Message from the President

TIES after COVID-19 pandemic: a full agenda ahead

Dear TIES Members,

During this time last year, our uncertainty levels were extremely high as we were in the middle of the COVID-19 pandemic. We experienced enforced lockdowns worldwide and frightening tolls in number of people infected and dying from COVID-19. Many of us have relatives and loved ones that were affected in different ways during these unprecedent times. We adapted our day-to-day lives to survive and thrive under these special circumstances. As we approach towards the end of this period, I am certain that our mindsets have

Lelys Bravo de Guenni

changed, especially for many of us that spend a lot of energy and time in trying to tell the truth with data. We have gained a new world vision just by observing and processing the huge amount of information leading us to discern between truth and fiction. Despite the constraints set by the pandemic, TIES community continued to be engaged in several activities creating and disseminating new tools and methods to improve our understanding in the interphase between statistics, data science, the environment, epidemiology, and human health. I take this opportunity to thank all conference, workshops, and course organizers for their commitment in pushing the TIES agenda forward. I also want to thank the award committees for the Abdel El-Shaarawi Early Investigator Award, Wiley-TIES Best paper award and Best Student presentation award committee for their terrific job in evaluating our talented people. Thanks to the membership committee and outreach and liaison committee for their great ideas and enthusiasm to reenforce TIES goals and promote the application of environmental statistics across academia, industry, and policy makers. As we have just finalized our election period, I want to congratulate the incoming Board members and wish them a very successful term. This is going to be my last column as a president, and I want to take this opportunity to communicate that it has been a great pleasure to work for TIES with a wonderful team. Thank you all for your support. I look forward to the coming agenda, meetings and working groups, and the closer possibility of meting many of you in person soon.

Best wishes,

Lelys Bravo de Guenni

World Statistics Congress 2021

Virtual 63rd ISI World Statistics Congress 2021: *Statistics and Data Science for a Better World* will be held on 11–16 July 2021.

- o   Website: https://www.isi2021.org/
- o   Twitter: @isi_wsc_2021

29th TIES Conference 2021

This year we will set up the TIES conference in an online diffuse format over September-December 2021 with short courses offered in July-September 2021.

- o   Organizers: Marta Blangiardo & Michela Cameletti
- o   Website: https://sites.google.com/view/tiesgraspa2021/home
- o   Twitter: @ties2021
- o   Facebook: Ties-Graspa2021

As part of the TIES conference, registration is open for the short course on "*Spatio-temporal modeling and visualization of small-area data in R*", 13-14 September 2021, see the link here for more information and registration.

As part of the **29th TIES Conference 2021,** we are organizing a symposium on *Data Science and Governance in National Science Agencies*. This symposium will be held virtually on 27th July 2021, and we are hoping to have a broad cross-section of perspectives and contributions from scientists and policymakers from several countries' science agencies, including United States, Canada, United Kingdom, Germany.

TIES has held annual conferences since 1990 on topics tightly connected to quantitative methods, monitoring, decision making, spatiotemporal modeling, and alike. One common element in these conferences is the intensive use of data sourced from national science agencies, and members of such agencies have long been often conference attendees. We are inviting all to participate in a **one-day additional session for the 2021 TIES conference** taking advantage of the online and virtual nature of the conference, with a set of invited speakers to present on the need and use of data science and data governance in national science agencies.

We are hoping you are interested in this symposium, and willing to attend (virtually!) and present a short talk on some aspect of the theme connected to your day-to-day work, mandate, or interests. At the moment, our tentative session titles are:

Session 1: Research perspectives on the integration of data and models for improved stakeholder decision-support - intended for scientists at agencies working with data and models to present on aspects of their work

Session 2: Science-to-policy interface and data sharing and governance mandates - intended for policy makers, analysts, and similar roles (including management!) to present on the other perspective, from mandate, policy and governance perspectives.

If you are interested but feel that neither of these sessions fit your professional role or interests, please let us know - depending on interest, we are considering adding a 3rd session for additional impact.

