2004-2005 AISC Educator Career Enhancement Awards

AISC invites you to participate in a new award program designed to provide career development opportunities to help educators succeed at their university. AISC supports the development and enhancement of educators dedicated to the teaching of steel-related topics. The award is intended to foster creativity and promote the implementation of new ideas in teaching related to structural steel. Applicants must submit a proposal for how the award would be used to extend or create programs that enhance teaching activities related to structural steel.

The award recipient will receive a $20,000 grant, national recognition, and present his/her project at the Educator Session of an upcoming North American Steel Construction Conference. For more information or to enter, contact Fromy Rosenberg, AISC's director of university relations at 312.670.5408 or rosenberg@aisc.org. ★

AISC 2004 Fall Seminar Series

AISC'S fall 2004 seminar series is coming to a city near you! AISC offers cutting-edge continuing education courses at reasonable prices. And with the "Bring a Buddy" program, each paid registrant can bring one colleague or friend along for only $100 extra! AISC seminars are an excellent opportunity to learn about everything from basic field fixes to advanced seismic design with structural steel. This fall, AISC offers five continuing education seminars in cities across the nation through December 2004. Don't miss the chance to hear from the expert—-and bring your friends too!

For more information on dates, locations, and accommodations, and to register, please visit **www.aisc.org/seminars**, or contact Carol Pivonka, director of continuing education at 406.652.9787 or pivonka@aisc.org.

Seismic Design and 2002 AISC Seismic Provisions
This seminar focuses on changes to the Seismic Provisions and provides designers with practical knowledge on how to apply these changes to their current and future projects.

Basic Design for Stability—Columns and Frames
This six-hour program provides a practical understanding of the stability provisions in the AISC *Specification*. With design examples and case studies, the program gives designers a fundamental understanding of buckling. The course focuses on the compressive strength of columns and frames.

Field Fixes: Common Problems in Design, Fabrication and Erection-Solutions and Prevention
This five-hour seminar covers a wide range of topics, including material specifications, connection design requirements, standard details, sizing material for constructability, use of mill reports, perimeter details for tiltup and pre-cast concrete walls, design procedures for fast-track construction, electronic data transfer, and shop-drawing approval procedures.

Botling and Welding
This is for those who want to learn more about bolted and welded connection design. You will leave the seminar better equipped to solve bolting and welding problems and learn cost- and time-saving ideas on bolting and welding, which will permit you to put these ideas into practice and quickly reap the benefits of this course.

Fire, Blast, and Progressive Collapse
This program focuses on the prescriptive procedures included in model building codes for the determination of fire-protection requirements and provides an introduction to the evaluation of structural steel capacities at elevated temperatures. Included in the seminar will be a segment on blast and progressive-collapse resistance in steel. You will learn about three basic levels of approach-strategies for typical buildings, prescriptive approaches, and performance-based approaches. You will also be given engineering guidance for each approach. ★

Second Public Review of the 2005 AISC Specification

The AISC *Specification for Structural Steel Buildings* is now available for a second public review. The first public review was held in December 2003. The purpose of the second public review will be to consider additional technical revisions that have occurred in the document. The draft specification is available for free downloading on the AISC web site at **www.aisc.org**. Copies are also available (for a nominal $12 fee) by calling 312.670.5411.

To submit comments, please contact Cynthia J. Duncan, director of specifications, at duncan@aisc.org and request a public review form or download the form on the AISC web site. Comments must be received by September 20, 2004 for consideration. ★

Call for Papers: 2005 NASCC

Designers, contractors, detailers, erectors, and educators are invited to submit proposals for the poster session at the 2005 North American Steel Construction Conference. All poster presenters will receive free registration to the NASCC. The 2005 Conference will be held April 6-9 in Montreal, Canada. Abstracts are due October 1, 2004; accepted presenters will be notified by November 15.

