

# Brad Veldkamp

“Brad”



**Graduate Institution:** Northwestern University

**Location:** Evanston, Illinois

**Graduate Discipline:** Physical Chemistry

**Hometown:** Grand Rapids, Michigan

## Research Interests:

*Light-driven systems that couple water oxidation with the reduction of protons to hydrogen could provide a sustainable means for the production of a storable chemical fuel. To address the need for low cost, robust materials that efficiently absorb light, separate charges, and catalyze fuel formation, I am synthesizing organic chromophores and integrating them with known earth-abundant transition metal based catalysts. I use ultrafast transient absorption spectroscopy to study the desired photoinduced electron transfer reactions and identify competitive deactivation pathways.*

*Previously, while working as a research scientist in industry for three years, I developed materials that reversibly change color in response to varying temperature. These materials can be used to construct windows that tint only when warmed by direct sunlight, thereby limiting excessive solar heat gain on warm sunny days while still providing high natural light levels on cooler cloudy days. These variable tint windows can significantly reduce the energy required for cooling and lighting.*

## About me:

*I studied Chemistry and International Development as an undergraduate at Calvin College. As a student there, I was selected as a Barry M. Goldwater scholar and served as a leader of the college's Environmental Stewardship Coalition. Following graduation, I volunteered in Honduras for one year as a middle school math and science teacher. After this experience, I worked for three years as research scientist at Pleotint L.L.C., developing novel thermochromic materials for use in energy saving windows. From this work, I am a co-inventor on two patents and one pending patent application. As of July 2010, I am finishing my second year of graduate school at Northwestern University where I am jointly advised by Dr. Mark A. Ratner and Dr. Michael R. Wasielewski. My long term career goal is to conduct research in the field of energy technology as the head of an academic, industrial, or government research group. I am also interested in making contributions to science policy and expanding science education opportunities. My wife Beth and I enjoy camping, hiking, biking, and swimming in Lake Michigan.*



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