HARVARD MEDICAL SCHOOL

MD-PhD

Class of 2007

SPRING DINNER

JUNE 5, 2007

HARVARD MEDICAL SCHOOL
From the Dean

June 2007

To the Harvard Medical School MD-PhD Class of 2007,

I write to extend my most sincere congratulations at this very special time in your academic careers. As members of the Class of 2007, you represent the largest of our MD-PhD classes. It is especially meaningful to me that you all matriculated during my tenure as Dean.

As graduates of our MD-PhD Program, you are poised to assume major leadership positions in a variety of fields including academia, industry, and government. You have worked hard and should be very proud of what you have accomplished.

Now as you enter the next phase of your professional lives, I encourage you to maintain your commitment, drive, energy and enthusiasm. You have the ability and the opportunity to make a difference, and I have every confidence that you will.

With all best wishes for your continuing success.

Yours sincerely,

Joseph B. Martin, MD, PhD
Dean of the Faculty of Medicine
Harvard Medical School
“To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.”

SIR WILLIAM OSLER
HARVARD MEDICAL SCHOOL MD–PhD PROGRAM

Andrew James Aguirre
Genetic Determinants of Pancreatic Ductal Adenocarcinoma
HST Society/Harvard BBS: Genetics
Mentor: Ronald A. DePinho, M.D.

Robert Stewart Hagan
Regulation of the Spindle Checkpoint by Mad2 Binding Proteins
HST Society/MIT Biology
Mentor: Peter Sorger, Ph.D.

Ashutosh Prabhakar JadHAV
Regulation of Vertebrobasilar Retinal Development by the Notch Signaling Pathway
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Mentor: Charles J. Geulin, Ph.D.

David Hyun Jung
Co-acting Elements Controlling Antigens Receptor Gene Assembly
Castle Society/Harvard BBS: Genetics
Mentor: Frederick W. Alt, Ph.D.

Rita Khodosh
Basal Functionally Antagonistic Rab11 During Development and in Regulating Synaptic Morphology
HST Society/MIT Biology
Mentors: Thomas L. Schwartz, Ph.D. and Paul A. Garty, Ph.D.

Andrew David Levin
Specific and General Binding in Artificial Drug Delivery
HST Society/MIT Medical Engineering Medical Physics
Mentors: Elaine R. Edelman, M.D., Ph.D. and Robert S. Langer, Ph.D.

Bradley John Molyneaux
Molecular Development of Corticospinal Motor Neurons
Cannon Society/Harvard Neuroscience
Mentor: Jeffrey D. Macklis, M.D.

Sahar Nissim
Signaling Centers in Early Limb Development
Peabody Society/Harvard BBS: CBS
Mentor: Clifford J. Tablin, Ph.D.

Benjamin Daniel Sommers
The Dynamics of Public and Private Health Insurance Coverage in the United States
HST Society/Harvard BBS: Biology
Mentor: Joseph F. Newhouse, Ph.D.

Michael Abram Ohtlger
Fundamental and Practical Constraints to Image Acceleration in Parallel Magnetic Resonance Imaging
HST Society/MIT Medical Engineering Medical Physics
Mentor: Daniel K. Sodickson, M.D., Ph.D.

James Rheo
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HST Society/Harvard BBS: Genetics
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Douglas A. Rubinson
Knoched Knock-out and Knocked Out: A Lentiviral System for RNA Transgenesis and the Eta/ε ε-ε Triple Knockout uncover Functional in Mouse Development
HST Society/MIT Biology
Mentor: Frank B. Gerlier, Ph.D.

Safa Sadeghpour
NMDA Normalization in Hippocampal Neurons: System for RNAi Transgenesis and the Ena/VASP Triple Knockout uncover Functional in Mouse Development
HST Society/MIT Biology
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Erica Seiguer
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Cannon Society/Harvard Health Policy
Mentor: Richard G. Frank, Ph.D.

Jay Ashok Shendure
Multiplex Genome Sequencing and Analysis
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Jonathan Sidney Therman
Sources of Difference Frequency Sound in a Dual-Frequency Imaging System with Implications for Monitoring Thermal Surgery
HST Society/MIT Medical Engineering Medical Physics
Mentor: Kullervo H. Hynynen, Ph.D.

Vesselin T. Tomov
Codon-Optimized and Reporter-Packaging Strains of HIV-1
HST Society/Harvard BBS: Genetics
Mentor: Brian Seed, Ph.D.

Griffin M. Weber
Data Representation and Algorithms for Biomedical Informatics Applications
HST Society/Harvard Engineering & Applied Sciences
Mentors: Leslie Otto-Machado, M.D., Ph.D. and Robert A. Goezles, M.D., Ph.D.

