



ISI Special Interest Group on SPORTS STATISTICS

KICK-OFF MEETING
Brescia, September 27, 2019

THANKS

- International Statistical Institute (in particular, the ISI Vice President Fabrizio Ruggeri, CNR IMATI)
- Big Data Analytics in sports (BDsports, bdsports.unibs.it) and Big&Open Data Innovation Laboratory (bodai.unibs.it) @unibs
- University of Brescia, Dept. of Economics and Management
- Associazione per la Statistica Applicata (ASA)
- Scientific and Organizing Committees of the ASA Conference on «Statistics for Health and Well-being»

ONCE UPON A TIME....

Last year, ISI wished to revitalise its Special Interest Group (SIG) in Sports Statistics: in **November 2018** the ISI Executive Committee has invited two Elected Members, Paola Zuccolotto and Marica Manisera to collect expressions of interest among members of ISI and its family of Associations

In **May 2019**, the ISI announced the creation of the renewed ISI SIG on Sport!

AIMS

To promote the understanding, development and good practice of sports statistics worldwide, with particular regard to the methodological problems involved and the in-field application of methods and models, from three different perspectives:

a) Scientific research: organizing workshops, sessions at conferences and events, promoting special issues in scientific journals, disseminating data on sports

AIMS

b) Statistical Capacity Building: to enable statistical practitioners in the sport sector to use state-of-the-art methods for data collection, analysis and interpretation

c) Education: at different levels (schools, universities, sport societies, national and international Federations)

OUR SIG ON THE WEB

ISI website

<https://isi-web.org/index.php/news-from-isi/127-isi-sports-statistics-committee>

BDsports website

<https://bdsports.unibs.it/research/isi-sig/>



BDsports



PAST AND UPCOMING ACTIVITIES

https://bdsports.unibs.it/wp-content/uploads/2019/09/2019-09_SIG-on-Sports.pdf

Please, periodically **send us** references to any activity or event that can be added to the list!!

KICK-OFF MEETING

Aims:

- to get to know each other better in order to find possible prospects for future collaborations
- to summarize past and upcoming 2019 activities
- to discuss organizational structure and practical issues

PEOPLE

Chair: Marica Manisera, Italy - **Deputy Chair:** Leonardo Egidi, Italy

Members:

Paola Zuccolotto, Italy

Andreas Groll, Germany

Dimitris Karlis, Greece

Livio Corain, Italy

James Cochran, USA

Tim Swartz, Canada

Florian Berens, Germany

Saeed Fayyaz, Iran

Augusta Obidinnu Nigeria

Elieza Paul, Tanzania

András Gyimesi, Hungary

Christophe Ley, Belgium

Ioannis Ntzoufras, Greece

Luigi Salmaso, Italy

Antonio Mussino, Italy

Jim Albert, USA

Philip Maymin, USA

Milica Maričić, Serbia

Ramde Zakaya, Burkina Faso

Adenomon Monday Osagie, Nigeria

Dániel Kehl, Hungary

Francesco Addesa, UK

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LET'S MEET

MARICA MANISERA and PAOLA ZUCCOLOTTO

Big Data analytics in sports (bdsports.unibs.it)

- Scientific research
- Application on the field
- Teaching
- Dissemination

Marica: AE Journal of Sports Analytics

Paola: EAB Journal of Sports Sciences



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MARICA MANISERA · PAOLA ZUCCOLOTTO

University of Brescia, Italy

- Scientific papers focused on basketball
- Book: Basketball Data Science
- R package `BasketballAnalyzeR`
(with Marco Sandri)
- Some other papers with unibs colleagues

LEONARDO EGIDI

Univ. of Trieste, Italy



- Scientific papers on football (Stat. Modelling, JQAS)
- Bayesian Modelling for Volleyball (joint work with Ioannis Ntzoufras)
- Master student with thesis for shots performance in football
- Open collaboration with Mercurius, a start-up for smart betting

CHRISTOPHE LEY

Gent University, Belgium



- **S-TRAINING:** creation of a European network about the use of Data Science in Sport Analytics and Injury Prevention
- Statistical and machine learning methods in football, table tennis and athlete's health

ANDREAS GROLL

Technische Universität Dortmund, Germany



Upcoming sport analytics-related research projects:

- Modeling and prediction of the UEFA Euro Championship 2020, using machine learning methods
- Marie Curie ITN project

ANDREAS GROLL

Technische Universität Dortmund, Germany

Ongoing projects:

- With Marius Ötting (Bielefeld University) we currently work on a regularized hidden Markov model for analyzing the "hot shoe" in football, using data on penalty kicks from the German Bundesliga
- With my Ph.D. student Hendrik van der Wurp, we currently work on a Generalized Joint Regression framework for Count Data with a Focus on Modelling Football Matches
- A book chapter entitled "Ranking and Prediction Models for Football Data" for Christophe's book together with Gunther Schauburger & Hans Van Eetvelde



ANDREAS GROLL

Technische Universität Dortmund, Germany

- **Planned** projects:
A cooperation with Borussia Dortmund on injury prevention
- A risk factor analysis for the prevention of injuries based on data from several German ice hockey leagues in cooperation with Prof. Astrid Zech

IOANNIS NTZOUFRAS · DIMITRIS KARLIS

Athens Univ. of Economics and Business, Greece



- AUEB Sports Analytics group
- Annual AUEB SAW (Sports Analytics Workshop)
- Short courses (2019: Basketball Data Science)
- MathSport 2019
- Special issue in “Mathematics in Sports”
Submission deadline: November 30, 2019

IOANNIS NTZOUFRAS · DIMITRIS KARLIS

Athens Univ. of Economics and Business, Greece

- Bayesian football modelling (Skellam distribution, bivariate Poisson)
- Competitive Balances Indices
- Bayesian modelling for Volleyball data

LUIGI SALMASO · LIVIO CORAIN

University of Padova, Italy



- Team: 1 Full Professor (Luigi Salmaso), 2 Associate Professors (Livio Corain, Rosa Arboretti), 2 PhD Candidates (Riccardo Ceccato, Luca Pegoraro). Based at: Engineering Depts., University of Padova, Italy.
- Methodological Interests: Composite Indicators, Multivariate Testing and Ranking, Longitudinal Data Modelling and Inference.
- Applied Interests: advanced basketball analytics, sports & wellness.

LUIGI SALMASO · LIVIO CORAIN

University of Padova, Italy

Recent publications:

- Testing and Ranking on Round-Robin Design for Data Sport Analytics with Application to Basketball, *Statistical Modelling*, 19(1), pp. 1–23.
- Performance Profile of Elite Wheelchair Rugby Players Related to IWRF Classification, *Frontiers in Physiology* (to appear).

Forthcoming publications:

- Testing and Ranking on the Multivariate Repeated Measures Nested Design with Application to Player-by-Player Sport Analytics.
- Testing and Ranking of Multivariate Longitudinal Big Data: Applications to Statistical Process Control and Sport Analytics

LUIGI SALMASO · LIVIO CORAIN

University of Padova, Italy

UNIPD double carrier project for basketball and volley teams

Members of the Team are involved in the “UNIPD double carrier project for basketball and volley teams”, i.e. the acknowledgement of the dual student-athlete career, as has long been the case particularly at Canadian and American colleges.

- <https://www.unipd.it/incentivi-merito>
- <http://www.cuspadova.it/it/agonismo/basket>

TIM SWARTZ

Simon Fraser University, Canada



- Sports Research papers - 40 including cricket, hockey, golf, baseball, fringe sports
- Statistical focus - Bayesian computation and modelling
- Sports Analytics Group at SFU - member
- AE - JQAS, JSA, IJF, IJSS&C
- Meetings - CASSIS Sept 26/20



PHILIP MAYMIN

Fairfield University, Connecticut, USA



- Co-Editor in Chief - Journal of Sports Analytics
- Analytics consultant for NBA teams

MILICA MARIČIĆ
University of Belgrade, Serbia



Fields of interest: Composite indicators,
Multivariate analysis, Structural equation modelling

Research activities in sport: Clustering sports
teams, Sport marketing decision making,
Effectiveness of sport sponsorship

MILICA MARIČIĆ

University of Belgrade, Serbia

Selected papers on statistics in sport:

Maricic, M., Kostic-Stankovic, M., Bulajic, M., & Jeremic, V. (2018). **See it and believe it? Conceptual model for exploring the recall and recognition of embedded advertisements of sponsors.** International Journal of Sports Marketing and Sponsorship, 20(2), 333-352.

