Editor: Ayesha Ali

In This Issue:

1. A Message from the President,

Ron Smith
(president@environmetrics.org)
Statistics Network within the Centre for Ecology and Hydrology, Edinburgh, Scotland

Dear TIES Members,

Looking back, we have been in touch at various times over the last year but have not formally put together a newsletter. We're still progressing our transition for TIES to be based in the Netherlands under Dutch law rather than under Canadian law,

and operate within the ISI family of Associations. Not all details are yet sorted and I will be back in touch as soon as we can present you with new statutes and let you know about the outcomes of negotiations with ISI.

However, this detail deficit primarily gives us a chance to update you on two successful annual conferences in Al Ain (November 2015) and Edinburgh (July 2016), and to tell you about forthcoming events such as the ISI World Statistical Congress in 2017 at Marrakech (Morocco) where there will be sessions organised by TIES and by individual TIES members. We will have the 27th TIES annual meeting as a satellite meeting to the ISI WSC in Bergamo (northern Italy) and run jointly with GRASPA, a group of the Italian Statistical Society (SIS). Most of these will be reported in detail in other sections of the newsletter, so I thought I could take time to share some personal thoughts rather than repeat information that you can find elsewhere.

The recent Edinburgh conference is fresh in my mind and it was a great pleasure to welcome so many of you to Scotland. We had generally good weather for the meeting, and many of you joined in the great British habit of discussing its vagaries – and commenting that 'hot' for us locals is often 'cool' for our visitors. We also have very short nights for several weeks of the summer though we are well south of the Arctic Circle, but it reminded

me just how far north we live in many countries of Europe relative to other parts of the world.

I am now taking a break in Shetland, and there in recent times much has been made of the fact that this island group in the north of Scotland straddles the 60th parallel. 60°N takes you to a number of diverse locations: roughly several major cities (Bergen, Oslo, Stockholm, Helsinki) in Scandinavia, across northern Russia from St Petersburg to the Kamchatka Peninsula, through the Kenai Peninsula just south of Anchorage in Alaska where we had the 23rd TIES Annual Meeting, across the northern parts of Canada and Hudson Bay to meet the ocean again in Quebec, and crossing the very south of Greenland before returning to Shetland – passing through a variety of climate types on the way. Many of these communities have fragile ecosystems but many also have natural resources which mankind has exploited in different ways over the last several centuries.

The balance between conservation and development pressures is starkly illustrated. Whether or not directly related to climate change, however, weather patterns have altered within our lifetime, as I experienced with gale force winds in August welcoming me to our holiday cottage. These changes in the weather will make a considerable difference to life in the northern regions and is already presenting society with very difficult decisions. It is timely that the 27th TIES meeting will focus on Climate and Environment – consult http://www.graspa.org/?page_id=494 for preliminary information on the conference.

As I noted in my introduction to the Edinburgh meeting, we have just met in a city that led the Scottish Enlightenment in the 18th century. This period of significant intellectual and scientific discussion shaped Scotland's development with many renowned scholars asserting the importance of human reason to justify new ideas. The benefit from the ensuing freedom of thought attracted many, including Thomas Bayes who came to study in Edinburgh in 1719. In modern terminology, the Enlightenment was a move toward interdisciplinary development, a direction of intellectual progress that is so important to current environmental research.

The presentations at the Edinburgh conference illustrated that we have a vibrant community well up to facing the many challenges of championing environmental statistics. Almost more important, we collectively have to make sure our research provides genuine benefit to society, and for that we can take a lead from the Scottish Enlightenment as we engage with the interdisciplinary challenges of the 21st century. Edinburgh and Bergamo are on locations of settlements that have existed for many thousands of years, but with modern histories that demonstrate both similarities and differences in intellectual development. I hope many of you will be able to meet next year to take inspiration from an Italian perspective on our work.

With best wishes,

Ron Smith

2. TIES News

There is a new Board of Directors with TIES officers voted in from the July 31, 2015 election. The representatives voted in assumed their respective positions September 1, 2015. Thank you to all nominees who participated in the election, to the Elections Committee and to all members who voted. See Section 7 for a listing of the current Board of Directors.

Awards

Peter Craigmile made Fellow of ASA
Peter Craigmile has been named Fellow of the American Statistical Association at the association's Joint Meetings this summer in Chicago.

The following awards were announced at the 2016 TIES Annual Meeting in Edinburgh, Scotland.

J. Stuart Hunter Lecture (2016)
Kerrie Mengersen, Queensland University of Technology

President's Invited Lecture (2016)
Mevin Hooten, Associate Professor, Dept. of Fish, Wildlife, and Conservation Biology and Dept. of Statistics, Colorado State University

Springer Prize for Best Student Oral Presentation (2016) Jointly awarded to:

Keith Mitchell, University of Exeter, UK, *Verification of Interval Probability Forecasts*.

