# Newsletter

**of the INFORMS Computing Society**

**Volume 21, Number 1 Spring 2000**


## Contents



## IFORS tutORial Project


by
Moshe Sniedovich
Department of Mathematics and Statistics
University of Melbourne
Parkville VIC 3052, Australia
m.sniedovich@ms.unimelb.edu.au


Last year the International Federation of Operational Research Societies (IFORS) established an Educational Resources Committee, chaired by Vicki Sauter, whose mission is to collect and organize information on OR/MS Educational Resources world wide (www.umsl.edu/~sauter/ifors/).

In this article I briefly describe a special initiative of the Committee, called tutORial (www.ifors.org/tutorial/), whose aim is to develop a comprehensive collection of web-based, educationally-rich tutorial modules for standard OR/MS topics. Hopefully, this article will encourage ICS members to take an active part in this exciting project.

*IFORS: continued on page 4*

**The Institute for Operations Research and the Management Sciences' Computing Society Newsletter**

**Volume 21, Number 1, Spring 2000**

## ICS Officers

**Chair**

Ramayya Krishnan (rk2x+@andrew.cmu.edu)
Carnegie Mellon University
Heinz School of Public Policy & Mgmt
Pittsburgh, PA 15213
(412) 268-2174

**Chair-Elect**

Irvin Lustig (irv@cplex.com)
ILOG, CPLEX Division
99 Braeburn Drive
Princeton, NJ 08540
(609) 497-0984

**Secretary/Treasurer**

Bjarni Kristjansson (bjarni@maximal-usa.com)
Maximal Software
Arlington, VA 22201
(703) 522-7900

**Board of Directors**

Bruce Golden (bgolden@rhsmith.umd.edu)
RH Smith School of Business
University of Maryland, Simpsonville, MD 21150
(301) 405-2232; term expires in 2001

Jeffery L. Kennington (jlk@seas.smu.edu)
Department of Computer Science and Engineering
Southern Methodist University, Dallas, TX 75275
(214) 768-3088; term expires in 2001

Manuel Laguna (Manuel.Laguna@colorado.edu)
Graduate School of Business
University of Colorado, Boulder, CO 80309-0419
(303) 492-6368; term Expires 2002

Erik Rolland (eric.rolland@ucr.edu)
Anderson Graduate School of Management
University of California - Riverside, Riverside CA 92521
(909) 787-3694; term Expires 2002

Matthew J. Saltzman (mjs@clemson.edu)
Department of Mathematical Sciences
Clemson University, Clemson, SC 29634
(864) 656-3185; term expires in 2000

Carol Tretkoff (tretkoff@ilog.com)
ILOG, Inc.
1080 Linda Vista Avenue, Mountain View, CA 94043
(650) 567-8157; term expires in 2000

## Newsletter Staff

**Co-Editors**

S. Raghavan (suraghav@rhsmith.umd.edu)
Decision & Information Technologies Dept.
Robert H. Smith School of Business
University of Maryland
College Park, MD 20742
(301) 405-6139

Tom Wiggen (wiggen@acm.org)
Dept. of Computer Science
University of North Dakota
Grand Forks, ND 58202-9015
(701) 777-3477





The ICS Newsletter is published semiannually in April and October by the INFORMS Computing Society (ICS). Manuscripts, news articles, camera-ready advertisement and correspondence should be addressed to the Editor. Manuscripts submitted for publication will be reviewed and should be received by the Editor three months prior to the publication date. Requests for ICS membership information, orders for back issues of this Newsletter, and address changes should be addressed to:

INFORMS Computing Society Business Office
901 Elkridge Landing Road, Suite 400
Linthicum, MD 21090-2909
phone: (410) 850-0300

# Successful 7th ICS Meeting in Cancún

The 7th ICS conference was held in Cancún on January 5-7, 2000. In attendance were 79 brave participants who traveled to Cancún ignoring all Y2K-bug warnings and the possibility that their airplane would fall off the sky. We appreciate their courage and contribution to our biannual conference. The conference started with Richard Nance's plenary talk on simulation, which identified a great deal of research challenges while surveying history and recent developments of simulation technologies. The first day ended with a reception in the Playa de la Laguna (not a relative of Manuel), where in spite of the rain the participants enjoyed exotic beverages prepared with the juice of local fruits and distillages. The scientific program consisted of twenty five parallel sessions and eight tutorials, which were well attended (considering the temptations around our meeting facilities). There was also an ICS Business Meeting, to which all participants were invited. In this informal meeting, Ramayya Krishnan solicited opinions about the future of our conference. Due to the diversity of the attendants, who came from several countries in Europe, Latin America, and Asia, the consensus was that our conference benefits from the selection of attractive sites. That is, attractive sites encourage international participation, which in turn promotes our society to wider audiences. Although there was no consensus on the best time of the year to hold the conference, two proposals were considered: (1) keeping the conference at the beginning of January and (2) moving the conference to May to the same location of the INFORMS Spring conference.

ICS attendees enjoy the sights in Cancun. From left to right, David Heltne, Alexandra Newman, Kevin Wood, Bruce Golden, Shreevardhan Lele, Ed Wasil, Harlan Crowder

Kluwer published the conference book that consists of 17 carefully selected papers. We are confident of the high quality of this publication because in addition to a formal refereeing process, the articles in the book passed the even more strict review of Mexican custom agents. After two days of such review (and a small monetary incentive), the book was released for distribution to the participants.

In our biased opinion the conference was a success, although we were disappointed with the level of participation of ICS members. We also believe, however, that those who made it to Cancún had a good time and participated in an interesting and informative exchange of ideas.

Manuel Laguna and José Luis González-Velarde

*IFORS: continued from page 1*

**Background and motivation**:

A significant volume of OR educational resources is currently available on the web. However, actual utilization of these resources is limited by a number of factors, such as lack of coordination and diversity of local needs and requirements.

Lack of coordination between OR societies, academic programs and individuals resulted in an uneven distribution of effort over various areas of OR/MS. Duplications abound in some areas (eg. linear programming) whereas coverage of some areas is very light (eg dynamic programming). Furthermore, it is not always easy to find existing material.

But even if plenty of material on a given topic is readily available and accessible, it may not suit the local needs of individual lecturers and/or departments. This can be due to a number of factors some of which are technological in nature (eg computer platform) some are content-related (eg. language, level of mathematics) others are pedagogical in nature (eg style and nature of the user interface).

For sometime now IFORS has recognized these difficulties and this recognition has led to the establishment of the new IFORS Educational Resources Committee in 1999. The main objective of this Committee is to make information on existing OR/MS Educational Resources well documented, organized and searchable, thus more easily accessible and useful to end users, especially users from developing countries.

