ICS 2005 Prize Goes to Fu, Golden, Lele, Raghavan, and Wasil

The 2005 ICS Prize was awarded to Zhiwei Fu (Fannie Mae, and previously, University of Maryland), Bruce L. Golden, Shreevardsan Lele, S. Raghavan (all from the University of Maryland) and Edward A. Wasil (American University). The award was presented to the winners at the ICS Business at the INFORMS Meeting in San Francisco.

ICS Award winners. From left to right, Raghu Raghavan, Bruce Golden and Ed Wasil

Record ICS Activity at San Francisco

John Chinnec

ICS was everywhere at the INFORMS 2005 Annual Meeting in San Francisco November 13-16! With a record 34 ICS-sponsored sessions, there were 2 ICS sessions running simultaneously in virtually every time slot. There was always something interesting to see.

Much as I would like to take credit for this success, the credit actually belongs to the organizers of the “mini-tracks” who put together sets of sessions on themes of interest to ICS. These folks got a big round of applause at the ICS business meeting in San Francisco, and I’d like to thank them again here in our newsletter.
Message from Chair

Ariela Sofer
George Mason University
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This is the first issue of the newsletter for 2005 and I cannot even pretend to label it as “Spring 2005.” So, in the name of truth in advertising, I have relabeled it as “Volume 26 Number 1 (2005).” The Volume 26 Number 2 issue is hot in its footsteps, and will carry the label “2005” with great dignity.

We are however nearing the end of 2005, and looking back, this has been a record breaking year for ICS in many respects. It started with the hugely successful ICS Conference in Annapolis, organized by Bruce Golden, Raghu Raghavan, and Ed Wasil. Not only did the conference bring a record number of talks and attendees, but it significantly raised our membership, and swelled our coffers to an all time record high. The string of successes continued with a record number of sessions at the San Francisco INFORMS Meeting. Kudos to John Chinneck for putting together such a strong and exciting cluster!

Speaking of records, I should also mention the new and improved refreshment offering at the ICS Business Meeting. This was not your ordinary wine and cheese affair. Members feasted on delectable appetizers including skewered chicked teriyaki, and spinach and feta cheese in phyllo (spanakopitas), and sipped wine or guzzled beer to their heart’s content. No wonder the crowd was so rambunctious!

2005 was also an extraordinary year for ICS conference organizers, Bruce Golden, Raghu Raghavan, and Ed Wasil. With raves for their huge success still ringing fresh, the team, together with Zhiwei Fu and Shreevardhhan Lele won the ICS 2005 Prize for their innovative methods for constructing classification trees in very large data sets. The award - a plaque and a $1000 check was presented to the winners at the ICS Business Meet. Congratulations to the prize winners! Special thanks also to the Prize Committee, Bob Fourer (chair), Gerald Brown, and Hanif Sherali for their outstanding job in reviewing 11 submissions to selecting the winning award.

You can read more about the award winning prize, and the exciting ICS activities at the INFORMS San Francisco meeting in this issue. Also in this you can read about the new ICS student award that was approved by the membership at the ICS Business Meeting. As is our custom, the newsletter also includes a feature article on we feature a member of note. Anna Nagurney is an outstanding representative of our society. Working on the interface of theory, practice and computation she has made significant contributions to each. Find out more about Anna in this issue.

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ICS in SF, continued from Page 1

- Manuel Laguna and Dave Woodruff arranged for 5 sessions on Heuristic Search
- Bob Fourer, Robin Lougee-Heimer, Ted Ralphs, and Matt Saltzmann arranged for 8 sessions on Optimization Services and Open Source Software
- Pascal Van Hentenryck arranged for 7 sessions on Constraint and Integer Programming
- Nick Sahinidis and Mohit Tawarmalani arranged for 3 sessions on Computational Optimization. These were joint with the Optimization Society.
- Harvey Greenberg and Allen Holder arranged for 4 sessions on OR and Biomedicine. These were joint with the Health Applications Section.

