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“Molecular Surgery”

M. Christina White, PhD

*Professor of Chemistry
Department of Chemistry
University of Illinois, Urbana-Champaign
Champaign, Illinois*

**10:00 a.m. Wednesday May 15th, 2019
Wolfe Hall 1205**



M. Christina White, Ph.D.

Prof. M. Christina White began her academic career at Smith College in 1988 studying biochemistry, where she worked with Prof. Stuart M. Rosenfeld and received numerous awards, including a Ford Foundation summer research grant. After a brief stint in the Dept. of Biology with Christian Anfinsen at Johns Hopkins University, she moved to the Dept. of Chemistry where she worked as an ACS Predoctoral Fellow in the lab of the late Gary Posner. She followed her Ph.D. studies by pursuing an NIH Postdoctoral Fellowship in the lab of Eric Jacobsen at Harvard University. She became an Assistant Professor at Harvard from 2002-2005 before moving to UIUC in 2005, where she is now Full Professor since 2011.

In her independent career, Prof. White has earned numerous honors and awards, including but not limited to the Camille and Henry Dreyfus New Faculty Award, an NSF CAREER Award, the Alfred P. Sloan Research Fellowship, the Camille Dreyfus Teacher-Scholar Award, the ACS Cope Scholar Award, the ACS Award for Creative Work in Synthetic Organic Chemistry, and numerous awards from pharmaceutical companies. In 2012, she was made an American Association for the Advancement of Science Fellow.

As a credit to her innovative work, Prof. White has given over 200 lectures worldwide. She has also been called on to serve on numerous advisory boards, NIH review and special emphasis panels, and to chair the ACS Selection Committee. Prof. White has also served on the Editorial Advisory Board for *Advanced Synthesis and Catalysis*; *Chemical Science* since 2010.

The White group runs a program to develop highly selective oxidation reactions for the direct installation of oxygen, nitrogen, and even carbon groups at allylic and aliphatic C–H bonds of both feedstock and complex organic molecules. This can be achieved using subtle differences in electronic and steric interactions between the C–H bonds and non-enzymatic transition metal catalysts. These approaches can rival nature in their ability to efficiently perform *late stage functionalization*, and has led to important advances in streamlining chemical synthesis.

In addition to having published many highly impactful papers in journals such as Science, Nature, and the Journal of the American Chemical Society, as well as a number of patents, Prof. White has worked with Sigma Aldrich to commercialize many of her group's catalysts from across the Periodic Table. This includes 1,2-bis(phenylsulfinyl)ethane palladium(II) acetate (the White Catalyst), Fe(PDP) (the White-Chen Catalyst), and more recently [Mn(t-BuPc)]Cl (the White-Paradine Catalyst).

Selected Recent Scientific Contributions from list of ~52:

1. "Chemoselective Methylene Oxidation in Aromatic Molecules." Zhao, J.; Nanjo, T.; de Lucca, E. C.; White, M. C. *Nature Chem.*, **2019**, *11*, 213.
2. "Asymmetric Allylic C–H Alkylation via Palladium(II)/*cis*-ArSOX Catalysis." Liu, W.; Ali, S. Z.; Ammann, S. E.; White, M. C. *J. Am. Chem. Soc.*, **2018**, *140*, 10658.
3. "Manganese-Catalyzed Benzylic C(sp³)–H Amination for Late-Stage Functionalization." Clark, J. R.; Feng, K.; Sookezian, A.; White, M. C. *Nature Chem.*, **2018**, *10*, 583.
4. "C–H to C–N Cross-Coupling of Sulfonamides with Olefins." Ma, R.; White, M. C. *J. Am. Chem. Soc.*, **2018**, *140*, 3202-3205.
5. "Remote, Late-Stage Oxidation of Aliphatic C–H Bonds in Amide-Containing Molecules." Nanjo, T.; de Lucca, E. C.; White, M. C. *J. Am. Chem. Soc.*, **2017**, *139*, 14586.
6. "Catalytic C(sp³)–H Alkylation via an Iron Carbene Intermediate." Griffin, J. R.; Wendell, C. I.; Garwin, J. A.; White, M. C. *J. Am. Chem. Soc.*, **2017**, *139*, 13264.
7. "Oxidative Diversification of Amino Acids and Peptides by Small-Molecule Iron Catalysts." Osberger, T. J.; Rogness, D. C.; Kohrt, J. T.; Stepan, A. F.; White, M. C. *Nature*, **2016**, *537*, 214.

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This lectureship series is made possible by a grant from Organic Syntheses, Inc. at the behest of Carl R. Johnson, Wayne State University Distinguished Professor Emeritus, long-time Treasurer of Organic Syntheses, Inc. and friend of the University of Toledo.