Weill Cornell Medical College, Cornell University
The Hospital for Special Surgery
Faculty Curriculum Vitae

Name: Austin T. Fragomen, M.D.

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A. PERSONAL DATA

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B. EDUCATION

Academic Degree(s) (*Bachelor's and higher)*

Degree	Institution name, city and state	Dates attended	Year Awarded
BA, Biochemistry	Brandeis University, Waltham, Massachusetts	August 1989- June 1992	1992
MD	State University of New York Health Science Center at Brooklyn (SUNY Downstate) College of Medicine	Aug 1993- May 1997	1997

C. POSTDOCTORAL TRAINING *(include residency/fellowships)*

Title	Institution, city and state	Dates *(yyyy-yyyy)*
Internship in General Surgery	Montefiore Medical Center, Bronx, New York	July 1997- June 1998
Orthopaedic Associate	Saint Vincent Catholic Medical Centers, Brooklyn & Queens Region Jamaica, NY	July 1998- June 1999
Resident in Orthopaedic Surgery	Saint Vincent Catholic Medical Centers, Brooklyn & Queens Region Jamaica, NY	July 1999- June 2003
Fellow in surgery of the shoulder and knee	California Pacific Medical Center & Saint Mary's Medical Center, San Francisco, California	August 2003- July 2004

Fellow in Limb Lengthening and Reconstruction Surgery	Hospital for Special Surgery NY, NY	August 2004-July 2005

D. PROFESSIONAL POSITIONS & EMPLOYMENT

Academic appointments *(teaching and research, i.e. Instructor, Assistant Professor, etc.)*

Title	Institution, city and state	Dates *(yyyy-yyyy)*
Instructor of Orthopaedic Surgery	Weill Cornell Medical College New York, NY	August 2005-April 2008
Assistant Professor of Orthopaedic Surgery	Weill Cornell Medical College New York, NY	May 2008-October 2013
Associate Professor of Clinical Orthopaedic Surgery	Weill Cornell Medical College New York, NY	November 2013-December 2021
Professor of Clinical Orthopaedic Surgery	Weill Cornell Medical College New York, NY	December 2021-present

Hospital Appointments *(Clinical, i.e., Assistant Attending, Attending, etc.)*

Title	Institution, city and state	Dates *(yyyy-yyyy)*
Instructor of Orthopaedic Surgery	Hospital for Special Surgery New York, NY	August 2005-April 2008
Assistant Attending of Orthopaedic Surgery	Hospital for Special Surgery New York, NY	May 2008-October 2013
Associate Attending of Orthopaedic Surgery	Hospital for Special Surgery New York, NY	November 2013-December 2021
Attending of Orthopaedic Surgery	Hospital for Special Surgery New York, NY	December 2021-present

Other Professional Positions & Employment *(Industry, private practice, etc.)*

Title	Institution, city and state	Dates *(yyyy-yyyy)*
Consultant	Smith and Nephew, Memphis, Tennessee	2009-present
Consultant	J&J, DePuy Synthes	2014-present
Consultant	NuVasive Specialized Orthopedics Location: Consulting was performed at educational venues around the country and at HSS. Recent consulting has been virtual.	2015-present

E. LICENSURE, BOARD CERTIFICATION

Licensure: *Every physician appointed to the NYP Hospital staff, except interns, and aliens in the US via non-immigrant visas, must have a New York State license or a temporary certificate in lieu of the license.*

State	Number	Date of issue	Date of last registration
New York	214928	7/20/1999	1/31/2019

Board Certification

Full Name of Board	Certificate # *(indicate if board eligible)*	Dates of Certification *(mm/dd/yyyy) – (mm/dd/yyyy)*
American Board of Orthopaedic Surgery	none	Certification: 2007 Recertification: January 1, 2017-2027, Enrolled in MOC

F. INSTITUTIONAL/HOSPITAL AFFILIATION

Primary Hospital Affiliation:	Hospital for Special Surgery
Other Hospital Affiliations:	New York Presbyterian Hospital, Weill-Cornell Medical Center
Other Institutional Affiliations:	none

G. HONORS, AWARDS

Name of award	*Organization*	*Date awarded (yyyy)*
Best paper "antibiotic loaded calcium sulfate v PMMA for IM nailing to treat and prevent infection" presented at LLRS Annual Meeting 2021	Limb Lengthening and Reconstruction Society	July 2021
Paper "Compression Nails for Nonunion" selected by OTA Podcast Committee for OTA website	Orthopaedic Trauma Association	May 2020
2016 JBJS Essential Surgical Techniques "Editor's Choice Technique Award"	Journal of Bone and Joint Surgery	March 2017
Featured in AAOS Headline News Now: Study: Ankle distraction may be an effective surgical treatment for end-stage ankle OA.	AAOS Now Headline News	March 15, 2017
Alumni AOA Membership 2012, SUNY Downstate	SUNY Medical Center Downstate, Brooklyn, NY	2012
"Best Doctors"	New York Magazine	2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021

Top Doctor NY	Castle Connolly	2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021
America's Top Doctors	Castle Connolly	2015, 2016, 2017, 2018, 2019, 2020, 2021
Healthgrades Honor Role	Healthgrades	2015, 2016
Compassionate Doctor Award	American Registry	2010-2018
Compassionate Doctor Award- 5 Year Honoree	American Registry	2015-2018
LLCRS Teaching Award	LLCRS- HSS	2012, 2014
Best Poster American Academy of Orthopedic Surgeons Annual Meeting, Foot and Ankle Session	AAOS	2012
Featured in "Best Doctors"	New York Magazine	2010
Patient's Choice Award	Vitals	2008-2018
Patient's Choice- Fifth Anniversary Award	Vitals	2015
Meritorious Service Award and Bronze Medallion	Marine Society of the City of New York	April 2008
Commendation for support of Wounded Warriors Project	F.D.N.Y and Graybeards	June 2008

H. PROFESSIONAL ORGANIZATIONS AND SOCIETY MEMBERSHIPS

(Please include medical and scientific societies.)

Organization	*Date (yyyy-yyyy)*
Fellow American Board of Orthopaedic Surgery (ABOS)	2007- present (Recert 2017)
Fellow American Academy of Orthopaedic Surgeons (AAOS)	2009 - present
Member Limb Lengthening and Reconstruction Society- ASAMI N. America	2005 - present
Member at Large Limb Lengthening and Reconstruction Society- ASAMI N. America	2009-12
Treasurer Limb Lengthening and Reconstruction Society- ASAMI N. America	2012- 2018
Presidential Line Second/First Vice President Limb Lengthening and Reconstruction Society- ASAMI N. America	2018-19
President Limb Lengthening and Reconstruction Society- ASAMI N. America	2019-20
President – Second Term during COVID crisis Limb Lengthening and Reconstruction Society- ASAMI N. America	2020-21
Immediate Past President, LLRS	2021-2022
Committee Member AAOS BOS (Board of Specialty Societies) – LLRS Presidential Line Representative	2018-2022
Member Fracture Related Infection (FRI) Consensus Group (AOTK)	2018-present

Committee Member AAOS BOS (Board of Specialty Societies), Communication Committee – LLRS representative	2016-17
Member Musculoskeletal Infection Society (MSIS)	2019-present
Member New York State Society of Orthopaedic Surgeons	2007 - present
Member Eastern Orthopaedic Association	2014-present
Member NYC Medical Reserve Corps	2007 - 2010
Committee Member LLRS Limb Deformity Fellowship Accreditation Committee	2016-present
Committee Member LLRS Research Committee- Limb Deformity Study Group	2016-2019
Member ASAMI Brasil	2019-present

I. EDUCATIONAL CONTRIBUTIONS

Teaching
Please include title/audience/dates as applicable.

