By the Numbers

Clinicians Get a Hand from Biostatistician Josh Kriger.

Josh Kriger, MS ’14, is a hands-on kind of guy. He’s good in the classroom, but excels on the job. As a Mailman School student, the former tech entrepreneur and CEO devised algorithms to fine-tune a Web-based diagnostic tool for mitochondrial disease, evaluated the prognostic value of artificial nutrition and lung bypass among critically ill infants, and designed a clinical trial to evaluate anesthesia dosages for children awaiting stitches in the emergency department. “I tend to want to solve problems,” says the 29-year-old, “to know there’s a need and develop the skills to be useful.”

Kriger’s first post-commencement appointment—as full-time program manager for a Mailman School team analyzing clinical trial data from an experimental treatment for acute heart failure—is an extension of his studies with Professor of Biostatistics Seamus Thompson, PhD. “There are many clinicians on this campus who don’t have statisticians to help them,” says Thompson, who developed a program in which junior clinical faculty at Columbia University Medical Center can partner with ambitious biostatistics students for help with study design and data analysis. “When you have students who are as talented as Josh, you don’t have to be terribly smart to match the need with the ability.”

Kriger was 21 when he dropped out of college to launch his own company. By the time he was 25, he’d commercialized a mobile phone software system of his own invention, successfully overseen a round of investment financing, and landed a gig as vice president of sales and marketing for a multinational tech firm. And then he walked away. “I wanted to do something that was hard science and gives value to people,” says Kriger, who finished his bachelor’s in 2011. “I’ve been able to use the same drive and dedication that infused my work as an entrepreneur to work on my projects here at the Mailman School.”

In June, Kriger attended the United Mitochondrial Disease Foundation annual meeting to present his work with Columbia neurologist Michio Hirano, MD, and colleagues, to refine an online diagnostic tool. Mitochondrial diseases—cellular glitches that manifest in every organ system throughout the body—are rare, debilitating, and often fatal. “If you can diagnose people correctly and standardize the process,” says Kriger, “you can run a worthwhile clinical trial testing interventions in a patient population.”

Also this summer, the Journal of Pediatric Gastroenterology, Hepatology, and Nutrition published Kriger’s work with former Columbia pediatric gastroenterology fellow Anne Pierog, MD, to predict the vigor of infants born with herniated diaphragms. Often detected during a woman’s 20-week ultrasound, the congenital malformation compromises gastrointestinal and pulmonary development during gestation. At its most extreme, the condition kills. For children who survive long enough to allow for surgical repair at 12 months, clinicians need reliable indicators to inform families’ expectations and guide long-term treatment. Says Kriger: “It’s amazing to be co-authoring papers that are changing people’s lives—especially for these sick patients—while you’re still in school.”

Having such broad experience during his studies has galvanized his commitment to his new career, says Kriger. “To participate in writing the protocol, looking at the safety issues, going through the institutional review board process, writing a statistical analysis plan, putting together the grant proposal for review and approval—that is the big leagues,” he says. “And I got to do it in a real-life setting.”

Honored

Regina Santella, Mentor

This year, Dean Linda P. Fried, MD, MPH, had to convene a second selection committee when the time came to evaluate nominees for her annual Excellence in Mentoring Award.

In addition to the many impressive nominees submitted to Vice Dean of Faculty Affairs Regina Santella, PhD, who coordinates the nominating process, there was a complicating factor: a letter signed by nine professors and forwarded directly to the dean to propose that Santella herself receive the honor. “Their nomination letter was particularly poignant,” says Fried, who read excerpts as part of her State of the School address in May. The award’s presentation was a complete surprise for Santella, a professor of Environmental Health Sciences who joined the Mailman School faculty in 1983 and oversees the School’s mentoring program for junior faculty.

“Regina is the reason why so many of our Columbia faculty can successfully integrate biomarkers into our research portfolio—because we have all trained with her and we have all benefited from her biomarkers class,” wrote the nine faculty. “She is also the reason why so many of us have been successful with grant funding, as she actively collaborates with us, reading our grant applications and providing valuable scientific expertise; this is essential for all of us during this tight funding climate.”

