Welcome to the M.D.-Ph.D. Program's Annual Spring Dinner in honor of the M.D.-Ph.D. Class of 2013 at Harvard Medical School! We are especially delighted to welcome the family members and significant others who are joining the graduates, faculty, students and staff to recognize our graduates tonight.

This year, twenty students will graduate from our program with both M.D. and Ph.D. degrees. This book showcases the accomplishments of all the individuals among this select group. Together, these students collectively completed 20 Ph.D. degrees, 20 M.D. degrees and 2 Master's degrees, spending roughly 181 years, or 9.05 years on average per student, at graduate study since their matriculation into Harvard Medical School. Amazingly, they also had 7 children! This year’s class of nine women and eleven men reflects the diversity of graduate training available to M.D.-Ph.D. trainees at Harvard Medical School. In all, they carried out their graduate studies in 12 different programs located within Harvard University's Graduate School of Arts & Sciences and the Massachusetts Institute of Technology and 1 at the University of Oxford in the United Kingdom. While the majority of students pursued their dissertations in the basic sciences, two of our graduates completed their dissertations within the MIT/HST Medical Engineering Medical Physics program and one completed his dissertation in statistics.

Please spend a moment to read the individual biographies written by each of the students. Many spent their early years in cities and towns across the United States: California, Connecticut, Georgia, Illinois, Indiana, Maryland, Minnesota, New York, Ohio, Pennsylvania, Utah and Washington, D.C. Other students have come from China, Ghana, Israel and Nigeria. They went on to complete their undergraduate degrees at 15 different colleges and universities including Columbia University, Cornell University, Harvard College, Indiana University, Johns Hopkins University, Massachusetts Institute of Technology, Princeton University, Purdue University, Stanford University, University of Albany, University of Chicago, University of Florida, University of Illinois Urbana-Champaign, University of Pennsylvania and Williams College. While at HMS, 16 enrolled in the London Health Sciences and Technology (HST) curriculum, while 4 joined the New Pathway, representing two of the four societies (2 Cannon and 2 Peabody).

While these students are meeting the joint challenges of graduate and medical study, the M.D.-Ph.D. Program endeavors to provide a nurturing and cohesive environment for them. The program is fortunate to be able to provide financial support for the majority of the graduates under the sponsorship of the NIH-Medical Scientist Training Program (MSTP) grant and other sources, and wishes it could provide full funding for all. Program offerings, including special courses, advising sessions, retreats, dinners, symposia, lunches and poster sessions, help us to bring diverse groups of training together in fulfilling our mission to “educate and inspire the leading physician-scientists of the future.”

We congratulate the 2013 graduates on their numerous achievements and accomplishments towards the completion of the M.D. and Ph.D. degrees and send our most heartfelt wishes for continued discovery, success and happiness into the future.

Best wishes,
The Faculty and Staff of the M.D.-Ph.D. Program
HARVARD MEDICAL SCHOOL

ANNUAL SPRING DINNER IN HONOR OF THE
M.D.-Ph.D.
Class of 2013

May 28, 2013
The Joseph B. Martin Conference Center

6:00 PM
Cocktail Reception
Classic Jazz by Tal Shalom-Kobi Trio

7:00 PM
Seating for Dinner in the Rotunda

Welcome and Introduction of Graduates and Mentors
Dr. Marcia B. Goldberg
Interim Director of the Basic and Translational Science Track

Dean’s Champagne Toast to the Graduates
Dr. Jeffrey S. Flier

Dinner

After Dinner Special Remarks
Dr. Marcia B. Goldberg
Ms. Amy I. Cohen
Dr. Benjamin I. Rapoport

Formal Group Photo of the Graduates
(in dining room at conclusion of remarks)

The M.D.-Ph.D. Program welcomes the families and friends of the graduates.
GRADUATES CELEBRATE MATCH DAY ON MARCH 15, 2013:

1 (L-R) Amy Cohen, Dan Herman, Yves Chretien, Erin Chen, Christos Tsokos, Marie Hollenhorst, Ben Rapoport, Rochelle Witt, Narie Storer, Peggy Hsu, Sonia Cohen, Lauren Buhl, Sid Puram
2 Vincent Auyeung, Joseph Franses, Erin Chen, Peggy Hsu
3 Erin Chen, Erin Loeliger, Marie Hollenhorst, Yves Chretien, Ben Rapoport, Dan Herman, Rochelle Witt
4 Dan Herman, Dr. Rick Mitchell
5 Ben Rapoport, Amy Cohen
6 Jon Herman, Dan Herman
7 Sid Puram, Rishi Puram
8 Marie Hollenhorst, Vikram Pattanayak, Yves Chretien
9 Sonia Cohen, Erin Chen, Peggy Hsu, Lauren Buhl
10 Lauren Buhl
11 Robert Koffie and Nancy Oriol
Class of 2013

