

## ORSP Hosts IFORS Workshop for Teachers in Developing Countries



*With speakers and organizers, participants pose for a class picture after receiving their certificates.*

Recognizing the lack of qualified teachers and scarcity of teaching resources for OR trainers in developing countries, IFORS sponsored a Workshop for OR Teachers through the ORSP. The Workshop was held July 19 –21 at The Peninsula Manila in Makati, Metro Manila, Philippines, attended by 43 participants, three of whom come from South Africa. The speakers came from Australia, Canada and India. The Meralco Millennium Foundation, the Metro Bank Foundation and the San Miguel Corporation sponsored the participation of six, four, and two teacher-participants, respectively.

The three-day Workshop focused on: Teaching Content and Resources, led by Dr. Moshe Sniedovich; Teaching Methodologies, handled by Dr. Erhan Erkut; and the Developing Country Perspective in Teaching OR, dis-

cussed by Dr. Subhash Datta.

During the first day, the participants were shown how to make use of the IFORS tutORial to teach such OR techniques as DP, LP, IP and sensitivity analysis. Each participant was given a CD containing the modules that they could use for their classes even without access to the Internet. Dr. Sniedovich also shared games that could be used to make teaching interesting for students. The workshop portion enabled the participants to play around with the modules being discussed with the use of the computers provided.

Prof. Erhan, on the other hand, focused on teaching effectiveness and how various teaching techniques and media can make learning fun, both in and out of the classroom. Exhibiting in his

own lecture what he meant by being effective, he shared experiences that transformed a feared subject that is OR to a highly successful course. He also discussed the success of using project-based courses. In the afternoon workshop, he guided the participants through various tips in the use and teaching of OR through spreadsheets.

Before the end of the second day, ORSP President V. Reventar presented a case on “Preserving the Financial Viability of Trust Funds in Developing Countries through OR”. He presented the case and the solution that the teacher of the case would have access to. Six groups then were given questions on: how they would prepare for the case discussion, what their outline for the discussion and the follow up sessions would be for the case. Each group presented various approaches of tackling the case discussion in class. This concept of “teaching a case through a case” was adapted from the method used by Prof. Peter Bell in the INFORMS Teaching of Management Science Workshop in Massachusetts.

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*Drs. Sniedovich, Datta, and Erhan exchange ideas in between their lecturer*

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## ***ORSP Hosts IFORS Workshop for Teachers in Developing Countries***

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The third day was focused on issues pertaining to developing countries. Dr. Subhash Datta discussed concepts of sustainable development and related his research work on location studies. He shared perspectives that teachers must keep in mind to make OR applications appropriate to the needs of their end users in developing countries.

Two papers presented on experiences in teaching OR in the Philippines generated a lot of discussion. At the end of the Workshop, each participant was asked to relate to the rest an action plan upon return to his/her institution.



*Participants exchange ideas about the sessions with their team mates.*

For all the three days, there was extensive use of small group discussions during lunch and at the end of each day. These were adapted from the 2004 Teaching of Management Science Workshop sponsored by INFORMS at Marlborough, Massachusetts from July 8 to 11, and attended by E. del Rosario. The groupings were varied each day, while ensuring that there was as wide a background of participants in a group as possible. The discussions enabled the participants to share their experiences and process their learning for the day. It also served as an immediate

feedback to the session leaders who awaited participant responses to the questions: Which of the learning for the day is easiest to implement? Which one would make the most difference to my teaching, assuming all resources were available?

The participants were also able to socialize and share other talents during the second day cocktails where the participants showed off some skills at singing, reciting poems, and for the South African delegation, at introducing their beautiful country of South Africa.

The 40 participants from the Philippines came from as far north as Baguio and as far south as Mindanao. This was a desirable mix, since part of the objective was to ensure that far corners of the country, normally without access to seminars such as these, would benefit from the activity.

### **Action Planning**

The following commitment were taken from the participants' action plans:

**1. Reflect on Learning.** Study materials given and select those

that can be appropriately applied to the existing courses in my school; conduct echo seminars and encourage others to apply those that are relevant; use resources available and let students know about them and how to use them.