Presentations should provide practical information on state-of-the-art design or construction methods, or present information on the relevant research activities. Final presentations should be mounted on 24"x36" boards (maximum size), which will be displayed in the main exhibit hall at the conference. Presenters should be available to discuss their presentations April 6 (5-6 p.m.), April 7 (noon-1 p.m.), and April 8 (noon-1 p.m.). Please submit your abstract by October 1, 2004 to:

Scott Melnick
AISC, Inc.
One East Wacker Dr., Suite 3100
Chicago, IL 60601
melnick@aisc.org ★

OSHA Joist Erection Update

The OSHA enforcement policy with respect to the column joist requirements in section 1926.757(a)(3) that had been extended to July 18, 2004, has now been extended indefinitely (ref OSHA CPL 02-01-040).

Section 1926.757(a)(3) requires that "where steel joists at or near columns span 60 feet or less, the joist shall be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging."

There are many standard joists that are unable to meet this requirement either due to their span or due to their configuration, such as sloped or pitched chords. In addition, Steel Joist Institute research has determined that for any joist to meet the requirement, the erector would need to follow anchorage instructions that are more detailed than what is in the current OSHA standard.

Therefore, the enforcement policy that was scheduled to expire on July 18, 2004, will remain in effect indefinitely. That policy is as follows: for all joists at or near columns that span 60 feet or less, employers will be considered to be in compliance with 1926.757(a)(3) if they erect these joists either by: (1) installing bridging or otherwise stabilizing the joist prior to releasing the hoisting cable, or (2) releasing the cable without having a worker on the joists.

Steel joist manufacturers will continue to expect erectors to follow that policy. ★

Keeping Tabs on Structural Health Via the Internet

When the New York City Department of Transportation decided to launch a stiffening campaign on the Manhattan Bridge after observing movements between the suspension cables and the vertical truss members, it needed to monitor the structural behavior of the bridge while the work was being completed.

The solution was brought in by OSMOS, a French company that, for more than 15 years, has been developing monitoring systems for safety surveillance and fiber-optic technology for structural health monitoring (SHM). Its sensor-aided system for monitoring industrial installations, bridges, historic buildings, hydraulic engineering and other structures is used by building contractors and owners, operators, structural engineers, architects, and inspection authorities around the world. Users can monitor both short- and long-term structural changes. It provides ongoing risk surveillance, quality assurance during construction work and early detection of defects.

The OSMOS system is used to continually measure static and dynamic structural loads and stress cycles and the resulting effects on material and buildings. Changes in shape and position can be monitored, making it possible to forecast the behavior of the structure being inspected.

The complete system consists of a monitoring station that captures, transmits and records the incoming data—without any amplification or transformation—from sensors installed in or on the structure to be inspected. This station contains a master unit that performs all the necessary network functions and a slave unit that carries out data measurement. Measured values can be displayed on X-Y graphs, polar graphs, bar charts or as dashboards (threshold values with alarm levels).

In additon, all data can be saved, evaluated and displayed in real time, and information can be communicated to users by phone, fax, e-mail, the Internet, SMS (cell phone Short Message Service) or SNMP (Simple Network Management Protocol). Data can also be exported for further processing and managed directly via an Internet browser. OSMOS has developed specific fiber-optic sensors that reach the level of measurement of the micron and have a 20-year warranty. The system, however, is universal and can integrate all other sensors available on the market. The station will capture all data.

Currently, the company monitors 475 sites on a permanent basis. The OSMOS system has been used to monitor the Eiffel Tower since 1993 and the Nagoya power plant in Japan. The system also is being used to observe the Federal Hall structure in New York during geotechnical work in the immediate vicinity. Because the monitoring system was installed and operational for several months before the geotechnical work began, OSMOS was able to gather the data necessary to understand

the structure's behavior in "neutral" circumstances. This reference state will serve as a basis for the interpretation of any possible changes in its behavior during the geotechnical work.

Lastly, American Express used the system to monitor its 53-story building following heavy structural damage sustained by the collapse of the adjacent World Trade Center September 11, 2001. OSMOS installed one temperature sensor, one monitoring statio, and four optical strands on corner-bay spandrel beams on the 25th and 26th floors to detect both east-west and north-south movements. This instrumentation enabled American Express to evaluate the structure's behavior to determine immediate safety concerns and, from a long-term perspective, to produce reliable and precise data as a basis for a repair and rebuilding program.