Amma Fredua Agyemang
B.S., University of Albany (2002)
Ph.D., Harvard University in Immunology (2011)
DISSERTATION: Regulation of Self-Reactive B cells: Implications for Complement and Toll-like Receptors
M.D., Harvard Medical School (2013)
RESIDENCY: Postdoctoral Research at NIH, Bethesda, MD
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Lauren Kaye Buhl (Barr)
Ph.D., Massachusetts Institute of Technology in Brain and Cognitive Sciences (2011)
M.D., Harvard Medical School (2013)
RESIDENCY: Preliminary Medicine at Lahey Clinic, Burlington, MA
Anesthesiology at Beth Israel Deaconess Medical Center, Boston, MA
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Yiyin Erin Chen
B.A., University of Chicago (2006)
Ph.D., Massachusetts Institute of Technology in Biology (2011)
DISSERTATION: Phosphorylation-based control of cellular asymmetry and the cell cycle in Caulobacter crescentus
M.D., Harvard Medical School (2013)
RESIDENCY: Preliminary Medicine at Beth Israel Deaconess Medical Center, Boston, MA
Dermatology at UCSF, San Francisco, CA
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Yves Rene Chretien
Ph.D., Harvard University in Statistics (2010)
DISSERTATION: A New Kullback-Leibler Statistic to Quantify Discrimination and Calibration in Binomial Models
M.D., Harvard Medical School (2013)
RESIDENCY: Preliminary Medicine/Radiology at Massachusetts General Hospital, Boston, MA
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Sonia Cohen
Ph.D., Harvard University in BBS-Genetics (2011)
DISSERTATION: Activity-Dependent Phosphorylation of MeCP2 in Neural Development and Rett Syndrome
M.D., Harvard Medical School (2013)
RESIDENCY: General Surgery at Massachusetts General Hospital, Boston, MA
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Joseph Wang Franses
B.S., Purdue University (2005)
Ph.D., Massachusetts Institute of Technology in HST MEMP/Chemical Engineering (2011)
DISSERTATION: Regulatory Roles of Endothelial Cells in Cancer
M.D., Harvard Medical School (2013)
RESIDENCY: Internal Medicine at Massachusetts General Hospital, Boston, MA
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Daniel Steven Herman
B.S., Massachusetts Institute of Technology (2004)
Ph.D., Harvard University in BBS-Genetics (2011)
DISSERTATION: Massively parallel, targeted DNA resequencing and cardiovascular disease
M.D., Harvard Medical School (2013)
RESIDENCY: Pathology at University of Washington Affiliated Hospitals, Seattle, WA
Page 12

Marie Alice Hollenhorst
B.S., Stanford University (2005)
Ph.D., Harvard University in Chemical Biology (2011)
DISSERTATION: Biosynthesis and biological activity of the daptamide antibiotics
M.D., Harvard Medical School (2013)
RESIDENCY: Internal Medicine at Brigham & Women's Hospital, Boston, MA
Page 13

Peggy Ping Hsu
A.B., Princeton University (2003)
Ph.D., Massachusetts Institute of Technology in Biology (2011)
DISSERTATION: The Identification of the mTOR-Regulated Phosphoproteome and a Mediator of Feedback Inhibition to PI3K-Akt
M.D., Harvard Medical School (2013)
RESIDENCY: Internal Medicine at Brigham & Women's Hospital, Boston, MA
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Jeffrey Joseph Ishizuka
D.Phil., NIH-GPP at University of Oxford (UK) (2008)
DISSERTATION: Immunodominance and Interconnection in the CD8+ T-cell Response to Influenza and other Viruses
M.D., Harvard Medical School (2013)
RESIDENCY: Internal Medicine at Brigham & Women's Hospital, Boston, MA
Page 15
Robert Mawunyo Koffie
B.S., B.S., Indiana University (2007)
Ph.D., Harvard University in Biophysics (2011)
DISSERTATION: Molecular Imaging of Synaptic Changes in Alzheimer’s Disease
M.D., Harvard Medical School (2013)
RESIDENCY: Neurological Surgery at Massachusetts General Hospital, Boston, MA
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Thomas Michael Kolokotrones
M.P.H., Harvard School of Public Health (2013)
Ph.D., Harvard University in BBS-Cell Biology (2010)
DISSERTATION: Curvature in Metabolic Scaling
M.D., Harvard Medical School (2013)
RESIDENCY: Transitional at Harbor-UCLA Medical Center, Los Angeles, CA

Peter Grant Miller
B.S., Massachusetts Institute of Technology (2005)
Ph.D., Harvard University in Immunology (2011)
DISSERTATION: Targeting Leukemia Stem Cells in the Hematopoietic Niche
M.D., Harvard Medical School (2013)
RESIDENCY: Internal Medicine at Brigham & Women's Hospital, Boston, MA
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Mobolaji Oluyemisi Olurinde
B.S., B.S., University of Florida (2002)
S.M., Massachusetts Institute of Technology in Biological Engineering (2007)
Ph.D., Massachusetts Institute of Technology in HST MEMP/Biophysics (2010)
DISSERTATION: Factors Contributing to T Cell Persistence in a Tolerizing Tumor Environment
M.D., Harvard Medical School (2013)
RESIDENCY: Anesthesiology at Penn State, Hershey, PA
Page 19