Amira Elayouty, University of Glasgow, UK, *Time-varying Dynamic Functional Principal Components*.

Best Student Poster Presentation (2016)

Marnie McLean, University of Glasgow, UK, *Modelling Groundwater Contamination: A Comparison of Spatial and Spatiotemporal Methods*.

Abdel El-Shaarawi TIES Young Researcher Award (2016)

Ying Sun, Division of Computer, Electrical and Mathematical Sciences and Engineering, King Abdullah University of Science and Technology, Saudi Arabia.

For outstanding contributions to Environmental Statistics, in particular in the areas of spatio-temporal statistics and functional data analysis and visualization and for her distinguished service to the profession.

Wiley-TIES Best Environmetrics Paper Award (2014, awarded retrospectively) M.J. Heaton, M. Katzfuss, C. Berrett and D.W. Nychka, *Constructing valid spatial processes on the sphere using kernel convolutions*, Vol. 25, No. 1, pp. 2–15. Presenter: Candace Berrett, Brigham Young University. See: http://onlinelibrary.wiley.com/enhanced/doi/10.1002/env.2251

Wiley-TIES Best Environmetrics Paper Award (2015) Jo M. Kaczmarska, Valerie S. Isham and Paul Northrop, *Local generalised method of moments: an application to point process-based rainfall models*, Vol. 26, No. 4, pp. 312-325. Presenter: Paul Northrop, University College London. See:

http://onlinelibrary.wiley.com/enhanced/doi/10.1002/env.2338

Best Environmetrics Paper Award representatives pose with R. Smith (Left: C. Berrett for 2014; Right: P. Northrop for 2015).

The following awards were announced at the 2015 TIES Annual Meeting in Al Ain, United Arab Emirates.

J. Stuart Hunter Lecture (2015)

Peter Diggle, Distinguished Professor, University of Lancaster and President of Royal Statistical Society (RSS).

President's Invited Lecture (2015)

Daniela Cocchi, Professor of statistics at the School of Economics, Management and Statistics, University of Bologna.

TIES-Wiley Best Student Oral Presentation Awards (2015)

Jointly awarded to:

Tania M. Alarcon, Tufts University, USA, *Tap-to-household water quality deterioration: analysis of spatial and temporal uncertainties*.

Xin Huang, University of Texas at Dallas, USA, *Applications of Machine Learning in Environmetrics: Detecting Dynamic Trend-Based Clusters in Precipitation*.

Abdel El Shaarawi TIES Young Researcher Award (2015)

Murali Haran, Department of Statistics, Penn State University, USA

For outstanding contributions to statistical modeling in multiple areas, including inference for large non-Gaussian spatial data, spatial interaction point processes, compartmental models, and efficient MCMC methods for spatial models; for path breaking contributions to applications in environmental sciences such as climate change and paleoclimate reconstructions; for strong leadership

and mentorship; and for sustained and distinguished service to the environmetrics community.

Dedication to Ian MacNeill on his 85th Birthday

A special invited session was held in honour of Ian MacNeill at the 2016 Statistical Society of Canada Meeting, held in Brock University, St. Catherines, Canada. The session was organized by V. K. Jandhyala and speakers included former students, colleagues and former colleagues who took a look back at his contributions to statistics and to TIES.

MacNeill studied at the University of Saskatchewan in Mathematics before moving to Stanford University where he obtained his PhD in Statistics. He became Associate Professor in Mathematics at the University of Western Ontario (U.W.O., now Western University) in 1971 and became a full Professor in 1978. His main research areas are in time series analysis with emphasis on forecasting methodology and change-point problems. However, of note is his success in initiating and following through on big ideas throughout his career.

MacNeill founded Western's current STATLAB consulting service in 1977. As Director of the Statistics and Actuarial Sciences unit at Western, MacNeill led efforts for the unit to become its own independent department, which he chaired from 1980 to 1992. It was during this time that TIES was conceptualized and came to fruition.

In particular, U.W.O. and the National Water Research Institute (NWRI) hosted a workshop in 1981 on *Times Series Methods in Hydrosciences*. In the same year, J.S. Hunter gave the keynote lecture at the EPA, SIMS, and SIAM joint meeting, *Environmtrics '81*.

