Welcome to the Harvard/MIT MD-PhD Program’s Annual Celebration in honor of the MD-PhD Class of 2020! We are especially delighted to welcome the family members and significant others who are joining the faculty, students, and staff to recognize our graduates tonight.

This year, eighteen students will graduate from our program with both M.D. and Ph.D. degrees. This book showcases the accomplishments of these individuals. Together, they collectively completed 18 graduate and 18 medical degrees, spending over 146 years since their matriculation into Harvard Medical School. This year’s class of six women and twelve men reflects the diversity of graduate training available to MD-PhD trainees at Harvard Medical School. In all, they carried out their graduate studies in 9 different programs located within Harvard University, Massachusetts Institute of Technology, and the University of Oxford. Students pursued their dissertations in a wide range of fields including anthropology, biology, biophysics, cancer, chemistry, computer sciences, economics, genetics, genomics, health policy, immunology, and neuroscience.

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 (Alabama, Arizona, California, Colorado, Connecticut, Georgia, Maryland, Missouri, New Jersey, New York, Oregon, Pennsylvania, Texas, and Washington), as well as across the world (Canada, China, Greece, Israel, Italy, and Kenya). They completed their undergraduate degrees at 10 different colleges and universities including Amherst College, Boston University, Dartmouth College, Emory University, Harvard University, Stanford University, University of Pennsylvania, Willamette College, and Yale University. While at HMS, 12 enrolled in the London Health Sciences and Technology (HST) curriculum, while 6 joined New Pathway, representing two societies (2 Cannon and 4 Holmes).

While these students are meeting the joint challenges of graduate and medical study, the MD-PhD Program endeavors to create 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 strives to 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 2020 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 MD-PhD Program
HARVARD MEDICAL SCHOOL
ANNUAL SPRING CELEBRATION IN HONOR OF THE

MD-PhD
Class of 2020

May 26, 2020

7:30 PM

Welcome
Dr. Loren D. Walensky
Director

Dean's Champagne Toast to the Graduates
Dr. George Q. Daley

Introduction of Graduates and Mentors
Dr. Loren D. Walensky

Remarks
Dr. Loren D. Walensky
Ms. Amy I. Cohen
Dr. David B. Cox
Dr. Amy Li
Dr. Sana Raoof

The MD-PhD Program welcomes the families and friends of the graduates.
Matthew S. Alkaitis  
B.A., Dartmouth College (2009)  
D.Phil., University of Oxford (UK) in NIH-GPP (2014)  
DISSERTATION: Biochemical Determinants of Nitric Oxide Synthesis in Severe Malaria  
M.D., Harvard Medical School (2020)  
RESIDENCY: Internal Medicine at Stanford University, Stanford, CA

David B. Cox  
B.S., Stanford University (2009)  
Ph.D., Massachusetts Institute of Technology in Biology (2018)  
DISSERTATION: Characterization and application of type VI-B RNA-targeting CRISPR systems  
M.D., Harvard Medical School (2020)  
RESIDENCY: Internal Medicine at Stanford University, Stanford, CA

Matthew F. Basilico  
Ph.D., Harvard University in Economics (2019)  
DISSERTATION: Essays in Public Economics and Behavioral Health  
M.D., Harvard Medical School (2020)  
RESIDENCY: General Surgery at Johns Hopkins Hospital, Baltimore, MD

Colin M. Fadzen  
B.A., M.S., University of Pennsylvania (2013)  
Ph.D., Massachusetts Institute of Technology in Chemistry (2018)  
DISSERTATION: Peptide-Mediated Delivery of Antisense Oligonucleotides and Chemotherapeutics Across Biological Barriers  
M.D., Harvard Medical School (2020)  
RESIDENCY: General Surgery at Johns Hopkins Hospital, Baltimore, MD

Matthew L. Baum  
B.S., M.S., Yale (2009)  
M.Sc., Trinity College (2010)  
D.Phil., University of Oxford (2012)  
Ph.D., Harvard University in Neuroscience (2018)  
DISSERTATION: The Schizophrenia-Associated Gene, CSMD1, Encodes a Brain-Specific Complement Inhibitor  
M.D., Harvard Medical School (2020)  
RESIDENCY: Psychiatry/Research at Brigham and Women’s Hospital, Boston, MA

Emma C. Fink  
B.A., Amherst College (2011)  
Ph.D., Harvard University in BBS (2018)  
DISSERTATION: Investigating the Mechanism and Species-specificity of Thalidomide Derivatives  
M.D., Harvard Medical School (2020)  
RESIDENCY: Internal Medicine at Brigham and Women's Hospital, Boston, MA

Eran Hodis  
B.A., Boston University (2007)  
M.S. Weizmann Institute of Science (2010)  
Ph.D., Harvard University in Biophysics (2018)  
DISSERTATION: The Somatic Genetics of Human Melanoma  
M.D., Harvard Medical School (2020)  
RESIDENCY: Psychiatry/Research at Brigham and Women’s Hospital, Boston, MA