Vikram Pattanayak
Ph.D., Harvard University in Chemistry (2011)
DISSERTATION: Revealing the DNA Cleavage Specificities of Therapeutically Relevant Endonucleases Through In Vitro Selection
M.D., Harvard Medical School (2013)
RESIDENCY: Pathology at Massachusetts General Hospital, Boston, MA
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Sidharth Venkata Puram
B.S., B.S., Massachusetts Institute of Technology (2005)
Ph.D., Harvard University in BBS-Pathology (2011)
DISSERTATION: Calcium-Regulated Ubiquitin Signaling at the Centrosome Drives Dendrite Patterning in the Mammalian Brain
M.D., Harvard Medical School (2013)
RESIDENCY: Preliminary Surgery at Massachusetts General Hospital, Boston, MA
Otolaryngology - Head and Neck Surgery at Massachusetts Eye and Ear Infirmary, Boston, MA
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Benjamin Isaac Rapoport
M.Sc., Oxford University in Mathematics (2004)
Ph.D., Massachusetts Institute of Technology in EECS (2011)
DISSERTATION: Glucose-Powered Neuroelectronics
M.D., Harvard Medical School (2013)
RESIDENCY: Neurological Surgery at New York-Presbyterian Hospital-Weill Cornell Medical Center, New York, NY
Page 22

Narie Yoo Storer
Ph.D., Harvard University in BBS-Genetics (2011)
DISSERTATION: Characterization of the myogenic program in zebrafish rhabdomyosarcoma
M.D., Harvard Medical School (2013)
RESIDENCY: Pediatrics at Children's Hospital, Boston, MA
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Christos George Tsokos
B.S., Cornell University (2004)
Ph.D., Massachusetts Institute of Technology in Biology (2011)
DISSERTATION: Regulation of Cell Fate Asymmetry in Caulobacter crescentus by a Complex of Two Component Signaling Proteins
M.D., Harvard Medical School (2013)
RESIDENCY: Pathology at UCSF, San Francisco, CA
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Rochelle Marie Witt
B.S., B.S., University of Illinois Urbana-Champaign (1995)
Ph.D., Harvard University in Neuroscience (2010)
M.D., Harvard Medical School (2013)
RESIDENCY: Child Neurology at New York-Presbyterian Hospital-Weill Cornell Medical Center, New York, NY
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Key:
BBS: Biological and Biomedical Sciences
GPP: Graduate Partnership Program
HST: Health Sciences and Technology
MEMP: Medical Engineering and Medical Physics
MIT: Massachusetts Institute of Technology
NIH: National Institutes of Health
I was born in Los Angeles, California and raised in Accra, Ghana. A Ghanaian herbalist who famously claimed to have found a cure for HIV/AIDS influenced my initial interest in research. I attended the State University of New York at Albany (SUNY Albany) where I explored research in HIV-1 pathogenesis and synthesis of small organic compounds to target HIV-1 under the mentorship of Dr. Musah and Dr. Scholes. I earned a Bachelor of Science in Biochemistry and Molecular Biology from SUNY Albany and developed an avid interest in translating basic science research into clinical management of HIV infection and treatment. As part of the National Institutes of Health (NIH) undergraduate scholarship program, I was fortunate to spend a summer exploring the treatment of HIV-1 infection and opportunistic infections in clinical trials in Bethesda, MD. An interesting outcome of my studies was my exposure to autoimmune diseases amongst HIV patients. At HMS, my interests grew to include autoimmunity and the immune system's response to infection. For my Ph.D., I was privileged to find another wonderful mentor, Dr. Michael Carroll, who nurtured my scientific development as I investigated the regulatory mechanisms underlying the development of autoimmune disease. Upon my transition to the wards, I was blessed with fulfilling clinical experiences and amazing mentors who have helped me navigate patient care and fashion my niche as a physician-scientist. Currently, I will be returning to the NIH for a year of research and plan to apply to residency this coming fall. My experience in the MD-PhD program has been incredible and I am profoundly grateful for the unwavering support, encouragement, mentorship and wonderful retreats over the years. I would like to thank my friends and classmates from medical and graduate school who provided much needed support and intellectually stimulating conversations over the years. I could not have accomplished anything without the constant love, support and encouragement of my parents, 7 siblings, 4 nephews and a niece. I was also fortunate to have the help and support of loving Baha’i communities in the Greater Boston area.
Lauren Kaye Buhl (Barr)

I was not groomed for success in academia. In my home town of Pendleton, Indiana, success on the basketball court was revered much more than success in the classroom. Instead of worrying about GPAs and the right combination of extra-curricular activities, I was fortunate enough to enjoy my early education without any knowledge of the pressures of academic competition. After graduating high school, I set off for the University of Pennsylvania with absolutely no idea what I was getting myself into and was somehow lucky enough to stumble upon a lab mentor who would set me on the path to a career in academic medicine. As an undergraduate, a guest lecture from a cute post-doc first piqued my interest in synapses and the molecular machinery within. I carried that interest forward through my Ph.D. at MIT studying how, where, and when neurotransmitters are released, and I hope to continue to better understand and manipulate synapses as I move forward into a career in anesthesiology.