**2. Use Spreadsheets.** Master the spreadsheet and techniques shared by Dr. Erkut and use it in my class; expose students more to the use of Excel as a solver for OR problems; study the use of Excel Solver and explore the power of the Excel software; learn more about the Excel functions and incorporate them in my financial management and engineering economy courses; work with school administration to enable the use of computers and Excel Solver in my classes.

**3. Use Games.** Incorporate games in teaching - games will help me introduce variety and make the subject interesting for my students.

**4. Reevaluate existing courses.** Revise OR syllabus; add laboratory component to OR courses; include OR as a subject in business management courses; re-orient existing or develop a new course that will incorporate the methodologies learned; purchase additional computers and propose new curriculum for O.R.; review and enrich existing OR course offerings.

**5. Introduce/ Change Project Course.** Look into the feasibility of selling to clients so they pay for preject studies of students; offer a new course in management consulting; establish better industry-academe linkages; adopt use of projects in teaching; look for clients willing to fund OR projects undertaken by students.

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## PERSPECTIVES ON THE WORKSHOP

### Three Days of Discovery *by Alleli Domingo, participant from the University of the Philippines*

What is it in a three-day workshop at The Peninsula Manila that makes us Operations Research teachers think we have struck gold? For one, we sat at the feet of master teachers: hand-picked resource persons who undoubtedly are bright and shining stars in the firmament of OR education.



*Bobby Valentine of de La Salle and Alleli Domingo share their group findings with the rest of the participants.*

They are not just subject matter specialists; they teach who they are. How precious it is to have role models who inspire us and help us pursue our goals with greater accuracy!

Opening day plenary speaker was Dr. Moshe Sniedovich, an Israeli professor, active researcher and a prolific writer based in Melbourne University, Australia. Sir Moshe enthusiastically guided us through the web-based tutOR modules he and his project team developed a few years back. He energetically enticed us to utilize educationally rich, fun-filled games to stir consciousness and raise the level of awareness for OR model formulations. Chief among our discoveries is that we have an embarrassment of wealth in terms of OR instructional resources readily available to us via the internet.

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## Contagious Enthusiasm: A South African Perspective

Rialine Cruywagen, Ilze du Plooy and Willemien van Hoepen from the Department of Quantitative Management, University of South Africa, Pretoria, South Africa, attended the workshop held in Manila,

Philippines from 19 to 21 July 2004. Attending this workshop was an enriching experience. Congratulations to the organisers for a well and professionally organised event! We enjoyed the daily rotation of the work groups and the "working" lunches.



*Clockwise on the foreground: Ilze, Willemien and Rialine in Zamboanga to sample native food and dances, shown here with the speakers and organizers.*

It gave us an opportunity to interact with all the other delegates. We experienced our Philippine colleagues as warm, open and friendly.

The speakers shared their OR teaching experience with so much Enthusiasm and exuberance

that it was contagious! We are teaching at a distant education university where the mode of instruction is the written word. We very seldom see our students, but do communicate by mail, phone or e-mail. Our students are second language learners with a poor mathematical background who do not all have computers at home. The didactic information and material given to us by the speakers are very valuable. We are now faced with a unique challenge to implement this in our educational environment.

We want to thank the organisers and every person that contributed to make the workshop such a wonderful and instructive event. It was a privilege to attend a workshop of such high quality. ♦

## *Three Days of Discovery*

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We were given free access to the electronic journal INFORMS Transactions on Education, edited by our second-day speaker, Dr. Erhan Erkut, a Turkish professor who has found a home in the University of Alberta, Canada. Dr. EE regaled us with captivating accounts of how he painstakingly experimented with various innovative teaching styles designed to address multiple intelligences and guaranteed to trigger “*Aha!*” and “*Eureka!*” moments among students. He vigorously promoted the adoption of case studies to build credibility, the extensive use of spreadsheets to empower business students, and to institute project courses to enhance the OR/MS curriculum. Generous to a fault, Dr. Erkut wholeheartedly shared his time-tested course packs with all of the participants. He passionately convinced us that effective teaching calls for an optimal blend of adequate preparation and theater arts!

