16th Annual Scientific Conference of Montenegrin Sports Academy

“Sport, Physical Activity and Health: Contemporary Perspectives”

BOOK OF ABSTRACTS

4th - 7th April 2019, Dubrovnik – Croatia
The University of Montenegro is the leading higher education and research institution in Montenegro. It is a public institution, established by the state, operating as a unique legal entity represented by the Rector. It is an integrated university organized on the model of the most European universities. Organizational units are competent for provision of study programmes, scientific-research and artistic work, use of allocated funds and membership in professional associations.

Since its foundation, the University of Montenegro has continuously been conducting reforms in the area of education and research, while since 2003 in line with the trends in EHEA. After adoption of the Bologna Declaration, University of Montenegro organized systematic preparation of documents aligned with it. Already in 2003, the experimental teaching programme started and today, all studies are organised in line with the Bologna principles. During the last two years systematic reforms of the University’s study programmes have been conducted in order to harmonize domestic higher education system with European standards and market needs to highest extent.

The University of Montenegro has unique academic, business and development objectives. It comprises 19 faculties and two research institutes. The seat of the UoM is in Podgorica, the capital city, while university units are located in eight Montenegrin towns. The University support services and centers (advisory services, accounting department, international cooperation, career orientation) are located in the Rectorate.

Academic community of University of Montenegro is aware of the importance of its functioning for further development of the state and wider region. It has been so far, and will be in the future, the leader in processes of social and cultural changes, along with the economic development.

In the aspect of attaining its mission, University of Montenegro is oriented towards the priority social needs of the time in which it accomplishes its mission; open for all the students and staff exclusively based on their knowledge and abilities; dedicated to preservation of multicultural and multi-ethnic society in Montenegro; entrepreneurial in stimulating social and economic application of supreme achievements within the scope of its activities.

In 2015/16 there were a total of 1,192 employees at UoM, 845 of which were engaged in teaching. In the same year there were 20,236 students registered at all three cycles of studies.

Internationalization is high on the agenda of UoM priorities, thus it has participated in a number of international projects – over 50 projects funded under the Tempus programme, over 15 Erasmus Mundus Action 2 projects for student mobility, a number of projects under FP7 funding scheme or IPA supported projects, Erasmus + capacity building and International credit mobility projects and other.

For more information about University of Montenegro, please visit our website www.ucg.ac.me or send e-mail to pr.centar@ac.me.
Montenegrin Sports Academy & University of Montenegro:

Book of Abstracts of the 16th Annual Scientific Conference of Montenegrin Sports Academy “Sport, Physical Activity and Health: Contemporary Perspectives”

4 - 7 April 2019, Cavtat, Dubrovnik – Croatia.

Edited by Bjelica, D., Popovic, S., Akpınar, S.


Copyright by Montenegrin Sports Academy & University of Montenegro.

Prepress by Idea Group, Bratstva jedinstva 65, Podgorica, Montenegro.

Printed by Art grafika, V proleterske 2, Nikšić – Montenegro.
Partners

- Faculty of Sport and Physical Education
- Faculty of Kinesiology
- Universidade de Coimbra
- University of Zagreb
- ECSS Prague 2019
# Table of Contents

**WELCOME** ............................................................................................................................................. 6

**ORGANIZATION** ................................................................................................................................... 7

**INVITED PRESENTATIONS** ......................................................................................................................... 8
Screen, Sight, Sound and Sleep – A Snapshot of a Three-Year Surveillance Study on Screen Time, Quality of Life, Sleep and Play Among Preschool Children in Singapore ........................................... 8
Free Weight Bench Press Muscular Fitness and 1.5 Mile Distance Treadmill Running Normative Data for Adults Aged 20-29 Years.................................................................................................................. 9
Exercise in Non-Alcoholic Fatty Liver Disease ......................................................................................... 9
Morally Structuring Sport to Support Peaceful International Relations .................................................. 10
Physical Modeling in Sports ..................................................................................................................... 10
Identification of Talents in Elite Sport ....................................................................................................... 11

