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## CCFSS News Fall 2005

Wei-Wen Yu Center for Cold-Formed Steel Structures

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UNIVERSITY OF MISSOURI-ROLLA

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## AISI Committee on Specifications Meets

The Committee on Specifications for the Design of Cold-Formed Steel Structural Members and its subcommittees met for their semi-annual meeting on July 25, 26, and 27 in Baltimore, MD. The meeting consisted of updates on ongoing research as well as discussion on proposed changes to the Specification.

The Committee received a 50-minute presentation from Dr. Greg Hancock of the University of Sydney titled "Research and Application of High Strength Material in Australia/New Zealand." Dr. Hancock summarized the research conclusions as well as the design recommendations that have been developed and adopted to enable the broader use of high strength steels in both Australia and New Zealand.

Brief research reports were also presented on several AISI sponsored research projects. Mr. Doug Fox reported on his M.S. thesis research pertaining to the behavior of tension members. The research is under the direction of Dr. Reinhold Schuster at University of Waterloo. Dr. Steve Fox provided a summary of his study of the strength of the stud track bottom connection. Dr. Ben Schafer provided an overview of the project to develop a design guide for the direct strength method. Mr. Michael Seek, graduate student at Virginia Tech, reviewed progress on a study of purlin anchorage forces. The study is under the direction of Dr. Tom Murray. The Committee also received a progress report from Dr. Sam Easterling on the Virginia Tech study regarding the insulation impact on shear strength of screw connections and shear strength of diaphragms.

With the recent completion of the 2004 Supplement to the North American Specification for the Design of Cold-Formed Steel Structural Members, several possible enhancements and/or additions to the Specification were discussed at the meetings.

The Committee's next meeting is scheduled for February 20, 21, and 22, 2006.

## Short Course on Cold-Formed Steel Design

The Wei-Wen Yu Center for Cold-Formed Steel Structures is planning for its 19th Short Course on Cold-Formed Steel Structures. The three-day short course will be held October 18th, 19th, and 20th, 2005 in St. Louis, MO

The short course will discuss the behavior of cold-formed steel members and connections. The short course is structured to provide an introduction to behavior and design for engineers unfamiliar with cold-formed steel. For engineers experienced with cold-formed steel design, the short course will

strengthen their understanding of the fundamental behavior of both members and connections, as well as provide a better understanding of the AISI design specification and the AISI framing standards. A preview of future specification changes will also be provided. Both commercial and residential applications of cold-formed steel will be discussed.

Lectures will be based on information contained in the AISI North American Specification for the Design of Cold-Formed Steel Structural Members, 2001 edition with the 2004 Supplement and

its Commentary and the AISI Standards for Cold-Formed Steel Framing, 2004 editions. The text Cold-Formed Steel Design, 3rd edition, by W. W. Yu will also serve as a course reference.

Included in the course registration is a tour of a local panelizing facility. Gateway Panel is a manufacturer of pre-fabricated cold-formed steel wall panels and truss systems using state-of-the-art automated equipment in their

continued on page 4 -  
See Short Course

## AISI Committee on Framing Standards Update

by Jay Larson, American Iron and Steel Institute

At its March 2005 meetings, the AISI Committee on Framing Standards (COFS) approved a Code of Standard Practice for Cold-Formed Steel Structural Framing. The COFS began development of this document in 2002, which covers general requirements, classification of materials, plans and specifications, installation drawings, materials, manufacture and delivery, installation, quality control, and contractual relations. This document has been reviewed by several peer committees within the industry, and will define and set forth accepted norms of good practice for fabrication and installation of cold-formed steel structural framing. It is not intended to conflict with or supercede any legal building regulations, but serves to supplement and amplify such laws and is intended to be used unless there are differing instructions in the contract documents. This Code of Standard Practice was patterned after similar documents by other industries, but has been tailored to the needs of the cold-formed steel structural framing industry. It has been endorsed by the Steel Stud Manufacturers Association (SSMA) and is available as a free download from the Steel Framing Alliance ([www.steelframingalliance.com](http://www.steelframingalliance.com)).