In closing their letter, the faculty—from three Mailman School departments—wrote, “Dr. Santella inspires so many of us every day to work harder, think more, and give more to our entire School. She is the finest example of leading by example.”
The Fine Print  From a restaurant named Heaven to an entry in the annual anthology The Best Writing on Mathematics, Mailman School scholars engaged an array of topics in these tomes published during the past academic year.

* A Thousand Hills to Heaven: Love, Hope, and a Restaurant in Rwanda by Josh Ruxin, MPH ’94, PhD, assistant professor of Population and Family Health. Ruxin relates how he and his wife settled in Rwanda to do public health work and unexpectedly founded Heaven, a job-training facility and gourmet restaurant in Kigali. The memoir follows Heaven’s trajectory as well as Ruxin’s work as director of Health Builders (formerly the Access Project), which provide health systems expertise to more than 90 facilities in Rwanda.

* Introducing Global Health by Peter A. Muennig, MD, MPH ’98, associate professor of Health Policy and Management, and Celina Su, PhD. This overview of the major issues in the field explores strategies to optimize population health, emphasizing the integration of health-system, education, anti-poverty, infectious-disease, urban-development, governance, and incentive-based policies. Technical concepts—such as the incidence and prevalence of disease—are presented within the context of more accessible topics, such as global poverty.

* Epidemiology Matters by Katherine Keyes, MPH ’06, PhD ’10, assistant professor of Epidemiology, and Sandro Galea, MD, MPH, DrPH ’03, professor of Epidemiology. This introductory textbook incorporates extensive illustrations to make concepts and technical vocabulary accessible to students. A companion website with comprehensive reading lists and a lively Twitter feed carry forward its reach.

* The Best Writing on Mathematics 2013, essay by Prakash Gorroochurn, PhD, associate professor of Biostatistics. In “Errors of Probability in Historical Context,” Gorroochurn discusses how the common-sense approach deployed by the field’s earliest proponents generated a series of “blunders and fallacies,” some of which persist today. Examples include the work of the Italian Renaissance physician and mathematician Gerolamo Cardano and Gottfried Wilhelm Leibniz, the German mathematician and philosopher who co-invented differential calculus.

* The Biostatistics of Aging: From Gompertzian Mortality to an Index of Aging-Relatedness by Gilberto Levy, MD, DrPH ’11, and Bruce Levin, PhD, professor of Biostatistics. To investigate the biomedical and public health relevance of declaring that a condition is related to aging, the authors present a new quantitative method—a marriage of the evolutionary explanation of senescence in aging and the statistical theory of extreme values—for examining the relative contributions of genetic and environmental factors to mortality and disease incidence in a population.

* Enigmas of Health and Disease: How Epidemiology Helps Unravel Scientific Mysteries by Alfredo Morabia, MD, MPH, PhD, professor of clinical Epidemiology. Morabia investigates the role of epidemiologists in shaping our understanding of population health issues. Using examples including breast cancer and swine flu, he helps readers make sense of the health information disseminated by the mainstream media.

* Diabetes Mellitus and Oral Health: An Interprofessional Approach by Ira B. Lamster, DDS, MMSc, professor of Health Policy and Management and dean emeritus of the Columbia University College of Dental Medicine. This tool for dentists, dental hygienists, and primary care providers reviews medical and dental considerations when treating people with diabetes.

* A LifeCourse Approach to Mental Disorders, edited by Kareasten C. Koenen, PhD, professor of Epidemiology; Sasha Rudenstine, PhD, Epidemiology Merit Fellow; Ezra Susser, MD ’82, MPH ’82, DrPH ’92, professor of Epidemiology; and Sandro Galea, MD, MPH, PhD ’03, professor of Epidemiology. Researchers from disciplines including epidemiology, developmental psychopathology, genetics, socioculture, developmental cognitive neuroscience, and epigenetics synthesize existing data on adult diagnoses now recognized to have roots in early phases of individual development.

