

Session 18

---

**COUNCIL OF GREAT LAKES GOVERNORS  
POLYMER COMPOSITE INITIATIVE**

## Council of Great Lakes Governors Polymer Composite Initiative

---

**T**his Session focused on the theme "Repair and Renewal of Civil Infrastructure Using Polymer Composite Materials." The Council of Great Lakes Governors has formed a regional alliance on structural applications of polymer composite materials and the theme presented at this session is its initial thrust.

The Great Lakes states—New York, Pennsylvania, Ohio, Michigan, Indiana, Illinois, Wisconsin and Minnesota—have collectively a large civil infrastructure subjected to a harsh environment—hot summers, cold winters, wet climate, freezing and thawing and salt. Many repair problems on roads, bridges, building and other civil infrastructures exist; polymer composites appear to be a viable material to be used for these repairs and rehabilitations.

The Great Lakes states collectively have a huge manufacturing capability, specifically in polymers and polymer composites. The Great Lakes Governors are interested in commercialization of structural applications of polymer composites. The initial focus of the alliance and the presentations of this session were on

- Wrapping of columns with polymer composites
- Reinforcing wooden transportation structures
- Carbon plate strengthening of concrete beams
- Smart sensing of polymer composite structures

The alliance will partner state transportation departments, FHWA, federal laboratories, universities, polymer composite centers, poly-

mer composite industries and the infrastructure industry. It will focus on education and training, research and development, demonstration projects, design methodology and codes, smart sensing and commercialization.

The following presentations were offered during this session:

- "The Council of Great Lakes Governors Polymer Composites Initiative," John Hemann, Professor of Civil Engineering at Cleveland State University.
- "The Fiberwrap Composite System for Columns and Walls," Edward Fyfe and Fred Isley of Hexcel-Fife, Inc.
- "Rehabilitation of Structures through External Bonding of Thin Carbon Fiber Sheets," Urs Meier of EMPA.
- "Fiber Optic Sensors in Polymer Composites Bridge Structures for Health Monitoring," Ken Lou of Simula.
- "Reinforcing Wooden transportation Structures with Polymer Composites," Steve Quintana of the U.S. Forest Service Wood in Transportation Division.
- "The Development of a Laminated Composite Structures Technology," Max Yen, Professor of Civil Engineering at Southern Illinois University.
- "Performance Monitoring of All-Composite Pedestrian Bridges in Cleveland and Akron," John Hemann, Professor of Civil Engineering at Cleveland State University.