Ernest Nanjungh Yeh
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Key:
BBB: Biological and Biomedical Sciences
BCH: Biological Chemistry and Molecular Pharmacology
CBS: Cell and Developmental Biology
HST: Health Sciences and Technology
MIT: Massachusetts Institute of Technology
PMED: Mammalian Genetics

HARVARD MEDICAL SCHOOL MD–PhD PROGRAM

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ANDREW JAMES AGUIRRE

I grew up in a small town in Michigan where I spent most of my younger years playing sports and aspiring to a career as a professional basketball player. I soon realized that I was not going to make it to the NBA, and in high school decided that I would become a doctor instead. I was an undergraduate at the University of Michigan, and majored in cell and molecular biology. Here, I became fascinated by the genetic basis for cancer and developed a particular interest in tumor virology. I had my first experiences with laboratory research and studied the role of Epstein-Barr Virus in B-cell lymphoma. These studies opened my eyes to the many exciting possibilities for a combined career as a doctor and a scientist. I entered the MD-PhD program in July 2000 and did graduate work in Ron DePinho's lab at the Dana-Farber Cancer Institute. Here, we studied pancreatic cancer genetics and developed novel mouse models of the disease. I finished my Ph.D. in genetics in 2005 and headed back to the hospital for clinical training. Upon graduation, I will begin a residency in internal medicine at Massachusetts General Hospital and will eventually pursue a career in medical oncology. As I look back on my years as an MD-PhD student, I'm thankful to my family and friends as well as the HST and MD-PhD programs for their enduring support. I'm especially grateful to my Ph.D. adviser, Ron DePinho, for the many wonderful opportunities and invaluable mentorship he has given me. (Pictured below on right Andy and his twin brother Aaron, also doing his Ph.D-M.D. at Harvard.)

JAKOB BEGUN

I must be addicted to school or afraid of a real job. These are the most plausible explanations to my family and friends when confronted with the fact that I am 32 and have been enrolled in school almost continuously for 27 years. Despite numerous attempted interventions I kept going, and was grateful for their patient support, especially my parents'. After majoring in biochemistry at Cornell I was accepted to the Harvard MD-PhD program but deferred for a year to earn a M. Phil degree in biochemistry from Cambridge University in Sir Tom Blundell’s laboratory, the only knight that I have served under since recess in the second grade. During my PhD I gravitated to the lab of Frederick Ausubel where my thesis work focused on the interaction between bacterial pathogens and the innate immune system. Fred is a wonderful role model, who gave me the independence to pursue my ideas while providing the support and reality checks that I needed. In addition to a great deal of science I also learned valuable lessons about achieving balance between the professional and personal spheres.

Despite all of the studying, research, and clinical rotations there has been time for all of life's other activities. During my time in the program I have managed to travel on four different continents, forge indelible friendships, learn a second language and come to think of Boston as home. It was also during my nine years in the MD-PhD program that I married Gesa and brought two wonderful children into the world, Luca and Yael, who are a source of great happiness and pride to us both. All these factors made the decision to stay in Boston for residency relatively straightforward.

As my family and friends stand with bated breath, I will participate in my last graduation. I have a strong suspicion that in addition to pride there will also be a feeling of relief that I am finally kicking the education habit. My sense of panic at starting my first real job is assuaged by the knowledge that the path I have chosen will involve continued learning and teaching. Besides, there is always fellowship training.
DAVID M. COCHRAN

I grew up in the suburbs of Atlanta, GA, and for some reason unfathomable to me at this point decided during high school that I wanted to be a chemical engineer when I grew up. I spent five years at Georgia Tech getting an undergraduate degree in chemical engineering while working full-time alternate quarters in the exciting research field of pulp and paper science! During my final years, I discovered that I was much more intellectually stimulated by biomedical research, and after graduating from Georgia Tech I came to MIT to pursue a graduate degree in chemical engineering with a biomedical focus.

After two years in the chemical engineering program at MIT, I felt as if I had no concept of how my research would ultimately be translatable to a clinical setting. I decided that I wanted a much deeper exposure to biology and physiology and transferred into the HST MEMP program. I completed my PhD studies under the advisement of Rakesh Jain at Massachusetts General Hospital, studying the effects of hypoxia on tumor growth through the hypoxia-inducible transcription factor. I have been consistently amazed by the opportunities and educational experiences available through the Harvard-MIT HST connection. One of my favorite experiences was serving as the student chairperson of the MEMP PhD Admissions Committee, helping to shape the future face of HST.

The most significant impact of my HST transfer was my exposure for the first time to clinical medicine. With every patient encounter, I soon knew that this was my true calling, and at the completion of my MD I decided to pursue a combined graduate degree program in Adult and Child Psychiatry. I am excited to be entering a combined Adult and Child Psychiatry Residency program at the University of Massachusetts Memorial Medical Center in Worcester, MA, upon graduation from medical school.

I couldn’t have made it through this process without my beautiful wife, Bonnie, who has been by my side since high school(!) and has patiently put up with the changing currents of my career path.

IRENE ANN CHEN

Irene was born and raised in San Diego by Taiwanese American parents who taught her the important lessons in life, like how to be patient during manuscript review and how to freeze dumplings so they don’t stick together. She has always loved science, and at Harvard she supplemented her education with a degree in chemistry, graduating summa cum laude. As the daughter of a professor of management science and a former nurse, Irene wished for an academic life in science with medical applications. She also loved blistering winds and noisy radiators, so she stayed at Harvard for the MD-PhD program.

In medical school she was inundated with vast quantities of information, and she tried in vain to mobilize the parts of her brain that sat around and ate marshmallows instead of memorizing the names of arteries. However, in graduate school those neurons shaped up as Irene studied the biophysics of the origins of life with Jack Szostak, who is a superb scientist and mentor. She had terrific fun looking for cell-like behaviors in very simple chemical systems. Then during the clinical years, she saw the immediacy of diseases and finally understood why medical research is so critical.