Radaković, S., Radojičić, M., & Maričić, M. (2018). **Multivariate approach to making sponsorship decisions: The case of European football leagues,** In N. Žarkić-Joksimović, & S. Marinković (Ed.), XVI International Symposium SymOrg 2018. Zlatibor, 07-10 June 2018

Maricic, M., Bulajic, M., Horvat, A., Dobrota. M. (2018). **Exploring the Awareness of Embedded Sponsors' Messages: The Case Study of the UEFA Champions League.** Proceedings of the IRES international conference, August 5-6, Stockholm, Sweden, 9-14.

DANIEL KEHL · ANDRÁS GYIMESI

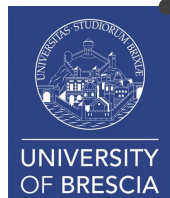
University of Pécs, Hungary



Cooperative Research Network in Economy of Sport, Recreation and Health

Project Branches at the University of Pécs:

- International Physical Activity Questionnaire (IPAQ) Validation
- Quantitative analysis of sports consumption habits
- Financial Impact Assessment of Sports Injuries
- **Modeling Value Creation for Sports Companies**
- Small Group of 4 people with statistics and economics background (Gábor Rappai, Diána Fűrész and us)



DANIEL KEHL · ANDRÁS GYIMESI

University of Pécs, Hungary

Results so far:

- Collected financial data of about 200 (mostly Hungarian) team sports companies from the field of football, basketball, handball, water polo
- A set of R functions to reproducibly download public data of league tables, games, attendance figures, players market (mostly from flashscore.com, transfermarkt.de, worldfootball.net)
- Developing database to connect financial and sports data
- A website where sports businesses can register, provide data and able to look at some aggregated reports and (in the future) analyses
- Conference lectures, publications on sports economics topics (f.e. competitive balance, players market)

DANIEL KEHL · ANDRÁS GYIMESI

University of Pécs, Hungary

Future plans:

- Develop international connections
- Integrate more international clubs to the database
- Statistical modelling of the determinants of profit, revenues, attendance, league competitiveness
- Publications in quality journals
- Organizing a Special Session on „Sport Science - from Biostatistics to Economics” at the International Statistical Conference in Croatia (ISCCRO'20), 7-8 May 2020.

Waiting for possible participants!



Other SIG members

Antonio Mussino

Università di Roma La Sapienza, Italy



James Cochran

Università of Alabama, USA



Other SIG members

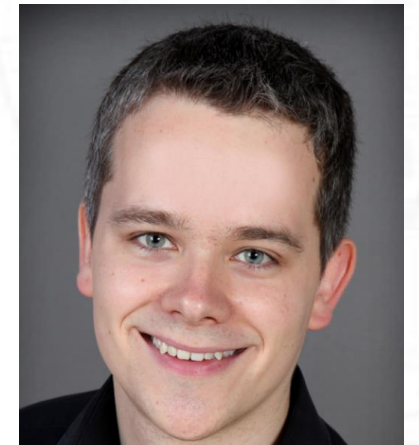
Jim Albert

Bowling Green State University, OH, USA



Florian Berens

Georg-August-Universität Göttingen,
Germany



Other SIG members

Saeed Fayyaz,
National Statistical Office Iran

Ramde Zakarya, Burkina Faso



Other SIG members

Augusta Obidinnu, Nigeria



Monday Osagie Adenomon,
Nasarawa State University, Nigeria



Other SIG members

Francesco Addesa
Leeds Beckett University, UK



Elieza Paul,
Ministry of Health, Community Development,
Gender, Elderly and Children, Tanzania



WHAT'S NEXT?

Soon, we will establish a **Management Committee** (8-15 ISI members having different geographical origin and research interests and paying attention to gender equality)

Possibility to establish:

- an **Advisory Committee** (senior researchers or wise persons, not necessarily ISI members)

Please, suggest people!

WHAT'S NEXT?

Every member has an important role and responsibility in the development and maintenance of the SIG

Procedure:

- 1) Email marica.manisera@unibs.it and legidi@units.it
- 2) Authorization request to ISI
- 3) Announcements (ISI newsletter and bdsports website)

THANK YOU



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