Didactic teaching *(lectures, seminars, tutorials, professional development programs at WCM and previously employed institutions))*

Title	Audience	Dates
Sports Service- LLCRS combined service conference Grand Rounds	HSS sports service, LLCRS service, international fellows	Apr 2021
ARJR Service- LLCRS combined service conference Grand Rounds	HSS ARJR, Virtual visitors China & Greece	Apr 2021
Limb Lengthening and Complex Reconstruction at HSS	HSS Radiology Grand Rounds	Mar 2021
Periarticular knee deformity: correction strategies to optimize TKR	HSS, ARJR grand rounds: medical staff, fellows, residents, Cornell medical students, researchers	Oct 2020
HSS – Limb Lengthening and Complex Reconstruction service focused on research	Residents and Cornell medical students	August 2020
Proximal Tibial Osteotomy in Orthopedic Sports Medicine	HSS combined Sports-LLCRS service conference medical staff, fellows, residents, Cornell medical students, researchers	July 2020
Evaluating deformity of the Lower Extremity: Measuring MAD, CORA, and rotation	HSS residency: residents, Cornell medical students, researchers	June 2020
Combined conference LLCRS-Trauma: management of femoral osteomyelitis and limb shortening with integrated fixation	HSS Trauma Grand Rounds: medical staff, fellows, residents, Cornell medical students, researchers	Dec 2019
LLCRS Research Program 2019	HSS residency	Sept 2019
Femur based osteotomy	Combined Sports and LLCRS service conference: medical staff, fellows, residents, Cornell medical students, researchers	June 7, 2018

Activity Director, Chair, Inaugural HSS Limb Deformity Course	HSS Medical staff, fellows, residents, Cornell medical students, researchers	February 2018
The treatment of Charcot of the foot and ankle with external fixation," presented at the PALP 1.0 Limb Preservation Symposium, Weill Cornell Vascular Surgery	HSS: medical staff, fellows, residents, Cornell medical students, researchers	May 2018
"Limb Lengthening, Radiographic considerations"	HSS Dept of Radiology Grand Rounds: medical staff, radiology fellows.	Jan 2018
"Limb Lengthening and Complex Reconstruction Surgery"	HSS perioperative medicine grand rounds: medical staff, fellows, residents, Cornell medical students	November 2017
What's new in Limb Deformity: Foot and Ankle	HSS 98th Annual Alumni Meeting: alumni surgeons, medical staff, fellows, residents, Cornell medical students, researchers	November 2016
Deformity Planning	Sports fellowship conference: medical staff, fellows, residents, Cornell medical students, researchers	June 2016
Distal Femoral Osteotomy	HSS Sports Service Grand Rounds: medical staff, fellows, residents, Cornell medical students	June 2016
Unstable Ankle Fractures: The role for Ilizarov Fixation	HSS 96st Annual Alumni Meeting: alumni surgeons, medical staff, fellows, residents, Cornell medical students, researchers	November, 2014
Limb Lengthening and Complex Reconstruction. The Painful Process to Healing	Eighth Annual Program on pain awareness, at HSS: medical staff, pain management team, anesthesia team, Fellows, nursing.	Oct 2014
Faculty Limb lengthening core curriculum conference	HSS: medical staff, fellows, residents, Cornell medical students, researchers	2005- present

Clinical teaching *(bedside teaching, teaching rounds, teaching in operating room, precepting in clinic, morning report, etc.)*

Invited guest surgeon assisting orthopedic trauma surgeons at UZ Leuven to perform the first PRECICE IM lengthening nail insertion surgery in Belgium	International Attending Staff	Dec 2019
Resident Boot Camp", Bioskills learning session	new residents to gain experiential learning in drilling, inserting half-pins, tensioning wires, connecting external fixators	meets annually in June, 2014-present

Daily clinical instruction of Fellows and Residents through modeling, hands on technical training, decision making algorithms, and informal questioning	HSS: Fellows, residents	2005-present
Instructor for Medical Students through Cornell Med Summer program	HSS: Cornell medical students	Summer 2008-2010, 2018-present
Faculty LLCRS pre-operative planning conference	HSS: medical staff, fellows, residents, Cornell medical students, researchers	weekly- 2005-present
Orthopaedic Bioskills laboratory instructor	fellows, residents, Cornell medical students	2005-present
Surgical Instruction of fellows, residents and medical students in operating room	HSS and NYPH	2005-present
Supervised Undergraduate, Medical Student & Resident Research in area of Trauma and Limb Lengthening	HSS: fellows, residents, Cornell medical students	2005-present

Administrative teaching *(leadership role as residency or fellowship director, course or seminar series director or co-director at WCM and previously employed institutions))*

Title	Audience	Dates
Education Meeting Review education objective for the fellowship and residency	Medical staff, fellows, residents, Cornell medical students	First Thursday of every month
Fellowship Meeting (with Fellows) Review performance of the fellows, views on the fellowship, attending performance	Fellows	Second Thursday of every quarter
Service Meeting Lectures from fellows, attendings, PAs are given. M&M presented and reviewed, sawbone workshops and cadaver labs are given, and research projects are discussed.	Fellow, resident, medical student, PA education.	weekly, every Thursday
Journal Club Review recent articles in the field of limb lengthening. Systems based learning to implement new techniques	Medical staff, fellows, residents, Cornell medical students	Quarterly
Combined Service Conferences This is an LLCRS (limb lengthening and complex reconstruction service) initiative. The LLCRS meets with other orthopedic services at HSS to present complex cases and	Medical staff, fellows, residents, Cornell medical students- with specific emphasis on exposing trainees from these other fields to limb deformity methods that are applicable to their practices.	every other month

discuss innovative treatment options. Participating services include: Foot and Ankle, Arthroplasty, Spine, Sports, Hand, Trauma, Metabolic Bone.		
Director of the annual Bobby Menges Memorial Limb Deformity Course at HSS	Medical staff, fellows, residents, Cornell medical students	2018-present
Co-chair of the LLRS Annual Scientific Meeting	Society members, guest surgeons, vendors, fellows, residents	2019-2020 2020-21