George Karandinos  
B.A., University of Pennsylvania (2010)  
Ph.D., Harvard University in Anthropology (2019)  
DISSERTATION: Can’t Stop the Hustle: The production and exploitation of precarious life in inner-city Philadelphia  
M.D., Harvard Medical School (2020)  
RESIDENCY: Medicine-Primary at Mass General Hospital, Boston, MA

Nicholas O. Bodnar  
A.B., Harvard College (2011)  
Ph.D., Harvard University in BBS (2018)  
DISSERTATION: Mechanism and structure of the Cdc48 ATPase complex  
M.D., Harvard Medical School (2020)  
RESIDENCIES: Med/Prelim/Neurology at Brigham and Women’s Hospital, Boston, MA  
Neurology/BWH-MGH at Brigham and Women’s Hospital, Boston, MA

POSTGRADUATE: Health Policy Fellow at the United States Senate, Washington, DC
Amy Li  
A.B., Harvard College (2010)  
Ph.D., Massachusetts Institute of Technology in Biology (2018)  
DISSERTATION: Investigation of CD4+ T cell heterogeneity and function in a genetic mouse model of lung adenocarcinoma  
M.D., Harvard Medical School (2020)  
RESIDENCY: Peds/Children's Hospital at Children's Hospital, Boston, MA

Edward B. Li  
A.B., Harvard College (2012)  
Ph.D., Harvard University in BBS (2018)  
DISSERTATION: Investigating the roles of IRF6 in epithelial maturation, craniofacial development, and orofacial cleft pathogenesis  
M.D., Harvard Medical School (2020)  
RESIDENCIES: Medicine/Preliminary at Brigham and Women's Hospital, Boston, MA  
Dermatology at Northwestern McGaw/NMH/VA, Chicago, IL

Kristen E. Mengwasser  
M.Phil., University of Cambridge (2008)  
Ph.D., Harvard University in BBS (2018)  
DISSERTATION: Genetic Screening Approaches to Cancer Driver Characterization and Synthetic Lethal Target Discovery  
M.D., Harvard Medical School (2020)  
RESIDENCY: Internal Medicine at Brigham and Women's Hospital, Boston, MA

Daniel S. Pearson  
B.A., Willamette College (2008)  
Ph.D., Harvard University in BBS (2018)  
DISSERTATION: Novel Roles for the Terminal RNA Uridyltransferases ZCCHC6 and ZCCHC11 in Development and Disease  
M.D., Harvard Medical School (2020)  
RESIDENCY: Pathology-Clinical at Mass General Hospital, Boston, MA

Sana Raoof  
A.B., Harvard College (2012)  
Ph.D., Harvard University in BBS (2018)  
DISSERTATION: Targeting FGFR to overcome EMT-related resistance to EGFR inhibition in EGFR-mutated Non-small Cell Lung Cancer  
M.D., Harvard Medical School (2020)  
RESIDENCIES: Medicine-Preliminary at Mass General Hospital, Boston, MA  
Radiation Oncology at Memorial Sloan-Kettering, New York, NY

Yakir A. Reshef  
A.B., Harvard College (2009)  
Ph.D., Harvard University in SEAS - Computer Sciences (2018)  
DISSERTATION: Detecting meaningful relationships in large data sets  
M.D., Harvard Medical School (2020)  
RESIDENCY: Internal Medicine at Brigham and Women's Hospital, Boston, MA

Rachel E. Rodin  
B.S., Emory University (2012)  
Ph.D., Harvard University in Neuroscience (2018)  
DISSERTATION: The Human Brain as a Mosaic: Somatic Mutation in Autism Spectrum Disorder, Aging, and Neurodegeneration  
M.D., Harvard Medical School (2020)  
RESIDENCIES: Med-Prelim/Neurology at Brigham and Women's Hospital, Boston, MA  
Neurology/BWH-MGH at Brigham and Women's Hospital, Boston, MA

Clara K. Starkweather  
B.S., Duke (2013)  
Ph.D., Harvard University in Neuroscience (2018)  
DISSERTATION: Hidden State Inference in the Midbrain Dopamine System  
M.D., Harvard Medical School (2020)  
RESIDENCY: Neurological Surgery at UC San Francisco, San Francisco, CA

Key  
BBS: Biological and Biomedical Sciences  
NIH-GPP: National Institutes of Health - Global Partnership Program  
SEAS: School of Engineering and Applied Sciences
Matthew Alkaitis

Graduating from HMS marks the end of a somewhat unusual MD-PhD path, which of course started with me being born at Mt. Sinai hospital to an MD-PhD neurologist, Damanhuri Alkaitis, and a United Nations Security Council expert, Loraine Sievers. I grew up in Weston, CT and spent a year in Severna Park, MD with my father before attending Dartmouth College as an undergraduate.

My Dartmouth years included my first experience in the lab with Joyce DeLeo, who became a trusted mentor. Although I always knew I wanted to attend medical school, I took the opportunity to pursue a PhD in biochemistry (focusing on nitric oxide synthesis) through the NIH Oxford-Cambridge Scholars Program. As a part of this program, I spent 2 years in Oxford, UK working with David Roberts, Keith Channon and Oliver Billker. For the second half of my PhD, I moved to Bethesda, MD to continue my research with Hans Ackerman at the NIH. I am extraordinarily grateful for the support and guidance provided by this group of advisors throughout my PhD journey.

