

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF ORTHOPAEDIC SURGERY

Michelle S. Caird, M.D., associate professor of orthopaedic surgery, with tenure, Department of Orthopaedic Surgery, Medical School, is recommended for promotion to professor of orthopaedic surgery, with tenure, Department of Orthopaedic Surgery, Medical School.

Academic Degrees:

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| M.D. | 1998 | University of Michigan Medical School |
| B.S.E. | 1993 | University of Michigan College of Engineering |

Professional Record:

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| 2019-present | Interim Chair of Orthopaedic Surgery, University of Michigan |
| 2016-present | Larry S. Matthews Collegiate Professor of Orthopaedic Surgery, University of Michigan |
| 2014-present | Associate Professor of Orthopaedic Surgery, University of Michigan |
| 2007-2014 | Assistant Professor of Orthopaedic Surgery, University of Michigan |
| 2004-2007 | Clinical Lecturer of Orthopaedic Surgery, University of Michigan |

Summary of Evaluation:

Teaching: Dr. Caird served for four years as the director of the Orthopaedic Surgery Residency Program. She revamped the residency curriculum to focus on weekly three hour lectures, and the residency annual in-training scores went from average to the top percentile. During her tenure as residency director, the residents had a 100% pass rate on the written orthopaedic surgery boards. Additionally, instituted annual residency awards for outstanding orthopaedic surgery residents. She instructs orthopaedic surgery residents in the pediatric orthopaedic surgery clinic and in the operating room. Dr. Caird has mentored more than 50 residents.

Research: Dr. Caird is an outstanding researcher with a focus on altered bone mass as it relates to children with comorbidities. Her collaboration with her colleague, Dr. Kenneth Kozloff, is a blueprint for basic science and clinical collaborations within the Department of Orthopaedic Surgery. Dr. Caird and Dr. Kozloff have collaborated on a mouse model for osteogenesis imperfecta (OI) to test an antibody to that can increase bone mass which has resulted in federal funding. This antibody would be a potential novel treatment for children with OI.

Dr. Caird has had great success in her collaborative ventures with basic scientists yielding in several NIH grants, significant publications and acknowledgements through research awards. She has published more than 87 peer-reviewed articles. She is a co-investigator of an NIH R21 grant and is a co-I with effort on two separate submitted NIH grants. Dr. Caird has been invited to present her research on 59 occasions regionally and nationally.

Recent and Significant Publications:

Li Y, Helvie P, Farley FA, Abbott MD, Caird MS. Complications after plate fixation of displaced pediatric midshaft clavicle fractures. *J Pediatr Orthop* 38: 350-353, 2018.

Rao RR, Hayes M, Lewis C, Hensinger RN, Farley FA, Li Y, Caird MS. Mapping the road to recovery: Shorter stays and satisfied patients in posterior spinal fusion. *J Pediatr Orthop* 37(9):E536-E542, 2017.

Farley FA, Li Y, Jong N, Powell CC, Speers MS, Childers DM, Caird MS. Congenital Scoliosis SRS-22 Outcomes in Children Treated with Observation, Surgery and VEPTR. *Spine* 39(22): 1868-74, 2014.

Seeley MA, Gagnier J, Srinivasan RC, Hensinger RN, Vander Have KL, Farley FA, Caird MS. Obesity and its effects on pediatric supracondylar humerus fractures. *The Journal of Bone and Joint Surgery* 96(3): e18(1-10), 2014.

Meganck JA, Begun DL, McElderry JD, Swick A, Kozloff KM, Goldstein SA, Morris MD, Marini JC, Caird MS. Fracture healing with alendronate treatment in the Brtl/+ mouse model of osteogenesis imperfecta. *Bone* 56(1): 204-212, 2013.

Service: Dr. Caird is an excellent clinical pediatric orthopedic surgeon. She pioneered the osteogenesis imperfecta (OI) clinic which is critical to her low bone mass focus. This multidisciplinary clinic including clinicians from the School of Dentistry, Departments of Orthopedic Surgery, Physical Medicine and Rehabilitation, and Division of Endocrinology. This clinic is the first of its kind in the United States. The clinic has placed Dr. Caird on the world stage for cutting edge treatment of OI. She has an outstanding reputation for service in the Pediatric Orthopedic Society of North America where she is the current treasurer and served as the program chairman for the annual meeting in 2019. She was appointed as the interim chair of the Department of Orthopaedic Surgery in 2019, a notable accomplishment as she is one of three female chairs of orthopaedic surgery in the United States.