Continuing education and professional education *(role and scope of activity)*

CME		
Title	Audience	Dates
Periarticular knee deformity: correction strategies to optimize TKR	Ranawat Orthopedic Conference 19th Winter Meeting Advances and Techniques in Joint Replacement Surgery & Arthroscopy	Jan 2021
Ankle distraction arthroplasty	Invited speaker at AOFAS virtual Annual Meeting: society members, guest surgeons, vendors, fellows, residents	Sept 2020
"Limb reconstruction after blast injuries," "Precice magnetic intramedullary compression nail for nonunions," "NSAIDs after osteotomy yield variable results," "ABX loaded calcium sulfate for infection prevention and control in IM nailing," "Predictors of successful limb salvage for osteomyelitis"	Presented at the ILLRS 4th Combined Congress, Liverpool, UK: society members, guest surgeons, vendors, fellows, residents	Aug 2019
Subtalar distraction arthroplasty a new joint preservation technique," "Limb salvage reconstruction by ankle arthrodesis and lengthening using IM nailing of the tibia," "Intramedullary antibiotic depot does not preclude successful IM lengthening or compression," "Predictors of successful limb salvage for patients with chronic osteomyelitis of the tibia and ankle," "Proximal tibial osteotomy for genu varum: deformity correction with plate v external fixator," " NSAIDs after osteotomy surgery reduce opioid consumption without affecting	Presented at the LLRS 28th annual scientific meeting, Boston, MA: society members, guest surgeons, vendors, fellows, residents	July 2019

bone healing," "The accuracy of blocking screw assisted IM nailing for limb lengthening and deformity correction," "Introduction to bone transport precice nail" "Biology of the docking site and of lengthening nails"		
"Adult Clubfoot"	Invited speaker at 2019 AAOS, LLRS: society members, guest surgeons, vendors, fellows, residents	March 2019
"Use of hexapod frames to gradually correct congenital and acquired forearm deformity", "The results of antibiotic cement coated interlocking IM nails in complex lower extremity reconstruction", "The current surgical treatments of leg length discrepancy after total hip arthroplasty", "The use of circular external fixation for gradual correction of ankle contractures", The magnetic intramedullary compression nail for the treatment of long bone nonunions", "Carbon fiber reinforced IM nails perform poorly in limb deformity surgery", Tranexamic acid reduces postoperative blood loss in distal femoral osteotomy"	Presented at the LLRS 27th annual scientific meeting, San Francisco, CA: society members, guest surgeons, vendors, fellows, residents	July 2018
"Ankle distraction arthroplasty"	Invited speaker at 2018 AAOS, LLRS-AOFAS combined specialty day: society members, guest surgeons, vendors, fellows, residents	March 2018
"Distal femoral flexion deformity from growth disturbance treated with a two level osteotomy and ILN," "A preliminary comparison of carbon fiber reinforced versus titanium plates in distal femoral osteotomy."	Presented at the LLRS 26th annual scientific meeting, Park City, Utah: society members, guest surgeons, vendors, fellows, residents	July 2017
"What's new in Limb Lengthening?"	2017 Annual NYSSOS Symposium, HSS, New York: members State Orthopedic Society	Sept 2017
"What's new in Limb Deformity: Foot and Ankle," and "What's new in Limb Deformity: Trauma,"	Eastern Orthopaedic Association 47th Annual Meeting, NOLA: society members, guest surgeons, vendors, fellows, residents	October 2016
Session moderator: Foot and Ankle at the Eastern Orthopaedic	society members, guest surgeons, vendors, fellows, residents	October 2016

Association 47th Annual Meeting, NOLA		
"Simultaneous acute femoral deformity correction and gradual limb lengthening using the retrograde Precice femoral nail," "Prophylactic pre operative antibiotics have no influence on pin site infection after external fixation," and "Does the surgical outcome of tibial torsion with genu varum produce outcomes similar to those in varus correction alone."	Podium presentations presented at the LLRS 25th annual scientific meeting, Charleston, SC: society members, guest surgeons, vendors, fellows, residents	July 2016
Moderator for Session 11: Foot & ankle deformity correction using the Ilizarov method Presenter: "Complex foot and ankle correction with the TSF," and "Ankle distraction arthroplasty for post traumatic osteoarthritis."	International Symposium dedicated to the 95th anniversary of Professor GA Ilizarov, 65th anniversary of the Ilizarov Method, and 45th anniversary of the Russia Scientific Center "Restorative Traumatology and Orthopedics." Kurgan, Russia: international collection of deformity surgeons	Jun 2016
"Transitioning to the Internal Lengthening Nail,"	AAOS Specialty Day- LLRS, Orlando: society members, guest surgeons, vendors, fellows, residents	Mar 2016
"The Failed Pilon Fracture: Ankle Joint preservation and realignment," "Tibial Lengthening with the Precice ILN," "Patient care outside the operating room," "Achieving hindfoot fusion with infection and bone loss," "Precice Tips and Pitfalls,"	Symposium ILLRS, Miami: society members, guest surgeons, vendors, fellows, residents	Nov 2015
"Magnetic ILN Retrograde Technique,"	OTA, San Diego: society members, guest surgeons, vendors, fellows, residents	Oct 2015
"The Failed Pilon Fracture: Joint preservation,"	ICL at AAOS, Las Vegas: society members, guest surgeons, vendors, fellows, residents	March 2015
"IM Lengthening with Magnetic Control Experience"	LLRS Specialty Day meeting, Las Vegas: society members, guest surgeons, vendors, fellows, residents	March 2015
"Topics in Complex Post Traumatic Limb Reconstruction: Many roads to Rome," presented by A. Fragomen & Michael Suk	John Parenti Limb Preservation Symposium, Geisinger Health Center, Danville, PA: medical staff, fellows, residents	August 2014
"Applications of the Ilizarov Method to Foot and Ankle surgery."	Methodist Medical Center, Podiatry Grand Rounds, Brooklyn, NY: medical staff, fellows, residents	May 2014
eUniversity video capture	surgeon CME education online: community orthopedic surgeons	2014- present

Professional Education/ Development		
Title	Audience	Dates
Orthospin & MaxFrame update for post traumatic limb reconstruction	J&J Synthes Trauma Virtual Education Webex: Practicing Orthopedic Surgeons- after OTA/LLRS combined specialty day	March 2021
Complex lower limb deformity correction using ring fixation	J&J Synthes Trauma Virtual Education Webex: Practicing Orthopedic Surgeons	May 2020
"Rotational malalignment in IM nailing"	Moderator for AO webinar with Willem Jan Metsemakers: Practicing Orthopedic Surgeons	aired and recorded March 12, 2019
"Analysis of deformity," "Billing and coding," "Circular frame biomechanics," "Incorporating ring fixation into my practice," "MaxFrame distal tibia," "Re-plan standard method,"	DPS educational course, Dallas, TX: Practicing Orthopedic Surgeons	Nov 2019
"Salvage ankle fusion," "Equinus deformity," "Cable & other Bone transport options," "Advanced foot and ankle,"	TSF educational course, Jacksonville, FL: Practicing Orthopedic Surgeons	Oct 2019
"MaxFrame for deformity correction: clinical experience."	Synthes during the LLRS 28th annual scientific meeting, Boston, MA: Practicing Orthopedic Surgeons	July 2019
"TSF for malunions"	TSF training course, McGill University Health Centre, Montreal, CAN: Practicing Orthopedic Surgeons	November 2018
"Bone transport techniques," "Equinus Deformities Causes and Types," "Soft tissue considerations,"	Smith and Nephew TSF Advanced Course, Memphis, TN: Practicing Orthopedic Surgeons	October 2017
"Unyte compression nail,"	NuVasive surgeon's education symposium Vancouver, CAN: Practicing Orthopedic Surgeons	Oct 2017
"Precice Unyte compression nail in nonunion management of the femur and tibia,"	NuVasive surgeon's education symposium Park City, Utah: Practicing Orthopedic Surgeons	Jul 2017
Synthes Max Frame surgeon's education course	Chicago, IL: Practicing Orthopedic Surgeons	May 2017
Synthes Max Frame surgeon's education course	West Chester, PA: Practicing Orthopedic Surgeons	April 2017
Synthes validation studies for Max Frame	West Chester, PA: internal review	October 2016
"Precice ILN & Unyte internal compression Nail,"	2016 OTA (Orthopaedic Trauma Assn.) Annual Meeting, National Harbor, Maryland: Practicing Orthopedic Surgeons	October 2016