* The Transplant Imaginary: Mechanical Hearts, Animal Parts, and Moral Thinking in Highly Experimental Science by Lesley A. Sharp, PhD, senior research scientist in Sociomedical Sciences. A medical anthropologist, Sharp expands her investigation of the cultural power of organ transplantation to the moral thinking of scientists seeking alternatives to a pressing conundrum: The clinically promising field is plagued by a shortage of human organs. Sharp applies an ethnographic approach to the quest for cross-species and bioengineered organs.
In the City of Peace

Building Bridges in Geneva, Switzerland

This summer, six Mailman School students traveled to Geneva, Switzerland, to complete practicum experiences as part of their MPH training. As host to the United Nations, the World Health Organization, the World Economic Forum, and the International Committee of the Red Cross—plus dozens of consulting companies and myriad lesser known international nonprofits and nongovernmental organizations—the city hums with opportunities for young professionals in public health.

To help Mailman School students leverage those possibilities, longtime Geneva residents Jessie Schutt-Aine, MPH ’94, who works for the WHO, and Columbia MBA Barbara Bulc, founder and president of the boutique consulting firm Global Development, have joined forces with staff in the offices of Career Services, Alumni Relations, and Integrative Practicum Experience.

In May, Schutt-Aine and Bulc hosted a videoconference to answer students’ questions about global health work in Geneva. In June, they welcomed students at a networking event hosted by the Geneva chapter of the Columbia Alumni Club. Schutt-Aine organized a second event specifically for students working with the WHO. Bulc has posted multiple employment opportunities for Mailman School students and alumni.

“Geneva is a great training ground for students interested in working in international health,” says Schutt-Aine. “Mailman School students bring to their work solid public health skills—including epidemiology, monitoring and evaluation, and project management—all of which are highly valued and critical to international health.”

Commencement Kudos

Class of ’14

In May, the Class of ’14 became the first to graduate with MPH degrees earned through the Mailman School’s interdisciplinary curriculum, launched in 2012. Geriatrician John W. Rowe, MD, chair of the School’s Board of Overseers and a professor of Health Policy and Management, gave the commencement address. Pediatrician Noé’ Duran Romo, MS ’14, delivered remarks on behalf of the graduating class.

The 334 MPH graduates earned certificates of specialization in 20 fields, including health of an aging society, climate and health, and humanitarian assistance. Thirty-three Master of Science and eleven doctoral degrees were also awarded in May. An additional 188 graduates received their diplomas in October 2013 and February 2014.

As a student, Mark Kaplan, MPH ’14, grappled with large data sets in the classroom and as an intern in the Department of Health and Human Services’ Office of Inspector General. He now works as a technical research analyst at a New York City nonprofit, applying behavioral economics research to programs that serve poor families in the United States.

Kaplan is in good company. By September, the Class of ’14 was well on its way to matching the six-month job placement stats achieved by the Class of ’13, with 85 percent of the class employed in the fields of public health or healthcare. The graduates in the Class of ’14 had further cause for celebration: A median increase of approximately 44 percent in their starting salaries.

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Christin Gilmer, MPH ’14, could easily have been at the Tucson, Arizona, scene where in 2011 a gunman killed six and injured fourteen, including then-U.S. Representative Gabrielle Giffords. A volunteer for the congresswoman, Gilmer had taken the day off. Three of her friends were shot, two fatally. The next day, when Gilmer learned that a hate group planned to disrupt the memorial service of the youngest victim, she set out to organize a “divine guard.” Thousands of volunteers, dressed as angels with 8- to 10-foot wings, shielded mourners at the service. “It was so beautiful,” Gilmer remembers. “It was one of the most touching moments of my life.”

In May, Gilmer was honored with the 2014 Gorman Humanitarian Award for demonstrated excellence in commitment to the humane care of individuals and communities, and in advancing consideration of human rights and values in healthcare and prevention.

As a junior high school student inspired by ACT UP, Gilmer started speaking out about AIDS and volunteering for global HIV/AIDS groups. As an undergraduate, she interspersed her studies with work in the fashion and music industries and in 2007, added full-time advocacy to the mix. She helped raise more than $1 million for the Southern Arizona AIDS Foundation, founded a health organization, and organized opposition to anti-gay and anti-immigrant legislation.

For her practicum in the Global Health track at the Mailman School, Gilmer traveled to Denmark, where she worked on HIV prevention with the World Health Organization, and South Africa, where she was a field manager on a University of Oxford study of youth at risk for the disease. In July, the 29-year-old began her studies at Harvard University for a doctorate in public health.