Concluding plenary lecturer was Dr. Subhash Datta, a professor of Systems Science and Operations Management at the Management Development Institute in India. His lecture focused on development issues that filled us with breakthrough insights on OR for what, and for whom? In Dr. Data we found a keen-eyed trainer who could push us further to achieve greater heights and become better at what we do.

To commit to their academic profession, OR teachers in developing countries make a lot of sacrifices - for instance, personal time, better salaries and corporate glory. At times, we teachers grow weary under the weight of such sacrifice and it is beneficial to step back and get a fuller perspective.

It took a collective life-affirming interaction with peers, co-teachers and companions in the journey of OR learning to get a clearer view of what we were meant to do. The workshop woke us up to the wonders of the world of OR instruction. Delegates from different parts of the Philippines and faraway South Africa became joyously absorbed in what we were learning. We re-dedicated ourselves to our vocation as we would after being gripped with an overwhelming sense of coming home to a lifelong relationship full of hard work and deep contentment.

Our boundless thanks go to the organizers headed by Ms. Elise del Rosario who had our own best interests at heart when they carefully mapped out plans for the seminar lectures, small group discussions in the midst of buffet lunch akin to a feast, team output presentations, cultural numbers for an instant cocktail party, and wrap up sessions in which we were held responsible and accountable for our personal action plans. Recognizing our need for re-tooling, we enlisted for the workshop and we were not disappointed! We were stimulated and supported in ways we never expected or even imagined. We recovered a sense of connection, strength, significance, and abundance beyond measure.

Renewed by the encouragement derived from an almost unbearably rich exposure to the latest trends in OR teaching, we returned to our respective campuses determined to keep the OR spark alive and glowing. And the multiplier effect goes on in the remarkable difference we endeavor to make in the lives of our students. ♦

## **Papers on Teaching OR in the Philippines Presented in Workshop**

In the recently concluded IFORS 2004 Workshop for OR Teachers in Developing Countries, two papers were presented on the third day of the workshop. These were (1) Competency Exercises: A Teaching Strategy in Operations Research and (2) Framework for Operations Research Instruction for Future Electric Power Engineers. The first paper was presented by Rex Aurelius Robielos, assistant professor from Mapua Institute of Technology and the second paper was presented by Dhon Dungca (with Edwin Cano as co-author), instructor from Holy Angel University.

The first paper proposes three (3) competency exercises to Operations Research classes to replace regular examinations. The competency exercises aims to check the level of understanding of the students in the different topics of Operations Research. This set-up gives slow learners more chances to enhance understanding, hence increasing the chance to pass the subject and obtain higher grade.

The second paper proposes an Operations Research course outline for Electrical Engineering students. Operations Research tools such as Linear Programming, Integer Programming and Dynamic Programming were used to solve electric power system problems.

## ORSP Learns from INFORMS Teachers' Workshop

The INFORMS Teaching of Management Science Workshop held from July 8 to 11 at the Learning Center at Marlboro, in Marlborough, Massachusetts was attended by Elise del Rosario as part of the preparations for the IFORS Workshop for Teachers of OR in Developing Countries to be held in Manila a week later.

and disadvantages of the various technologies such as video, screen capture, animation, games, net-meeting, online feedback, available for use in the classroom. Ravindra Ahuja from the University of Florida delivered a parallel session on Developing Web-Enabled Decision Support Systems, where he gave an overview of various tools that could

Peter Bell captured everyone's attention during the plenary as he spoke about how Strategic OR has achieved a sustainable, competitive advantage in the corporate world and the importance of letting students know all about how OR has been successfully used in the real world. Bell and Greg Zaric shared their techniques at the Ivey School of Business at the University of Western Ontario for their success at teaching management science through the use of the case method. They conducted a case teaching workshop through the use of a case, a technique later adopted in the Manila workshop. Erkut Erhan, on the other hand, talked about Teaching with Projects, something he also shared during the Manila workshop.



