

*Fellowship in Pediatric Gastroenterology,  
Hepatology & Nutrition*



*Boston Children's Hospital  
Harvard Medical School*

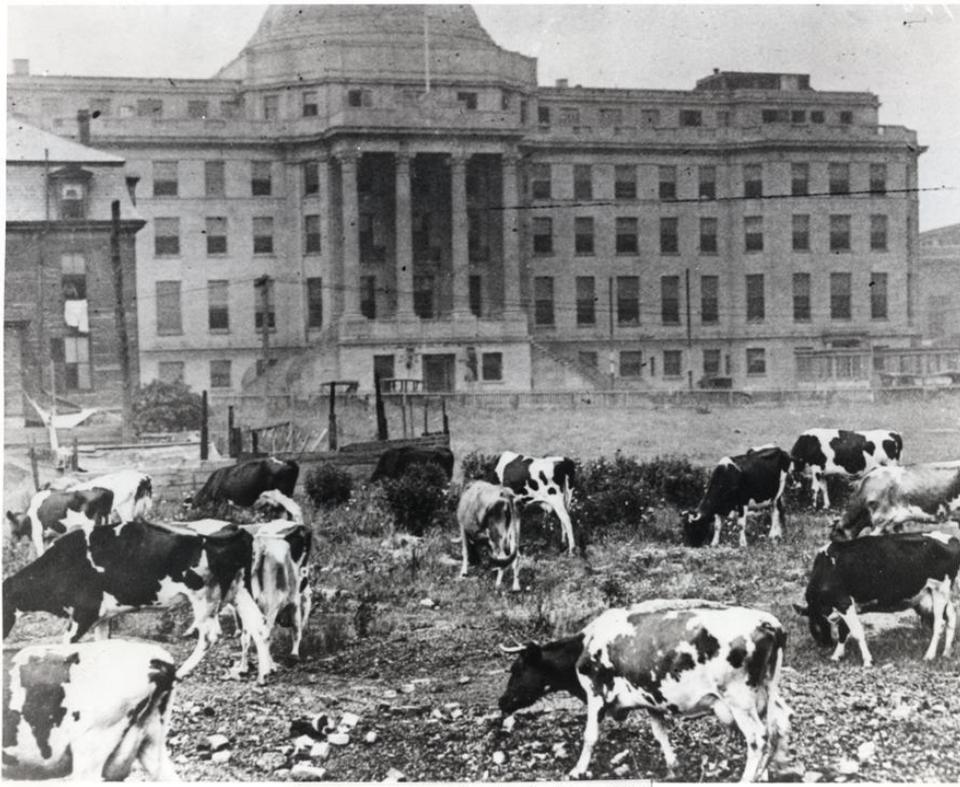


*2018 Edition*



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# History of Boston Children's Hospital



Children's Hospital, Boston, 1914

## 1869-1881

Soon after the Civil War, in 1869, Dr. Francis Henry Brown organized a small group of Harvard Medical School graduates joined by Boston's civic leaders to establish a 20 bed Children's Hospital in a townhouse on Rutland Street in Boston's South End. The hospital treated just 30 patients that first year. One year later the Children's Hospital relocated to a larger building on the same street. The patients were predominately Irish immigrants and many had traumatic injuries or infectious diseases.

Philanthropy completely supported the new hospital. Sister Theresa and the Anglican Order



of the

Sisters of St. Margaret oversaw the nursing care of the children for the first 45 years of the hospital's existence.

## 1882-1913

By 1882 having outgrown its current structure,

the hospital was moved to Huntington Avenue near the current Symphony Hall. This larger building was designed especially for children's needs. As the range of illnesses grew, so did the professional staff. Between the years 1882 and 1914 the practice of pediatrics was recognized as a specialty and Harvard Medical School made its first appointment of a physician devoted solely to the care of children. The first medical house officers (interns and externs) were appointed and a nursing school was opened to educate nurses.

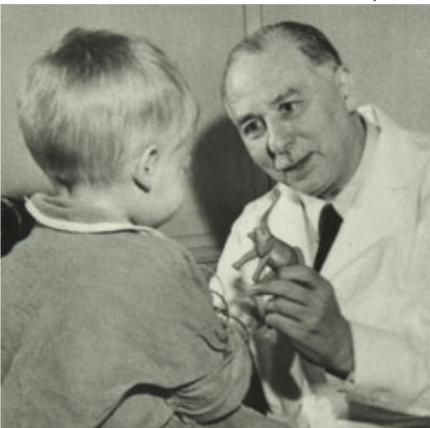
## 1914-1945

In the early 1900s Harvard Medical School moved to the former Ebenezer Francis Farm, its current site, and in 1914 the Children's Hospital relocated to its current address on Longwood Avenue immediately next to the Medical School. During this era the Hunnewell building housed the children until a series of "cottages" were built to minimize the spread of infection. These "cottages" housed medical, surgical and orthopedic patients. Departments now differentiated into Surgery, Medicine, Radiology, Orthopaedics, and Pathology to mention only a few.

Cystic fibrosis, erythroblastosis fetalis and other diseases were described and studied by Children's Hospital physicians. Pediatric medicine subspecialized into metabolism, hematology and bacteriology. Surgeons developed new techniques for repairing congenital abnormalities. The field of cardiac surgery was begun and the iron lung for polio victims was developed by physicians at Children's Hospital and the Harvard School of Public Health. Harvard medical students began to learn pediatrics at the Children's Hospital. The housestaff grew from 3-4 in 1900 to over 30 in the early 40s. Women became residents when men left to serve in World War II. The Medical & Nursing Alumni Associations were established. During this period, Children's Hospital forged strong bonds with other institutions including the House of the Good Samaritan (for rheumatic fever patients), the Sarah Fuller School (for deaf children), the Judge Baker Children's Center (for psychiatric illness) and the Sharon Sanatorium. Remarkably, in 1939 the average cost of a hospital visit was just \$1.50.

#### 1946-1990

During the years 1946 to 1990 the Children's Hospital was well positioned to take a leadership role in pediatric health. Experienced physicians returned from the military service. The NIH established programs to support academic research. The Children's Hospital organized itself into the Children's Hospital Medical Center. The hospital endorsed specialized pediatric care, and began the construction of new buildings: the Farley inpatient building (in 1956), the Fegan outpatient building (in 1967), the Martha Eliot Health Center (in 1967), and the Enders



research building (1970) named for Dr. John Enders, recipient of the Nobel Prize for his work with polio virus. In 1987 a new inpatient facility was built bringing the number of inpatient beds to 330. Old diseases such as polio,

measles, pertussis, meningitis, pneumonia, and epiglottitis decreased in prevalence because of vaccines, and new antibiotics, only to be replaced by new diseases like HIV, Kawasaki's, substance abuse, and the autism spectrum disorders. The faculty in all departments grew rapidly. The medical house staff by 1990 numbered over 86 residents. All subspecialties had developed outstanding fellowships. The hospital was now a primary education site for Harvard medical students and elective students from throughout the US, and Children's Hospital enjoyed both a national and international reputation.



#### 1990-Present

The years since 1990 have seen increasing excellence in patient care, great research productivity, new medical innovations, and remarkable contributions to pediatric medical education. Children's Hospital clinicians have pioneered lung, liver, and multiple organ transplants, innovative procedures for short gut syndrome, surgery using robotics and lasers, the development of tissue engineered organs, the use of small devices to repair holes in the heart, hydroxyurea to treat sickle cell disease, gene therapy, novel treatments for vascular malformations, and fetal intervention for hypoplastic left heart syndrome, among others. Children's researchers have developed treatments for blood disorders, regenerated damaged nerves, identified genes associated with specific diseases, developed new vaccines for serious illnesses, created disease-specific human stem cells, invented genomic tools to classify tumors and identify new drug therapies, and developed whole new fields, such as angiogenesis.



## *Boston Children's Hospital Milestones*

- 1869** Boston Children's Hospital opens as a 20-bed facility at 9 Rutland Street in Boston's South End.
- 1891** Establishes the nation's first laboratory for the modification and production of bacteria-free milk.
- 1920** Dr. William Ladd devises procedures for correcting various congenital defects such as intestinal malformations, launching the specialty of pediatric surgery.
- 1922** Dr. James Gamble analyzes the composition of body fluids and develops a method for intravenous feeding that saves the lives of thousands of infants at risk of dehydration from diarrhea.
- 1932** Dr. Louis Diamond characterizes Rh disease, in which a fetus's blood is incompatible with its mother's. Diamond later develops exchange transfusion to treat the disease.
- 1938** Dr. Robert Gross performs the world's first successful surgical procedure to correct a congenital cardiovascular defect, ushering in the era of modern pediatric cardiac surgery.
- 1947** Dr. Sidney Farber achieves the world's first successful remission of acute leukemia. He goes on to found the Dana-Farber Cancer Institute.
- 1954** Dr. John Enders and his colleagues win the Nobel Prize for successfully culturing the poliovirus in 1949, making possible the development of the Salk and Sabin vaccines. Enders and his team went on to culture the measles virus.
- 1971** Dr. Judah Folkman publishes "Tumor angiogenesis: therapeutic implications" in the *New England Journal of Medicine*. It is the first paper to describe Folkman's theory that tumors recruit new blood vessels to grow.
- 1977** Thomas Edward Patrick Brady Jr. is born
- 1983** Children's physicians report the first surgical correction of hypoplastic left heart syndrome, a defect in which an infant is born without a left ventricle. The procedure is the first to correct what previously had been a fatal condition.
- 1985** The Howard Hughes Medical Institute funds a major research program in molecular genetics, the first HHMI program at a pediatric hospital.
- 1986** Drs. Louis Kunkel and Stuart Orkin and their research teams develop the technique of positional cloning to identify the genes responsible for Duchenne muscular dystrophy and chronic granulomatous disease, respectively.
- 1989** Researchers in Neurology and Genetics discover that beta amyloid, a protein that accumulates in the brains of people with Alzheimer's disease, is toxic to neurons, indicating the possible cause of the degenerative disease.



