the NBAS provides counsel to the federal government on the broad range of issues impacting the development and implementation of a nationwide biosurveillance strategy for human health.
Taking Epidemiology to the next level: a strategic plan for the Department

WE AIM TO Reinforce the Department’s areas of strength and build new ones
OUR GOAL IS Innovative scientific contribution

OUR OPERATIONAL STEPS ARE
- Articulate, communicate, and implement Department strategic vision
- Recruit new faculty to strengthen Department direction
- Catalyze new, Columbia-wide, inter-departmental, collaborative initiatives
- Establish and nurture regular departmental academic seminars and events
- Contribute to the intellectual discussion on directions in epidemiology

WE AIM TO Nurture faculty and create clear road maps for collaboration with partners inside and outside Columbia
OUR GOAL IS Engaged, productive faculty

OUR OPERATIONAL STEPS ARE
- Formalize and sustain a system of mentoring of junior faculty
- Develop and administer a junior faculty grant review mechanism
- Introduce and conduct annual faculty reviews
- Articulate promotion procedures and benchmarks
- Engage Department senior faculty and Columbia leaders in Department stewardship

WE AIM TO Strengthen our educational programs
OUR GOAL IS Dynamic educational opportunities

OUR OPERATIONAL STEPS ARE
- Renew the epidemiology doctoral curriculum
- Increase departmental training grants consistent with Department direction
- Establish clear faculty teaching expectations and reward faculty teaching
- Clarify and improve opportunities for student support
- Communicate our value proposition to candidates and recruit high priority students

WE AIM TO Effectively manage the Department’s administration
OUR GOAL IS Supportive administrative infrastructure

OUR OPERATIONAL STEPS ARE
- Communicate clearly and consistently, internally and externally
- Maximize efficiency of Chair’s office operations
- Optimize departmental grants management and administrative functions

Current status of our work on these operational steps is as follows:
- In place
- Under development
- Planned
Clusters

In July of this year, the Department launched its new cluster configuration. The clusters are designed to serve as catalysts for scientific innovation by creating a structure for formal interaction among our faculty and trainees at all levels (post and pre doctoral).

Based on their related interests, faculty and students are now organized into clusters with a designated faculty cluster leader and dedicated administrative support. Senior cluster administrators have been arranging meetings, which are now taking place, in which cluster faculty share research and intellectual resources and brainstorm about opportunities for synergy. Over the course of the year, cluster faculty, students and administrators will meet regularly to promote academic discourse through mentoring, topical seminars, and group discussions of potential research and training proposals.

What follows is a brief overview of each cluster, with a few selected highlights of existing work being conducted by cluster faculty. These highlights are by no means a comprehensive or even representative listing; they can be regarded simply as a sampling of the work that each cluster begins with as a foundation for new initiatives to be developed in the coming months.
mental exposures to endocrine disruptors on the DNA methylation in genes related to adipocyte development, in conjunction with the effects of neighborhood poverty and disparities in access to retail outlets selling healthy food. The research team includes sociologists, geographers, social worker researchers, molecular biologists, environmental scientists, and pediatricians.

- In 2003 Chronic Disease Epidemiology cluster leader Dr. Al Nugut, and cancer epidemiology investigators Drs. Victor Grann, Dawn Hershman and Judy Jacobson received U54 funding for an initiative focused on developing cancer research in the Caribbean immigrant communities in Brooklyn and Washington Heights, in partnership with Long Island University. The grant, which is the largest in the nation targeting this population, has enabled us to develop science, build relationships with our unique communities, and nurture collaborations with community-based organizations and community health care providers; all of which will enhance our ability to make a major contribution to research on cancer disparities. One such study, published in Cancer and the British Journal of Haematology, found that women from Barbados/Trinidad-Tobago, Haiti, Jamaica, and US-born black women were more likely than women from the Dominican Republic or European-born whites to have a gene that is associated with low white blood cell count (and consequent increased risk for infection) in response to chemotherapy, which in turn can result in a delay or prevention of the completion of treatment.

- Dr. Heather Greenlee was recently awarded a 2-year R21 from the National Cancer Institute to study the effects of an intervention designed to increase fruit/vegetable and decrease dietary fat consumption among Latina breast cancer survivors. This interdisciplinary project involves collaborators from the College of Physicians and Surgeons Division of Hematology/Oncology, College of Physicians and Surgeons Division of Preventive Medicine and Nutrition, Teachers College, the Irving Institute for Clinical and Translational Research, and the NYC community-based organization Cook For Your Life!
Clusters

Epidemiology Innovation

Overview: The Epidemiology Innovation cluster brings together a group of accomplished investigators with a wide range of interests. Among their areas of expertise are the epidemiology of aging, injury and violence, global health, maternal and child health, and systems research, as well as new approaches to data collection and cohort maintenance in low- and middle-income countries. The cluster serves as a seed bed for the germination of innovative ideas and directions, and provides the administrative and intellectual infrastructure needed to support developing research programs.

