September 2013 Newsletter

Wide Range of Practice Activities in Minneapolis

By Russ Labe, CAP; Chair, CPMS
russ.labe@bankofamerica.com

I want to take this opportunity to alert you to the many practice-related activities that will be available at the upcoming INFORMS Annual Meeting. This year the meeting will be held in Minneapolis, October 6 - 9, 2013. If you plan to attend, be sure to reserve time for some of these events that are especially relevant for practitioners.

Look for the following activities:

- Finalists for the 2013 Wagner Prize will be presenting their work in open competition sessions.
- The 2013 Edelman Award winning team will reprise their competition presentation. Other 2013 Edelman finalists will be reprising their competition presentations also.
- Representatives from the 2013 UPS George D. Smith Prize winning academic organization will discuss their curriculum to develop well-prepared practitioners.
- Our Isolated Practitioner Workshop features a presentation geared for independent OR/MS specialists while proving of interest to all practitioners.
- Four practice sessions will be held on the topics of outsourcing/offshoring analytics, academic/industry collaboration, managing an O.R. career, and certification for analytics practitioners/continuing education.
- Our annual CPMS membership meeting will be held on Tuesday morning. All CPMS members present at the INFORMS meeting are invited to attend! Enjoy a complimentary continental breakfast while learning more about the many practice activities that CPMS sponsors and administers.

Additional information on these events has been included in articles in this newsletter. As we go to press, details on some dates, times, and locations are not yet available. For more information as the conference gets closer, check the INFORMS website and your meeting registration materials.
Many of these activities are sponsored or chaired by CPMS members. I thank all the members who volunteer their time to make such events happen.

Be there to gain benefits for yourself and to support our volunteers!

Interfaces, the Premier Voice of Practice

By Srinivas Bollapragada, Editor-in-Chief, Interfaces

Interfaces is the bimonthly INFORMS journal dedicated to improving practical applications of operations research and management science (OR/MS). The mission of Interfaces is to publish manuscripts that focus on actual practice within the field of OR/MS, also called the field of advanced analytics, and on the beneficial impact this practice has upon organizations throughout the world. A typical article in Interfaces provides details of an implemented application, including the implementation's results and organizational impact, and describes the methodology developed. The journal publishes papers in all areas of OR/MS practice including operations management, information systems, finance, marketing, education, quality, and strategy.

For over 40 years, Interfaces has been the premier practice journal of our profession. This is my third year serving as editor-in-chief. The journal was in excellent health at the start of my tenure. And, fortunately, over the last few years we have seen consistently positive trends in the metrics that INFORMS employs to measure performance. The number of our original submissions increased by over 20% last year. The average time to first decision has steadily decreased. The acceptance rate for original submissions is now around 14% compared to over 16% a few years back. Expenses in 2012 decreased by over 10% while revenues increased by a small fraction. The percentage of submissions from authors outside the US and Canada has been increasing over the last four years: in 2009, 50% of the original submissions were from international authors; so far in 2013, this metric stands at 66%.

Although Interfaces spotlights the practice of OR/MS, the majority of contributions to the journal have been from the academic community. A large percentage of the submissions and accepted papers originate at universities. More than half of our editorial board members and our reviewers are faculty members. Several reasons for a higher level of participation from academics in comparison to practitioners seem apparent. Faculty members usually are evaluated based on their publications and are encouraged to participate in journal-editing activities; practitioners usually do not receive such incentives. Confidentiality of the work performed, and lack of time for publishing, could be other reasons for relatively fewer submissions from non-academic authors.

Nevertheless, we have experienced an increase in contributions
from practitioners over the last several years. I am the first non-academic to serve as EIC of the journal. We now see five practitioners on the editorial board plus several others serving as reviewers. The papers from the Edelman Award and Wagner Prize competitions do an excellent job of unveiling OR/MS success stories from multiple types of organizations across the world. Yet there still is room for much more practitioner involvement.

We offer multiple avenues by which CPMS practitioner members, or other OR/MS and analytics practitioners, may contribute to Interfaces. These include volunteering to review papers, submitting regular papers, and participating in the Edelman or Wagner competitions. Papers from Interfaces are used worldwide for learning. We practitioners come across numerous important real-world problems. Sharing our experiences through the journal brings visibility to our work while advancing our professional field.

Sometimes it may be difficult for us to devote sufficient time in order to write a full-length journal paper and then go through the rigorous reviewing necessary for publishing. To bring forward good practice work in such situations, I instituted the publication of short papers that are two to four pages long. These papers, called practice summaries, are similar to "technical notes" published in the journal Operations Research. The practice-summary authors need not describe all technical details; this mitigates confidentiality concerns to some extent. I was pleasantly surprised to learn from a recent survey we conducted that faculty members are finding practice summaries very helpful for both teaching and research.