The Committee will also embark, from time to time, on special initiatives whose aim is to strengthen and complement its main mission. The tutORial project is one such initiative whose objective is to establish the foundation for a long term international collaborative effort involving the development of an extensive collection of web-based generic tutorial modules for a large number of standard OR/MS topics.

**Scope:**

The development of web-based, educationally-rich OR/MS resources is labor-intensive, thus expensive. Consequently it is not an activity that IFORS can be heavily involved with directly. On the other hand, IFORS is perfectly positioned in the global OR/MS scene to play a central role in initiating, fostering and facilitating collaborative international activities in this important area.

Thus, the tutORial project is not about IFORS itself being heavily involved with the development of specific OR/MS Educational Resources. Rather, it is about IFORS laying the foundation for and coordinating a long term, international cooperative effort to make the emerging www technology more accessible to OR/MS persons and organizations world wide.

The immediate goal of the tutORial project is then to set things in motion. This will be achieved by providing the international OR/MS community, in the first instance, access to a number of generic tutorial modules that are currently being developed by the OR group at the Department of Mathematics and Statistics, University of Melbourne, in conjunction with their tutOR project (http://www.tutor.ms.unimelb.edu.au). It is envisaged that additional modules will be contributed by other OR/MS groups and individuals.

In the long run, IFORS main role in this project will be to coordinate an international effort dedicated to expanding and further developing the modules on an on-going basis.

### Organization:

The plan is to keep the organizational structure of the project as simple and as flexible as possible. Thus, the main directory (www.ifors.org/tutorial/) is located on the IFORS web site in the USA and provides general information on the project as a whole and essential details on the existing modules.

The modules themselves reside on the contributors' web sites and are linked to the main directory.

### Intellectual Property and Copy Rights:

Contributors of modules to the project retain complete intellectual and copy rights on their contributions.

Should there be a need to distribute the modules, say on CDs, an agreement will be reached with the contributors on the details of the distribution plan, including copyright matters.

Contributors can withdraw their contributions anytime, and will decide for themselves whether to provide their modules for distribution if this will be considered by IFORS.

### Why tutorials?

The tutORial project as a whole and its particular focus on "tutorials" were inspired by the tutOR (www.tutor.ms.unimelb.edu.au) project which is dedicated exclusively to the development tutorial modules. The explanation for such a strong focus on tutorials is simple:

- Not much OR/MS tutorial resources are freely available on the web
- It is becoming easier to develop educationally-rich tutorial resources on the web

In any case, whereas the IFORS Educational Resources Committee is interested in all types of educational resources (eg. lecture notes, books, videos, software), the tutORial project is dedicated to the development of web-based, educationally-rich tutorial modules.

The term "educationally-rich" is not meant to be a buzz word. It is used to stress and reinforce the fact that the focus is on tutorial modules. Thus, a module that enables the user to specify a linear programming problem via a spreadsheet-like input form and then solve it by pressing a "Solve" button, is not necessarily regarded in this context as being educationally-rich. The module will have to do much more than just solve the problem and display the final tableau.

That is, ideally the module should enable users to go step-by-step on their own through the process of defining and solving the problem. It should also provide context-dependent on-line feedback and help.

We accept it as a fact of life that not all the modules will be 'ideal' in this respect. The minimum requirement is that the module should offer an educational feature that cannot be offered by plain text, for instance: an on-line computing facility.

### The Technology

There are various approaches to the development of web-based tutorial modules in terms of the technology used for this purpose. Perhaps the most crucial choice is the client vs server option. In other words, one extreme approach could be to use the user's machine merely as an input/output device. In this paradigm the "real stuff" is done exclusively on the server. There are many advantages to this approach, one being the freedom in choosing the application software used to do the "real stuff" on the server.

The other extreme approach is to do everything on the client's machine. Namely here the server is used merely to store the module which is downloaded by the user's browser onto his/her machine where the "real-stuff" is run. While this way it may take a while to download the module via the network, once the module is on the client's machine, it runs on its own and does not have to be connected to the server for the duration of the session.

The choice between these two extreme approaches is not always easy and clear cut. The complexity has to do with a host of technological, organizational and pedagogical issues.

Needless to say, in some cases it is best to use a mixed strategy where part of the module is server-based and part of it is client-based.

In any case, one of the reasons why it is now becoming easier to develop web-based tutorial modules for OR/MS is that recent versions of the popular browsers (Netscape Communicator and Microsoft Internet Explorer) provide reasonable support for JavaScript. In fact, this popular scripting language of the web has become the de facto tool for client-side processing and computing.

For various reasons the tutOR project adopted the pure client-based approach. Furthermore, its modules are JavaScript intensive in that so far all the modules have been developed with JavaScript and Dynamic HTML. It is envisaged though that some modules will be developed in Java and/or Java-based applications and may require plug-ins.

## The Challenge

The tutORial project poses a number of major challenges. We shall briefly mention three.

The first is pedagogical in nature: how can the web technology be used to enrich the educational content of OR/MS courses in general and tutorials in particular? As we all know only too well from what is happening on the WWW, it is not too difficult to jazz-up web sites with bells and whistles. But how can we make good use of these bells and whistles in the OR/MS classroom?

The second challenge is technological: how do we cope with the fast and ever changing nature of the technology and the difficulties associated with its implementation? For example, how do we handle the substantial differences between operating systems (Windows, Mac, unix) and browsers (Netscape, Microsoft)?

As was indicated above, the tutORial project was inspired by the success we had coping with these two challenges within the tutOR project. We are thus confident that the tutORial project will also be successful in this regard.

The third challenge is much more difficult: how do we attract OR/MS persons to actively participate in this international project? How do we gather modules for this project?

We decided to deal with this challenge in an unorthodox manner, namely by insuring that we have a good start, a start that will stimulate active participation in this project.

## Where do we start?

A visit to the tutORial web site (www.ifors.org/tutorial/) is all that is required in order to get a good overall impression of what the project is all about, its potential contribution to the international OR/MS community and to the OR/MS as a discipline.

Had such a visit been made at the time

this article was written (March 21, 2000), the basic picture would have been something like this:

There are currently eighteen modules on board. Fourteen were contributed by the tutOR project (The University of Melbourne) and four by Jaroslav Sklenar from the University of Malta, Msida, Malta.

These modules cover a number of topics: linear algebra, linear programming, dynamic programming and simulation. The complete list is as follows:

_ Row operations
_ The Equator
_ The Inverter
_ Shortest path problem
_ Dijkstra's Algorithm
_ Knapsack Problem
_ Critical Path Problem
_ The Simplex Place
_ Virtual Duality
_ Royal Optimization
_ Die Hard at the Pub
_ Towers of Hanoi
_ 8 Eazy Pieces
_ Gee Park
_ M/M/1 Queues
_ G/G/s Queues
_ Queueing Networks
_ Random Generator Tester

They are all web-based and highly interactive. It is interesting to note that they are all JavaScript intensive. None utilizes Java, none requires plug-ins. All you need to use them is a recent version of Netscape Communicator or Microsoft Internet Explorer.