SELECTED HIGHLIGHTS

- With the long term goal of promoting better physical and psychosocial functioning of children in South Africa, the primary aim of the ASENZE study, is to determine how the ability of children with neurodevelopmental disorders to function cognitively and socially is influenced by health related, contextual, and psychosocial factors, including caregiver mental health and substance abuse. The project team has recruited a population-based sample of almost 1600 children and families in KwaZulu-Natal who are about to undergo a follow-up assessment. The study, a collaboration between Columbia and the University of KwaZulu-Natal (UKZN), is led by Epidemiology Innovation cluster leader Dr. Leslie Davidson and subcontract PI Mr. Shuaib Kauchali, who is a senior specialist at UKZN and a doctoral candidate in the Department. The US team also includes Department members Drs. Stephen Arpadi and Zena Stein.

- Dr. Thelma Mielenz is leading, along with Dr. Tien Dam of the Department of Medicine, an innovative transdisciplinary collaboration with Atria Senior Living Group, an assisted living provider. The primary aim of the study is to promote best-practices in fall prevention in potentially frail older adults. Dr. Mielenz began by selecting a sustainable evidence-based program and training five Doctor of Physical Therapy students to conduct the functional assessments. The investigators are now piloting its use in two Atria assisted living communities. Additional aims include examination of the relationship between participation in a fitness program and fall risk reduction in several Atria communities and description of the characteristics and falls outcomes in residents from a group of assisted living facilities.

- In association with the Institute for Human Nutrition, Dr. Anne Paxton is conducting a study on Immigration, Assimilation and Nutrition: Changes in Diet of South Asian and West African Recent Immigrants to New York City. The goal of the project is to preserve the healthful aspects of the traditional diet, and assist in the adoption of the most healthful aspects of an American diet, in recent immigrants to New York City. This study will explore changes in dietary patterns of recent immigrants to New York City from South Asia and West Africa. These two under-researched immigrant groups are at increased risk of obesity and diabetes, yet knowledge on dietary changes in these populations after immigration is limited. This project will inform the development of a baseline survey for a longitudinal study of changes in dietary practices and health of South Asian and West African immigrant families to the United States.

Social Epidemiology

Overview: The Social Epidemiology cluster is founded on a strong history of research on social factors in health at Columbia, particularly within psychiatric epidemiology. Faculty bring to the cluster traditions of developing and deploying rigorous theory, concepts, study design, and measurement innovation. Work in the cluster builds on its connections with the RWJ Health and Society Scholars Program and the Center for the Study of Social Inequalities and Health. The RWJ program facilitates interdisciplinary collaborations between the biological and social sciences and has dramatically increased contacts between researchers at the Mailman School of Public Health and the basic social sciences. The Center for Social Inequalities and Health provides a rigorous intellectual basis for the study of health inequalities. The Center provides support for junior faculty interested in this areas, sponsors speakers and events that highlight the importance of social inequalities for the production of health inequalities and keeps members current on critical issues through a lively journal club.

SELECTED HIGHLIGHTS

- The Emerging Health Disparities grant is co-led by Social Epidemiology cluster leader Dr. Bruce Link, working in collaboration with Lifecourse Epidemiology cluster leader Dr. Ezra Susser and other Lifecourse Epidemiology faculty. It brings novel data to bear on the emergence of racial and socioeconomic disparities in health over the life course. Examining the intersection and mutual influence of socioeconomic status, cognitive ability, and health itself, the study brings together a broad interdisciplinary group from across CUMC to assess health outcomes in mental health, lung function, and obesity.

- In the Expressed Emotion and Stigma among Chinese-Americans with Schizophrenia study, Dr. Larry Yang examines the specific social and cultural factors that lead to better course of schizophrenia among a high-risk group of Chinese immigrants. He is also applying his expertise related to psychosis to a new “high-risk” for psychosis population and examining how stigma unfolds among a group that is at risk for developing psychosis.

- Drs. Bruce Link and Lisa Bates are advancing the development of a New York City population health project in close collaboration with the New York City Department of Health and Mental Hygiene (NYCDOHMH). This project aims to generate new data and integrate existing sources to create a rich resource to investigate urban health, and to test the impact of innovative approaches to population health intervention pioneered by the NYCDOHMH.