In closing, I encourage the CPMS practice community and other advanced-analytics practitioners to take advantage of Interfaces to bring greater visibility to their work while helping to advance the journal and our profession. I found my own publishing-and-editing involvement to be both enjoyable and rewarding.

Please do not hesitate to contact me if you want information about publishing your articles in the journal or contributing to running the journal.

Practice Update

By Jack Levis, INFORMS Vice President, Practice Activities
JLevis@ups.com

We are in exciting and challenging times for our profession.

Gartner points out that only a small minority of organizations are using advanced analytics today. The majority of organizations, however, want to gain insight from their data. They are busy preparing their data so they can gain insight, predict, and optimize.

This is leading to a shortage of analytics talent and provides great
opportunity for INFORMS and its members. At the same time, this is a challenge.

No real roadmap exists to allow less mature organizations to achieve the promise of the profession. Therefore, INFORMS has been working to show leadership using the strength of our members.

With support from the INFORMS board, strategic work is underway. Multiple committees are taking on the challenge of executing action plans that will provide resources to improve the analytics capabilities of organizations and their people. The end vision is that INFORMS is the premiere organization for those engaged in advanced analytics.

We completed the first true certification for advanced analytics professionals. The first group of applicants took the test at the analytics conference in San Antonio. Those who passed the test were officially designated Certified Analytics Professional (CAP®).

Today, over 50 professionals have earned the CAP® certification and over 200 more are in the pipeline.

An INFORMS continuing education program is underway to allow professionals to remain up to date on professional development. The first classes will be given this year with more planned next year.

An Analytics Maturity Model is being developed that will allow organizations to measure their capabilities and provided a framework for moving up the analytics hierarchy. This is a much needed piece of the puzzle. These initiatives are certainly bold steps being undertaken by INFORMS. The time is right however. Organizations continue to clamor to hire and develop qualified professionals.

With the strategic initiatives, INFORMS, already the premiere OR/MS society, is well on the way to also being the premiere analytics society and thereby to provide even more value to both its members and benefiting organizations.

Updates from the Analytics Section

By Zahir Balaporia, President, INFORMS Analytics Section
balaporiaz@schneider.com

The Analytics Section has been focused on three initiatives over the last few months.

First, the Innovative Applications in Analytics (IAA) Award brought in another great batch of submissions. Chaired by Pooja Diwan, the IAA Award committee observes that the competition resonates with the broader analytics community; we are delighted with the award event's continued
growth. More about the award below.

The award supports the second initiative, one of our primary objectives, which is to attract the broader analytics community to INFORMS. The Analytics Section is a great initial landing spot for analytics professionals who are new to INFORMS. We hope to serve as another portal into INFORMS and a way for new members to get to other sections and societies that have a more specialized focus.

The third initiative was a regional conference on The Practice of Analytics, held in Chicago jointly with the INFORMS Chicago Chapter and the University of Chicago. With over 100 attendees, the conference proved to be a great success. Many of the attendees were not INFORMS members, but we were able to share a common interest in the application of a variety of analytical techniques, finding plenty of common ground in implementation successes and challenges.

Next up, we look forward to bringing new officers and volunteers to the section to lead us into an even bigger and brighter future.

Innovative Applications in Analytics Award

We received 31 submissions for the 2014 competition. Nine semi-finalists will be presenting during the INFORMS Annual Meeting in Minneapolis.

Key dates:
- October 8, 2013 - semi-finalists present at 2013 INFORMS Annual Meeting, Minneapolis, MN
- November 30, 2013 - finalists chosen
- March 30, 2014 - finalist presentations at INFORMS Conference on Business Analytics and Operations Research, Boston, MA.

Judging criteria:

1. Level of uniqueness, creativity, value, and (potential) contribution of the analytical techniques developed.
2. Innovation in any of the three dimensions of analytics: descriptive, predictive, or prescriptive. Submissions that span more than one dimension of analytics are preferred.
3. Implemented approaches are preferred but not required; to the extent implemented savings are claimed in the submission, the judging panel will seek verification of the implementation.
4. Submissions that have the potential for more widespread use will be given added consideration, but particularly clever innovations with narrow focus are also highly valued.

The 2014 Franz Edelman Award Competition

https://ui.constantcontact.com/visualeditor/visual_editor_preview.jsp?agent.uid=1114685800129&format=html&print=true
By Peter Bell, Chair, 2014 Edelman Competition
PBell@Ivey.ca

The 43rd annual international competition for the Franz Edelman Award for Achievement in Operations Research will be held at the INFORMS Conference on Business Analytics and Operations Research, Boston, on March 31st, 2014. There is work to be done before the finalists make presentations showcasing outstanding work that has had a major verified impact on their client organizations.

The Franz Edelman Award competition is jointly sponsored by INFORMS and CPMS. The purpose of the competition is to bring forward and recognize the very best examples of OR/MS and advanced analytics in practice. The award is named in honor of Franz Edelman, who established one of the earliest industrial OR/MS groups in North America.