Also at the March COFS meetings, the Executive Subcommittee approved the dividing of the General Provisions and Design Methods into two Subcommittees, one on General Provisions, which Don Allen would continue to chair, and one on Design Methods, which Dr. Roger LaBoube has agreed to chair. The General Provisions Subcommittee retains responsibility for the General Provision standard and the Product Data standard, and oversees the activities of the Product Standard, Corrosion and Durability, and Fire, Sound and Thermal task groups. The Design Methods Subcommittee assumes responsibility for the Header Design standard, Lateral Design standard, and Wall Stud Design standard, and oversees the activities of the Header Design, Lateral Design and Wall Stud Design task groups.

The next meetings of the COFS will be in Baltimore, MD on September 13 and 14. For more information about the activities of the COFS, please check the AISI website at [www.steel.org/construction/framing/](http://www.steel.org/construction/framing/) or contact Jay Larson at [jl Larson@steel.org](mailto:jl Larson@steel.org).

## Schafer Receives Prestigious NSF Award



**Dr. Ben Schafer**

Dr. Ben Schafer was recently awarded a NSF CAREER award for his proposed study "Structural Stability and Thin-Walled Structures". A key aspect of Dr. Schafer's multi-faceted study will be to extend the Direct Strength Method to members with perforations and to beam-columns.

The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of the early career-development activities of those teacher-scholars who most effectively integrate research and education within the context of the mission of their organization. Such activities should build a firm foundation for a lifetime of integrated contributions to research and education.

Assistant Professor Schafer received his PhD in Structural Engineering from Cornell University in 1997, BSE from University of Iowa in 1993. He worked for two years at the Boston firm of Simpson Gumpertz & Heger, Inc., before accepting his current position. He currently works in the Department of Civil Engineering at Johns Hopkins University, where he teaches both undergraduate and graduate courses and conducts his research on thin-walled structures and structural stability.

## Dan Walker Rejoins MBMA Staff

MBMA recently announced that Dan Walker has returned to Thomas Associates, Inc. effective Tuesday, May 31, 2005. He has been re-hired as Senior Engineer of Technical Services for Thomas Associates and will be assigned to work with the Metal Building Manufacturers Association (MBMA). We are excited that Dan has re-joined MBMA at a time when the association is refocusing efforts in the technical area.

After leaving Thomas Associates, Dan gained 2 years experience working as Staff Structural Engineer for a major manufacturer of sunrooms and solariums. This practical design experience will make Dan even more qualified to carry out his duties with MBMA. Dan is now a licensed Professional Engineer in KY, OH, NC, NH, NJ, MN and PA. Dan resides with his wife Lori in Newbury, Ohio.

## Design of Wall Systems Seminars Offered

The Wei Wen Yu Center for Cold-Formed Steel Structures and the Steel Framing Alliance have teamed up to present a seminar entitled **Design of Wall Systems Using Cold-Formed Steel Framing**. This full-day program begins with the basics of cold-formed steel wall framing and takes you through multiple systems, installations, and examples including curtain walls, load bearing designs, stud bracing, slip and drift connections, and header design. All examples are centered on the design of steel wall studs in typical commercial and residential loading conditions, including high-wind and high-seismic. A number of new software tools and options are introduced and analyzed, and design using the North American Specification for the Design of Cold-Formed Steel Structural Members (NASPEC) and the AISI Wall Stud Standard will be discussed.

This seminar would be of interest to architects, structural engineers, designers, or anyone involved with the design of structures that include cold-formed steel wall elements. Some of the content is highly technical, although most of the program contains information for the expert and novice alike. To participate, a general understanding of load paths and building design is helpful. Although understanding cold-formed steel is not required, it may be beneficial for the technical portion of the presentation. A total of 7 Continuing Education Credits will be awarded for this seminar.

**Seminar highlights include:** background of standards and standards development; some of the latest design advances based on current and soon-to-be-released documents; discussion of advantages and disadvantages of using steel with different cladding types and different building systems; using state-of-the-art software for your design; and what the future holds for steel framing in wall system design.