## What's next?

Our immediate objective is to spread the news about this project to OR/MS persons world-wide with a view to encourage active participation in this project.

For this purpose we plan to publish a number of articles on this project in OR/MS news letters and magazines, give tutorials on this project at international OR/MS conferences (eg. APORS 2000, EURO XVII) and distribute a Call for Contributions through OR/MS newsgroups and national societies. Hopefully, this effort will pay off and soon contributions will begin to flow in.

As was indicated above, we are fully aware of the challenge we face in our attempt to attract active participants to this project. But we do believe that by the time we report on this project at the next IFORS Triennial Conference (July 8-12, 2002, Edinburgh, UK), the list of modules will be much longer.

In the meantime, add the URL of the project (www.ifors.org/tutorial/) to your list of bookmarks and visit the site regularly to see how the project is progressing. We do hope that you'll like what you'll see and that sooner or later you'll send us your contributions! If you teach OR/MS courses, you may wish to advise your students about this project.

**Sustainable Transportation Networks**

by Anna Nagurney
Edward Elgar Publishing, Cheltenham, England (2000)
304 pages Hardback ISBN 1-84064-375-9

*Book Description provided by the author:*
Transportation networks are essential to the functioning of societies and economies and provide the infrastructure for the movement of people and goods over space and time. The existence and utilization of transportation networks are fundamental to the modern age and the negative effects of congestion and pollution associated with their increasing usage demand urgent attention.

This book cogently addresses the question as to whether transportation networks are sustainable: that is, can they last, given the growing demands on the network, on the one hand, and the desire to alleviate the associated negative impacts, on the other. Anna Nagurney answers the question positively by providing a rigorous foundation for the formulation, analysis, and computation of solutions to such problems through the use of appropriate policies ranging from tolls and tradable pollution permits to the design of the networks themselves.

Sustainable Transportation Networks will be of great value to students, researchers, and practitioners of transportation studies, environmental economics, regional science, and urban planning.

Contents:


About the Author: Anna Nagurney is the John F. Smith Memorial Professor, Isenberg School of Management, University of Massachusetts at Amherst

**Operations Research: A Practical Introduction**
Michael W. Carter & Camille C. Price
CRC Press, July 2000. ISBN 0-8493-2256-1

*Description provided by Camille Price:* The original motivation behind this book was that I teach an OR course in our computer science department, and none of the standard (though excellent) textbooks quite fit the needs of my students (computer science or mathematics majors) who are interested in computational issues associated with the use of OR methods. Early drafts were used successfully by my students as text material, and since then, the scope of the book has been generalized and broadened into its present form, which can be used as a text or a professional reference. The book covers structuring problems into standard mathematical models, traditional and innovative solution methods, insights on how to apply or develop computational tools, guides to choosing software, and numerous illustrations of the effective use of OR techniques, drawn from industrial, computing, engineering, and business applications.

I'm hoping that many of the members of the ICS will be interested in this book. (It will be available for fall adoption as a textbook.)

## Report on the INFORMS Journal on Computing

W. David Kelton, Editor-in-Chief

It is truly an honor to be chosen as the new Editor-in-Chief of *JOC*. I thank the selection committee, headed by Jan Karel Lenstra, and the INFORMS Board for giving me the opportunity to lead a respected journal that has built a tradition of not only publishing solid research, but also of forging into innovative (and risky) areas in the intersection of operations research and computer science. I follow in the (large) footsteps of the first two Editors-in-Chief. Bruce Golden, my predecessor, skillfully steered *JOC* for over seven years to its present position of innovative breadth and solid depth, bringing in many creative ideas and practices. Before Bruce, Harvey Greenberg had the vision and energy to found *JOC* at a time when the links between operations research and computer science were just emerging and when it was not easy to start a journal. I look forward to continuing and building on the fine service (and hard work) that Harvey and Bruce provided to our community.

Continuing *JOC*'s tradition of evolving to stay at the forefront, there have been several changes to our topical Areas. The former Telecommunications Area has expanded its scope in an exciting direction, and its new name indicates the intent: *Telecommunications and Electronic Commerce*. This new Area will be co-edited by Anant Balakrishnan, who heretofore has served as Telecommunications Area Editor, and is now being joined by Ramayya Krishnan to develop the E-Commerce aspect of this expansion. We welcome Krishnan as a new Area Co-Editor, and appreciate his and Anant's vision and efforts in making this timely change to our Area lineup. Two other Areas have been renamed and accordingly reoriented. John Chinneck has renamed the former Modeling Languages and Methods Area to *Modeling: Methods and Analysis* to indicate the Area's broad interest in modeling methods beyond languages. And reflecting intense current interest in constraint programming, John Hooker has renamed the former Logic Modeling and Computation Area to *Logic, Optimization, and Constraint Programming*. We thank John C. and John H. for their energy in keeping their Areas out in front.

There have been changes in the cast of characters as well. I'm very pleased to appoint Bruce Golden to the *JOC* Advisory Board, which provides long-term guidance and continuity for the journal. I'm also honoring Dick Larson's request that his long and valuable term on the Advisory Board come to a close as his interests lead him elsewhere. We welcome three new Associate Editors: Kirk Pruhs in Design and Analysis of Algorithms, Alan Hevner in Knowledge and Data Management, and Betty Hickman in High-Performance Computation. We thank Lawrence Dowdy, Leslie Hall, Charles Blair, Ramayya Krishnan, Melanie Lenard, Erik Rolland, Douglas Shier, and Prasoon Tiwari for their service as Associate Editors as they rotate off the Editorial Board. We are proud to welcome several new Institutional Sponsors: Andersen Consulting, the IBM T.J. Watson Research Center, Palisade Corporation, Systemflow Simulations, Inc., and the University of Cincinnati's Department of Quantitative Analysis and Operations Management. (Of course, we have retained a number of ongoing sponsors, including ICS itself.) Though we hope to receive additional Institutional Sponsorship, we are already over the budgeted income.

Here are some basic statistics. The first issue of 2000 was published (on time) with 5 papers, 2 of which were long Expository Articles. There are now 12 accepted papers in the publication queue. We have 84 papers in various stages of review or revision. During the first quarter of 2000 we received 22 new submissions, accepted 5 papers, and rejected 5 (these acceptance/rejection statistics are not very meaningful since they were collected over such a short time period). The Area Editors and I have moved to shorten review cycles and to solicit several special papers; indeed, we now have at least two special issues or focused clusters of papers in development. While there are both advantages and disadvantages to both long and short publication queues, the salient fact at this point for the ICS membership is that the queue right now is quite short, making it a great time to submit good papers to *JOC*.