**ORAL PRESENTATIONS** ........................................................................................................................... 12
Adapted Physical Activity ........................................................................................................................... 12
Anthropology ................................................................................................................................................ 13
Biochemistry ................................................................................................................................................. 14
Biomechanics ................................................................................................................................................ 14
Coaching ...................................................................................................................................................... 18
Economics .................................................................................................................................................... 19
Health and Fitness ...................................................................................................................................... 21
Motor Learning ........................................................................................................................................... 27
Nutrition ..................................................................................................................................................... 30
Other Multi- & Interdisciplinary Themes ................................................................................................ 32
Physical Education and Pedagogics ......................................................................................................... 36
Physiotherapy ............................................................................................................................................. 41
Psychology ................................................................................................................................................ 43
Rehabilitation ............................................................................................................................................ 44
Sociology ..................................................................................................................................................... 45
Sport Management and Law ..................................................................................................................... 46
Sport Statistics and Analyses .................................................................................................................... 50
Sport Tourism ............................................................................................................................................. 51
Sports Medicine and Orthopaedics ....................................................................................................... 55
Training and Testing ................................................................................................................................. 59
POSTER PRESENTATIONS ................................................................. 71
Adapted Physical Activity ................................................................................... 71
Anthropology ........................................................................................................... 73
Architecture and Urbanism ................................................................................ 76
Biochemistry ........................................................................................................... 79
Biomechanics .......................................................................................................... 80
Coaching .................................................................................................................. 82
Health and Fitness .................................................................................................. 83
Motor Learning ......................................................................................................... 91
Nutrition ................................................................................................................... 92
Other Multi- & Interdisciplinary Themes ................................................................. 93
Philosophy and Ethics ............................................................................................... 98
Physical Education and Pedagogics ........................................................................ 99
Physiotherapy ......................................................................................................... 104
Psychology ............................................................................................................. 105
Rehabilitation ......................................................................................................... 105
Sociology .................................................................................................................. 106
Sport Management and Law .................................................................................... 107
Sport Statistics and Analyses ................................................................................... 109
Sports Medicine and Orthopaedics ........................................................................ 110
Training and Testing ............................................................................................... 112

WORKSHOPS .............................................................................. 123
Why Publish in Montenegrin Journal of Sports Science and Medicine .................. 123
University of Coimbra: Post Graduate Offer and Excellency ...................................... 123
Inertial Measurement Units in Biomechanics ........................................................... 124
Games of the Small States of Europe Montenegro 2019 .............................................. 125
Competing in the Hot Tokyo 2020: A Thermoregulation Perspective ......................... 126

AUTHORS INDEX ........................................................................... 127
Welcome

Dear colleagues and friends,

on behalf of the Montenegrin Sports Academy (MSA), I am aware of the distinguished honor to announce Dubrovnik, the metropolis of Croatian tourism, as the host city of the 16th Annual Scientific Conference of Montenegrin Sports Academy “Sport, Physical Activity and Health: Contemporary Perspectives”. I also wish to welcome academicians and students from all over the world on 4 to 7 April, 2019.

Since the first event in Bar in 2003, the MSA Conference has been a huge success, providing a great opportunity to promote and develop Sports Sciences through networking, study and research. This year, under the traditional patronage of the Montenegrin Olympic Committee and in collaboration with Faculty of Sport and Physical Education, Faculty fo Economics, Faculty of Law, Faculty of Mechanical Engineering and Faculty of Architecture at University of Montenegro as well as Faculty of Sport and Physical Education at University of Novi Sad, Faculty of Sport and Physical Education at University of Sarajevo, Faculty of Kinesiology at University of Split, Faculty of Kinesiology at University of Zagreb, Faculty of Science of Sport and Physical Education at University of Coimbra, and European College of Sports Science, we have put together a high profile scientific programme with plenary and parallel sessions (oral and poster), accompanied by social events and free time to discover and enjoy the amazing city of Dubrovnik. The upcoming conference aims to contribute to the development of global approaches in the different specialized areas and to provide an even broader view of Sports Sciences. Hopefully, sport scientists will be able to find the best paths through the field.

We are confident you will enjoy the whole conference experience, the sharing of knowledge and contribution this will make to our institution and to our field of study and work.