In addition to these special themed mini-tracks, there were 7 sessions on other ICS-related topics organized by members, including Vehicle Routing, Genetic Algorithms, IT Modeling, Feasibility and Infeasibility Analysis in Optimization, Economic Mechanisms in Information Search, the ICS Prize Tutorial, and Parallel Metaheuristics.

I attended quite a number of the ICS sessions myself and found them incredibly interesting. Let me mention just one as an example: this was a session entitled “Creating a Testbed of Industry Problems for OR Model and Algorithm Development” that appeared in the Optimization Services and Open Source Software mini-track. This was a panel discussion between academics and representatives from industries that regularly need to solve difficult and large-scale optimization and modeling problems. The industry representatives complained that the academics are researching problems that are such great simplifications of real problems that their results be applied in practice. The academics complained that they cannot get the real data that they need because it is proprietary. What a great discussion! The upshot is that there is now a dialogue about how to solve this problem. One idea is for ICS to sponsor panels that maintain and update standard industry test models, e.g. of a “typical” refinery or manufacturing operation, complete with sufficient detail to be realistic, but devoid of any proprietary features. Now wouldn’t that be useful for researchers?

I’m also pleased to note that the constraint programming community has found a home in ICS. We have been sponsoring constraint programming sessions for a few years now, but the 7 sessions in the Constraint and Integer Programming mini-track is an indication that the community has found the right place to settle down.

There was one other fun new feature this year: Pano Santos of HP Labs organized a cocktail party right after his ICS-sponsored session on Heuristics for Large Scale Computing Systems (co-organized by Pedro Flores), and in the same room. This was a great way for people to meet the HP researchers and talk research in a relaxed atmosphere.

Speaking of fun events, the ICS Business meeting was terrific as always, with the usual famous spread of wine, cheese, beer and other munchies. You could come just for the free food and drink, but the business is interesting too (and doesn’t take too long). I’m always amazed by how much fun the meeting itself actually is. Of course, it’s the people that make it that way. Be sure to come by next time, and bring along prospective members too.
CALL FOR PAPERS
The Tenth INFORMS Computing Society Conference
International Impact of Computing, Optimization, and Decision Technologies

January 3-5, 2007
Omni Colonnade Hotel
Coral Gables, Florida

The INFORMS Computing Society (ICS) solicits papers and presentations for its tenth conference on the interface of computer science (CS), artificial intelligence (AI), operations research, and management science (OR/MS). The conference organizers invite you to submit theoretical and applied work that highlights the conference theme. Specific areas of interest include (but are not limited to) design and analysis of algorithms, heuristic search and learning, modeling languages, parallel and distributed computing, simulation, computational logic, and visualization. Work that focuses on new or novel applications in the interface of CS, AI, and OR/MS is especially welcome.

SUBMISSIONS
There are two categories of submissions: (1) papers for the conference volume and (2) papers for presentation.

Papers for the Conference Volume
A volume of peer-reviewed papers will be published for distribution at the conference. A paper submitted for the conference volume must describe original work that has not been published previously and must not have been submitted for publication elsewhere. A paper for the conference volume is limited to 6,000 words, will be refereed, and should be submitted by email as a PDF file. After acceptance for publication, authors will prepare their paper for the conference volume using a style format supplied by the publisher. A paper accepted for the conference volume must be presented at the conference.

Papers for Presentation
A paper may be submitted only for presentation at the conference and will not appear in the conference volume. An abstract of less than 200 words should be submitted by email as a PDF file. A paper accepted for presentation will have the abstract printed in the conference program.

IMPORTANT DATES

Papers for Conference Volume
Submission deadline        April 30, 2006
Notification of acceptance July 1, 2006
Final papers due           August 1, 2006

Abstracts for Presentations
Submission deadline        September 15, 2006
Notification of acceptance October 1, 2006

Conference Co-Chairs
Edward Baker       Anito Joseph       Anuj Mehrotra       Michael Trick
School of Business School of Business School of Business Tepper School of Business
University of Miami   University of Miami   University of Miami Carnegie Mellon University

Consider Coral Gables, “The City Beautiful.” Located just a few miles from Miami, the city, is home to many historic landmarks, parks, public tennis courts and golf courses, and other first-class recreation amenities. Among them the largest tropical botanical garden in the continental United States, a spring-fed grotto swimming pool made of native coral rock with underwater caves, tree-lined bike paths and walking trails, and more.