Best wishes,
Wesley & Nathaniel

Dr. **Wesley S. Burr**, *Assistant Professor of Statistics, Trent University, Ontario, Canada; Member, Outreach Committee, The International Environmetrics Society*
Dr. **Nathaniel K. Newlands**, *Research Scientist, Agriculture and Agri-Food Canada; Adjunct Professor in Geography, University of Victoria, Canada; Member, Data Science Working Group, International Statistics Institute*

Call for Action in Data Science

'Statistics for a Better World' is a current catchphrase for ISI and Data Science has emerged as a more visible and publicly recognized label for problem solving. While difficult to precisely define, we know that Data Science involves the intersection of statistics, computer science, engineering, mathematics and individual domain expertise. ISI President **John Bailer** tasked a Working Group (WG) in the fall of 2019 to develop recommendations for connecting and highlighting Data Science in the ISI. The WG started its discussions in November 2020 with **Daniel Jeske** (University of California, Riverside, ISBIS President-Elect) and **Juergen Symanzik** (Utah State University, IASC President) as co-chairs. The WG has representatives from each of the 7 ISI Associations and most of the SIGs. In addition, the WG has members from the ISI Council and a selection of regional ISI members. **Nathaniel Newlands** (Canada) is the TIES representative on this WG.

The group considered five different areas for data science initiatives, namely: Branding, Collaborations, Publications, Capacity Building, Data Warehousing, and Data Science without Borders. The ISI WG asked Associations and SIGs to convene their Executive Councils/Management Committees or an otherwise appoint an Ad Hoc committee to have this discussion on the WG recommendations and to identify which data science areas and activities they can engage in while "helping ISI improve their identity with Data Science research, education, and outreach."

TIES has interest in several activities aligned with the five Data Science development areas and helping to implement initial steps and aiming to propose a roadmap to promote Data Science. We also aim to promote a broader TIES participation including volunteers to be involved in particular activities. If you are interested – please contact Lelys Bravo (president@environmetrics.org).

Nathaniel Newlands, *TIES WG Representative*
Elena Naumova, *TIES Publication Officer*
Lelys Bravo, *TIES President 2019-2021*

Message from *Environmetrics* Editor

Alessandro Fassò, Editor-in-Chief of *Environmetrics*, the official Journal of TIES

I have the pleasure to inform that the new Impact Factor (IF) 2020 for *Environmetrics* move up to 1.900 vs 1.039 in 2019 placing the journal at 48/125 in the Statistics & Probability category. The 5-year IF is now 2.171.
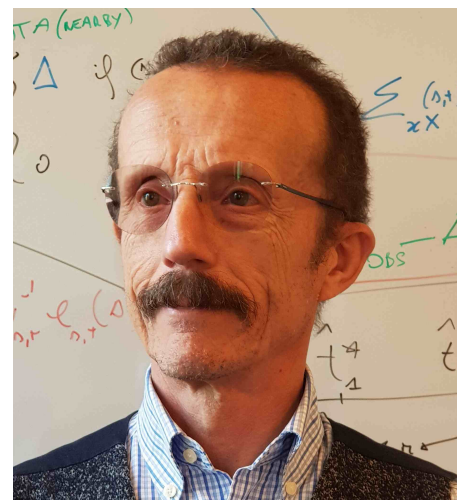
Professor **John Haslett**, Fellow Emeritus at the Trinity Centre for the Environment, TCD, and Dr **Devin Johnson**, Statistician at NOAA Fisheries, recently retired from the Editorial Board. I wish to thank them for their invaluable contribution to the journal for so many years. Their expertise, clarity and timeliness have been vital for the journal success.

Since my inception in 2020, I progressively reinforced the Editorial Board of *Environmetrics*. I welcome the

Alessandro Fasso

following Associate Editors: **Giovanna Jona Lasinio**, **Raphael Huser**, **Francesco Finazzi**, **Fateh Chebana**, **Peter Atkinson**, **Stefano Castruccio**, **Robert Erhardt**, **Giada Adelfio**, **Philippe Naveau**, and **Murali Haran**.

Together with the Journal publisher and TIES we call readers and members attention to the annual Wiley-TIES Best *Environmetrics* Paper Award. The award recognizes the authors of an outstanding published paper from a calendar year by inviting to present their work at the following year's TIES or ISI conferences. The Award Committee nominated by the President of TIES assessed the candidates considering the following aspects: original methodology, innovative solution, theoretical depth, interesting data application and potential for broad use. Thus, selected papers must meet the following criteria:

- present novel theory or methodology for relevant and current environmental applications
- be well written with large potential for impact
- provide a significant contribution to environmetric research.

All regular submissions to *Environmetrics* that are accepted in a calendar year are considered eligible for that year.

We are looking forward to outstanding candidates of 2021!

Alessandro Fassò
Environmetrics Editor-in-Chief

Meet TIES-Wiley Best Paper Award Recipients of 2020

This year the Wiley-TIES best paper award goes to a group of researchers from Montréal, Canada: **Nicholas Beck**, **Christian Genest**, **Jonathan Jalbert**, **Mélina Mailhot** for their paper entitled "*Predicting extreme surges from sparse data using a copula-based hierarchical Bayesian spatial model*" published in [*Environmetrics*](#) (Volume 31, Issue 5, August 2020, e2616).