As a Bauer Fellow at Harvard, Irene will be starting a research lab at the FAS Center for Systems Biology. She plans to study evolution at a molecular level, including the origins of life as well as the evolution of parasites. She is very grateful to the MD-PhD program for its support over the years, and she is excited to move on to the next stage.
SOPHIE CHRISTINE CURRIER

It comes to no surprise that I have been a student for 31 years. I have always loved school. As a child my favorite summer camps were computer and ecology camp. I was the only senior who choose NOT to skip school on “senior skip day.”

However, school has not always been easy for me. I did not read until very late. Because of my poor reading and spelling skills I had to repeat the fourth grade. This challenge with written language has followed me through these 31 years of education. Math and science, on the other hand, were always my strengths. I was especially intrigued by biology. And so at the age of 16 I volunteered in a diabetes research lab at BWH with Dr. David Sacks. It was then that I discovered the joys of medicine based research.

Coming from a family with no scientists or doctors it was a bit of a surprise when I chose MIT for my undergraduate studies. Even more shocking was when I decided to enter an MD-PhD program. I entered Harvard with an interest in genetics and neuroscience. I joined the lab of Dr. Chris Walsh with the hope of studying the genetics of learning disabilities. Dr. Walsh kindly suggested that I take on a more “do-able” topic for my PhD thesis. Thus I studied the genetics of a disorder of muscle eye and brain development (Walker Warburg Syndrome). I discovered that this rare, seemingly genetically simple disorder is actually very heterogeneous. This experience gave me new perspective on the challenges of studying the genetics of even more complex disorders such as dyslexia (which I eventually do hope to study).

My next step is residency in clinical pathology at MGH. I look forward to learning about how advances in genetics could be applied clinically to improve patient diagnosis and treatment.

Outside of work my partner, Jeremie Gallien, and I enjoy sports, nature, travel and being with friends and family. We have recently begun a new adventure of parenthood, being blessed with two children, Theo (18 months) and Lea (1 month).

PHILLIP ALLEN ERWIN

I was born in Brooklyn, NY, and, like many good New Yorkers, my family moved to the New Jersey suburbs when I was a teenager. I went to college at Rutgers, where I studied biochemistry.

I’ve been interested in cardiology since high school, and, after my first-year pharmacology course introduced me to cardiovascular signaling, I decided to expand my engagement with the field by spending the summer after my first year in Dr. Thomas Michel’s lab at Brigham and Women’s Hospital. After a summer of studying endothelial cell signal transduction, I decided to join the MD-PhD program. I did my PhD work in Dr. Michel’s lab, where I discovered a novel pathway by which nitric oxide signaling is regulated in blood vessels.

I look forward with great anticipation to the next portion of my career as an internal medicine resident at Massachusetts General Hospital.
ROBERT STEWART GRIFFIN

I grew up in the Philadelphia area, and went to Council Rock High School, a public high school with at the time about 3000 students and a school district the size of Liechtenstein. After graduating, I stayed near Philadelphia and went to Swarthmore College, less than half the size of my high school in terms of student population. While an undergraduate, I started off in the lab working at the University of Pennsylvania studying blood coagulation and fibrinolysis. After graduating from Swarthmore, I moved to Boston in 1999 to start my MD-PhD program in the HST division. It took some adjusting, moving from a 60-acre forested arboretum with every plant labeled and no cars bigger than a bicycle path, to living in the Longwood area. My life was certainly enriched by the people I met while in the MD-PhD program. I made friendships that will last a lifetime, and I found the love of my life, Steffi. Many people supported me along the way, in particular, I would like to thank everybody in the HST and MD-PhD offices, and my parents for their never ending love and guidance through the years.

JEAN-MARC GAUGUET

I was born in Stamford, CT and grew up in Wayland, MA. I spent four years at Swarthmore College in Pennsylvania where I studied biochemistry and learned a lot about bicycle repair. During that time, I grew fond of research and medicine, and on a snowy day just before Christmas I had my HST interview. Even though I hear people talk about how great the weather is anywhere other than Boston, I could not imagine living anywhere else. During the long winters I enjoy skiing and equally long summers I go biking.

Early in my first year at HMS, I struggled over which lab I would work in, but once I had joined Dr. Ulrich von Andrian’s lab, I knew I would have many enjoyable years ahead of me in the MD-PhD program. I was “the American” in the lab surrounded by post-docs from Germany, Switzerland, Austria, Spain, China, Russia, Australia and England. I learned to perform intravitreal microscopy, and I studied the role of carbohydrates in lymphocyte recruitment to lymph nodes and chemokine antagonists as a therapy for multiple myeloma. The two projects were a great balance between basic and translational science. Dr. von Andrian emphasized the concept that with imaging you can address many scientific questions that were previously impossible to answer. This exposure certainly helped direct me towards the field of radiology, and I am very excited that after my transitional year just across the river at Cambridge Hospital, I will be at the Beth Israel Deaconess Hospital for a residency in radiology. My life was certainly enriched by the people I met while in the MD-PhD program. I made friendships that will last a lifetime, and I found the love of my life, Steffi. Many people supported me along the way, in particular, I would like to thank everybody in the HST and MD-PhD offices, and my parents for their never ending love and guidance through the years.
ASHUTOSH PRABHAKAR JADHAV

I was born in a small town in India and delivered at home essentially by our neighbor. I subsequently moved to the US at the age of four with my family and lived in more small towns. I grew up mainly in Delaware, home of the ‘punkin chuckin’ contest (www.punkinchunkin.com).

