Applying for Residency: Orthopaedic Surgery

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Part I: Overview of Orthopaedic Surgery (from AAOS.org)

Description of Specialty, Common condition, types of patients:
Treatment of a wide range of musculoskeletal conditions ranging from congenital deformity (clubfoot, different limb anomalies) to tumors, sports and traumatic injuries and degenerative and autoimmune arthritis. The specialty focuses on surgical management but non-operative techniques of treatment are learned as well. Surgeries range from microscopic reattachment of amputated digits to limb lengthening, spinal deformity correction, joint replacement, fracture treatment and arthroscopic joint repair surgeries of all types.

Subspecialties within orthopaedic surgery:
- Foot and Ankle
- Hand/Elbow and Shoulder/Upper Extremity
- Total Joint Replacement
- Pediatric
- Spine
- Sports
- Trauma
- Oncology

Now more than 90% of US graduates do a sub-specialty fellowship; 58% of Orthopaedists identify as a sub-specialist, 25% as a generalist with a sub-specialty interest and 17% as generalists. In order of most common: Sports medicine 18.8%, total joint arthroplasty 11.5%, hand 11.2% followed by spine, trauma, pediatrics, foot and ankle, and oncology.

Career trajectories: academics, clinical, research, teaching, etc.:
There are widely varied career paths available. Latest statistics show half of Orthopaedic surgeons are in private practice, 15% in academic practice while 35% are in a multispecialty group. Most Orthopaedic surgeons are full time clinicians (90%). Many combine some clinical research and teaching into their practice.
Practice Models
Practice models for Orthopaedics include traditional private practice, group practice, employment through a Health Maintenance Organization (HMOs, for example, Kaiser Permanente), hospital or medical center employment, academic medicine, public health or community health centers, Indian Health service or the military. These vary from employment models to productivity based RVU performance based models to a mixture.

Residency: Length, typical curriculum
5 year residency: 1st year is 6 months of general surgery and relevant specialties (varies by program but can include radiology, vascular surgery, plastic surgery, neurosurgery) and 6 months Orthopaedics. The next 4 years rotate through all major Orthopaedic subspecialties (joints/spine/sports/pediatrics/oncology/hand-upper extremity/trauma). The exact order and length of rotations varies but is usually 2-4 months on a given sub-specialty service.

Fellowships offered after residency
Most residents (90%) choose to do a fellowship of 1 year and sometimes a second one after training. See above for sub-specialities. Some orthopedic surgeons will complete an MPH or MBA.

Part II: Life as an Orthopaedist

Demographics
Around 29,000 Orthopaedists in the USA
93% male, 7% female as of 2016
86% white, 7% Asian as of 2016
Average age 55

Earnings Potential
High: average $473,810 range $372,510 to $613,019 according to salary.com

Lifestyle
Busy: majority are full time and work 55-60 hours per week. However, among the happier specialties overall (3.96 on scale of 1-5, a third report being very happy at work).

Academic Medicine
Offers opportunities to teach and do research in addition to clinical work. Very rewarding for those that enjoy teaching.
Part III: Applying in Orthopaedics

How Competitive is Orthopaedics?
Very competitive. Generally successful applicants have top board scores, great grades/letters and are well rounded with enough experience in Orthopaedics to be sure it is a good fit for them.

Pre-clerkship
Stay open to all fields and work hard in all rotations!
Find a MS3/MS4 or ortho resident mentor (Email/text HMS alum who are now residents. See below for contact information) to discuss your application.
Find one research project with a mentor you like (does not have to be in ortho), especially if you do not plan to take a 5th year for research

Clerkship
Do well in PCE rotations - as mentioned earlier, orthopaedic surgery is a very competitive field. With the new DSA system, it is particularly important to do well in surgery.
Rotate on ortho service if possible - let people on your rotation know you are interested in ortho
Let your surgery clerkship director or ortho attending know that you may want a letter of recommendation for away rotations come February of 3rd year

Planning the post-clerkship years (3rd year):
Plan for ~6 months to be dedicated to ortho sub-internship at home, away, and research
- September-December
  - Step 1 (Goal >240)
  - Meet with Dr. Dyer (Program Director of HCORP) to get on his radar, purpose of meeting is to introduce yourself and let him know you are interested in orthopedic surgery. You do not need to have him as your mentor, but you can if you have similar interests and feel comfortable.
  - Meet with ortho attending you worked with on PCE to continue relationship
  - Meet with residents and attendings to set up research projects
- Jan - March
  - Talk to upperclassmen and mentors to decide on 2-3 aways (deadline to apply usually sometime in February or March)
  - Medicine Sub-I, Advanced elective, AISC, Essentials, etc
  - Start to identify letter writers: Want 4 total ortho letters - usually 1 research and 3 clinical (Clinical letters can be all from Harvard or 1 from each subI rotation). Of the 4 letters, one needs to be from a "Chair" (People who are considered "chair letters" include Drs. Dyer, Thornhill (BWH, chair emeritus), Kang (BWH), Gebhardt (BIDMC) Waters (Boston CHildren’s), Harris (MGH).
- April-May
  - Research time
  - Identify letter writers for ERAS/residency applications
  - Meet with Dr. Dyer: ask him about "competitiveness" as an applicant. He is very honest about how many programs an applicant should apply to.
  - Continue to develop relationship with ortho letter writers