The 2014 Edelman award process begins with a call for abstracts due in October of this year. Organizations have been asked to provide a three-page summary of an operations research application and describe results that had significant, verifiable, impact on the performance of the client organization. To a significant extent, the success of this award depends on the number of entries. Entering is not onerous - a three-page summary is all that is required. Please consider entering if you have done an interesting and successful application, and encourage others to enter if you know of work that is suitable. The due date for entries is October 16, 2013. (details at https://www.informs.org/Recognize-Excellence/Franz-Edelman-Award/Application-Process)

A committee of over three-dozen experienced O.R. practitioners and academics will review the entries received and then, in early November, select semifinalists. If you wish to serve on this selection committee, please let me know (PBell@Ivey.ca).

Each semifinalist entry will be assigned a verification team whose role is to understand the application in sufficient depth to validate its claims. The verification teams will communicate their findings to the rest of the committee in written reports prior to the finalist selection meeting, in the third week of December 2013, when the finalists will be chosen.

At least two of the finalists from last year's competition (spring 2013) will be presenting their work in Minneapolis at the INFORMS Annual Meeting. The Monday keynote presentation will be given by members of the award-winning team, representing Delta Commissioner of Holland (with Tilburg University), who used O.R. to provide advice on efficient flood standards to protect the Netherlands against flooding. Their results, accepted as a basis for policy by the State Secretary, led to an estimated cost reduction of 7.8 billion euro less investment costs.
Also presenting are members of the finalist team from Chevron Corporation who developed an O.R. decision support system that is used in all company-owned refineries to select the most profitable raw materials, evaluate product options, optimize refinery processes, and guide Chevron's "downstream" capital usage. This O.R. application, in conjunction with efficient work processes, currently generates $1 billion of value annually.

I will be in Minneapolis for the Annual Meeting. If you are considering entering the 2014 Edelman competition or contributing in some capacity, please let me know and we can meet and discuss.

2013 Wagner Prize Competition on the Horizon

By C. Allen Butler, Chair, 2013 Wagner Prize Committee

Save the date! The competition for the 2013 Daniel H. Wagner Prize for Excellence in Operations Research Practice will be held in three Wagner Prize tracks on Monday, October 7, at the 2013 INFORMS Annual Meeting in Minneapolis, MN. The winner will be announced, and will give a reprise, at a keynote session on Tuesday afternoon.

The six finalists will tell us how best to schedule a German basketball league, to optimize customer-relations services at an Italian energy company, to simultaneously optimize loading and routing decisions for the company Webb Wheel, to optimize water distribution pressure in the Valley of the Moon water district of California, and to optimize distribution of print magazines and newspapers in Israel. If you want to hear some high quality presentations and learn about some clever applications of O.R. and advanced analytics, plan to attend the Wagner Prize sessions (Monday 8 to 9:30, 11 to 12:30, and 1:30 to 3 in auditorium room 3, convention center)!

The Wagner prize is awarded for a previously unpublished paper describing a real-world application of operations research or advanced analytics. The primary criteria for selection are mathematical innovation and clarity of exposition, in contrast to the Franz Edelman Award, which emphasizes organizational impact.

The prize is in memory of the late Dr. Daniel H. Wagner. While president of his own practice-oriented consulting firm, Dr. Wagner brought many high-quality mathematicians into the operations research community, leading to significant applications for U.S. Navy, U.S. Coast Guard, and many other organizations. The prize honors Dr. Wagner by emphasizing qualities he respected in his colleagues: the ability to innovate and to communicate clearly and effectively.
Naval Post Graduate School Wins the 2013 UPS George D. Smith Prize

By Ranganath Nuggehalli, CAP; Chair, UPS Smith Prize
Rnuggehalli@ups.com

The Operations Research Department of the Naval Post Graduate School (NPS) won the 2013 UPS George D. Smith Prize. CPMS collaborated with UPS and INFORMS to establish this prize, first awarded in 2012, to recognize academic departments/programs that excel in preparing their students for practicing operations research. The winner was announced during the Edelman Gala at the 2013 spring analytics/operations research conference. Prof. Donald (Bob) Smith of Monmouth University, chair of the 2013 selection committee, while delivering the decision stated, "... The program is unique in its strong and inexorable link to its sponsor, the U.S. Department of Defense, which keeps NPS students and faculty focused on applying methods to solve problems facing the military and other diverse branches of government, with emphasis on improving operational efficiency and effectiveness. By awarding the 2013 UPS George D. Smith Prize, the committee recognizes the outstanding contribution made by the Naval Post Graduate School, and its graduates, through the practice of operations research." Dating back to 1951, the O.R. degree program at NPS is the oldest in the country.