- 1989** Ben Paret is born.
- 1990** Dr. Joseph Murray, chief of Plastic Surgery emeritus, wins the Nobel Prize for his pioneering work in organ transplantation.
- 1997** *Good Will Hunting* is released in theaters
- 1998** *Good Will Hunting* is released on VHS
- 1998** *Good Will Hunting* somehow only wins 2 Academy Awards
- 1998** Dr. Anthony Atala successfully transplants laboratory- grown bladders into dogs, a major advance in the growing field of tissue engineering.
- 1999** Dr. Todd Golub first uses gene expression microarrays to differentiate cancers.
- 2000** Dr. Frederick Alt finds that end-joining proteins maintain the stability of DNA, helping to prevent the chromosomal changes that precede cancer.
- 2001** Children's performs the world's first successful fetal repair of hypoplastic left heart syndrome in a 19-week- old fetus.
- 2002** Dr. Nader Rifai co-authors a landmark study showing that a simple and inexpensive blood test for C-reactive protein is a more powerful predictor of a person's risk of heart attack or stroke than LDL cholesterol.
- 2003** Drs. Heung Bae Kim and Tom Jaksic develop, test and successfully perform the world's first-ever serial transverse enteroplasty (STEP) procedure, a potential lifesaving surgical procedure for patients with short bowel syndrome.
- 2004** Children's surgeons perform New England's first multi- visceral organ transplant when an 11-month-old boy receives a stomach, pancreas, liver and small intestine from a single donor.
- 2005** Dr. Stephen Harrison and colleagues show how a key part of the human immunodeficiency virus (HIV) changes shape, triggering other changes that allow the AIDS virus to enter and infect cells.
- 2008** Dr. Rani George finds that activating mutations in the receptor tyrosine kinase ALK cause some cases of neuroblastoma.

- 2008** Drs Vijay Sankaran and Stuart Orkin discover that the fetal hemoglobin to adult hemoglobin switch is controlled by the BCL11A transcription factor. This solves a decades old problem in hematology and has important implications for the treatment of sickle cell disease and thalassemias.
- 2008** Dr. Zhi He observes that stimulation of the mTOR pathway increases axon regeneration after CNS injury.
- 2008** Manton Center for Orphan Disease Research founded.
- 2009** Immune Disease Institute joins Children's Hospital as the Program in Cellular and Molecular Medicine.
- 2009** Drs. George Daley and Richard Gregory show that the microRNA, Lin 28, plays an important role in germ cell development and cancer.
- 2009** Drs. Len Zon and George Daley discover that blood flow triggers development of hematopoietic stem cells.
- 2011** Drs. Luigi Notarangelo, Sung-Yun Pai and David Williams achieve the first successful treatment of severe combined immunodeficiency by gene therapy in the US.
- 2012** Dr. Heung Bae Kim develops novel method to stretch arteries in vivo for repair of arterial defects.
- 2012** Standardized Clinical Assessment and Management Plans (SCAMPS) method developed for reducing costs and variability of care and improving outcomes.
- 2013** Drs. Amy Starmer, Ted Sectish and Chris Landrigan develop a patient handoff method (I-PASS) that greatly reduces medical errors and preventable adverse events.
- 2014** Drs. Jeff Burns and Tracy Wolbrink launch OPENPediatrics, an innovative web-based digital learning platform linking physicians and nurses across the world.
- 2015** Dr. Joel Hirschhorn and others identify a large number of genes that contribute to obesity and body fat distribution.
- 2015** Dr. Len Zon defines the perivascular hematopoietic stem cell niche.
- 2015** Dr. Beth Stevens wins MacArthur "Genius" Award for defining the role of microglia in synapse pruning in development and Alzheimer's disease.
- 2016** Dr. Len Zon shows that reversion to a neural crest identity initiates the first cancerous cell in melanoma.



*Dr. Nurko with Jennifer Garner*



*Dr. Farwaz and her patient*

## *People*

### *Program Director*



*Paul Rufo, MD, MMSc*

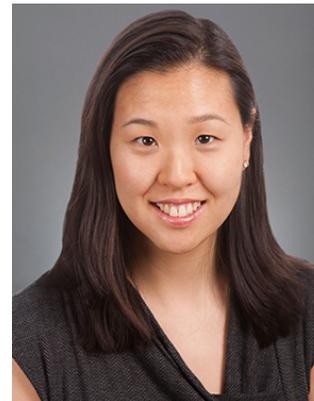
Dr. Paul Rufo is an Assistant Professor of Pediatrics and Program Director of the Fellowship in Pediatric Gastroenterology, Hepatology and Nutrition. A native of Boston, Dr. Rufo obtained his medical degree from the University of Massachusetts and was an intern and resident in Pediatrics at Johns Hopkins. Dr. Rufo returned to Boston to complete his fellowship training in Gastroenterology and Nutrition at Boston Children's Hospital, and joined the faculty at BCH at the completion of his fellowship. Dr. Rufo's research is focused on the development of novel treatments and diagnostic tools for use in the management of children and adults with inflammatory intestinal diseases (IBD). While working in the laboratory of Dr. Wayne Lencer, he discovered that the antifungal antibiotic, clotrimazole, displays both anti-secretory and anti-inflammatory properties in vitro and in vivo, recognizing the potential clinical implication of these findings. Dr. Rufo's translational research program has published findings demonstrating that fecal lactoferrin and urinary isoprostane levels can help in the assessment of patients with IBD. Ongoing studies are exploring other novel fecal proteins for use in the evaluation of patients with known or suspected IBD. Dr. Rufo became Director of the GI Fellowship Training Program in 2008. He has introduced a number of innovative training opportunities into the fellowship, such as the Clinician-Innovator program. Dr. Rufo continues to work to make Boston Children's Hospital the premier training program in the country, and one that remains at the cutting edge of innovative clinical instruction.

### *Associate Program Directors*



*Daniel Kamin, MD*

Dr. Daniel Kamin is an Assistant Professor of Pediatrics, the Director of GI Consultation Services, as well as Associate Program Director of the fellowship. Dr. Kamin received his medical degree from the Yale University School of Medicine and was an intern and resident at the Massachusetts General Hospital for Children. Following residency, Dr. Kamin stayed at MGH to complete his fellowship training in Pediatric Gastroenterology. Dr. Kamin joined the faculty at Boston Children's Hospital in 2005. Dr. Kamin specializes in medical ethics, having completed an ethics fellowship at Harvard Medical School in 2009.



*Christine Lee, MD*

Dr. Christine Lee is an Instructor of Pediatrics, the Program Director of the Advanced Transplant Hepatology Fellowship, as well as Associate Program Director of the GI Fellowship. She is also the Medical Director of the Fatty Liver Interdisciplinary Program (FLIP). Dr. Lee received her medical degree from Brown Medical School prior to training in the Boston Combined Residency Program at Boston Children's Hospital and Boston Medical Center. She is a graduate of our GI Fellowship Program, as well as our Advanced Fellowship in Pediatric Transplant Hepatology. Dr. Lee's clinical and research interests focus on the care of infants, children and adolescents with a broad variety of gastrointestinal and liver disorders and pre/post-liver, intestinal and multi-visceral transplant care.

## *Fellowship Program Leadership*



**Wayne Lencer, MD**  
*Division Chief*



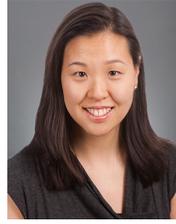
**Athos Bousvaros, MD, MPH**  
*Associate Division Chief*



**Paul Rufo, MD, MMSc**  
*Program Director*



**Daniel Kamin, MD**  
*Associate Program Director*



**Christine Lee, MD**  
*Associate Program Director*



**Alan Leichtner, MD**  
*Vice Chair, Clinical Affairs*



**Samuel Nurko, MD, MPH**  
*Director, Motility Center*



**Scott Snapper, MD, PhD**  
*Director, IBD Center*



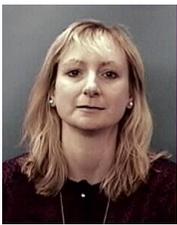
**Chris Duggan, MD, MPH**  
*Director, Center for Nutrition*



**Menno Verhave, MD**  
*Clinical Director*



**Victor Fox, MD**  
*Director, Gastroenterology  
Procedure Unit*



**Anne Wolf, MD**  
*Director, Inpatient Services*



**Laurie Fishman, MD**  
*Director, Medical Education*



**Susanna Huh, MD, MPH**  
*Associate Director, Center for  
Nutrition*



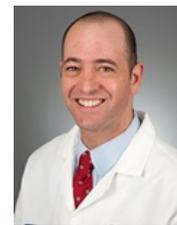
**Amit Grover, MD**  
*Director, Pancreatic Disorders  
Program*



**Ben Paret, not an MD**



**Leonel Rodriguez, MD, MS**  
*Director, Colorectal Program*



**Eitan Rubinstein, MD**  
*Director, GI Consultation Services*

## Current Fellows

We seek fellows who are intelligent, curious, creative, energetic, personable, and accomplished. Our goal is to provide our trainees with the skills necessary to become leaders in pediatrics and in gastroenterology. We seek fellows who come from all parts of the country and beyond, as well as those from a wide variety of backgrounds.

We provide our trainees with a comprehensive clinical experience followed protected time necessary to pursue in depth a scholarly project under the mentorship of an established investigator. We match each trainee with a mentor of prominence who possesses the requisite resources as well as the interest and enthusiasm to guide our trainees through their early years of career development. We seek to establish within our division an atmosphere that values intellectual achievement and the courage to pursue new ideas. We hope to foster in each trainee the tremendous personal satisfaction and inherent fun that accompanies such a career path, and in doing so provide him or her with an opportunity to make an impact in our field of medicine.