- Dr. Bates has received a grant from the Substance Abuse and Mental Health Services Administration (SAMHSA) to study “Mental health consequences of the US economic downturn: What do we know and what can be done?” The goal of the grant is to conduct a rapid collaborative assessment of evidence on the mental health impact of economic contractions and to identify opportunities for government interventions.
Infectious Disease Epidemiology

Overview: The Infectious Disease cluster encompasses domestic and global work on the epidemiology of emerging and re-emerging infections, global infectious disease threats, disease surveillance, disease detection, development of vaccines and other prevention methods, clinical trials, and the role of infectious pathogens in the pathogenesis of chronic non-communicable diseases (such as cancer and cardiovascular disease). The focus is broad, ranging from the search for novel pathogens using advanced molecular techniques to longitudinal population-based studies to define transmission dynamics and spectrum of disease and survival. Approaches are employed in an interdisciplinary fashion to define etiology, pathogenesis, transmission, and prevention/treatment potentials. The faculty of two major school-wide centers (see sidebar) are deeply engaged in the academic life of the Department of Epidemiology and make up a sizable portion of the overall Infectious Disease Epidemiology cluster.

SELECTED HIGHLIGHTS

- As part of its ongoing research in program, CAPRISA (see page 1 of this newsletter) participates in the Microbicide Trials Network (MTN), a clinical trials network established in 2006 by the National Institute of Allergy and Infectious Diseases (NIAID). The MTN brings together international investigators and community and industry partners who are devoted to reducing the sexual transmission of HIV through the development and evaluation of products applied topically or administered orally, working within a unique infrastructure specifically designed to facilitate research required to support licensure of these products for widespread use.

- A project -- PREDICT -- has been created with up to $75 million in funds over five years from the U.S. Agency for International Development’s (USAID) Emerging Pandemic Threats Program to develop a global warning system for newly emerging diseases and to anticipate and prevent emerging infectious diseases that move between animals and people in order to prevent the next global pandemic. This international program, which is directed by Dr. Stephen S. Morse, includes a consortium of organizations led by the School of Veterinary Medicine of the University of California Davis and will be active in global hotspots where important wildlife host species have significant interaction with domestic animals and high-density human populations.
**Clusters**

**Psych / Neuro Epidemiology**

*Overview:* The Psychiatric and Neuro Epidemiology cluster carries out studies that aim to understand the causes, origins, progression, and outcomes of psychiatric disorders. Faculty members are engaged in research that investigates a broad spectrum of determinants ranging from genetic factors to the influence of macrosocial environments. Work in the Psychiatric and Neuro Epidemiology cluster builds on a long collaborative history with the New York State Psychiatric Institute, the Department of Psychiatry, the G. H. Sergievsky Center, and the School of Social Work. Among the faculty are leading scholars in neuro-developmental science, stress and adversity, developmental psychopathology, genetic factors, suicide, trauma, stigma, methodological issues, and mental health services research. Faculty in the cluster work regularly with other clusters in the Department, particularly life course and social epidemiology.

**SELECTED HIGHLIGHTS**

- The cluster has launched a groundbreaking Global Mental Health Program (GMHP) which aims to catalyze our work and that of our colleagues across the University around mental health research and interventions in lower and middle-income countries. Work in the GMHP is focused on building new research, intervention, and educational opportunities, all to the end of promoting populations mental health globally. A joint initiative of the Psych / Neuro and Lifecourse clusters, this program engages students and faculty from both CUMC and Morningside campuses with international partners throughout the world.

- Also situated within the Psych / Neuro cluster is Columbia’s arm of the National Center for Disaster Mental Health Research, under the leadership of Dr. Sandro Galea. This Center is a collaboration of four academic institutions: Columbia, Dartmouth, Yale, and the Medical University of South Carolina. An explicit goal of the center is to have the resources and infrastructure in place to allow researchers to launch studies quickly after a disaster to identify the mental health consequences of such mass traumatic events. The Center also aims to bring cutting edge methodological approaches to bear and engages cells-to-society etiologic questions, including assessments of genetic, endocrine, and environmental factors in the production of population health after traumatic events. Recent post-disaster assessments related to the Center include research after Hurricane Ike in Texas and research after the recent earthquake in Haiti.

- Dr. Michaeline Bresnahan is engaged in the International Collaboration for Autism Epidemiology (iCARE) project, which unites a multi-national network of disease and birth registries including Denmark, Sweden, Finland, Norway, Australia and Israel. The project will establish logistic and technical infrastructure for multi-registry autism research including the creation of a virtual data set approach to analysis, establish written guidelines for registry-based research collaboration, and demonstrate the capabilities of the multi-registry approach to elucidate etiologic pathways to autism by thoroughly investigating candidate factors for perinatal adversity in relation to autism, beginning with gestation length and fetal growth. Under Dr. Bresnahan’s leadership, Columbia serves as the data coordination site, with primary responsibility for data harmonization.