Shown with Elise del Rosario (foreground) are L-R: Tava Olsen-Washington University; Stephen Powell-Dartmouth Colleges; Thomas Grossman-University of San Francisco; Peter Bell-University of Western Ontario; Ralph Ante (Ateneo) and Lisa Close (INFORMS)

INFORMS stands for the Institute for OR/MS, the national society of the United States, itself a member society of IFORS (International Federation of OR Societies), and boasts of a lot of well-known lecturers among its members. The faculty included Richard Larson, the current President-Elect of INFORMS, who talked about web-based learning and discussed, among others, the Learning International Networks Consortium, a MIT-based Consortium for Global Learning. Talking on a related topic, Teaching OR/MS with Technology, was Kala Seal from the Loyola Marymount University. He shared his experiences in the usage and associated considerations, advantages

and disadvantages of the various technologies such as video, screen capture, animation, games, net-meeting, online feedback, available for use in the classroom.

be used in building a web-enabled DSS. Roger Grinde of the University of New Hampshire dealt with issues of teaching Montecarlo Simulation using the Spreadsheet. Spreadsheet modeling was discussed at length by Cliff Ragsdale who shared aspects of his textbook *Spreadsheet Modeling and Decision Analysis* by discussing some fundamentals of Excel and VBA (Visual Basic for Applications) as well as by Steve Powell of the Tuck School of Business of the Dartmouth College who covered techniques in designing, building, testing and analyzing a spreadsheet for his topic on the Structured Approach to Spreadsheet Engineering.

The other non-OR plenary speakers, Chris Jernstedt and Richard Felder, imparted useful knowledge for teachers. A psychologist, Jernstedt shared recent discoveries about how the brain stores and retains information, and their implications on educating adults. Felder, on the other hand, demonstrated how active learning can be used to deliver technical material, how it enlivens the classroom experience and how it enhances learning.

Learning from all the competent speakers featured in the workshop was enhanced by the group exchanges that featured dividing the participants into groups of ten and getting each other's reactions to the sessions. This feature was also adopted in the Manila conference.

It was thus an enriching experience not only for the participants of the workshop, but through Elise, for the Manila Workshop as well. ♦



## ORSP WELCOMES NEW MEMBERS; ANNOUNCES BOARD MOVEMENTS



Bobby Baylon



Alleli Domingo



Ma. Teresa Bondad

ORSP is happy to welcome its newest members: **Bobby Baylon**, ChairPerson, Dela Salle University-College of St. Benilde; **Alleli Domingo**, Associate Professor, OIC, Math Division, and Deputy Director of University of the Philippines - Los Baños; and **Ma. Teresa Bondad**, Faculty Member of Aquinas University of Legaspi.



*Robielos presenting his paper during IFORS Teachers' workshop.*

ORSP is also pleased to appoint the newest member of the Board, **Rex Robielos**. An Assistant Professor of the School of Industrial Engineering of Mapua Institute of Technology, Robielos was recently appointed to take the place of Geoff Chua in handling the Student Chapters. Chua recently left for the Singapore on a scholarship. Congratulations, Geoff!

## More Materials for Teachers

Dr. Moshe Sniedovich taught the importance of games in teaching OR and showed new approaches to teaching some OR topics like Dynamic Programming and Networks. But most of the teachers became really excited when he showed the tutorials he and his team at the University of Melbourne developed to make teaching OR easier. [www.ms.unimelb.edu.au/~moshe/](http://www.ms.unimelb.edu.au/~moshe/) and [www.ifors.org/tutorial/](http://www.ifors.org/tutorial/) are the important websites to check out.