As a recipient of the NIH MD-PhD graduate partnership program MSTP grant, I then joined the HMS MD-PhD program for my clinical training. The most memorable aspect of my time at HMS will be the strong friendships formed with a core group of classmates - Damir Ljuboja, Yuri Pompeu, Sean Fletcher, and MD-PhD colleague Max Valenstein. Creating the Makerspace Prototyping Lab was also a highlight, which would not have been possible without co-founder/classmates Steve Dalvin and Nisarg Patel or the support and advice of Krishna Yeshwant and Nancy Oriol. In addition to many clinical mentors across core and advanced elective rotations, Anthony D’Amico has been an extraordinary supporter and sounding board throughout my medical school experience. I would also like to thank David Sontag for advising my HMS thesis and giving me the opportunity to jump into the deep end of the clinical machine learning field.

In addition to doing my MD-PhD slightly out of order, I took 2 years off between MS3 and MS4 years to join McKinsey & Co’s healthcare practice, where I worked closely with former NIH Oxford-Cambridge Scholar Jeff Smith. I am still amazed at how helpful the Medical school administration was in helping me incorporate this experience into my training path. Countless others to thank, including my baby brother Sam and the new friends I have made at every step along the way. At the end of a long road all I can say is “Thank you!”
Matthew Basilico

I was born and raised in Boston, so it was fitting to do my undergrad and MD-PhD down the street. I was always interested in the questions why some people suffered and died from a lack of resources in a world with so many. At the age of 7 I remember being puzzled by this question, walking by a homeless man on a field trip to the Boston’s Museum of Fine Arts.

A trip to South Africa with my jazz band when I was a senior in high school forever changed my trajectory. Face-to-face with remarkable inequality within the cities of Johannesburg and Cape Town, and seeing the HIV pandemic taking a massive toll, I became extremely interested in healthcare and global poverty. I resolved to myself on that trip to be the best physician I could become, and to learn how to understand the seemingly nebulous underlying causes of economic and healthcare inequality.

That search took me many different places – from studying with Paul Farmer and Jim Kim (both alumni of this MD-PhD program), to undergraduate summers in Nairobi, Lilongwe and Neno, to activism on global HIV, to a Fulbright in Malawi, to an undergraduate concentration in Social Studies, giving me an interdisciplinary approach to questions of inequality and healthcare access. I was fortunate enough to coedit Reimagining Global Health with some of these mentors.

It is impossible to study economic inequality and healthcare access in the 2000s and not become very interested in the field of economics, and the thought of David Cutler, Nathan Nunn, James Robinson and David Laibson. Needless to say I was thrilled for the opportunity to do a PhD with them and the special intellectual community in the Department of Economics at Harvard. My fields were in macroeconomics and behavioral economics, and I defended a dissertation based on work linking tools for causal inference in applied econometrics to questions in behavioral health and behavioral economics (e.g. determinants of long-term opioid use, racial bias).

I was always drawn to the field of trauma surgery – a chance to do everything one can do at some of the most vulnerable moments in patient’s lives, and in many societies one of the rare systems that is fully supported for any member of that society, regardless of ability to pay. Dr. Noelle Saillant, a trauma surgeon at Harvard, was chief among my many inspirations to enter the field. I feel incredibly fortunate to join Johns Hopkins as a general surgery resident in 2020.

I am extremely grateful to my parents, my brother and his family, my advisors (including PhD mentioned above, MD-PhD, and Dr. D’Amico, Arthur Kleinman, Anne Becker, Salmaan Keshavjee, Thomas Ponniah), my friends (especially the WH crew and Luke, Jon, Eugene, Vince, Nick), the DGHSM crew, my advisers in surgery, and the artists behind the music and cinema that inspires us every day.
Matthew Baum

Born at high altitude in Colorado, my childhood tumbled towards the sea through Arizona to Massachusetts. Missing the mountains, I went to Colorado College for one year before transferring to Yale, where I had the immense pleasure of sailing the seas of molecular memory in the lab of a gentleman I had met while painting his country house. In New Haven, my roommates and I also learned applied microbiology (aka beer brewing). Desirous of a dose of international perspective, I was incredibly fortunate to win scholarships to hop across the pond, 1st to study neuroscience in Dublin, and then to earn a DPhil at Oxford, writing about the neuroethics of biomarkers. Little did I know that I would also meet a charming qualitative researcher who would later join me back in Boston - despite our lack of universal healthcare – to make a wonderful life and family together; especially remarkable given that my pick-up line was inviting her to a philosophy seminar.