"Bone transport techniques," "Management of Malunions and Nonunions with TSF," "Soft tissue considerations,"	Smith and Nephew TSF Advanced Course, Memphis, TN: Practicing Orthopedic Surgeons	September 2016
"TSF Planning for malunion correction," "Management of Malunions with TSF,' "Corticotomy Techniques,"	Smith and Nephew TSF Advanced Course, Memphis, TN: Practicing Orthopedic Surgeons	September 2015
"Biomechanics of the TSF," "Tibial Malunion Management", "TSF Planning & Software", "TSF for Tibial Bone Defects and Nonunions"	Smith and Nephew TSF Course, NY, NY: Practicing Orthopedic Surgeons	Oct 2014

Community education or patient outreach *(medical journalism and media presentations such as television and radio appearances that educate the public about medicine, health or biomedical sciences)*

Patient education videos, eLearning videos at HSS, patient handouts, and social media are all used to elevate the Limb Deformity profile and answer patient questions. Much of my effort to educate the community and potential patients about the world of limb deformity has been placed into social media platforms. The www.limblengthening.com website, Facebook @limblengtheningnyc, and Twitter @SmyL_NY are full of patient education videos and information to educate the public about limb deformity and treatment options.

J. CLINICAL PRACTICE, INNOVATION, and LEADERSHIP

Clinical Practice
Please include duration, i.e., year(s) of practice, name and location of practice, type of activity, level of activity (e.g., sessions, days or hours per week or month). Examples include attending on inpatient units, ambulatory practice, performing procedures.

Specialties: Limb Lengthening & Deformity Correction
Interests: Trauma, Joint Preservation & Osteotomy, Bone Healing Clinical Research, Foot & Ankle Deformity

Hospital based practice- Orthopaedic Surgery.
2005-present, Hospital for Special Surgery, New York Hospital, NY, NY
Associate Attending:
Duties include office patient visits, in-patient hospital rounds, surgery, pre operative planning and supervision of residents, fellows, medical students, and physician's assistants.

Director of the Limb Lengthening and Deformity Clinic, HSS
2009-present, Hospital for Special Surgery
Duties include supervising LLCRS Fellows in the indigent clinic and in the operating room. Pre- and post-operative planning and patient care. Ilizarov fixator adjustments, wound care.

Clinical evaluation: I am evaluated annually by the fellows, and I review these evaluations with my service chief. I am also evaluated constantly through Healthgrades, Vitals, Google, and other sites by patients. I review these comments and incorporate changes into my practice. For example, one patient commented that I did a fantastic surgery but was disappointed that I did not speak to him after the surgery. I thought

back and realized that speaking to the family member might not be adequate. I have changed my practice to include speaking with every patient directly after speaking with the family after surgery.

Clinical Innovations
Please include date innovation launched, title/location of innovation, role and short description of the influence on clinical care or practice management. Examples include development of innovative approaches to diagnosis, treatment or prevention of disease, applications of technologies, and/or models of care delivery.

As a co-founding member of the Limb Lengthening & Complex Reconstruction service at HSS, I have contributed significantly to the creation of our Limb Deformity center. I have been fortunate to be able to help design novel bone fixation devices and to help trial many amazing implants introduced by my Limb Deformity colleagues. Early in my career, I assisted in the development of the "RAD Frame", a streamlined external fixator dedicated to the unique procedure of ankle joint distraction arthroplasty. This device simplified the procedure for the patient and the surgeon. I then assisted with the creation and utilization of several surgical techniques that sought to reduce the time needed for patients to wear an external fixator. These procedures integrated the flexibility of external fixation with the convenience of internal fixation and included lengthening-and-then-nailing. I coined the term, "integrated fixation" to refer to techniques that used a combination of internal and external fixation [Bernstein-37, Sheridan-99]. We became a pilot center for the most revolutionary internal lengthening intramedullary nail of our time, the Precice (NuVasive, San Diego, CA). I am a part of the engineering team for DePuy Synthes for the development and validation of a clever new external fixation system that would solve many of the issues seen with earlier generation frames (2014-present). This company has partnered with an Israeli group to create a completely self-adjusting hexapod fixator (2019-present). I am the first surgeon in the United States to use this system which has been embraced by patients. I was on the Precice Bone Transport IM Nail design team for NuVasive in 2018-present. HSS has been a pilot center for this implant which has made limb salvage with bone transport nearly painless and far more convenient for patients. I pioneered the use of the internal lengthening nail in reverse- to compress bones. This found great utility in patients with long bone nonunions where the compression nail was able to unite in impossible situations. I initiated the use of NSAIDs in osteotomy patients to mitigate opioid doses needed after surgery. This was quite controversial since some studies suggested NSAIDs would slow bone healing and lead to nonunion. I studied the effect of the NSAIDs v narcotics with no NSAIDs on my patients and found no impact on osteotomy healing [Fragomen-95]. I helped lead the way on mixing antibiotics into dissolving cement and then filling the bone canal with that mixture followed by immediate IM nail insertion. This method replaced the classic antibiotic bone cement which would need to be removed in a subsequent surgery. I have developed an apprenticeship style fellowship program at HSS to train surgeons interested in adding complex limb reconstruction to their skill set. The curriculum has been scrutinized and updated annually based on fellow feedback and committee suggestions.

Clinical Leadership
Include year(s), leadership role, and description of activity/program, i.e. director/head of service/clinic or procedure area.

Advising/Mentoring:
I have served as a mentor to many undergraduate and medical students, residents, fellows, and young attendings both nationally and globally. (Please refer to the *Mentoring* section) 2005-present

Clinical Program Development:
I am chair of the LLCRS clinical education program development committee at HSS. Dr. Rozbruch and I meet regularly to review the service where we identify gaps in efficiency or other deficiencies, and we work

to develop these areas. I have taken leadership roles in the development of novel clinical devices that will improve patient experience like creating a bone transport nail that provided an all-internal method for filling on bone defects. I have taken a leadership role in assessing a novel, automatically adjusting strut for deformity correction using external fixation. These patient-centered innovations have made our Limb Deformity program more attractive to potential patients as well as high level trainees.
We have created a “Combined Service Conference” schedule at HSS where our service meets with each of the other services throughout the year to present topics that are within both of our spheres of practice and discuss different approaches to the same problem. This has translated into clinical approach changes in the way we plan surgeries. 2005-present

Additional Leadership Training:
I attend the National Orthopedic Leadership Conference, hosted by AAOS, annually from 2016-present. Here the Academy engages select members in leadership training activates and uses us as representatives to present orthopaedic surgeon and patient needs to our elected officials in congress.

