Abstract

The field of Orthopaedic Surgery in the United States demonstrates the lowest female representation of all the surgical specialties, with less than 10 percent of orthopaedic residents being female. The reasons for this underrepresentation is multifactorial, however, a lack of female leaders and mentors has been identified as one major obstacle. As such, strategies to increase interest and matriculation into this field must increase student exposure to these female orthopaedic leaders. I propose a seminar including panel discussion and a reception to facilitate these necessary mentorship relationships.

Activity Goals

The significant underrepresentation of women in orthopaedics exists despite the fact that women now represent greater than 49% of medical students. As other surgical specialties have successfully increased female representation, there appear to be specific obstacles to female matriculation in the orthopaedic subspecialty. Reasons for this underrepresentation are multifactorial, but a lack of female applicants is one clear obstacle. Currently, only 10-13% of orthopaedic surgery applicants are female. This is believed to stem from misconceptions about the field that may specifically deter female applicants. For example, the idea that great physical strength is required has been overemphasized and does not represent a true obstacle to success in this field. An overall lack of exposure to orthopaedics in medical school is another negative driver, as a musculoskeletal health is underrepresented in most medical school curricula and orthopaedics clinical rotations are not required for graduation. However, a lack of female role models may be the most significant factor—as women are exceedingly underrepresented in academic orthopaedics and leadership positions. In 2007, only 7% of academic orthopaedic surgeons were women, with only 15 full professors and 1 department chair nationally!

With ongoing female underrepresentation in academic orthopaedics, a more pro-active outreach and mentorship programs is required to improve exposure to this field. Critical to this is facilitating exposure to positive role models and mentors - as we must celebrate the established female leaders in the field and harness their insight. The Ruth Jackson Society of the American Academy of Orthopaedic Surgeons (named after the 1st female orthopaedic surgeon to practice in the US in 1932) is an orthopaedic society that aims to do this on a national level. However, these efforts only reach those students that have already self-identified as interested in orthopaedics. The true challenge is expanding exposure and disseminating accurate information to undecided young pre-medical or medical students.
Over the past 10 years at University of Miami, the Department of Orthopaedics Surgery has made efforts to increase female representation in the faculty and the training programs. Currently, there are 3 full-time female orthopaedic surgeons (2 associate professors, one assistant professor), one non-operative female assistant professor, and 2 of 35 residents are female.

I propose a comprehensive seminar that will target young female in the sciences, pre-medical or medical fields to expose them to the established female orthopaedic leaders in our own institution and nationally. The inclusion of one or two national leaders in this field will round out this seminar and ensure appropriate diversity of the panel. The seminar will include brief, focused talks by each member, followed by a panel forum to encourage community talk and Q&A. This would be followed by a casual cocktail hour to allow development of personal and mentorship relationships.

Proposed lecture topics include:

- Barriers to diversity
- Strategies to optimize your residency application
- Tips for success in the OR culture
- Tools to manage discrimination in the workplace
- Professional development & academic advancement

Personal Goals

I am currently an Associate Professor and the Program Director of the Orthopaedic Surgery Residency and the Musculoskeletal Oncology Fellowship Programs and I have a passion for improving orthopaedic medical education and increasing female representation and overall diversity in this field. As the first and only female resident in my own residency program, I have direct experience and insight into the real and perceived obstacles that women face. After 5 years of residency, 1 year of fellowship and 9 years as clinical faculty at the University of Miami, I have never worked with a senior female orthopaedic surgeon. As a result, all of my female mentors have been sought outside of my field. One of my top career goals is to change this experience for young women interested in orthopaedics so they have early access to the field, the knowledge and confidence to compete effectively, and access to appropriate female mentors.

I am also a member of the newly established GME Mistreatment Subcommittee and believe this seminar could serve to empower young women in medicine and provide them with tools to manage mistreatment and workplace inequality. It would be immensely gratifying to contribute to such a meaningful change in the field, both regionally and nationally. I have applied for an unrestricted educational grant with Stryker Orthopaedics – a company highly interested in promoting diversity in this field – and am optimistic that their co-sponsorship will be granted. This additional funding and unique networking opportunity will also allow us to accommodate multiple national leaders in the field, will assist in expanding our potential audience, increasing overall attendance.
Budget

The majority of the budget would be dedicated to the flight and accommodations for the keynote speaker(s), as identifying strong and successful female orthopaedic leaders is critical to the success of the seminar. Potential invitees for a keynote speaker(s) include:

1) Kristi Weber, MD: Professor of Orthopedic Surgery, John Hopkins University & Second Vice President of the American Academy of Orthopaedic Surgeons (AAOS) – a 4 year term position that will place her as the first ever female president of the AAOS in 2019-2020 calendar year.

2) Valerie Lewis, MD Professor & Associate Director, Department of Sarcoma Center, The University of Texas MD Anderson Cancer Center, Houston, TX

3) Mary O’Connor, Professor of Orthopaedics and Rehabilitation and Director for the Center of Musculoskeletal Care, Yale University

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References:

Lewis VO, Scherl SA, O’Connor MI: AOA Critical Issue: Women in Orthopaedics – Way Behind the Number Curve. JBJS 94 (5): e30(1-7); 2012.

