

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF PEDIATRICS

Carl Koschmann, M.D., assistant professor of pediatrics, Department of Pediatrics, Medical School, is recommended for promotion to associate professor of pediatrics, with tenure, Department of Pediatrics, Medical School.

Academic Degrees:

M.D.	2007	University of Wisconsin
B.S.	2002	University of Illinois

Professional Record:

2017-present	Assistant Professor of Pediatrics, University of Michigan
2016-2017	Clinical Assistant Professor in Pediatrics, University of Michigan
2014-2016	Clinical Lecturer in Pediatrics, University of Michigan

Summary of Evaluation:

Teaching: Dr. Koschmann's trainees including undergraduate, graduate and medical students, residents, and fellows. While on the inpatient pediatric oncology service, he combines bedside teaching and didactic teaching sessions, all of which are well received by trainees at all levels. In the pediatric neuro-oncology clinic, he frequently hosts and supervises medical students with an interest in oncology, neuro-oncology, neurology, radiation oncology, or research in neuro-oncology. Dr. Koschmann is a faculty instructor for a fourth-year medical student elective, Multi-Disciplinary Neuro-Oncology, and a preceptor for the Medical School NIH T35 short term training grant for medical students. In his laboratory, he is the direct supervisor of trainees from various University of Michigan trainee programs, including the pediatric oncology fellowship, neurosurgery residency, and the cancer biology graduate program. Dr. Koschmann's teaching excellence is evidenced by receipt of the Department of Pediatrics Top Teacher Award in 2017, and a Token of Appreciation from Medical Students in 2018.

Research: Dr. Koschmann established his laboratory in 2017, and has pursued an exclusive focus on pediatric high-grade glioma (pHGG) and the related diffuse intrinsic pontine glioma (DIPG) for continued work in translational tumor genomics and therapeutic development. Dr. Koschmann's laboratory adopted a novel mouse intrauterine electroporation model that is driven by pHGG drivers (e.g. H3F3A and PDGFRA). The successful implementation of this pHGG model was recently published in the *Journal of Clinical Investigation* in 2020. Based on his research and clinical interest in precision medicine, he also pursues research in the optimization and integration of tumor and germline sequencing into the clinical management of children with brain tumors. This program has resulted in the establishment of multiple clinical trials with correlate sample analysis (cell-free tumor DNA) being performed in his lab, including a recently published manuscript in *Clinical Cancer Research* in 2020. Dr. Koschmann is the principal investigator of an NIH R01 grant, The role of ATRX mutation in the epigenetic dysregulation of cell cycle in pediatric high-grade glioma, and was recently awarded a Department of Defense Grant

Cancer Research Translational Team Science Award with co-principal investigators at the University of California, San Francisco and Children's National to assess the feasibility of translation of the imipridone ONC201 in children with Diffuse Midline Glioma (DMG). These projects continue to expand and Dr. Koschmann has pursued multiple channels of academic engagement and collaborative projects in translational research. Dr. Koschmann has authored 50 peer-reviewed publications. He is highly collegial, having developed the University of Michigan CNS Tumor Precision Medicine conference, a monthly multi-disciplinary combining genomic investigators from Pediatric Neuro-Oncology, Neurosurgery, Neuro-Pathology, Genetics and Pharmacology.

Recent and Significant Publications:

Bruzek A, Ravi K, Muruganand A, Wadden J, Babila C, Cantor E, Tunkle L, Wierzbicki K, Stallard S, Dickson R, Wolfe I, Mody R, Schwartz J, Franson A, Robertson P, Muraszko K, Maher C, Garton H, Qin T, Koschmann C: Use of novel, hand-held, electronic DNA analysis platform to quantify multi-gene molecular response in CSF of patients with high-grade glioma. *Clinical Cancer Research*. 2020. DOI: 10.1158/1078-0432.CCR-20-2066. PMC7710567

Miklja Z, Yadav VN, Cartaxo R, Siada R, Thomas C, Cummings J, Mullan B, Stallard S, Paul A, Bruzek AK, Wierzbicki K, Yang T, Garcia T, Wolfe I, Parmar H, Leonard M, Robertson PL, Garton H, Wahl D, Sarkaria J, Kline C, Mueller S, Nicolades T, Glasser C, Leary S, Venneti S, Kumar-Sinha C, Chinnaiyan A, Mody R, Manjunath PP, Phoenix TN, Marini BL, Koschmann C: Everolimus improves the efficacy of dasatinib in the treatment of PDGFRA-driven glioma. *J Clin Invest*. 2020 Jun 30; doi: 10.1172/JCI133310. PMID: 6477298.