- June - September (4th year)
  - Away rotations (2-3) + home ortho rotation
  - Research
  - Draft personal statement for ERAS application
  - Submit ERAS application (Mid-September)

Sub-Internships
Try to do home & away ortho sub-I’s after June of 4th year so that you are interacting with current residents who will be part of the residency application/decision cycle you are applying in.

Away electives
Most applicants do 2-3 away sub-internships in Orthopaedics.
Consider rotating at a program located in a geographic region you know you want to live in next year, a geographic location you are open to living next year but have no ties to yet, or programs that "compete" with HCORP.

Keep in mind that for residency selection, programs prefer applicants they know and have worked with (away students/rotators), but this is not an absolute necessary criteria. Many applications match at programs they did as sub-I, so choose wisely and don’t rotate somewhere that you would not be happy matching.

Other Recommended Electives
Complementary specialties are helpful such as MSK radiology, plastic surgery, vascular surgery, ACS/trauma surgery, EM.

Research
Most applicants have some research. Identifying a mentor as early as possible is suggested. Projects can be simple retrospective case reviews, case reports, chapters. Better to have one or two solid research papers/experiences than many unfinished projects.

National Meetings
It is nice if an applicant has had a poster or presentation at one, but simply attending is for your own benefit and not for your application. Attending and presenting at smaller meetings is more feasible and just as good on your CV.
Other degrees
Interesting, but unnecessary. If you have an MPH or MBA, you should be able to explain how it fits into your career goals.

Part IV: Assessing your Competitiveness

What Criteria do Programs Consider?

1. **Grades and your DSA:** Most applicants have high honors grades in most rotations; this is most important on your Ortho rotations. However, if you do not have all high honors, don’t panic - you can make up for it with performance on sub-Is and in other areas.

2. **USMLE Step Scores:** high range; most successful applicants have Step I scores > 230 and average successful applicant was 245.

3. **Research Experience:** some recommended but there is a wide range.

4. **Publications:** wide range, try to have one or two, but they do not need to be orthopedic surgery.

5. **Extracurricular Activities:** important but there is a wide range from volunteerism, teaching, sports, politics, other careers to music and art.

Getting an Interview: Attributes Residency PD’s Consider in Granting Interviews:

**Letters of recommendation**
It is very important to have letters from Orthopaedists who know you and have worked with you in addition to a Chairperson letter. As one attending likes to say, “a lukewarm letter is bad letter” so get to know people genuinely and ask those who know you if they would be willing to write you a “strong letter.” This gives them an out if they don’t know you well. Some programs have also started to use the standardized letters of recommendation (SLOR). It is a PDF that you can download from online (google ortho SLOR to find the pdf on AOA website). When you ask for letters, ask for both narrative and SLOR (and email them the SLOR attachment). Important to get the narrative letter if they are willing to write.

**How many programs should you apply to?**
The average successful applicant does 12 interviews and applies to many more programs. There are currently 163 residency programs with 717 slots. Residencies range from 1-2 slots to 12 (like the Harvard program HCORP).
**Common questions you may be asked – specialty specific**
Why do you want to be an Orthopaedic surgeon? What led you to choose this specialty? Where do you see yourself in 10 years? What makes you a great applicant? What are your weaknesses? Tell me about an Orthopaedic case that interested you and why.

**Communication with Programs: NRMP Code of Conduct for Applicants and Programs**
It is unnecessary to send thank you letters after interviews; in fact, it may be detrimental. Similarly, unless a program tells you to call for an idea of your ranking, don’t. If you really loved a program and that program is your top choice, it is OK to tell them that. However, don’t tell multiple programs they are your top program. In terms of when to tell a program they are your first choice, most people tell their top choice program in late Jan/early Feb because this is when many programs submit their rank list. The earlier you know this the earlier you can tell the program, but be absolutely sure about your decision before telling a program!

No program requires a second look trip, though if the program is your top choice, talk to your mentor about advocating/calling for you.

**Advocating for Interviews**
The best way to get interviews is to work well with Orthopaedic teams in multiple sites and get good letters stating you are a great team player. If you develop a rapport with a faculty member, ask that person to help advocate for you. If during the pre-interview time period you do not feel like you are getting many interviews, let Dr. Dyer/Mentors know ASAP so they can help make calls on your behalf!