

PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Arts, Sciences, and Letters

Peter M. Oelkers, assistant professor of biological sciences, without tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters is recommended for promotion to associate professor of biological sciences, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters.

Academic Degrees:

Ph.D.	1996	Wake Forest University, Molecular and Cellular Pathobiology, Winston-Salem, NC
B.S.	1991	College of William and Mary, Biology, Williamsburg, VA

Professional Record:

2010 – present	Assistant Professor, University of Michigan-Dearborn
2010 Visiting	Assistant Professor, Widener University, Chester, PA
2009 Adjunct	Professor, Rider University, Lawrenceville, NJ
2009 Adjunct	Professor, Ursinus College, Collegeville, PA
2001 – 2008	Assistant Professor, Drexel University, Philadelphia, PA
1996 – 2001	Post-doctoral Fellow, Columbia University, New York, NY

Summary of Evaluation:

Teaching: Professor Oelkers' teaching is rated excellent. His efforts acknowledged by students and colleagues alike, and he goes the extra mile, working one-on-one or small groups with students in and out of class. He completely revamped the BCHM 474 Molecular Biology lecture, and concurrently transformed the lab into a guided inquiry experience. This was a monumental task! In this laboratory, students use yeast as a model organism to design, conduct, and verify cloning experiments. Maintaining a guided inquiry lab is very challenging. Class outcomes were successful, based on student lab results, and the learning seen later on lecture exams. There was great student enthusiasm for this approach. Responding to the Biology Discipline's request, Professor Oelkers created a capstone "Mechanisms of Chronic Human Disease (BCHM/BIOL 404)," now a permanent DDC offering.

Professor Oelkers' class goals and objectives are clearly stated in all his course syllabi. He uses Bloom's taxonomy-learning assessment to align to course goals. Overall student evaluations in the past six years are mostly "excellent" in both introductory and advanced classes. Students remarked that he sets high standards, was helpful, challenging, fair, and very approachable. Many indicated he is one of the best teachers at UM-Dearborn. Experiments in Professor Oelkers' classes follow the best practices in student research style labs. The pedagogical toolbox he employs helps seek out new ways to help students learn, for example the use of POGIL (Process Oriented Guided Inquiry Learning). Many students appreciated the lively, informative analogies, and skits he used in lecture.

Professor Oelkers truly is a professional biochemist. He plays a crucial role in curriculum innovation, initiatives and design. The biochemistry program has the second greatest number of majors in the Department of Natural Science and it is very important to our mission. Professor Oelkers' educational vision for the program, encouraging critical thinking by acting more as a student's coach or mentor, provided students real-world perspectives and laboratory experiences and importantly through their education here builds self-confidence for their futures.

Research: Professor Oelkers' research is ranked significantly capable. The projects in his laboratory involve basic and applied science. He focused on acyl transferases, enzymes that transfer acyl chains from a donor to an acyl acceptor molecule (important in cell membrane biosynthesis). In the applied arena, Professor Oelkers examined the acyl chain allocation in the opportunistic fungal pathogen, *Candida albicans* as it relates to yeast pathogenicity. Thirdly, the enhancement of *Saccharomyces cerevisiae* to promote ethanol production as a biofuel was examined. To date, Professor Oelkers' research resulted in five published papers with several coauthor/undergraduate students. Recently three papers were accepted and are in press. In fall 2015, Professor Oelkers presented his research and progress on acyl transferases in a Natural Sciences Colloquium. These projects were supported by start-up funds (\$50,000) and several campus research grants (a total of \$21,500). In the past six years, he helped secure two undergraduate research fellowship grants, funded by the University of Michigan-Dearborn. Professor Oelkers' future productivity will likely continue at a similar pace, first constructing DNA fragments used to modify the yeast (for example), and then doing the experiment. Importantly, he will continue to partner with our undergraduates to do sophisticated molecular and biological research.

Recent and Significant Publications:

Publications in print: (*undergraduate). All papers were devised and constructed by Professor Oelkers in his UM-Dearborn laboratory.

Ayyash* M, Algahmi* A, Gillespie J, and Oelkers P (2014). Characterization of a lysophospholipid acyltransferase involved in membrane remodeling in *Candida albicans*. *Biochimica et Biophysica Acta* 184: 505-513.

Renauer* P., Nasiri* N, and Oelkers P (2015). *Saccharomyces cerevisiae* lysophospholipid acyltransferase, Lpt1, requires Asp146 and Glu297 for catalysis. *Journal of Lipid Research*. 56: 2143-2150.

Shilpa Jain, Hemal Dholakia*, Winston Kirtley*, Peter Oelkers (2016). Energy Storage in Yeast: Regulation and Competition with Ethanol Production. *Current Microbiology* (in press).

Oelkers, Peter (2016). "Semester-long inquiry-based molecular biology laboratory: transcriptional regulation in yeast" *Biochemistry and Molecular Biology Education* (in press).