Dubrovnik is an open city: open to the various people, to various cultures, to the world and to science. What better place in which to join forces in developing sport performances.

See you to Dubrovnik and Adriatic Coast!

Prof. Duško Bjelica, PhD
Conference President
Organization

Conference President
Dusko Bjelica

Chairs of the scientific committee
Stevo Popovic, Selcuk Akpinar, Yang Zhang

Members of the scientific committee
Alper Aslan, Antonino Bianco, Branislav Antala, Catalina Casaru, David Kalaj, Ferman Konukman, Goran Gabrilo, Goran Sporis, Haris Pojskic, Hugo Sarmento, Humberto Carvalho, Juan Cortell-Tormo, Ligia Rusu, Ljubisa Stankovic, Mehmet Uygur, Miodrag Spasic, Nejc Sarabon, Panteis Theodoros Nikolaidis, Predrag Bozic, Rodica Traistaru, Sandra Mandic, Sergej Ostojic, Seyed Morteza Tayebi, Tomislav Kristicevic, and Yasar Salci

Chair of the organizing committee
Kemal Idrizovic, Bojan Masanovic

Members of the organizing committee
Aldijana Nokic, Aleksandar Selmanovic, Batric Markovic, Danilo Bojanic, Dean Kontic, Dragan Krivokapic, Gorica Zoric, Ivan Vasiljevic, Jovan Gardasevic, Marija Bubanja, Marin Corluka, Marina Vukotic, Milena Mitrovic, Milovan Ljubojevic, Miroslav Kezunovic, Natalija Babic, and Rajko Milasinovic
MEASURING SATISFACTION FROM SPORTS COMPETITIONS ON THE EXAMPLE OF A TRIATHLON

Tomanek, M.¹
¹Nicolaus Copernicus University, Faculty of Economic Sciences and Management (Torun, Poland)

Introduction: Knowledge about participants of a sporting event is very important. Sponsors expect from the organizers of such events knowledge about participants - who they are, what are their expectations, how much they are willing to spend during a sports event. Mullin et al. (2007) developed The staircase approach to sport marketing, which describes the involvement of sports viewers. Through the development of mass sports (street runs - half marathons and marathons, obstacle courses, triathlons), earlier viewers become factors contributing to sports events. By this fact, there is a lack of knowledge about them (viewers). Shank & Lyberger (2015) noticed that for sponsors, apart from demographic factors, also aspects affecting the satisfaction of the competition. Edwards & Skinner (2009) appreciate the importance of ethnography research. Research carried out by the author in 2017 among triathletes focused on the recognition of sponsors’ brands. Analyzing the collected data, it was noted that the correlation takes place through the place of sponsorship exposure, not the size of sponsorship fees. In connection with such results, the next step is to define the player profile itself and him events satisfaction, so that the sponsors and organizers can prepare a more personalized offer. Aim: Identification of the satisfaction participant of triathlon events for marketing purposes (and organising). Methods: The study of triathletes profiles and event satisfaction was carried out using the on-line survey method (5-point Likert scale), by sending one week after event to participants of the Enea Bydgoszcz Triathlon - the largest amateur event in Poland (2972 participants), messages with a request to supplement the questionnaire. Answers were given by 466 (about 15.7% all Enea Bydgoszcz Triathlon participants). Results and Discussion: Participants assessed the event in three aspects: pre-event activities, event organization, accompanying events. The highest result (on a five-point scale) in the aspect of pre-event activities was achieved by “efficiency of issuing starter packages” - 4.9 points, the lowest “content of starter packages” - 4.3 points. Aspects during the event - the best result was obtained by the change zone (4.89 points), the worst protection of the crossings by tram tracks (3.85 points). References: Shank, M.D., Lyberger M.R. (2015). Sports marketing a strategic perspective. London and New York: Routledge. Skinner, J., Stewart B. (2017). Organizational behaviour in sport. London and New York: Routledge. Masterman G. (2014). Strategic sports event management. London and New York: Routledge. Edwards A., Skinner J. (2009). Qualitative Research in Sport Management. Oxford: Elsevier. Mullin, B.J., Hardy, S., Sutton, W.A., (2007). Sport marketing. Human Kinetics.