Our web site, available via *http://www.informs.org/Pubs/JOC*, has been expanded to include updated

*JOC: continued on page 10*

## Computational Global Optimization in Nonlinear Systems

by **János D. Pintér**
**Pintér Consulting Services, and Dalhousie University**

An electronic book published by **Lionheart Publishing, Inc.** (To appear in 2000)

*Description provided by the author:* This work presents a concise, practical introduction to models and algorithms that enable the analysis and solution of nonlinear decision problems, in the (possible) presence of multiple optima. Such problems arise in many areas of engineering, economics, and sciences. From among a large variety of applications, one can mention continuous facility location, data analysis and visualization, equilibrium studies in natural sciences and economics, image analysis, inverse model calibration, nonlinear approximation, potential energy based modeling (in biology, chemistry and physics), product design, robotics, and therapy planning. The book places a special emphasis upon computational aspects. First, a brief review of frequently used **global optimization** models and methods is provided, then software development and performance testing issues are highlighted. This is followed by a discussion of several interesting applications. The LGO integrated modeling and solver system is introduced and used to solve these examples. The corresponding demonstration program files are also made available. A list of references is also included, mainly consisting of recent books and WWW sites.

This work will be available in both electronic and paper forms. It is targeted towards a broad audience of OR/MS professionals—researchers and practitioners from both academia and business—who are interested in an application-oriented, hands-on (and inexpensive) introduction to an interesting and rapidly emerging field.

**Contents**



For further information regarding this book, please contact the Publisher at csr@lionhrtpub.com. LGO software information is available from the author.

*JOC: continued from page 9*

contact information for Area and Associate Editors as well as the Advisory Board and Institutional Sponsors, Editorial Statements for the Areas and the journal overall, a section with detailed Instructions for Authors, and information on Subscribing. We're also planning a permanent on-line archive of documents of various kinds (maybe lengthy and maybe including things like live links) supporting papers we publish, a list of accepted papers to appear in the future, and an archive of downloadable full-text papers from back issues of *JOC*. In addition, a web site describing guidelines for *JOC*'s internal procedures has been developed and made available to all Area and Associate Editors.

Finally, let me encourage all ICS members to participate actively in the life of *JOC*, most importantly by submitting research papers (and subscribing), but also by agreeing to serve as referees and in other capacities.

# DATA ENVELOPMENT ANALYSIS

*A Comprehensive Text with Models, Applications, References and DEA-Solver Software.*

by **William W. Cooper** , University of Texas, USA
**Lawrence M. Seiford,** University of Massachusetts, USA
**Kaoru Tone**, National Graduate Institute for Policy Studies, Japan
**Kluwer Academic Publishers, Boston**
**Hardbound, ISBN 0-7923-8693-0, November 1999, 352 pp.**

*Description provided by Lawrence M. Seiford:* In a relatively short period of time Data Envelopment Analysis (DEA) has grown into a powerful quantitative, analytical tool for measuring and evaluating performance. It has been successfully applied to a host of different entities engaged in a wide variety of activities in many contexts worldwide. In many cases evaluations of these entities have been resistant to other approaches because complex, multiple levels of (often) poorly understood relations must be considered. A few examples of these multifaceted problems are (1) maintenance activities of US. Air Force bases in geographically dispersed locations, (2) police force efficiencies in the United Kingdom, (3) branch bank performances in Canada, Cyprus, and other countries and (4) the efficiency of universities in performing their education and research functions in the U.S., England, and France. In addition to localized problems, DEA applications have been extended to performance evaluations of "larger entities" such as cities, regions, and countries. These extensions have a wider scope than traditional analyses because they include "social" and "safety-net" expenditures as inputs and various "quality-of-life" dimensions as outputs.

**Contents**


In other applications, DEA has been used to supply new insights into business activities and into the methods that have been used to evaluate these activities. These include "benchmarking" studies of professional organizations including legal and accounting societies, as well as organizational forms—such as evaluating the relative efficiencies of the "mutual" vs. "corporate" forms of organization that are used in the U.S. insurance industry. Finally, DEA can also be used to evaluate objects as well as governmental, business and societal activities. For example, a test study found that DEA compared favorably with traditional engineering approaches for use in evaluating the relative efficiencies of jet aircraft engines. These advantages accrued to DEA because of its ability to simultaneously handle multiple outputs and inputs without having to first specify a system of weights for use in effecting these evaluations.

This book is designed to provide a systematic introduction to DEA and its uses as a multifaceted tool for evaluating problems in a variety of contexts. Each chapter accompanies its developments with simple numerical examples and discussions of actual applications. Emphasis is placed on the use as well as an understanding of DEA and the topics in this book have been selected and treated accordingly. The objective is to introduce students, researchers, and practitioners in business, economics, engineering, and the sciences to Data Envelopment Analysis.

**Minutes of ICS Business Meeting for INFORMS Cincinnati, May 1999**

*Bjarni Kristjansson, Secretary/Treasurer*

Harlan Crowder, the Chair, opened the business meeting and went over the agenda. He then listed the current slate of 1998-1999 ICS officers that are serving.

### ICS Officers 1998-99

Chair: Harlan Crowder,
Vice-Chair/Chair Elect: Ramayya Krishnan,
Secretary/Treasurer: Bjarni Kristjansson
Board of Directors: Andy Boyd, Chris Jones (-1999), Carol Tretkoff, Matt Saltzman (-2000), Bruce Golden, Jeff Kennington (-2001)
Newsletter editors: Raghu Raghavan, Tom Wiggen, Associate Editor: John Hooker
ICS Prize Chair: Warren Adams

### Secretary/Treasurer's Report

The secretary/treasurer Bjarni Kristjansson, submitted the minutes from the Seattle meeting, which were approved unanimously and made available as a handout. He then gave a status report on the finances of ICS.

| | 1998 | 1997 |
|---|---|---|
| REVENUES: | | |
| Dues | 1434 | 3480 |
| Deferred | 1661 | 0 |
| Other | 4337 | 826 |
| Total | 7432 | 4306 |
| COSTS: | | |
| Newsletter | 6229 | 1311 |
| Nat. Meeting | 671 | 747 |
| Ballot | 193 | 757 |
| ICS Price | 1303 | 595 |
| JOC sponsor | 500 | 0 |
| Other costs | 0 | 201 |
| Total | 8896 | 3611 |

The revenues and costs for 1998 were unusually high, due to deferred revenues between years, the Monterey conference, and the newsletter. If we want to keep the newsletter at high standard we will need increase our revenue through additional members or find ways to cut costs.

