

**American Society of Civil Engineers  
Structural Engineering Institute  
Technical Committee on Optimal Structural Design**

**Un-Approved Meeting Minutes  
2005 ASCE Structures Congress  
Hilton New York – Holland Room**

**Saturday, April 23, 2005**

**Members in Attendance**

Shahram Pezeshk (Chair)	University of Memphis	<a href="mailto:spezesk@memphis.edu">spezesk@memphis.edu</a>
Chris Foley (Secretary / AE)	Marquette University	<a href="mailto:chris.foley@marquette.edu">chris.foley@marquette.edu</a>
Franklin Y. Cheng	University of Missouri – Rolla	<a href="mailto:fycheng@umr.edu">fycheng@umr.edu</a>
Lisa Wang	Cal-Poly Univ. – Pomona	<a href="mailto:ylwang@csupomona.edu">ylwang@csupomona.edu</a>
Siavash Khajehpour	Atomic Energy of Canada	<a href="mailto:khajehpours@aecl.ca">khajehpours@aecl.ca</a>
Keith Mueller	Teng and Associates	<a href="mailto:muellerkm@teng.com">muellerkm@teng.com</a>
Warren Lucas	Brigham Young University	<a href="mailto:warren.lucas@yahoo.com">warren.lucas@yahoo.com</a>
Dan Frangopol	University of Colorado	<a href="mailto:dan.frangopol@colorado.edu">dan.frangopol@colorado.edu</a>
Asghar Bhatti	University of Iowa	<a href="mailto:mabhatti@uiowa.edu">mabhatti@uiowa.edu</a>
Ali Memari	Penn-State University	<a href="mailto:amm@engr.psu.edu">amm@engr.psu.edu</a>

**Visitors (and Friends)**

Don Grierson (friend)	Chair: TAC-Analysis and Computation	<a href="mailto:grierson@uwaterloo.edu">grierson@uwaterloo.edu</a>
Jasbir Arora (friend)	TAD – ExComm	<a href="mailto:arora@uiowa.edu">arora@uiowa.edu</a>

The meeting was called to order at 9:10 AM by the Chair (Prof. Pezeshk).

1. Members and guests provided a short introduction to the Committee.
2. The minutes of the meeting in Nashville, TN at the 2004 Congress were approved without changes or amendments.
3. No new business arose from the meeting minutes. There was significant discussion, however, and this is outlined under subsequent agenda items.
4. The members were informed that they were to “log in” and update their contact and membership information on the web site. Prof. Pezeshk passed around a member contact information update sheet to the members and members were asked to update their information for the committee’s records.
5. The associate editor (AE) for the OSD committee (Foley) provided the committee membership with an update of the Journal of Structural Engineering’s editorial process and an update of the paper submission/review activities over the past year.

The managing staff of the Journal of Structural Engineering has expressed concern that the Journal’s impact factor has been reduced in recent years. The AE relayed this concern to the

committee and emphasized that one highly effective way to improve the Journal’s impact factor is to conduct manuscript reviews in a timely manner.

The Journal will eventually move to a “paperless” review process. The publications management has purchased a software system for this endeavor. There was no timeline for implementation yet for the Journal, but ASCE publications staff stated at the editorial board meeting that the new system “would be tried on a smaller journal” sometime this summer.

The managing editors (Sashi Kunnath, Sherif El-Tawil, and Joe Tedesco) have instituted a manuscript “screening process” that will streamline the review process. This process will be used to more effectively “shuttle” manuscripts between ASCE journals (*e.g.* Journal of Bridge Engineering) and justify return of sub-standard manuscripts to the authors prior to distribution to the AE’s.

The AE relayed the “Tardiness Index” concept to the committee and stated that the performance of the AE’s are going to be regularly evaluated using this index.

The AE answered committee member’s questions related to duration of manuscript reviews and the publication process.

The managing editors and production staff mentioned that “Special Issues” of the Journal see a significant “hit rate” increase on web-site downloads. Thus, it was felt that regular publication of special issues may be one avenue to improve the impact and stature of the Journal.

The AE handled 26 manuscripts during the period May 2004 through May 2005. The following are statistics for manuscript reviews that were completed during this period:

<i>Average Time for Review (months)</i>	5.2	<i>Total New Papers</i>	13	<i>Total Rev. MS</i>	6
		<i>Approve</i>	5    38%	<i>Approve</i>	4    67%
		<i>Re-Review</i>	3    23%	<i>Re-Review</i>	0    0%
		<i>Decline</i>	5    38%	<i>Decline</i>	2    33%

There are currently 4 new manuscripts under review and 3 revised manuscripts under review.

6. Sessions organized by the committee at the 2005 Structures Congress were discussed. The committee had one session at the 2005 Congress: *Optimal Structural Design for Practicing Engineers: Tools and Methods Available*. The session attendance was dominated by practicing engineers, which was encouraging given the Committee’s desire to get practicing engineers more involved in optimization activities.
7. Sessions for the 2006 St. Louis conference were discussed. The committee was reminded that proposals for conference sessions and individual presentation abstracts need to be uploaded through the conference web-site by May 6, 2005.

The committee discussed three session proposals for the 2006 Congress:  
*Multiple-Solution Optimization of Structural Systems: Providing Balance and Decision Opportunity* by Warren Lucas  
*Structural Optimization Using MS Excel for Practicing Engineers* by Keith Mueller

*Computer Intelligence and Natural Systems Algorithms in Structural Engineering*  
(joint session proposal with Emerging Computing Technical Committee)  
by Bill Bulleit, Chris Foley and Shahram Pezeshk  
*Life-Cycle Design and Management of Infrastructure* by A. Estes. The committee mentioned that Prof. Estes would be contacted to confirm that his interest in developing this session for the Congress.