When I first came to HMS in 2004, I think my classmates probably would have voted me least likely to settle down and have a family anytime soon, but I’m thrilled that I managed to surprise everyone, myself included, when I met and married my amazing husband, Derek. We were first blessed with a delightful pug, Otis, and then with our daughter, Margot, who constantly amazes us and is too wonderful for words. It’s only because of them that I am able to achieve anything.
Yiyin Erin Chen

I was born in Beijing, China, but grew up in Provo, Utah and Simsbury, Connecticut. My best-kept childhood secret is that I have amassed thousands of stamps, including a few hundred Cultural Revolution-era relics. Outside of stamp collecting, I spent my childhood practicing piano and assuaging my Tiger Mom. Meanwhile, my dad planted the first seeds of scientific curiosity in my mind by building potato batteries with me, teaching me about evolution, and making me unafraid of math.

To pursue the “Life of the Mind”, I attended the University of Chicago. There, I worked in the lab of Dr. Elizabeth McNally, under the guidance of two graduate students who taught me everything I remember from college and inspired me to apply for the Harvard-MIT MD-PhD program. During my PhD in the lab of Dr. Michael Laub at MIT, I studied how bacterial cells harness kinase cascades to generate asymmetry and control the cell cycle. I credit my adviser, Mike, with teaching me to think rigorously and creatively, to write science well, and to coax perfect figures out of Adobe Illustrator. During graduate school, I also learned how to cook annual Thanksgiving dinners for twenty starving graduate students. Most importantly, I met Phil, my amazing and supportive partner in crime, who was instrumental to my efficiently earning a PhD.

Now, I am excited to start my dermatology residency at UCSF, where I hope to research the skin microbiome, to better understand how the bacteria, fungi, and viruses on our skin educate our immune system. I am grateful for the MD-PhD program for giving me the tools to turn my curiosity into a real career!
Yves Rene Chretien

I grew up in Rockville, MD as the son of two doctors, and never learned what normal people consider appropriate dinner-table conversation. I did learn, from my mother’s decades of service as a primary care physician, how rewarding a career in medicine can be.

HST lured me to Harvard with promises of differential equations, and it has been a privilege to participate in this terrific academic community while at HMS. For my PhD, I joined Harvard’s Statistics Department, where I learned about research, teaching, and life from mentors Xiao-Li Meng, Carl Morris, and Don Rubin. My thesis focused on adjustment for bias in observational studies. During these years, I achieved the result of which I’m proudest: I met Victoria, the love of my life, and convinced her to marry me. Despite working tirelessly on her own dissertation and teaching every semester, she somehow finds energy to be my unfailing support.

On the wards I discovered the joy of Radiology. Mentors Hani Abuju-deh and Robert Novelline at MGH helped me to begin my radiology research career; my primary interest is improving appropriateness criteria of imaging studies through observational studies of outcomes. I am thrilled to be embarking on an MGH prelim year and then beginning an MGH Radiology residency.

When not on the wards or plotting data points, I’m typically either running on the Charles, dancing Argentine tango, attempting recipes at the expense of our smoke alarm, or watching Russian movies with Vika.
I was born in Jerusalem, Israel and moved to Chicago with my family when I was about 5 years old. Growing up I somehow always knew I would end up in medicine. For some reason, what hadn't occurred to me was that science wasn't just something you read about in textbooks – in school it seemed as though all the answers were already known, where high school science lab experiments were just meant to demonstrate those long-established principles. It wasn't until I went to college that I finally realized how alive and exciting experimental science is, and how many unanswered questions remain. My attempt to answer some unanswered questions during my thesis time in Mike Greenberg's lab has shown me how challenging and rewarding science can be. I was lucky to have the opportunity to work on a molecular biology problem with relevance to disease, and I plan to continue on this path during general surgery residency and throughout my surgical career.

To my mentors, family and friends who have supported me throughout this time of professional and personal growth with patience, humor, and love – thank you, it has meant and continues to mean so much to me.
Joseph Wang Franses

I was born and raised, and met my beautiful wife-to-be Nikki, in West Lafayette, Indiana. We both went to Harrison High School and Purdue University, also in West Lafayette. I studied Chemical Engineering and Chemistry and was initially more interested in physics and math than medicine. Following the lead of my parents, both Chemical Engineering professors at Purdue, I was initially very interested in physics, chemistry, and mathematics. Therefore my early research interests were in interfacial chemistry/physics and organometallic chemistry. About halfway through college I began to realize that I am most interested in problems at the interface between science, engineering, and medicine; I decided that a physician-scientist career would be an ideal hybrid. In 2005 I graduated from college, got married, and moved out east.

I was thrilled to be accepted into the HMS/HST and the MD-PhD programs, and even more thrilled to have found such an inspirational mentor as Elazer Edelman, who is himself an HMS/HST and MD-PhD alum. My PhD work in HST (Biomedical Engineering) focused on studying how endothelial cells serve as dynamic paracrine regulators of cancer cell behavior, drawing from paradigms in non-malignant vascular biology. I look forward to beginning my Internal Medicine residency at Massachusetts General Hospital; I plan to pursue clinical fellowship training in either Cardiovascular Medicine or Hematology/Oncology before returning to the laboratory to embark on a career combining translational research with clinical practice.

