

ASME Distinguished Lecturer

**Where: The Old Chapel at Union College,
Schenectady, NY**

**Topic: Constructal Theory and Design:
Optimal Flow Architecture, from
Engineering to Nature**

When: Thursday, April 24
Reception 6 PM
Lecture 7 PM

To reserve your seat, contact Fred Willett
(willettf1@asme.org or (518) 347-0271) by 12
Noon, Wednesday, April 23rd.

Constructal Theory and Design: Optimal Flow Architecture, from Engineering to Nature

Similarities abound in the geometry of flow systems in engineering and in nature. For example, tree-shaped flows are everywhere, in computers, lungs, dendritic crystals, urban street patterns, and communication links.

In this lecture, Adrian Bejan starts from the design of optimization of engineered systems and discovers a deterministic principle for the generation of geometric form in natural systems. Shape and structure spring from the struggle for better performance in both engineering and nature. This observation leads to constructal theory, that is, the thought that the objective and constraints principle used in engineering is also the mechanism from which geometry in natural flow systems emerges.

From heat exchangers to river channels, this thought unites the engineered and the natural worlds. Examples will be selected from mechanical structure, thermal structure, heat trees, ducts and rivers, turbulent structure, power systems, flight and structure in transportation and economics.

The lecture is based on Adrian Bejan's most recent book *Shape and Structure, from Engineering to Nature*, Cambridge University Press, Cambridge, UK, 2000.



Adrian Bejan is the J. A. Jones Distinguished Professor of Mechanical Engineering at Duke University. His research and teaching covers a wide range of topics in thermo-fluid science and engineering.

Professor Bejan received his B.S. (1972, Honors Course), M.S. (1972, Honors Course), and Ph.D. (1975) degrees in mechanical engineering, all from the Massachusetts Institute of Technology. He taught at M.I.T. until 1976 as a Lecturer and Research Associate. From 1976 until 1978 he was a Fellow of the Miller Institute for Basic Research in Science, at the University of California, Berkeley.

For **further information**, contact Tristan Boscard at 518-388-7085, boscardt@union.edu.

Cost: Cost of the reception is \$5.00 for ASME members and guests, \$3.00 for students, and free for Union College students.

Directions to the Old Chapel at Union College: The Old Chapel is near the center of the Union campus, south of the Nott Memorial and next to Hale House. A map of the Union campus can be found at <http://www.union.edu/Map/>

Honors and Awards Banquet in May

Our guest speaker at the May Honors and Awards dinner will be Prof. James Sherwood of the University of Massachusetts-Lowell mechanical engineering department. Prof. Sherwood is also director of the Baseball Research Laboratory at UMass-Lowell. The banquet will be on Thursday May 22nd at the Edison Club in Rexford, beginning with a social/cocktail hour at 6PM.

ASME International Hudson-Mohawk Section Officers

Chair: Fred Willett (518) 347-0271 willettf1@asme.org
Vice Chair: Frank Reed (518) 385-4264 frank.reed@ps.ge.com
Admin.Assoc.: Tom George (518) 395-4045
Treasurer: Mike Brilliant (518) 387-6558 brilliant@crd.ge.com

**THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
HUDSON MOHAWK SECTION**

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Tour of Benét Labs Cancelled

The March event, a tour of the Fatigue and Vibration laboratories at Benét Labs at the Watervliet Arsenal, was cancelled at the last minute due to National Security concerns. This is the second time, since 9/11, that an ASME event at Benét Labs has been cancelled.

Section By-Laws

Our section by-laws have gotten lost over the years. A new set of by-laws has been written, based on one form of section by-laws suggested by ASME. The executive committee has reviewed the new version and recommends that it be submitted to the section for ratification. The ratification vote will occur along with the annual election of officers. The new by-laws, along with answers to some anticipated questions, can be found at <http://www.asme.org/sections/udson-mohawk>.

Distribution of Section Newsletter

The Hudson Mohawk newsletter is posted at:
www.asme.org/sections/udson-mohawk.

Once each newsletter is posted on the Section's web page, an e-mail notification and link to the above website is sent to members who have e-mail addresses in the ASME member database. If you are an active member of ASME and did not receive an e-mail notification, please go to the ASME web site and update your membership information.
<http://members.asme.org/myasme/login/myasme.cfm>

Call for Nominations

The section Nominating Committee, chaired by Paul Kehoe, will meet soon to nominate officers and directors for 2003-04. Past section chairs wishing to serve on the nominating

committee should contact Paul at paul.kehoe@ps.ge.com or 518- 475-5174.

Members interested in becoming officers or directors can contact Paul Kehoe or Fred Willett for further information.

Opening for Section Historian

The Hudson-Mohawk Section seeks a historian whose duties will be to compile section history, including items such as; lists of past chairs, Scheper scholarship winners, and ASME fellows from the section; brief descriptions of historical landmarks; and brief biographies of notable section members (e.g., Sayre, Scheper). The historian will work with the section Webmaster to develop a section history web page. The goal is to initiate the web page within the next six months and complete it within the next year. The estimated time commitment is about two hours per month. Interest parties should contact Fred Willett.

Missing: Section's P.E. Videotapes

The Section's P.E. Exam study guide videotapes are missing. Would whoever currently has the tapes in his or her possession please return them to a member of the executive committee.

PE Exam Study Group Leader

The Hudson-Mohawk Section seeks a member to lead and host a P.E. exam study group. The ideal volunteer is an engineer planning to take the P.E. exam in the next year. The leader will arrange a location and schedule for prospective P.E.'s to view and discuss the P.E. exam study guide videotapes (*once they are returned to the section*). The leader will have custody of the section's P.E. exam study guide videotapes for the duration of the study group schedule.