**Extensive handouts provided at the seminar include:** Product Technical Information for the Steel Stud Manufacturers Association (SSMA); technical documents and case studies from leading industry associations; and speaker notes and slides.

**Seminar Presenters will be:** **Dr. Roger LaBoube, P.E.**, the Director at the Wei-Wen Yu Center for Cold-Formed Steel Structures at the University of Missouri-Rolla. Roger has an extensive background in the design and behavior of cold-formed steel structures and has written numerous papers and reports based on his research. **Don Allen, P.E.**, Director of Engineering Development, Steel Framing Alliance, has practiced engineering for more than 10 years in the southern U.S. He now serves as Technical Director for the Steel Stud Manufacturers Association. Don is a LEED 2.0 Accredited Professional, U.S. Green Building Council.

Remaining locations and dates for the seminar are **October 3 - Chicago, IL (see [www.metalcon.com](http://www.metalcon.com)); December 12 - Tampa, FL; December 13 - Orlando, FL and December 14 - Atlanta, GA**. For more information and to register online visit the Steel Framing Alliance website at [www.steel framing alliance.com](http://www.steel framing alliance.com). To register by phone, fax or mail, or if you are interested in showcasing a product at the seminars, contact Christina Stratman, Wei-Wen Yu Center for Cold-Formed Steel Structures, University of Missouri-Rolla, 301 Butler-Carlton Hall, Rolla, MO 65409-0030; Phone: 573-341-4471; Fax: 573-341-4476; Email: [ccfss@umr.edu](mailto:ccfss@umr.edu).

## ASCE-SEI Committee on Cold-Formed Steel Members Meets in Baltimore

*By Ben Schafer*

Finalization of a special report on bracing of cold-formed steel structures, planning for a session on cold-formed steel at the 2006 Structures Congress in St. Louis (May 18-21), work on a special issue of the Journal of Structural Engineering (JSE) related to cold-formed steel, and nomination of JSE papers for awards were the major topics of discussion at the recent ASCE-SEI Cold-Formed Steel Members committee meeting, held in conjunction with the July AISI meeting in Baltimore.

Committee member Thomas Sputo's design guide on bracing cold-formed

steel structures is in the final publication stages and should be on the streets in a matter of months. Committee member Don Allen is spearheading planning for a session of the 2006 ASCE Structures Congress on Behavior and Design of Load Bearing Cold-Formed Steel, with members Nabil Rahman and Reynaud Serrette preparing talks. Look for this session when you go to St. Louis in 2006!

The committee is continuing its work on a special cold-formed steel issue of the Journal of Structural Engineering. Over 20 papers were submitted based on the

best of the 2004 CCFSS specialty conference, the review process is nearing completion, and the journal issue should be slated for publication in the next couple of months. Also at the meeting, current committee chair Ben Schafer passed the baton to the new chair, Thomas Sputo - congratulations Tom.

Members of ASCE-SEI who are interested in adding their expertise to the committee should email the Chair Thomas Sputo at [sputo@ufl.edu](mailto:sputo@ufl.edu). The committee maintains a website with complete information at [www.ce.jhu.edu/bschafer/asce-sei-cfs/asce-sec-cfs.htm](http://www.ce.jhu.edu/bschafer/asce-sei-cfs/asce-sec-cfs.htm)

## McGuire Receives 2005 Lynn S. Beedle Award

The Structural Stability Research Council recently named Professor William McGuire as the recipient of the 2005 Lynn S. Beedle Award. The award was presented to Prof. McGuire by SSRC Chairman, Nestor Iwankiw, at the 2005 SSRC Annual Stability Conference in Montreal, Quebec, Canada.