Randy Stashick, the UPS Global Vice President for Engineering Services, presented the trophy to the winning team during the Edelman Gala. Prof. Robert Dell, chairman of the NPS Operations Research Department, accepted the award.

Winning this prize earns not only an impressive trophy but also a cash award of $10,000. The cash award has been generously underwritten by UPS. The prize is named after the late George D. Smith, second CEO of UPS, who championed the use of operations research within the company. The Enterprise System Center and Department of Industrial and Systems Engineering of Lehigh University, and the Leaders for Global Operations Program of MIT, were the two other finalists in 2013.

Applications are now being accepted for the 2014 UPS George D. Smith Prize. For more information about the application process, please contact me, Ranganath Nuggehalli, at Rnuggehalli@UPS.COM.

INFORMS Prize: Upcoming 2014 Competition
By Jeff Winters, Chair, 2014 INFORMS Prize Committee
jwinters@ups.com

Which organization has the best O.R. and analytics department in the world? The INFORMS Prize honors an organization that has repeatedly applied OR/MS or analytics in important, varied, novel, and lasting ways. If this sounds like your organization, please submit your nomination by December 1, 2013. Our selection committee will judge the relative impact OR/MS has had on the overall success of the organization, and the extent to which OR/MS is built into the fabric of the organization. A multi-billion dollar firm that has a large OR/MS staff, but integrates OR/MS techniques only occasionally, might be ranked relatively lower than a small firm that uses OR/MS throughout its business.

The most recent winners have been Ford Motor Company (2013), Memorial Sloan-Kettering Cancer Center (2012), Sasol (2011), Jeppesen (2010), Intel Decision Technologies Group (2009), and General Electric Global Research Center (2008).

If you have any questions, please contact me, Jeff Winters, the 2013-2014 Committee Chair, at jWinters@ups.com.

CPMS Practice Sessions at the Fall Meeting

By Ranganath Nuggehalli, CAP; Chair, CPMS-Sponsored Sessions
Rnuggehalli@UPS.COM

CPMS will sponsor a number of practice-oriented sessions at the upcoming 2013 INFORMS Annual Meeting. In addition to presentations by Edelman Award and Wagner Prize finalists, and a keynote by the UPS George D. Smith Prize winner, there will be four special presentations. The goal of all these sessions is to help advance the practice of our profession.

First of the special sessions will be a panel discussion of academic-industry collaboration. This is sponsored jointly by CPMS, the Transportation Science and Logistics Society, and the Junior Faculty Interest Group. The panel will be chaired by Karen Smilowitz (schedule: October 7, 2013, 11am-12:30pm).

In the second special session (schedule: October 7, 2013, 1:30-3pm), jointly sponsored with INFORMS, Jack Levis and Stephen Powell will discuss the Certified Analytics Professional (CAP®) certification initiative, and related continuing education initiative, of INFORMS.
The third session (schedule: October 7, 2013, 4:30-6pm) will be a panel discussion on managing successful careers in O.R. practice. CPMS has sponsored panels on this topic a few times in the past; those panel sessions were well attended. The chair this year is to be announced.

The following day, Peter Bell is chairing a panel discussion (schedule: October 8, 2013, 8-9:30am) on outsourcing and/or offshoring analytics. That discussion will focus on the growing trend to outsource analytics functions and the impact on analytics professionals.

The Naval Post Graduate School's Operations Research Department, winner of the 2013 UPS George D. Smith Prize, will give a keynote presentation on October 9, 2013, at 10am. The Wagner Prize competition sessions are discussed, with schedules, in the article by chair Allen Butler in this newsletter.

Please check the meeting program for days and times of reprise presentations by past Edelman Award finalists.

Isolated Practitioner Workshop at the Fall Meeting

By G. Jack Theurer, Chair, CPMS Isolated Practitioner Workshop
theurer@aol.com

No one knows how long isolated practitioners of operations research/management science/advanced analytics have been around, perhaps partly because many of the thousands of men and women who operate as the only OR/MS specialist in their territory don't think of themselves as an OR/MS practitioner. Isolated within large organizations or working as self-employed consultants, they carry a myriad of different job titles.

A clear turning point in this state of consciousness (or unconsciousness) occurred in the early 1990s when then-TIMS President Paul Gray made the existence of the Lone Ranger of ORMS known to the TIMS/ORSA community (forerunners of INFORMS) in his OR/MS Today editorial titled “Lasso The Lone Ranger” (OR/MS Today, October 1992). As often happens in the course of history, a spark gives rise to a whole new consciousness. In that sense Paul Gray's editorial was the impetus that led to the CPMS Isolated Practitioner Workshop and a new awareness of the role being played by isolated practitioners of OR/MS in organizations worldwide.