Gilmer is also in the exploratory phase of starting a nonprofit in South Africa for children with HIV. “The two things that drive my life are passion and compassion,” she says. “My biggest goal is helping people who need it.”
Leaders

Global Health at Home

Sten Vermund, PhD ’90, Puts Prevention First

As a pediatrician-in-training in 1970s New York City, Sten Vermund, MD, PhD ’90, lamented that many of the medical conditions he saw in patients were preventable. Forty years later, Vermund is a leading figure in HIV and cancer prevention for women and children in the U.S. and abroad. “I am a hopelessly prevention-oriented guy,” he says. “I’m so inspired when we can avoid illness altogether.”

Vermund, who is director of Vanderbilt University’s Institute for Global Health, is this year’s winner of the Mailman School’s Allan Rosenfield Alumni Award, given in recognition of outstanding achievements and leadership in public health. The award is named in honor of the late Allan Rosenfield, MD, who served as dean of the school from 1986 to 2008 and was a cherished mentor and friend to Vermund.

Like many of his colleagues in New York City in the 1980s, Vermund’s career was rocked by the emergence of AIDS. His own patients were dying and with limited therapeutic options, he turned his attention to preventing transmission from mother to child during pregnancy. “I got a sense that it was a historic moment,” he says, “and that because I had trained in infectious disease epidemiology, I could make a difference.”

Vermund went on to work for the National Institutes of Health, applying epidemiologic approaches to intervene in HIV, and later at the University of Alabama, Birmingham, as head of geographic medicine in the School of Medicine and as chair of the department of epidemiology at the School of Public Health. Overseas, he participated in the creation of a program to train health professionals in Zambia to develop screening programs to diagnose and treat HIV and cervical cancer.

“We really focused on trying to keep things pragmatic,” says Vermund, “for implementation in low-resource settings.” He has since worked on similar programs in China, India, Pakistan, and Mozambique. The “Red Ribbon, Pink Ribbon” campaign—a partnership of government, nonprofits, and pharmaceutical companies inspired by the Zambian cervical cancer screening program—has informed the integration of cervical and breast cancer prevention efforts into existing healthcare programs in sub-Saharan Africa, Asia, and Latin America.

In what he calls “global health at home,” Vermund applied the same principles he used in Zambia to create a program in rural Alabama, Mississippi, and Louisiana to help people in low-income settings better utilize healthcare. “You get a bigger bang for your buck when you’re working with people who are disadvantaged. There’s just more benefits to accrue in those populations whose life expectancies aren’t as high—where we worry about disproportionately high infant mortality, child mortality, maternal mortality,” he says. “If a patient is privileged, the health system may invest a lot of resources for a little gain, whereas if your clientele is not in great shape, you can put in those same resources for a lot more gain.”

To the Next Level...

Alumni Board Expands its Vision

In fall 2013, Kathleen Crowley, MPH ’01, PhD ’13, assumed the presidency of the Mailman School Alumni Board. Her first order of business was a listening tour. “I thought it would be helpful to consult board members for their ideas and input,” says Crowley, who is associate vice president of Environmental Health and Safety at Columbia University.

First and foremost, board members championed a more active role in their relationship with the School. “I’m excited that we’re taking the board to the next level,” says Crowley, who used the insights she gleaned to develop themes and a road map to guide the board’s efforts over the next five years.

The 29-member board plans to expand its partnerships with students; provide more alumni networking opportunities; extend the School’s presence nationally and internationally; and take a more purposeful approach to such internal board governance issues as forming an executive committee, providing an orientation for new members, and hosting guest speakers as a board educational opportunity. “We’ve already accomplished a lot,” says Crowley, “because of the energy of all of the committee chairs and the board members.”
On the Move

Kirby Bumpus, MPH ’10, sees the possibility in small steps. As a student in the Department of Sociomedical Sciences, Bumpus honed her skills as a sexual health counselor for young people. Working with the Harlem Health Promotion Center, she visited alternative high schools and juvenile rehabilitation programs to talk about safer sex. Says Bumpus: “There were ‘Aha!’ moments when I’d see a light bulb go off in a young woman’s head when we’d talk about condom negotiation and ways she could have a conversation with her partner.”