I initially started college in Baltimore, Maryland at Johns Hopkins University and then completed my studies at Harvard College graduating with a Bachelor of Arts in biochemistry. After graduation, I enrolled in the HST MD program. I continued to explore my research interests with a fellowship through the Howard Hughes Medical Institute and then decided to pursue a PhD with Dr. Constance L. Cepko. My research focused on neural development. Graduate school was a wonderful time to explore and do science, travel and forget the little medicine I had learned. During my time in the laboratory, I was fortunate to find inspirational mentors like Drs. Kirchhausen and Cepko, and I thank them for their support throughout the years. After graduation, I will continue my interest in the neurosciences with a residency in neurology at MGH/BWH.

During my time here, I had the opportunity to be a co-producer for our annual second year show, an interviewer for the HST MD Admissions Committee and a pre-medical advisor for Harvard college. Outside of school, I enjoy reading, running and playing the drums. I was recently convinced by a clever little novel that ‘time is how you spend your love’ so, importantly in addition to doing science and medicine, I cherish most my time with my family and friends.

ROBERT STEWART HAGAN

I was born and grew up in Arlington, Virginia. After a childhood spent mucking about in the creeks and woods near my house, I landed a summer job in a lab at the NIH. It was a lot like my prior job in a bike shop – I could wear jeans, listen to loud music, and constantly break and fix things – but I became hooked on studying the tiny machines of cells and proteins. So I went to Harvard and majored in biochemistry, which allowed me to try out a few different labs between crew practices. I also had never really considered a career in medicine until late one night a disgruntled postdoc shook me by the shoulders and told me I should do something with my life and try to help people instead of just cloning all the time. Being naturally indecisive and unable to choose between medicine and science, I came to HST and the MD-PhD program.

I spent two years absorbing as much medicine as I could from a perch in the back of MEC 209 and then went off to study cell cycle checkpoints and the biology of chromosome segregation in Peter Sorger’s lab at MIT. Peter’s lab was a fun, intense, and stimulating place where a young scientist could flourish and where I could chase any idea, any experiment, or any technique that interested me. I will always be grateful to Peter and the whole lab for providing direction and encouragement to my work. After finishing my PhD, I returned to the hospital and got excited about internal medicine and the prospect of one day aiming all that lab work at the sick lungs that come in through the ER doors. This summer I’ll be starting as a resident in medicine at Johns Hopkins with the hope of continuing either in pulmonary medicine or oncology.

When I came here from Virginia, I never thought that I’d stay for 13 years. During this time, my wonderful family has given me unflagging support despite my becoming a Yankee and my steadfast refusal to get a job throughout my 20s. My second family were my close friends from the program who accompanied me on these last 9 years, sharing all the late nights in the lab and hospital, prelim exams, papers, thesis writing, and residency matching. Finally, I owe a special debt to Patty, Linda, Rick, and all the staff who kindly overlooked my scatterbrained nature and missed deadlines and who make both HST and the MD-PhD program so amazing.
Growing up in Belarus, you might think I had fewer opportunities than those who grew up in the US, but you’d be wrong. My parents and grandparents made sure I could explore every possible interest. They let me dream big and made me believe that anything was possible.

We moved to sunny California when I was 14, and I realized my version of the American dream: owning a dog. In college, I started out majoring in chemistry, then added genetics—my real passion. I minored in women’s studies, but learned much more about strong women as a rower on the UC Davis crew team. I was lucky to work with two great scientists: Scott Hawley, a wizard of meiosis, and John Bowman, a king of plant development. They believed in me and inspired me with their commitment to figuring out the truth. After volunteering in the ER, I felt a calling to patient care, and decided to pursue an MD-PhD degree.

I braved the East Coast on a gut feeling that Harvard would be the best place for me. After nine years of never-ending winters I still believe I made the right decision, in large part because the program here has provided me with a supportive environment where I have been able to persevere through failures with a sense of humor and to thrive.

After the transiently terrifying transition back to clinical training (5 years s/p USMLE step I), I realized I enjoyed being in the wards even more than I thought I would. I’m excited to begin the next phase of my training as a resident in otolaryngology at the Massachusetts Eye and Ear Infirmary. I’m also willing to bounce half-baked ideas at 3 am. In addition to being a brilliant scientist, Fred (shown below) has been and continues to be an incredibly supportive mentor.

Now I’m headed back to California for a dermatology residency at Stanford. I’m leaving Boston with a few more things than I came with, like my husband Ben, who has been my biggest cheerleader over the last four years. Unfortunately, going to California means leaving behind many dear friends, but I will always hold them close in my heart.
With a mother from Massachusetts and a father from California, the law of averages saw it fit that I be born and raised in Illinois. As a kid, playing with Legos or being outside was the absolute tops. Continuing in that tradition I spent most of my undergraduate years at Princeton University in mechanical engineering labs or participating in the outdoor program. As graduation rolled around I decided it was time to see a bit of the world and headed to Peru as a Fulbright Fellow to study malaria. During that year I traveled to Patagonia, explored the Bolivian salt desert, sailed to Tahiti in a tiny boat and wrote my first scientific paper. The overall conclusion was that the world is large with lots of room for improvement.