Advocacy:
As a member of the AAOS’ BOS, I have improved LLRS member involvement in the orthopaedic PAC.
I attend NOLC annually and advocate for all orthopedists on the Hill in Washington, DC.
At HSS I have helped recruit grateful patients to make donations that support our research program including funding of a research coordinator position and statistics. 2018-present
As fellowship director I have been an advocate for the LLCRS fellows to make sure they share in the experiential aspect surgery and that both a fellow and resident can operate in the same case and both receive excellent training. We hold cadaver labs to work on fellow and resident skill sets. 2009-present

K. RESEARCH

Research Activities *In a paragraph or bullet points (up to 300 words), please describe your research interests and activities, including relevant dates. Please do not include research support/funding here. If you completed a “Statement of Key Contributions,” this may be omitted.*

Please See *Statement of Key Contributions*

Research Support

Current Research Funding *Duplicate table below as needed. For each funding vehicle, please include the following*:

The vast majority of my research has been low cost, and funding has come exclusively from a fund made up entirely of donations from grateful patients. This fund pays for a full time research coordinator, statistical analysis, and open access fees. The research team does not receive remuneration for any aspect of any of the work listed in the bibliography.

Past (Completed) Funding
Please summarize as for current projects: source-type, duration, your role.

Pending Funding
Please summarize as for current projects: source-type, duration, your role.
none

Patents & Inventions
Please include inventors, title of invention and patent number.
none

L. MENTORING

Mentorship is a longitudinal, collaborative learning relationship to help the mentee or protégé succeed. Mentoring can be provided within many formats, including one-to-one, small groups, or large group workshops or lectures, which cover any topic directly related to the mentee's career development.

Please list trainees and faculty that you have formally supervised. Individuals listed in this section should be those supervised in a research, teaching or clinical setting. List only those on whose careers you have had a substantial impact. Do not indicate those for whom you have provided general career advice. This section may be annotated to provide more information.

If this is the candidate's first faculty appointment at WCMC, please list mentoring contributions at institutions where the candidate previously held a faculty position.

Current Mentees

Name	*Site/Position*	*Expected Period*	*Project/ Accomplishments***	*Goals/expected Outcomes*	*Type of Supervision (Research, clinical, teaching, leadership)*
Marcel Orth, MD	*Traumatology Consultant, Germany*	*Feb 2020*	*We email and he runs surgical cases by me*	*Increased international collaboration*	*Clinical*
Roberto Carlos Hernandez, MD	*Assistant Attending Atlanta GA*	*Oct 2019*	*We are collaborating on a multi-center paper. He has me look at his surgical plans. We meet at LLRS functions.*	*Increased national collaboration, LLRS membership and engagement*	*Clinical & Research*
Sherif Hassan Galal, MD	*Fellow, U Texas, Houston TX*	*Aug 2019- Jul 2020*	*Fellows are life-long mentees. Two research projects came from this year.*	*Continued connection and collaboration, resumes, joint involvement in national and international meetings*	*Clinical & Research Leadership*
Taylor Reif, MD	*Junior Partner HSS*	*Aug 2019- present*	*Fellows are life-long mentees. Two research projects and 3 book chapters came from this year.*	*I will continue to mentor him closely as my junior partner.*	*Clinical & Research Leadership*
Gerald Sheridan, MD	*Orthopedic Resident, Dublin, IRE*	*Aug 2019- present*	*He is assisting me with meta-analysis research and statistics. [99]He will complete our fellowship in 2022.*	*I will continue to mentor him for many years. I expect he will continue to be extremely productive and*	*Clinical & Research Leadership*

				am lucky to be able to help his career.	
Josh Napora, MD	Assistant Attending, CWRU, OH	*Sep 2019-present*	*He has me look at his surgical plans. We meet at LLRS functions.*	*Increased national collaboration, LLRS membership and engagement*	*Clinical & Research Leadership*
Brennan Roper, MD	*Assistant Attending, UT Houston TX*	*Jun 2019*	*He has me look at his surgical plans. We meet at LLRS functions. He reaches out for advice.*	*Increased national collaboration, LLRS membership and engagement*	*Clinical & Research Leadership*
Aaron Lam, MD	*Orthopedic Resident*	*2016-present*	*He conducted clinical research and has published 2 papers with me.[76,86] I have advised him through medical school and continue to mentor him in residency*	*A career long relationship where I will advise him and meet up with him regularly. I hope he will join the LLRS and continue research in Limb Deformity.*	*Clinical & Research Leadership*
Aaron Pang, BS	*Medical Student, CWRU, OH*	*2019-present*	*He conducted clinical research with me. I have advised him through medical school.*	*I will continue to assist him with obtaining research opportunities and will recommend him for residency.*	*Clinical & Research Leadership*
Bruno Souto Franco, MD	*Assistant Attending, Belo Horizonte, BRA*	*2018-present*	*He rotated with me for one month to learn modern techniques to bring back to Brazil.*	*He makes an effort to attend society meetings in the US. He sends me cases for advice. I have been supportive to his career by promoting him to his chiefs.*	*Clinical*

Sherif Dabash, MD	*Assistant Attending, Univ Cairo, EGYPT*	*2018-present*	*He was my fellow for one year. He completed several research projects and continues to collaborate on research. [79,93]*	*He calls for advice. I will continue to provide him with recommendation letters. He will re-visit HSS in 2 years to be a part of the Fellow reunion course and will present his work for review.*	*Clinical & Research Leadership*
Ali Mirghasemi, MD	*Associate Attending, Iran*	*2018-present*	*He was my fellow for one year. He completed several research projects and continues to collaborate on research. [92]*	*He calls for advice. I will continue to provide him with recommendation letters. He will re-visit HSS in 2 years to be a part of the Fellow reunion course and will present his work for review*	*Clinical & Research Leadership*
Jason Teplensky, BS	*Medical Student, CWRU, OH*	*2018-present*	*He conducted clinical research and has published one paper with me.[73] He presented the paper at our society LLRS meeting. I have advised him through medical school and continue to mentor him in his application for residency. He has come to me with deep questions and for advice many times.*	*I expect to advise him through residency as he looks to fellowship. I meet with him 1-2 times per year, and we email several times a year for updates. I co-mentor him with a colleague in Cleveland and we review his progress yearly.*	*Clinical & Research Leadership*
Asim Makhdom, MD	*Assistant Attending, PA*	*2017-present*	*He was my fellow for one year. He completed several research projects and continues to collaborate on*	*He calls for advice. I will continue to provide him with recommendation letters. He will*	*Clinical & Research Leadership*

			research. [75,94] He has been very prolific. He runs cases by me and shows me his accomplishments.	*re-visit HSS in 2 years to be a part of the Fellow reunion course and will present his work for review.*	
Willem-Jan Metsemakers, MD	*Associate Attending, UZ Leuven, BEL*	*2017-present*	*He rotated with me for 2 weeks. He have kept in close contact. He runs complex cases by me. We have collaborated on many research projects. [80,82-84, 88,89]*	*He has become a colleague but still asks for advice. I went to Belgium to assist him with the first Precice lengthening nail done in the country.*	*Clinical & Research*
Gonzalo Bastias, MD	*Associate Professor, Santiago CHILE*	*2017-present*	*He rotated with me for one month to adapt skills to take to Chile. He has produced research with me. He asks for my opinion on cases and loves to show me his outcomes.*	*He joined the LLRS and attends the meetings. I have given talks in Chile and over zoom that he arranged. I support his social media postings.*	*Clinical & Research Leadership*
Anton Kurtz, MD	*Fellow, HSS*	*2014-present*	*He was my fellow for one year. He initiated several research projects. [59,65] He runs cases by me for advice. I have recommended him to different practices over the years.*	*He will continue to reach out to me for clinical advice and life lessons.*	*Clinical*
Mitchell Bernstein, MD	*Fellow, HSS*	*2013-present*	*Mitch is the most outstanding fellow to ever pass through our program. We collaborate regularly. I invite him to co-author many chapters and projects. [37,46,50,56, 63,69]*	*I will continue to support his career and provide him with opportunities to excel academically. He will continue to seek my advice on certain*	*Clinical & Research Leadership*