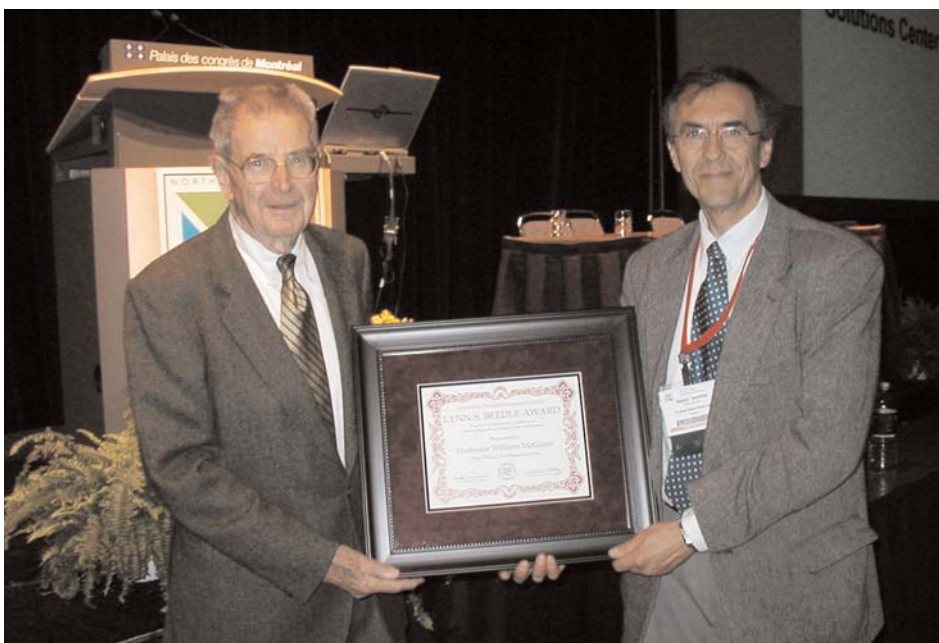
The Beedle award was established in honor of Prof. Lynn S. Beedle, an international authority on stability and the devel-

opment of code criteria for steel and composite structures. Prof. Beedle was a leader and outstanding contributor to the work of the Structural Stability Research Council for a period of more than 50 years, establishing the council as the pre-eminent organization worldwide in the area of structural stability. Prof. Beedle passed away in 2003.

Professor McGuire has served on the faculty at Cornell University since 1949

and has also served as visiting professor at the University of Tokyo in Japan, the University of Liege in France, and Strathclyde University in Scotland. In addition, he spent two years at the Asian Institute of Technology in Bangkok, Thailand, was a visiting lecturer at the University of Canterbury, New Zealand, and was a senior visiting fellow at the University of Western Australia.

Professor McGuire's research has focused on a broad array of problems in structural steel including progressive collapse, nonlinear torsional-flexural behavior, and the application of interactive computer graphics with an emphasis on nonlinear analysis and design of two-and-three dimensional steel frame structures. His textbook *Steel Structures* is a classic reference. In addition, he has done extensive consulting work including assignments with Cornell University and the National Astronomy and Ionosphere Center on the Arecibo Observatory in Puerto Rico, the National Bureau of Standards on projects related to the U.S. Olympic structure at Lake Placid, New York, various organizations on structure collapses in several cities, and the Transportation Research Board of the National Research Council on the development of load and resistance factor design specifications for highway bridges.



Professor William McGuire (left) is presented the 2005 Lynn S. Beedle Award by SSRC Chairman Nestor Iwankiw.

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### Short Course cont. from page 1

assembly plant located in St. Charles, Missouri. The pre-fabricated metal stud wall panels have welded connections. Finish systems such as Exterior Insulation Finish Systems (EFIS), siding or brick veneer are applied in a controlled environment.

Additional information regarding the course may be obtained by contacting Ms. Christina Stratman, Wei-Wen Yu Center for Cold-Formed Steel Structures, Tel: (573) 341-4471, Fax: (573) 341-4476, e-mail [ccfss@umr.edu](mailto:ccfss@umr.edu) or Dr. Roger LaBoube, Tel: (573) 341-4481, Fax: (573) 341-4476 or e-mail: [laboube@umr.edu](mailto:laboube@umr.edu).

## SSRC Annual Conference Held April 6-9

The Structural Stability Research Council (SSRC) has continued the successful practice of scheduling its Annual Stability Conference within the framework, and in conjunction with, the American Institute of Steel Construction (AISC) North American Steel Construction Conference (NASCC). This year's big event was held in Montreal, Canada from April 6-9, 2005.

