The Benjamin Fox Orthopedic Research Fellowship

Division of Orthopedic Surgery at The Children’s Hospital of Philadelphia

John M. Flynn, MD
Chief of Orthopedic Surgery, CHOP
Professor of Orthopedic Surgery,
University of Pennsylvania School of Medicine

Theodore J. Ganley, MD
Director of Sports Medicine Center, CHOP
Associate Professor of Orthopedic Surgery,
University of Pennsylvania School of Medicine

Wudbhav N. Sankar, MD
Director, Young Adult Hip Preservation Program, CHOP
Assistant Professor of Orthopedic Surgery,
University of Pennsylvania School of Medicine
The Benjamin Fox Orthopedic Research Award

Award Details
The CHOP Benjamin Fox Orthopedic Research Scholar Award promotes clinical research by giving extraordinary medical students the opportunity to investigate pertinent topics in clinical orthopedic research at The Children’s Hospital of Philadelphia. While there are several funded year-out programs for medical school students to conduct research, this award is unique because it is specifically designed for students who are interested in pursuing a career in Orthopedic Surgery. The Ben Fox Program focuses on giving the medical student clinical research opportunities, advanced orthopedic skills through weekly clinical exposure, and mentoring for residency applications and beyond.

Division of Orthopedic Surgery at The Children’s Hospital of Philadelphia
The Children’s Hospital of Philadelphia is internationally recognized for its pioneering work in pediatric orthopedic patient care, education, and basic and clinical research. The Division of Orthopedic Surgery at CHOP has consistently ranked among the top pediatric orthopedic programs in the nation by U.S. News & World Report. CHOP orthopedic surgeons are leaders in their fields – pioneering clinical innovations, writing textbooks, chairing courses and leading regional, national and international organizations in orthopedics. We have 28 attending physicians, each with different subspecialties in pediatric orthopedics.

Eligibility
Applicants should be completing their third year of medical school. The student must be in good academic standing and have an interest in pursuing a career in Orthopedic Surgery. The successful applicant will be responsible, motivated, intellectually curious and independent.

Award Stipend and Benefits
The recipient of this award will receive a $30,000 stipend to cover living expenses for the year, as well as travel expenses for national presentations.

How to Apply
Eligible students can apply by visiting the CHOP Orthopedic website. After clicking on the link, please go to the section entitled “Professional Resources for Orthopedics”. Under “Other educational programs” the link to the Benjamin Fox Orthopedic Research Scholar Award can be found. Detailed directions for submission can be found on the application. The deadline for the application is February 4th, 2018. We recommend submitting an application as soon as possible.

If you have any questions regarding the application, contact Divya Talwar at talward@email.chop.edu
The Ben Fox Fellowship Experience

Through the Ben Fox fellowship, I gained life-long role models who showed me what it takes to become an academic leader and also provide exemplary patient care; both with an inspiring degree of dedication and integrity. While I was only a medical student the fellowship became a springboard for my eventual career in pediatric orthopaedic surgery.

Neeraj Patel (BFF 2010-2011)
Orthopaedic Surgery Fellow, The Children’s Hospital of Philadelphia

The Benjamin Fox Fellowship allowed me to explore what "academic medicine" truly is from an insider’s perspective. I gained valuable knowledge and fundamental skills that I have translated both into my practice of orthopaedics as a resident and in conducting research. The experience both helped strengthen my application as an orthopaedic candidate and allowed me to form strong, life-long mentorship relationships which have been, and continue to be, truly valuable.

Itai Gans (BFF 2012-2013)
Orthopaedic Surgery Resident, Johns Hopkins

The Benjamin Fox Orthopaedic Research Fellowship was the most formative experience of my medical school career. The dedication of the faculty mentors to their research fellows, during the fellowship year and beyond, is unparalleled, and the opportunity to spend an entire year immersed in all aspects of orthopaedics with these world-renowned surgeons and researchers was invaluable both to my education and to furthering my future career as an orthopaedic surgeon.

Chrissy Goodbody (BFF 2013-2014)
Orthopaedic Surgery Resident, Hospital for Special Surgery

My time as a Ben Fox Fellow was the most formative experience of medical school. The support I received to build a knowledge foundation in orthopaedics and pursue meaningful research is surpassed only by faculty members' dedication to serving as lifelong mentors. There is simply no better preparation for orthopaedic residency training.

