Approved by the Regents
May 18, 2017

PROMOTION RECOMMENDATION
The University of Michigan
School of Dentistry

Brian A. Pierchala, assistant professor of dentistry, School of Dentistry, is recommended for promotion to associate professor of dentistry, with tenure, School of Dentistry.

Academic Degrees:

Post-doctoral	2002	Neuroscience, Washington University, School of Medicine, St. Louis, MO
PhD	1998	Neuroscience, Johns Hopkins University, School of Medicine, Baltimore, MD
BS	1994	Biochemistry, Oakland University, Rochester, MI

Professional Record:

2009 – Present	Assistant Professor of Dentistry, Department of Biologic and Materials Sciences, Division of Prosthodontics, School of Dentistry, University of Michigan
2005 – 2009	Assistant Professor, Department of Biological Sciences, State University of Ne York at Buffalo, College of Arts and Sciences
2002 – 2005	Research Instructor, Department of Molecular Biology and Pharmacology, Washington University School of Medicine

Summary of Evaluation:

Teaching: Professor Pierchala maintains a substantial level of didactic teaching responsibility at the School of Dentistry and at other university units. He serves as course director of one School of Dentistry course and one graduate level course in Neuroscience in the Cell and Molecular Biology program at the University of Michigan Medical School. Additionally, he consistently lectures in other courses taught at the School of Dentistry and other university units. Reviews of his teaching from students have been consistently positive. Furthermore, his teaching philosophy displays a thoughtful approach to teaching that considers the importance of having appropriate goals for the student and instructional techniques to reach these goals. He identifies that the most challenging aspect of his teaching is communicating the practical and clinical relevance of basic neurobiology and he thoughtfully adapts his teaching techniques by using up to date technologies and resources to engage the student learner. As well, he changed his teaching approach to include more case studies to increase clinical relevance, critical thinking and problem solving. Recognition for his teaching effectiveness was rewarded by his students by his recent nomination for the University of Michigan Golden Apple award. Professor Pierchala displays a remarkable level of student mentoring at various schools and colleges at the University of Michigan and at all student levels. In addition to serving as a guide in the dental school Pathways program, he has been a research mentor for over a dozen students in the Undergraduate Research Opportunity Program and has been the primary mentor for four PhD students and two postdoctoral students.

Professor Pierchala's commitment to teaching both future dentists and scientists is notable. He recognizes the importance of proper and sufficient preparation of lectures and understands the importance of both traditional didactic lecture style and case-based presentation for clinically-relevant information. His receptiveness to bringing the best teaching approach into the classroom is reflected by the number of strong student and peer teaching evaluations. He is a sought after mentor who eagerly engages the mentee by challenging existing knowledge to foster problem solving and new discovery.

Research: Professor Pierchala is internationally known for his work in neurotrophic factor signaling in sensory and sympathetic neurons which originated during his PhD graduate studies where he investigated the mechanism of retrograde nerve growth factor (NGF) signaling in neonatal sympathetic neurons. As a post-doctoral fellow, he extended these studies to receptor tyrosine kinase Ret which resulted in several fundamental contributions to our understanding of how the Ret/GFD complex functions in neuronal cell survival and death. Since being at Michigan, Professor Pierchala has participated in the generation of a conditional p75 mouse that allowed investigation of its contribution in different tissue and cell types. He has also taken new approaches to studying Huntington's disease, which is closely connected to the lack of neurotrophic factor signaling and the perception of taste by sensory neurons. His studies have resulted in numerous quality publications in high impact journals as a first or corresponding author, one R01 grant as the principal investigator and numerous invitations to present his research at professional meetings nationally and internationally. He was recently invited to the prestigious Gordon Conference on Neurotrophic Factors.

Professor Pierchala has clearly shown significant scholarly accomplishments during his time as an assistant professor. He had been able to develop a clear area of expertise for which he is recognized globally. He has been successful at obtaining a significant level of research funding from national and foundation sources. He collaborates at the school, state, national and international levels and is admired by colleagues for his willingness to discuss his ideas and share his insightful knowledge. His publications are of a high caliber and are helping to strengthen the field of neurotrophic factor biology and mechanisms that regulate survival, differentiation, and maintenance of neurons of the peripheral nervous system.

