

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF PEDIATRICS AND COMMUNICABLE DISEASES

David P. Olson, M.D., Ph.D., assistant professor of pediatrics and communicable diseases, Department of Pediatrics and Communicable Diseases, Medical School, is recommended for promotion to associate professor of pediatrics and communicable diseases, with tenure, Department of Pediatrics and Communicable Diseases, Medical School.

Academic Degrees:

Ph.D.	1999	University of Michigan
M.D.	1999	University of Michigan
B.A.	1989	Cambridge University
B.S.	1987	University of Michigan

Professional Record:

2010- present	Assistant Professor of Pediatrics and Communicable Diseases, University of Michigan
2005-2010	Instructor in Medicine, Children's Hospital Boston

Summary of Evaluation:

Teaching: Dr. Olson coordinates the weekly Pediatric Endocrinology Seminar Series and has worked to balance the needs of continuing education for a variety of learners across both clinical and basic science topics. While in clinic (five sessions/month), he routinely engages in teaching medical students, residents and endocrinology fellows. As part of these efforts, he helped redesign the outpatient clinic teaching materials for medical students and has taken on a new role as educational lead for the Division of Pediatric Endocrinology. He has restructured the inpatient endocrinology teaching to better address the needs of our pediatric residents and has updated its written curriculum. He provides core content lectures to the medical students, pediatric residents and endocrine fellows and helped design and teach a basic science introduction to incoming pediatric endocrinology fellows. He has reactivated the fourth-year medical student rotation and is developing a pediatric endocrinology interest group to identify and engage medical students and residents interested in pediatric endocrinology. He has also served as a mentor to a UMMS Dean's Scholar. Additionally, Dr. Olson teaches in the laboratory setting. Currently this is composed of two post-doctoral fellows, a senior graduate student who just completed her Ph.D., a rotating graduate student, a Master's student and an undergraduate. Dr. Olson is known to have a highly interactive and rich training environment that allows for significant one-on-one interactions.

Research: Dr. Olson has focused his research efforts on the cellular and molecular mechanisms used by the brain to regulate energy balance and metabolism. Much of his work has focused on the central melanocortinergic system which is critical for energy balance in humans and can be modelled in rodents. Since coming to the University of Michigan, his team has shifted its focus from central melanocortin action to determining the physiologic function of discrete sets of neurons in the paraventricular nucleus of the hypothalamus (PVH). The results of his studies have been published in high profile journals including the *Proceedings of the National Academy of Science*, *Nature Neuroscience* and the *Journal of Neuroscience*. Dr. Olson's work has been presented at the annual meetings of the Endocrine Society, the Society for Neuroscience and a Keystone Symposium. In 2015, he was recognized as an up and coming investigator at the Helmholtz-Nature Medicine Diabetes Conference in Munich, Germany and in February 2016, he had the honor of delivering the first George E. Bacon Lecture in Pediatric Endocrinology at the University of Michigan. His laboratory has been well funded from a variety of sources including the National Institutes of Health (R56, R01) and industry support from Novo Nordisk. Dr. Olson has a successful publication record with 32 peer-reviewed publications overall, 22 while in rank of which he is first or senior author on seven.

Recent and Significant Publications:

Sutton AK, Pei H, Burnett KH, Myers MG Jr, Rhodes CJ, Olson DP: Control of food intake and energy expenditure by nos1 neurons of the paraventricular hypothalamus. *The Journal of Neuroscience* 34:15306-15318, 2014.

*Shah BP, *Vong L, *Olson DP, *Koda S, Krashes MJ, Ye C, Yang Z, Fuller PM, Elmquist JK, Lowell BB: MC4R-expressing glutamatergic neurons in the paraventricular hypothalamus regulate feeding and are synaptically connected to the parabrachial nucleus. *Proceedings of the National Academy of Sciences of the United States of America* 111:13193-13198, 2014 *denotes co-first authors.

Pei H, Sutton AK, Burnett KH, Fuller PM, Olson DP: AVP neurons in the paraventricular nucleus of the hypothalamus regulate feeding. *Molecular Metabolism* 3:209-215, 2014.

