

Numerical Ranges and Radii cont'd

The social events included a banquet and a performance of the student fado group, Lacrima, from Coimbra. The lunches and coffee breaks led to some lively discussions.

The Workshop Programme can still be downloaded from the Workshop website: <http://www.mat.uc.pt/ilas2004/Body.html> (click "associated events").

The next meeting on Numerical Ranges and Radii will be held in 2006, probably in Canada. The previous workshops of this series were held at the United States, Portugal, Japan and Greece.

Directions in Combinatorial Matrix Theory Workshop

Report by **Bryan Shader**



The Directions in Combinatorial Matrix Theory workshop was held at the Banff International Research Station May 7-8, 2004, and attracted 29 researchers (10 from Canada, 15 from the U.S. and 4 from abroad) and 7 post-doctoral or graduate students. Talks discussed current developments and open problems in the following emerging themes in Combinatorial Matrix Theory: Spectral properties of families of matrices associated with graphs; Matrix theory and graph theory in the service of Euclidean geometry; Algebraic tools for combinatorial problems; and Spectral properties of classes of matrices. Titles and abstracts of the talks presented can be found at <http://www.pims.math.ca/birs/workshops/2004/04w2525/abstracts.pdf>.

Participants were: Mahmoud Akelbek, Richard Anstee, Francesco Barioli, Wayne Barrett, Majid Behbahani, Avi Berman, Thomas Britz, Richard Brualdi, Robert Craigen, Michael Doob, Shaun Fallat, Miroslav Fiedler, Peter Gibson, Bob Grone, Leslie Hogben, Yury Ionin, Charlie Johnson, Hadi Kharaghani, In-Jae Kim, Steve Kirkland, Peter Lancaster, Hien Le, Chi-Kwong Li, Zhongsan Li, XiaoPing Liu, Raphi Loewy, Judi McDonald, Dale Olesky, Alex Pothen, Hans Schneider, Bryan Shader, Wasin So, Jeff Stuart, Michael Tsatsomeros, Kevin Vander Meulen, and Rokas Varaneckas.

The organizers were: Shaun Fallat (University of Regina), Hadi Kharaghani (University of Lethbridge), Steve Kirkland (University of Regina), Bryan Shader (University of Wyoming), Michael Tsatsomeros (Washington State University), and Pauline van den Driessche (University of Victoria).

Miroslav Fiedler was the ILAS speaker, and he spoke on "*Matrices and Graphs in Euclidean Geometry*." The Workshop's Open Problem sessions were highly successful, and a list of problems presented are posted at <http://www.pims.math.ca/birs/workshops/2004/04w2525/openprobs.pdf>. New collaborative efforts resulting from the workshop are already noticeable. Results presented at the conference will be disseminated through a special 2005 issue of the Electronic Journal of Linear Algebra.

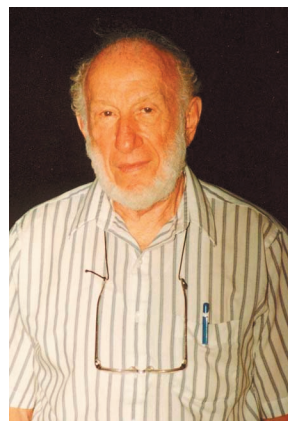
The workshop strengthened the participants' beliefs that the directions for research in Combinatorial Matrix Theory are abundant, promising, and central to mathematics.

13th International Workshop on Matrices and Statistics, in Celebration of Ingram Olkin's 80th Birthday <http://matrix04.amu.edu.pl>

Report by **Simo Puntanen**

The 13th International Workshop on Matrices and Statistics (IWMS-2004) was held in Będlewo, about 30 km south of Poznań, Poland, from 18-21 August 2004. Będlewo is the Mathematical Research and Conference Center of the Polish Academy of Sciences; the setting is similar to Oberwolfach with accommodations on-site. The participants had a nice opportunity to enjoy the interesting meeting environment and facilities. The workshop was endorsed by the International Linear Algebra Society.