Dr. Erhan Erkut gave a lively session on the importance of the Excel Solver over other OR software, and demonstrated several Excel files that made teaching OR and statistical concepts easier. He also showed how incorporating projects in OR courses benefit both the students and the faculty. Most of the teachers enjoyed the

techniques he showed for keeping the students interested in the course. Website: <http://www.bus.ualberta.ca/eerkut/>

From India, Dr. Subhash Datta explained the importance of including Third World concerns to classroom problems. He emphasized the importance of sustainability and environmental awareness when solving real-life problems. He demonstrated some software he helped develop in the Management Development Institute, primarily decision support systems for various sectors in industry. Website: <http://www.mdi.ac.in/faculty/corefacultydetail.asp?id=1&fid=84> ♦

## ORSP's Agnes Perez Attends 2004 INFORMS Conference

San Miguel Senior OR analyst and current ORSP Board Secretary Agnes Perez attended the 2004 INFORMS Conference on OR/MS Practice, with the theme "Applying Science to the Art of Business". The conference was held for three days last April 25 to 27 at the Hyatt Regency Cambridge in historic Cambridge, Massachusetts.

Always a major international attraction, the INFORMS conference offered 16 tracks that incorporated 88 sessions, thus giving the over-300 participants lots of choices. Among the tracks were: financial applications, retail applications, supply chain management, software tutorials, emerging trends. A major highlight of any INFORMS conference is the Franz Edelman Competition, where seven organizations competed for the \$10,000 2004 Edelman Award, vying for honors as the most outstanding examples of OR in practice.

Agnes made sure she didn't miss IFORS president and INFORMS past president Tom Magnanti's keynote address, "When OR is AND", a talk that focused on bridging theory and practice, and bringing together OR rigor and relevance. She also benefited from the plenary on the overview of MIT's OR Center. A new innovation this year was the Birds-of-a-Feather Discussion Groups, timed for after-sessions happy hour (5:30 pm to 6:30 pm) and led by Advisory Council members over beer, soda, and munchies. Other notable topics covered were: "OR in the Organization", "Why OR Systems Fail", "Marketing the Profession" and "The Academic-Practitioner Interface". ♦

## JC Mercado Attends SAP Seminar in Brisbane

ORSP Board Member JC Mercado attended the Asia Pacific SAPHIRE 2004 themed Growth through Innovation from June 1 to 4 in Brisbane, Australia. An annual customers' conference organized by SAP, SAPHIRE highlighted SAP Netweaver, which is the engine on which new releases of SAP are built. SAP Netweaver promises to make the collection of data from different sources more seamless and the publishing of relevant business information faster. Of possible interest to OR enthusiasts is the introduction to an optimization tool called SAP Advanced Planning and Optimization, a standard component of SAP Supply Chain Management. A true-blue OR person, JC sees this module as a clear indication that ERP systems like SAP can only be completely successful in helping businesses grow with the help of Operations Research. ♦

IFORS Workshop Participant Statistics (%)	
Locals	92
Foreign	8
Male	47
Female	53
Metro Manila	60
Outside Metro Manila:	
Southern Luzon	14
Central Luzon	6
Northern Luzon	3
Visayas	3
Mindanao	6
Foreign	8
School Representation (%)	
University of the Phils.	20
De La Salle University	20
Others	60

## 2005 ORSP STUDENT PAPER WRITING COMPETITION Call for Entries Deadline for submissions, December 31, 2004

ORSP is pleased to continue the tradition of the ORSP Student Paper Writing Competition. A grand prize of P5,000 and a runner-up prize of P3,000 are offered, together with a Certificate of Achievement. The teacher-coach will be awarded a plaque.

The Prize Committee welcomes all entries meeting the following criteria:

- Paper must have been authored by a student at a university in the Philippines enrolled for the school year 2004-2005.
- The paper may be co-authored with other students but not with any faculty in a university. The submitted paper must present research results obtained and written by the author/s.
- The paper must not have been submitted to another competition.
- If selected to be among the finalists, the entry should be presented by one of the principal authors during the 2005 ORSP Student Congress.
- The paper includes some description of the application and its impact on the decision-making process or on the organization for which it was conducted.
- Length of the paper does not exceed 25 pages (1½ spacing). Papers exceeding this length will be rejected. Electronic submission of Microsoft Word files are acceptable provided that:
  - (i) font type is Times New Roman at font size 12, and
  - (ii) if requested, authors will be able to send a hard copy within one week of request.