The gorgeous Omni Colonnade Hotel is located in the heart of quaint Coral Gables and is an elegant historic landmark. The hotel’s lounge offers a casual atmosphere reminiscent of 1920’s Florida. This was once the gathering place of celebrities such as Gloria Swanson, Will Rogers and Rudolph Valentino. The hotel is just minutes to fine dining, shopping, and entertainment.
MEET THE CANDIDATES

The end of the year will bring about a transition in the ICS leadership. Ariela Sofer will be completing her term as ICS Chair, and Vice Chair/Chair Elect John Chinneck will become Chair. Robin Lougee-Heimer will be completing her terms both as Secretary/Treasurer and as member of the ICS Board of Directors. Karen Aardal will also be completing her term as member of the Board of Directors.

ICS is therefore electing a Vice Chair/Chair Elect, Secretary Treasurer and two members of the Board of Directors. The elected officers will assume office on January 1, 2006. The term of the Vice Chair/Chair Elect is two years and upon completion of the term the candidate will assume the position of ICS Chair. The term of the Secretary Treasurer is two years. The term of ICS Board Members is three years.

The candidates proposed by the Nominating Committee for the open positions proposed by the Nominating Committee are presented below. The candidate list was presented to the ICS membership at the San Francisco Business Meeting. The floor was open to additional nominees, and by vote, the proposed list was closed. Ballots have been recently sent out electronically to all ICS members, and are due to Katie Skorich at INFORMS (Katie.Skorich@informs.org) by December 16. Please make sure to vote!

Candidate for Vice-Chair/Chair Elect:
Robin Lougee-Heimer

Robin Lougee-Heimer earned her PhD. degree in mathematical sciences from Clemson University in 1993. She joined the IBM Research Division in 1994, initially to work on algorithms and tools for resource allocation problems arising in manufacturing. Her main research interest is in developing efficient solutions to large-scale discrete optimization problems found in industry. Dr. Lougee-Heimer was a founding member of the Computational Infrastructure for Operations Research (COIN-OR), where she has served as a principal infrastructure manager and evangelist since 2000. Dr. Lougee-Heimer is currently serves as the INFORMS On-line Associate Editor for Practice, chair of the INFORMS Professional Colloquium 2006 (a program she co-created in 2005), program chair for INFORMS International Puerto Rico 2007 Meeting, a board member of the COIN-OR Foundation, Inc, and a member of the INFORMS Meetings Committee. She is a recipient of two IBM Research Division Technical Group awards, and has published in the areas of mathematical programming, manufacturing production planning, object-oriented application frameworks, and hydroelectric management.

Candidate for Secretary Treasurer:
Jeff Linderoth

Jeff Linderoth is an Assistant Professor in the department of Industrial and Systems Engineering at Lehigh University and co-founder of the Computational Optimization Research @ Lehigh (COR@L) Lab. Dr. Linderoth received his Ph.D. degree from the Georgia Institute of Technology in 1998. From 1998-2000, he was employed with the Mathematics and Computer Science Division at Argonne National Laboratory. Prior to joining Lehigh, he was a Senior Consultant with the optimization-based financial products firm of Axioma Inc. In 1999, Dr. Linderoth was named the Enrico Fermi Scholar at Argonne National Lab, and in 2002, he was awarded the SIAM/Activity Group on Optimization Prize. Dr. Linderoth has served on the Technical Leadership Committee of the COIN-OR foundation, serves as an Area Editor for Optimization Online, and is an administrator for the NEOS Server.