At the Harvard-MIT MD-PhD program, I dove into the medical-engineering water of HST, and joined the labs of Beth Stevens and Steve McCarroll to study innate immune molecules (and their regulation) and microglial-mediated synaptic pruning in psychiatric disease. This time was rich in intellectual fermentation with wonderful colleagues (in classroom, clinic, lab, and Penguin Pizza); our collaborative extra-curricular fermentation also yielded delicious fruits, from Cranberry Mead that was born (and consumed) in the hallowed halls of Vandy, to “MicrogliAle” (with the “Engulf Responsibly” tagline) that, of course, was responsibly engulfed out of a Nebuchadnezzar-sized bottle after my PhD-defense. I am immensely grateful for the many people that helped me and enriched my life: my family, friends, mentors, and colleagues, not to mention all the folks that steer the MD-PhD program ship (or perhaps multi-institutional flotilla). Hard to believe that psychiatry residency will mark the end of my perpetual student-dom! (Albeit still a trainee, of course).
Nick Bodnar

I was born at the Brigham, but managed to escape to New Jersey between the ages of 2 and 18 before returning to Boston for college. During that time, I became a fan of New York sports teams (which has earned me many a scathing glare from colleagues and patients alike) and spent a while thinking I was going to be a classical cellist. I went to Harvard for college, where a series of lucky events landed me in Steve Blacklow’s lab and put me on a path toward an MD-PhD future.

As one of two New Pathway students in my incoming class, I was fortunate to meet not only Nick Destefino - who is on record saying it’s unlikely he would have been my friend if we hadn’t been forced together by that circumstance - but also Tom Rapoport, my biochemistry small group leader and eventual PI. Tom’s lab has been a home for me through my PhD and beyond, and it has been an absolute privilege to learn from such a wonderful biochemist and mentor. As I delved into the world of protein quality control, I developed an interest in one of its clinical applications, neurodegeneration, and am hoping to build a career combining clinical neurology with basic research in this field.

Most importantly, I met my wonderful wife Simin when we were both first year students (she’s a real doctor now), and we recently welcomed a baby boy, Sina, who has made the fourth year of medical school very interesting indeed. Their love and support, and that of my parents, friends, and colleagues, has kept me going throughout my time in the program, and I’m sure my reliance on them will only grow in the years to come.
I grew up in Baltimore, MD and became interested in science, and more specifically stem cell biology, because of the advocacy work of Christopher Reeves and Nancy Reagan in the early 2000s. Their words inspired me to write a rather impassioned 7th grade oratory contest speech on the topic and then propelled me to work in basic science labs at Johns Hopkins in high school and again at Harvard College where I was part of a new major, Human Developmental and Regenerative Biology, and worked in Kevin Eggan’s lab.

As I thought about post-graduate options, I knew that I wanted to build a strong foundation in science and medicine that would allow me to shape a career focused on how we bring the science I had seen in labs to patients. This interest in the intersection between medicine and science made the MD-PhD an obvious next step. As I considered what I wanted to study for my PhD, I decided to delve into cancer biology as the field allowed me to explore disease mechanisms in ways that could one day be relevant to therapeutic development. I also saw that a number of hallmarks of stem cell biology are reflected in cancer biology. This overlap between fields inspired me to join Cigall Kadoch’s laboratory at the Dana-Farber Cancer Institute and Broad Institute, studying how a nucleosome remodeling protein complex epigenetically regulates gene expression and cell state in both healthy and cancer cells.

I am deeply grateful to my parents, sister, girlfriend, and friends for their endless support and to the HMS administrators and academic advisors who have been invaluable in helping me navigate the MD-PhD journey. I’m looking forward to my next steps continuing to work to improve therapeutic options for patients.
David Cox

I was born to my wonderful parents, Carl and Gilda, in the Bay Area of California. I did not, however, come into this world alone, and so I and my identical twin spent our first few days of life named baby A and baby B, until my parents decided that I (baby B) would be named David and he (baby A) would be Evan. And so armed with an appropriate name, I began my journey to where I am today.

My mother and father had initially met as librarians before my mother went to law school and began to practice business litigation. Thus, even though I was mostly interested in sports, my early home environment instilled in me a love of reading, learning and debating. I spent my childhood trying to be a good student and an even better basketball player, although the converse fortunately ended up being true. One of the real reasons for my academic and athletic success is the fierce competition I always enjoyed with my identical twin. It is difficult to justify performing worse than someone who has the same genes and environment as you! We also have a younger brother, Matthew, who is definitely the coolest out of the three siblings.

I was an undergraduate at Stanford University, where I initially explored non-scientific interests until I read Tracy Kidder’s *Mountains Beyond Mountains* and became interested in becoming a physician. To get into medical school, it was rumored that one had to work in a research lab and so I joined Irv Weissman’s lab to study how the innate immune system recognizes cancer cells. At the time the lab was developing a new type of immunotherapy; seeing this happen first-hand filled me with an excitement and ambition to develop new therapies myself. From that experience, the idea of combining science and medicine became a driving force in my life. I was therefore attracted to MD-PhD programs, applied and was thrilled to be accepted to Harvard.

My experience in the Harvard/MIT MD-PhD Program has been incredible. I was fortunate to join Feng Zhang’s lab just before the CRISPR revolution and so got to do science that was therapeutically relevant and exciting. Feng not only taught me how to do high-level science but also showed me that success need not come at the expense of kindness, integrity or fun. Although I’m no longer his mentee, I will always think of him as my mentor and try to emulate him as a scientist.

During this period, I met my beautiful wife, Clara Men. We began dating the first week of medical school and ever since, she has been a gentle, calming presence in my life. What she means to me cannot be put into words—so I won’t try to do it here.