Allison MB, Patterson CM, Krashes MJ, Lowell BB, Myers MG Jr, Olson DP: TRAP-seq defines markers for novel populations of hypothalamic and brainstem LepRb neurons. *Mol Metab* 4:299-309, 2015.

Garfield AS, Li C, Madara JC, Shah BP, Webber E, Steger JS, Campbell JN, Gavrilova O, Lee CE, Olson DP, Elmquist JK, Tannous BA, Krashes MJ, Lowell BB: A neural basis for melanocortin-4 receptor-regulated appetite. *Nat Neurosci* 18:863-871, 2015.

Service: Dr. Olson has been actively involved in service to the division, department and Medical School. He participated in the development of a departmental strategic plan and has been an active interviewer for the residency program since 2011. His contributions to the Medical School have included leading medical student recruitment "Untours" and reviewing abstracts and grants for the Annual Pediatric Research Symposium, the Michigan Metabolism and Obesity Center Pilot and Feasibility Grants Program, the Reproductive Sciences Pilot Grant Program and

the Medical School's Bridge Funding Program. His academic service extends outside the university as well. At the national level, Dr. Olson has been a grant reviewer for the Diabetes Research Centers at the University of Washington, Vanderbilt University, and the Albert Einstein College of Medicine. He has served as a reviewer for the National Institute of Child Health and Human Development (NICHD) Loan Repayment Grants Program since 2015 and he has been an ad-hoc reviewer for numerous journals including *Nature*, *Diabetes* and *Plos One*. Dr. Olson has also been on the editorial board of *Frontiers in Endocrinology* since 2014. In addition to seeing pediatric patients at Mott Children's Hospital, Dr. Olson also holds clinics at the Northville Health Center. Clinical work accounts for approximately 25% of his overall effort. He is known for providing excellent clinical care to his patients and their families, not only in regard to the specifics of medical therapies, but also at the level of personal engagement and the establishment and maintenance of the patient/family—physician bond. Dr. Olson's peers have selected him as one of the "Best Doctors in America" since 2013 as this reflects his commitment to providing the highest level of quality clinical care to children with diabetes and a variety of endocrine disorders.

External Reviewers:

Reviewer A: "He has developed a nice skill set that includes neurobiology, mouse genetic models and systems physiology, a portfolio that drives his work and puts him in a dynamic and fruitful area of biomedical science... Dr. Olson has considerable expertise in this methodology and is ideally positioned to stay at the forefront of brain control of metabolism. I note that Dr. Olson has been effective in attracting research funding and has received grants as a PI and co-I during his time on the faculty."

Reviewer B: "In addition to his publication history, David is now showing outstanding success on the independent funding front as well. He has recently secured a significant RO1 award from the National Institutes of Health to focus on his work in the paraventricular nucleus. He has received an independent award from the Whitehall Foundation as well and is a co-investigator on a number of RO1s from other investigators at the University of Michigan... Clearly, he is recognized as one of the up-and-coming outstanding investigators in the field of the neuro-regulation of body weight."

Reviewer C: "In particular, his research focused on the specific molecular neuroanatomy of the paraventricular nucleus, its efferent and afferent connectivity, and its role in feeding and energy expenditure is exceptional and represents a meaningful advance in the field."

Reviewer D: "His contribution[s] to the scientific community are significant with service as reviewer to top tier journals such as *Cell Metabolism*, grant reviewer on NIH study section and member of the editorial board of *Frontiers in Endocrinology*. These contributions testify to his excellence... Pediatric researchers with the basic science research experience and training of Dr. Olson are relatively rare."

Reviewer E: "Dr. Olson has had a major impact on the study of neural systems involved in regulating body weight. His work is distinguished by a profound appreciation for the complexity of brain organization and the technical requirements for unraveling how diverse metabolic

signals are detected and transmitted... Dr. Olson is also an extremely generous colleague and collaborator who shares reagents freely and always seems more interested in the scientific outcome than where credit is applied.”

Summary of Recommendation:

Dr. Olson is an innovative and productive faculty member. He has created a unique niche in his research and is making remarkable contributions to his field. He is highly regarded by his peers and serves the university with distinction. I enthusiastically support the promotion of David P. Olson, M.D., Ph.D. to associate professor of pediatrics and communicable diseases, with tenure, Department of Pediatrics and Communicable Diseases, Medical School.



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

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