Chris Brusalis (BFF 2015-2016)
Orthopaedic Surgery Resident, Hospital for Special Surgery

Three generations of Ben Fox Fellows. From left to right: Jigar Gandhi, Nakul Talathi, Alexander Adams (BFF 2017-2018), Neeraj Patel (BFF 2010-2011), and David Ramski (BFF 2011-2012).
The Benjamin Fox Fellowship – Research

The Ben Fox Orthopedic Fellowship is a funded year-out research position designed for third year medical students destined for a career in orthopedic surgery. The goal is to launch the careers of tomorrow’s leaders in our field.

There are three components to the program: research, clinical exposure and mentoring. For the research focus, the Ben Fox fellows take on several projects, prospective and retrospective, single-center and multi-center, some of which were started prior to their arrival, and some of which will begin during their year. The research is designed to answer questions and solve problems in the area of pediatric orthopedic trauma; sports medicine; spine, hip and hand disorders; patient safety; healthcare quality and value; as well as medical economics. Students meet with Drs. Flynn, Ganley and Sankar several times per week to assure satisfactory supervision and mentorship.

There is a very strong, long established clinical research office in the Division of Orthopedics at The Children’s Hospital of Philadelphia. A few of the benefits of doing clinical research in our Division include:

• 7 orthopedic CRCs who can help the student design and complete IRB’s, adhere to Division and CHOP research policies, review clinical data, measure X-rays, and complete manuscripts for publication. They offer crucial assistance to new students and researchers who join our Division.

• A Research Manager whose advice and support will be invaluable as you navigate the logistical and compliance challenges of 21st clinical research.

• Four U.S.-trained clinical fellows and an international research fellow, each of whom has their own individual projects, but with their other obligations, often welcome and mentor medical student collaborators.

• An active Orthopaedic Engineering research program directed by Dr. Saba Pasha, PhD. Current orthopaedic engineering studies include a clinical trial evaluating patient positioning in the EOS x-ray machine.

• Extremely active academic surgical faculty, with at least 6 internationally-known thought leaders among our 17 full-time surgeons and 5 non-operative surgeons. A faculty member and research manager with an MPH, who can assist the student with study design and statistical analysis.

• Nearly 160+ open clinical IRBs, including databases for several national multicenter research groups, ripe for utilization for high-powered collaborative projects.

• Daily clinical conferences, visiting speakers, quarterly Journal Club and many other educational events to inspire and educate medical student researchers.

• A high-volume clinical practice (more than >65,000 outpatient visits, and >4,000 surgical procedures per year) that allows the student to shadow and gain clinical exposure to inspire research ideas.

Completed projects by Benjamin Fox fellows are published in the best orthopedic journals and are presented at the American Academy of Orthopaedic Surgeons, the Scoliosis Research Society, the American Academy Society for Orthopaedic Sports Medicine, the Pediatric Orthopaedic Society of North America and the American Academy of Pediatrics. In many cases, whenever permissible and possible, the Benjamin Fox Fellows present their research at these national meetings. There are several Division research meetings per year and an opportunity to present research to the entire CHOP Orthopedic Division at the year-end orthopedic research symposium.
The second aspect of this program is strong clinical exposure. The Benjamin Fox Fellow participates actively in the outpatient clinical program in the Division of Orthopedics at CHOP. There are weekly outpatient clinics where the Benjamin Fox Fellow will be trained and mentored to participate in trauma and sports clinics. Weekly, the Benjamin Fox Fellow sees patients alongside Dr. Flynn, Dr. Ganley or Dr. Sankar, developing mastery of pediatric physical exam of the shoulder, knee, fractures, spine and hip, image interpretation and decision making. Additionally, Fellows participate in surgeon-of-the-day clinics, specifically gaining experience in the evaluation of patients with urgent injuries. Typically, by the end of the year, the Benjamin Fox Fellow functions at a level above a senior resident.