External Reviewers:

Reviewer A: "Her in-depth academic pursuits have focused on the areas of the orthopedic treatments of diseases involving low bone mass. This has further focused her endeavors in the areas of osteogenesis imperfect and children afflicted with neuromuscular disorders. She has extensive grant funding along with academic and scholarly success in these areas of focus...there have been three to five very substantial manuscripts provided by Dr. Caird in these focused areas. These have had a substantial impact on our subspecialty and have garnered her a significant national and international reputation as a scholar in these areas of academic pursuit...She certainly would meet the criterion for such a promotion at my institution"

Reviewer B: "She is a frequently invited lecturer to the International Pediatric Orthopedic Society meeting held each year in Orlando, and is widely acclaimed for her talents as an educator. As a former residency program director myself, I understand the job and its importance to the young people who are learning and preparing for professional careers, and also to the University and Medical Center as a marker of national excellence and quality. She has done a terrific job elevating

the reputation and educational program of the orthopedic residency at UM as residency director...I believe she is qualified for that rank at our own institution.”

Reviewer C: “Overall, Dr. Caird is a pediatric orthopaedic surgeon who is making significant progress in clinical research, and is widely recognized for this within the Pediatric Orthopaedic Society of North America...She...is the Interim Chair of the department...these administrative tasks are critical to a well functioning department and facilitate clinical care, education and research. Dr. Caird’s consistent administrative roles attest to the dedication and excellence she brings to the task.”

Reviewer D: “Dr. Caird is one of the few pediatric orthopaedic surgeons (and orthopaedic surgeons in general) who has been able to conduct both basic science and clinical research. Her basic science work has been impactful in pediatric low bone mass, orthopaedic treatment of Osteogenesis Imperfecta, and characterization of Cerebral Palsy...Dr. Caird is at the top of the field in terms of mid-career orthopaedic surgeons in terms of clinical reputation, basic science research, clinical research, teaching and leadership...Dr. Caird has made substantial contributions to the profession. She has served on an amazing number of committees and leadership roles...She is also a well-respected mentor to younger pediatric orthopaedic surgeons, and a role model for female pediatric orthopaedic surgeons in particular...Dr. Caird would be appropriate for promotion to the corresponding position at [my institution].”

Reviewer E: “Her surgery care of her OI patients is second to none amongst her peers in pediatric orthopedics in North America...From a distance, Michelle is a highly competent academic orthopaedic surgeon. She is exceptionally effective as an educator of residents, fellows and her peer orthopaedic surgeons. Her track record in both basic sciences and clinical research is exemplary...If Michelle were with us in the Department of Orthopaedics at [my institution], she would certainly by now have been recommended for promotion as a professor.”

Reviewer F: “She has used laboratory investigations to inform her clinical work; an ideal academic model...In professional circles, Michelle is known as a thoughtful, considerate contributor who considers all points of view and is able to come to an appropriate decision. Her hard-working and reliable leadership style has involved her in committees of ALL of the major societies relevant to her field....As a long-standing member of the [my institution’s] Professorial Promotions Committee, I can assure you that she would be promoted at our Institution.”

Reviewer G: “Her manuscript ‘Mapping the Road to Recovery: Shorter Stays and Satisfied Patient’s in Posterior Spinal Fusion’ J Pediatr Orthop 2017;37:e536-e542 has resulted in postoperative protocols for adolescent undergoing spinal surgery resulting in shorter hospital stays, decreased costs and improved patient’s satisfaction. This work has been confirmed in several other studies and is now the standard for postoperative care in North America...Dr. Caird stands out among her peers. Very few, if any, compare to her societal participation and leadership, her institutional leadership or her academic productivity.”

Reviewer H: “Dr. Caird is a highly respected pediatric surgeon and leader with a national and emerging international reputation. Her academic opinions are highly respected and sought after. She has been a frequent visiting professor in the past 7 years, a significant achievement indicating

the highest level of work and respect...Most importantly, Dr. Caird is a leader. She will continue on an elevated trajectory for sure. I fully endorse her promotion.”

Summary of Recommendation:

Dr. Caird’s multifaceted research in osteogenesis imperfecta, both in vivo and in vitro, are leading to novel new treatments. She is an excellent educator, and has transformed the residency program into a top-tier, nationally-respected program. I am pleased, therefore, to recommend Michelle S. Caird, M.D. for promotion to professor of orthopaedic surgery, with tenure, Department of Orthopaedic Surgery, Medical School.



Marschall S. Runge, M.D., Ph.D.
Executive Vice President for Medical Affairs
Dean, Medical School

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