Returning to the States brimming with enthusiasm to change the world, I joined the HST program and Elazer Edelman’s lab at MIT. I tried at least a dozen hair-brained schemes before settling on a thesis topic in arterial drug delivery. Lab taught me that large movements come with many tiny steps. Thanks to Elazer I also learned how to play squash and cut vessels into very very thin slices.

I never believed that graduate school would actually come to an end. Now that it has and I am forgetting the not so fun parts (such as quals or studying for Step 1) and remembering the best parts (like going to the gym any time I wanted or the unrestricted pursuit of knowledge), I have to say it has been a good seven years. Many thanks to family and friends for their unwavering support.

After growing up north of Chicago, I made my way east to Dartmouth College where I was introduced to research working in George Langford’s laboratory. When not studying molecular biology or working in the lab, I devoted my time to exploring the White Mountains through rock climbing and hiking. During the summers, my explorations turned toward the shores of Cape Cod, where I conducted ocean side research on the squid giant axon and dabbled in all manners of squid cuisine at the Marine Biological Laboratory in Woods Hole.

After a year of research in Michael Hasselmo’s laboratory at Boston University, I embarked on my eight-year journey at HMS. While at HMS, I have enjoyed sharing my love of the White Mountains with others through leading FEAT trips and rallying classmates to head north on weekends.

Neuroscience has been a defining aspect of my time at HMS. I had a tremendous experience doing my dissertation research with Jeffrey Macklis on cortical development, investigating upper motor neuron specification. My next step takes me to Mass General Hospital, where I will be completing an internship in medicine before continuing in neuroscience with a residency in neurology. Not too far from the White Mountains, my wife, Lindsay, and I look forward to continuing to explore them in the years to come.
MICHAEL ABRAM OHLIGER

I was born in York, PA, and spent most of my life growing up in Philadelphia. I always knew that I wanted to be a scientist, but I could never figure out which kind. During college, I majored in physics, but was always drawn to research projects that involved some sort of biology. I enjoyed having to learn about several disciplines at once and I found the applications to human health very motivating. After graduating from college, I spent a year teaching English in China, and came back to graduate school still not sure exactly what field I wanted to pursue. I finally joined the laboratory of Dr. Daniel Sodickson doing research on rapid MRI techniques. I chose this research because, more than anything, I found medical images extremely beautiful. I was lucky to work with a uniquely nurturing mentor during a very exciting time for MRI research. The beautiful images of MRI, and their ability to help people, have also drawn me to radiology. I am very excited about my future career, but mostly thankful to my friends and family and teachers who have helped me along the way.

SAHAR NISSIM

I was born in Petah Tikva, Israel, to a family of Jewish Iraqi refugees. My grandparents had never heard of Harvard but they instilled in my parents an appreciation for education as a source of hope. And so, thirty years after my family had arrived in the fledgling nation carrying all their property on their backs, my father found himself a biochemist bringing his family to Haverford, an idyllic suburb west of Philadelphia. It was there that, in the fourth grade, I resolved to liberate humanity from the need to breathe by mixing the oxygen-producing aquatic microorganisms Euglena with blood. It was a lofty goal that died with the Euglena, but the lessons learned have served me well in the years to follow: symbiosis cannot be forced in a few minutes; Euglena make boring pets, and nose bleeds can be stopped with ice and pressure.

Such ventures not only muddied my room, they also served to shape and intensify a curiosity for the natural world. Backyard projects became school science fair projects, summer camps became research internships, a college thesis on neural stem cells became an aspiration to train as an MD-PhD. While this passion for science had its greatest expression in biology, it did come across some unexpected variants. Meteorology for example, an interest that found relentless fodder in 14 Bostonian winters at Harvard College and Harvard Medical School.

To date, a fifth of my life has been under the tutelage of Cliff Tabin. I could not have been more privileged. What I learned about genetics and patterning in development will serve me well as I negotiate new frontiers between research and clinical medicine. Cliff is a brilliant scientist with a very big heart. My career will be indebted to his mentorship.

Years 15-18 of my Harvard training (what some might call ‘Extra-Strength Preparation H’) will be in internal medicine at the Brigham and Women’s Hospital. As I embark on this next phase, I owe special thanks to Linda Burnley and the MD-PhD program for helping me grow as a physician scientist; to my friends for their extraordinary creativity and love of life; and to my parents and brother whose encouragement, hope and love define constant in my life.

2021
DOUGLAS A. RUBINSON

Doug was born at 11:55 pm on Thursday, August 12, 1976. With his emergence a week past his due date, and a meager five minutes before Friday the 13th, Doug began a lifetime of procrastination punctuated by fortuitous luck. Doug’s earliest forays into science included the near ubiquitous chemistry project in which a variety of foodstuffs and household cleaners are combined in various quantities and arbitrary proportions. The results were often colorful, frequently nonsensical, and invariably useless—thus preparing his experience in graduate school decades later. In fifth grade, a salt water tank housing an octopus was placed in Doug’s care. Despite fastidious attention to the salinity, pH, and temperature of the tank, the octopus died within weeks. Such was Doug’s introduction to the fickle nature of biological investigation.

In the fall of 1994 Doug enrolled at Yale with the intention of majoring in molecular biophysics and biochemistry, despite having little conception what that was. After his sophomore year he became involved in political activism. Although primarily focused on environmental issues, his participation in a protest against Playboy Magazine® resulted in his naked appearance in the October 1995 issue—a publication with an impact factor dwarfing the balance of his CV.