Nicolas Beck, Christian Genest, Jonathan Jalbert, Mélina Mailhot

The paper presents an innovative solution to assessing the risk of overland flooding due to extremal surges for the Atlantic coast of Canada, addressing the problem of data sparsity and incompleteness in space and time. The authors use a combination of extreme value theory, spatial statistics in a hierarchical Bayesian approach as a modeling framework. The model implemented includes tail dependence between observed extremes, which is key for risk assessment of concurrent extreme events.

Authors represents three Canadian Universities:
- Nicholas Beck and Christian Genest - McGill University,
- Jonathan Jalbert - Polytechnique Montréal,
- Melina Mailhot - Université Concordia.

Congratulations to the winners and a big thank you to all the participants and WILEY - the Award sponsor! An announcement is posted on the *Environmetrics* homepage and also on [Stats & Data Science Views site](#). Please check [social media accounts](#) to promote the work of our winners.

On behalf of the award committee:

Lelys Bravo, *TIES President 2019-2021*

Elena Naumova, *TIES Publication Officer*
Francesco Finazzi, *TIES Regional Representative*

Notes from TIES AEEI Award Committee

The **Abdel El-Shaarawi Early Investigator** (AEEI) Award was established by the TIES Board to recognize and honor early investigators who have made outstanding contributions to the development of statistical and/or quantitative approaches for research in the environmental sciences. The nominations are based on:

- Outstanding contribution to environmental statistical and quantitative research with quality and impact as proved by the number and the reputation level of publications in the statistical literature.
- Strong interdisciplinary work for solving important environmental problems, as proved by high reputation interdisciplinary publications and research projects.
- Contribution to the *Environmetrics* community, as proved by the organization of courses and conferences, and professional development in the field of Environmetrics.
- Contribution to TIES, as proved by, for example, number of years of membership, participation to TIES conferences or courses, organization of TIES conferences/courses or invited sessions, contributions to the board.

Stefano Castruccio

Meet Stefano Castruccio – Recipient of the Abdel El-Shaarawi Early Investigator Award 2021

Stefano Castruccio got his Ph.D. in 2013 at the University of Chicago. He was a postdoctoral fellow at King Abdullah University of Science and Technology (KAUST, Saudi Arabia) and a Lecturer at Newcastle University (UK) before his current appointment at the University of Notre Dame (US). Throughout his career, he has worked on several environmental topics such as uncertainty quantification of climate model projections at global scale, air pollution assessment, wind energy and visualization. His current research is broadly divided in two areas: physics-based models with Stochastic Partial Differential Equations and data-informed approaches with Machine Learning methods for spatiotemporal data.

Ttraditionally, the award recipient is invited to make a presentation at the TIES Conference or WSC according to the conference schedule. We look forward to **Stefano's** presentation soon.

TIES AEEI Award Committee (2020-2022) Members: *Giovanna Jona Lasinio (Italy, Chair), Hsin-Cheng Huang (Taiwan), Nathaniel Newlands (Canada), Geoff Hosack (Australia), Chris Wikle (USA)*

The 2021 GRASPA-TIES conference was held online on 7-9 June 2021. GRASPA 2021 was also the 2021 European regional conference of The International Environmetrics Society and a Satellite Meeting of the 2021 World Statistics Congress. There were 56 registered participants and about 20 other invited people attending the conference during the three afternoons. The organization was based at the Department of Statistical Sciences of the University of Rome "La Sapienza". The conference was coordinated by a scientific committee chaired by **Giovanna Jona Lasinio**. Members of the committee were: **Rosalba Ignaccolo** (University of Torino), **Luigi Ippoliti** (University of Chieti-Pescara), **Alessandro Fassò** (University of Bergamo), **Francesco Finazzi** (University of Bergamo), **Francesco Lagona** (University of Roma Tre), **Alessio Pollice** (University of Bari), **Laura M. Sangalli** (Politecnico di Milano), **Massimo Ventrucci** (University of Bologna). Technical support was provivided by **Marco Mingione** and **Pierfrancesco Alamo Di Loro** from the University of Roma "La Sapienza." The workshop was free of charge for TIES, SIS, and ISI members.