I. MacNeill, J.S. Hunter, A. El-Shaarawi at 1st TIES meeting in Cairo, 1989.

In 1988, MacNeill and Hunter presented at another workshop in Burlington, ON, Canada, that was co-organized by A.H. El-Shaarawi through the NWRI. The coalescence of these researchers brought about a meeting held in Cairo in April 1989, at which TIES, The International Environmetrics Society, was co-founded by El-Shaarawi (President) and MacNeill (Vice-President) with keynote addresses given by Hunter and R.A. Vollenweider, NWRI. TIES was formed as a non-profit organization based out of Canada.
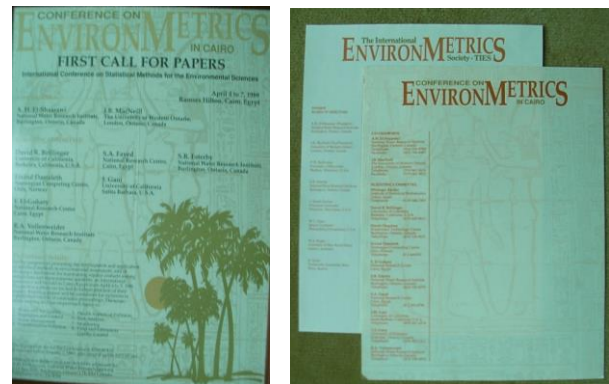
Design of poster (left), letterhead, banner, journal cover (right) by Dept of Graphic Designs, UWO.

The proceedings from this meeting appeared in what became the first official volume of the journal *Environmetrics*, which was published by Environmetrics Press, Inc. typeset by Scitex, UWO, in 1990 and co-edited by MacNeill and El-Shaarawi. In 1990, volume 2 of the journal was moved to Wiley & Sons Ltd with El-Shaarawi as Editor-In-Chief and the journal was adopted as the official journal of TIES. In 2008 TIES joined the ISI family and earlier this year (2016) formally moved its operations to the Netherlands. Despite changes in the Society and journal over the years, MacNeill has continued to contribute to the growth of environmetrics through his own research and that of his academic lineage.

Thus, it is only fitting that TIES acknowledges MacNeill's contributions and accomplishments in his home country at the Statistical Society of Canada Meeting on the occasion of his 85th birthday. MacNeill received a plaque from the Society with the following inscription:

For a Lifetime of Outstanding Contributions to Research, Teaching, Service, and Development of Statistical Theory and its Applications

SSC 2016 (left to right): G. Umphrey, K. Jandhyala, S. Esterby, I. MacNeill, E. Naumova, S. Provost, A. Ali.

Thank you, Ian, for your hardwork and tenacity over the years. Happy 85th!

Editor's Report from *Environmetrics*
By: Walter W. Piegorsch, Editor-In-Chief

The Society's journal, *Environmetrics*, continues apace in its goal to attract and publish the highest-quality research that advances environmetric science. Having an active Editorial Board with 49 highly dedicated Associate Editors helps us maintain our aims and scope. For 2015 our publisher, John Wiley & Sons, instituted a number of innovative features on the journal's website,

http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1099-095X,

including links to "Early View" articles in press, most cited articles published in previous calendar years, most accessed/downloaded articles, top discussion papers, and a slew of other content-related components. Published articles are available in enhanced PDF mode -- although regular PDFs are also available -- and include links to article Altmetric "Attention Scores", Twitter demographics, Mendeley readers, and other social media information.

Wiley also publishes "Layman's Abstracts" for some of our articles, which are used to inform readers with more-general interests about the work that we do. These appear on Wiley's very successful "Statistics Views" website,

http://stats.cwslive.wiley.com/details/subject/2220861/Environmental.html, and also are linked from the journal's website.

In concert with our Wiley publisher, the journal and TIES have instituted an annual Wiley-TIES Best Environmetrics Paper. The award recognizes a published paper from each calendar year/volume, the authors of which are invited to present their work at the following year's TIES meeting. As previously noted, the 2014 and 2015 winning papers were presented at the 2016 TIES meeting in Edinburgh, Scotland.

All regular submissions to Environmetrics that are accepted in a calendar year are considered eligible for that year. Selected papers must meet the following criteria:

- Present novel theory or methodology for a relevant and current environmental application;

- Be well written with large potential for impact; and

- Provide a significant contribution to environmetric research.

For calendar year 2015 (vol. 26) the journal published:

Number issues: 8
Number articles: 46 (5.75 articles/issue)
Number pages: 583 (12.7 pages/article)
Number of articles with online Supplementary/ Supporting Information: 18

Submissions are received at approximately 140-150 new papers per year. Specifically, editorial data from papers submitted Jan. 1 - Dec. 31, 2015 are as follows:

Total (new) submissions: 144
Decisions complete: 137/144
Accepted: 38/137 (27.7%)

Average time from submission to decision, papers received Jan. 1- Dec. 31, 2015:

Original submission/Research articles: 32.0 days
Revised submission(s)/Research articles: 18.0 days

A number of new special issues are planned for 2017 and beyond. In particular, a special issue celebrating 25 years of The International Environmetrics Society (TIES) is currently in the planning stages, and is expected to appear in 2017. See the journal's website at http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1099-095X for more information and to keep up with every issue!