LAST DECADE CHANGING PUBLICATION PATTERNS IN THE FIELD OF PHYSICAL EDUCATION AND SPORT IN SERBIA

Matic, R.¹, Maksimovic, N.¹, Milosevic, Z.¹, Vasic, G.¹, Jaksic, D.¹, Vukovic, J.¹, Corilic, D.¹
¹University of Novi Sad (Novi Sad, Serbia)

Introduction: An analysis of the changing publication patterns in the Physical Education and Sport in the last decade period is presented on the basis of the available peer reviewed journals in Serbia. Method: 

for sport and physical education Maros, M., Mujak, Z., (2015), Succes of our athletes as a way of promoting Montenegro, Podgorica: Magazin for sport, phisical education and health „Sport mont”, 43-45/XIII.
Authors Index

A
Abdelkarem, K. 61
Abdellatif, A. 62
Abu-Alim, M. 84
Ajman, H. 32
Akpinar, S. 12, 17, 28
Alaj, I. 50
Al Ali, N. 30, 72
Al Amiri, K. 30, 72
Al-Ajmi, M. 84
Ali, N. 30, 72
Alic, H. 97, 119
Alminni, C. 118
Alricsson, M. 56
Al Saleh, M. 72
Andrasic, S. 117
Anguera, M.T. 33
Antala, B. 38, 43
Araujo, D. 33
Aric, F. 13
Azeem, K. 21

B
Bacvarevic, BB. 17
Badel, T. 96
Bajic Sestovic, J. 76
Bajramovic, I. 40, 119
Bakayev, V. 82, 113
Bakovic, M. 32
Barak, O. 57, 92, 111
Barbero, M. 44
Barovic, G. 95
Bauman, A. 72
Becic, P. 18
Becker, S. 29
Ben Amar, I. 45
Bendo, A. 80
Berenji, K. 102
Bergman, P. 79, 83
Berrios, B. 15, 16, 39
Besirevic, D. 119
Bjelica, D. 73, 74, 86, 106
Blasco-LaFarga, C. 89
Bogatij, S. 88, 110
Bojanic, D. 94, 98, 99, 102, 106
Boldemann, C. 72
Bozic, P. 17
Bubana, M. 94

C
Canaj, F. 80, 105
Canaj, K. 105
Carlsson, J. 79, 83
Carlsson, K. 79
Causevic, D. 97, 101, 116
Cavar, M. 14
Cekanova, I. 38
Cerkez Zovko, I. 14
Cescon, C. 44
Chia, M. 8
Choi, H.J. 21
Chua, T. 8
Clarys, P. 55
Clijisen, R. 44, 55
Coh, M. 11, 14
Consuegra, P. 15, 16, 39
Cordellat, A. 89
Coriic, D. 108
Corluka, M. 14
Costello, J.T. 55
Covic, N. 116, 119
Cupic, L. 75
Cvijovic, D. 69
Cwikla, K. 113

D
Dadeliene, R. 59
Dajakovic, S. 75
Damo, E. 80
Danielsson, T. 79, 83
Dehri, T. 55
Devrnja, A. 24
Dilmachambetov, E. 92
Djekic, A. 55
Djukanovic, N. 114
Djurovic, N. 78
Doder, I. 116
Dragisjky, M. 112
Dragutinovic, K. 99, 100
Drapsin, M. 26
Drid, P. 45, 69, 76, 120, 121
Drljevic, V. 53
Durakovic, D. 97

E
Eckerman, M. 56
Eksman, G. 56
Einarsson, I.P. 61
Erdal, M. 28
Espinosa, M. 35

F
Fernandez-Rodriguez, E. 118, 120
Flores, B. 35
Foretic, N. 65, 116
Fucik, H. 38

G
Gabrilo, G. 66
Garcia, F. 15, 39
Garcia-Pinillos, F. 16
Gardasevic, J. 73, 74, 106
Gilic, B. 24
Gjinovci, B. 115
Gregurant, T. 122
Gryc, T. 64
Guðmundsdottir, M.L. 61
Gujar, T. 28
Gulin, J. 75
Gures, A. 60
Gusic, M. 88, 117