Candidate for Board of Directors:
Rob Dell

Rob Dell is an Associate Professor of Operations Research at the Naval Postgraduate School. Applications motivate his optimization research. Since joining the Naval Postgraduate School in 1990, he has taught and applied optimization to a variety of military problems. He has received research support from every uniformed service for topics ranging from naval capital planning to Coast Guard cutter scheduling. Army base realignment and closure offices have provided long-term research support. He has also applied optimization in the
Candidates, continued from Page 4
private sector in areas ranging from production scheduling to supply chain design and has served as the military functional Editor for Interfaces

Candidate for Board of Directors:
Pascal Van Hentenryck
Pascal Van Hentenryck is a Professor of Computer Science at Brown University. He received his PhD from the University of Namur in 1987 and worked for four years at ECRC in Munich before moving to academia. His research interests are at the interface between computer science and operations research. He has developed a number of influential optimization systems, including the CHIP constraint programming language, the Numerica system for global optimization, the OPL optimization programming language and, recently, the Comet system for constraint-based local search. He is the author of four books, all published by the MIT Press, and his research activities have been recognized by several awards, including the INFORMS Computing Society Prize.

Pascal Van Hentenryck has served on many editorial boards, including the Journal of Heuristics, Operations Research Letters, Constraints, the Journal of Artificial Intelligence Research, and the ACM Transactions on Computational Logic. He has been program chair of four international conferences and has been cluster chair for many INFORMS and ISMP conferences. Overall the conference featured over 170 talks in six parallel sessions focusing on the conference

NEW ICS STUDENT PRIZE APPROVED

At the ICS Business Meeting in San Francisco (November 14, 05) the membership voted to establish a new student paper award. The description of the award, as voted on by the membership, is given below:

The INFORMS Computing Society (ICS) Student Paper Award is given annually to the best paper on computing and operations research by a student author, as judged by a panel of the ICS. The award is accompanied by a plaque and a $500 honorarium. The winner will be invited to briefly present his or her paper in an ICS-sponsored session at the INFORMS Annual Meeting held in the fall, and the award will be presented at the ICS Business Meeting. The winner will also receive free registration to the next ICS Conference. The judging Panel may name Honorable Mentions, if deemed deserving. All students working on topics relating to the interface of OR and computing are encouraged to submit a paper.

There are seven conditions for eligibility:
1. the entrant must have been a student on or after January 1 of the year under consideration;
2. the paper must present original research results;
3. the research must have been conducted while the entrant was a student;
4. the paper must be written by the entrant with only minor outside editorial assistance (one or more advisors may appear as co-authors of a paper, but the student must be the 'first author');
5. the entrant can be a (co-)author in at most one paper submitted to the competition;
6. the paper must not have won a previous ICS Student Award;
7. the entrant must be an ICS member in the year the submission is made.

The paper should be 30 pages or less (1 inch margins, double spaced, and 12 point font) and in the standard format of INFORMS Journal on Computing. Entrants must submit to the Committee Chair in the year of the award:

a. an electronic copy (a Postscript or Pdf file) of one paper to be received no later than June 30 at midnight (EST);
b. an email address and phone number where the entrant can be contacted in the event they are selected as a finalist;
c. a letter signed by both faculty advisor and the entrant attesting that the seven eligibility conditions are met.

The ICS exists to support research and practice activity on the interface of operations research and computer science. The congenial and active organization of over 500 members welcomes student members and their involvement in all aspects of the organization.
MEMBER PROFILE: ANNA NAGURNENY

Anna Nagurney is the John F. Smith Memorial Professor in the Department of Finance and Operations Management at the Isenberg School of Management at the University of Massachusetts at Amherst. She also holds appointments in the Department of Civil and Environmental Engineering and the Department of Mechanical and Industrial Engineering. She received her AB degree in Russian Language and Literature, and her ScB, ScM, and PhD degrees, all in Applied Mathematics, from Brown University in Providence, Rhode Island. Her doctoral specialization was in Operations Research. Anna’s dissertation supervisor at Brown was Stella Dafermos, the second female to receive a PhD in OR, which she obtained from Johns Hopkins University. Stella held appointments in the Divisions of Applied Mathematics and Engineering at Brown.