The center of attention was naturally Ingram Olkin,



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Ingram Olkin's 80th Birthday cont'd

who gave the Nokia Lecture entitled “*Inequalities: some probabilistic, some matrix, and some both.*” Gene H. Golub gave the Opening Address on “*Numerical methods for solving least squares problems with constraints.*” Other invited speakers were Theodore W. Anderson, Jerzy K. Baksalary, Rafael Bru, Carles M. Cuadras, Pierre Druilhet, Ludwig Elsner, Jürgen Gross, Jeffrey J. Hunter, Charles R. Johnson, Joachim Kunert, Teresa Ledwina, Erkki P. Liski, Peter Major, Nripesh K. Mandal, Richard J. Martin, Volker Mehrmann, Joao Tiago Mexia, Waldemar Ratajczak, Dietrich von Rosen, Bikas K. Sinha, George P.H. Styan, Gabor Tusnady, Béla Uhrin, Hans Joachim Werner, and Haruo Yanai. The total number of participants was 82, comprising participants from 18 countries.

The Local Organizing Committee was Jan Hauke, Augustyn Markiewicz (chair), Tomasz Szulc, and Waldemar Wołyński. The International Organizing Committee for this Workshop was R. William Farebrother (Shrewsbury, England), Simo Puntanen (Tampere, Finland; chair), George P. H. Styan (Montréal, Canada; vice-chair), and Hans Joachim Werner (Bonn, Germany).

Organizing institutes were Stefan Banach International Mathematical Center (Warsaw); Committee of Mathematics of the Polish Academy of Sciences (Warsaw); Faculty of Mathematics and Computer Science, Adam Mickiewicz University (Poznań); Institute of Socio-Economic Geography and Spatial Management, Faculty of Geography and Geology, Adam Mickiewicz University (Poznań); and Department of Mathematical and Statistical Methods, Agricultural University (Poznań). The workshop was sponsored by GlaxoSmithKline, Nokia, and SAS.

Augustyn Markiewicz and Waldemar Wołyński did an excellent job of editing the booklet “Program and Abstracts”: the result is an unusually nice collector’s item. It includes, in

addition to the program and abstracts, biographies, an article and an interview of Ingram Olkin reprinted (from *Student* and from *Festschrift*) as well as his updated bibliography, and an article by R. W. Farebrother.

The organizers are pleased to announce a special issue of *Linear Algebra and Its Applications* devoted to this workshop. It will include selected papers strongly correlated to the talks of the conference. Submissions on the theory of matrices and methods of linear algebra with statistical origin or possible applications in statistics are encouraged.

All papers submitted must meet the publication standards of *Linear Algebra and Its Applications* and will be subject to normal refereeing procedure. The deadline for submission of papers is February 28, 2005, and the special issue should be published in 2006. Papers should be sent to any of the special editors, preferably by email in a PDF or PostScript format:

Ludwig Elsner, University of Bielefeld, Faculty of Mathematics, Postfach 100131, 33501 Bielefeld, Germany, e-mail: elsner@Mathematik.Uni-Bielefeld.DE

Augustyn Markiewicz, Agricultural University of Poznań, Department of Mathematical and Statistical Methods, ul. Wojska Polskiego 28, 60-637 Poznań, Poland, e-mail: amark@owl.au.poznan.pl

Tomasz Szulc, Adam Mickiewicz University, Faculty of Mathematics and Computer Science, Umultowska 87, 61-614 Poznań, Poland, email: tszulc@amu.edu.pl

Volker Mehrmann (Editor-in-Chief for this special issue), Institut für Mathematik, MA4-5 Strasse des 17. Juni 136, D10623 Berlin, Germany, email: mehrmann@tu-berlin.de



IWMS-2004 group photo taken by Hazel Hunter in Będwelo