After the article appeared, CPMS responded quickly. The TIMS/ORSA national meeting in San Francisco was just weeks away. Newt Garber, then president of CPMS, asked me to organize a session at the San Francisco meeting, featuring the role of isolated practitioners of OR/MS. The session, conducted jointly
with the Roundtable, was so popular and well-attended that it became the first of a continuing series of isolated practitioner workshops held at every TIMS/ORSA, and now INFORMS, meeting since then. That's 29 workshops at national meetings through the one last year in Phoenix. This year's workshop in Minneapolis will be the 30th in the series. Some meetings have been so popular that we've had attendees craning their necks to hear from outside in the hallway. And they don't just come for the wine and cheese we serve.

Why this popularity? The workshops do focus on timely issues that affect the growing community of isolated practitioners. It's not that simple though because at any national INFORMS meeting there probably aren't enough isolated practitioners to fill a regular meeting room. So who are those attendees? We discovered that issues of interest to the Lone Rangers also have much wider appeal. Although isolated practitioners have their special needs, it turns out that they are very much in the mainstream of OR/MS practice. We see workshop attendees who are isolated and not, practitioners and not; they are from business, government, universities, and other kinds of organizations. Not only that, but the topics we discuss are just plain timely and interesting.

Here's what we've covered since 1992:

- Are You an Isolated Practitioner? (Better Still: What is an Isolated Practitioner?)
- What do Lone Rangers Need to Know to Sell their Services?
- Serving the Customer
- Integrating ORMS with Technology
- The INTERNET: Information Explosion or Security Time Bomb?
- Are You an Isolated Practitioner? (Revisited)
- Breaking Away from the Corporate Job: Should I or Shouldn't I?
- Experiences as a Lone Ranger in ORMS
- Seven Helpful Hints for ORMS Consultants
- The Virtual Enterprise: Roles, Deliverables & Technology
- Forum on the WWW as an OR Delivery Mechanism
- Doing Business in Japan: Recent Developments
- Factors for Success: A UK Perspective
- Delivering ORMS Worldwide
- E-Commerce: Decision Support for Business-to-Business Trading
- Optimization as an Internet Resource
- The Isolated Practitioner and INFORMS
- Predicting the Near-Term State of the US Economy Using Composite Leading Indicators
- Making the Transition: Full-time Employee to Outside Consultant
- Breaking Away: Spinning Off an OR Product or Business
- The Art and Science of Selling Your Services
- A Week in the Life of an Isolated Practitioner
- OR in Federal Policy-Making: Swimming Against the Riptide Amidst Sharks
- Lessons from Growing a Consulting Business and How They Apply to Isolated Practitioners
Business as an Independent Practitioner  
The Lone Ranger of ORMS and Surviving the Great Recession  
OR Consulting: There is no Template  
Experiences Consulting in the Healthcare Industry: Dos and Don'ts  
Current Technology Trends and Future Growth of the Optimization Market

At this year's national meeting in Minneapolis, Jim Williams, Principle Consultant at FICO Xpress Optimization, will recall 15 years as a Lone Ranger with lessons learned. The session will be on Monday evening, October 7, from 6:15-7:15pm. Please check the schedule for the location.

These workshops during our national meetings, now held annually in the fall, are part of the CPMS effort to address the needs of all practitioners in the ORMS world. The success of the workshops shows that the isolated practitioner is an important member of the profession.

Please send your suggestions for future topics to me, Jack Theurer, at theurer@aol.com.

G. Jack Theurer is president of G. Theurer Associates Inc., an ORMS consulting firm in New York, NY.

Spring Analytics/Practice Conference in Boston

Freeman Marvin, Chair, 2014 Conference on Business Analytics and Operations Research
ffmarvin@innovativedecisions.com

The next INFORMS Conference on Business Analytics and Operations Research will be held March 30th to April 1st, 2014, at the Westin Boston Waterfront Hotel in Boston, Massachusetts. This INFORMS analytics conference is well known for presentation of the prestigious Franz Edelman Award and several other annual practice awards at a gala dinner held Monday evening. Many other events pack an exciting three-day agenda.

Sunday you may choose from technology and soft skills workshops, the INFORMS Professional Colloquium, the Spreadsheet Guru Competition, and a number of evening receptions. Monday and Tuesday offer industry leading keynote speakers and over 20 special tracks on a range of application areas and methods, including the Edelman Award competition sessions, supply chain management, the analytics process, marketing analytics, decision analysis, and hands-on software tutorials.

Attendance at the conference has steadily increased over the past
three years. Yet most still find the conference size to be comfortable such that you can easily have meaningful and enjoyable professional exchanges.

I want to especially encourage students in the Boston area to attend. The combination of a special conference rate for students and a local venue make this a most affordable way to grow your skills and expand your career network.

There truly will be something for all analytics professionals at the 2014 conference. Watch the INFORMS website for announcements and schedules in the months ahead.

See you in Boston!