Often, those conversations served as a prelude to more global discussions about health and wellness, even as opportunities to connect individuals with the larger healthcare system. Says Bumpus: “It allowed us to link to a population that was falling through the cracks and hadn’t taken control of their health.”

With the 2008 election of President Barack Obama, Bumpus saw a window of opportunity. After years of explaining to confused friends just what a master’s in public health was, prevention and health awareness were finally coming into their own. The new president had pledged to deploy resources in areas like community health and health prevention. Perhaps a role within the federal bureaucracy would provide Bumpus a broader platform to extend her efforts, especially among disadvantaged communities.

So in 2011, soon after passage of the Affordable Care Act, Bumpus left a job she loved at the Robin Hood Foundation in New York City and headed to the nation’s capital to work at the Department of Health and Human Services. “There is no better way to learn about the nation’s health than to work at the federal level on public health issues,” says the 28-year-old.

It didn’t take long for Bumpus to hit her stride in D.C. After a scant two years as a special assistant to the Assistant Secretary for Health, she accepted a policy portfolio of her own that included adolescent and women’s health, LGBT issues, and HIV. Then in 2014, a call came from the White House inviting Bumpus to apply for a post working with First Lady Michelle Obama on “Let’s Move,” the ambitious program dedicated to solving the epidemic of obesity within a generation.

“I feel especially driven to help communities of color because that is where health disparities are typically greatest,” says Bumpus. “As a public health professional, I feel obligated to educate and help people learn how to live healthier lives.”

Rates of childhood obesity, which have tripled in three decades, are especially high in African-American and Hispanic communities, where some 40 percent of children are overweight or obese. Let’s Move provides outreach to parents, schools, elected officials, faith communities, and even chefs, encouraging efforts to educate all Americans about nutrition and exercise and promote sustainable habits to last a lifetime.

For Bumpus, a self-taught cook who admits that eating is one of her great pleasures in life, taking control of the kitchen has become a centerpiece of her own quest for lifelong health. “So many of us eat food on the go and have no clue what we are putting into our bodies,” she insists. “When people cook at home, they are more in control of what they are eating and can teach their kids better habits at a young age.”
Practice Perfected

Each summer, MPH students on the cusp of their second year of classes disperse around the world, putting to the test the lessons they’ve studied in the classroom. This summer, their hosts—in 50 nations—including federal and local governments, nonprofits, corporations, and philanthropies.

1 Iran’s Lake Urmia was once the largest saltwater lake in the Middle East, teeming with wildlife. In the last two decades, rapid desertification has turned it into a desolate health hazard. Ali Sadeghi, MPH ’15, traveled to Lake Urmia as a research associate for the Environment and Water Research Center. A Sociomedical Sciences major, he documented the health effects of salt dust swept from the lake’s dried surface and created interactive maps to inform strategies for remediation.

2 In Paris, France, Navid Fallahi, MPH ’14, worked at the Cochrane Institute. An aspiring medical administrator who intends to integrate his training in Epidemiology with the clinical insights of an MD, Fallahi created a statistical algorithm to analyze demographic features of research participants, information vital for evaluating the external validity of a clinical trial.

3 In Mahanoro, Madagascar, Shayla Durrett, MPH ’15, worked with USAID and a local organization intent on increasing use of community-based primary health care services. A former Peace Corps volunteer, Durrett used her fluency in Malagasy, the local language, to draft a handbook for community health workers to use in the field to diagnose, treat, and refer people in their villages.

4 Michelle Jackson, MPH ’14, traveled throughout Indonesia, doing a household survey in 32 villages to assess barriers to birth registration and education, social assistance, and health outcomes. “In our coursework, we learn many of the ‘hard skills’ needed to collect high quality data,” she says. “In Indonesia, I took skills I had developed in the classroom and actually put them into practice to collect the data needed to inform policies and priorities around child protection.”
“I want to make a difference at the Mailman School, but as a recent graduate, I don’t have a lot of money to spare. I was thrilled to find out that I can be a leader at the School by making monthly gifts of less than $50.”

Carlos Cuevas, MPH ‘12

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