For more information, visit **www.osmos-group.com** or call 312.327.5260. ★

Emergency Steel Bridge Goes Up in Four Days

On July 12, 2004, Burlington County, NJ was devastated with a 1,000-year storm. More than 13" of rain fell within a 10-hour time frame in some areas. Twelve dams burst, resulting in major flooding throughout the area and the closing of more than 25 roads and bridges. Friendship Creek in Southampton surged and the 90'-long Route 70 Bridge over the creek collapsed as the churning waters undermined its foundations.

The next morning, Matt Hummel, project engineer for AISC-member Acrow Corporation, an international bridge engineering and supply company based in Carlstadt, NJ, visited the bridge site. He promptly met with New Jersey Department of Transportation (NJDOT) officials and gave an assessment of the situation. The NJDOT would need a 130' bridge to safely span Friendship Creek. NJDOT had an 80' Acrow Panel Bridge in its storage yard that was used during an emergency on Interstate 80 in 2001. NJDOT dispatched the bridge for delivery by the following day. Meanwhile, Acrow proceeded with new drawings and shipped an additional 40' bridge from its yard. Bridge assembly began July 1, and the final 130' clear-span bridge was lifted into place July 16—only four days after the storm.

"Our emergency response team worked in unison with the State engineers and everything organized in a matter of hours," said Bill Killeen, president of Acrow Corporation. "The panel bridge system is versatile and can be erected quickly, enabling the construction crews to get in and out. This helps minimize the inconvenience to the motoring public."

The new bridge includes two 12'-wide lanes with 3' shoulders for traffic on the bridge. It is a major thoroughfare connecting the western part of New Jersey to the resorts along the New Jersey coastline.

For more information on Acrow Corporation or the Acrow® 700XS® Panel Bridging System, please visit www.acrowusa.com. ★

Second Public Review of AISC Prequalified Connection Standard

The AISC standard *Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications* is now available for its second public review. The new standard provides design, detailing, quality, and inspection requirements for prequalified beam-to-column connections in Special Moment Frames (SMFs) and Intermediate Moment Frames (IMFs). Copies of the proposed standard can be downloaded for free by visiting www.aisc.org/AISC353. Or, you can purchase a copy for a nominal fee of $12 by calling 312.670.5411 or by e-mailing cummins@aisc.org. Deadline for submitting comments is October 18, 2004. Review forms are available at www.aisc.org/prdoc. E-mail completed forms to hewitt@aisc.org, or mail to: Christopher Hewitt, American Institute of Steel Construction, Inc., Suite 3100, One East Wacker Dr., Chicago, IL 60601-2000. ★

Excellence in Hot-Dip Galvanizing Awards Competition

The American Galvanizers Association (AGA) has announced that the organization is now accepting applications for its 2005 Excellence in Hot-Dip Galvanizing Awards.

Presented annually, these awards recognize projects that utilize hot-dip galvanizing in an ideal, creative, innovative, or monumental fashion.

Winning projects will be announced at the AGA's annual conference awards dinner Wednesday, April 6, 2005 at the Biltmore Hotel in Coral Gables, FL. For each award presented, the galvanizer and all parties involved with the project will receive recognition. Winners will receive their own four-color project brochure and an awards plaque. They will also be featured on the AGA website and mentioned during various seminars, editorials, and publications throughout 2005 and beyond. Non-winning projects may be publicized as well. All submissions will be considered for the 2005 Most Distinguished Project of the Year.

While membership is not required to enter, projects submitted must have been galvanized by an AGA member galvanizer, with construction completed during 2004. This free competition is open to all architects, engineers, fabricators, and other members of the specifying community. For project guidelines, rules, and applications, contact Madison Sterling at the AGA (720.554.0900 x15, or msterling@galvanizeit.org). Forms may also be downloaded at www.galvanizeit.org/awards. All entries must be received or postmarked on or before Friday, January 28, 2005; no extensions will be provided. ★

Steel Bridge Longevity

The 100-year old steel bridge that crosses the Delaware River and connects New Hope, PA with Lambertville, NJ reopened in late July after minor repairs. The bridge typically carries about 16,000 vehicles a day but had been closed for repairs on weekdays since the beginning of the year.

