

Contact: Diana Gonzalez

FACULTY PRESENTATION AT IOWA STATE UNIVERSITY
“A MATERIALS SCIENCE RESEARCH EXPERIENCE FOR
IOWA STATE UNIVERSITY UNDERGRADUATES”

Action Requested: Receive the presentation.

Executive Summary: Dr. Steve Martin and Mr. Seth Berbano will describe the research opportunities for undergraduates in the research area of non-equilibrium materials.

Dr. Martin is a Distinguished Professor in the College of Engineering and Professor of Materials Science and Engineering at Iowa State University. Dr. Martin's interest and expertise is in glass formation, ionic transport, glassy solid electrolytes, relaxations in glass, laser optical fibers, and molecular dynamics. He received a Bachelor of Arts in Chemistry from Capital University in 1980 and a Ph.D. in Physical Chemistry from Purdue University in 1986.

Mr. Berbano is an undergraduate student in the Department of Materials Engineering.

A new research experience for undergraduates (REU) site, “Materials Education and Research on Far-From-Equilibrium Materials, Processes, Structures, and Properties” provides ISU undergraduates a research opportunity in the area of non-equilibrium materials. Far-from equilibrium materials are those materials that are not in their most stable state. Common examples include silica glass (non-equilibrium) instead of crystalline quartz (equilibrium), and living systems (non-equilibrium) instead of their fundamental building blocks carbon dioxide and water (equilibrium) to which they may decay.

This REU site provides 10-12 undergraduate researchers with focused and well-directed summer research experiences in far-from equilibrium materials, processes, structures, and properties. Through these research projects, the students expand their understanding of non-equilibrium materials, and gain a more complete understanding of equilibrium materials. At the conclusion of the REU experience, students are better prepared to contribute to a future where non-equilibrium materials, processes, structures, and properties will be more common and essential to the existence of new technologies.