There are also opportunities to observe surgical procedures in the operating room. In addition, the Benjamin Fox Fellows are welcomed and encouraged to attend a very rich variety of clinical conferences in the Division of Orthopedic Surgery at CHOP, including didactic lectures, a weekly case presentation conference, University of Pennsylvania Orthopedic Grand Rounds every Thursday morning, and a quarterly clinical research journal club attended by all faculty, students, residents and fellows. With the experience in clinic, observation in the operating room, attendance of conferences, and the interaction with the University of Pennsylvania orthopedic residents and fellows, the year-out medical students advances to the next level of training far ahead of those students who have spent the year just doing clinical rotations.
Dr. Ganley has been an attending surgeon at CHOP for over 20 years. He is Director of The Sports Medicine and Performance Center at The Children’s Hospital of Philadelphia. Dr. Ganley completed a sports medicine fellowship at The Graduate Hospital, in affiliation with The University of Pennsylvania, and completed a second fellowship in pediatric orthopedics at CHOP. He is one of a small group of surgeons in the country with a primary focus on sports and trauma in the young athlete. He is a member of several multicenter research groups, is a co-founding member of the Research in Osteochondritis Dissecans of the Knee (ROCK) group, and a member of the Multicenter ACL Revision Study (MARS) group and Pediatric ACL: Understanding Treatment Outcomes (PLUTO).

Dr. Ganley has published more than 100 peer-reviewed scientific articles, reviews or textbook chapters, and was editor of a Clinics in Sports Medicine book on ACL injury in the young athlete this past year. He lectures nationally and internationally on ACL reconstruction, OCD lesions, sports and trauma in the young athlete. He served on executive committee for American Academy of Pediatrics. Dr. Ganley is also Program Chair for the Philadelphia Orthopaedic Society, second Vice President for Pediatric Research in Sports Medicine (PRISM) and serves on the POSNA Evidence Based Practice Committee.

Dr. Ganley is married and has five children. He enjoys the academic aspects of clinical medicine and working with the Ben Fox Fellows.
**Mentors**

**Dr. Flynn** joined the CHOP team in 1996, after completing 18 months of Fellowship at Boston Children’s and DuPont. After 10 years as Associate Chief, he became Orthopaedics Division Chief in 2014.

Dr. Flynn’s clinical focus includes spine deformity, early onset scoliosis/thoracic insufficiency, fractures, pre-school hip disorders and CP. He initiated the CHOP programs for hip preservation, TIS/VEPTR, MAGEC rods, Mehta casting and image guided navigation for pedicle screw placement. He is the author of over 230 peer reviewed papers, reviews and chapters, and editor of the seminal texts in pediatric orthopaedics: Lovell and Winter’s *Pediatric Orthopaedics*, Rockwood’s *Fractures in Children*, *Operative Techniques in Pediatric Orthopaedics*, as well as *OKU 10* and *Staying out of Trouble in Pediatric Orthopaedics*. He is currently the President of the Board of Directors for the Children’s Spine Foundation.

Dr. Flynn served as the President of the Pediatric Orthopaedic Society of North America in 2013-2014, and is Chair Emeritus of the International Pediatric Orthopaedic Symposium. He is currently the Chair of the AAOS CME Courses Committee and a Director, American Board of Orthopaedic Surgery.

A winner of multiple Penn teaching awards, he lectures nationally and internationally on management of spinal disorders, pediatric fracture care, safety and value in spine care, and work-life integration for surgeons. His primary passion, however, is family: his wife Mary and four kids—Erin, Colleen, John and Kelly.
Mentors

Dr. Sankar has been an orthopedic surgeon at CHOP for more than five years, and is director of the young adult hip preservation program. He is a graduate of Cornell University and the University of Pennsylvania School of Medicine. After finishing his orthopedic residency at the University of Pennsylvania, Dr. Sankar completed three additional fellowships in the areas of pediatric orthopedic surgery and adolescent hip surgery at Children’s Hospital Los Angeles, the Shriners Hospitals for Children in Los Angeles, and Boston Children’s Hospital. He is one of a small group of surgeons in the country with special expertise in complex adolescent and young adult hip reconstruction.

Dr. Sankar is a member of several multicenter research groups including the International Perthes Study Group, the International Hip Dysplasia Institute, and the Academic Network of Conservational Hip Outcomes Research (ANCHOR). In 2012, Dr. Sankar received the Young Investigator Award at the AAOS/ORS Femoroacetabular impingement research symposium. He currently serves as medical director for International Hip Dysplasia Institute.