For forthcoming articles to be published in the society journal Environmetrics, please visit the following link

http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291099-095X/earlyview

3. Environmetrics Conferences

3.1 Forthcoming Conferences

27th Annual Conference of The International Environmetrics Society, joint with **GRASPA 2017**, Bergamo, Italy, July 24-26, 2017

The 27th Annual Conference of The International Environmetrics Society, will be held 24-26 July 2017, at the University of Bergamo, Italy, as a satellite of the 61st ISI-WSC meeting in Marrakech.

Moreover, the tradition of collaboration with other scientific institutions is carried on by joining with the GRASPA 2017 conference. The conference focus on "Climate and Environment" is intended to be inclusive of members' scientific interests and to attract new climate and environmental scientists.

View of Bergamo's upper town, Città Alta.

Bergamo is 40km from Milan. Its historical center is over the hill (Città Alta) and is characterized by magnificent buildings in ancient Venetian style (1428-1797 AD). In addition to art and history, both

Map of Italy with Bergamo marked in red.

Città Alta and the new city offer a number of restaurants specialized in Italian cuisine and, in particular, in Bergamo cuisine. The University of Bergamo (www.unibg.it) is a medium sized university with 15,000 students that will host the conference. Sant'Agostino, a recently refurbished church (1290 AD), is the dedicated aula magna.

Sant'Agostino mural, University of Bergamo.

Conference topics include:
- Climate change assessment and monitoring,
- Impact on Environment, Ecological systems,
- Biosphere, Atmospheric variables,
- Meteorology, Water bodies, Desertification,
- Food sustainability, availability and security,
- Human health, Population and migrations,
- Economics and Finance, Energy,
- Spatial and spatio-temporal modelling,
- Functional, directional and complex data,
- Change point methods, Extreme values, and
- Official statistics for Climate change.

Tentative schedule of dates:
- Early October: 1st call for papers/invited sessions
- October-January: organization of invited sessions
- January: 2nd call for contributed papers

Website: http://www.graspa.org/?page_id=494

ISI2017 – 61ˢᵗ World Statistics Congress, Marrakech, Morocco, 16-21 July, 2017

This biennial flagship conference of the ISI, the World Statistics Congress, will be held in the exotic city of Marrakech from July 16-21, 2017. Eminent statisticians and members of the statistical community from the five continents will gather to present, discuss, promote and disseminate research and best practices in every field of Statistics and its applications.

Marrakech is the fourth largest city in the country and is one of the most important of Morocco's four former imperial cities. Although Marrakech is comprised of an old fortified city packed with vendors and their stalls (the medina), it is bordered by modern neighborhoods and is one of the busiest cities in Africa.

The Scientific Programme of the 61ˢᵗ WSC is under development with topics covering the diverse interests of the ISI members and the international community. The Programme will be comprised of Invited Paper Sessions (IPS), Special Topic Sessions (STS) and Contributed Paper/Poster Sessions (CPS), with sessions of three different lengths: 70, 100 and 120 minutes. There will also be Short Courses and Satellite Meetings organised by the ISI Associations and Committees. Key dates are summarised below.

Milestone	Key Dates
• IPS Title/abstract submission	16 Aug to 31 Oct, 2016
• IPS/STS Paper submission	16 Jan to 13 Apr, 2017
• CPS Paper submission	15 Sep, 2016 to 15 Feb, 2017
• CPS paper notification	31 Mar, 2017
• Discount registration closes	19 Apr 2017
• Registration: organisers, chairs, presenting authors and discussants	22 May 2017
• Online and student registration closes	07 Jul 2017

Two IPS proposals put forward by TIES have been approved, but there are several sessions that may interest TIES members. These include:

- Statistical and stochastic modelling of vectorborne infectious diseases (Yulia Gel)

- Recent advances in Bayesian modelling of spatial and spatio-temporal data (Sujit Sahu)
- Recent Developments in Environmental Statistics (Rahmatullah Imon)
- Novel approaches for analyzing high dimensional time series (Ali Shojaie)
- How to Geo-Enable Official Statistics? - the global Statistical Geospatial Framework. (Ekkehard Petri)
- Space-Time Statistical Models for High Dimensional Computer Experiments (Stefano Castruccio)
- Robust Statistical Methods for Highdimensional Data with Engineering and Environmental Applications (Ying Sun)
- Resilience and risks of complex systems (Maurizio Vichi)
- Uni-Multivariate Count Dispersion and Applications (Celestin Kokonendji)
- Global, regional, national and thematic monitoring of the SDGs (Tiina Luige, Nicola Massarelli)
- Old and new frontiers in sampling (Li-Chun Zhang)
- Statistical and stochastic modelling of vectorborne infectious diseases (Cigdem AK, Elvan Ceyhan)

