

Mary C. Andorfer is an Assistant Professor of Chemistry at Michigan State University, where her laboratory investigates and engineers radical enzymes for selective C–H functionalization. A central focus of her research is glycyl radical enzyme hydroalkylases, including benzylsuccinate synthase, which catalyze C–C bond formation through the addition of hydrocarbons to alkenes. Her group combines structural biology, enzymology, and directed evolution to understand how these oxygen-sensitive enzymes control radical reactivity and stereoselectivity, and to expand their catalytic capabilities for asymmetric synthesis.

Andorfer received her B.S. from Butler University and her Ph.D. from the University of Chicago, where she worked with Professor Jared Lewis on the directed evolution of flavin-dependent halogenases for selective C–H functionalization. She subsequently conducted postdoctoral research with Professor Catherine Drennan at the Massachusetts Institute of Technology, where she investigated how the activity of oxygen-damaged glycyl radical enzymes can be rescued by a small, "spare part" protein. She joined the faculty at Michigan State University in 2023.

Her independent research program is supported by the National Institutes of Health, including an NIH MIRA award focused on developing glycyl radical enzymes for asymmetric catalysis. In 2026, she received the American Chemical Society's Jonathan L. Sessler Fellowship for Emerging Leaders in Bioinorganic and Medicinal Inorganic Chemistry.