H
Hadzic, V. 31
Halldorsson, K. 61
Hamdan, M. 21
Hattori, Y. 87
Helbig, M. 29
Herrador, J. 39
Hohenauer, E. 55
Hokelmann, A. 28
Honari, H. 48
Hubona, O. 25

I
Ibrahimovic, M. 97
Iconomos, T.M. 36
Idivic, K. 65, 115
Ilhas, F. 36
Ikonomi, E. 82
Ivor, D. 97
Izovska, J. 112
J
Jaberi, A. 48
Jaksic, D. 108
Jaksie-Stojanovic, A. 52
Jankovic, M. 52, 102
Janjic, N. 92, 111
Jasiulewicz, A. 20
Jeleskovic, E. 97
Jerolimov, V. 96
Jo, S. 91
Jurak, I. 42
Jurisic, D. 67

K
Kalinski, M.I. 14
Kapo, S. 119
Karaba Jakovljevic, D. 58
Karalar, M. 60
Karan, V. 92
Karir, Z. 24
Karpiljuk, D. 110
Kern, J. 96
Kezunovic, M. 110
Kim, S. 91
Kiseljak, D. 42
Kita, T. 87
Klasnja, A. 92
Koca, A. 109
Kondric, M. 31
Kontic, D. 65
Kootshabe, K. 63
Korovljev, D. 45
Kosovic, O. 68
Kostic, V. 50
Kovacevic, E. 116
Krapac, L. 96
Kristjansdottir, H. 61
Krivokapic, D. 88
Krolo, A. 67
Kuu, S. 42
Kvesic, I. 86
Kwon, Y.S. 9
L
Lakota, R. 116
Latorre, P. 15, 16, 39
Leko, G. 122
Leoni, D. 44
Lepes, J. 36
Lihui L. 44
Likic, S. 40, 119
Lilic, Lj. 68
Liu, C. 46
Lok, N. 34
Lok, S. 34
Ljubojevic, M. 94, 98, 99, 102, 106

M
Macak, D. 88
Macura, M. 57
Madic, D. 88, 117
Madiyeva, G. 92
Majeric, M. 39
Majstrovic, M. 66
Maksimovic, N. 45, 90, 104, 108
Malovic, P. 106
Mara, F. 82
Marinovic, M. 18, 68
Marjanovic, R. 53
Markovic, B. 57
Markovic, V. 55
Maros, M. 107
Martinez-Redondo, M. 15
Masanovic, B. 86, 95
Masie, S. 116
Matic, R. 108
Maurer, J. 41
Mayorga-Vega, D. 118, 120
Mazloomi Sovemi, F. 48
Medenica Mitrovic, D. 49
Mehmeti, I. 12
Mekic, A. 119
Merino-Marban, R. 118, 120
Michalska, J. 113
Micoogullarz, BO. 28
Micoogullari, O. 17
Mihalek, N. 111
Mikic, M. 110, 112
Milasinovic, R. 98, 99, 102, 106
Milasius, K. 92
Milic, Z. 102, 103
Milosevic, Z. 45, 69, 90, 104, 108
Milovanovic, I. 45
Misigoj-Durakovic, M. 24
Mitrovic, M. 99, 100
Mohammed, M.H.H. 21, 47
Molnar, S. 117
Monteagudo, P. 89
Moreno del Castillo, R. 15, 16, 39
Moric, I. 54
Moznik, M. 32
Muka, E. 82

N
Nagyvaradi, K. 36
Nekriosiou, R. 59
Nilsson, C. 79
Nokie, A. 99, 114

O
Obradovic, B. 45
Odek, U. 17, 28
Okech, R. 51
Olujic, D. 32
Onyewadume, I. 63
Onyewadume, I.U. 25
Oreb, B. 53
Oreb, G. 53
Oreb, I. 53
Ormanovic, S. 97, 101, 116
Osmani, A. 37
Oytun, M. 23
Ozcan, K. 17