---

### Upcoming Edelman Gala

**By C. Allen Butler, Chair, 2014 Edelman Gala Committee**  
[Allen.Butler@va.wagner.com](mailto:Allen.Butler@va.wagner.com)

The Edelman Gala at the recent 2013 INFORMS Conference on Business Analytics and O.R. was a resounding success. We are planning another great event for 2014.

Next year's gala will take place on March 31, 2014 at the Westin Boston Waterfront Hotel in Boston, MA. As in years past, conference participants will be treated to an excellent dinner and examples of wonderful achievements in our profession.

The evening will include recognition of the 2013 Wagner Prize winning authors, announcement of the 2014 INFORMS Prize winning company, and announcement of the 2014 UPS George D. Smith Prize winning academic program. In addition, attendees will have the opportunity to view summaries of the exciting work done by each of the finalists for the 2014 Edelman Award. The gala will culminate with announcement of the 2014 Edelman Award winner.

This is always a fun event, celebrating innovative, high-impact work in the practice of OR/MS and Advanced Analytics. I encourage you to attend and take pride in our profession!

---

**LinkedIn Topic: Tools for Data Extraction and Manipulation**
Have you ever noticed how the data you want to use to answer a specific research or business question inevitably reside in different sources, structures, and formats? Some data are in databases, some in spreadsheets, and some in text files. Some data are structured in rows and columns with delimiters, and some less structured.

To answer your specific question, the data need to be extracted, cleaned, munged, and assembled. It's no wonder many people say that at least 80 percent of the work devoted to using data to answer a question involves collecting, manipulating, and organizing the data.

Since source data often come from a wide variety of sources, with differing structures and formats, you can be a more effective and efficient data analyst by having multiple data manipulation tools in your tool kit. A few of the open source tools that I've found to be particularly good for manipulating data are SQL, Perl, and Python.

SQL is an excellent tool for extracting data from databases, grouping data by categories, and aggregating data to calculate summary statistics. When it comes to parsing text files, using regular expressions, and structuring and iterating over data, Perl is a first-rate option. Finally, Python is a superb tool for extracting data from spreadsheets and other formats, combining, reshaping, and transforming data, as well as practically anything else you'd need to do to prepare data for analysis.

SQL, Perl, and Python are three open source tools that I've found to be especially helpful, but they are not the only available options. What tools have you employed to access, manipulate, and analyze data? What is your most interesting or challenging data extraction or manipulation experience?

Please share your stories and preferences with the broader CPMS community by posting your response on the CPMS discussion board on LinkedIn (http://www.linkedin.com/groups?gid=1791861).

**INFORMS Offers New Continuing Education Courses; 25% Discount on Data Course in Minneapolis**
INFORMS introduces a new continuing education program by offering the first two courses in what will become a portfolio of courses. These courses are designed to cover skills that are vital for professionals working in, or interested in, the successful practice of OR/MS and analytics.

The courses are two days in length, are conducted in a classroom setting, and each will be offered twice during 2013 beginning in September. Registrants who have received CAP® certification may use either course to help satisfy the CAP® continuing-education requirement.

The initial courses are *Essential Skills for Analytics Professionals* and *Data Exploration & Visualization*.

The *Essential Skills for Analytics Professionals* course presents practical approaches and techniques for carrying out winning analytics projects that improve performance in business and non-business organizations. We examine many best practices drawn from experience. The course aims to help analytics professionals add value from beginning to end.

In the *Data Exploration & Visualization course*, participants will experience first-hand the power of data exploration and visualization to answer important questions as well as to reveal unexpected patterns, trends, and exceptions, in this era of "big data." During our hands-on program, we will use commercial software but this course is not for software-training; the focus instead is on understanding methodologies and mindset that best reveal how data should be approached, handled, explored, and incorporated back into the domain of interest.

Here are the dates and locations:

**Essential Skills for Analytics Professionals**
September 26-27, 2013 - Redwood City, CA  
November 7-8, 2013 - Washington, DC

**Data Exploration & Visualization**
September 30-October 1, 2013 - Redwood City, CA  
October 3-4, 2013 - Minneapolis, MN

As you can see above, the Data Exploration & Visualization course is being offered immediately before the INFORMS Annual Meeting. If you plan to attend the annual meeting, attending the Data Exploration & Visualization course first will allow you to enhance your skills in ways that you can implement immediately when you get back to work, which would help you gain more from your annual-meeting trip.

**Special offer:** CPMS members and other Annual Meeting registrants can take a 25% discount off the fee for this intensive,
hands-on, two-day data course in Minneapolis. To receive the discount, you must register for the course by September 10. To register, contact Thedra White at thedra.white@informs.org.

For detailed information about the Data Exploration & Visualization and Essential Skills for Analytics Professionals courses, please visit www.informs.org/continuinged.

If you have any questions, please feel free to contact Thedra White, INFORMS Continuing Education Program Manager, at thedra.white@informs.org or 443-757-3570.