Doug entered Harvard Medical School in the fall of 1998 at the age of 22. During medical school he was introduced to a wonderfully idiosyncratic set of colleagues from which rapidly emerged a tight-knit group. One of his classmates was Hagan, who unknowingly and unwittingly delivered his future wife, Tala Klinck, into his living room one winter afternoon.

Doug received his Ph.D. training at MIT. After several fits and starts in a variety of labs, he arrived in the lab of Frank Gertler. Frank provided Doug with the support to pursue a far-flung range of academic interests. In addition, he has proven an insightful advisor and good friend. This summer Doug will begin his training in medicine at Brigham and Women’s Hospital. As he tackles this next challenge he is exceedingly grateful for the support of his wife, parents, and friends.

JAMES RHEE

I was born in a very small town in upstate New York, called Oneonta, and spent a large chunk of my childhood outdoors hiking, fishing, and biking. We had only one high school in the town, and a graduating class of just 150 students. So coming to Boston for college was somewhat of a cultural shock — going from one Chinese Restaurant to an entire Chinatown and from long empty roads to adrenaline-raising traffic.

Through my undergraduate classes and research in muscle cell differentiation, I was turned onto the idea of somehow bridging basic science with clinical application within the context of a combined degree program. In graduate school, I was very fortunate to find a great mentor in Bruce Spiegelman, whose lab studies many aspects of nutrient metabolism and fat cell differentiation.

The focus of my thesis was the transcriptional control of hepatic glucose and lipid trafficking involving the coactivator molecule PGC-1α and its potential dysregulation in such disorders as obesity and diabetes. In between pipetting, I used my PhD years to raise two cats, learn how to golf and snowboard, overcome my fear of eating fish (striped bass) caught straight out of the harbor, and, most importantly, meet my wife, Shinlei.

I have relished my decade-long affiliation with the MD-PhD program. Being here enabled me to meet and form great friendships with absolutely wonderful and truly talented people on their way toward ground-breaking accomplishments in science, medicine, health care reform, and technology. The staff within the MD-PhD program, as well as at the medical school in general, helped nurture an immensely supportive and nurturing environment for which I am grateful. Thank you to all.
Safa’s friends can be broken down into two categories: those who think he should make a movie or write a novel about his life and those who think no one would believe such a story as non-fiction. Safa was born in Mashad, Iran, and at the age of four, mostly due to religious persecution, his family moved to Chile and then Ecuador, where he grew up. It was in Latin America that he first fell in love (and deeply in love) with the sciences, and found great sense and login in the written art forms. After high school, he moved to the US where he completed a double major in neuroscience and cybernetics at UCLA. During his tenure at Harvard and MIT, he has woven threads of both scientific and broader interests. For several years, he organized the Harvard-MIT Science, Religion and Society Lectures, wrote on neuroscience and human nature for journals of the Templeton Foundation, as well as had several of his plays produced. More recently, he has found himself leading an umbrella organization focused on placing New England Film on the national map. On the sciences end, his Ph.D. in MIT’s Department of Brain and Cognitive Sciences, focused on both basic and applied science. In the former regard, he studied what determines the flexibility of synapses in single neurons—and thus their ability to store new information—and in the latter, he worked on finding drugs that can enhance and restore learning and memory function. These findings, in the context of animal studies, have already been shown to reverse the effects of aging on learning function, and international human clinical trials are being organized. His post-graduate plans involve continuing to explore the interface between basic and applied science, between scientific invention and entrepreneurship by joining a major consulting firm, McKinsey & Co. in their New Jersey Office. The long-term is as easy to predict as what he would have guessed his future would have been when he was in Ecuador, learning Spanish, and unable to fathom where he would find himself only a few years later.

I grew up in Baltimore, Maryland and attended Princeton University. After college, I worked for the Sabin Vaccine Institute in Washington, DC on immunization policy, and then for the Bill and Melinda Gates Foundation’s Malaria Vaccine Initiative. At Harvard, my research has focused on the economics of pharmaceutical research and development. My research interests also include efforts to improve health care quality, understand the factors driving patient compliance with pharmaceuticals and the impact of regulatory policy on innovation in health care. My dissertation committee, chaired by Richard Frank, PhD, has nurtured my interests throughout this time. They have been wonderful mentors and advisors and their patience and encouragement is greatly appreciated.
I was born and raised in Solon, Ohio, home of the King Nut Company (airplane peanuts) as well as excellent public schools. My first foray into cutting-edge research was in 4th grade, when I tried to build a perpetual motion machine by hooking a generator up to a motor (which in turn, powered the generator). Although I didn’t learn why for a few more years, it didn’t work, and I swore off science.

I attended college at Princeton, where I majored in molecular biology and cultural anthropology. After graduating, I spent one year supported by a Fulbright working at a hospital in Pune, India, not far from where my parents had grown up in the 1950’s and 60’s. On returning, I spent a year living in New Jersey, working at Merck and trying to decide what to do with my life.

I was fortunate enough to be accepted at the MD-PhD program at HMS, and the next nine years have been here in Boston. I’ve had a wonderful experience working on sequencing technology development with George Church, who has been an inspirational mentor, and I feel privileged to have been a part of this fantastic Longwood community. I can’t imagine a better way to have spent my 20s (and part of my 30s).