Our training program is designed to accommodate, encourage, and provide support for fellows transitioning to careers in academic medicine. We recognize that there is a distinct need to train young physicians to take leadership positions in the broadest range of academic pursuit. As such, we have developed discreet, but often overlapping, programs to support trainees interested in pursuing careers as:

**Physician-Scientists** - Those interested in pursuing hypothesis driven, project eligible for NIH-funding including:

- a. Bench research
- b. Patient-Oriented translational research
- c. Epidemiological Studies

**Clinician Innovators** – Those interested in pursuing initiatives that do not generally meet criteria for funding from federal agencies including:

- a. Medical Education
- b. Patient Advocacy
- c. Public Policy



## *First Year Fellows*



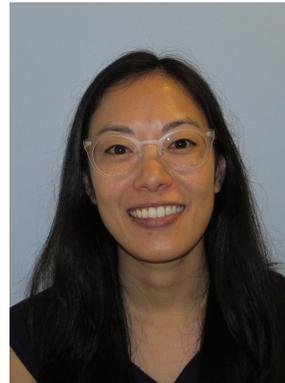
**Osama Baghdady, MBBS**  
**Medical School:** King Abdulaziz College of Medicine  
**Residency:** Children's National Medical Center



**Suzanna Hirsch, MD**  
**College:** Wesleyan University  
**Medical School:** Albert Einstein School of Medicine  
**Residency:** Boston Combined Residency Program



**Lauren Veit, MD**  
**College:** Rensselaer Polytechnic Institute  
**Medical School:** University of Massachusetts  
**Residency:** Boston Combined Residency



**Allison Wu, MD**  
**College:** University of Pennsylvania  
**Medical School:** University of Southern California  
**Residency:** UCLA



**Yanjia "Jason" Zhang, MD, PhD**  
**College:** Yale University  
**Graduate School:** Harvard School of Public Health  
**Medical School:** Harvard Medical School  
**Residency:** Boston Combined Residency

## *Second Year Fellows*



**Denis Chang, MD, MMSc**  
**College:** Boston College  
**Graduate School:** Rutgers University  
**Medical School:** Drexel  
**Residency:** New York University



**Deron Spencer, MD, MMSc**  
**College:** Morehouse  
**Graduate:** Rockefeller University  
**Medical School:** Weill Cornell  
**Residency:** Stanford



**Katherine**  
**College:** Bates  
**Medical School:** Ohio State  
**Residency:** Cincinnati Children's



**Jes**  
**College:** Harvard  
**Medical School:** Harvard Medical School  
**Residency:** Boston Combined Residency

## *Third Year Fellows*



**Paul "McGreggor" Crowley, MD**  
**College:** Massachusetts Institute of Technology  
**Medical School:** Harvard Medical School  
**Residency:** Massachusetts General Hospital



**Matthew Kowalik, MD**  
**College:** SUNY, Geneseo  
**Medical School:** Downstate Medical Center  
**Residency:** Icahn School of Medicine, Mount Sinai



**Erin Syverson, MD**  
**College:** University of Rochester  
**Medical School:** Jefferson Medical College  
**Residency:** Children's National Medical Center



**Amy Turner, MD**  
**College:** Clemson University  
**Medical School:** University of South Carolina  
**Residency:** Boston Combined Residency

## *Divisions & Programs*

<b>Adolescent Medicine</b>	<b>S. Jean Emans, MD</b>
<b>Clinical Translational Study Unit</b>	<b>David A. Williams, MD</b>
<b>Developmental Medicine</b>	<b>Leonard A. Rappaport, MD</b>
• ASAP (Adol Substance Abuse Prog)	Sharon J. Levy, MD
<b>Emergency Medicine</b>	<b>Richard G. Bachur, MD</b>
• Clinical Emergency	Anne M. Stack, MD
• Clinical Toxicology (Poison Center)	Michele M. Burns, MD
• Short Stay Program	Mark N. Baskin, MD
<b>Endocrinology</b>	<b>Joseph A. Majzoub, MD</b>
• Clinical Endocrinology	Laurie E. Cohen, MD
• Diabetes Program	Joseph I. Wolfsdorf, MB, BCh
• Neuroendocrinology	Laurie E. Cohen, MD
<b>Gastroenterology and Nutrition</b>	<b>Wayne Lencer, MD</b>
• Clinical Gastroenterology	Athos Bousvaros, MD
• Clinical Nutrition	Christopher P. Duggan, MD, MPH
<b>General Pediatrics</b>	<b>Mark A. Schuster, MD, PhD</b>
• Children's Hospital Inpatient Service	Vincent W. Chiang, MD
• CHPCC (Primary Care)	Joanne E. Cox, MD
• Clinical Effectiveness	Jonathan A. Finkelstein, MD
• Coordinated Care Service	Sangeeta Mauskar, MBBS
• Environmental Medicine	Alan D. Woolf, MD, MPH
• Family Develop't Unit (Child Abuse)	Celeste R. Wilson, MD
• Martha Eliot Health Center	Alex Epee-Bounya, MD
<b>Genetics &amp; Genomics</b>	<b>Christopher A. Walsh, MD</b>
• Clinical Genetics	Olaf Bodamer, MD, PhD
• Metabolism	Gerard T. Berry, MD
<b>Hematology/Oncology</b>	<b>David A. Williams, MD</b>
• Clinical Hematology	Matthew M. Heeney, MD
• Stem Cell Transplantation	George Q. Daley, MD, PhD
<b>Immunology</b>	<b>Raif S. Geha, MD</b>
• Allergy	Hans C. Oettgen, MD, PhD
• Dermatology	Stephen E. Gellis, MD
• Immunology	Hans C. Oettgen, MD, PhD
• Clinical Rheumatology	Robert P. Sundel, MD
<b>Infectious Diseases</b>	<b>Michael Wessels, MD</b>
• Clinical Infectious Diseases	Sandra K. Burchett, MD
<b>Interdepartmental Programs</b>	
• Bioinformatics	Kenneth D. Mandl, MD
• Cellular and Molecular Medicine	Frederick W. Alt, PhD
• Stem Cell Biology	Leonard I. Zon, MD
<b>Medicine Critical Care</b>	<b>Michael S. D. Agus, MD</b>
<b>Molecular Medicine</b>	<b>Stephen C. Harrison, PhD</b>
<b>Neonatology</b>	<b>Stella Kourembanas, MD</b>
• at Boston Children's Hospital	Anne R. Hansen, MD
• at Beth Israel Deaconess Hospital	DeWayne M. Pursley, MD
• at Brigham and Women's Hospital	Terrie E. Inder, MD, MB ChB
<b>Nephrology</b>	<b>Friedhelm Hildebrandt, MD</b>
• Clinical Nephrology	Michael J. Somers, MD
<b>Pulmonary Medicine</b>	<b>Craig J. Gerard, MD, PhD</b>
• Clinical Pulmonology	Debra Boyer, MD
• Ina Sue Perlmutter Laboratory	Craig J. Gerard, MD, PhD

## *Where are they now?*

### **2012-2013**

Afzal, Amna  
Ambartsumyan, Lusine  
Rao, Meenakshi  
Shouval, Dror

### **2013-2014**

Gosselin, Kerri  
Hron, Bridget  
Mallon, Daniel  
Ouahed, Jodie  
Pai, Nikhil

### **2014-2015**

Fiechtner, Lauren  
Ganesh, Meenakshi  
Grover, Amit  
Tang, Margot

### **2015-2016**

Egberg, Matthew  
Silvester, Jocelyn  
Softic, Samir  
Thiagarajah, Jay  
Zhou, Hongchao

### **2016-2017**

Gluchowski, Nina  
Hubbard, Jonathan  
Mahoney, Lisa  
Tsou, Amy

Merck  
Seattle Children's Hospital  
Boston Children's Hospital  
Sheba University

University of Massachusetts  
Boston Children's Hospital  
Cincinnati Children's Hospital  
Boston Children's Hospital  
McMaster University

Massachusetts General Hospital  
Dowd Medical Associates  
Boston Children's Hospital  
Boston Medical Center

UNC Chapel Hill  
Boston Children's Hospital  
Boston Children's Hospital  
Boston Children's Hospital

Boston Children's Hospital  
Boston Children's Hospital  
Boston Children's Hospital  
Weill Cornell

## Facilities

Boston Children's Hospital is one of the largest pediatric hospitals in the United States, and a major teaching facility of Harvard Medical School. Founded in 1869 as a 20-bed hospital for children, it is now a comprehensive medical center for pediatric and adolescent health care, dedicated to excellence in patient care, teaching and research.

There are 404 inpatient beds distributed on five floors in the Main hospital building, Main South, and the new state-of-the-art Mandell building. The hospital contains:

- A 29- bed multidisciplinary intensive care unit
- 12-bed medical intensive care unit, 24-bed neonatal intensive care unit,
- 26-bed cardiac intensive care unit
- 10-bed intermediate care unit,
- 13-bed bone marrow transplantation

### Main South

Children's opened this 11- story clinical building in 2005. Main South gives clinicians access to cutting-edge technology while carving out more room for patients and families. The building includes cardiac, medical multidisciplinary ICU beds, a medical intermediate care unit, a cardiac catheterization lab, inpatient echocardiography, medical and surgical patient beds, operating rooms, as well as Radiology facilities.



### Fegan Building

This 12 story building sits in the middle of the Children's campus, between the Hunnewell building and the Main Hospital, and houses Children's ambulatory programs and many clinician's offices.

### Enders and Karp Research Laboratories

The 13-story John F. Enders Laboratories for Pediatric Research, named for the Nobel Prize recipient who cultured the polio and measles viruses; the 12-story state-of-the-art Karp Family Research Laboratories; and a portion of the new neighboring Center for Life Science Boston, add up to more than 750,000 square feet of research space. These buildings contain more than 1,100 basic scientists and physician investigators in virtually every specialty. The hospital faculty includes:



- 7 members of the National Academy of Sciences
- 16 members of the National Academy of Medicine
- 22 Fellows of the American Academy of Arts and Sciences
- 12 members of the Howard Hughes Medical Institute
- A level of research that rivals the very best research institutes in the world.

Funding for research at Boston Children's Hospital exceeds \$300 million and is greater than all other pediatric hospitals in the United States.

The clinical research program has extensive support services, including biostatisticians, epidemiologists, database programmers, data coordinators and clinical research coordinators who provide consultation to clinical investigators. The hospital also has one of the oldest and largest NIH-funded clinical research centers (called the Institutional Centers for Clinical and Translational Research at Children's) in the country.

### Mandell Building

This 10-story state-of-the-art clinical building opened in 2013. It contains much needed expansion space for the Emergency, Radiology, Surgery, Neurology, and Pharmacy services. There are four floors of single bed inpatient rooms that align with floors in the existing hospital, ne 'short stay beds', and a neuroimaging suite with additional MRI, functional MRI, and near infrared imaging tools.

### Hunnewell Building

This famous "green-domed" building with its classic columned façade on Longwood Ave was built in 1914 and is the oldest building in the Children's complex. To many, it is the symbol of the institution. Today, it mostly houses administrative offices, including the IBD Center and main GI Clinical offices, which are located on the 1<sup>st</sup> and ground floor, respectively. The copper dome covers an internal atrium. It was reclad about 20 years ago and is only beginning to recover its verdigris hue.