I’ve developed relationships over the past 9 years that will last a lifetime. I have grown incredibly close to my classmates that I started this process with. I will always contend that the cohort of MD-PhD students that I began with is the smartest group of people that I have ever been a part of and it makes me proud. From late nights in TMEC, to dancing in bars in Boston/Cambridge, hanging out at the yearly retreat, practical jokes that we played on each other in class, to now weddings and children, we have grown from boys and girls into men and women together. I would not trade it for the world.

I am excited for the next phase of things. I and my wife will finally be reunited in the Bay Area, where I will start residency in Internal Medicine at Stanford, after years of long distance. I will be back home in California, without snow or a real winter. But I will always love and miss the Harvard/MIT MD-PhD program! It made me who I am today and today I am proud of myself.

Last, I want to thank my family and friends. I could not have done this without you guys.
Colin Fadzen

I grew up on a beautiful property in a rural town in Western Pennsylvania called Butler. My childhood was filled with hayrides, country music and wild imagination. In adolescence, my tastes matured to include classical music and the physical sciences. I considered a career in flute performance, but my intellectual curiosity led me to Penn and to join the Vagelos Scholars Program which supports undergraduates doing biochemical research.

At Penn, I studied physics and biochemistry and conducted research with Dr. E. James Petersson. I had a brief crisis of confidence when I learned I had been misusing micropipettes my entire first summer. Nevertheless, James and my graduate student mentor, Rebecca Wissner, instilled in me a lifelong passion for science and chemical biology, which led me to pursue training as a physician-scientist. I also met my partner, Robbie, in my freshman physics class, despite initially judging his tie-dye shirts.

I entered the MD-PhD program motivated to learn how to meaningfully care for patients and driven to continue my scientific development. I chose to do my PhD in the MIT Department of Chemistry with Dr. Bradley Pentelute due to his infectious enthusiasm for interdisciplinary projects. Along with my work husband, Justin Wolfe, I explored using modified peptides as drug delivery tools, particularly for kids with Duchenne muscular dystrophy. Returning to the wards, I was inspired by working with adults and children with malignancies and found I most loved surgical approaches to their disease processes. Moving forward, I hope to blend this newly identified passion with chemical biology.

My years in the MD-PhD program have been the most personally and professionally formative and fulfilling time in my life. I am incredibly grateful for the endless support from my mom, my partner Robbie, my mentors, all of my friends – from HST, the Pentelute lab, music and life – and the HST and MD-PhD program offices. I am incredibly excited to begin the next MD-PhD length chapter as a general surgery resident at Johns Hopkins Hospital in Baltimore.
I grew up in a small town outside of Rochester, NY with my incredible parents, Victoria and Ernest. From early on they nurtured my questioning nature and interest in how the world works. With time this became more defined as an interest in Biology, which they and others supported through numerous enrichment activities.

As a high school student, I started working in a research lab at the University of Rochester. Honestly, though, I wasn’t so sure about research at the time. Purifying proteins over nickel columns was somewhat tedious and research seemed hard. Fortunately someone saw potential in me regardless and I attended Amherst College as part of the Schupf Scholars research program. At Amherst, Caroline Goutte introduced me to the world of careful and rigorous science through the genetics of *C. elegans* and the biochemistry of gamma secretase, while also giving me the opportunity to explore science in other contexts over the summers. After a summer at Cold Spring Harbor I knew I wanted to pursue a combination of medicine and science.

As I started the Harvard/MIT MD-PhD program in the HST track, I met some of the smartest and most creative people I will ever know. (Although my parents will attest that I was not initially a huge fan of the Vanderbilt Hall dorm.) During the first two years of medical school, I soaked up knowledge about physiology and pathophysiology and developed an interest in Hematology and Oncology. At my classmate’s Quinn Sievers suggestion, I rotated in the lab of Benjamin Ebert and ended up joining. Ben is a brilliant and creative scientist and a supportive mentor who has shaped the scientist that I am today and hope to become in the future. He also created an amazing environment filled with smart and caring people who challenged me to be the best scientist possible while also making late nights in the lab more fun.

After graduation, I will be starting residency in internal medicine at Brigham and Women’s Hospital, hopefully followed by a fellowship in Hematology/Oncology. I owe my success to my family, friends, and classmates who have supported and encouraged me at each step along the way, especially my parents and my boyfriend Shahrad.
Eran Hodis

Harvard MD-PhD Program Class of 2020
George Karandinos

I was born in Birmingham, Alabama but grew up mostly in Houston, Texas. I also lived in Greece and Italy for a year each and spent nearly seven years in Philadelphia before starting medical school. Both of my parents were born in Greece and I spent most of my summers there growing up.

I completed my bachelor’s at the University of Pennsylvania where I began the fieldwork that would form the core of my dissertation in Anthropology while living in Philadelphia. My PhD research drew on more than four-and-a-half years of residence in an inner-city Puerto Rican neighborhood at the heart of Philadelphia’s largest open-air heroin and cocaine street market. My dissertation aimed to analyze and render more visible the rising human cost of the historically toxic landscape of US inner-city hypersegregation, poverty, incarceration, punitive policing and public/private infrastructural abandonment.