The program included three Keynote talks by:
- **Sudipto Banerjee** (UCLA) "Spatial "Data Science" meets Bayesian inference"
- **Ashley Steel** (FAO) "Global Woodfuel Production: A simple model?"
- **Michela Cameletti** (UNIBG) "A year of COVID-19 pandemic in Italy: impact on air pollution and mortality"

Six invited sessions featured a total of 21 presentations, 10 posters, and presented as short videos. The book of abstract is available at the website of the conference and has been published with ISBN: 979-12-200-8496-3.

A best poster competition took place as part of the conference program. The first, second and third place awards were given to:
- First prize: **Chiara Barbi** (Politecnico di Milano, Italy): *Predicting Water Temperature Profiles in the Middle Fork River: a Geostatistical Approach for Functional Data Over a Stream Network Domain*
- Second prize: **Bora Jin** (Duke University): *Scalable Gaussian Processes on Physically Constrained Domains*
- Third prize: The prize was shared between **Greta Panunzi** (Sapienza University of Rome, Italy): *Model-Based Clustering for Monitoring Cetaceans Population Dynamics*, and **Stefano Moro** (Sapienza University of Rome, Italy): *Using high-resolution density models to predict white sharks' hot spots in the* Mediterranean Sea.

Congratulations to all winners and to the Conference organizers for a great Conference!

Call for participation in TIES collaborative working groups from TIES Membership Committee (2020-2022) Members: **Monica Pirani - Chair** (UK), **Carolina Euan** (Saudi Arabia), **Stefano Castruccio** (USA), **Susan Simmons** (USA), **Melanie Meis** (Argentina), and **Jonathan Stroud** (USA)

The TIES Membership Committee is going to launch in early Fall 2021 a new initiative to improve creative collaboration and networking across the TIES members.

This new initiative aims at connecting well-established research groups/labs, working on the development and use of statistical and quantitative methods in environmental research, with students and early-career researchers, who are members of the Society and share its mission and values. It consists in creating collaborative working groups, where students and early-career researchers can work together on real-world projects, remotely guided by mentors and advisors from well-established research groups/labs. Through this initiative, the members of the working groups not only will be able to connect with other researchers and to challenge their scientific skills, but also will have the great opportunity to gain visibility, presenting their project results at TIES events, submit to open-source code repositories, produce and publish original research papers.

We are excited to announce that we have three terrific hosting groups/labs, which will be mentoring on the following proposed projects:

Working Group 1:
- o Hosting Lab: Prof. Matt Wheeler @ *National Institute of Environmental Health Science*
- o Project: ***Bayesian Methods for Complex Environmental Systems***
- o Link to the project description is here.

Working Group 2:
- o Hosting Lab: Prof. Marta Blangiardo @ Imperial College London
- o Project: ***Using Bayesian modelling to apportion ultra-fine particles into their sources***
- o Link to the project description is here.

Working Group 3:
- o Hosting Lab: Prof. Christopher Wikle @ University of Missouri
- o Project: "AI" and Environmental Statistics
- o Link to the project description is here.

This exciting new initiative represents a completely volunteer effort to foster new links and collaborations across TIES. If you would like to get involved or simply to learn more about the initiative, please reach out to the TIES membership committee specifying your name and contact details in the above links by August 20, 2021.

Monica Pirani
TIES Membership Committee Chair

Notes from WSC Short Course **Building technical editing and science communication skills for 21st Century** organized by **Elena Naumova** (Tufts University, USA) and **Alessandro Fasso** (University of Bergamo, Italy).

The course was held on 20-21 May 2021 and covered the following objectives:
• create plans for scientific paper preparation, review and editing
• critically assess the time needed to review and revise a scientific paper
• develop a sequence of steps for addressing challenging issues in reviewing
• recognize the essential aspects of ethics of reviewing and editing
• recognize the essential aspects of constructive feedback
• practice giving and receiving peer feedback
• identify ISI publications, their missions, editorial boards
• build their own network of peers interested in science communication
• learn how to be a stellar reviewer, an avid technical editor, and an enthusiastic science communicator!

Participants of the WDS Short Course Building technical editing and science communication skills for 21st Century, May 20th 2021

We were aiming for junior practitioners and researchers, postdoctoral fellows and graduate students interested in improving manuscripts for submission for top international journals. We were also hoping to attract senior or mid-career practitioners and researchers interested in workforce development and improving reviewer's skills for top international journals and setting up Special Issues for top international journals in statistics and related disciplines.