Dr. Sankar has published more than 50 peer-reviewed scientific articles, reviews or textbook chapters, and co-edits the pediatric sub-section of Operative Techniques in Orthopaedic Surgery, along with Dr. Flynn. Dr. Sankar is an at-large member of the board of directors of the Pediatric Orthopaedic Society of North America (POSNA).

Dr. Sankar is married and has two children.
The Children’s Hospital of Philadelphia

The Children’s Hospital of Philadelphia (CHOP) is not only the oldest pediatric hospital in the United States, it is also one of the top-ranked children’s hospitals in the world. In addition to providing excellent patient care, CHOP excels at research by devising and committing to projects aimed at developing cures for chronic and fatal pediatric illnesses and disorders. Because awareness of disease is important in the prevention of illness, CHOP also strives to educate the public – not only on ways to prevent disease – but also on ways to support independent living for those with debilitating conditions.

CHOP was founded in 1855, when Francis West Lewis MD, inspired by his visit to the Great Ormond Street Hospital for Sick Children in London, built the first pediatric hospital in the United States. In collaboration with three other doctors, the team constructed a pediatric center that included 12 beds and a dispensary. A year later, the hospital’s physicians treated 67 inpatients and 306 clinical patients. Since its first year, the hospital has relocated its building on three separate occasions. On June 23rd, 1974, the hospital settled at 34th Street and Civic Center Boulevard, its current location. In 1976, C. Everett Koop, MD, not only established the pediatric surgical division, but also performed ground-breaking procedures that brought notoriety to the hospital.

CHOP has earned recognition as the nation’s best pediatric hospital from two respected publications: U.S. News & World Report named CHOP No. 2 on its 2015-2016 Honor Roll of Best Children’s Hospitals in the nation; and Parents magazine named CHOP No. 1 on its 2013 list of Top 10 Best Children’s Hospitals. To learn more, see Why Choose CHOP?
In 1889, with the financial help of the Ladies’ Auxiliary, DeForest Willard organized the first orthopedic children’s ward at the University of Pennsylvania. Since then, The Children’s Hospital of Philadelphia has seen six Chiefs of Orthopedic Surgery. The first, Charles Merrill, MD, was instated as Chief, but unfortunately died one month later.

In 1936, Jesse Nicholson, MD, replaced Merrill as Chief of Orthopedic Surgery. Nicholson’s position as Chief ended in 1968, and he was succeeded six years later by Stanley Chung, MD, who served from 1974-1979. In 1979, Hugh Watts, MD, took over as Division Chief. Six years later, Denis Drummond, MD, succeeded Dr. Watts, and served from 1985-1996. John P. Dormans, MD led the Division from 1996-2014. Subsequently Dr. Flynn succeeded him as Chief of Orthopedic Surgery.
The City of Philadelphia

A Brief History of Philadelphia
- In 1682, William Penn bought land from the local Lenape Indian village of Shackamaxon.
- In 1701, Penn issued a Charter, establishing Philadelphia as a city.
- From 1790 to 1800, Philadelphia served as the capital of the United States of America.
- As businesses boomed within this area, the population reached two million residents in 1950.
- Today, Philadelphia remains a commercial, educational, and a diverse center of culture, art, architecture, cuisine, and sports.

Philadelphia and Medicine
- Philadelphia has become an important center for medicine, an association that the city has had since its colonial period.
- Philadelphia is home to the first hospital in the British North American colonies.
- Philadelphia is also the home of the first medical school, located today at the University of Pennsylvania.
- The first pediatric hospital in the United States was established in Philadelphia in 1855 (The Children’s Hospital of Philadelphia).
- Major hospitals within Philadelphia are also affiliated with Temple University School of Medicine, Drexel University College of Medicine, Thomas Jefferson University, and Philadelphia College of Osteopathic Medicine.
The City of Philadelphia

Ideal Location

- Philadelphia is located ideally between many popular attractions on the northeast coast of the United States.
- As indicated on the map to the right, Philadelphia (point A) is a short distance from New York City (point B – 95 miles), the Pocono Mountains (point C – 135 miles), Cape May (point D – 92 miles), and Baltimore (point E – 100 miles).
- The area surrounding Philadelphia has much to offer: whether it’s seeing Broadway shows in New York, skiing in the Pocono’s, relaxing on the beach in Cape May, or visiting Baltimore’s Inner Harbor to catch and dine on some of the best crab on the east coast, the Philadelphia area is brimming with things to see, do, and experience.

