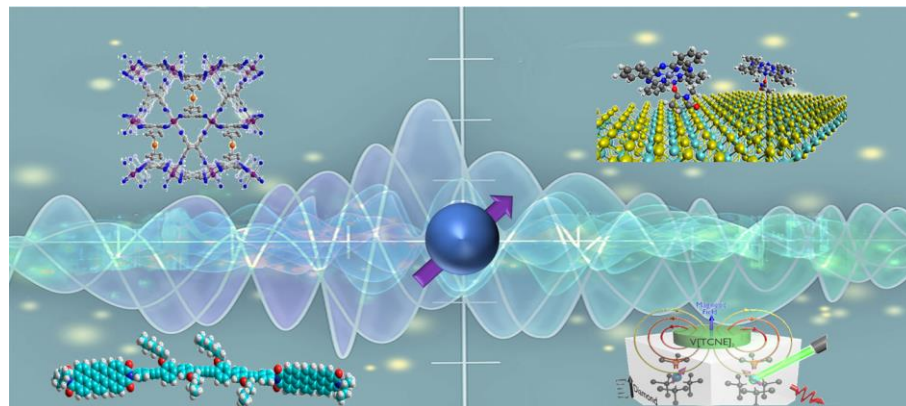


# Center for Molecular Quantum Transduction (CMQT)

Michael R. Wasielewski, Director (Northwestern University); Class: 2020-2024

**MISSION:** To develop the fundamental scientific understanding needed to carry out quantum-to-quantum transduction through a bottom-up synthetic approach, which imparts atomistic precision to quantum systems.



<https://cmqt.org>

## RESEARCH PLAN

Quantum-to-quantum transduction is the coherent exchange of information between quantum systems, which is an essential element of quantum information science.

- **CMQT** explores coherent coupling of molecular degrees of freedom, i.e. the pairwise interactions between photons, excitons, magnons, phonons, spins, and charges, at both the ensemble and single-molecule levels.
- **CMQT** probes quantum transduction within distributed molecular quantum systems, which bridge the length scale of single molecules with those of state-of-the-art solid-state systems.
- **CMQT** uses the interaction of light and molecular degrees of freedom to achieve quantum transduction in scalable quantum systems.



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