Website: http://www.isi2017.org/

XIth International Conference "Computer Data Analysis and Modeling: Theoretical and Applied Stochastics" (CDAM 2016), Minsk, Belarus, 6-10 September 2016

This conference will include sessions on an array of topics: Robust and Nonparametric Data Analysis; Multivariate Analysis; Statistical Analysis of Time Series and Spatial Data; Probabilistic and Statistical Analysis of Discrete Data; Asymptotic Methods in Stochastics; Econometric Modeling and Financial Mathematics; Survey Analysis and Official Statistics; Data Mining.

Asia-Pacific Conference on Transforming Official Statistics, Bankok, Thailand, 24-26 Aug 2016

The Asia-Pacific Conference on Transforming Official Statistics for Implementation of the 2030 Agenda for Sustainable Development will aim to advance the work of the ESCAP Committee on Statistics to strengthen statistics capacity, as articulated in its 2020 goals. In particular, we seek to define a clear path that the Asia-Pacific region can take to strengthen statistics for its SDGs. The ESCAP secretariat is organizing the Conference

under the guidance of the Bureau of the Committee on Statistics, and in cooperation with the United Nations Statistics Division. E-mail: guerrero@un.org

2nd IMA Conference on The Mathematical Challenges of Big Data, London, UK 1-2 Dec. 2016

This conference will showcase work by young and established researchers advancing the state-of-the-art in of big data analysis on a rigorous mathematical basis, with a focus on specific features such as maximizing the information that can be extracted in the presence of inherent uncertainties, sampling bias, data streams, and data linkage. Applications led by industry will showcase the power of mathematical approaches for practical applications. Website: http://www.ima.org.uk/conferences/conferences_cale ndar/big-data-2016.html

3.2 Meeting Reports

TIES 2015 – 25th Annual Conference of the International Environmetrics Society, Al Ain, UAE, 22-25 November 2015. *By Ayesha Ali*

As TIES passed its 25th anniversary, it was only fitting that we celebrated this milestone in the United Arab Emirates. With the first TIES meeting having taken place in Egypt, we have now come full circle.

The conference was comprised of 64 talks spread out across 23 sessions with the overarching theme of *Quantitative methods for environmental economics, sustainability and indicators*. The meeting was preceded by workshops on "Analysis of Extremes with Environmental Applications" (by Hao Zhang) and "ARCH/GARCH and Their Extensions for Modeling Financial and Environmental Time Series" (by Yulia Gel). Together, these created a worthy celebration of 25 years of TIES with high quality contributions, outstanding keynote speakers and great conviviality.

The venue was the College of Information Technology at the United Arab Emirates University, which is a modern technological oasis flanked by green grass and palm trees. UAEU staff was most hospitable and I must admit that all meals in the UAE were memorable because it was all so good. Lunches were endless tables of buffet style palatable eats.

Group photo from TIES 2015 in Al-Ain, celebrating 25 years of TIES

I enjoyed seeing several students from developing countries who could attend the meeting because its proximity to their native countries. However, this did not detract from the calibre of talks we saw. I learned of innovative solutions to water renewal and about practical challenges faced in conducting household surveys in the region. Daniela Cocchi gave the President's Invited lecture while Peter Diggle gave the J Stuart Hunter lecture. His vivid stories from studies on African River Blindness prevalence were fascinating and lingering.

The conference dinner was held atop the amazing and windy top of Jebel Hammet. While this mountain, a prominent part of the city skyline, overlooked our hotels, the bus trek up the hill was the only trip to the hilltop for most of us. Shuttles were organized to take us up in small groups and the ride provided an excellent opportunity for discussion with our peers. The nighttime view was remarkable and I was surprised we needed the giant heaters distributed among the outdoor tables. However, this was surely the most scenic backdrop for any TIES awards ceremony.

Indeed, it was an appropriate end to an enjoyable TIES meeting. A big thank you must go out to the local organizing committee, chaired by Ali S Gargoum, and to Abdel El-Shaarawi, for their efforts in organizing this meeting and on such short notice.

GRASPA 2015, Università degli Studi di Bari Aldo Moro, 15-16 June 2015. *By Alessio Pollice*

GRASPA 2015 was the biennial conference of the Italian Research Group for Environmental Statistics (GRASPA-SIS) and the TIES 2015 European regional conference. It was sponsored by the Young section of the Italian Statistical Society and was a

connected event of the Spatial Statistics 2015 Conference (Avignon, 9-12 June 2015).