CAP® Certification and the New INFORMS Career Center

By Gary Bennett, INFORMS Director of Marketing
gary.bennett@informs.org

For this issue of CPMS News, I will focus on CAP® certification and also on our new career center.

CAP® Certification News
Three New Exam Sites Announced
INFORMS recently announced three new exams for fall 2013 - on November 6, November 12, and December 12, as summarized below. These additional exams bring the total to nine exams in 2013, all at different locations. Other upcoming dates and sites are October 3 in Boston following Predictive Analytics World and October 5 in Minneapolis preceding the INFORMS Annual Meeting. The exam is paper and pencil only in 2013. We hope you'll participate and earn what is sure to become a prestigious credential.

Click here to apply for certification at any location.

Click to download the Candidate Handbook.

For more information, click here.

November 6, 9am-12pm, IBM Tech Center, San Francisco, CA
Co-located with IBM SPSS Data Mining Workshop,
IBM is a proud supporter of INFORMS CAP® Certification

This exam is co-located with the IBM SPSS Data Mining Workshop. The exam occurs in the morning and the Data Mining Workshop in the afternoon. There is no requirement for CAP® candidates to attend the IBM event. INFORMS and IBM have co-located these events as a convenience to our mutual customers. Separate registrations are required.

Register for the IBM SPSS Data Mining Workshop here.

Click here for additional information on the Workshop.
November 12, 9am-12pm, SAS New York Training Center, New York, NYCo-located with SAS Data Mining Workshop and Survival Data Mining course
SAS is a proud supporter of INFORMS CAP® Certification

This exam is co-located with the SAS Data Mining Workshop, November 12, 1:30-5pm. This is a complimentary workshop. There is no requirement for CAP® candidates to attend the SAS event. Separate registrations are required. INFORMS and SAS have co-located this event as a convenience to our mutual customers.

Register for the complimentary SAS Data Mining Workshop here. SAS also offers Survival Data Mining, Wednesday-Friday, November 13-15. This is a paid course covering survival data mining methods and their implementation using SAS software.

December 12, 9am-12pm, Queens School of Business, Lecture Theater, Toronto, Ontario, Canada

Prestigious Analytics Certification Board Named
An independent and prestigious Analytics Certification Board (ACB) has been appointed by the INFORMS Board of Directors further signaling the staying power of the new CAP® credential and the wide support for it by industry luminaries. The ACB is the official governing body of CAP® certification; it has independent authority to make all final decisions regarding program procedures, program content, approval of applicants, and granting of certifications. Welcome to the twelve new members, including INFORMS Executive Director Melissa Moore, who will serve staggered one, two, and three year terms. (The table below shows name and affiliation. The designation "CAP" denotes a member who has earned the CAP® credential.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zahir Balaporia, CAP</td>
<td>Schneider National</td>
</tr>
<tr>
<td>Tom Davenport</td>
<td>Babson College and Harvard Business School</td>
</tr>
<tr>
<td>Bill Franks</td>
<td>Teradata</td>
</tr>
<tr>
<td>Jeanne Harris</td>
<td>Accenture</td>
</tr>
<tr>
<td>Terry Harrison, CAP</td>
<td>Penn State University</td>
</tr>
<tr>
<td>Lisa Kart, CAP</td>
<td>Gartner</td>
</tr>
<tr>
<td>Kathy Kilmer</td>
<td>Disney</td>
</tr>
<tr>
<td>Jack Levis</td>
<td>UPS</td>
</tr>
<tr>
<td>Paul Messinger, CAP</td>
<td>University of Alberta</td>
</tr>
<tr>
<td>Polly Mitchell-Guthrie</td>
<td>SAS</td>
</tr>
<tr>
<td>Scott Nestler, CAP</td>
<td>U.S. Army</td>
</tr>
<tr>
<td>Melissa Moore</td>
<td>INFORMS Executive Director</td>
</tr>
</tbody>
</table>
INFORMS President Anne Robinson Speaks to *Information Week* about CAP®
In an interview with Jeff Bertolucci of *Information Week*, Anne explains how the CAP® certification helps employers know that the data scientist they just hired has all the skills they purport to have, and not just math and computer skills but also the softer communication skills so critical in this role. [Read more](https://ui.constantcontact.com/visualeditor/visual_editor_preview.jsp?agent.uid=1114685800129&format=html&print=true).

CAP® Now Officially Registered with the U.S. Patent and Trademark Office
In another sign of staying power and prestige, the U.S. PTO just informed us that the INFORMS Certified Analytics Professional mark has been federally registered and will stay in effect for ten years. This means that no other certifying body may use Certified Analytics Professional or CAP®.