I was introduced to my wife, Alex, in 2002, by former HMS classmates who were her co-interns at Brigham & Women’s Hospital. We were married in September 2006. This fall, we’ll be returning to her home town, Seattle, where I will be an assistant professor in the Department of Genome Sciences at the University of Washington. I am tremendously indebted to my wife, family, friends, colleagues and the MD-PhD staff for all of their support over my time here. Thanks! I’m looking forward to the west coast after 15 years on the east, but am also very sad to be leaving this great town. In stark contrast to our current saturated surroundings, there is not a single Dunkin Donuts within the city limits of Seattle.

Baseball, health policy, and primary care medicine—I’d say that captures my main activities for the past seven years. I was born in Cumberland, Maryland, and have been a devoted Baltimore Orioles fan since—more on that later. But I grew up in Cincinnati, Ohio, with two wonderful parents and two fantastic brothers (one of whom is graduating from high school tomorrow—Mazel Tov, Zach!). Cincinnati is also where I met my high school sweetheart and now wife Melissa. I left the midwest for college at Princeton University, where I was an English major with a minor in Jewish Studies. The next stop was Boston.

In 2000, I enrolled in the Ph.D. Program in Health Policy, an interdisciplinary program at Harvard. My dissertation explored two aspects of access to care in the U.S.: First, I examined market pressures that lead to cutoffs in health insurance for working adults, particularly low-income workers. Second, I studied which policies and demographic factors put individuals at high risk for dropping out of Medicaid and becoming uninsured.

Since arriving in Boston, I’ve switched back and forth between grad school and med school three times, gone to about 30 Red Sox-Orioles games at Fenway wearing my Baltimore hat without incident, and now have finally finished my training. I even found time to play shortstop for a local softball team. For the past few years, I’ve been fortunate to participate in the new MD-PhD Program in the Social Sciences at Harvard, which is a great addition to the school. In June, I’ll be joining the internal medicine/primary care residency program at Brigham & Women’s Hospital—joining my wife Melissa, who is already there as a second-year resident.

Now finally at graduation day, I am extremely grateful to my advisor Joe Newhouse for his excellent guidance, to Cal Ripken for years of entertainment and inspiration, to my family for constant support, and to Melissa for all of that and more.
I was born in San Rafael, California and grew up in Hercules and then Piedmont, California. The highlight of high school in Piedmont was my 15 minutes of fame as a Piedmont Bird Calling champion, which brought me to NYC as a guest on the Late Show with David Letterman and also resulted in a small voice-over part as the American Red Robin in the Francis Ford Copula movie “The Secret Garden.” My life of stardom has been pretty much downhill from there.

I attended college at Harvard College which was wonderful mostly because there I met a beautiful woman through a friend from music appreciation class. I spent that semester constantly picking up the phone. The gesture may have been transparent, but it worked out in the end because that was how I met my wife.

At Harvard I also made many friendships I still hold dear. My mentor, Professor Roger Brockett, was an inspiration and once advised, “Approach life as though you will live forever (in contrast to the more popular saying to ‘live your life as though you might die tomorrow’) because you will benefit tomorrow by taking the slightly longer path today to learn things thoroughly and properly.” Perhaps I took his advice a little too seriously as I spent the next 9 years of my life pursuing a master’s and a Ph.D. in biomedical and mechanical engineering at MIT, followed by an M.D. at Harvard Medical School. I am very grateful for the experiences I have had at both of these amazing institutions and truly valued my time in the Focused Ultrasound Surgery laboratory where I studied ultrasound theory and system design for my doctoral thesis. That being said, I cannot wait to be out of school!

Despite holding several patents on medical devices, being honored with fellowships and other awards, and being delighted to have matched at Johns Hopkins for residency, by far my greatest achievement to date has been fathering a delightful baby boy named Jacob who cannot help but smile at the world with knowing eyes that twinkle. He contributes to my life daily by helping to put everything else into perspective. Although I anticipate great things from Jacob one day, at 4-months of age his contribution is usually in the form of a little spit-up on my shoulder. And I cannot think of a better way to put it all into perspective than that.
Vesselin (Vesko) Tomov was born and raised in Bulgaria. He attended the Sofia High School of Science and Mathematics and subsequently came to the United States where he majored in biochemistry at Vassar College.

As an M.D. student in the HST program, he began working in Brian Seed’s laboratory on a project involving codon optimization of the human immunodeficiency virus. He soon realized that his research was too interesting, challenging, and time consuming for him to complete as a medical student, and therefore applied to the BBS program.

Vesko worked towards his Ph.D. in the Seed laboratory on several projects involving HIV-1. He showed that large-scale codon optimization of HIV leads to aberrant splicing of the viral transcript. In addition, he developed methods for the incorporation of enzymatically-active reporters directly into replication-competent virions. He hopes that these latter technologies will form the basis of rapid viral detection systems that can be employed in high-throughput genetic screens for HIV-1 inhibitors.

Griffin Weber is the Chief Technology Officer of Harvard Medical School (HMS), Director of the Biomedical Research Informatics Core (BRIC) at Beth Israel Deaconess Medical Center (BIDMC), and an Instructor of Medicine at Harvard Medical School in the Division of Interdisciplinary Medicine and Biotechnology, Department of Medicine, Beth Israel Deaconess Medical Center.