Oelkers, Peter, Pokhrel, Keshav (2016). Four acyltransferases uniquely contribute to phospholipid heterogeneity in *Saccharomyces cerevisiae*. *Lipid Insights* (in press), accepted recently after obtaining the external review letters.

Service: Professor Oelkers' service is ranked significantly capable. In 2012 and 2013, Professor Oelkers was a member of the Department Executive Committee Member-at-Large, and the Colloquium Committee. He served on two faculty search committees: Organic Chemistry and Neurobiology. In the biology discipline, he worked specifically on new "gateway" courses, and changes to the BIOL140 content. He contributed to assessment and the program review in the biochemistry program (2011 to present). Professor Oelkers demonstrated strong leadership and did hard work to help configure the now renovated Natural Sciences Building. He was a member of Vision 2020 forums and the Student Activity Advisory Committee from 2011 to 2014. Professionally, Professor Oelkers has a workshop on concept driven teaching strategies in biochemistry. In 2013 and 2014, he judged at the American Society for Biochemistry and Molecular Biology (ASBMB) undergraduate meeting. In 2015, he helped organize a regional education and pedagogy workshop at ASBMB. Furthermore, Professor Oelkers was a reviewer for seven prestigious scientific journals: *Applied and Environmental Microbiology*, *Applied Microbiology and Biotechnology*, *FEBS Letters*, *European Journal of Lipid Biochemistry and Technology*, *The Journal of Biological Chemistry*, *Phytochemistry* and *Public Library of Science (PLOS) One*.

External Reviewers:

Reviewer A: "A major contribution is his analysis of amino acid residues that are critical for catalysis in a member of the MBOAT family of acyltransferases. Many MBOAT family members have been identified, but most studies have focused on their substrate preferences; the MBOAT mechanism of action is poorly understood, therefore, Dr. Oelkers [sic] analysis is a significant contribution to our understanding of the role of MBOAT acyltransferases in membrane biogenesis and remodeling. Dr. Oelkers has continued to publish excellent papers that are important for our understanding of lipid metabolism. I strongly support Dr. Oelkers' promotion. He is very well trained, expert in an understudied area of lipid metabolism, an active faculty mentor, and highly enthusiastic about making progress in both research and teaching."

Reviewer B: "...on both publications, Dr. Oelkers is listed as the corresponding author. In addition, I consider the journals (BBA and Journal of Lipid Research) to be very good journals, suggesting the research is of high quality. It is also good to see that there are UM-Dearborn students as co-authors."

Reviewer C: "Dr. Oelkers [sic] works are of high value and quality. The quantity should be considered acceptable given the fairly heavy teaching load and only working with undergraduate students in recent years. Dr. Oelkers' standing is on par with his peer group in terms of value and quality. The quantity of contributions is lower than his peer group in leading research institutes."


Reviewer D: "The research papers supplied with the other materials for this review were of high quality. The manuscripts were published in high quality journals with respected editorial boards. Certainly, this body of work would be judged from very good to excellent at most primary undergraduate institutions (PUIs). I believe that Dr. Oelkers standing is well above the average PUI tenure track faculty member."


Reviewer E: "Overall, the scientific quality and output can be labelled as very good. Hirsch Index (H-factor) of Dr. Oelkers [sic] is 17, which is very good, especially the average citations per item which is excellent (45). At the present time, Oelker's [sic] team seems to be limited in size and may thus lack the critical mass to be globally very highly competitive; yet, in its actual configuration, the teams manage well to perform things. It can be concluded that the scholarship of Dr. Oelkers reveals that the candidate is likely to become one of the best in his field of research. Dr. Oelkers has demonstrated his commitment and ability to conduct very good academic research."

Reviewer F: "In summary, taking into consideration the specifics of your university, the resources as well as the challenges, I believe that Dr. Oelkers' scientific efforts since arriving at the University of Michigan-Dearborn are certainly worthy of tenure and promotion. I come to this conclusion based on my own knowledge of the field and what I could have reasonably accomplished working only with undergraduates and carrying roughly twice the teaching load that I do at present."

Summary of Recommendation:

Overall, Professor Oelkers is an essential contributor to the biochemistry program and the biology discipline. His educational approaches and proven results illustrate his expertise and value to our campus mission. Using the teacher/scholar model as a guide, Professor Oelkers transitions educational experiences from the lecture to the laboratory and research lab, partnering with students to contribute significant and praiseworthy scholarly publications in well regarded professional biochemistry journals. Combining this overarching theme, his service contributions are essential for the vitality and viability of the biochemistry program and Natural Sciences mission. We are pleased to recommend, with strong support of the College of Arts, Sciences, and Letters Executive Committee, Peter M. Oelkers for promotion to associate professor of biological sciences, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters.


Martin J. Herschok, Dean
College of Arts, Sciences, and Letters


Darriel Little, Chancellor
University of Michigan-Dearborn

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