Anything that I have managed to accomplish is directly due to the support from my family and friends. I am particularly indebted to my loving grandparents, my brilliant parents Elias and Linda, my amazing wife Nikki, and our beautiful boys Alexander and William (and our feisty dog Oscar). They mean everything to me.
Daniel Steven Herman

I grew up in Yorktown Heights, New York. I was blessed with supportive parents who provided me with amazing opportunities. Unfortunately, my first potential career -- tennis pro -- ended in its infancy due to the combination of a string of injuries and unrelenting reality. Instead, I moved to Boston and studied biology and neuroscience at MIT. Driven toward medicine, I entered the MD-PhD program in 2004.

I am extremely grateful to the MD-PhD program for the experiences I have had and the people I have met along the way. Most importantly, the program helped me meet Caitlin Foley, who, at the time, thought an MD-PhD student must be pretty cool. She has learned better, but I am very lucky to have journeyed alongside her ever since.

After a bit of exploration, I joined the group of Jon and Kricket Seidman and studied cardiac genetics. Jon and Kricket taught me how to be a scientist, how to do science that is relevant to medicine, and the importance of strong scientific collaborations. Next year, I begin training in Clinical Pathology at the University of Washington. I look forward to a shift of scenery and hope to continue to advance the use of basic science tools and knowledge in the practice of medicine.
Marie Alice Hollenhorst

I grew up in Saratoga, California, and stayed close to home for college at Stanford. As an undergraduate, I got my first taste of the excitement of scientific discovery through my work in the laboratory of immunologist C. Garrison Fathman, and experienced some of the joys of clinical medicine as a volunteer at Arbor Free Clinic.

I joined the Harvard MD/PhD program in 2005, aspiring to a career that would allow me to integrate my interests in chemistry, biology, and medicine. I was fortunate to be the final graduate student to join the group of Christopher T. Walsh, who straddles these disciplines in his science and his thinking. In his lab, I studied the biosynthesis and biological activity of a family of peptide antibiotics which are produced by a plant-associated bacterium. The Walsh group provided a stimulating environment, in which I benefitted from Chris’s unparalleled scientific knowledge as well as the diverse expertise of my labmates.

My experiences as a third year and fourth medical student reinforced my desire to pursue a career that will involve caring for patients and thinking biochemically about human health and disease. I look forward to taking my next steps towards this goal as a resident in Internal Medicine at Brigham and Women’s Hospital.

I am grateful to the many mentors, classmates, labmates, collaborators, and friends who have inspired and motivated me. Most importantly, I thank my parents, my siblings, and the rest of my family for their unwavering love and support.
I grew up in Bethlehem, Pennsylvania. I always had an interest in biology, but my love of research really began when I studied molecular biology at Princeton University. There, I completed my thesis work with James Broach. While the majority of my undergraduate work concerned yeast stationary phase, my first summer project was a failed attempt to identify substrates of the yeast TOR kinase. After graduation, I spent a year at the Max Planck Institute of Molecular Cell Biology in Dresden, Germany. It was a fantastic time spent studying protein trafficking, traveling, and enjoying German music.

Upon joining the HST program, I was really excited to find like-minded friends and colleagues who shared a similar passion for science and medicine. I joined David Sabatini’s lab at MIT the summer of my second year. Although I was also interested in cancer metabolism, the bulk of my thesis research was the identification and characterization of novel substrates of mTOR - a research question that had its origins in my undergraduate work. In a few months, I am very excited to be a resident in internal medicine at Brigham and Women's Hospital, a place with a tradition of nurturing physician-scientists.

For their support, I must thank the HST and MD/PhD programs and friends met along the way: my HST classmates, my MIT Biology peers, and my fellow MD-PhD trainees. I could not have asked for a more clear-minded and inspiring research mentor in David Sabatini. And most importantly, I thank my parents, James and Shuyu, and my brother, Allen, for giving me their strength and for their continued belief in me.
Jeffrey Joseph Ishizuka

I grew up in Worthington, Ohio and was raised by Karen and Henry Arnold Ishizuka. I spent a fair portion of my early years trying to keep up with my older sister, Kelly, who had and retains the dual advantages of three years in age and substantially more common sense. I attended Williams College in western Massachusetts and initially planned on studying philosophy. However, in my first two summers of college, I worked at a hospice for children with HIV in Honduras and had the opportunity to witness the effects of antiretroviral therapy. After college, I was fortunate to be able to pursue my D.Phil in immunology with Sir Andrew McMichael at Oxford University and with Jon Yewdell at the NIH, focusing on CD8+ T-cell immunodominance and crossreactivity. I next joined the HST and MD-PhD programs, where I’ve continued to work on immune-viral dynamics in modeling studies. I’ve also been lucky to get to work with some inspiring people on tech solutions for chronic disease, surgical devices and in the early formation of a biotech company focused on mobilizing the immune system to treat cancer. Next year I’m looking forward to continuing my clinical training in internal medicine at Brigham and Women’s Hospital and continuing to work and spend time with some of the great folks in the area here.
Robert Mawunyo Koffie

Robert grew up in a small town in the coast of Ghana, and migrated to the U.S. as a teenager to further his education. Driven by an interest in science and mathematics, he majored in Physics during his college years and become fascinated by the interphase of medicine and technology. Robert enrolled in the Harvard-MIT Division of Health Sciences and Technology (HST) and the Harvard-MIT MD-PhD programs to train to become a physician-scientist. During his time at Harvard, he became profoundly interested in the neurosciences, and to combine this interest with his strong background in the physical sciences, he worked on his PhD in Biophysics in Dr. Bradley T. Hyman’s lab. Robert’s PhD thesis research focused on studying the molecular etiology of Alzheimer’s disease using ultra-resolution imaging methods and cutting edge nanotechnology.

