



ANNUAL MEETING **SFRR-E 2021** Belgrade, Serbia, 15-18 June

Redox Biology in the 21st Century:
A New Scientific Discipline

PROGRAMME

PRESENTED VIRTUALLY

ORGANIZED BY

Society for Free Radical Research Europe (SFRR-E)

SPONSORED BY



Republic of Serbia
Ministry of Education, Science
and Technological Development

LOCAL ORGANIZER

Serbian Society for Mitochondrial and Free Radical Physiology
Bato Korac, Aleksandra Jankovic, Andjelika Kalezic

Dear Colleagues,

"Those who were fortunate to wake up this morning in Belgrade may believe that they have accomplished enough in their lives. To insist on more than this would be merely immodest" (*Serbian poet and writer Dusko Radovic*).

With these words, we would like to warmly welcome you to the virtual SFRR-E 2021 annual meeting "Redox Biology in the 21st Century: A New Scientific Discipline" from June 15-18, 2021, presented from Belgrade, Serbia.

Belgrade (Serbian: Beograd, meaning "white city") is the capital of Serbia and one of the oldest cities in Europe. It lies at the confluence of the Sava and Danube rivers, the position that defined Belgrade as the Door to Europe, the meeting point between East and West, North and South. In its 7000-year-old history, our city was demolished more than forty times, each time reborn and resurrected, like the Phoenix. Today, Belgrade unites diversity, creating a unique spirit of time. In the words of another Serbian writer, Momo Kapor: "Belgrade is not even in Belgrade, because Belgrade, in fact, is not a city; it is a metaphor, a way of life, a perspective on things".

There are a number of reasons one can say that the 21st century has given birth to a new scientific discipline – Redox Biology. And Redox Biology is also, like any other aspect of science and life, a perspective on things, with the cooperation of opposites in its basis. With a goal. Harmonized in health, out-of-balance in illness. Studying Redox biology: oxidants, antioxidants, redox active molecules and redox regulation is a multilayered endeavor to comprehend the complexity and uniqueness of this regulation. Understanding this complexity will allow for a greater understanding of biology and, life.

This Conference is an attempt to get to know more deeply the core of Redox Biology, the core of life.

With these warm thoughts, we are waiting to virtually meet you in June 2021.

On behalf of the Organizing Committee,

Bato Korac

Bato Korac



Belgrade Fortress



Church of Saint Sava



Nikola Tesla Museum

Tuesday, 15 June 2021

Channel 1

- 13.00–13.30** **Opening ceremony and welcome address**
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- 13.30–16.00** **Free radical research: My look into the future**
Chairs: Biljana Buzadzic, Serbia; Mihajlo Spasic, Serbia
Keynote lectures
1. Salvador Moncada, UK: My encounters with free radical biology: a summing up
 2. Barry Halliwell, Singapore: An ageing free radical: still moving forward
- 16.00–16.25** **Break**
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- 16.25–16.30** **Enrique Cadenas: In memoriam to John Maguire**
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- 16.30–17.30** **SFRR-Europe basic science award lecture**
Chairs: Michael Davies, Denmark; Enrique Cadenas, USA
Roland Stocker, Australia: Arterial redox signaling controlling blood pressure during inflammation
- 17.30–19.00** **Symposium 1**
-
- Dynamic subcellular targeting of redox signals in the cardiovascular system**
Chairs: Thomas Michel, USA; Roberto Sitia, Italy
- Speakers**
1. Emrah Eroglu, Turkey: Multiparametric imaging approaches to dissect the role of ROS and RNS signaling pathways using chemogenetic tools and genetically encoded biosensors
 2. Iria Medraño Fernandez, Italy: Regulation of redox signaling mediated by H₂O₂ transporters
 3. Massimo Santoro, Italy: Imaging and functional monitoring of redox signaling and metabolism in cardiovascular tissues

Wednesday, 16 June 2021

Channel 1

08.00–09.00 Early bird educational session

Chairs: Jelena Kotur-Stevuljevic, Serbia; Helen Griffiths, UK
Fabio Virgili, Italy: Genetic variants as modulators of human (patho) physiology

09.00–09.45 SFRR-Europe Catherine Pasquier award lecture

Chairs: Juan Sastre, Spain; Josiane Cillard, France
Aleksandra Jankovic, Serbia: Redox-metabolic synergy – a backbone interface for adipocentric approach to metabolic diseases

09.45–10.30 SFRR-Europe Leopold Flohé redox pioneer young investigator award lecture

Chairs: Clare Hawkins, Denmark; Regina Brigellius-Flohe, Germany
Alessandro Vannini, UK/Italy: Redox regulation at the heart of RNA Polymerase III gene transcription machinery

10.30–11.00 Break

11.00–12.00 Oral presentations from submitted abstracts 1

Chairs: Aphrodite Vasilaki, UK; Joao Laranjinha, Portugal

Speakers

1. Jean-Philippe Reichheld, France: Thiol-mediated redox regulation of DICER-LIKE RNaseIII and small RNA metabolism
2. Bess Yi Kun Yu, UK: Regulation of metastasis suppressor NME1 by a key metabolic cofactor coenzyme A
3. Eduardo Fuentes-Lemus, Denmark: Tryptophan and cysteine residues mediate chain reactions and propagation of oxidative damage in concentrated casein solutions
4. Christine Y. Chuang, Denmark: Hypoxia of human endothelial artery wall cells affects arterial extracellular matrix remodelling and contributes to atherosclerosis development
5. Sarah Smith, UK: The biological role of redox signalling by the tumour suppressor PTEN

