

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

Corinna Schindler, associate professor of chemistry, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of chemistry, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2010	ETH Zürich, Switzerland
M.S.	2004	Technical University of Munich, Germany

Professional Record:

2019–present	Associate Professor of Chemistry, University of Michigan
2013–2019	Assistant Professor of Chemistry, University of Michigan
2014	Visiting Professor, Westfälische-Wilhelms-Universität Münster
2010–2013	Post-doctoral Fellow, Harvard University

Summary of Evaluation:

Teaching: Professor Schindler taught three graduate teaching assignments (CHEM 543 twice and 541) and one undergraduate assignment (CHEM 420 in W20). In her graduate courses, Professor Schindler has recognized that we have had a large influx of master's degree students from various programs with different backgrounds from our traditional Ph.D. chemistry student. Because these students sometimes struggle with the pace of a typical class, she has made an effort to provide more assistance to her students through evening problem solving sessions, matching students to tutors, and developing a boot camp concept for new students. Her undergraduate teaching evaluations have been consistently excellent, largely attributed to her ability to connect well with students and provide feedback in different ways on problem-solving sessions. Besides didactic teaching, she has been an excellent mentor to a large number of Ph.D. students, typically over ten in her research group at a time, many of whom have won fellowships. She has also developed a novel set of materials to assist GSIs with their assignments in organic chemistry.

Research: Professor Schindler is an organic chemist who studies reactions and synthesis of carbon containing molecules. Professor Schindler's research emphasizes development of new reactions and catalysts as well as synthesis of complex molecules. Pre-tenure, Professor Schindler developed the carbonyl-olefin metathesis reaction, which was widely considered to be a major discovery because of the potential for new synthetic methods. Since this discovery, she has explored mechanisms of the reaction in depth, designed new catalysts for the reaction that broaden the scope, and demonstrated its use in synthesis. She also took up two new focuses on methods for imine-based cycloadditions, a reaction of interest in many complex syntheses, and natural product synthesis. In this latter area, a highlight was the synthesis of herquiline, a challenging target with medicinal significance. She has been extensively recognized in the scientific community with numerous awards including the American Chemical Society Award in Pure Chemistry, an award reserved for the top junior chemists in the world.

Recent and Significant Publications:

Becker, M. R., Wearing, Emily, R., Schindler, C. S. (2020). Synthesis of azetidines via visible light-mediated intermolecular [2+2] photocycloaddition. *Nature Chemistry*, 12, 898-905.

Davis, A. J., Watson, R. B., Nasrallah, D. J., Gomez-Lopez, J. L., Schindler, C. S. 2020. Superelectrophilic Aluminum(III)-Ion Pairs Promote A Distinct Reaction Path for Carbonyl-Olefin Metathesis of Medium-Sized Rings. *Nature Catalysis*, 3, 787-796.

Xu, Z., McAtee, C. C., Schindler, C. S. (2019). Total Syntheses of Herquelines B and C. *Journal of the American Chemical Society*, 141(1), 3409-3413.

Albright, H., Riehl, P. S., McAtee, C. C., Reid, J. P., Ludwig, J. R., Karp, L., Zimmerman, P. M., Sigman, M. S., Schindler, C. S. (2019). Olefin Metathesis of Aliphatic Ketones: Iron(III) Homo-Dimers as Lewis Acidic Superelectrophiles. *Journal of the American Chemical Society*, 141(4), 1690-1700.

Service: Professor Schindler has engaged in several service activities for the department, university, and profession. The most significant departmental activity was organizing the Merck Symposium, a large event that brings several Merck Scientists to UM for a conference. Professor Schindler started this event as an assistant professor and received funding from Merck to continue running it under her leadership. This event ultimately set the stage for the university to develop a blanket research agreement between Merck and UM and a commitment of \$400k annually from Merck to support research at UM. She also served on our faculty search committee which successfully filled their position. Besides this, she performed significant outreach work through FEMMES (Females Excelling More in Math, Engineering and Science), Michigan Math and Science Scholars, and MCore (a preview weekend for graduate students from minority serving institutions). She has added several professional service assignments such as editorial boards and organizing symposia.

External Reviewers:

Reviewer (A): "In summary, I believe that Professor Corinna Schindler is one of the top [junior] synthetic organic chemists in the world."

Reviewer (B): "I am exhausted just reading all of her accomplishments in the past two years ... To me the most striking developments are the new directions that were not even on the horizon in her dossier in 2018 such as the aza- Paterno-Büchi reaction ... and her advances in the total synthesis of complex natural products such as the herquelines B and C ... Professor Schindler publishes brilliant full articles with extensive studies using kinetics, isotope effects, spectroscopies and computational analysis at a level of depth rarely seen in established investigators."

Reviewer (C): "[Professor Schindler] is on an excellent trajectory and has become a leader in the field of organic synthesis and catalysis ... She's pioneered an exciting program that has attracted world-wide attention in a short time span. She has the ability to think mechanistically about new reaction design and to think strategically about target-oriented synthesis. Her leadership in catalysis is a timely one given the field's current drive towards more sustainable and earth

abundant derived technologies.”

Reviewer (D): “Schindler is one of the most productive, versatile, creative and charismatic organic chemists of her generation. She has completed notable syntheses of natural products, and has provided a new approach to accomplishing double bond metathesis reactions, while most recently starting new areas, such as photochemical [2+2] reactions to form saturated heterocycles ... you have a ... star, and the research contributions are more than worthy for promotion at this point.”

Reviewer (E): “Her work measures favorably with any of the leading practitioners... She is widely recognized as one of a select few individuals, worldwide, who are setting the standard of excellence high for what is possible in organic chemistry today.”

Reviewer (F): “Dr. Schindler’s research output is strong in terms of numbers for researchers at this stage of their independent careers, and it demonstrates outstanding scholarship ... Dr. Schindler is a bright [junior] scholar who has carved her own niche in the area of methods development and garnered an outstanding reputation.”

Summary of Recommendation:

Professor Schindler has become a leader in organic chemistry by discovering new reactions, including the carbonyl-olefin methathesis reaction, uncovering mechanisms, and developing existing reactions for new transformations. She has also developed new routes for synthesizing complex molecules, including some that depend upon her reaction discovery. She has provided high-quality instruction, including fresh approaches that involve creation of materials to better train GSIs and allow students to problem-solve and practice with rapid feedback. She has engaged in outreach to promote understanding and interest in science at several levels. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Corinna Schindler be promoted to the rank of professor of chemistry, with tenure, College of Literature, Science, and the Arts.



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Anne Curzan, Dean  
Geneva Smitherman Collegiate Professor of  
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