### Election Results

Everybody on the ballot was elected Irv Lustig as the new vice-chair/chair-elect, and Manual Laguna and Eric Rolland for the board.

### ICS Bylaws

The new bylaws were emailed to members before the meeting and accepted anonymously through vote.

### 1999 ICS Prize

Warren Adams was the prize committee chair. Winners were Yair Censor and Stavros Zenios.

### CSTS 2000: Cancun

Manuel Laguna, the General Chair for ICS in Cancun, Mexico, gave an update on the preparation for the meeting. There is a website: http://www-bus.colorado.edu/faculty/laguna/cancun2000.html.

### Newsletter

There was a lot of discussion on electronic publishing. Sanjay Saigal will do a poll on who wants to receive newsletter by email.

### Journal on Computing

Bruce Golden reported that the Journal is running well and will publish about 465 pages in '98' and he expects the same for 1999. Expenses continue to be quite low. Reasonable backlog – 6 to 9 months. Several feature articles are in progress. Current Issues: Winter 1999: Cluster on heuristic search. Spring 1999: Special issue on combinatorial optimization and network flows. Summer 1999: Cluster on data mining.

This will be Bruce's last year as the Editor-in-Chief. There will be a search committee to find a new chief. Members are as follows:

Jan Karel Lenstra, Eindhoven (Chair); Karen Donohue, Wharton School; Michael Gendreau, CRT; Leslie Hall, Johns Hopkins. Sanjay Mehrotra, Northwestern Univ., and Fred Murphy, Temple University. Nominations due by June 15, 1999. Fred Murphy talked about how the search would be conducted which will include an ad for OR/MS Today, but don't expect too many responses from that. Everyone is asked to think who would make a good manager for the Journal.

### ICS Logo Contest

The new logo for ICS was presented and discussed extensively. One of the suggestions, came from John Chinneck, was to call this the "Copulating Caterpillars" because of its suggestive layout, but after some laughs it was not seconded and therefore not voted on.

### Attendance

The meeting was well attended and this time we think we got almost everyone to sign on the roster before leaving:

Ramesh Sharda, Bruce Golden, Mark Reynaud, Warren Adams, Rich Guy, Irv Lustig, Ariela Sofer, Dave Morton, Paul Jensen, Kevin Wood, Chris Huntley, Fred Murphy, John Chinneck, Ray Patterson, Rema Padman, Nick Sahinidis, Arjang Assad, Nicola Secomaudi, Matthew Saltzman, Alper Atamturk, Don Kraft, Erik Rolland, Jim Bander, Karla Hoffman, Leslie-Ann Asmj, Robin Lougee-Heimer, Eli Olinich, Charles Anderson, Rick Rosenthal, Dick Barr, Carla Gomes, Jeff Arthur, Sanjay Saigal, Shabbir Ahmed, John Hooker, Dave Woodruff, Mark Fleischer, Rex K. Kincaid, Mary Feneton, S. Raghavan, R. Krishnan, Joe Creegan, Bjarni Halldorsson, Jeff Kennington, Harlen Crowder, Bjarni Kristjansson.

## Call for Contributions: Case Studies in Global Optimization

**Janos Pinter (jdpinter@is.dal.ca)**

I am very pleased to inform you that Kluwer Academic Publishers approved the book project of an edited volume of case studies in global optimization (GO). I invite you and your colleagues to contribute. The primary emphasis is on real-world applications (even, perhaps, open problems) that apparently need genuine GO methodology. This volume will appear in the NOIA series. For currently available books in the series, please see **http://www.wkap.nl/series.htm/NOIA.**

Potential contributors of book chapters are asked to submit 15-25 page manuscripts based upon original research, following one of the standard Kluwer AP styles, by May 31, 2000. Kluwer stylefiles are available at http://www.wkap.nl/kaphtml.htm/BOOKSTYLES. All contributions should be completed and refereed by the end of September 2000.

Potential contributors should send a note announcing a tentative title for your contribution. Reviewers, please send a note regarding areas within GO you are willing to review.

## Global Optimization tutorial at CORS

Invited global optimization tutorials and lectures will be delivered at the forthcoming CORS (Edmonton, May 29-31) conferences. The presentations will be given by Janos D. Pinter. His book 'Global Optimization in Action' (Kluwer AP, 1996) is made available - by a special arrangement with the Publisher - at these events and at future tutorials/workshops at a reduced price. Please contact Janos <jdpinter@is.dal.ca> for further details.

**Minutes of ICS Business Meeting for INFORMS Philadelphia, November 1999**

Ramayya Krishnan, the Chair, opened the business meeting and went over the agenda. He then listed the current slate of 1999-2000 ICS officers that are serving.

### ICS Officers 1999-2000

Chair: Ramayya Krishnan, Vice-Chair/Chair Elect: Irv Lustig, Secretary/Treasurer: Bjarni Kristjansson
Board of Directors: Manuel Laguna (-2002); Eric Rolland (-2002); Bruce Golden (-2001); Matthew Saltzman (-2000); Jeff Kennington (2001): Carol Tretkoff (-2000)
Newsletter editors: Raghu Raghavan, Tom Wiggen, Associate Editor: John Hooker

### ICS Web Strategy

The ICS now has a new web site URL, *www.informs.org/ics*, and with it a new webmaster, Erik Rolland (*erik.rolland@ucr.edu)*. The new site is being updated and is intended to be the ICS information portal and gateway to other resources of interest to members. Dick Barr is going to maintain a page on networks and John Chinneck will also maintain a page. Bob Fourer asked for ideas from members on what other material to include.

### Secretary/Treasurer's Report

The secretary/treasurer, Bjarni Kristjansson, submitted the minutes from the Cincinnati 1999 meeting, which were made available as a handout and then approved unanimously (except for some comments by John Chinneck :-). Bjarni then gave a status report on the current finances of ICS.

**ICS Financial Statement**

| REVENUES: | Jun99 | 1998 | 1997 |
|---|---|---|---|
| Dues | 2809 | 1434 | 3480 |
| Deferred | 0 | 1661 | 0 |
| Other | 0 | 4337 | 826 |
| TOTAL | 2809 | 7432 | 4306 |
| | | | |
| COSTS: | | | |
| Newsletter | 1975 | 6229 | 1311 |
| Nat. Meeting | 266 | 671 | 747 |
| Ballot | 21 | 193 | 757 |
| ICS Price | 1116 | 1303 | 595 |
| JOC sponsor | 0 | 500 | 0 |
| Other costs | 3 | 0 | 201 |
| TOTAL | 3381 | 8896 | 3611 |

Bjarni explained the difference in costs between the years, especially on the newsletter. The main reason was that the second newsletter in 1997 was not charged until 1998. INFORMS changed how they counted revenue in 1998. The cost of each newsletter had also gone up, since they are now both longer, and were printed on more expensive paper.