Art and Food

- Philadelphia is home to many museums, including the Philadelphia Museum of Art, one of the largest art museums in the United States; the Pennsylvania Academy of Fine Arts; the Rodin Museum, which boasts the largest collection of works by Auguste Rodin outside of France; and the Philadelphia Sketch Club.
- Annual events include film festivals and parades, the most well-known being the New Year’s Day Mummers Parade.
- The city is also known for its food – from hoagies to cheesesteaks, scrapple to soft pretzels, water ice to Tastykakes.
Sports

- Philadelphia is one of 13 cities in the nation to have all four major sports teams: the Philadelphia Eagles of the National Football League, the Philadelphia Flyers of the National Hockey League, the Philadelphia Phillies of Major League Baseball, and the 76ers of the National Basketball Association.
- Sporting events such as the Penn Relays, the Philadelphia Marathon, the Broad Street Run, and the Aberdeen Dad Vail® Regatta attract professional, semi-professional, and elite amateur teams and individuals from all over the country to the city as well.
Application Timeline

- **Call for applications:** November 11th, 2017
- **Application deadline:** February 4th, 2018
- **Application review:** February 5th – end of March, 2018
- **Final decisions:** End of March – 1st week of April, 2018
- **Fellowship start date:** July 2nd, 2018
Alex Adams grew up in Annapolis, Maryland. In 2014, Alex earned his Bachelor of Science with Magna Cum Laude honors from Georgetown University, studying human science and chemistry. During college, he served as Chapter President of the Alpha Sigma Nu Honors Society, Head Tutor of Human Biology, volunteer EMT, and club ice hockey team member. He recently completed his third year of medical school at Thomas Jefferson University, where he is a two-time recipient of the Pennsylvania Medical Society A.M.E.S Award and member of the College within the College Clinical Translational Research Track. His current research interests at CHOP are on risk factors for pediatric limb fracture complications, reducing unnecessary perioperative measures including blood-drawn labs and opioid overprescribing, and characterizing neuromuscular and early-onset scoliosis treatment outcomes. Alex is the middle child of three and will be getting married this spring to his fiancé, Jordan.
Nick Talathi was raised in Alpharetta, Georgia, a suburb of Atlanta. He attended the University of Georgia, where he was a part of the honors program and graduated Phi Beta Kappa with a double major in Genetics and Psychology. While at UGA, Nick was passionate about Special Olympics and co-created Aces for Athens, an organization dedicated to increasing the availability of fitness programs for the special needs community. Nick recently completed his 3rd year at the University of Pennsylvania Perelman School of Medicine and is a Gamble Scholar. Outside of academics, Nick enjoys following Georgia Football, basketball and running, and exploring Philly's lively restaurant scene.
Jigar Gandhi was born and raised in India where he attended high school and two years of college. After arriving to the United States, he enrolled in a pharmacy school at Rutgers University. While in pharmacy school, Jigar worked as an analytical research and development scientist for three years at Amneal Pharmaceuticals. After receiving his Doctor of Pharmacy degree in 2012, he worked as an oncology pharmacist at the Memorial Sloan Kettering Cancer Center in New York City. He recently completed his third year of medical school at Rutgers New Jersey Medical School. As a Ben Fox Fellow, Jigar has been involved in over 12 major clinical research projects. His research interests are in the field of scoliosis, Perthes disease, osteochondritis dissecans, and pediatric trauma. He enjoys learning from the great orthopaedics team at CHOP, and hopes to continue pursuing his research interests as a physician-scientist in the future.
Prior Ben Fox Fellows
Selected Publications and Presentations

**Brendan Striano**
2016-2017
Rutgers Robert Wood Johnson Medical School


*Manuscripts in Preparation*

**Striano BM**, Flynn JM. VEPTR associated surgical site infections.

**Striano BM**, De Mattos C, Ramski D, Flynn JM, David H. Displaced supracondylar humerus fractures in toddlers: are they different?

**Striano BM**, Talwar D, Shah AS. Hospital variation in open reduction rates for pediatric supracondylar humerus fractures.