## Satellite Locations

Children's has physician service agreements for inpatient pediatrics, emergency medicine and newborn medicine at:

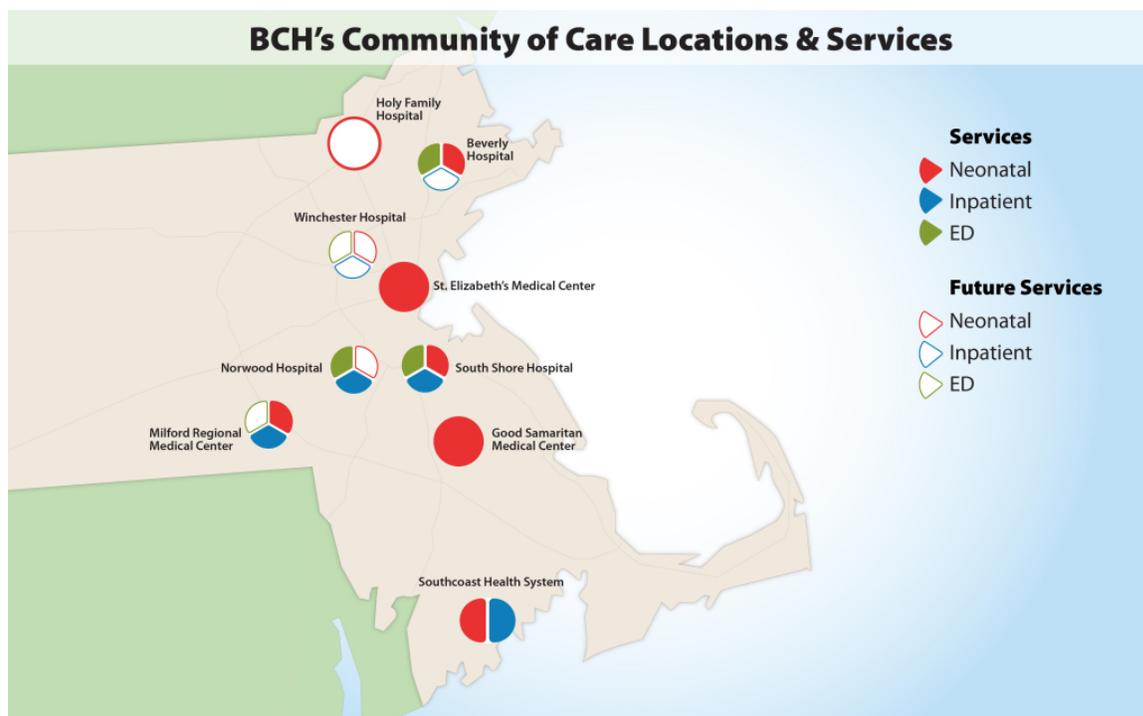
- Beverly Hospital
- Charlton Memorial Hospital
- Milford Hospital
- St Luke's Hospital
- South Shore Hospital
- Tobey Hospital
- Winchester Hospital

There are more than 100 outpatient programs ranging from primary care to a wide variety of specialty programs. Outpatient facilities include:

- An 11-story building for ambulatory services
- The Adolescent/Young Adult Program
- Children's Hospital Primary Care at Longwood
- Martha Eliot Health Center

In addition, outpatient services are provided at Children's satellite centers or physician offices in:

- Brockton
- Lexington
- Milford
- Norwood
- North Dartmouth
- Peabody
- Waltham
- Weymouth



## *Harvard Medical School and the Longwood Medical Area*



### *Longwood Medical Area*

Boston Children's Hospital is the primary pediatric program of Harvard Medical School, which is located next to the hospital. All faculty hold academic appointments at the medical school. There are more than 3000 Harvard Medical School faculty affiliated with Boston Children's Hospital.

Children's Hospital and Harvard Medical School are part of a larger, roughly 20 square block campus called the Longwood Medical Area. Children's sits in the center of this area, next to the Brigham and Women's Hospital, Beth Israel Deaconess Medical Center and the Dana-Farber Cancer Institute, as well as Harvard Medical School, and within a block of the Joslin Diabetes Center, the Massachusetts College of Pharmacy, the Harvard School of Public Health, and the Harvard School of Dental Medicine. Some members of the staff are also staff members at one of these neighboring institutions.

Boston Children's Hospital participates in numerous cooperative programs. It is a partner in Neonatology with Brigham and Women's Hospital and Beth Israel Deaconess Medical Center. It is the headquarters of the New England Regional Infant Cardiac Program, the site of the Massachusetts Poison Control System, a partner in the Dana-Farber/Boston Children's Cancer and Blood Disorders Center with Dana-Farber Cancer Institute and a partner in the Joint Program in Gastroenterology and Nutrition with Massachusetts General Hospital across town. Several surgical departments are joint programs with the Brigham and Women's Hospital.



### *Harvard Medical School Quad*

## Program

We aim to position each of our fellows choosing to pursue training as Physician-Scientists the support and infrastructure to compete successfully for independent funding through the NIH or for transitional Foundation support in anticipation of competing for NIH funding. Similarly, we provide fellows choosing to pursue training as Clinician-Innovators with the skill-set necessary for them to be innovative leaders in medical education, patient advocacy, public policy, and quality improvement.



### *3<sup>rd</sup> Year Fellows at Graduation*

In the past 30 years, we have developed a substantive infrastructure to provide this type of transitional support for all our trainees who are interested in moving forward with an academic career. Nearly 95% of the trainees who have graduated from our program over the course of the last ten years have remained in academics, and 39% have been NIH funded. As such, we feel fortunate, to be in a strong position to continue to foster the career development of our trainees over the long term.

Over fifty outstanding research faculty members have been recruited to support this effort (a ratio of approximately 5:1, faculty to trainee). Within the scope of disease-oriented basic science research training, we have on our faculty nationally and internationally recognized experts in the fields of cell biology, biochemistry, structural biology, genetics, immunology, physiology, biophysics and microbiology.

Equally impressive mentoring opportunities are available to trainees through our faculty of independent investigators in epidemiology, biostatistics, bioethics, outcomes and health policy, study design and translational medicine. Our faculty members have competed successfully for NIH and foundation funding and are making substantive contributions to their fields of research interest. All are publishing in journals of the highest quality and have successful records of training young investigators. The Harvard Medical School Departments of Cell and Developmental Biology, Microbiology, Immunology, Pathology, Medicine, and Pediatrics, and the Harvard School of Public Health Departments of Epidemiology, Biostatistics, and Nutrition are represented. The overall annual research-funding base for our Division exceeds \$10 million (including program grants) in direct support of our investigator-initiated research.

The faculty of the Division of Gastroenterology and Nutrition at Boston Children's Hospital provides general and subspecialty care to patients presenting with a full range of gastrointestinal, hepatobiliary, pancreatic, and nutritional problems. Children's is one of the foremost pediatric gastroenterology programs in the world and a destination for many patients and families seeking additional information about the diagnosis and management of illness. Centers-of-excellence have therefore been established including the Center for Inflammatory Bowel Disease, the Center for Childhood Liver Disease, the Motility Program, the Therapeutic Endoscopy Program, and Clinical Nutrition. These specialized programs within the Division enable us to provide cutting-edge clinical care, enable fellows to benefit from concentrated training within a particular discipline, and facilitate the integration of basic and translational research into clinical practice. Administration for the Fellowship is based in both the GI Cell and Developmental Biology Laboratories and in the Pediatric GI and Nutrition Division at Boston Children's Hospital. As such, trainees have ready access to both clinical and laboratory resources.

## Tracks

The program offers two training tracks:

- Physician-Scientist (3 fellows) — emphasizing training in hypothesis driven projects
- Clinician-Innovator (1 fellows) — emphasizing training in the acquisition of educational skills in research or a defined clinical area

## Physician Scientist Track

### Training as an Academic Physician

All fellows receive identical clinical training and graduate from our program with the skills that will qualify them for recruitment into any large academic tertiary clinical program.

**Physician-Scientist:** Training is centered on mentoring fellows in the development and execution of basic and patient-oriented (translational) research.

Basic research training conducted in the fellowship program focuses on related fields in intestinal biology that encompass most acute and chronic intestinal diseases including:

- Epithelial cell and developmental biology
- Innate and acquired mucosal immunology
- Intestinal epithelial-microbial pathogenesis.

Patient-oriented research focuses on topics including:

- Intestinal and nutritional epidemiology (including global health)
- Outcomes research
- Clinical trials, including translational research in basic pharmacology of novel therapeutics.
- Funding and research infrastructure are available through the Children's Hospital Clinical and Translational Research Programs to support such research training.
- Support is similarly available to applicants with interests in other fields of GI-related basic or clinical research.



*Eosinophilic Gastrointestinal Disease Team*

## Clinician Innovator Track

Training provides state-of-the-art training in the acquisition of educational skills or in research in a defined clinical area. Academic programs in this fellowship-training curriculum will focus on:

- Quality Improvement
- Critical review or meta-analysis of the literature
- Systematic review of clinical practice
- Development of evidence based treatment algorithms
- Medical Education
- Public Policy and Advocacy

## Curriculum: A Year-by-Year Snapshot

### Year 1

Our clinical programs provide care to children from Boston and from around the world. In addition to participating in a busy ambulatory program in general gastroenterology, first year fellows also interact with faculty in established subspecialty programs including Inflammatory Bowel Disease, Hepatology, Liver and Small Bowel Transplantation, Endoscopy, Nutrition, Short Bowel Syndrome and Intestinal Failure, Celiac Disease, Aero-Digestive Diseases, and Motility.

The first year of fellowship is devoted almost entirely to building a core proficiency in clinical medicine. The year is divided into approximately 13 blocks of 3.5 weeks each. Fellows complete rotations on the Consult, Inpatient, and Hepatology Programs at Children's Hospital. One rotation is dedicated entirely to the improvement of endoscopic proficiency. Two rotations are dedicated to fellow education in parenteral and enteral nutrition on the Clinical Nutrition Service at Boston Children's Hospital. Focused teaching time will enable each fellow to work individually with our Radiology staff to acquire proficiency in cross-sectional imaging, abdominal imaging, and fluoroscopy. Similarly, fellows are afforded time to work individually with Pathology staff to acquire core competency in recognizing standard pathophysiology including GI atopic disease, inflammatory bowel disease, and hepatology.

## Years 2 & 3

All fellows continue their weekly half-day ambulatory teaching clinic during years 2 and 3 of training. In an effort to broaden their training experience, fellows are also permitted to substitute sub-specialty clinics in place of their general teaching clinics up to twice per month during their second and third years of training. This allows trainees to customize their training contingent upon their career interests. Most fellows choose to pursue continue experience in our Hepatology program. Many choose to spend six-month blocks in our IBD, Nutrition, and Short Gut Programs.