### ICS Newsletter Report

The co-editors for the newsletter are Raghu Raghavan, at the University of Maryland and Tom Wiggen, at the University of North Dakota. Sanjay Saigal reported on the ICS newsletter on-line poll results, which were as follows:

| Paper | On-line | Other | Total |
|---|---|---|---|
| 25 | 87 | 1 | 113 |

The results were 3 to 1 in favor of the on-line version, which could lead to reduced costs for the society. Those that preferred the paper version felt it would add to the on-line information glut, and could devalue the membership. The discussion that followed mentioned that members could be given an option to receive it on paper, possibly by sending them a postcard, which they could return. To start the transfer to on-line version was put to a vote and was accepted. Since the newsletter editors were not at the meeting, it was suggested that a smaller group should decide the details with them.

### 2000 ICS Prize for Research Excellence

The ICS Prize committee chair is Richard Barr and he gave his report. Other members of the committee include David Woodruff (UC-Davis), Robert Vanderbei (Princeton), and John Hooker (Carnegie Mellon). The prize includes a certificate and $1000 for the best English-language paper, or book, on the OR/CS interface. Nominations should be sent to Dick Barr (*barr@seas.smu.edu*) or the other committee members with a cover letter explaining why it should be considered and four copies of the article. Members can also nominate themselves. The committee will be looking for a high-quality work, that advances the state-of-the-art. The nominations must be published in the open literature (no restrictions on the publication date) and pertinent to the OR/CS interface. Further information is available on the web site, *www.informs.org/ics.*

### Journal on Computing Report

The current editor-in-chief for the Journal, Bruce Golden, is now leaving. The review and search committee for the new JOC editor was headed by Fred Murphy and consisted of Karen Donohue, Michel Gendreau, Leslie Hall (chair), Sanjay Mehrotra. Jan Karel Lenstra made the following remarks on their work:

REVIEW: Bruce Golden has done an excellent job as editor-in-chief. He has moved the quality up and the costs down. IJOC is now the premier journal in computational operations research. In spite of the relatively low subscription level, Bruce kept the journal financially sound by acquiring industrial sponsorship and by producing the journal himself, in cooperation with the printer. Two issues demand attention: a closer relation with the INFORMS Business Office, and a better web site for the journal.

SEARCH: We published a call for nominations in OR/MS Today, sent e-mail to the members of ICS, and talked to many individuals, notable Bruce Golden and Tom Magnanti, INFORMS President. We received twenty nominations, and asked ten of them if they were interested in the position. Four were, which put us in the luxurious but difficult position of having to choose between some eminent candidates. After obtaining letters of reference and more information, we arrived at the unanimous decision to recommend to the INFORMS Board to appoint as the next editor-in-chief of the INFORMS Journal on Computing.

DAVID KELTON (Univ. of Cincinnati): David Kelton was appointed by the board on November 7. He has served as simulation area editor for IJOC under Harvey Greenberg and Bruce Golden and is now

serving in the same capacity for Operations Research. After two editors-in-chief who were active in optimization, we view it as a welcome change for the journal to be led by someone whose research interests are in simulation and computational probability. David Kelton is an experienced editor and a kind person. He is very much worthy of your support.

Remarks by Incoming JOC Editor-in-Chief
David Kelton

"I'd like to thank Jan Karel Lenstra, the rest of the selection committee, and the INFORMS Board for their confidence in me in naming me to this post. It is a great honor for me, and an awesome responsibility. Bruce Golden has done a great job with JOC, and filling his large shoes in this post will be a tall order. I am looking forward to getting going on my duties, and have some thoughts and plans.

Most importantly, I hope I can count on the continued support of the ICS membership for JOC, including editorial work, refereeing papers, submitting papers, subscribing, and encouraging their institutional libraries to subscribe. It's only by high-quality volunteer work and participation that a journal can thrive. I have not been particularly involved in the ICS leadership in the past, having devoted most of my service efforts to the INFORMS College on Simulation. But I understand JOC's close history with ICS and the earlier ORSA CSTS, and look forward to greater involvement.

By its very name, JOC should be at the forefront of electronic communication and dissemination, and I intend to enhance the journal's web site to include things like complete submission information, a permanent on-line repository of supporting material (e.g., appendices, tables, data, graphics, and live links to authors' sites for material like demos, applications, and audio/video), and links to related journals and sites. I will also work closely with INFORMS Publications On Line (IPOL) to facilitate appropriate electronic availability of both current and past JoC papers. My intention is to appoint someone at the Area-Editor level to oversee and coordinate such activities.

A practical matter for all journals concerns budgeting and finance. As Jan Karel mentioned, Bruce has largely produced the journal himself, a practice that saves considerable costs, and I intend to continue to do so. On the revenue side, I will also develop a plan to increase subscriptions, both to individuals and to institutions (mostly libraries), and will appoint as well a person at the Area-Editor level to foster corporate and institutional sponsorship.

But the most essential ingredient in a journal continues to be the people involved, many of whom are in this room, and I look forward to having a conversation with each Area Editor in the near future to discuss status, future prospects for initiatives like feature and review papers on timely topics, and to gather ideas for making a strong journal even better."

## ICS 2000: Cancun, Mexico

Everything is getting ready for the ICS 2000 meeting in Cancun, Mexico, January 5-7, 2000. The general chairs for the meeting are Manual Laguna and Jose Luis Gonzalez. 25 papers have been submitted of which 17 have been accepted. The conference volume will be about 300 pages and is in production. The preliminary program will contain 5 tutorials. We are expecting participants from both Europe and South America. Sightseeing tours will be available and the conference rate will be in effect January 1st to 8th.

# Message from the Chair

Ramayya Krishnan

It has been a pleasure to serve you as Chair of the INFORMS computing society. It has been an eventful year. We held an intellectually stimulating biennial meeting in Cancun – congratulations to the Chairs Manuel Laguna and Jose Luis Gonzalez – and made progress with the ICS web strategy I outlined in the Fall newsletter. While we will have every opportunity to build on these initiatives, there are important strategic issues we are faced with due to the new meeting structure at INFORMS. I would like to discuss these with you.