**Striano BM**, Brusalis CM, Flynn JM, Talwar D, Apurva S. Operative time and cost varies by surgeon: analysis of a common pediatric orthopaedic procedure.

Flynn JM, **Striano BM**, Wallis MT, Kraus B, Sankar WN, Mehta V, Blum M, DeZayas B, Feldman J, Keren R. A dedicated pediatric spine deformity team significantly reduces surgical time and cost.

Taylor Jackson
2016-2017
University of Texas
Southwestern Medical Center

Prior Ben Fox Fellows
Selected Publications and Presentations


Prior Ben Fox Fellows
Selected Publications and Presentations

**Chris DeFrancesco**
2016-2017
University of Pennsylvania
School of Medicine


**DeFrancesco CJ**, Storey EP, Ganley TJ. Pediatric ACL reconstruction and return to the operating room: graft failure is less than half of the story. Presentation at POSNA/AAOS International Pediatric Orthopaedic Symposium. Orlando, FL, USA; December, 2016.


Prior Ben Fox Fellows
Selected Publications and Presentations


Prior Ben Fox Fellows

Selected Publications and Presentations


Refakis CA, Sankar WN. Coexisting DDH and spastic hip disease? The treatment of dislocated hips in infants with spasticity. Poster presented at The Pediatric Orthopaedic Society of North America (POSNA) National Meeting; Indianapolis, IN, USA; April, 2016

Refakis CA, Flynn JM. Bundles, surveillance and committees: can an all-out assault on PSF SSI yield a measurable return on investment? Results of a 10 year study at a major pediatric spine center. Oral presentation at The Scoliosis Research Society (SRS) Annual Meeting (presented by Flynn, JM); Prague, CZE; September, 2016.

Christian Refakis
2015-2016
University of Pennsylvania School of Medicine

Current position:
General Surgery Intern,
Duke Department of Surgery
Prior Ben Fox Fellows

Selected Publications and Presentations


Prior Ben Fox Fellows
Selected Publications and Presentations


Prior Ben Fox Fellows

Selected Publications and Presentations


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**Christine Goodbody**

2013-2014

University of Pennsylvania School of Medicine

**Current position:**

Orthopedic Surgery Resident, Hospital for Special Surgery, New York City, NY
Prior Ben Fox Fellows
Selected Publications and Presentations


Prior Ben Fox Fellows

Selected Publications and Presentations


**Prior Ben Fox Fellows**

**Selected Publications and Presentations**


Prior Ben Fox Fellows

Selected Publications and Presentations


Prior Ben Fox Fellows
Selected Publications and Presentations


De Mattos CB, Ramski DE, Horn BD. Displaced supracondylar humerus fractures in toddlers: are they different? Poster at the AAOS Annual Meeting 2013, Chicago, IL.


Prior Ben Fox Fellows

Selected Publications and Presentations


Prior Ben Fox Fellows
Selected Publications and Presentations


Flynn J, Miller RA, Cody S, Lonner B, Marks M, Bastrom T. What is different after surgery for AIS patients who enjoy a minimal clinically important difference? Presented at AAP Fall Conference 2010, San Francisco, CA.


Ben Fox Activities

2009-2010 Ben Fox Fellow, Nicholas Beck and Dr. Ganley at a Philadelphia Eagles game

2011-2012 Ben Fox Fellows with Dr. Flynn, Dr. Ganley, and Sharon Farrell, MSN, CRNP, at the end of the year Fellows Dinner at Citizens Bank Park

2012-2013 Ben Fox Fellows and International Research Fellows in Orlando, Florida for the 2012 IPOS Meeting

2014-2015 Ben Fox Fellows with Dr. Sankar and his son Kamran at the 2014 Holiday Party
Ben Fox Activities

2010-2011 Ben Fox Fellows with nurse practitioner Sharon Farrell at the 2010 Holiday Party

Dr. Ganley and Dr. Flynn with 2013-2014 Ben Fox Fellows, Chrissy Goodbody and Afam Nduaguba

2014-2015 Ben Fox Fellows, Joe Yellin and Alex Gornitzky, at the FDA Reviewers Pediatric Spine Course which they attended and helped coordinate

2015-2016 Ben Fox Fellows Chris Brusalis and Christian Refakis with Dr. Ganley and Clinical Research Coordinator Eileen Storey at a conference