			He helps run live courses. I helped him get onto the Board of Directors for LLRS.	*surgeries. I will support his leadership goals.*	
Josh Buksbaum, BS	*PreMed student, Emory*	*2012-present*	*Josh has been very dedicated to research. [42,86,91,93,94,96] He has been a part of the service for many years taking time to attend grand rounds and shadow patient encounters.*	*I will advise him on research and clinical decisions making. He asks me for advice regularly. He continues to help finish open research projects.*	*Clinical & Research Leadership*
Many members of the LLRS who look to me for guidance					

Past Mentees

Name	*Site/Position*	*Mentoring Period*	*Project/ Accomplishments***	*Current Position*	*Type of Supervision (Research, clinical, teaching, leadership)*
Emiliano Malagoli, MD	*Assistant Attending, Milan, ITA*	*2018-2020*	*Clinical observation*	*Assistant Attending, Milan, ITA*	*Clinical*
David Zhang, BS	*Medical Student, WCMC*	*2018-19*	*Research assistant. He was outstanding and demanded strong leadership. He published many papers with me due to his motivation. [79,92,98]*	*Medical Intern*	*Research*
Jamie Ferguson, MD	*Assistant Attending, Oxford, UK*	*2018-2020*	*He rotated with me for clinical guidance. He has taken his learned skills back home. We meet at conferences and review his progress and goals.*	*Assistant Attending, Oxford, UK*	*Clinical*

Keir Ross, MD	*Medical Student*	*2017-2019*	*I have known Keir for many years and advised him in undergraduate years. He rotated with me as a med student for clinical guidance. We have collaborated on research projects. [74]*	*Orthop Resident, NYU*	*Clinical and Research*
Rachael DaCunha, MD	*Fellow, HSS*	*2017-2018*	*She learned clinical and research skills from me. [62] She is still conducting a research project with me. She is very independent and is practicing her skill set in Canada.*	*Assistant Attending, Kings Hospital, CAN*	*Clinical and Research*
Eugene Borst, BS	*Pre Medical Student*	*2010-2018*	*Gene learned clinical and research skills from me. He earned volunteer of the year from HSS for most hours logged. He became our research coordinator. [22,30,34,38,39,42, 44,53] He finally was able to enter medical school.*	*Medical Student, SUNY Upstate*	*Clinical and Research*

Other mentoring activities
I have mentored fellows from other services at HSS. This has been particularly true for some trauma fellows that very much wanted to augment their year of classic trauma training with complex, circular external fixation techniques. This mentoring become so popular that we started a more formal rotation for the trauma fellow on the limb lengthening service.

M. INSTITUTIONAL LEADERSHIP ACTIVITIES

Please list activities at WCM and NYP or at previously employed institutions, including division or department positions, directorships, deanships, chairmanships/service on major intramural committees.

Role(s)	*Institution/Location*	*Dates*

Member HSS Bone Biologics Committee Recurrence: First Wednesday of every month Purpose: Evaluate new bone graft products and biologic implants. Evaluate safety of graft materials used at HSS. Improve efficiency of stocking graft materials.	2009-present
Graduate Medical Education Committee Recurrence: quarterly meetings Purpose: review and create policy to maximize fellow and resident education. Discuss in an open forum all issues that arise related to medical education. Strive to continue the reputation of excellence that HSS has earned as a teaching institution.	2009-present
Assistant Director HSS Fellowship Committee Member HSS Fellowship Committee Recurrence: quarterly meetings Purpose: review and create policy to maximize fellow and resident education. Evaluate fellowship programs and uphold ACGME standards.	2018-2020 2009-present
Member HSS International Fellow Task Force Purpose: review and create policy to maximize fellow and resident education with specific focus on Foreign Medical Graduates. Evaluate fellowship programs and uphold ACGME standards.	2018-present
Member HSS Alumni Committee Recurrence: quarterly meetings Purpose: planning the alumni meeting	2019-present
Service line representative for Epic Recurrence: quarterly meetings Purpose: update and implement epic changes	2019-present

N. EXTRAMURAL PROFESSIONAL RESPONSIBILITIES

Leadership in Extramural Organizations

Organization	*Role (i.e. member, secretary, chair, etc)*	*Dates (yyyy-yyyy)*
LLRS	President	*2019-21*

Service on Boards and/or Committees

National

Name of Committee	*Role (i.e. member, secretary, chair, etc)*	*Organization Institution/Location*	*Dates (yyyy-yyyy)*
AAOS Board of Specialty Societies (BOS)	Communication Committee Representative for LLRS,	American Academy of Orthopaedic Surgeons	2016-2017

	BOS presidential line representative for LLRS	2018-2021
	BOS Advisory Opinion Champion "Limb Deformity Category" presented at AAOS Fall Meeting	2018-19
Limb Lengthening and Reconstruction Society (LLRS)	Executive Board Member	2009-present
	Treasurer	2012-2018
	Second Vice President LLRS	Jul 2018
	First Vice President LLRS	Jan 2019
	President LLRS	**2019-20**
	President LLRS, Second Term	**2020-21**

LLRS Presidential Role and Accomplishments:

Purpose: Bring Limb Deformity into the mainstream of orthopedic surgery.

Initiatives have included:

1. petition AAOS for a "Limb Deformity" category at Annual Meeting- **This won an advisory opinion vote by BOS/BOC at AAOS Fall Meeting 2019**
2. encourage LLRS members to join AAOS CAP positions- **We now have a LLRS Board member on the Annual Meeting Committee**
3. create content for LLRS to present at AAOS – **10 co-branded inter-society ICLs were developed and submitted**
4. create a new logo for the LLRS- **This is done and has been an overwhelming success**

5. negotiate a merger with the Baltimore Limb Deformity Course- **ongoing, first combined course in Feb 2021**.
6. create new Board positions- **Mentorship Committee & BOS committee now created**
7. negotiate the terms for adopting a new society journal and re-evaluate the future of the existing fledgling journal- **We have adopted a second journal: STLR**
8. Improve processing speed at our society journals, STLR and JLLR- **I assembled a list of crack LLRS reviewers noting their areas of expertise. This has visibly impacted review turn-around time for these journals.**
9. oversee the success of the LLRS traveling fellowship- ongoing
10. amended the society bylaws to reflect modern issues- ongoing
11. plan and executed the LLRS Virtual Scientific Annual meeting July 2020.