The meeting was hosted on 15-16 June 2015 by Università degli Studi di Bari Aldo Moro and financially supported by Dipartimento di Scienze Economiche e Metodi Matematici – Università degli Studi di Bari Aldo Moro, Dipartimento di Economia – Università degli Studi di Foggia, Fondazione Cassa di Risparmio di Puglia, Istituto di Ricerca sulle Acque - Consiglio Nazionale delle Ricerche and Sanitanova.

The meeting had two keynote talks by Adrian Bowman (University of Glasgow) and Tata Subba Rao (University of Manchester), 30 invited speakers and over 50 contributed oral and poster presentations. Proceedings were published online in the GRASPA Working Papers Series, including both oral and poster short papers (editors Alessandro Fassò and Alessio Pollice). Extended versions of a selection of invited/contributed short papers are part of a special issue of the Journal of Statistical Computation and Simulation (JSCS, Volume 86, Issue 13) with guest editors Alessio Pollice and Giovanna Jona Lasinio.

On 17 June, a post-conference one-day short course on Introducing flexible regression for environmental data was given to 30 registered participants by Adrian Bowman and Marnie McLean (University of Glasgow). GRASPA 2015 was an opportunity to share research interests related to the development and use of statistical methods in environmental sciences, fostering methodological developments and applications in fields such as spatial and spatio-temporal modelling, functional data analysis, directional data, spatial and spatio-temporal sampling and extreme values. The conference scientific and social program, the location and the organization have attracted considerable interest and positive feedback by the participants.

GRASPA has been active since 1995 and has become a permanent working group of the Italian Statistical Society (SIS) since May 2013. GRASPA-SIS promotes statistical and interdisciplinary research in the field of environmental quality, safety and sustainability including air and water quality, epidemiology, climate, earth science and ecology. GRASPA 2015 was.

TIES 2016 – 26th Annual Conference of the International Environmetrics Society, Edinburgh, UK, 18-22 July 2016. *By Ayesha Ali*

This year's TIES meeting just passed last month in Edinburgh, Scotland. The venue was Heriot-Watt University, which is located close to the airport and, for several of us, served as home for a few days. We were fortunate to witness a rare stretch of sunny and warm July days with intermittent rain on only a couple of them. This welcoming weather and scenic greenery made for pleasant walks between dorm rooms and the James Watt Centre.

There were 114 oral and 20 poster presentations covering a very wide range of environmetrics topics spread over 35 sessions (at most 3 parallel sessions at any time). Mevin Hooten (Colorado State University) gave the President's Invited lecture as the opening plenary talk. He discussed the use of telemetry data to deduce animal movement patterns.

Mevin Hooten receiving plaque from Ron Smith.

From the diverse range of high quality talks we heard of concepts that governments and environmental scientists will likely need in the near future: doing away with "evidence-free debates" and introducing "integrated risk" to transform our current sustainability development dialogues. Also notable were plenary talks on the environment and human health, both generally speaking and specifically with adverse pregnancy outcomes in mind. There was one panel discussion on the "internet of things" for resilient rural landscapes.

Bright and early Wednesday, TIES tried a new session format – hands-on tutorials for which participants could pre-download related freeware and follow along on their laptops: Erin Peterson and Kerrie Mengersen (Queens University of Technology) chaired the "Merging mixed realities and statistical models to improve conservation" while

Andrew Lawson (Medical University of South Carolina) chaired the "Bayesian Modelling of spatial health data with INLA" session.

Another novelty of this year's meeting was the presentation of the new Wiley-TIES Best *Environmetrics* paper awards. The winners were mainly chosen for exploiting simple ideas that pushed the science forward (2014: assuming Earth is a sphere, not a flat plane, for remote sensing data; 215: replace discrete calendar month with continuous covariates more directly related to process in downscaling regression rainfall models).

Participants viewing posters at TIES 2016.

Despite the numerous technical discussions, the social side was not to be forgotten. Tuesday evening we regrouped at the James Watt Centre for the poster reception over wine and nibbles, followed by an introduction to Scottish fare (typical haggis, neeps and tatties) and entertainment in a ceilidh setting. Traditional Scottish fiddle music was played by the local 3-piece band, Heeliegoleerie, while Ron Smith and Peter Craigmile tried to teach us, en masse, the various Gaelic dances (I'm sure this is what they were doing in the most recent movie version of Pride and Prejudice)! Wednesday afternoon was "off" to allow participants to go into the city and tour Edinburgh Castle, simply walk the Royal Mile in sunshine, or sit down together for flights of whiskey tasting, as one wished.