Recent and Significant Publications:

Tsui CC, and Pierchala BA. The Differential Axonal Degradation of Ret Accounts for Cell-type-specific functions of Glial Cell Line-Derived Neurotrophic Factor as a Retrograde Survival Factor. *J. Neurosci.* 2010. 30:5149-5158.

Bonanomi D, Chivatakarn O, Bai G, Abdesselem H, Lettieri K, Marquardt T, Pierchala BA and Pfaff SL. Ret is a Multifunctional Coreceptor that Integrates Diffusible- and Contact-Axon Guidance Signals. *Cell.* 2012. 148: 568-582.

Frampton JP, Guo C, and Pierchala BA. Expression of axonal protein degradation machinery in sympathetic neurons is regulated by nerve growth factor. *J. Neurosci. Res.* 2012; 90: 1533-1546.

Calco GN, Stephens OR, Donahue LM, Tsui CC, and Pierchala BA. CD2-associated Protein (CD2AP) Enhances Casitas B. Lineage Lymphoma-3/c (Cbl-3/c)-mediated Ret Isoform-specific Ubiquitination and Degradation via Its Amino-terminal Src Homology 3 Domains. *J. Biol. Chem.* 2014. 289: 7307-7319.

Tsui CC, Gabreski NA, Hein SJ, and Pierchala BA. Lipid Rafts are Physiologic membrane Microdomains Necessary for the Morphogenic and Developmental Functions of Glial Cell Line-Derived Neurotrophic Factor In Vivo. *J. Neurosci.* 2015. 35: 13233-13243.

Wehner AB, Abdeselem H, Dickendesher TL, Ginger RJ, and Pierchala BA. Semaphorin 3A is a Retrograde Cell Death Signal in Developing Sympathetic Neurons. 2016. *Development.* 143: 1560-1570.

Service: Professor Pierchala has a robust commitment to the school and university service mission. He has been active in various committees, particularly at the department level, participating in various committees related to examination and admissions in neuroscience and cell and molecular biology programs, as well as faculty recruitment. He is currently on the search committee for a faculty member in his department, as well as for the chair of his department. At the national level, he

has regularly served as an ad-hoc reviewer for NIH study sections, grant review panels and as a peer reviewer for numerous journals.

External Reviewers:
Reviewer A: "In closing, Dr. Pierchala is an active member of my field and valued as a significant scientist in our realm. My interactions with him at Gordon Research Conferences and other venues have been uniformly excellent and I have been impressed with his keen grasp of the field and the high quality work he has generated."

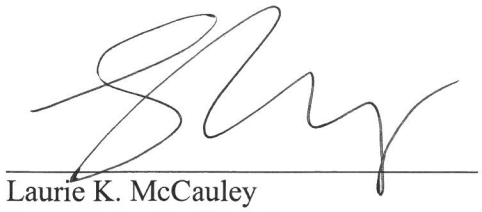
Reviewer B: "He participated in the generation of a conditional p75 mouse, which has not been made by anyone in the field. The conditional mouse has allowed Brian to define the contribution of his receptor in different tissues and cell types. To his credit, this useful mouse model has been distributed to other laboratories."

Reviewer C: "His largest service contribution, …, is to the graduate programs at the University of Michigan. My interactions with Brian's students lead me to the understanding that Brian is an excellent mentor. It is clear from his service that he understands his role not only as a scientist but also as a trainer of future scientists."

Reviewer D: "He has spoken at national and international meetings whose focus is neurotrophic factor biology. His presentations are lucid and highly informative. They provoke interesting and important discussions. He has and will continue to flourish as an investigator and educator."

Reviewer E: "Dr. Pierchala has excelled in obtaining outside funding, especially from the NIH. He presently is the PI of a R01 grant that will be active until 2020. He is also the PI of a revised R01 application currently under review. The initial application received a score at the 26th percentile, making future funding very likely."

Summary of Recommendation:
Professor Pierchala has demonstrated excellence in teaching, research, and service and is a valuable faculty member to the department, school and to the university. He is credited for his outstanding scholarly activity and excellence in teaching. His compassion for the mentoring of young researchers is providing a firm foundation for future scientific leaders. His research has been prolific and impactful. It is with the support of the School of Dentistry's Executive Committee, that I recommend Brian A. Pierchala for promotion to associate professor of dentistry, with tenure, School of Dentistry.



Laurie K. McCauley
Dean, School of Dentistry

May 2017