**New meeting structure:** Beginning in Fall 2000, INFORMS will move to a structure consisting of a General Conference that will held once a year. The Spring Conference will transition to a "listener-based" practice-oriented conference. I encourage every ICS member to review a presentation that Tom Magnanti made to the INFORMS board in 1998 (please see http://www.informs.org/INFORMS2000/PRESENTATION/). This impacts us in at least three ways.

a) We have had our business meeting with a new ICS chair taking over during the Spring business meeting. If we move to a conference structure with one General Conference per year, this might require changing the term of the ICS chair from 1 year to 2 years. Irv Lustig, the Chair Elect, has been thinking about this issue. The membership will need to deliberate on this issue and make some decisions during our "final" Spring business meeting at Salt Lake City.

b) INFORMS plans to rework the Fall General meeting to encourage "meetings within meetings" and to organize a collection of tutorials on "hot" topics in non-traditional areas. We need to decide on the role that ICS will play in this new Fall meeting format. While we have been successful at organizing high quality sponsored sessions, the new structure presents us with the opportunity to organize a different sort of meeting – perhaps, a smaller version of our biennial conference. As with all opportunities, we need to carefully assess costs and benefits to determine how we should proceed. Organizing a Fall ICS meeting within a meeting will demand considerable additional work to put together than the present format and will likely have implications for our biennial conference as well.

c) INFORMS also plans to rework its Spring meeting and transition to a listener-based practice meeting. The goal is to have active involvement from vendors and increased participation by practitioners and academic members. ICS counts an active group of vendors and practitioners among its members. It is important that ICS take the lead in ensuring that our members contribute to and benefit from the new Spring meeting format. We are fortunate in that Irv Lustig, the Chair Elect, is a practitioner and a member of the vendor community as well. Irv has already begun thinking about ICS's role in the new meeting structure and we should be well represented in the year to come.

I would like to conclude this brief letter to you by thanking you once again for making it possible for me to participate in this role at ICS. Please contact Rober Fourer (4er@iems.nwu.edu) if you would like to contribute to the ICS information portal on the ICS web site (www.informs.org/ics) and with Erik Rolland (erk.rolland@ucr.edu) if you have any suggestions about improving the site. Finally, I would like to extend a warm welcome to the new slate of ICS officers headed by the new Chair, Irv Lustig.

# ICS Member Profile: Irv Lustig

Dr. Irvin Lustig, the new INFORMS Computing Society Chair, has spent half of his career in academia and the other half in industry. Irv was first introduced to Operations Research while studying for his combined Bachelor of Science and Master of Science degree in Applied Mathematics/Computer Science from Brown University. “As a junior, I took my first course in linear programming from the late Stella Dafermos. Anna Nagurney was my teaching assistant. We used the book by Bradley, Hax and Magnanti. I was immediately intrigued by this area that had a combination of algorithms, computing, and practical applications.”

After graduating Brown in 1983, Irv went on to get his Ph.D. at Stanford, writing his thesis under the direction of George Dantzig. “Working with Professor Dantzig was a wonderful experience. He was a great advisor. He had the insight to point me in the right direction, without doing the work or wanting any additional credit. Dick Cottle and Mike Saunders were also valuable advisors as I worked on my thesis that was entitled ‘Comparisons of Composite Simplex Algorithms.’”

In 1987, Irv left Stanford and started his academic career at Princeton University in the Department of Civil Engineering and Operations Research. While there, he began his work with Dave Shanno, who was only 20 miles away at Rutgers, on primal-dual interior point methods for linear programming. “Those were pretty exciting times. I had come up with a new method to solve the problem of finding initial feasible points for a primal-dual interior point method. Then we were able to prove that the method was equivalent to Newton’s method applied to the KKT system. But we had no proof of convergence. So we just implemented the method, working with Roy Marsten who handled the linear algebra. We were able to get things to work without worrying about the theoretical details.” This work led to Irv, Dave and Roy winning the Mathematical Programming Society Beale-Orchard Hayes prize for excellence in computational mathematical programming as well as the Computer Science Technical Section (predecessor of ICS) award in 1991.

In 1993, Irv left Princeton and joined CPLEX Optimization, Inc. At CPLEX, Irv was responsible for the implementation of the CPLEX presolve algorithms and the CPLEX barrier algorithm. “I first started working with Bob Bixby during a sabbatical at Rice University in 1991. Over the course of the next couple of years, it became clear that I was more interested in commercializing my research than trying to succeed as an academic by getting grants and writing papers. In 1993, CPLEX Optimization, Inc., was a small company with only 7 employees. It was very exciting to know that the code I was developing was being used by more and more operations research professionals.”

In 1997, ILOG acquired CPLEX Optimization, Inc., and Irv, along with the rest of the CPLEX team, became a member of a 470 employee organization based in France. Since then, Irv left the CPLEX Research and Development team and joined the Product Marketing team as a Product Manager. “The merger of ILOG and CPLEX was difficult, as we were merging different algorithmic philosophies (constraint programming and mathematical programming) as well as two different cultures (French and American). But it has offered me the opportunity to learn more about this exciting new area of constraint programming. Being a product manager means that I look at the needs of the marketplace and help define the strategic directions for our optimization products. It has been very educational to learn about all the different business aspects of how optimization software gets sold.” Irv was responsible for the launch of ILOG OPL Studio, and is now the Product Manager for CPLEX, AMPL, and ILOG Solver.

”I’m not sure what the future holds for me. What really interests me is how we can get more people to use these great tools we have created, by making them easier to use and by expanding the types of problems that we can solve. This is a real challenge, and I think ILOG is positioned to continue its leadership position in the industry. And the recent increase in our stock price certainly hasn’t hurt!”

# News about Members

**Tom Elken (telken@sgi.com)** works for Silicon Graphics, Inc. About a year ago his primary job at SGI switched from supporting Operations Research software vendors to performance engineering — predicting the performance of future computer systems and benchmarking new systems. He has been named CEO of the OpenMP Architecture Review Board, a non-profit Minnesota corporation (**http://www.openmp.org)**. OpenMP (Open Multi-Processing) is a standard API for shared-memory parallel programming. The OpenMP ARB has members from Compaq, HP, IBM, Intel, Kuck and Associates, SGI, Sun and the ASCI group at Lawrence Livermore Labs.

**Camille C. Price** (**camille@cs.sfasu.edu**) is the Series Editor for a new Operations Research Series of books at CRC Press. ICS members interested in writing a book are encouraged to contact her about the possibility of publishing in this series.

**Janos D. Pinter** (**jdpinter@is.dal.ca**) recently has received a grant for software development from the National Research Council of Canada. Janos is a member of the INFORMS Computing Society. He works as President and Research Scientist of Pinter Consulting Services, Inc. in Halifax, NS, Canada.

Prof. **Kevin Wood** (**KWood@nps.navy.mil**) of the Naval Postgraduate School has been appointed as distinguished visiting professor at the National Security Agency this summer. At NSA's Columbia, Maryland site, Wood will guide 10 PhD candidates in the Summer Program for Operations Research Technology. He and his students will study such topics as communication network analysis and resource allocation. The program runs from the end of May through the end of August.