The conference dinner was held at the University of Edinburgh's Playfair Library in Old College, built downtown at a time when those studying in Edinburgh, including Thomas Bayes, enjoyed free thought, scientific discussion and philosophical innovation. It was a fantastic environment for TIES participants to come together and acknowledge the award winners (and celebrate Marian Scott's birthday). Ironically, while looking for the venue I realized that almost none of the locals seemed familiar with this historical gem!

Perhaps the most memorable part of the meeting was saved for the last day when we all got to watch a Star Wars scene afresh as C3PO talked odds with Han Solo and Chewbacca (yes, really!). Kerrie Mengersen delivered the J Stuart lecture and discussed the role of Bayesian priors in real world environmental problems including conservation of threatened species. Thanks to Ron Smith and the local organizing committee for hosting such an enjoyable TIES meeting. I'm looking forward to seeing everyone in Bergamo, Italy next year!

4. Short Courses and Workshops

5th Workshop on Bayesian Inference for Latent Gaussian Model, Somerset, UK, 14-16 Sept. 2016

This workshop will bring together researchers who develop methodology and fit latent Gaussian models to data from diverse applications such as the social sciences, spatial and spatio-temporal data, climate modelling, epidemiology, and image processing. Location: University of Bath, Somerset, United Kingdom.Website: http://lgm2016.r-inla.org

CI2016 – 6th International Workshop on Climate Informatics, Boulder, CO, USA, 22-23 Sept. 2016

The Climate Informatics workshop series seeks to stimulate discussion of new ideas, foster new collaborations, and grow the climate informatics community; thus accelerating discovery across disciplinary boundaries. The scope of the workshop also includes data science approaches to problems at the nexus of climate and the earth system sciences.
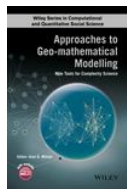
5. Recently or soon-to-be Published

Spatial and Spatio-Temporal Geostatistical Modeling and Kriging (2015). J Montero, G Fernández-Avilés, **J Mateu.** John Wiley & Sons, Inc. A unified resource on spatial-temporal geostatistics with ideas from time series, spatial statistics, stochastic processes, kriging and covariance function selection. Supported by website with R code.

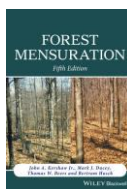*Approaches to Geo-mathematical Modelling: New Tools for Complexity Science* (Sept. 2016). A Wilson. Wiley. Presents mathematical models with spatial dimensions with examples from trade, migration, security and development aid. For researchers in applied mathematics, geography, economics, and interdisciplinary fields such as regional science and complexity science.

Spatial Agent-Based Simulation Modeling in Public Health: Design, Implementation, and Applications for Malaria Epidemiology (2016). SM Niaz Arifin, GR Madey, FH Collins. Wiley Series. Development of spatial agent-based models (ABMs) and intergration of GIS via working example of vector-borne malaria epidemiology.

Forest Mensuration, 5th Ed (Dec. 2016). JA Kershaw, Jr., M. Ducey, TW Beers, B Husch. Wiley-Blackwell. Based on geometry, sampling theory, ecology, and practical field experience, this book offers opportunities for creative problem solving and critical thinking in forest management.

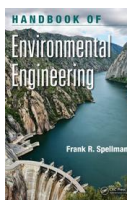*Understanding Mathematical and Statistical Techniques in Hydrology: An Examples-based Approach* (2016). H Rodda, M Little. Wiley-Blackwell. Detailed expositions of equations and mathematical concepts used in hydrology with understandable explanations and real-world examples.
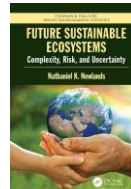
Handbook of Spatial Epidemiology (2016). **AB Lawson, S Banerjee**, RP Haining, MD Ugarte. CRC Press. Disease mapping handbook with a wide-ranging overview of state-of-the-art approaches for determining the relationships between health and various risk factors, with examples from real-world problems and R code.
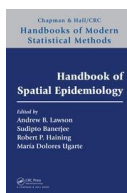
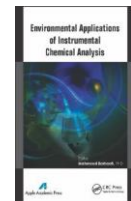*Handbook of Environmental Engineering* (2015). FR Spellman. CRC Press. An overview of environmental pollution. Covers fundamental engineering, statistics, and advanced algebra, with emphasis on sustainability, treatment and prevention.

Future Sustainable Ecosystems: Complexity, Risk, and Uncertainty (Aug. 2016). **NK Newlands**. Chapman and Hall/CRC. Provides a comprehensive overview of how to use statistics to solve diverse environmental and socio-economic problems involving food, water, energy scarcity, and climate change risks. State-of-the-art techniques include Bayesian hierarchical, spatio-temporal, agent-based and game-theoretic models with a focus on practical integration of observational and experimental data.