Though scheduling can vary from one year to the next, fellows pursuing the Physician-Scientist curriculum will typically complete one or two rotations on the Inpatient or Consult service at Children's Hospital during each of their second and third years. Fellows pursuing training as Clinician-Innovators will typically complete three rotations on the Inpatient or Consult services during each of their second and third years of training. As such, all fellows are afforded substantive protected time to pursue research and career development.

## Scientific Mentoring & Career Development

The program is designed to mentor our trainees during and beyond the three formal years of fellowship training. Starting in the first research year, a formal Scholarly Oversight Committee (SOC) is assembled for each individual trainee and includes a member of the Training Program Steering Committee as Chair, the trainee's primary mentor, the trainee's clinical advisor, and one or two invited faculty in the field most relevant to the trainee's academic program. This SOC acts as a "thesis committee" and guides each trainee on an individual basis through his/her major decisions in career development. The SOC meets formally with the trainee at least twice each year and stays with the trainee as a primary mentoring resource throughout their tenure in the Harvard Program.



*Snapper Lab members conducting research*

## Education

### Graduate Training Opportunities

Fellows interested in developing career as Clinician-Innovators have diverse interests and training needs. There is no individual training program that is ideally suited for all trainees. As such, fellows will meet with their research mentors, collaborators, and fellowship and division leadership.



*Dr. Beinvoogl completing her MPH*

### Clinical or Patient-Oriented Research:

Clinician-Innovators are provided with funding to complete the **Summer Program in Clinical Effectiveness**.

Alternatively, trainees on the Clinician-Innovator track may choose to spend an equivalent amount of money (approximately \$18,000) on other course work available through Harvard or on the campuses of nearby institutions including MIT, Mass. College of Pharmacy, Harvard School of Public Health, and Boston University.

### Quality Improvement:

The **Pediatric Health Services Research Fellowship** promotes the training and career development of trainees interested in pursuing the burgeoning discipline of academic medicine that addresses gaps in medical care or cost-effectiveness. This two-year program is focused on the promotion and delivery of equal access to safe, effective, timely, efficient, equitable, and patient-centered medical care.

The **Institute for Healthcare Improvement (IHI)** is an independent organization centered in Cambridge, MA and dedicated to reducing error and waste in the delivery of healthcare. Numerous educational and training opportunities are offered by the IHI in the form of conferences, didactic programs, and web-based training. The **Clinical Research Program (CRP)** at Boston Children's Hospital provides support to investigators at all stages of protocol development and study conduct.

The CRP collaborates closely with the Committee on Clinical Investigation to ensure that research is designed in such a way as to maximize benefits and minimize risks to human subjects who enroll in the clinical trials. The CRP offers shared interdisciplinary resources to all clinical researchers at Boston Children's Hospital. Coursework, typically available free of charge in the form of seminars or longitudinal programs, includes:

- Introduction to Clinical Research
- Orientation for New Study Coordinators
- Introduction to Biostatistics with SPSS
- Power and How to Get It
- Do-it-Yourself Data Management
- Beyond Chi-squares: Drawing Inferences from Tables
- Statistics for Small Sample Size Studies
- Introduction to Statistical Genetics

### Medical Education and Curriculum Development:

The **Masters of Medical Sciences in Medical Education** is a two-year program centered on providing trainees with the skills necessary to achieve leadership positions in academic divisions and medical schools. This comprehensive program, centered at Harvard Medical School, will promote the development of superlative teaching skills and the insight and understanding necessary to promote innovations in the ways in which we educate consumers, providers and administrators of health care.

The **Harvard Macy Institute** is a collaborative effort of Harvard Medical School, the Harvard Graduate School of Education, and Harvard Business School. The program promotes the study and promotion of innovative approaches to the delivery of medicine and the education of health care providers both in the US and around the world. Programs offered through the Harvard Macy Institute include:

- The Program for Educators in Health Professions
- Systems Approach to Assessment in Health Professions Education
- Leading Innovations in Health Care and Education

The **Rabkin Fellowship in Medical Education** was established to provide individuals with the skills necessary to take positions as innovators in medical education and academic administration.

The **Carl Shapiro Institute for Education and Research at Harvard Medical School and Beth Israel Deaconess Medical Center** provides education and resources to support innovative programs in medical education.

### Health Policy:

The **Jerome H. Grossman Graduate Fellowship** is offered through the Harvard Kennedy School and the Mossavar-Rahmani Center for Business and Government. This fellowship supports the training of physicians interested in promoting meaningful changes in the delivery of healthcare. This is a highly competitive program and provides tuition for trainees to pursue a Master's Degree in Public Policy (MPP) or Public Administration (MPA).

## Fellow Conferences

### *Tuesday Morning Fellows Lecture*

The Tuesday Morning Lecture Series, a weekly teaching conference, is the core curriculum of our Pediatric Gastroenterology, Hepatology, and Nutrition program. This is a fellows-only conference that features superb teaching from our clinical faculty. Listed below is a selection of the lecture topics covered:

- Acute Liver Failure
- Acute Diarrhea
- Intro to Motility
- Allergy: Assessment Food Allergies
- Nutrition- Enteral Nutrition/ Vitamins
- Pancreatitis
- Normal Growth And Development
- Vomiting
- Aerodigestive Disease
- Management Perianal Crohn's
- Intestinal Failure
- Autoimmune Hepatitis
- Intro To Manometry
- Constipation
- Acute Liver Failure
- Upper GI Bleed/Foreign Bodies Intro
- Inflammatory Bowel Disease I- Diagnosis
- Inflammatory Bowel Disease II- Treatment
- Sedation
- Acute Diarrhea
- Eosinophilic Esophagitis
- Feedback Session
- GERD
- Metabolism
- Colonoscopy
- Nutrition: Enteral Nutrition/Vitamin Supplements
- Assessment Food Allergies

## Medical Grand Rounds

Weekly Grand Rounds provide exposure to leading clinicians and researchers providing cutting-edge information about their areas of expertise. Grand Rounds features topics from multiple areas of medicine including clinical topics, basic science research, global health and public policy.

Teaching conferences include a weekly clinical conference conducted within our Division and a bi-weekly combined adult and pediatric GI conference that is conducted in collaboration with adult GI trainees and faculty from Brigham and Women's Hospital and Beth Israel Deaconess Medical Center (The Longwood Conference). We have weekly Pathology conferences to discuss ambulatory and inpatient cases. Bi-monthly conferences are dedicated to highlighting basic or clinical research within our division and to expose fellows to potential areas of investigation they may wish to consider during their second and third years of training.

## Family Friendliness

### *Parenting as a Resident*

Our division actively supports fellows who are parenting during their training years. As a program, we recognize the difficulties inherent in managing the dual roles of parent and house officer. We are proud to offer a variety of supports to help fellows strike their work-family balance with grace and confidence.

- **Peers who are Parents.** You will find parents of infants, toddlers, school age, and even college-age children among fellow residents. As a group they socialize and share information about how to strike the right work-family balance.
- **Maternity and Paternity Leave.** The program offers paid maternity leave and paternity leave. With advance scheduling up- anywhere from 8 to 12 weeks usually can be accommodated for the former. Although the maximum time is limited by training requirements of the American Board of Pediatrics, program leadership works with all residents to accommodate additional clinical time if the resident extends the period of training to include the extra leave.  
**Supportive Colleagues and Mentors.** House officers returning to work after the birth of a child report that their colleagues and mentors are supportive during the transition back, including attitudes towards breastfeeding and the short but frequent absences it requires from the wards.
- **Lactation Support.** Boston Children's Hospital has extensive lactation resources, including dedicated RN lactation consultants and multiple comfortable, quiet areas in which mothers can pump in private. Pumps and associated accessories can be purchased from the hospital at a discount.
- **Child Care.** Children's Hospital has an affiliated day- care center that is available to Categorical track residents (though there is usually a waiting list). It is directed by Donna Warner and is located 21 Autumn Street, just a short walk from Children's Hospital. It is open year round on weekdays from 6:30 AM to 6:00 PM. Phone: (617) 355-6006.

There are multiple other daycare options in the Longwood Medical Area that are compatible with medical hours. Some of these include: The LMA Family Childcare Network, Bright Horizons Family Center at Landmark, and Brookline Knowledge Beginnings.

For even more flexibility, some residents choose to hire nannies, found through a variety of channels, including recommendations from current and former residents. UHAT residents have access to “emergency childcare” resources through their CIR union benefits.

- **Community Offerings for Families.** Boston and the surrounding communities provide a wide array of enjoyable and enriching opportunities for kids, such as playgrounds and parks, the Aquarium, the Children's Museum, the Science Museum, and numerous day trips outside the city.
- **Schools.** Many of the local school systems, including Brookline and Newton, enjoy nationwide recognition for excellence.



## Libraries

**The Children's Hospital Library and Archives** have recently moved to the 5th floor of the Longwood Center at the corner of Brookline and Longwood Avenues, midway between the hospital and the clinical research complex on Autumn Street. It is a quiet respite with private carrels, computer workstations, collaboration rooms for 6 to 10 people with AV capacity for presentations, and other work and reading areas. The library *offers* a wide range of services including various databases, Up-To-Date, End Note, Mendeley, many electronic journals, free copying, scanning and printing facilities, and interlibrary loans. Laptops are available for loan. *Staff* librarians can assist you with performing complex literature searches, whether for immediate patient management or for ongoing research. They also *offer* introductory seminars on the use of EndNote, Mendeley, and PubMed for interested residents.

**The Francis A. Countway Medical Library at Harvard Medical School**, next door to Children's Hospital, is one of the world's largest medical libraries. The library holds over 630,000 volumes, subscribes to 3,500 current journals, of which over 1,500 are available in electronic form, and houses over 10,000 non-current journal titles. All the library's resources are available to residents, and all electronic journals articles can be downloaded as pdf files. Many electronic textbooks and other electronic databases, such as MD Consult are also available to BCRP housestaff. All electronic resources are available over the Internet from home. The Countway also *offers* access to the extraordinary library resources of Harvard University and an exceptional History of Medicine collection.