**Bruce L. Golden** (**bgolden@umdacc.umd.edu**), France-Merrick Chair in management science at the University of Maryland, and **Douglas R. Shier** (**shierd@clemson.edu**), professor of mathematical sciences at Clemson University, are the new editors-in-chief of the journal Networks. They encourage ICS members to submit relevant articles to them, especially those that highlight the OR/CS interface. More information about the journal can be found at the web site **http://www.interscience.wiley.com/jpages/0028-3045/**

In Heerlen, The Netherlands, the *International Institute of Infonomics* has been opened. The institute does interdisciplinary research on the impact of digitisation on individual, organizations and our society. The WWW address of the Institute is **www.infonomics.nl**. ICS member **Rudolf Müller** (r.muller@KE.UNIMAAS.NL) is heading the e-organizations research unit of the institute. His unit is doing research on changes in operations management and markets in the new economy.

# Upcoming Meetings

**INFORMS Spring 2000 Meeting,** Salt Lake City, Utah. May 7-10, 2000. Theme: "Soaring to New Heights". URL = http://www.informs.org/Conf/SaltLake2000

9th Annual **Industrial Engineering Research Conference**, Cleveland, Ohio, May 21-23, 2000. URL: http://www.ie.msstate.edu/ierc2000/

**CORS 2000,** Edmonton, Alberta, May 29-31, 2000. Theme: "Energy, Environment, and Natural Resources". Contact: erhan.erkut@ualberta.ca or visit URL = http://www.bus.ualberta.ca/eerkut/CORS2000/

Tenth **SIAM Conference on Discrete Mathematics**, June 12-15, 2000, Minneapolis, Minnesota. URL: http://www.siam.org/meetings/dm00/

**INFORMS/KORS,** Seoul, South Korea, June 18-21. Theme: "Information and Knowledge Management in the 21st Century.". URL = http://www.informs.org/Conf and http://informs.scu.edu/seoul/.

**International Symposium on Combinatorial Optimisation** (CO2000), Conference Theme Combinatorial Optimisation: Entering A New Century. A biennial conference to be hosted by The University of Greenwich, London, 12-14 July 2000. URL: http://cms1.gre.ac.uk/co_2000/

**EURO XVII**, 17th European Conference on Operational Research, Budapest, Hungary, July 16-19, 2000. URL: http://www.sztaki.hu/conferences/euro17/

**17th International Symposium on Mathematical Programming**, Georgia Institute of Technology Atlanta, Georgia, USA, August 7-11, 2000. URL = http://www.isye.gatech.edu/ismp2000/

Sixth **ACM SIGKDD International Conference on Knowledge Discovery and Data Mining**, August 20-23, 2000, Boston, USA. URL: http://www.acm.org/sigs/sigkdd/kdd2000

**X CLAIO** (10th Congreso Latino Americano en Investigacion de Operaciones), Mexico City, September 4-8, 2000. URL = http://quitel.cs.buap.mx/~claio

Workshop: **7th DIMACS Implementation Challenge: Semidefinite and Related Optimization Problems** DIMACS Center, Rutgers University, Piscataway NJ, 08854-8018. September 13 - 15, 2000. URL = http://dimacs.rutgers.edu/Workshops/index.html

First **SIAM Conference on Computational Science and Engineering**, September 21-23, 2000, Washington, DC. URL: http://www.siam.org/meetings/cse00/

**INFORMS San Antonio**, Texas, November 5-8, 2000. URL: http://ie.tamu.edu/informs2000/

**2000 Winter Simulation Conference**, Orlando, FL USA, December 10-13, 2000. URL = http://www.wintersim.org

Institute for Operations Research and the Management Sciences

**901 Elkridge Landing Road, Suite 400**
**Linthicum, MD 21090-2909**

## MESSAGE FROM THE EDITORS

It is with pleasure we bring the spring issue of the ICS newsletter to our society members. When both of us assumed these duties in the spring of 1998 the task seemed quite daunting, and we probably were not fully cognizant of what we had signed up for. The task is no less daunting (it seems to be inversely proportional to the volume of contributions from members), but has been quite enjoyable for both of us.

In this issue our lead article, by Moshe Sniedovich, is on the IFORS tutORial project. The advent of the web, as well as the increased accessibility and power of personal computers, has altered the landscape in our pedagogical activities. Classes are now taught asynchronously, and it is recognized that much of the learning occurs outside the classroom. The use of the web and other computer technologies makes it easier to provide students resources to enable their learning outside the classroom environment. The OR community is no stranger to these activities: Many reports in OR/MS today describe the use of spreadsheets to teach core OR concepts to MBA students. There are also various resources for animation of algorithms and Java applets on several OR problems like the traveling salesman problem, and the shortest path problem. Some of these can be accessed at the Interactive Learning Center http://web.mit.edu/orc/www/informs/InteractiveLearning/Main.html and through Mike Trick's OR page http://mat.gsia.cmu.edu/program.html. Moshe Sniedovich's article outlines a *very exciting* project tutORial undertaken by IFORS to facilitate collaborative international activities in this arena.

We have been able to continue the member profile series that was introduced by John Hooker (our past associate editor). In this issue our "featured member" is Irv Lustig, the Chair of the INFORMS Computing Society (starting with the Salt Lake City meeting). We will try to bring you a member profile in at least one of the two issues each year. As before, we will try and alternate between members in academia and industry, and again we welcome suggestions concerning members to feature.

It appears that the debate on the online versus paper version of the newsletter continues. While we wait for the society as a group to reach consensus on this issue, we would like to point out one additional benefit to an online version. It is possible with the online version (at the fraction of the cost of the paper version) to include color graphics, pictures, and perhaps someday, featured programs as well!

The ICS conference at Cancun was a rousing success. Manuel Laguna and José Luis González-Velarde report on the conference. One of us (Tom Wiggen) was down at Cancun, and it sure was a great place and way to start the new millennium.

We would also like to take this opportunity to thank Bruce Golden, University of Maryland, the outgoing editor-in chief of the INFORMS Journal on Computing for his contributions to ICS and INFORMS, and to welcome David Kelton, University of Cincinnati, the new editor-in-chief of the INFORMS Journal on Computing.

We must continue (to ensure continued publication of this newsletter ☺) to unabashedly solicit your contributions to the newsletter (articles, viewpoints, news, book announcements, volunteers as associate editors etc.). We hope to continue the flow of interesting articles we have had over the past few years. We also welcome any feedback, in person (at INFORMS conferences) or via e-mail.

Finally, we remind all of you to vote for the ICS officers (if you have not already cast your ballot). By now you should have received your ballot from INFORMS.