Griffin did his undergraduate work at Harvard where he concentrated in biomedical sciences and engineering in the Division of Engineering and Applied Sciences. Shortly after arriving at Harvard, he began working as an informatics consultant for several hospitals and medical research centers; and, in 1997, he created one of the world’s first hospital-wide web-based electronic medical record systems. Other projects ranged from developing software tools for analyzing DNA microarray databases to modeling the growth of breast cancer tumors to inventing algorithms for predicting life expectancy.

He entered Harvard Medical School in 2000 as an MD/PhD student in the Health Sciences and Technology (HST) program. In his first year as a medical student, he recognized the need for a web-based curriculum and invented the MyCourses internet web portal, which today is used by over 500 courses at HMS to publish events, announcements, lecture videos, exams, handouts, interactive simulations and other content online. He then joined forces with the HMS Information Technology (IT) department and over the next seven years expanded MyCourses and designed a second web portal, eCommons, to serve the content management needs of the administration and researchers of Harvard Medical School. Together, the two portals are used by 20,000 faculty, staff and students over 30,000 times a day. During this time, Griffin earned a PhD in computer science with a focus on biomedical informatics and artificial intelligence, received a certificate from the Bioinformatics and Integrative Genomics Training Program at MIT, and completed his medical school coursework at HMS.

In January, 2007, Griffin came to work for HMS full time as its Chief Technology Officer. As CTO, he oversees research and development of new IT initiatives, evaluates emerging technologies, implements enterprise-wide solutions, and initiates collaborative projects with the IT departments of Harvard affiliated hospitals and institutions. In his other role as Director of BRIC, he coordinates the efforts of various informatics groups to provide data management, web development, and software engineering services to the researchers at BIDMC.
Born in southern China and raised in Hong Kong, Ernie came to Boston for college, met the love of his life and never left. His MIT undergraduate studies soon extended to a Master’s in electrical engineering, and later an MD, PhD in medical engineering/medical physics at HST.

Ernie has found interests in engineering and medicine since early childhood, influenced by a physicist father and a physician mother. Ernie is also extremely grateful for the mentoring of his undergraduate advisor Dr. William Peake – a founding faculty of HST, and his doctoral thesis advisor Dr. Daniel Sodickson – the inventor of parallel magnetic resonance imaging. As an engineer, Ernie delights in taking things apart and attempting to put them back together. His claims of fame in the engineering world include a hand-wired multiplication lookup table and two US patents in wireless communications. As a medical student, Ernie enjoys interacting with patients, and his enthusiasm has been noted in numerous evaluations that ‘Ernest is earnest.’

Ernie is a creative cook, experimenting fusion cuisines to be tested by his unsuspecting fellow classmates. Ernie has also tested his ineptitude in sports after competing in the MIT varsity swim team and a Boston marathon. When asked about how he did in the marathon, he would factually answer, ‘I finished.’

Now Ernie is finishing this 14-year marathon, and is eager to start a six-year scholar-track radiology residency at BIDMC. A journey of a thousand miles ends by beginning another one.

I grew up in small town in New Jersey where a ‘night out’ meant an evening at the mall or on special occasions, a bonfire on the beach. Despite these numerous local attractions, I became obsessed with ballet and dreamt of becoming a professional ballerina. Science was about the last thing on my mind, until a tenth grade biology class where everyday coursework was complemented with hands-on experiments. I was so intrigued by discovery, that I exchanged my pointe shoes for a pipette and geared up for a career in research.

In 1994, I moved to New York City to attend Columbia University where I had the good fortune of working with Dr. Richard Axel to evaluate the role of pheromones in innate behaviors. My wonderful experiences at Columbia inspired me to pursue an MD-PhD with the long-term goal of bridging molecular neuroscience research and medicine. Once at HMS, my doctoral work with Dr. Catherine Dulac focused on the molecular regulation of olfactory neurogenesis. During this time, I also became a certified diver, learned a bit of tango and salsa, and most importantly, I was lucky enough to meet Sebastian, a fellow graduate student, whom I recently married in Buenos Aires.

My transition back to the wards was daunting but it was during my psychiatry clerkship when I knew I had found my niche. I am thrilled to be graduating (finally) and very much looking forward to beginning my residency training in psychiatry at MGH. Of course, this wouldn’t have been possible without the constant support of my family, friends, and the MD-PhD office. Thanks!
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“Match Day is when we celebrate knowing where we will go for residency and post-graduate training.”

LOUIS PASTEUR

“Chance favors the prepared mind.”

LOUIS PASTEUR
“Take rest; a field that has rested gives a bountiful crop.”

OVID (43 BC-17 AD) ROMAN POET
The largest MD-PhD class in the history of Harvard Medical School is comprised of students who entered medical or graduate school between 1997–2000. We are thankful to the twenty-eight graduates who sent us their short bios and photos for this special edition.

Their stories reveal personal triumphs and the steadfast commitment to complete both the Ph.D. and M.D. degrees. On behalf of the M.D.-Ph.D. Program, we congratulate them on their remarkable individual and collective achievements over the past decade!

LINDA BURNLEY, Editor

Special acknowledgements:
Editorial: JANELLE O’BRIEN
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Cover design displays titles from the Ph.D. dissertations of the graduates.
Shown here is a photo taken by Liza Green at the HMS white coat ceremony for the entering medical school class in 1998. Thirteen of the MD-PhD Class of 2007 were part of this class.