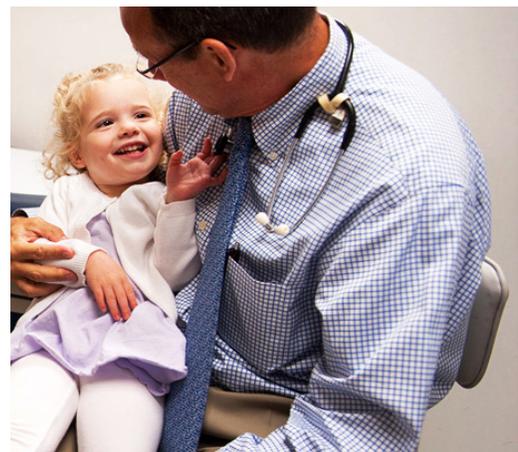
## Research

Boston Children's Hospital is home to the world's largest and most active pediatric research enterprise and one of the largest research programs of any independent hospital. The hospital has more than \$300 million in research funding per year and more than 750,000 square feet of state-of-the-art laboratory space. The research mission of Children's Hospital encompasses basic research, clinical research, community service programs and the training of new scientists. More than 500 investigators, including 7 members of the National Academy of Sciences, 16 members of the National Academy of Medicine, 22 Fellows of the American Academy of Arts and Sciences, and 12 members of the Howard Hughes Medical Institute are part of Children's truly extraordinary research community. Four Children's investigators have won the Nobel Prize and six have won the nearly equally prestigious Lasker Award.

## Cell Biology Laboratories

The GI Cell Biology Laboratories occupy 9600 sq ft. of laboratory space occupying the entire 6<sup>th</sup> floor of the Enders Building adjacent to Children's Hospital on campus at Harvard Medical School. Resources available include:

- 42 wet laboratory benches.
- 2 walk-in cold rooms
- Fully equipped areas dedicated to microscopy,
- Live cell microscopy
- Cell culture (750 sq. ft./3 separated fully equipped rooms: 8 hoods, 14 incubators, microscopes and centrifuges, cold storage),
- 6-color FACs, nCounter nanoString technology for multiplex quantification of individual mRNAs,
- microtomy (thin and frozen section, 200 sq. ft.),
- multiple PCR and qPCR machines
- A Karl Storz HD Mouse Endoscope for micro-colonoscopy.
- All necessary laboratory equipment is available for studies using molecular biology, biochemistry, cell culture, and cell biology.



*Dr. Verhave with a patient*

## Salaries & Benefits

### Salaries

(2018-2019)

1 <sup>st</sup> Year	\$75,089
2 <sup>nd</sup> Year	\$80,221
3 <sup>rd</sup> Year	\$86,415

### Benefits

#### Insurance

- Professional liability (malpractice) insurance
- Life insurance
- Long-term disability insurance
- Short-term disability insurance
- Business travel accident insurance
- Subsidized health insurance, including spouse and children
- Subsidized dental insurance
- HIV supplemental benefit plan



#### Other Employment Benefits

- Vacation (4 weeks)
- \$1,500 per year to attend a medical conference
- \$250 to spend over three years on textbooks
- Leave of absence: medical, family medical or child care/adoption, maternity and paternity, bereavement.
- Child Care Center
- Discounted parking in hospital lots with shuttle bus service
- Free night and weekend parking in patient parking garage
- Discounted public transportation (MBTA) pass
- Voluntary tax-deferred annuity and investment (403b) plan

### Lease Guarantee Program:

- Children's Hospital guarantees payment of security deposit and/or advance payment of last month's rent if required by landlord. For questions about the program contact the HR Service Center at (617) 355-7780 or email [HRESC@childrens.harvard.edu](mailto:HRESC@childrens.harvard.edu).
- Taxi Voucher Program

### Child Care Center

The Children's Hospital Child Care Center provides high quality childcare for children of hospital employees and staff, including Categorical residents. They accept children three months through five years without regard to race, creed, cultural heritage or religion. They offer a safe, supportive environment that fosters self-esteem, growth and cultural diversity. The Center is located at 21 Autumn Street, just a short walk from Children's Hospital. It is open year round on weekdays from 6:30 AM to 6:00 PM. The Center is closed on weekends and hospital recognized holidays. The center can accommodate 42 children, but there is nearly always a waiting list. Reduced tuition rates are available based on gross family income. For more information about the program, or for a tour, please call the Center at (617) 355-6006.

### Office of Fellowship Training

Children's Hospital maintains an Office of Fellowship Training, run by Jordan Kreidberg and Lu-Ann Pozzi, which serves both clinical and research fellows and offers a multitude of services. Examples include: conferences and seminars on topics related to career, family, leadership, mentoring and funding; clinical and basic science discussion groups; and journal clubs, social events, group dinners, and a research day poster session. They also have programs devoted to getting

settled in the Boston area that address topics such as: housing, finances (Boston on a Budget), transportation, childcare, family, family activities, sports and fitness, and arts and entertainment. And, there are important sections on credentialing, moonlighting, and preparing a Harvard formatted CV on their website.

## Cost of Living

Boston is relatively expensive, though less so than many people imagine. The table below compares the cost of living in different US cities in 2016 based on an income of \$65,000, which is approximately the salary of a junior resident in the BCRP. Comparatively, Boston is similar to Oakland, Seattle, New Haven, Los Angeles, and Baltimore, less than New York, Washington, Palo Alto, and San Francisco, and more than Philadelphia, Denver and Cincinnati. BCRP salaries, which are higher than average, and the extensive benefit package, make the relative costs even lower. In addition, Boston Children's Hospital is only 4 blocks from the elegant suburb of Brookline, with one of the best school systems in the Boston area, and the hospital is very near two subway lines that serve the downtown and suburban neighborhoods. So fellows can live in high quality communities without the expense of a car (or extra car) to get to work. In our experience, the cost of living is only restrictive for couples with multiple children and one salary, particularly if there are extra expenses for schooling or child care or loan repayments. We are happy to connect applicants who wish to explore cost of living with current or recent past fellows in similar situations.

City	Comparative Living Costs 2016*	Percent Difference	Training Program
New York, NY	\$81,849	126	Columbia, Cornell, Mt Sinai
San Francisco, CA	\$73,342	113	UCSF
Washington, DC	\$71,123	109	Children's National
Palo Alto, CA	\$68,702	106	Stanford
Oakland, CA	\$65,029	100	Oakland Children's
<b>Brookline, MA</b>	<b>\$65,000</b>	<b>100</b>	<b>BCH</b>
Rochester, NY	\$52,597	98	Rochester
Los Angeles, CA	\$62,652	96	USC, UCLA
Seattle, WA	\$61,609	95	Univ. Washington
New Haven, CT	\$60,450	93	Yale
Providence, RI	\$58,304	90	Brown
Baltimore, MD	\$57,713	89	Johns Hopkins
Burlington, VT	\$56,988	88	Vermont
Philadelphia, PA	\$56,492	87	CHOP
Chicago, IL	\$56,022	86	Northwestern, Chicago
Portland, OR	\$55,968	86	Oregon
Ann Arbor, MI	\$54,698	84	Michigan
Minneapolis, MN	\$54,349	84	Minnesota
Denver, CO	\$53,300	82	Colorado
Cleveland Heights,	\$53,550	82	Case-Western
Coral Gables, FL	\$53,621	82	Miami
Atlanta, GA	\$51,986	80	Emory
San Diego, CA	\$63,641	81	UCSD
Charlottesville, VA	\$52,442	81	Virginia
Chapel Hill, NC	\$51,263	79	North Carolina
Pittsburgh, PA	\$51,301	79	Pittsburgh
Houston, TX	\$50,919	78	Baylor
Dallas, TX	\$50,152	77	Texas Southwestern
Milwaukee, WI	\$50,060	77	Med College Wisconsin
Durham, NC	\$49,159	76	Duke
Cincinnati, OH	\$47,931	74	Cincinnati
St Louis, MO	\$47,638	73	Washington Univ.
Salt Lake City, UT	\$47,442	73	Utah

# Boston

Boston is a medical center like no other, with three major medical schools and about 27 hospitals. Immensely diverse and vibrant. Boston is a city of some twenty neighborhoods with Cambridge and Brookline as bordering communities. Persons of color comprise over 40% of the city's population and over one-third of all students enrolled in Boston Public Schools speak a language other than English at home.



## Transportation

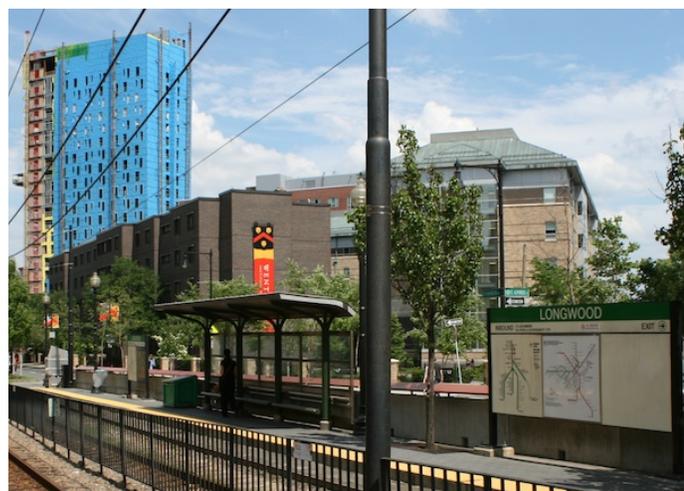
Boston is blessed with excellent public transportation. The MBTA subway system (or just "the T") extends throughout Boston, most of Brookline and Cambridge, parts of Newton, and to near north and south shore suburbs. More distant towns are served by commuter rail. The Longwood Medical area is centered within 2-3 blocks of two different Green line routes. There is also an extensive bus system, including a shuttle bus from Harvard University to the Medical School. Parking is expensive in the Longwood area, but fellows who drive can park in cheaper outlying lots and use Children's shuttle buses

Fellows can park in the patient lot across from Children's for free at nights (6 pm to 10 am) and on weekends. Fellows who leave the hospital late at night can also obtain free taxi vouchers. Residents who enroll in the Hospital's T-Pass Program receive a 40% discount on monthly MBTA passes. For those who park in more distant lots, the hospital provides a free shuttle service. There is also a free shuttle (M2 Shuttle) from the Longwood Medical Area to Harvard Square in Cambridge. In addition, Children's Hospital provides a free bike cage in the Patient/Family Garage for employees who cycle to work.

## History

Boston was founded in 1630 and is central to American history. History buffs can trek the Freedom Trail, which connects many historically important sites, from the Old State House, where the Declaration of Independence was first read, to Paul Revere's House to the USS Constitution ("Old Ironsides"). Sites of pivotal battles at Bunker Hill, and in Lexington and Concord,

are also national monuments and nearly every town has a historical society. Old Sturbridge Village is an authentic recreation of a colonial village, with historic housing and costumed inhabitants that is located in Sturbridge, an hour west of Boston. Plymouth Plantation is a similar recreation of the original Plymouth Colony just south of Boston. And touristy Salem, home of the infamous witch trials, lies to the north.