INFORMS New Career Center
On August 5, INFORMS launched its new [Career Center](https://ui.constantcontact.com/visualeditor/visual_editor_preview.jsp?agent.uid=1114685800129&format=html&print=true). The new ICC (INFORMS Career Center) replaces the old Job Placement Service (JPS.) Why the change in names? The site is much more than a job board now. The site also features a rich source of career information for INFORMS members only. Resources include videos, and an up-to-date content library that has everything from interviewing tips to sample resumes and cover letters. There is also an ask-the-expert email feature.

The first thing you'll notice about the new Career Center is that it now has hundreds more analytics industry jobs than ever before. We have partnered with a career center service, JobTarget, that has access to these analytics jobs and makes them available on our Career Center.

The second thing you'll notice is much more robust functionality such as that we have become accustomed to with Monster and Career Builder. Members will now be able to search jobs using powerful search filters, set up and receive job alerts delivered right to your in-box, and post anonymous career profiles that will allow employers to search for you and request a connection without your having to worry about your current employers finding you.

We've opened up the Career Center to non-members, too, because that's what employers want. But only members will be able to post their resumes or anonymous career profiles for free, view the newest jobs posted on the site before non-members, have their career profiles rise to the top during resume searches by employers, and have access to all the career resources.

We hope you will take the time to register and post an anonymous career profile. That way, interested employers will find you. This is perfect for passive job seekers who wouldn't mind an offer that comes out of the blue.

**Analytics and Management Science Make News**
By Barry List, INFORMS Director of Communications, barry.list@informs.org

INFORMS continues to reach out to our members, as well as those others who benefit from analytics and O.R., about the value of our specialty and the growing importance of our field in business and government.

INFORMS President Anne G. Robinson, along with Practice VP Jack Levis, have represented INFORMS at numerous conferences and speaking engagements, explaining the value of analytics and O.R. Anne Robinson gave a plenary presentation about the growing importance of analytics around the world at the INFORMS/EURO conference in Rome at the beginning of July. This coming November in Amsterdam, she will present the Franz Edelman Award to the 2013 winning team representing the Dutch Delta Program Commissioner.

INFORMS representatives had a preliminary discussion with editors of the US News & World Report Best Colleges guide about ranking O.R. and analytics programs in their best graduate school section. If successful, this initiative will alert more young people to the value of a career in our field.

INFORMS continues to work on an analytics maturity model that will help O.R. and analytics professionals assess their organizations' capabilities. Thanks to all CPMS members who volunteered to test the model.

INFORMS board members have been speaking to the press about the value of analytics and O.R. and about programs like the Certified Analytics Professional (CAP®) exam. Anne Robinson and Jack Levis discussed CAP® with information-management.com. Anne Robinson talked about hiring analytics professionals with cfo.com. Jack Levis showed Wired how UPS tackles the Traveling Salesman Problem. INFORMS Secretary Brian Denton examined healthcare analytics in an interview with himssfuturecare.com. The online publication allanalytics.com also spoke with Denton about healthcare, and covered CAP® and the value of competing as part of an Edelman team, as well.

The INFORMS Podcast Series continues to offer practitioners and academics a forum for extended discussion of their work. Among recent contributors are:

- Tom Davenport, the celebrated co-author of "Competing on Analytics," discusses his latest book
- Evan Levine, of the New York Police Department, talks about the importance of effectively communicating analytics results
- Eric Bickel talks about the way his baseball research caught the eye of one of this year's hottest rookies
- In a videocast, former INFORMS President Don Kleinmuntz gives a far reaching talk on healthcare analytics and the dawn of Obamacare
- Resilient solo consultant Carrie Beam offers soft skills for
Ione wolves

- Historian Stephen Budiansky talks about his book on O.R. during WWII and the British pioneer operational researcher Patrick Blackett

Analytics, O.R. and management science have been making lots of news since the ascendance of advanced analytics. Read more in the INFORMS Newsroom. You can contact INFORMS Communications Director Barry List about ways of doing outreach for analytics and O.R. at barry.list@informs.org.

Note From the Newsletter Editor

By Randy Robinson, Chair, CPMS Newsletter Committee
randy.robinson@mac.com

Please send your article ideas, announcements, or comments, to be considered for future issues to randy.robinson@mac.com.

This newsletter is brought to you by the authors and by:

**CPMS Officers**
Russell P. Labe, CAP; Chair
Peter C. Bell, Vice Chair
R. John Milne, Secretary
Douglas A. Samuelson, Treasurer

**Newsletter Committee**
Randall S. Robinson, Chair
Mary Leszczynski, INFORMS Staff

This message, an informational posting, was sent to the CPMS members' list by the CPMS council. To unsubscribe so as to be removed from all future CPMS emails, please click the "Update Profile/Email Address" link below.

Forward this email

This email was sent to gary.bennett@informs.org by randy.robinson@mac.com | Update Profile/Email Address | Instant removal with SafeUnsubscribe™ | Privacy Policy.

INFORMS | 5521 Research Park Drive | Suite 200 | Catonsville | MD | 21228