Sheila Ann Conway, MD  
7601 NE 9th Avenue  
Miami, FL 33138  
sconway@med.miami.edu

Academic Title(s)  
Associate Professor & Chief, Division of Orthopaedic Oncology  
Program Director, Orthopaedic Surgery Residency Program  
Program Director, Musculoskeletal Oncology Fellowship Program  
Department of Orthopaedic Surgery

Board Certification  
Board-Certified Orthopaedic Surgeon, American Board of Orthopaedic Surgery, 2010  
Inductee, American Orthopaedic Association (AOA), 2015  
Member, Ruth Jackson Orthopaedic Society (RJOS), 2002

Clinical Specialties  
Dr. Sheila A. Conway is the Chief of the Orthopaedic Oncology division of the Department of Orthopaedic Surgery and specializes in the surgical management of bone and soft tissue sarcomas, benign bone and soft tissue tumors, and metastatic disease to bone. The management of bone and soft tissue sarcoma is completed with a multidisciplinary group of physicians with specialization in these rare cancers to ensure the most comprehensive and personalized oncologic care. Dr. Conway enjoys the comprehensive and collaborative nature of this field and treats patients of all age groups.

Dr. Conway is passionate about education and is deeply invested in the training of medical student, residents and fellows. She is the Program Director for the orthopaedic surgery residency program and the dedicated fellowship program in orthopaedic oncology. Dr. Conway was inducted into the orthopaedic leadership organization, the American Orthopaedic Association in 2015, in recognition of her educational and leadership roles in orthopaedics and was awarded the Orthopaedic Surgery “Teacher of the Year” award in 2016 – in recognition of her dedication to resident education at the University of Miami. She is an active member of the Ruth Jackson Orthopaedic Society – a support and networking organization for the growing number of women in orthopaedics. Dr Conway’s research includes clinical research on reconstruction methods and functional outcomes in oncology patients and the prevention and appropriate management of unplanned excisions of soft tissue sarcomas.

Research Interest  
Brachytherapy and radiation techniques in the treatment of soft tissue sarcomas  
Limb salvage and pediatric reconstruction in bone sarcomas  
Prevention of unplanned excision of soft tissue sarcomas  
Resident and fellow education optimization

Residency & Fellowship  
08/2008–07/2009  
Musculoskeletal Oncology Fellowship  
University of Miami/Jackson Memorial Hospital

07/2002–06/2008  
Orthopaedic Surgery Residency Program  
Monmouth Medical Center

Graduate Education  
2000 M.D.  
Temple University School of Medicine

Undergraduate Education  
1996 B.S.
University of California, Berkeley

**Practice Locations**
University of Miami Hospital  
1400 NW 12th Avenue  
Miami, FL 33136

UHealth/Sylvester at Plantation  
8100 SW 10th Street  
Plantation, FL 33324

Jackson Memorial Hospital  
1611 NW 12th Ave, ACC West, 3B  
Miami, FL 33136

**Publications**

Muthusamy S, **Conway SA**, Pitcher JD, Temple HT: Primary Intraosseous Malignant Peripheral Nerve Sheath Tumor of the Medial Cuneiform: A Case Report and Review of the Literature.  
*J Foot Ankle Surg.* 2017, 56(1): 129-134.


Seiter M, Motasem AM, Rosenberg A, **Conway S**: Primary osteosarcoma of the bone with rhabdoid features, a rare, previously undescribed primary malignant tumor of bone. Case Reports in Surgery, Volume 2016; Article ID 5901769, 6 pages; December 2016.

Muthusamy S, **Conway SA**, Pitcher JD, Temple HT: Primary Intraosseous Malignant Peripheral Nerve Sheath Tumor of the Medial Cuneiform: A Case Report and Review of the Literature.  
*J Foot Ankle Surg.* 2016 Jul 19, epub ahead of print

*JBJS* 97 (7): 597-603; 2015.

Klevos G, Jose J, Pretell-Mazzini J, **Conway SA**, Hibernoma.  

American Journal of Clinical Oncology, May 2014 [Epub ahead of print].

Potter BK, Forsberg JA, **Conway S**, Morris CD, Temple HT: Pitfalls, errors, and unintended consequences in musculoskeletal oncology: How they occur and how they can be avoided.  

Binitie O, Tejiram S, **Conway S**, Cheong D, Temple HT, Letson GD; Adult Soft Tissue Sarcoma Local Recurrence After Adjuvant Treatment Without Resection of Core Needle Biopsy Tract.  

Emory C, Montgomery C, Potter BK, Keisch M, **Conway SA**: Early complications of high dose rate brachytherapy for extremity soft tissue sarcomas: A comparison with traditional external beam radiotherapy.  


**Adams SC**, Potter BK, Pitcher JD, Temple HT: Office-based core needle biopsy of bone and soft tissue malignancies: an accurate alternative to open biopsy with infrequent complications.  