My time at Harvard has been unbelievable, both in medical school and graduate school. At every step of the way I learned alongside and was inspired by some of the most talented, compassionate, driven, and principled individuals I have ever met. And those were just my classmates! My clinical year at Cambridge Health Alliance was humbling and grounding and surely shaped the kind of doctor I will be in very important ways. During my dissertation years, I was tremendously fortunate to work with Arthur Kleinman, Jean Comaroff, and Philippe Bourgois.

It has been a long road and I am so lucky to have had the caring guidance of my dissertation committee, great clinical mentors, and of course the never-ending support of the MD-PhD program, above all that of Dr. Loren Walensky and Amy Cohen. But more than anything else, I am lucky to have the love of the family of women who raised me and my wonderful partner who is a daily source of inspiration and support.
Amy Li

I was born and raised in New York City, where my parents had emigrated from China in search of better opportunities for their children. My parents worked hard to support our futures, which instilled in us a strong sense of responsibility and the motivation to pursue big dreams.

My chief ambition as a child was to be just like my older brother, who was not only my first friend and guide to American culture, but also a talented artist and aspiring engineer. After he passed away of leukemia, I was simultaneously driven to, and disillusioned with, a career in medicine. As a high school student, I developed interests in literature and history, but the summer before college I had the serendipity of working in Cecilia Cheng-Mayer’s lab at the Aaron Diamond AIDS Research Center. My first research experience inspired me to study molecular and cellular biology at Harvard. Seeking to learn more about immunology, I completed a thesis in the lab of Koichi Kobayashi at the Dana Farber Cancer Institute, where I studied the transcriptional regulation of antigen presentation. My research, along with the excitement over novel targeted therapies in cancer, gave me a different perspective on medicine, which I now saw as a vibrant, dynamic field where one could dedicate one’s life to making clinical care better.

In the MD-PhD program, I have been fortunate to learn from and grow with talented and passionate classmates, including my now husband Jake Lemieux, who first demonstrated his knack for grunt work as my anatomy partner. As a graduate student with Tyler Jacks, I was able to combine my interests in immunology and oncology by studying T cell responses in lung cancer, which was especially exciting as immunotherapy found unprecedented clinical success. Even as he offered guidance, Tyler gave me the opportunity to learn independently, make mistakes, and develop as a mentor and leader, for which I am incredibly grateful. I look forward to starting a pediatrics residency this summer, and ultimately pursuing a career in pediatric hematology/oncology. As a physician-scientist I hope to direct my research efforts toward helping families like mine.

It has been an immense privilege to share these years with my classmates, labmates, and friends. I would not have made it without the support and love of my family, which has grown, first with the addition of Jake and our dear chocolate Labrador Huxley, and most recently with our baby girl, Charlotte. Even on the hardest days, they remind me of the simple joys of eating a home-cooked meal, taking a stroll around the park, or watching a newborn sleep.
Edward Li

I was born in Liaoning, China and at the age of ten moved with my parents to Toronto, Canada. My love for developmental biology began in a ninth-grade biology class when we first learned about embryogenesis. I still remember sitting in my seat, jaw dropped in amazement of the fact that the incredible diversity of cell types found in our bodies all started from a single cell. From that moment on, I was hooked. I studied human developmental and regenerative biology at Harvard College and was fortunate to continue my journey at Harvard Medical School with the MD-PhD program where I continued to explore my love for developmental biology, this time with a focus on the pathogenesis of craniofacial defects through the lens of functional genomics.

During these eight years at Harvard Medical School, I experienced tremendous growth in so many aspects of life. I met and married my wife, Caitlin, who continues to bring me joy and make me a better person on a daily basis. I formed lifelong friendships, many of whom I would now consider family. None of my personal and professional growth would have been possible without all those who tirelessly supported me along the way: my wife, parents, friends, mentors, the HST program, and the MD-PhD program.

The time I have spent in the MD-PhD program has been the most transformative years of my life. In addition to gaining a better understanding of human physiology in both health and disease, I have acquired a deeper appreciation for the art of being a physician through some of the best patient interactions that one could hope for. Furthermore, now equipped with a broader scientific knowledge base and research skillset, I am feeling more invigorated than ever about the power of basic science and its ability to transform the care of patients. I am very excited to start my residency at McGaw Medical Center of Northwestern University and launch into the field of dermatology as a budding physician-scientist with hopes of advancing our knowledge of cutaneous biology and developing novel mechanism-driven therapies that will positively impact the lives of patients.
I was born and raised in the friendly land of St. Louis, Missouri, surrounded by my loving, supportive parents and younger brother. Among my most vivid and joyful childhood memories were my earliest encounters with biology! I remember feeling my imagination and curiosity sparkle when I first learned about organelles, Gregor Mendel’s experiments, and PCR! I was in 4th grade when I ran my first agarose gel – I was immediately hooked. I had no concept of the order of magnitude of gels that would later follow in my career, but I knew that I had found my innate life’s passion and would forever be enthralled with the process of scientific discovery!