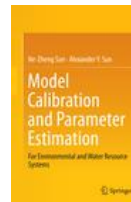*Environmental Applications of Instrumental Chemical Analysis* (2015). M Barbooti, CRC Press. Provides a comprehensive review of the instrumental analytical methods and their use in environmental monitoring site assessment and remediation follow-up operations.

Environmental and Ecological Statistics with R, 2nd Ed. (2016). SS Qian. Chapman and Hall/CRC.
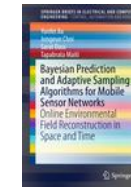
Spatial Analysis Statistics, Visualization, and Computational Methods (2015). TJ Oyana, F Margai. CRC Press.

Model Calibration and Parameter Estimation: For Environmental and Water Resource Systems (2015). NZ Sun, A Sun. Springer. Detailed and systematic introduction to title topics, reliability assessment, data collection design, and discussions on multiscale inversion, machine learning, stochastic field parameterization, goal-oriented modelling, and model uncertainty quantification.

*Bayesian Prediction and Adaptive Sampling Algorithms for Mobile Sensor Networks: Online Environmental Field Reconstruction in Space and Time* (2016). Y Xu, J Choi, S Dass, T Maiti. Springer. This book tackles environmental monitoring, surveillance, adaptive sampling, exploration, and plume tracking using a fully Bayesian approach.

Studies on Time Series Applications in Environmental Sciences (2016). A Bărbulescu. Springer. Presents statistical tests and modelling techniques for time series analysis, with a real world hydro-meteorological series as a working example. Relevant for planning, risk assessment and decision making in environmental management.

Geoinformatics in Health Facility Analysis (2017). PK Rai, MS Nathawat. Springer. Uses GIS techniques and statistical methods to emphasise the characteristics of population and its related variables, vis-à-vis care facilities and the status of vector borne diseases, as well as for malaria modeling
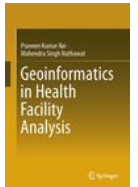
Measuring Progress towards Sustainability: A Treatise for Engineers (2017). SK Sikdar, D Sengupta, R Mukherjee. Springer. Presents simulation-based approaches to process design and quantitative measurement techniques of sustainability for technology systems: development, assessment, verification.
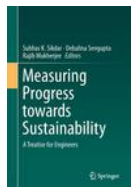
Quantification of Climate Variability, Adaptation and Mitigation for Agricultural Sustainability (2017) M Ahmed, CO Stockle. Springer. With focus on climate change mitigation to enhance sustainability in agriculture, this book presents ways to minimize GHG emissions and utility of latest techniques in conservation and environmental-sustainability.
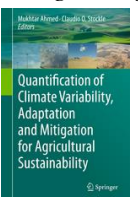
Machine Learning Models and Algorithms for Big Data Classification: Thinking with Examples for Effective Learning (2016). S Suthaharan. Springer. Presents machine learning models, including decision trees (a hierarchical approach), random forests (an ensemble hierarchical approach), and deep learning (a layered approach), to address big data classification problems.
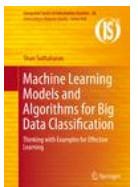
An Introduction to Complex Systems: Society, Ecology, and Nonlinear Dynamics (2017). P Fieguth. Springer.

Geospatial Semantic Web (2015). C Zhang, T Zhao, W Li. Springer. Covers key issues such as geospatial web services for spatial data interoperability; geospatial ontology for semantic interoperability; ontology creation, sharing, and integration; querying knowledge and information from heterogeneous data sources, to name a few.
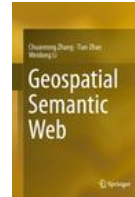
The Editorial Board would like to encourage TIES members to volunteer for book reviews and to bring new publications to our attention.

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TIES Newsletter is a publication of The International Environmetrics Society (TIES). It is published semi-annually, or whenever the need arises by The International Environmetrics Society and distributed to TIES members as part of their annual dues. For questions regarding membership and other benefits, please contact Rosalba Ignaccolo at

secretary@environmetrics.org.

Objectives of the Newsletter include:

- to inform TIES members of happenings within the Society;

- to cover news in latest developments in theory and applications of environmetrics;

- to discuss of a broad range of issues which are of interest to members of TIES and are consistent with the objectives of the Society;

- to facilitate communication between environmental scientists and statisticians about research problems of mutual interest;

- to provide details about upcoming conferences and workshops related to Environmetrics;

- to announce members' news that are worthy of notice or recognition (e.g., awards, prizes and honours received, promotions, appointments, etc.).

Communications, (e.g. contributions, comments and suggestions) regarding this publication should be addressed to the TIES Newsletter editor: Ayesha Ali (pubofficer@environmetrics.org). As Editor, I would like to encourage TIES members to submit items for publication in the Newsletter. I would like to thank all who have contributed to this issue.

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