12. plan and arrange the LLRS Scientific Annual meeting July 2021 in NYC.
13. Improve Board communication- **I organize regular ad hoc Board conference calls as issues arise.**
14. Improve the dissemination of information to the membership**- I created a Twitter account "POLLRS19" where members can read about society matters as they unfold.**
15. Boost society spirit and pride- **I have developed a line of surgical caps and pull overs with the society logo for proud members to wear. We are creating lapel pins with the logo for members as well.**
16. LLRS accreditation of fellowships- goal for 2020-21
17. LLRS webcast series- goal for 2020-21
18. LLRS N America – LLRS Nigeria, ASAMI Brasil, ASAMI Chile- regular zoom educational lecture series- goal for 2020-21

International

Name of Committee	*Role (i.e. member, secretary, chair, etc)*	*Organization Institution/Location*	*Dates (yyyy-yyyy)*
	Committee member		
Fracture Related Infection (FRI) Diagnosis and Treatment Consensus Group	AOTK funded yearly meeting to develop an international definition and treatment approach	AO-TK	2018-present

Editorial Activities

Journal Reviewing/ad hoc reviewing

Journal / Organization Name *Dates (yyyy-yyyy)*

CORR, 2005-present
HSSJ, 2013-present
JLLR, 2016- present
JOT, 2017-present
Journal of Orthopaedic Research, 2005
Scientific World Journal, 2014
Expert Review of Medical Devices, 2014-present
Computers in Biology and Medicine 2017- present
BMC Musculoskeletal Disorders 2017- present
Advances in Medical Science 2017- present
JBJS 2018-present
J Bone Joint Infection 2018-present
STLR 2019- present

Editor/Co-Editor

Books / Textbooks / Journals / Organization Name *Dates (yyyy-yyyy)*

Co-Editor for *Limb Lengthening and Reconstruction Surgery Case Atlas 2nd Ed.* Springer, 2022

Guest Editor for a special issue of *Techniques in Orthopedics*, "Motorized internal lengthening: International perspectives," Editors: S Robert Rozbruch & Austin Fragomen. Chief Editor Bruce Browner, 2020

Section Editor: "Foot and Ankle Surgery" in *Limb Lengthening and Reconstruction Surgery Case Atlas* Edited by Rozbruch and Hamdy, Springer, 2015

Editorial Board Membership

Board / Organization Name	*Dates (yyyy-yyyy)*

Editorial Board Member, *Journal of Limb Lengthening and Reconstruction, 2020*

Guest Editorial Board Member, Supplement Issue "Best Papers LLRS & BLRS 2020," *Strategies in Trauma & Limb Reconstruction*

O. INVITED AND/OR PEER-SELECTED PRESENTATIONS

(Please list extramural invited activities such as presentations, grand rounds, research seminars, and lectures at meetings of professional organizations, as well as abstracts)

Regional

Title	*Institution/Location*	*Dates (mm/yyyy)*
"What's new in Limb Lengthening?"	2017 Annual NYSSOS Symposium, HSS, New York: members State Orthopedic Society	Sept 2017
"What's new in Limb Deformity: Foot and Ankle," and "What's new in Limb Deformity: Trauma"	Eastern Orthopaedic Association 47th Annual Meeting, NOLA: society members, guest surgeons, vendors, fellows, residents	October 2016

National

Title	*Institution/Location*	*Dates (mm/yyyy)*
Sustained compression nailing for long bone nonunions	Combined OTA/LLRS Specialty Day – Virtual	March 2021
Victor M Goldberg Visiting Professor. "A new era in Limb Lengthening and Complex Reconstruction Surgery"	Orthopedic Grand Rounds, Case Western Reserve University, Cleveland, OH	Nov 2019
Invited Speaker Grand Rounds: "Limb lengthening & complex reconstruction surgery"	UMDNJ, Rutgers RWJMC Dept. of Orthopedic Grand Rounds	Oct 2017
"Applications of the Ilizarov Method to Orthopaedic Oncology." Invited lecture at Harvard Medical School	Orthopaedic Oncology Department, Massachusetts General Hospital, Orthopaedic Grand Rounds, Boston, MA	January 2014

International

Title	*Institution/Location*	*Dates (mm/yyyy))*

“Periarticular knee deformity correction strategies”, Webinar ASAMI Sociedad Brasilera de Orthopedia e Traumatologia	Virtual Faculdade de Medicina da Universidade de Sao Paulo, Instituto de Ortopedia e Traumatologia. Brazil	Sept 3, 2020
FE Godoy Moreira visiting professor (virtual) lecture, “Ankle distraction arthroplasty for post traumatic osteoarthritis.”	Virtual Faculdade de Medicina da Universidade de Sao Paulo, Instituto de Ortopedia e Traumatologia. Brazil	Aug 2020
Invited speaker (conferencista international) for the virtual course, “Jornado Virtual: Fijacion externa circular en trauma del tobillo y pie: Tratamiento, complicacions y manejo de secuelas.”	Virtual Hospital del Trabajador, Sociedad Chilena de Ortopedia y Traumatologia (SCHOT), Chile	Aug 2020
Invited speaker for virtual grand rounds “Osteotomies around the Knee”	Virtual Al-Azhar University Hospital, in conjunction with ASAMI Egypt	Jul 2020
Management of bone defects in fracture related infection of the femur and tibia,” to be presented as a part of the AOTK FRI consensus group	Regional Trauma Congress, Chongqing, China	May 2020- **Postponed**
“A new era for limb deformity”	UZ Leuven, Belgium, Dept Traumatologie	Dec 2019
Invited speaker and moderator at the ILLRS 4th Combined Congress	Liverpool, UK	Aug 2019
Key note speaker for ASAMI Brasil	Campo do Jordao, Brasil	April 2019
Invited speaker Orthopaedic Grand Rounds, “A new era for limb lengthening and reconstruction”	McGill University Health Centre, Montreal, CAN	Nov 2018
Invited speaker for orthopedic grand rounds, “A new era for limb lengthening and reconstruction.”	University of Calgary, CAN	March 2018
Invited Key Note Speaker, “Joint preservation strategies in osteoarthritis of the knee and ankle,”	Peking University 2017 Osteoarthritis International Forum, Hangzhou, China	Sept 2017
Invited Key Note Speaker: “Artrodesis compleja de tobillo: CEM v/s Tutor externo circular,” “Complex foot deformity,” “Evolution of femur deformity surgery,” “Algorithm for genu varum deformity surgery,” “Opciones terapeuticas en pilon tibial,” “Complex deformity approaches: a strategy to correct multiple coexisting deformities,”	52nd Congreso Chileno de Ortopedia y Traumatologia, Congreso SCHOT (Sociedad Chilena de Ortopedia y Traumatologia), Vina del Mar, Chile	November 2016

"Changing from external to internal fixation."		
"Complex foot and ankle correction with the TSF," and "Ankle distraction arthroplasty for post traumatic osteoarthritis."	Russia Scientific Center "Restorative Traumatology and Orthopedics." Kurgan, Russia	Jun 2016

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3. **Fragomen A**, Rozbruch SR. Chief Editor, William Jaffe. “Femoral Osteotomy” for *Emedicine.com* 2006, updated Feb 28, 2012. Medscape Reference 2011 WebMD, LLC

4. **LaMont** L, **Fragomen A**, Rozbruch SR. Blount Disease. Medscape. Nov 12, 2013

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1. Wolf EM, **Fragomen A**. “Arthroscopic reconstruction of the coracoacromial ligament for acromioclavicular dislocation” chapter 15 in *Surgical Techniques in Sports Medicine* edited by ElAttrache NS, Harner CD, Mirzayan R, and Sekiya JK. LWW, Dec 2006 pp153-60