Anna’s passion is the study of networks from an interdisciplinary perspective, a subject she has been drawn to since her undergraduate days. After receiving her undergraduate degrees she worked for several years in high tech consulting for the defense sector in Newport, Rhode Island, while working on her Master’s degree at Brown and also finding time to run marathons. The network theme continued since she was involved in developing a variety of models and algorithms (implemented in assembly language) for submarine transit and detection avoidance. Her first paper presentation was at a conference at the Naval Postgraduate School for an audience filled with military brass.

Anna soon realized that she did not like “having a boss” especially since she would complete projects ahead of schedule, much to the consternation of some of her supervisors, so she matriculated full-time as a doctoral student at Brown. The match-up with Dafermos was a natural one, since Stella needed a student with a lot of computational experience and Anna liked the idea of working for the only female faculty member in Engineering and Applied Math (not to mention that Dafermos was an expert in transportation science and networks). The experience of working with Dafermos, who was so ahead of her time, was incredible and the standards instilled in Anna she strives to meet to this day. Anna especially enjoyed TAing Stella’s courses in OR and transportation – not to mention being Irv Lustig’s TA at Brown while he was an undergraduate. Stella Dafermos passed away on April 5, 1990 and her obituary written by Anna appeared in Operations Research.

Along with Dafermos, Anna published several papers on sensitivity and stability analysis of network equilibrium problems using variational inequality formulations that Dafermos had been instrumental in discovering and advancing. Those papers that appeared in Operations Research, Mathematical Programming, and Transportation Research, have now (twenty years later) drawn interest from the computer science community due to the parallels between flows on transportation networks and telecommunication networks; notably, the Internet. Such interest has been also stimulated by the Braess paradox and the theme of the “price of anarchy” which is motivating further research is network games and pricing. Anna, along with Braess, and a doctoral student of hers, Tina Wakolbinger, have now translated the classical Braess article from German to English (in Transportation Science, November 2005) Learning different languages is a hobby of Anna’s that comes in handy in her research and also in her many travels.

Anna has been drawn to computing since her undergraduate days at Brown and after receiving her PhD was also very active in supercomputing and parallel computing and utilized the resources of several National Supercomputing Centers including Cornell’s and Illinois’. She also served on Cornell Theory’s Center National Allocation Committee and would spend weeks of many a summer being “trained” at various supercomputing centers in the US. The INFORMS Computing Society is, hence, a natural “home” for Anna, along with the INFORMS Transportation Science & Logistics Section. She has served on several prize committees for both the Computing Society and the TSL Section.

Anna’s passion for networks (and transportation, including travel) has been realized also in numerous visiting appointments. She has held visiting appointments at MIT (Center for Transportation and the Sloan School), at Brown University, at the Royal Institute of Technology (KTH) in Stockholm, Sweden, and at the University of Innsbruck, Austria as a Distinguished Faculty Chaired Professor under the Fulbright program. In March 2004, Anna organized a research team residency at the Rockefeller Foundation’s Bellagio Center on Lake Como, Italy. The project was focused on dynamic networks with applications to global supply chains and financial networks with intermediation. It was the first research team funded in applied math/operations research/management science since the founding of the center in 1959.
Anna’s first book, Network Economics: A Variational Inequality Approach, was published in 1993 with the second and revised edition appearing in 1999. She has since authored books on Financial Networks (with Stavros Siokos), Environmental Networks (with K. Kanwalroop Dhanda and Padma Ramanujam), Sustainable Transportation Networks, and Supernetworks (with June Dong). She has also edited several books. She is co-editor with Hans Amman of the journal Netnomics. She serves on the editorial boards of several journals and is editor of the book series: New Dimensions in Networks for Edward Elgar Publishing. She has published extensively in leading OR and economic journals.

In 2001, Anna founded the Virtual Center for Supernetworks and serves as its Director, along with the Supernetworks Laboratory for Computation and Visualization. The center website has articles, Fulbright network course lectures, fascinating facts, and other information on network-based topics.

Some recent awards that Anna has received are: the College Outstanding Research Award (2004-2005), two AT&T Industrial Ecology Fellowships (2002 and 2001), the Chancellor’s Medal from the University of Massachusetts (2000), and the Eisenhower Faculty Fellowship from the National Highway Institute (1999).