I attended an all-girls Catholic high school where the resident Sisters, who were both my teachers and friends, became powerful role models of service to others. At Harvard College, I met wonderful friends who have become a second family to me. But my favorite academic parts of college were the summers and evenings I spent in the lab. I was fortunate to find generous scientific mentors who allowed me to play, learn, and grow in their labs! I am indebted to Enrico Di Cera for my first taste of discovery, and Michael Eck for a truly inspiring lab experience that set me on my path toward becoming a physician-scientist. Before matriculating into the MD-PhD program, I completed a master’s degree in Biochemistry at the University of Cambridge with Nick Gay and a year of research at the NIH with Peter Sun.

My time in the MD-PhD program has been a transformative period of tremendous personal and professional growth. Since my very early days as an HST student, my classmates have continued to inspire, motivate, and support me. So many wonderful memories have blossomed from these friendships! For my PhD training, I was fortunate to join the lab of Steve Elledge, which I’ve often described to others as a garden of ideas. Working with Steve has continually inspired and challenged me, while shaping my mind and identity as a scientist. I feel so grateful to have learned from him and the incredibly creative and brilliant people in his lab, who embody for me the highest ideals of scientific thought.

As I approach graduation, I’m overwhelmed with gratitude toward the many people who have coached, cheered, and mentored me to this point. None of this would have been possible without the unyielding love and support of my incredible parents. I am so grateful for Rick Mitchell’s unconditional support, Patty Cunningham’s kind wisdom, and Wolfram Goessling’s open-minded vision. Loren Walensky coached me through obstacles with tremendous resourcefulness, warmth, and generosity of spirit. Susan Dymecki, Ben Ebert, Amy Cohen, and Kate Hodgins thoughtfully guided me in key moments.

Thanks to all of these friends and supporters, I am so grateful to be moving forward to internal medicine residency, followed by fellowship in Rheumatology! I hope to apply my training toward the study of human immunology and the care of patients with autoimmune disease.
Daniel Pearson

I grew up in Granger, a small city in rural Washington State that is best known for its high ratio of cows to people (>20:1) and the 32 life-size dinosaur models on display around the town. At a young age I gravitated towards science as a framework to explore the world, an interest that was solidified at Willamette University and later at the National Institutes of Health. Thanks to the encouragement of my parents and the support of countless teachers and mentors, I found my way to the MD-PhD program at Harvard.

At HMS I was excited to find myself surrounded by an extraordinary group of people who shared my passion of learning and discovery. In the laboratory of George Daley, I had the opportunity to pursue my interest in the role of regulated RNA-decay in the cell-state and fate transitions. I was privileged to be in an environment where ambition and creativity were encouraged and only the limits of my imagination curtailed my exploration.

Over the past 10 years I’ve been very fortunate to have the enduring support of my wife Laurie, my parents/parents in law, and my cat Holly. More recently, my newborn son Oliver gave me some great advice that I wish I had heard earlier; when things get tough, stop what you are doing, eat a good meal, take a nap, and then reassess the situation.

After graduation, I am excited to embark on residency training in clinical pathology at Massachusetts General Hospital.
I was born in Long Island, New York and grew up in a wonderful, multigenerational Indian family. My grandparents, both educators, helped to raise and teach my little brother and me as my parents, both physicians, finished their training. I loved to race track, debate, and do math research in high school. These activities led me to Harvard College (Pfoho house!), where I majored in Chemistry & Physics, ran on the track team, continued Parliamentary Debate, and did research on statistical mechanics and evolutionary dynamics. I also met a fellow physics student, Irineo, who became my best friend and eventually my husband.

I joined HST and the MD-PhD program with a focus on reducing the burden of tobacco related disease in America. As the daughter of a pulmonologist, I always hated cigarettes and dreamt of one day holding tobacco companies accountable for the magnitude of morbidity and mortality they cause every year. I spent my scientific efforts working on new drugs for patients who developed lung cancer due to unlucky genetic mutations (EGFR-mutant non-small cell lung cancer). I spent my policy efforts on educating politicians in NY and MA on the topics of second-hand smoke in cars, smoking in public housing, e-cigarette sales near schools, and age minimums for buying tobacco products. I found that physicians are valuable in court rooms for pushing laws forward. Eight years in the MD-PhD program flew by wrapped up in these projects. During that time, I also celebrated my parents' 25th anniversary, my grandfather's 96th birthday, and my little brother's own Harvard admission; Irineo and I took hiking trips in the Alps and Japan, I held my own bachelorette party at the Nantucket 5k, and I continued a tradition of annual girls' trips to London. It has been a wonderful way to spend my 20s.

Looking forward, I hope to care for lung cancer patients as a radiation oncologist, research strategies for early cancer detection, and continue my anti-tobacco political work on state and federal scales. I also hope to keep hiking around the world with Irineo, doing big workouts with my mom and dad, watching my little brother create his own world at Harvard, and learning how to cook like my grandma.
Yakir Reshef

I was born in Jerusalem and, after four years in Kenya, spent most of my school-age years in Maryland. I felt drawn to medicine as a child because of my parents. One of them was a commando medic turned ophthalmologist who focused his efforts on Africa; the other fought with her pen and later with her computer for the cause of public health long before I knew what that was. They showed me how many different ways of thinking come together when we try to prevent and treat disease: knowledge and theory, but also the realities of the material world, the complexities of culture and society, and towering above it all: personal connection.

