

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Vincent J. Denef, assistant professor of ecology and evolutionary biology, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of ecology and evolutionary biology, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2005	Universiteit Gent, Belgium
B.S./M.S.	2001	<i>magna cum laude</i> University of Leuven, Belgium

Professional Record:

2012 – present	Assistant Professor, Ecology and Evolutionary Biology, University of Michigan
2005 – 2011	Post-doctoral researcher, University of California, Berkeley

Summary of Evaluation:

Teaching – Professor Denef has demonstrated excellence in teaching both in the classroom and as a research mentor. His contributions to formal classroom teaching include three courses, two of which (Biology 144 “What’s in Your DNA? Implications for You and Society,” and EEB 446 “Microbial Ecology”) are innovative new courses that he initiated, developed, refined, and successfully grew the enrollments of over multiple iterations. Professor Denef takes his teaching seriously, and he has sought out and incorporated input from multiple sources to improve course content, presentation, and inclusiveness. He is an excellent research mentor of undergraduate students, a number of whom have attained authorship on laboratory publications, obtained fellowships, and enrolled in doctoral programs. In addition, he has an impressive track record of mentoring graduate students and post-doctoral fellows.

Research – Professor Denef’s scholarly work seeks to understand how interactions within and between species influence the diversity, composition, and functioning of freshwater microbial communities, taking advantage of the unique insights that can come from carefully conducted molecular analyses. This is an emerging subfield in microbial ecology that is of fundamental importance to our ability to understand the structure and functioning of lake ecosystems, and is also of clear applied importance. His peers recognize him as an innovative leader in this area and as a creative, productive, and influential microbial ecologist. His trajectory suggests a very promising future.

Recent and Significant Publications:

“Genome evolution and host microbiome shifts correspond with intraspecific niche divergence within harmful algal bloom-forming *Microcystis aeruginosa*,” with S. L. Jackrel, et al., *Molecular Ecology*, 2019, <https://doi.org/10.1111/mec.15198>.

- “Peering into the genetic makeup of natural microbial populations using metagenomics,” in *Population Genomics: Microorganisms*, M. F. Polz and O. P. Rajora, eds., 2018, Springer, https://doi.org/10.1007/13836_2018_14.
- “Lake bacterial assemblage composition is sensitive to biological disturbance caused by an invasive filter feeder,” with H. J. Carrick, et al., *mSphere* 2 (3), 2017, e00189-17.
- “Chloroflexi CL500-11 populations that predominate deep lake hypolimnion bacterioplankton rely on nitrogen-rich DOM metabolism and C1 compound oxidation,” with R. S. Mueller, et al., *Applied and Environmental Microbiology*, 82(5), 2016, pp. 1423-1432 [AEM spotlight article].

Service – Professor Deneff is engaged with important service activities both within and outside the university. Outside the university, he has been particularly involved in reviewing and editorial activities and in organizing seminars and conferences. Within the university, Professor Deneff has served or is serving on several departmental committees, including the Graduate Admissions, Seminar, and Diversity Committees, the latter of which he chairs. Leading the Diversity Committee is a major service responsibility that also links with a broader suite of his activities centered on promoting diversity, equity, and inclusion.

External Reviewers:

Reviewer (A)

“A novel aspect of Dr. Deneff’s research is his focus on population structure and dynamics, an aspect of microbiology that is relatively little explored. This work draws in part on genomic information from natural consortia and analysis of signals of selection and requires attention to detail to tease out signals related to evolution and adaptation. The work is impactful and at the leading edge of the field.”

Reviewer (B)

“With regards to overall scientific achievements and intellectual capacity, I would place Vincent really in the top group among peers working in his research field. He clearly has the potential and integrity to be a leader in the field and shape the future of freshwater microbiology.”

Reviewer (C)

“In my opinion, Dr. Deneff is well on his way to becoming an international leader in microbial ecology. ... His work has important implications for our understanding of how ecosystems, especially aquatic ecosystems, function and how they may respond to environmental change. There are also fascinating applications of his discoveries, and to his credit he has not been hesitant to work on applied questions, most notably studying toxic algal blooms and biofuels.”

Reviewer (D)

“Although this is an extremely important field, there are not a lot of people for comparison. I think this is in part because the suite of talents required to thrive in the field are not easy to find in a single person. One has to be comfortable with lab work, field work, heavy-duty bio-informatics, and ecological theory. For very senior people this can be done by hiring the right people. But junior level scientists have to be able to master the full diversity of approaches necessary to make progress. Deneff is one of the few in his cohort with this suite of talents, and all that have ‘made it’ are exceptional scientists.”

Reviewer (E)

“The totality of Dr. Denef’s research output is providing important theoretical as well as practical perspective on some real world environmental problems, putting him at or near the top of his peer group in my opinion.”

Reviewer (F)

“Dr. Denef’s record places him in the top tier of researchers working in the field of molecular microbial ecology. His standing is certainly on par or above that of other colleagues who are at or near promotion with tenure...”

Reviewer (G)

“Dr. Denef arrived at your institution with an excellent track record, and has continued to carry out creative and significant work in an important research area since arriving there, at an accelerating pace. A recurrent theme in his research has been a general focus on applying ‘classical’ ecological principles to microbial systems, mostly in freshwater (e.g. Lake Michigan).”

Summary of Recommendation:

Professor Denef has established a novel and dynamic research program on the ecology of freshwater bacterial communities and he has become widely recognized as a pioneer and leader in this important new frontier of microbiological research. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Vincent J. Denef be promoted to the rank of associate professor of ecology and evolutionary biology, with tenure, College of Literature, Science, and the Arts.



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