Miklja Z, Pasternak A, Stallard S, Nicolaidis T, Kline-Nunnally C, Cole B, Beroukhim R, Bhandopadhyay P, Chi S, Ramkissoon S; Mullan B, Bruzek A, Gauthier A, T Garcia, Atchison C, Marini B, Fouladi M, Parsons D, Leary S, Ligon K, and Koschmann C: Molecular profiling and targeted therapy in pediatric gliomas: Review and consensus recommendations. *Neuro Oncology*. 26 Feb 2019. doi: 10.1093/neuonc/noz022. PMC6682212

Koschmann C, Zamler D, MacKay A, Robinson D, Wu YM, Doherty R, Marini B, Tran D, Garton H, Muraszko K, Robertson P, Leonard M, Zhao L, Bixby D, Peterson L, Camelo-Piragua S, Jones C, Mody R, Lowenstein PR, Castro MG: Characterizing and targeting PDGFRA alterations in pediatric high-grade glioma. *Oncotarget*. 2016 Oct 4;7(40): 65696-65706, doi: 10.18632/oncotarget.11602. PM27582545

Koschmann C, Calinescu AA, Nunez FJ, Mackay A, Fazal Salom J, Thomas D, Mulpuri L, Kamran N, Mendez F, Dzaman M, Krasinkiewicz J, Doherty R, Lemons R, Li Y, Brosnan-Cashman J, Roh S, Zhao L, Ferguson D, Appelman H, Gorbunova V, Meeker A, Jones C, Lowenstein PR and Castro MC: ATRX loss promotes tumor growth and impairs non-homologous end joining DNA repair in glioma. *Science Translational Medicine*. 2016 Mar 2;8(328):328ra28. doi: 10.1126/scitranslmed.aac8228. PM26936505/PMC5381643

Service: Dr. Koschmann is extremely dedicated to the improvement of clinical care for children with brain tumors and to the educational and research supervision of trainees. He participates in a wide variety of service roles to promote this effort at the institutional, national, and international

level. At the institutional level, he has served as an abstract reviewer (2018-present), session moderator (2014-present), and co-chair (2021) for the University of Michigan Pediatric Research Symposium. He is a committee member of the University of Michigan CNS Tissue Bank Steering Committee, and the Translational and Clinical Research program. Dr. Koschmann also developed and leads the University of Michigan CNS Precision Medicine Tumor Board, in which patients are presented from over 10 hospitals by teleconference, including presentations by trainees from various clinical and research programs. At the national level, Dr. Koschmann serves as the external chair of the Data Safety Monitoring Board for Pediatric Brain Tumor Trials at the Fred Hutchinson Cancer Research Center. He served as an NIH Early Career Reviewer in 2018 on the Molecular Oncogenesis Study Section. Dr. Koschmann has been an active member of the International DIPG Registry Steering and Scientific Committees. He is a committee member of multiple COG and PNOG trials and serves as the co-lead of two PNOG trials that are currently being developed for PNOG (PNOG22/23) in children and young adults with DMG.

External Reviewers:

Reviewer A: “He has made seminal contributions in the field of neuro-oncology. On the clinical front, he has taken national leadership roles on several pediatric neuro-oncology trials as demonstrated by his recent paper in June 2020 in *JCI*. On the research front, he is a very skilled and nationally recognized expert in cancer genetics and translating those efforts for cancer diagnostics...He is at the very top of his field and has made important contributions in science and patient care. He is a true superstar.”

Reviewer B: “The most remarkable accomplishment of Dr. Koschmann is his recognition by his peers as an expert in the field of Pediatric Neuro-Oncology as shown by multiple invited speaker roles and collaborations, and the amount of grants that he obtained.”

Reviewer C: “He has the mind of an inventor which translates into novel ideas, novel applications, and very practical outputs. He has applied that creativity in a most focused way to the treatment of children with the most challenging of pediatric brain tumors-namely the infiltrating astrocytomas...Dr. Koschmann is in the top 1% of physician scientist at his career point.”

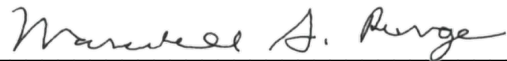
Reviewer D: “Carl quickly and effectively established himself as a national leader in pediatric neuro-oncology and in DIPG in particular. He has led innovative clinical trials rooted in good preclinical science, done important studies in his lab to elucidate the oncogenic signaling and epigenetic pathways driving childhood gliomas, and has led U of M in national clinical trials consortia...In summary, Carl Koschmann is a rising star in pediatric neuro-oncology with a strong national and international reputation and an accomplished scientist.”

Reviewer E: “He has won awards for his research on pediatric glioma biology, in particular, the role of ATRX mutation, has given almost 30 invited lectures, and has almost four dozen refereed publications, many in high impact journals...Overall, I consider him to be one of the most impressive pediatric neuro-oncologists in the country at his career stage, and I have no doubt that he would meet the requirements for promotion at our site.”

Reviewer F: “Carl is clearly a top notch scientist. His work has been the basis of a global study in children with DMG, and as mentioned, he is critical to the development of a soon to open investigator-initiated, IND, combination drug master protocol that will directly impact the care and management of these children.”

Summary of Recommendations:

Dr. Koschmann is a physician-scientist who embodies excellence in all the arenas of research scholarship, teaching, national service and recognition, and clinical care. He is an outstanding and talented investigator with a truly impressive trajectory and a national and an international reputation in pediatric high-grade glioma research and clinical care. I am pleased to recommend Carl Koschmann, M.D. for promotion to associate professor of pediatrics, with tenure, Department of Pediatrics, Medical School.



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

May 2022