9

We delivered the course over 2 days with 3-hour synchronous online instruction consisting of three 60-min modules, covering two major topics: **The Value of Effective Communication** (Day 1) and **The Value of Science Dissemination** (Day 2). We had provided examples and material needed for manuscript submission and reviewing, including Cover Letter, Manuscript Template, Nature-style Annotated Abstract, as well as curated and organized Nature-based resources for authors and reviewers, and links to useful resources, tips, and recommendations. We got good questions on the review process, journal selection, and Open Access policies.

At the beginning of the course, we asked participants to respond to a brief 5-question entry survey. We learned that information on available resources for authors and reviewers could be quite useful. At the end of the course, we ask participants about their opinion of the usefulness and relevance of the delivered material and happy to learn that over 90% of responders found the content, examples, and suggestions helpful.   The entry and exit surveys indicated a strong overall impression on familiarity and importance of the selected topic (75%) and a strong overall impression on interest and usefulness of the delivered course (94%).

Our impression that the course went well given the virtual reality. There were no major technical glitches, except maybe for a few internet slowdowns. **Katie Junasova**, the ISI webmaster helped us a lot with the practicing sessions, posting the recorded material, and solving technical issues.

If you are interested in our experience – please feel free to contact us!

Elena Naumova, *TIES Member (since 1997)*
Alessandro Fassò, *TIES Member (since 1997)*

Note from TIES 2021 Elections Committee

The TIES Elections Committee: **Walter Piegorsch** (Chair), **Marian Scott** (Co-Chair) and **Krishna Jandhyala** has reported the election results for TIES Board of Directors for and Regional Representatives:

The incoming Board of Directors:
- **Claire Miller** (President-Elect)
- **Elena N. Naumova** (Secretary)
- **L. Leticia Ramírez Ramírez** (Treasurer)
- **Amanda Hering** (Publication Officer)
- **E. Ashley Steel** (Communication Officer)

will join **Yulia Gel** (TIES President 2021-2023) as members of the Board of Directors for the period 2021/09/01 - 2023/08/31.

The incoming Regional Representatives:
- **Alessio Police** (Europe)
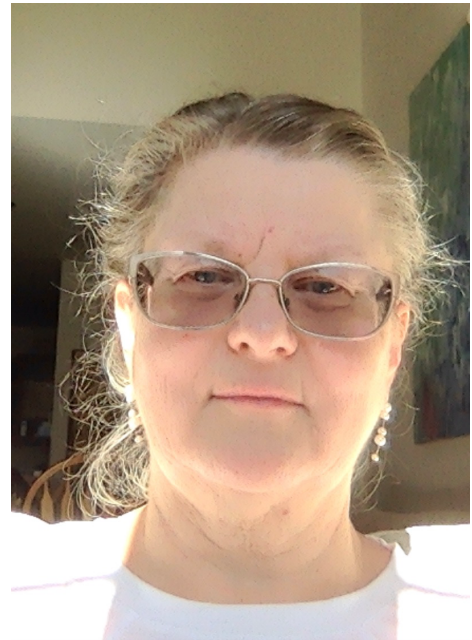- **Nathaniel Newlands** (North America)

- **Amira El-Ayouti** (Global)

will join **Hao Zhang** (North America), **Francesco Finazzi** (Europe) and **Hsin-Chang Huang** (Global) as Regional Representatives for the period of 2021-2025.

We thank the elections Committee members for their great support during the election process and wish a very successful period to the incoming board members.

<div style="background-color:#F4A460; padding:4px; text-align:center;">

Note from Elena Naumova, the Publications Officer

</div>

Thanks to many scientists for raising their voices to improve collaboration and science communication, and to advance awareness of complex environmental issues.

Our voices are important for making decisions at individual, community, national and international levels. The effects of climate change and extreme weather events on human health are not easy to explain as their perception vary and tends to change rapidly. The perception often depends on our experience and how such experience changed our lives or lives of people we know. The direct and indirect, short- and long-term effects of extreme weather, like heat or flood or storm, on human health are huge, but elusive and very often missed or misdirected. Any crisis, extreme weather included, reveals the disparities among various groups, accessibility of various services and resources, and abilities to cope with environmental stressors. In my recent interview with [Angely Mercado](), I stressed the need for solutions to which we -- data scientists -- are contributing and capable to offer answers and roadmaps for building healthy resilient communities. If interested, read the featured stories in [Popular Science]() and [The Conversation]().

Elena Naumova

I will soon pass the baton to **Amanda Hering**, the nearly elected Publication Officer, and join the Board as the TIES Secretary. I am looking forward to working with the growing TIES community.

Stay safe, well, and healthy!

Elena Naumova
TIES Publications Officer 2019-2021