*Longwood Train Stop*

## Arts and Culture

Boston is a cultural Mecca. The Boston Symphony and Boston Pops are world-renowned, but there are several other professional symphonies and innumerable civic and college orchestras. In fact, the medical area has its own orchestra, the Longwood Symphony, composed mostly of physicians, that is very high quality. There are also over 150 amateur choral groups, including many outstanding ones: the Cantata Singers, the Boston Cecelia and the Handel and Hayden Society to name just three. The Museum of Fine Arts and the Isabella Stuart Gardner Museum are world-class fine art museums and are only a 3-block walk from Children's Hospital. The Institute of Contemporary Art and the Fogg Art Museum at Harvard are two others of note. The Museum of Science and the Harvard Museum of Natural History and the John F. Kennedy Library and Museum are also outstanding.



***Boston Opera House***

Bank North Garden, where the Celtics and Bruins play, is a short subway ride. The Patriots and Revolution play in Foxboro, MA, which is about 20 miles south of the city. For those who prefer participatory sports, the Harvard University Athletic Facilities and Harvard Medical School Athletic Facilities are available for a small fee. Harvard University offers facilities for indoor and outdoor tennis, swimming and diving, ice skating, jogging, squash, basketball, baseball, field hockey, lacrosse, rugby, volleyball, rowing, and sailing, plus others, and extensive exercise and weight training. The Medical School has a gymnasium, squash courts, cardiovascular and strength training equipment and an outdoor tennis court. Groups like the Boston Ski and Sports Club organize year round sports leagues, as well as sporting trips. Golfers have many opportunities in the Boston area. There are 102 18-hole public courses within an hour of Boston including many award winning courses, such as Pinehills in Plymouth, Red Tail in Devens, Shaker Hills in the town of Harvard, and George Wright in Hyde Park, a Boston Municipal course designed by Donald Ross.

The Boston Lyric Opera highlights a growing opera scene, and the Boston Ballet is one of the country's best. There are numerous theater companies including the American Repertory Theater, The Huntington Theater Company and the Lyric Stage of Boston. Plus, Boston is a frequent venue for pre-Broadway tryouts and touring national companies.

## Sports

Boston is a great sports town. The Red Sox, Celtics, Bruins and Patriots have often been outstanding in recent years. The

Revolution (soccer) is usually competitive. Fenway Park is only a 10-minute walk from the hospital (~5 blocks) and the



***Fenway Park, which you may remember from such films as The Town***

## Housing and Schools

Housing is relatively expensive in Boston, roughly equivalent to Seattle, though less than New York City, Washington, DC, or the major cities in California. To compensate, the program offers higher than average salaries. In addition, Children's Hospital offers a Lease Guarantee program. If a landlord requires advance payment of the last month's rent and/or a security deposit, Children's Hospital will guarantee payment to the landlord. Real estate information is available from a number of sources including the Boston Globe, which also publishes a useful rental search engine. Other good sources for rental housing are Rental Beast, Craig's List, the Harvard Off-Campus Rentals website (<https://harvardhousingoffcampus.com>), the Harvard Housing Office, and the information on Housing and other topics on the website of the BCH Office of Fellowship Training. For those interested in purchasing property, the Harvard Faculty Real Estate Office provides useful services. Boston and Cambridge schools are variable but the schools in Brookline, Newton and many other suburban communities are outstanding. The Great schools website contains considerable information about individual schools.

## Kids

Boston is a great city for kids because there are so many things to see and do in the city and nearby, and because the transportation system is safe and extensive. The Children's Museum and the Museum of Science are each among the best in the country. The nearly free (\$1 per year for kids) Community Boating Program is also outstanding and is an incredible bargain. It offers sailing, windsurfing and kayaking on the Charles (lessons included). A good list of activities for kids can be found at Fairly Odd Mother, Family Days Out, Family Friendly Boston, and at Boston Central. The latter site also contains lots of useful information about Boston suburban communities.

Children's Hospital has its own Child Care Center and there is a Bright Horizons Family Center at the nearby Landmark Center that is available to employees of Harvard Medical School and the Longwood Area hospitals. Kathleen Greer Associates (KGA, Inc.) is Children's Employee Assistance and Information Program. They will help fellows find childcare services. The Longwood Medical and Academic area (LMA) Family Childcare Network (FCCN) also matches LMA employees with family childcare providers. For grown-up kids, the Boston Event Guide is a collection of local events for those nights off. The Mass Vacations website contains scads of useful information about the region and things to do.

## Restaurants and Night Life

Boston is a world-renowned center for ideas and learning. Some 65 colleges, universities and other institutions of higher education attract more than 200,000 students. No other major city has such a high proportion of students. Their energy invigorates the city's restaurant and nightlife, from club hopping on Lansdowne Street to the live music scene in the cafes and coffeehouses. Live music includes Latin, jazz, blues, gospel, folk and classical. Boston is a great restaurant town. There are many outstanding restaurants and enormous variety. The restaurant reviews in the Boston Globe and Zagats are particularly useful.



*Matt Damon, current  
Mayor of Boston*

## Waterfront

Downtown Boston is a peninsula, surrounded by water on three sides: the harbor on the east and north, and the Charles River on the west. Unlike many cities, much of the waterfront is recreational space. The harbor offers boating of all kinds, fishing, and a number of community beaches. There is a Harbor walk with many parks and other venues. The Harbor Islands are part of the National Park system and are accessible by ferry for day trips and picnicking.

The Charles River side is even more scenic, with a 17-mile Esplanade along the shore, the Hatch Shell for summer concerts, the famous Duck Boat Tours and a Community Boating Program that allows individuals or families to sail any of a fleet of 113 boats (or kayaks or wind surfers) in the Charles River Basin for a remarkably low fee and that provides children with instruction and all-summer boating for \$1. Every July 4th, the Esplanade is packed with crowds for a spectacular Boston Pops concert and fireworks show. The Charles River is also known for its rowing and sculling. The famous Head of the Charles regatta, the world's largest 2-day rowing event, is held every year in October.

## Boston Neighborhoods and Nearby Communities

Boston is a city of neighborhoods. Beacon Hill dates from the 18th century and features cobblestone streets, gaslights and brick front Georgian townhouses. Back Bay was built a century later by the Boston elite and contains gorgeous Victorian townhouses with wide streets and small front gardens. It also includes the fanciest shopping area in Boston, along lower Newbury and Boylston streets plus the Prudential Center and Copley Place shopping centers. The old North End, which dates from Colonial times, still retains much of its strong Italian heritage. The South End is a vibrant newly restored, cosmopolitan district and includes the Theater District and many of the best restaurants. Bay Village is a charming historic part of the South End.

The Harbor area is also newly renovated. Many wharves have been recycled as high-end condominiums. Chinatown is Boston's center for the Asian community. The Fenway area, which is closest to the hospitals and includes Fenway Ball Park, has a particularly high concentration of student housing, cultural organizations and parkland. Charlestown, Brighton, Allston, South Boston, East Boston, Roxbury, Dorchester, Mattapan, Jamaica Plain, West Roxbury, Hyde Park and Roslindale are other Boston neighborhoods.

Some fellows have recently purchased homes in parts of Jamaica Plain, West Roxbury and Dedham, which are reasonably close to the Longwood Medical Area.

Brookline is a very high quality suburb that begins just 3 blocks west of the Longwood Medical Area. It has superb schools and shops and multiple subway lines. Although homes in Brookline are extraordinarily expensive, condominiums and apartments are more reasonably priced, and many interns and residents live there.

Cambridge lies just across the Charles River from Boston and is home to Harvard University and MIT. Many fellows enjoy the intellectual ferment of Cambridge and live in the residential areas near Harvard Square.

There is a regular shuttle bus from Harvard Square to Harvard Medical School and good subway connections.

## Suburban Communities

Greater Boston is actually a conglomerate of over 100 small to medium-sized towns and villages, most of which were incorporated in the 17th and 18th centuries. As such it differs greatly from the more homogeneous towns in many other parts of the country, because each of the Greater Boston communities has its own character, government and school system. The range of variation is quite remarkable. Marblehead is centered on sailing, Lincoln and Hamilton on horseback riding, Lexington and Concord on colonial history, and so on.



*Cape Cods Bourne Bridge*

## Within Massachusetts

### Beaches

The Massachusetts shoreline is dotted with beaches, some, like Revere Beach, even serviced by the MBTA. Beaches on the outer arm of the Cape and north of the Cape tend to have colder water than beaches on the south coast of the Cape, on Martha's Vineyard and Nantucket, and lining Long Island Sound, which are brushed by fringes of the Gulf Stream. It's difficult to choose the Perfect Beach because tastes and uses vary, but we recommend Horseneck Beach in Westport, MA, near the Massachusetts-Rhode Island border. This 2.5-mile beach features beautiful dunes, warm (ish) water and adequate parking.

### The Cape and Islands

Cape Cod is Boston's summer vacation spot. It offers a wide variety of attractions. From quaint, historic old towns like Sandwich, founded in 1638, or charming, gray-shingled Chatham, to the Cape Cod National Seashore, with its 40 miles of ocean beaches, dunes, salt marshes and pine barrens, to free-living, freethinking Provincetown at the tip of the Cape. There is a ferry to Provincetown from Boston.

Nantucket and Martha's Vineyard are reached by ferry from Woods Hole or Hyannis on the Cape. Nantucket Town is historic and charming, with cobblestone streets and 18th century homes. Outside the town one finds an otherworldly landscape of ponds, thickets, moors and heath. There are 80 miles of gorgeous beaches, great biking trails and the village of Scaconset ('Sconset) with its privet hedges and rose-covered trellises. Martha's Vineyard is more varied and more Victorian, but also charming.

## Rockport and Cape Ann

Cape Ann, on the North Shore of Boston, extends from the classic fishing port of Gloucester around to the quaint English-like village of Annisquam. It includes Rockport, a charming artist's colony, and the bizarre Hammond Castle.



## Berkshires and Tanglewood

The Berkshires refers to the area around Lenox and Stockbridge in the western portion of Massachusetts. It is a region of green hills, quaint New England villages, the Norman Rockwell Museum, and Tanglewood, the summer home of the Boston Symphony Orchestra.

## Williamstown

A beautiful New England town in the mountainous heart of the northern Berkshires, Williamstown is home to two extraordinary art museums—the Sterling and Francine Clark Art Institute and the Williams College Museum of Art—and the renowned Williamstown Theatre Festival, arguably America's premier summer theater. The exceptional collection of impressionist paintings alone makes the Clark worth a visit.