P
Pacesova, P. 38, 43
Pagaduan, J. 27
Pagels, P. 72
Pantoja, A. 15, 16, 39
Papp, R. 36
Parraga, J. 15, 16, 39
Pavcic, I. 96
Pedak, K. 42
Pekovic, M. 55, 93
Pereira, A. 33
Peric, M. 32, 57
Perovic, Dj. 55
Pesce, C. 89
Pittorff, M. 29
Pocek, S. 69
Podstawski, R. 22
Pojskic, S. 27
Popovic, G.S. 79
Popovic, S. 86, 93, 95
Popov, K. 50
Port, K. 42
Protic-Gava, B. 90, 104
Prus, D. 31

Q
Qeleshi, A. 80

R
Radasovic, D. 88
Radjenovic, O. 42
Raess, D. 41
Raicevic, M. 49
Raickovic, N. 68
Raiola, G. 118
Rakin, M. 111
Rakovac, A. 26
Rapajic, M. 111
Sports Science and Medicine Journals from Montenegrin Sports Academy

We have expanded the quality of our journals considerably over the past years and can now claim to be the market leader in terms of breadth of coverage.

As we continue to increase the quality of our publications across the field, we hope that you will continue to regard MSA journals as authoritative and stimulating sources for your research. We would be delighted to receive your comments and suggestions, mostly due to the reason your proposals are always welcome.

Look Inside!

**Sport Mont Journal**

Editors-in-Chief: Dusko Bjelica, Montenegro; Zoran Milosevic, Serbia
Managing Editor: Jovan Gardasevic, Montenegro

*Volume 17, 2019, 3 issues per year; Print ISSN: 1451-7485, Online ISSN: 2337-0351*

Sport Mont Journal is a scientific journal that provides: Open-access and freely accessible online; Fast publication time; Peer review by expert, practicing researchers; Post-publication tools to indicate quality and impact; Community-based dialogue on articles; Worldwide media coverage. SMJ is published three times a year, in February, June and October of each year. SMJ publishes original scientific papers, review papers, editorials, short reports, peer review - fair review, as well as invited papers and award papers in the fields of Sports Science and Medicine, as well as it can function as an open discussion forum on significant issues of current interest.

www.sportmont.ucg.ac.me

**Montenegrin Journal of Sports Science and Medicine**

Editors-in-Chief: Dusko Bjelica, Montenegro; Stevo Popovic, Montenegro
Executive Editor: Selcuk Akpinar, Turkey
Associate Editors: Mehmet Uygur, USA; Catalina Casaru, USA; and Predrag Bozic, Serbia

*Volume 8, 2019, 2 issues per year; Print ISSN: 1800-8755, Online ISSN: 1800-8763*

Montenegrin Journal of Sports Science and Medicine (MJSSM) is published biannually, in September and March of each year. MJSSM publishes original scientific papers, review papers, editorials, short reports, peer review - fair review, as well as invited papers and award papers in the fields of Sports Science and Medicine, as well as it can function as an open discussion forum on significant issues of current interest. MJSSM covers all aspects of sports science and medicine; all clinical aspects of exercise, health, and sport; exercise physiology and biophysical investigation of sports performance; sport biomechanics; sports nutrition; rehabilitation, physiotherapy; sports psychology; sport pedagogy, sport history, sport philosophy, sport sociology, sport management; and all aspects of scientific support of the sports coaches from the natural, social and humanistic side.

www.mjssm.me
Faculty for sport and physical education

NIKŠIĆ

Phone: + 382 40 235 204; Fax: + 382 40 235 207, +382 40 235 200
E-mail: fakultetzasportnk@t-com.me; Web: www.ucg.ac.me/sport

Znanje i zdravlje!
BE PART OF OUR TEAM

CRNOGORSKI OLIMPIJSKI KOMITET
MONTENEGRIN OLYMPIC COMMITTEE
CIP - Каталогизација у публикацији
Национална библиотека Црне Горе, Цетиње

COBISS.CG-ID 38115600
16th Annual Scientific Conference of Montenegrin Sports Academy
"Sport, Physical Activity and Health: Contemporary Perspectives"

http://www.csakademija.me/conference/

4th - 7th April 2019, Dubrovnik - Croatia