Robert is very grateful to his wife, Jessica Koffie, and daughters Mya, Marie, and Mabel for their love, support, and encouragement. He appreciates the support and guidance of his parents Regina Kofi-Lart and Linus Koffie as well as his in-laws Marlin and Rachel Kohlmeier. Robert is also thankful for having Drs. Bradley Hyman and Tara Spires-Jones as mentors during his research years and beyond.

Robert’s experiences in the MD-PhD program have been invaluable and truly memorable. Now interested in developing innovative technologies for combating neurological diseases, he is really excited to embark on his residency training in Neurological Surgery at the Massachusetts General Hospital.
Peter Grant Miller

I was born and raised in Atlanta, Georgia. Through 8th grade I attended the Greenfield Hebrew Academy after which I went to school at Woodward Academy. At Woodward I was inspired by Chery Gibson, my biology teacher, and Paula Nettles, my chemistry teacher to pursue a career in science. I attended MIT where I double majored in chemical engineering and biology. I was exceptionally lucky to have a wonderful mentor there, Daniel Wang, without whom I would not be where I am today. After taking a molecular biology of human physiology class as a junior, I decided to pursue an MD/PhD. I was fortunate to be part of the HST 2009 class and am still very close with many of my former classmates. I decided to study leukemia for my PhD in the lab of Gary Gilliland, a wonderfully positive and inspiring mentor. Halfway through my research years, Gary left Harvard for a great opportunity at Merck, and I transitioned to Benjamin Ebert’s lab. Both on a personal and professional level, I could not have found a better person to work with. My thesis focused on therapeutic targeting of leukemia stem cells within the context of their microenvironment. After returning to medical school I did my third year at the Brigham and Women’s Hospital and ultimately decided to pursue internal medicine and ultimately hematology/oncology. I hope to integrate translational research, clinical responsibilities, and teaching into my future career.
Mobolaji Oluyemisi Olurinde

I was born in Lagos, Nigeria into a wonderful family that values education and professionalism. My family has supported my desire to combine biology, medicine and engineering at every stage. In December 2002, I graduated from University of Florida with BS degrees in Chemical Engineering and Biological Engineering. In 2003, I matriculated into the HST MD program. I subsequently joined the HST MEMP program. Under Jianzhu Chen's mentorship at MIT, I earned a MS degree in Biological Engineering and a PhD in Medical Engineering. My PhD research focused on understanding the molecular underpinnings of infiltrating CD8 T cells in tumor tissue. We showed that the persistence of tumor-infiltrating CD8 T cells is intrinsic to the tumor tissue and independent of the classic antigen, IL-7 and IL-15 pathways. This year, I will complete my MD and continue my clinical training in anesthesiology at Penn State Hershey Medical Center.

Through it all, I am eternally grateful to mentors and friends, particularly those in my “Boston village” spanning Harvard, MIT, Koch Institute, Whitehead Institute, DFCI and Tremont Temple Baptist Church. Thank you to my dear friends, Alisha Kidane and LeSette Wright, who listen to my woes, share a kind word and prayer, and celebrate my victories. To my family, I am grateful that I can always depend on you. Your love and prayers keep me going. Most important, I thank my Lord and Savior, Jesus Christ, who makes all things possible. This MD-PhD has always been about you; “Magnifying God, Praising Him Daily”.

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My story starts in California, where I entered the world blessed with a loving father, mother, and brother. I spent almost all of my childhood in Niskayuna, New York, about three hours north of New York City. On the first day of my junior year of high school, a wonderful girl sat to my left in the trombone section of our school band. That non-random, but extremely fortunate encounter, would eventually lead to marriage (with help in proposing from a dynamic Siberian Husky).

At the University of Pennsylvania, I was a Vagelos scholar under the tutelage of Ponzy Lu and my research advisor, the late Alan Gewirtz. My project to identify RNA target sites for antisense DNAs was my first foray into molecular methods. At Harvard, I worked with my Ph.D. advisor, David Liu, and collaborator, Keith Joung, to develop an in vitro selection to study the specificity of endonucleases that are potential gene therapeutics.