## Amusement Parks

Canobie Lake Park lies just over the New Hampshire border and is a beautiful, old-time (110-years old), family-oriented park that is especially appropriate for preschoolers to preteens. Lake Compounce in Bristol, CT is another excellent family-oriented park. Six Flags Amusement Park is the big-coaster-type park, near Springfield, MA, that is more oriented to teens and adults. Six Flags also has an excellent water park, but the closest big water parks are Water Country in Portsmouth, NH and Water Wizz, in Wareham, MA. Water Country is especially good and not that far. For kids in the winter, Coco Key in Danvers and Great Wolf Lodge in Fitchburg are indoor waterparks.

## New England Getaways

One of Boston's gifts is its proximity to great natural beauty. Right in the city is the famous ring of connected parks called the Emerald Necklace, which includes the Arnold Arboretum. A short drive will get you a relaxing weekend in the Berkshire Mountains of Western Massachusetts, or to hiking and biking in the White Mountains of New Hampshire. A free day from the hospital could mean escaping to scenic Vermont, or to miles of rugged coastline in Maine or to the beaches of Cape Cod. Take a ferry ride to the islands of Martha's Vineyard or Nantucket. And, New York City is only four-hour drive from Boston. The Go New England website is a good place to start looking.

## Newport

Newport is both a historic town with more 17th and 18th century homes than any other place in the country, and the fabled summering place of the fabulously wealthy during the Gilded Age at the end of the 19th century. The mansions, like the Vanderbilt's opulent 'The Breakers' or 'Rosecliff', of Great Gatsby fame, are worth the trip, as is the Ocean Drive along Newport's spectacular rocky shore.



*Generic Scenery*

## Mystic Seaport

Site of shipbuilding since the 17th century, tiny Mystic, CT contains Mystic Seaport, the country's premier maritime museum. There is also an aquarium and, nearby, two of the world's largest casinos: Foxwoods and Mohegan Sun.

## Maine Coast

Maine is famous for its pinewoods, rugged, rocky shore, and lobsters. Southern Maine is more accessible and also beautiful, but 'Downeast' Maine, north of Portland, is even more so, particularly the areas around Boothbay Harbor, Camden, Blue Hill and Bar Harbor. Bar Harbor is located on Mt Desert Island, which also houses Acadia National Park, one of the most popular national parks in the US. Acadia has the highest mountains on the ocean north of Rio de Janeiro and the only fiord in the Americas. The scenery is spectacular and is amplified by an extraordinary variety of outdoor activities (hiking, biking, rock climbing, canoeing, sea kayaking, sailing, deep sea fishing, whale watching), along with outstanding restaurants, art galleries and opportunities for antiquing.

## Lakes



There are many beautiful lakes in New England. Indeed many in northern Maine are wilderness lakes, only accessible by floatplane or logging road. Nearer Boston, Lake Winnepesaukee in mid-New Hampshire is a recreational paradise, especially along its western shore. The Squam Lakes, just south of the White Mountains, depicted in the movie "On Golden Pond", are more peaceful. Sebago Lake in southern Maine is also a popular resort area. [outdoors Activities](#)

## Hiking

The hiking in New England is some of the best anywhere. The Appalachian Trail extends through Massachusetts,

Vermont and New Hampshire, terminating at Mt Katahdin in Maine. The White Mountains in New Hampshire are among the very best with 48 peaks above 4000 ft. and many dozens of hikes. Some of these are described at [Hike the Whites](#). The Appalachian Mountain Club and [Trails.com](#) are also excellent resources. Acadia National Park is another extraordinary place for hiking. The 120 miles of hiking trails were mostly built in the early 20th century and vary from gentle woodland and oceanside walks to exhilarating climbs along ledges assisted by iron ladders and steps cut into the rocks. Mt Monadnock is another excellent spot for hiking. The solitary mountain is located just over the Massachusetts-New Hampshire border, about an hour from Boston, and has excellent views. The surrounding region is charming and contains numerous prototypical New England villages. For kids, the 70 ft. high, quarter mile long Purgatory Chasm in Sutton, MA, offers rock caves and many fun climbing challenges.

## Biking

Biking is also excellent in New England, both mountain biking and trail riding, including numerous rides in the Boston area. Acadia National Park has 50 miles of beautiful, fine gravel carriage roads, which wind among the lakes and mountains, with fabulous views and some exciting ups and downs. They were built at great expense by John D. Rockefeller, Jr. between 1913 and 1940, and are now used for biking and horseback riding (no motor vehicles allowed). The trails are listed in the [Top 10 biking trails in the US](#). On Cape Cod, the 22-mile Cape Cod Rail Trail is newly refurbished. It extends from Dennis to Wellfleet along ponds, salt marsh and cranberry bogs. In Rhode Island, the 14.5-mile, paved East Bay Bike Path hugs the coast from Providence to Bristol, passing a wildlife refuge, salt- and freshwater marshes and an open panorama of Narragansett Bay. For mountain bikers, Sunday River Ski Resort in Maine offers weekend lift service to 25 trails covering over 20 miles of terrain.



## Ziplines

There are numerous opportunities for zip lining in New England for adrenaline junkies; some lines are more than a half mile long and 200 ft. in the air. Others involve tours combining multiple zip lines, sky bridges, rappels and other challenges.



## Canoeing and Kayaking

In the Boston area there is very enjoyable canoeing on the Charles River and on the Concord-Sudbury-Assabet Rivers. The latter offers an opportunity to paddle under the historic Old North Bridge and into the Great Meadows National Wildlife Refuge beyond. For those who desire more adventurous canoeing or kayaking, the New England Division of the American Canoeing Association offers cruises and instruction and times of recreational water releases from dams. The enormous numbers of lakes in the northern Maine Wilderness offer exceptional opportunities for extended fishing, camping and canoeing trips. One of the most famous is the trip down the Allagash Wilderness Waterway. For something more casual on a summer day, Farmington River Tubing in New Hampshire provides a cooling 2.5-mile tube ride down the Farmington River and a bus ride back to the launch point.

## Skiing and Snowboarding

New England has 68 downhill ski areas, from small family run operations to giant destination resorts. The snow conditions are less predictably excellent than in the West, but the resorts are more accessible to those wanting day trips. The Blue Hills is a small area just south of the city and offers night skiing. Larger areas within 1.5-2 hrs. distance include Waterville Valley, Sunapee and Loon in New Hampshire. The largest and most popular areas, like Killington, Stratton, Sugarbush and Stowe in Vermont; Cannon and Wildcat in New Hampshire; and Sunday River in Maine are 2.5-3 hours driving distance. Sugarloaf, a terrific mountain in Maine, is even a bit further. Virtually all New England ski areas also cater to snow boarders. For cross-country skiing, it's hard to beat the trail

system in Jackson, NH, which is also about 2.5-3 hrs. away. Imagine a whole New England Village dedicated to Nordic skiing, with a white-steepled church, covered bridges, rivers with cascading waterfalls, sundry eateries, charming country inns and 100 miles of cross country ski trails. Its no wonder that the Jackson Ski Touring Foundation is listed #1 in the US. For cross-country skiing close to Boston, the Weston Ski Track is recommended.

## Fishing and Whale Watching

Boston is a worldwide destination fishery for striped bass, blue fin tuna, bluefish, flounder and cod. Salt-water fishing is especially popular, and colleagues with boats and experience are available within the program to introduce interested individuals to the sport. Boston Harbor has been completely cleaned up beginning in the 1980s with the installation of the massive Deer Island water treatment plant, and its waters are now pristine.

Striped bass migrate north to Boston harbor in early May, and the 39 Boston Harbor Islands provide ideal structure and a very picturesque venue for striped bass fishing. In August and September, medium sized blue fin tuna (30 to 120 lbs.) move into Cape Cod Bay near Boston, and feed actively on the surface, becoming prime targets for light tackle fly and spin fishing anglers. Tuna travel with whales, providing interesting whale watching opportunities on Stellwagen bank while searching for the elusive schools of tuna. Bluefish arrive around the same time as the tuna, and provide exciting surface action as they feed on schools of baitfish in Boston Harbor. Summer is the prime season for salt-water fishing in Boston, but for the dedicated fisherman or woman, large cod fish (up to 50 lbs.) can be successfully targeted with jigs year-around in waters just outside Boston Harbor. All fish species are safe to eat due to the successful harbor clean up.

Fresh water fishing is also popular. Freshwater species include: large and small mouth bass, lake trout, perch, walleye, northern pike and land-locked salmon. Fly-fishing for trout in New England streams is also popular. And, for the hardy there is ice fishing in the winter.



## Application Process

### What are we looking for?

Graduates of medical schools & residencies in the United States and other countries are eligible to apply. We seek applicants who are intelligent, curious, creative, energetic, personable, and accomplished. We are very interested in having a diverse fellowship class and wish to attract exceptional applicants with wide-ranging interests and talents from all parts of the country and beyond. We are especially interested in those who will become leaders in many areas of Pediatric Gastroenterology. We are currently recruiting for a total of 4 Fellowship positions with a start date of July 1, 2019. This will include 3 Physician-Scientist positions and 1 Clinician-Innovator position. For more details regarding the curricula differences, please see the descriptions of the program section, or reach out to Ben.

The Harvard Medical School Fellowship in Pediatric Gastroenterology and Nutrition at Boston Children's Hospital participates in ERAS, the Electronic Residency Application Services of the Association of American Medical Colleges. Interested applicants should log onto the ERAS site to get more information about the submission process and relevant fees. Fellowship applications should include:

1. Completed ERAS Common Application Form (CAF)
2. At least three (no more than four) letters of recommendation
3. Medical school transcript
4. Medical Student Performance Evaluation or letter from the dean of your medical school
5. Wallet-sized color photograph
6. USMLE or ECFMG scores
7. Personal Statement outlining the reasons for your interest in pursuing a career in Pediatric Gastroenterology, as well as your academic plans and research interests. You may also wish to comment of your particular interest(s) in obtaining either Physician-Scientist and/or Clinician-Innovator training
8. Updated curriculum vitae

For more information, please feel to contact Paul Rufo or Ben Paret.

### Foreign Applicants

Physician Scientists in our Program are funded primarily through a training grant provided by the NIIH. As such, participation is limited to physicians with American citizenship or green card status. Nonetheless, foreign applicants interested in pursuing training as Physician-Scientists may choose to seek and secure independent funding from Principal Investigators in basic or clinical research groups to complete their research training in Boston.

## Contacts



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