Conn Abnee, executive director of the National Steel Bridge Alliance, cites the New Hope/Lambertville free bridge as an example of the excellent life cycle performance possible with steel bridges.

According to the Delaware River Joint Toll Bridge Commission, repairs included the replacement of the flooring systems, sidewalks and handrails, miscellaneous steel repairs, cleaning and painting and various safety improvements. J.D. Eckman Company of Atglen, PA completed the repairs at a cost of $6.3 million.

The bridge, which contains 962 tons of steel, is 1046 ft long and 23 ft wide. It consists of six-span, pin-connected Pratt-type trusses, which are 27 ft high. Floor beams support roadway stringers with a 5″-deep open grid steel flooring. A cantilevered, well-used sidewalk resides outside the downstream truss.

The original bridge stone substructure, completed September 12, 1814, remains in place today. In 1904 the present steel superstructure replaced a succession of wooden superstructures washed away by floods. ★

AISC Staff News

Kurt D. Gustafson, S.E., P.E., has been named Director of Technical Assistance at the American Institute of Steel Construction, Inc. His primary responsibility is to lead the free technical assistance services provided by AISC's Steel Solutions Center.

Prior to joining AISC, Gustafson was Principal with Tylk Gustafson Reckers Wilson Andrews, LLC in Chicago. "Kurt's retirement from TGRWA created quite an opportunity for AISC," said Charlie Carter, AISC's Chief Structural Engineer. "His 30 years in design offices and eight years of construction experience with American Bridge before that make him uniquely suited to lead AISC's Steel Solutions Center efforts in technical assistance."

Jason R. Ericksen, S.E., has been promoted to the position of Director of the AISC Steel Solutions Center. He will be responsible for the coordination of all activities of the center and promoting the services provided by the center to architects, owners, general contractors and structural engineers.

Ericksen joined the staff of AISC Marketing, LLC, in August of 2001 as a Solutions Center Advisor. Over the past three years he has been instrumental in providing over 150 conceptual solutions demonstrating the cost and schedule advantages of utilizing steel framing systems to project decision makers. In addition, he is the primary author of many of the SteelTools™ available for free download from the AISC web site for assistance in the design of steel structures.

Prior to joining AISC, Ericksen was with Campbell & Associates Consulting Engineers in Chicago. He holds a masters degree in structural engineering and a bachelors degree in civil engineering from the University of Illinois at Urbana-Champaign.

The Steel Solutions Center is for people who need technical assistance, innovative solutions, or tools to make structural steel design easier. Developed by AISC specifically for steel fabricators, structural engineers, architects, owners, developers and other professionals, the Steel Solutions Center is the number one source of information for structural steel. Find out all the Steel Solutions Center offers at **www.aisc.org** or by calling 866.ASK.AISC. ★

Steel Girder Launch Video Available

The solution for the U.S. 20 river valley crossing in Hardin County, IA, was a launched steel I-girder bridge. (See coverage in the February 2004 issue of *Modern Steel Construction* at **www.modernsteel.com**.) Because the site was environmentally sensitive, the bridge frame was constructed span by span in a launching pit behind one abutment and rolled out over piers in the river valley. At the time of construction, the bridge was the first launched steel girder bridge in the United States.

The Iowa Department of Transportation, in cooperation with the Federal Highway Administration, Iowa State University, Jensen Construction, and HNTB Corporation, extensively instrumented and documented behavior of the bridge during construction. Both a 32-minute video of the launching process on DVD and a technical report on CD are available at no charge. For a copy, write to Max G. Grogg, P.E., Programs Engineer, FHWA, 105 Sixth Street, Ames, IA 50010; call 515.233.7306; or e-mail max.grogg@fhwa.dot.gov. ★