The SSRC track in the main conference program numbered seven sessions, with a total of twenty presentations that covered such diverse topics as seismic stability, frame stability, element stability, and lateral-torsional buckling. An accompanying SSRC Proceedings documented all these technical papers and the talks given during the additional SSRC Saturday morning session. Interesting follow-up questions and discussion occurred during all these sessions.

Particularly noteworthy was the presentation of the 2005 SSRC Lynn S. Beedle Award by SSRC Chairman, Nestor Iwankiw, to Professor William McGuire, Cornell University (see related article, pg. 4). This Award, given in acknowledgment of Professor McGuire's SSRC membership, outstanding career-long contributions to stability research, leadership in fostering international engineering cooperation and the development of design codes and standards, was presented during the Friday, April 8th morning session. Professor McGuire gave his technical presentation on "Structural Stability Research: Unfinished Business" during the opening SSRC session on the Wednesday, April 6th afternoon session. A full slate of Saturday sessions and Task Group (TG) meetings were dedicated to the usual continuing SSRC work and new stability research needs and developments. A short Annual Business Meeting was also held, during which Chairman Iwankiw summarized the major progress, current work, and future objectives of the Council.

Honored during the Annual Business Meeting was this year's winner of the Sarada M. and Raju A. Vinnakota Award, O. Ozgur Egilmez and his faculty advisor and co-author, Todd Helwig, and co-author Reagan Herman, all from the University of Houston, for the Conference paper "Strength Requirements of PMDF Bracing for Steel Bridge Girders". Each co-author received a Vinnakota Award plaque and Mr. Egilmez received a check for \$500 as well.

For more information about SSRC, ordering publications, or about becoming a member, please check the SSRC website at <http://www.stabilitycouncil.org/>, or phone 573-341-6610.

## Calendar

### October 3, 2005

Design of Wall Systems Using Cold-Formed Steel Framing  
Chicago, IL  
[www.metalcon.com](http://www.metalcon.com)

### October 3, 4, 5, & 6, 2005

METALCON  
Chicago, IL  
[www.metalcon.com](http://www.metalcon.com)

### October 18, 19, & 20

19th Cold-Formed Steel Short Course  
St. Louis, MO  
[www.umn.edu/~ccfss](http://www.umn.edu/~ccfss)

### December 12, 2005

Design of Wall Systems Using Cold-Formed Steel Framing  
Tampa, FL  
[www.steel framingalliance.com](http://www.steel framingalliance.com)

### December 13, 2005

Design of Wall Systems Using Cold-Formed Steel Framing  
Orlando, FL  
[www.steel framingalliance.com](http://www.steel framingalliance.com)

### December 14, 2005

Design of Wall Systems Using Cold-Formed Steel Framing  
Atlanta, GA  
[www.steel framingalliance.com](http://www.steel framingalliance.com)

### February 20, 21, 22, 2006

AISI Committee on Specification  
Venue to be announced  
[www.steel.org](http://www.steel.org)

### September 6, 7, & 8, 2005

International Colloquium on Stability and Ductility of Steel Structures  
Lisbon, Portugal  
[www.civil.ist.utl.pt/sdss](http://www.civil.ist.utl.pt/sdss)

## ***International Colloquium on Stability and Ductility of Steel Structures***

Abstracts are now being accepted for the International Colloquium on Stability and Ductility of Steel Structures (SDSS '06) which will be held September 6-8, 2006 at the Congress Center of the Technical University of Lisbon, Portugal. The language of the colloquium will be English, both for the presentation and Colloquium Proceedings.

Topics to be addressed during the Colloquium include, among others: general design concepts; compression members; built-up members; tapered members; beams; beam-columns; frames; triangulated structures; connections; plated structures and box girders; shells; cold-formed members; composite members; bridges; earthquake engineering; fire engineering; and reliability and progress in design codes.

For more information, including the Call for Papers and registration form, see the Colloquium website at <http://www.civil.ist.utl.pt/sdss> or contact Prof. Dinar Camotim, Department of Civil Engineering, Technical Institute of Lisbon at [dcamotim@civil.ist.utl.pt](mailto:dcamotim@civil.ist.utl.pt).