- Dr. Renee Goodwin and colleagues have been studying the inter-relationships among asthma, smoking and mental disorders, with a focus on an intergenerational perspective. One line of research focuses on a hypothesis that a parallel rise in smoking among women over the past several decades may be one contributing factor to the epidemic of asthma in children (via increased exposure to secondhand smoke). Dr. Goodwin and her co-investigators have found in several studies that despite an overall decline in smoking on a national level, cigarette smoking continues to increase among women, especially younger women of lower socioeconomic status. They are also currently working in collaboration with neuroscience researchers on the Morningside campus and the Genome center to examine potential mechanisms of the relationship between asthma and depression and anxiety, using a combined approach that includes both epidemiologic methods and animal models.

- Psych / Neuro Epidemiology cluster leader Dr. Sandro Galea is also leading several studies concerned with understanding the psychiatric impact of military deployment, particularly in the aftermath of the wars in Iraq and Afghanistan. Dr. Galea and his colleagues have focused principally on mental health among national guard and reserve soldiers who have been deployed in these conflicts in numbers far exceeding any previous conflict. This work, in collaboration with colleagues across the country, involves a cohort of guard and reservists nationally and a large 10-year cohort of national guard members in Ohio. This project aims to establish the factors across the life course that intersect with military experience to influence the mental health of soldiers.
Lifecourse Epidemiology

Overview: The Lifecourse Epidemiology cluster carries out studies in birth cohorts across the globe, with the aim of deepening our understanding of the origins and unfolding of health and disease over the life course. Virtually all of the work in the cluster involves interdisciplinary collaborations with faculty in epidemiology and across CUMC. Primary collaborators include the Imprints Center for Genetic and Lifecourse Studies, the Institute of Human Nutrition (College of Physicians and Surgeons, Columbia University), and the Division of Developmental Neuroscience (New York State Psychiatric Institute).

SELECTED HIGHLIGHTS

- A large series of studies has been built over 20 years in collaboration with the leaders of Child Health and Development Study in Oakland, California and the New England Collaborative Perinatal Cohort Study. These two relatively similar studies began as pregnancy/birth studies in 1959-1966 and have been used in a broad array of follow-ups over the past two decades. Life Course Epidemiology cluster leader Dr. Ezra Susser, and Drs. Jennie Kline and Pam Factor-Litvak, among others, have been addressing the prenatal and early life origins of schizophrenia and other neurodevelopmental outcomes in these groups for many years. A program project, Early Determinants of Adult Health or "EDAH" (PI Dr. Susser), brought together the two cohorts in a multisite study focused on sibling pairs and on neuropsychiatric, breast cancer, and cardiovascular risk outcomes. Under the umbrella of EDAH, investigators in our Department subsequently developed numerous independent grants, including large and ongoing studies of prenatal endocrine disruptors and effects on male fertility and reproduction (Dr. Factor-Litvak), and of early origins of mammographic density (Dr. Mary Beth Terry). They also include a study of how health disparities emerge over the lifecourse co-led by Dr. Bruce Link and Dr. Susser. New initiatives are still emerging, one of which is an especially innovative proposal by Dr. Jennie Kline to study early influences on menopause in the New England cohort. The results of the core EDAH program project (and selected related studies) will be published as a special issue of the Journal Developmental Origins of Health and Development. This will include papers on early origins of neuropsychiatric disorders, mammographic density, male fertility, and anthropometry including obesity.

- Studies of the Dutch Hunger Winter have a long and storied history in our Department, including the original work led by Drs. Zena Stein and Mervyn Susser, and the studies of prenatal famine and schizophrenia led by Dr. Ezra Susser. Since his recruitment back to this Department about ten years ago, Dr. Bertie Lumey has initiated and led a groundbreaking population-based follow-up study of persons exposed and unexposed to the Dutch Hunger Winter. One of the intriguing results of recent years was the finding of epigenetic effects related to periconceptional exposures. Dr. Lumey is working with Drs. Terry, Susser, and many other investigators across the medical center (and in Holland) to pursue these epigenetic findings.

- Dr. Ronald Wapner of Ob/Gyn plays a central role in a series of pregnancy cohorts studies funded by NICHD and based in a multisite network in which Columbia is a key site. He has generously offered to collaborate with Epidemiology investigators to use these remarkable cohorts as a base for further studies of early determinants of health and disease over the early life course. Dr. Factor-Litvak has been particularly involved in these collaborations. An exciting initiative currently under development is led by Drs. Susser and Factor-Litvak, in collaboration with Dr. Ben Tycko at CUMC and Dr. Abraham Aviv at UMDNJ. The proposal will focus on the determinants of telomere length at birth. Its significance lies in the fact that leukocyte telomere length is related to cardiovascular (and probably other) diseases, and to longevity, yet only recently was it recognized that individuals vary widely in leukocyte telomere length at birth, and therefore, prenatal influences on leukocyte telomere length may have important implications for health and disease across the entire life course.


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