- Papers which meet the preceding requirements will be evaluated on the basis of problem definition, creativity and appropriateness of approach, MS/OR content, impact of the study, paper organization and structure and quality of written and (if selected as finalist) oral presentation.

All contestants may send by e-mail or by post, a copy (two copies, if by post) of their paper along with their names, school, full mailing address, e-mail address, telephone and fax numbers to:

Chair: Rex Aurelius C. Robielos  
Email: [racrobielos@mapua.edu.ph](mailto:racrobielos@mapua.edu.ph)  
Address: School of IE & Eng Mgmt  
Fax: 301-0082  
Cellphone: 0917 840 3535

### Important dates:

- ◇ Last day for submission of entries: December 31, 2004
- ◇ Notification of finalists: January 31, 2005
- ◇ Presentation: February, 2006
- ◇ Date of Student Congress: TBA

## APORS Announcement

The Asia Pacific Operations Research Societies, in cooperation with the International Federation of OR Societies is pleased to announce that APORS 2006 will be held in Manila from January 16 to 18 2006. The Operations Research Society of the Philippines will be the Host with the Program Committee chaired by Prof. Han Chun Kwong of the MS/OR Society of Malaysia. Watch out for paper submission guidelines and deadlines. ♦

## **ORSP Hosts IFORS Workshop . . .**

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**6. Apply OR for sustainable development** Make use of applied OR for sustainable development for PhD dissertation; Create localized cases for use in O.R.; Look into community service involvement through projects on sustainable development both for me and my students; Raise consciousness of students in community development and role of OR in this; Be involved in projects of the Department of Environment and Natural Resources where OR can best be used; Convert local cases into classroom materials.

**7. Inspire** Inspire students and future teachers the way I had been inspired in this workshop; Take up as a personal mission to teach and inspire others to teach.

### **Workshop Feedback**

On the basis of the following criteria: Usefulness and Relevance of Topics; Presenter Effectiveness; Relevance of Materials; and Adequacy of Facilities, the participants gave the Workshop an overall rating of 4.51 on a scale of 1 to 5 where 1 is poor and 5 is excellent.

In general, comments garnered were positive. Workshop was viewed as an eye-opener, very timely, beneficial to teachers, inspiring, and fun. Consi-

dered desirable was the structure which allowed people to know as many of the participants as possible. Many wished that the Workshop could be repeated especially for their colleagues in the provincial areas who will find the issues on sustainable development very relevant. A majority requested that this activity should be done on a yearly basis. Significantly, one participant cited the workshop as a "life-changing experience" for him, because prior to the Workshop, he was still undecided about making a career out of teaching. After going through all the inspiring materials and realizing the ways in which teachers can have such profound impact on students, he decided to take up teaching as his vocation.

### **Successes and Problems: Organizers' Perspective**

Based on feedback, the Workshop achieved its objectives of skills uplifting and updating of teachers of OR in developing countries. The near excellent mark given by the participants attested to the good selection of speakers, topics, and well orchestrated flow of activities.

The number of participants could be considered optimal from the point of view of interaction with the speakers and with one another. However, the workshop was less of a success from the point of view of attracting teachers from various developing countries. As it was, the only foreign delegation consisted of the three participants from South Africa.

Some of those invited from Asian neighbors did not consider the workshop title attractive because of its focus on developing countries. There were also expressions of concern raised over the election jitters in the Philippines due to the bad press it was getting internationally. Most of the potential participants from India needed sponsorships to be able to attend. As the sponsorships gathered were only sufficient for local participants, no participant from India was able to come.

Overall, a lot of lessons were learned from this Workshop, both by the participants and the organizers who are getting ready to sponsor APORS 2006! ♦

Workshop pictures are available at <http://www.orsp.org.ph/Conference/>.



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