Two important plotlines started in middle and high school. First, thanks to a string of phenomenal teachers and a nerdy uncle, I realized that I liked to ask questions and build things. This eventually led me to late nights coding, an undergraduate degree in math, and many years now of research in computer science, statistics, and machine learning. The professors who have mentored during the research journey are an incredible group: Salil Vadhan, Pardis Sabeti, Michael Mitzenmacher, Ryan Adams, Alkes Price, and Soumya Raychaudhuri.

The other plotline started like this: I met a girl in my sixth grade math class who dazzled my heart and mind. Over two decades and countless closenesses later, she’s now my wife. We live with our son in Brookline where we’re surrounded, supported, and often rejuvenated by siblings and spouses, nieces and nephews – and my wife’s parents, whose wisdom and tirelessness undergird the whole endeavor.

The rest is details.
I was born in Seattle, Washington and grew up in Eugene, Oregon. My incredibly supportive parents, Ginny and Bud, instilled in me a love of learning and encouraged every single goal I entertained throughout my younger years, from wanting to be a professional soccer player to eventually discovering my love for science and medicine. My kind and hard-working older brother, Nathan, set an example of academic excellence, ambition, and compassion.

I went to Emory University for college, where I double majored in biology and music and fell in love with basic science in a neuropharmacology lab. During my time at Emory I solidified my career plans as a physician scientist and deepened my fascination with neuroscience. After spending time in the Pacific Northwest and the Southeast, I was overjoyed to move to Boston in 2012 to join the Harvard/MIT MD-PhD Program.

These past eight years have been an amazing ride. After completing my preclinical training in HST, I spent my graduate school years studying somatic mutations in the human brain under the wonderful guidance of Dr. Christopher A. Walsh. Upon returning to the wards, I ultimately discovered my passion for clinical neurology. Meanwhile in my personal life, I got married to my college sweetheart, we welcomed two loving and hilarious cats into our lives, and I took up competitive marathon running.

I am sincerely grateful to my husband Alex, my family, friends, mentors, and the MD-PhD program leadership and staff for believing in me through every step of my physician scientist training. It has been a profound honor to have such an encouraging and dedicated support system. I am excited to enter the next stage of my career as a neurology resident at Massachusetts General Hospital and Brigham and Women’s Hospital.
Clara Starkweather

I am from Athens, Georgia. I was born into a musical family, with an elementary school music teacher mother and a cello professor father. For the first 18 years of my life, my greatest passion was piano performance, thanks to my mother’s tireless piano teaching efforts. Until I started college, I couldn’t imagine anything making me quite as happy as playing piano.

I established my academic interest in neuroscience as an Angier B. Duke Scholar at Duke University. Inspired by my musical interests, I joined the lab of Dr. Richard Mooney, a wonderful neuroscientist who studies the neurobiological basis of song learning in songbirds. Rich was instrumental in my early scientific development; he was singlehandedly responsible for my getting hooked on systems neuroscience. Around the same time, I worked with Parkinson’s disease patients through an Arts in Medicine program. I realized that, while I loved the long-term satisfaction of scientific discovery, the day-to-day gratification and privilege of working with patients was really special.

On coming to Harvard for my MD/PhD, the MD/PhD and HST programs welcomed me by putting me in touch with many great mentors. Among them was Dr. Matthew Frosch, a neuropathologist, neuroscientist, and legendary neuroanatomy professor, who introduced me to Dr. Ziv Williams, a neurosurgeon-scientist at MGH. Role models such as Dr. Frosch and Dr. Williams showed me that even clinically consuming fields such as neurosurgery are not incompatible with doing great science. I was quickly convinced to pursue neurosurgery after seeing Dr. Williams perform a deep brain stimulation surgery on an awake patient, whose debilitating tremor vanished immediately upon insertion of the electrodes.

I am grateful for the scientific mentorship I had while at Harvard. My wonderful MD/PhD advisor, Dr. Chinfei Chen, recommended I meet with Dr. Naoshige Uchida, an exciting neuroscientist who studies dopamine and reward. My work in Nao’s lab inspired me to be the best ‘wet lab’ scientist possible—and unexpectedly, to also develop my skills in computational neuroscience. Nao’s investment in my education is unfathomable. He sat with me for hours while delivering honest and constructive feedback on my presentations. He sent me to a computational neuroscience summer school in Shanghai. He mentored me through getting my first NIH grant as a principal investigator. A mentor like Nao is one-in-a-million. I am also grateful for my wonderful computational neuroscience collaborator, Dr. Samuel Gershman, and to my dissertation committee—Dr. John Assad, Dr. Christopher Harvey, and Dr. Richard Born—for their thoughtful and animated discussions.

None of my growth would have been possible without my loving and supportive relationships. I am grateful to my wonderful partner, my friends, and my family. And a special ‘thank you’ goes to my #1 piano teacher—my mom—whose emphasis on fine motor skills since day 1 will hopefully pay off during neurosurgery residency!
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