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4. **Fragomen AT**, Blyakher A.“Mechanical Principles of the Ilizarov Method” chapter 3 in “*Limb Lengthening and Reconstruction*” edited by S. Robert Rozbruch, M.D., Informa Healthcare Publishing, Oct 2006. pp43-52

5. **Fragomen AT**, Rozbruch SR. “Supramalleolar osteotomy with external fixation. Perspective 1” in “Operative techniques in orthopaedic surgery” edited by Sam Wiesel, Lippencott Williams Wilkins, 2011. pp3976-94

6. **Fragomen AT**, Rozbruch SR: Ch 16 Distraction Arthroplasty for Ankle Osteoarthritis. In: Tsuchiya, Kocaoglu, Eralp (Eds.): Advanced Techniques in Limb Reconstruction Surgery, Springer 2015, pp361-7

7. Rozbruch SR, **Fragomen AT**: Ch 4 Hybrid Lengthening Techniques: Lengthening and then Nailing (LATN), Lengthening and then Plating (LAP) In: Tsuchiya, Kocaoglu, Eralp (Eds.): Advanced Techniques in Limb Reconstruction Surgery, Springer 2015, pp85-99

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11. **Fragomen AT**, Rozbruch SR. Ch. 21 External Fixation, In: Lee S, Hsu A, eds. Sy*nopsis of Foot and Ankle Surgery.* New York, NY: Thieme Publishing-in print

12. Rozbruch SR, **Fragomen AT**. Chapter 27, Lengthening intramedullary nails for limb lengthening and reconstruction, In Browner et al. *Skeletal Trauma* 6th Edition, Elsevier 2020, pp835-52

13. **Fragomen AT,** Livingston K, Sabharwal S**.** Chapter 8, "External Fixators for Deformity Correction" in *Essential Biomechanics for Orthopedic Trauma: A Case-Based Guide.* Eds Brett Crist, Joseph Borelli, Edward Harvey. Springer Nature Switzerland AG 2020, pp107-125

14. **Fragomen AT**, Bernstein M**,** Rozbruch SR**.** Chapter 21, "Intramedullary Nails in Limb Lengthening" in *Essential Biomechanics for Orthopedic Trauma: A Case-Based Guide.* Eds Brett Crist, Joseph Borelli, Edward Harvey. Springer Nature Switzerland AG 2020, pp299-326

15. **Fragomen AT**, Rozbruch SR. "Circular External Fixation for Tibia Fractures" Ch 28 in Master Techniques in Orthopedic Surgery: Fractures 4th Edition. Eds Michael Gardner. 2021 Wolters Kluwer

16. Reif T.J., **Fragomen A.T.,** Rozbruch S.R. (2022) Percutaneous Osseointegration Prosthesis. In: Özger H., Sim F.H., Puri A., Eralp L. (eds) Orthopedic Surgical Oncology For Bone Tumors. Springer, Cham. https://doi.org/10.1007/978-3-030-73327-8_26

Case Reports *(optional, or list 10 best)*:

1. Shafi R, **Fragomen AT,** Rozbruch SR. Ipsilateral fibular transport using the Ilizarov-Taylor spatial **frame** for a limb salvage reconstruction: A case report. HSS J. 2009; 5(1):31-9 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2642540/

2. Volpi AD, **Fragomen AT**. Percutaneous distraction lengthening in brachymetacarpia. Orthopedics. 2011 Aug 8;34(8):e424-7
https://pubmed.ncbi.nlm.nih.gov/21815589/?from_term=fragomen+a&from_page=6&from_pos=1

3. Borst E, Ellis S, **Fragomen A**. Talar body fracture nonunion and osteonecrosis with adjacent arthritis can be successfully treated with tibiotalocalcanel fusion using circular external fixation. J Limb Lengthening Recon. 2015 Nov;1(1):54-9 http://www.jlimblengthrecon.org/showcaptcha.asp?RedirectUrl=article&issn=2455-3719;year=2015;volume=1;issue=1;spage=54;epage=59;aulast=Borst;type=0

Guidelines *(if not listed above)*: N/A

In review *(manuscripts submitted or in preparation – list separately)*:

1. Reif TJ, Rozbruch SR, **Fragomen AT**. Ch. “Distal femur osteotomy” in *Operative techniques in orthopaedic surgery*. Wiesel

2. Reif TJ, **Fragomen AT**, Rozbruch SR. Ch. “High tibial osteotomy” in *Operative techniques in orthopaedic surgery*. Wiesel

3. Sheridan G, **Fragomen AT**, Rozbruch SR. Chapter, in Hexapod External Fixator Systems, Eds Dr Massobrio, Mora. Springer Nature (in process)

4. **Fragomen A**, Cordosa G. Comparison of hexapod and classic circular fixation for bone transport and post traumatic deformity correction. HSS- Brasil ASAMI (In process)

5. Post Traumatic Rotational Deformity of the Lower Extremities, a meta analysis. Metsemakers WJ (Department of Trauma Surgery, University Hospitals Leuven), **Fragomen AT** (HSS) (In process)

6. The use of external fixation for the gradual correction of ankle equinus deformities. DaCunha R, **Fragomen AT** (PI), Rozbruch SR, from HSS, New York in conjunction with Fuentes P, Bastias G from Clinica Indisa, Hospital El Carmen, Santiago, Chile. (in process)

Recognition of Exemplary Service during the COVID-19 Pandemic

Faculty across all missions are encouraged to provide below an optional narrative, not to exceed 1 page, of their performance of unusual and exemplary service during the COVID-19 pandemic. This may include such activities as increased clinical service or redeployment to areas outside of their basic expertise, transformation of laboratory activities in support of COVID-19-related research, development of new educational curricula to enable remote electives and on-line learning.

I have a busy traumatic limb reconstruction practice and play a supportive role for surgeons on the trauma and foot and ankle services where I assist with bone infections, limb salvage, and bone grafting. Tending to emergencies and assisting my colleagues with their urgent cases required me to be in the operating room for several surgical cases a week throughout the entire crisis. I had many patients wearing external fixators who were actively undergoing bone transport that needed to be seen in person. I maintained one clinic day per week throughout the peak COVID months to be sure my urgent patients received proper care. As fellowship director, I ensured continuing fellow education by having the fellows rotate with me on a schedule where they had exposure to the outpatient clinic and operating room. We also continued the weekly service conference through zoom to ensure proper didactic learning.

When my essential surgical case volume dwindled, I volunteered to assist the medical team at HSS during the COVID crisis. This was something that most of our orthopaedic staff engaged in. I essentially acted as the hospitalists’ personal intern. This medical immersion helped to re-train me in clinical medicine and to build stronger relationships with my medical colleagues. This improved communication and skill set will translate into better patient care going forward. This event has flipped the surgical hierarchy on its head: in a COVID crisis the anesthesiologists are the leaders and most prepared to save lives while the surgeons can only play a supportive role. I was reminded of the importance of every member of the surgical team and every employee in the greater hospital system.

The COVID 19 crisis created much havoc in our national society, the LLRS, which placed additional decision making responsibility on me as president. We canceled the annual meeting without much financial damage and pivoted to a virtual format. The Board of Directors voted

unanimously to keep me as president for an unprecedented second term to ensure stability through this difficult time and leverage the contacts I had already made in the Academy to keep our society present. This second term has required sustained intensity, but it has been an honor to serve my colleagues again.