All of the people (and animals) I have mentioned, in addition to my friends, family, classmates, and labmates, from Niskayuna, Penn, Harvard, and elsewhere, have shaped me as a person, a scientist, and future physician. Whether staying up all night working on fantasy baseball rules, a Science Olympiad project, an electromagnetism problem set, or a profile of zinc finger nuclease specificity, I am grateful to have been surrounded by such incredible people for my entire life. I look forward to adding to this list as a clinical pathology resident next year at Massachusetts General Hospital.
Sidharth Venkata Puram

Sidharth (Sid) Puram grew up in Edina, Minnesota where he completed his early educational studies and graduated at the top of his class at Edina High School. In 2005 he joined the Harvard Medical Scientist Training Program, where he completed his PhD studies in Neurobiology at Harvard Medical School under the guidance of Dr. Azad Bonni. His primary research focus was on understanding the proteins that drive dendrite growth and retraction in the mammalian neurons, with a specific focus on ubiquitin family pathways and centrosomal signaling. He also dedicated himself to studying the pathways that promote glioblastoma tumorigenesis, an incurable cancer of the brain. Next year, Sid will be starting in the Harvard Otolaryngology Residency program, which is associated with the Massachusetts Eye and Ear Infirmary. His surgical internship will be next door at Massachusetts General Hospital. Sid used his free time during his MD-PhD to get married to his loving wife Akshita, an MIT Sloan business school student, as well as obtain a pilots license and enjoy the restaurants and night life of Boston. In his spare time, he enjoys flying to Martha’s Vineyard or other nearby places for day trips, playing golf, watching sports (he is a die-hard Minnesota Vikings fan), and spending time with his wife, brother (also an MD-PhD at Harvard), and close friends.
Benjamin Isaac Rapoport

Ben Rapoport was born and raised in New York City, and never thought he would leave. He attended Harvard College, where he received an AB in Physics and Mathematics and an AM in Physics in 2003, and drew editorial cartoons for the university newspaper. He then received an MSc in Mathematical Biology from Oxford in 2004 before entering the MD-PhD Program at Harvard Medical School. Ben pursued his MD in the Health Sciences and Technology Program, and earned his PhD in Electrical Engineering and Computer Science at MIT in 2011 (Analog Circuits and Biological Systems Group, Research Laboratory of Electronics).

Ben is interested in designing and implanting electronic interfaces with the brain and nervous system, such as neural prosthetic devices for the paralyzed and disabled, which can repair and augment neurologic function. His thesis work involved designing algorithms and micropower electronic architectures for decoding neural signals in the context of fully implantable brain-machine interfaces, and designing energy harvesting devices that supply power to biomedical implants by scavenging energy from glucose in the surrounding biological environment. His doctoral thesis was entitled “Glucose-Powered Neuroelectronics.”

Ben is also a dedicated marathon runner with special interests in the limits of human physiology and in optimizing human performance through quantitative physiology. He has run more than 20 marathons, and has run the Boston Marathon every year he has been affiliated with the MD-PhD Program.

Ben will return to New York City this summer to begin residency in Neurosurgery at New York-Presbyterian Hospital of Cornell University.
Narie Yoo Storer

I grew up in Morton Grove, Illinois, a suburb of Chicago, and moved to Boston in 1998 to start college at Harvard. As an undergrad, I discovered the excitement of research and beauty of genetics in the laboratory of Richard Losick, where I studied genes required during development in the bacterium Streptomyces coelicolor. I started the MD/PhD Program in 2003 with an eagerness to use genetic approaches to better understand pathways underlying human cancer. I performed my doctoral research in the lab of Leonard Zon, where I used zebrafish to investigate how timing of oncogene expression during development affects tumorigenesis in rhabdomyosarcoma and to identify epigenetic modifiers of rhabdomyosarcoma formation. After graduation, I will be starting a residency in pediatrics in the Boston Combined Residency Program. Following residency, I hope to pursue a fellowship in hematology/oncology.

The past ten years as an MD/PhD student have been tremendously rewarding and challenging. I would not have been able to accomplish what I have without the love and support of my family and friends. I thank my mom, Sandra, for her love and guidance and my mother-in-law, Julie, for the support she has given. I am so thankful to my husband, Ginggi, for being my rock every day for the past ten years and for all that you have given me—none of this would have been possible without you. Finally, I would like to thank my daughter, Abby, for being so amazing and filling my life with so much love and joy.
I was born in Maryland to parents who had emigrated from Greece to pursue research at the National Institutes of Health. Although my sister escaped and studied the law, for me, the apple did not fall far from the tree. My first exposures to research were in high school, sequencing the Spanish Influenza Virus with Jeffrey Taubenberger and analyzing gene expression in solid tumors with Javed Khan.

I went to college at Cornell University, graduating with a B.S. in Biology. I spent summers with John Lambris developing inhibitors of complement activation. I spent the school years with George Hess measuring altered kinetics of mutated neuroreceptors found in hereditary epilepsies.

After starting at Harvard Medical School, I worked with Bob Sauer on AAA+ proteins, molecular motors used in a variety of cell functions. I then joined the laboratory of Michael Laub at the Massachusetts Institute of Technology for my thesis work on the molecular mechanisms of cellular asymmetry in the model organism Caulobacter crescentus. Next, I will start residency in Pathology at the University of California, San Francisco.