Anna serves as the Faculty Advisor for the UMass Amherst INFORMS Student Chapter http://student.som.umass.edu/informs/ which this year was the spotlight chapter in ORMS Tomorrow; http://ormstomorrow.informs.org/spotlightchapter.htm. The chapter is very active, hosting a speaker seminar series, and many activities, including a variety of social activities. Anna was awarded a "Moving Spirit Award" at the San Francisco INFORMS meeting for her work with the Student Chapter. Anna also heads the Management Science doctoral track of the PhD in Business Administration at the Isenberg School of Management.

In her spare time, Anna enjoys running, painting, reading, and spending time with her family, which includes a much-traveled husband and daughter.

This Fall Anna is on a one year sabbatical at the Radcliffe Institute for Advanced Study at Harvard University as a Fellow (one of 48 fellows selected from across the country and abroad, representing 24 different academic, professional and artistic fields). The mission of the Radcliffe Institute is the creation of new knowledge. Anna will be continuing her research on dynamic networks, variational inequalities, and projected dynamical systems while in residence at Harvard and hopes to write another book.

ICS Prize, continued from Page 1

The winning team was awarded the Prize for their body of work in three papers:


The award committee was chaired by Bob Fourer, and included also Gerald Brown and Hanif Sherali. With a total of 11 nominations the competition was very healthy.

In awarding the prize the committee gave the following citation:

“This work describes innovative methods for constructing classification trees in very large data sets. Ideas from statistics and heuristic search are combined to produce methods that are fast, accurate, and of high quality as measured by several newly proposed performance measures. These methods are applicable to a variety of data mining problems of practical size, and represent a significant contribution to knowledge and practice at the interface of operations research and computer science.”

The ICS Prize award is accompanied by a plaque and a $1,000 honorarium.
ICS SESSIONS FOR INFORMS 2006 MEETING IN PITTSBURGH

John Chinneck, Carleton University, chinneck@sce.carleton.ca

The next INFORMS Annual Meeting is scheduled for Pittsburgh on November 5-8, 2006, and the ICS plans to be there in force. Session organizing will begin in earnest in the new year, but I would like to float a few ideas and requests now.

First, I plan to use the “mini-track” approach again to help arrange ICS sessions on themes of special interest. You can help by suggesting mini-track themes. Of course, volunteering to organize the mini-track as well is greatly appreciated! The main job of a mini-track organizer is to recruit the session chairs: you don’t need to arrange for the individual papers yourself – the session chairs do that. Are there emerging areas that we should be covering? Are there breakthroughs in an area? What research themes are hot? Let me know.

Second, computing is a basic theme that runs through many of the activities of the other INFORMS subdivisions. We started to pick up on this idea in San Francisco by co-sponsoring sessions with the Optimization Society and with the Health Applications Section. I would like to extend this idea at the Pittsburgh meeting. If you are a member of another subdivision as well as an ICS member, consider organizing a mini-track around the theme of computing in that second subdivision. Let me have your suggestions and I will look into official co-sponsorship of sessions with the other subdivision.

Third, there are lots of other ways to participate:

- Let me know if you want to organize a single session on a topic of interest to ICS. These are always welcome!
- If you have just a single paper that you would like to submit, let me know. I will try to group these single papers into coherent sessions. It’s generally better to appear in a sponsored session than in an ordinary contributed session.

I’ll look forward to seeing you all in Pittsburgh!

ICS SESSIONS FOR EURO XXI IN ICELAND JULY 2-5, 2006

Euro XXI will be held at the University of Iceland in Reykjavik. Iceland is home to tremendous icecaps, glaciers, spouting geysers, volcanoes, raging rivers, a multitude of birds, cavorting whales offshore and many other surprises. ICS will be sponsoring a cluster of sessions at the conference, organized by Bjarni Kirstjansson. Suggestions for topics of invited sessions and proposals of sessions are welcome. Contact Bjarni at bjarni@maximalsoftware.com. More information on the conference is available at http://www.euro2006.org/