The 17th Analysis and Computation Conference sessions and paper submittal process was discussed. The committee was informed that the camera-ready manuscript deadline was extended until January 31, 2005. The committee was also informed that the 17th A&C Conference track would be used as a venue for generating a “special issue” in the Journal of Structural Engineering. Conference papers/presentations provided by authors at the 17th A&C will be asked to “expand” their conference submissions to journal-length papers for inclusion in the special issue. These expanded contributions would undergo the standard peer-review process for contributions in the Journal.

An idea for a session devoted to structural optimization in a “specific medium” (*e.g.* structural steel, reinforced concrete, timber) was discussed. The committee discussed the idea of a session devoted to this, but the discussion did not result in definitive direction.

8. The 2007 Structures Congress and sessions were discussed.
9. The future directions of the OSD committee were discussed.

The special publication entitled “Performance-Based Optimal Design” was discussed. Prof.s Lucas and Foley were reminded to submit an abstract for their contribution as soon as possible. The committee decided to collect the papers for the “special issue/publication” and then decide on the route to take (*e.g.* special publication, manual of practice, or special issue in the journal). Thirteen chapter abstracts were submitted. Copies of the abstracts are available through the committee chair. The format for the contributions is to follow the ASCE guidelines.

The concept of having tutorial sessions on optimal structural design was discussed. It was felt that the “Manual of Practice” publication could be used as a foundation for “continuing education” activities. Development of “webinars” in structural optimization was discussed by the committee. The committee also discussed methods and mechanisms to generate “dynamic” presentations (*e.g.* audio/visual PPT presentations).

Prof. Arora described his activities at U. of Iowa related to using commercial software as an analytical engine. Prof. Arora currently is using ANSYS as his analytical engine for optimization algorithms. He asked that if any committee members are interested in collaborating in these efforts that they should contact him.

The use of CIS2 as a neutral file format for optimization interfaces with commercial software was discussed. Several members relayed their experience with commercial vendors and ideas related to development of third-party algorithms. These are related to Prof. Arora’s work at Univ. of Iowa, but commercial software vendors seem less than forthcoming in these endeavors.

The committee discussed generation of benchmark problems for structural optimization. The past work of the Structural Control committee in this arena was discussed. The committee supported efforts in this arena as there is a very strong move away from elastic analysis for which there is a plethora of benchmarking solutions available.

The SEI “special project funding” process and procedures were discussed by the Committee. It was stressed that if a special project is proposed, it cannot be a routine part of the committee’s activities. The program is truly for “special activities”.

10. Other Business

Professor Grierson led discussion regarding the committee’s impressions of E-Room and relayed some concerns and positive thoughts he has heard regarding E-Room from other committee members and AE’s.

The proposed six-year membership term was discussed. The latest “policy” from the Executive Committee is that members of the committee will have 6-year terms. A one year extension to this term is possible, but it must be considered an extraordinary occurrence and approval from the ExComm is needed. The committee chair will have to make a case for this extension. After the 6-year term is completed, members must not be a member of the committee for a minimum of two years. After this two-year period, the member may reapply for another 6-year committee membership term.

The committee chair and associate editor positions were discussed. The terms of the current secretary (Foley) and current committee chair (Pezeshk) are up. These issues will be addressed in the near future, but no decision in this regard at the meeting was made.

The SEI tracking sheets for the committee activities were discussed.

Jasbir Arora (ExComm Member) provided an overview of current discussions of the ASCE/SEI Executive Committee:

Prof. Arora relayed Executive Committee desires to have technical committees reevaluate their mission, purpose, and direction to respond more closely to the profession’s needs.

Fire protection, physical security and design for sustainability were mentioned as very important needs of the profession. Committee’s have been asked to examine their mission related to these profession needs.

Merging committee’s, changing names, etc..., to develop a closer link to the needs of the profession were relayed as possibilities.

Product tracking sheets were discussed. It was stressed that these sheets were very important mechanisms for the Executive Committee to remain informed of the committee’s activities and for new ExCom members to “learn about” what the committee does.

A theme for the 2007 Structures Congress in Long Beach has been identified. It was stressed that proposed sessions should be consistent with themes established for the congress.

The Structural Engineering Institute is making a “push” for more practitioner involvement. Along these lines, Prof. Memari mentioned that an increase in “manufacturer” involvement should also be examined.

A goal for the 2007 Congress is to have 50% of the sessions invited. Therefore, it is expected that the competition for “unsolicited sessions” will be high.

New membership activities were also stressed. It was relayed that getting professional involvement in the committee is important. It was recommended that committees examine and/or develop their own policies regarding membership. There is a need to allow “new blood” to be interjected into committees. Extensions filed for individuals must be seriously considered and justified by the committee chair.

The use of conference calls by the committee between their annual meetings at the congress was encouraged. Cost for these conference calls can be added to the Committee’s budget.

It was thought that having presentations made at the congress available to attendees would be highly useful. Discussion related to placement of these presentations and paper contribution on the same CD, or presentations placed on a two-year temporary web-site may improve accessibility to congress presentations and therefore, increase interest in the Congress.

11. The meeting was adjourned at 12:00 pm.

Respectively Submitted,

A handwritten signature in black ink, appearing to read 'C.M. Foley'.

Christopher M. Foley, Ph.D., P.E.  
Secretary – Technical Committee on Optimal Structural Design  
April 24, 2005