I am grateful to the Harvard MD/PhD and MIT Biology programs for their endless support. I would like to thank my advisor, Michael Laub, for the hours invested in my development. I would like to thank my fiancée, Emma Lubin, my parents, George and Maria, my sister, Sophia, and all my friends and family. Finally, my two cats were exceptionally furry throughout, so it is only natural to thank them too.
Rochelle Marie Witt

No one gets through it all without family. On this path, I have been fortunate to have the love and support of several. I was born on the South Side of Chicago, into a loving and large extended family (my father is one of 9 siblings and my mom is one of 10!). Their unwavering support of me to pursue what makes me happy has continued to this day. I discovered a passion for scientific investigation as a University of Illinois undergraduate while researching a subject that has always fascinated me – how we learn and remember. With schoolteachers as parents, I was constantly reminded that education has the power to shape a young mind. As a member of my first lab family, I began to understand how truly profound that assertion was, as we discovered how experiences are quite literally capable of restructuring the brain. Yet it was the significant dysfunction seen in models of human neurologic disease and the potential for novel therapies that really captivated me. I was fortunate to have inspirational research mentors, Drs. William Greenough and Ivan Jeanne Weiler, who vigorously encouraged my desire to impact human neurologic disease.

After graduation, as a genetic engineer in the SF Bay Area, I worked in a company devoted to treating serious human illness. Working closely with Dr. Luigi Naldini and other clinician-scientists, I found the innovation of disease-modifying gene therapeutics and their delivery to patients to be transformative. Because of it, I became certain that I was called to advocate for those suffering from illness in two ways - by performing disease-oriented research and through administering compassionate patient care.

Inspired, I decided to pursue an MD-PhD and consequently, joined my HMS family. Over the years, I have been unimaginably fortunate to be part of the most impressive “blended family” - composed of MD, PhD and MD-PhD colleagues. These rich relationships continue to sustain me until this day. I must thank my thesis advisor, Dr. Rosalind Segal, both for her belief in my abilities and for the freedom to find my scientific voice. It is with a nod to her exceptional scientific bravery (and enthusiasm!) that we were able to elucidate something often thought to be too difficult to investigate – the functional instructions contained within structures of carbohydrates. We had fun as we also determined how these instructions regulate both physiologic and pathologic proliferation.

On the wards, I found the natural extension of both my desire to have meaningful relationships with my patients and my enduring interest in problems of neurodevelopment in pediatric neurology. It is with great enthusiasm that I join a new family - of child neurologists – to consider the clinically significant problems of the littlest patients.
Class of 2013 Thesis Advisors

1. Dr. Michael Carroll (Amma Agyemang)
2. Dr. J. Troy Littleton (Lauren Buhl)
3. Dr. Michael Laub (Yiyin Erin Chen and Christos Tsokos)
4a. Dr. Carl N. Morris (Yves Chretien)
4b. Dr. Donald B. Rubin (Yves Chretien)
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6. Dr. Elazer Edelman (Joseph Franses)
7. Dr. Jonathan Seidman (Daniel Herman)
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14. Dr. Jianzhu Chen (Mobolaji Olurinde)
15. Dr. David R. Liu (Vikram Pattanayak)
16. Dr. Azad Bonni (Sidharth Puram)
17. Dr. Rahul Sarapeshkar (Benjamin Rapoport)
18. Dr. Leonard I. Zon (Narie Storer)
19. Dr. Rosalind A. Segal (Rochelle Witt)
1 Retreat, 2004
2 Retreat, 2010: Athar Malik, Rex Hung, Marie Hollenhorst
3 Joseph Franses, Marie Hollenhorst, Athar Malik, Honor Hsin, Sid Puram, Erin Loeliger, Vijay Ganesh
4 Retreat, 2004
5 Daniel Herman, Sol Schulman, Srinivas Viswanathan and Vikram Pattanayak on the T heading to HST Forum, 2004
6 Retreat, 2012: Abby Schiff, Alisha Ling, Jennifer Yeh, Marie Hollenhorst
7 Commencement, 2009
8 Lauren Buhl and Peggy Hsu
9 Peggy Hsu and Lauren Buhl
10 Lauren Buhl and Christos Tsokos
11 Picnic, 2010: Yin Ren, Mark Lee, Dan Buckland, Cameron Sadegh, Arvind Ravi, Devarati Mitra, Erin Loeliger, Erin Chen
12 Sol Shulman’s Wedding, 2008
13 Retreat, 2008
14 Ice skating for Lauren Buhl’s Birthday Party, 2005
15 Marie Hollenhorst, Xavier Rios Villanueva, Erin Loeliger
16  Peter Miller, Sidharth Puram  
17  MIT Tour  
18  Society Olympics, London Society, 2006  
19  Anatomy Toast  
20  MGH PCE Graduation, 2012  
21  White Coat Ceremony, 2005  
22  Poster Session, 2007: Ben Rapoport, Sol Schulman  
23  Quentin Baca, Lauren Buhl, Peggy Hsu  
24  Sidharth Puram, Peter Miller, Takahiro Soda  
25  MD-PhD Retreat Hike, 2006  
26  HMS Formal, 2008: Jeffrey Ishizuka, Wendy Liu, Vineeta Agarwala, Divya Jayaraman, Katie Lee Hwang, William Hwang, Wen Fan, Alex Bagley, Michael Susman  
27  Alex Subtelny, Amy Xu, Wataru Ebina, Mike Xiang, Diane Shao, Robert Koffie  
28  Leaders in Biomedicine Lecture, 2009: MDPhD Students with Dr. Mike Brown  
29  Retreat, 2006
Congratulations from all of us to the M.D.-Ph.D. Class of 2013!

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