12.00–13.00 SFRR-Europe clinical science award lecture

Chairs: Jose Vina, Spain; Nesrin Kartal Ozer, Turkey
Giuseppe Valacchi, Italy: OxInflammation in Rett syndrome

13.00–14.00 Break

14.00–15.00 Oral presentations from submitted abstracts 2

Chairs: Dolores Pérez-Sala, Spain; Joel Pincemail, Belgium

Speakers

1. Florian Gruber, Austria: Autophagy protects murine preputial glands against premature aging, and controls their sebum phospholipid and pheromone profile
2. Cristina Mas Bargues, Spain: Effect of mesenchymal stem cells-derived extracellular vesicles from young mice on senescent myoblasts
3. Anna Gioran, Greece: Proteasome activation in *C. elegans* engages UPRmt
4. Cátia Lourenço, Portugal: Modulation of cerebrovascular dysfunction by dietary nitrate in a rodent model of vascular dementia
5. Marta Budnar, Serbia: Nrf2-dependent control of redox and metabolic profile in the skin of hibernating ground squirrel (*Spermophilus citellus*)

15.00–16.00 Young investigator award symposium

Chairs: Anne Negre-Salvayre, France; Giuseppe Poli, Italy

Young investigator award Ferrara 2019

1. Maximilien Euler, Germany: Amplification of NET formation induces resolution of inflammation
2. Renato Gaspar, UK: Platelet-derived extracellular vesicles express NADPH oxidase-1 (Nox-1), generate superoxide and modulate platelet function
3. Andrea Perrelli, Italy: Protein kinase C α regulates the nucleocytoplasmic shuttling of KRIT1

Oral presentations from submitted abstracts

4. Pablo Martí-Andrés, Spain/Sweden: TRP14 deficiency markedly reduces the inflammatory response in acute pancreatitis through Nrf2 activation
5. Shuqi Xu, Denmark: Chlorination and nitration of extracellular matrix by inflammatory myeloperoxidase-derived oxidants in the presence of nitrite

16.00–16.30 Break

16.30–18.00 **Symposium 2**

Post-translational modifications in redox biology: Old issues and new perspectives – In memoriam to Arne Holmgren

Chairs: Ivan Gout, UK; Joris Messens, Belgium

Speakers

1. Joris Messens, Belgium: The dynamic redox language of the cell – peroxiredoxin mediated signaling
2. Milos Filipovic, France: Protein persulfidation: the oldest solution for oxidative stress
3. Jovana Bakovic, UK: Understanding the role of coenzyme A and protein CoAlation in the function of peroxiredoxins and redox regulation

Channel 2

11.00–12.00 **Poster session 1**

Chairs: Clare Hawkins, Denmark; Richard Siow, UK

Posters 1-15

12.00–14.00 **Break**

14.00–15.00 **Poster session 2**

Chairs: Niki Chondrogianni, Greece; Giovanni Mann, UK

Posters 16–30

15.00–16.00 **Poster session 3**

Chairs: Mari Carmen Gomez-Cabrera, Spain; Andreas Daiber, Germany

Posters 31-45

16.00–16.30 **Break**

16.30–17.30 **Poster session 4**

Chairs: Brigitte Winkhofer-Roob, Austria; Michael Davies, Denmark

Posters 46-60

17.30–18.30 **Poster session 5**

Chairs: Daniela Caporossi, Italy; Enrique Cadenas, USA

Posters 61-75

Thursday, 17 June 2021

Channel 1

08.00–09.00 Early bird educational session

Chairs: Aleksandra Jankovic, Serbia; Fabio Virgili, Italy
Tilman Grune, Germany: Biomarkers of redox biology in human studies

09.00–10.30 Symposium 3

Early career researchers symposium

Chairs: Matthew Smith, UK; Paraskevi-Maria Psefteli, UK

Invited speaker:

1. Moran Benhar, Israel: Gasotransmitters and thiol redox signaling: a focus on regulated cell death

Speakers

2. Laura Doblado, Spain: Interference with mitochondrial activity drives the on-set of cardiovascular disease following long-term treatment with SGAs
3. Miroslava Kvandova, Germany: Environmental aircraft noise aggravates oxidative DNA damage, granulocyte oxidative burst and nitrate resistance in Ogg1-/- mice
4. Agathe Lermant, UK: Glutaredoxin-1 promotes pregnancy-induced vascular complications by altering placental angiogenesis
5. Thilo Philipp, Germany: Identification of a novel hydrogen sulfide-generating *Caenorhabditis elegans* protein, SEMO-1, that is orthologous to human selenium-binding protein 1 and modulates lifespan

10.30–11.00 Break

11.00–12.00 Oral presentations from submitted abstracts 3

Chairs: Tilman Grune, Germany; Corinne Spickett, UK

Speakers

1. Aldona Mzyk, Netherlands: Differentiating rheumatoid arthritis and osteoarthritis by nanodiamond magnetometry
2. Irundika Dias, UK: Mass spectrometry method to profile isoprostanes and neuroprostanes in brain tissue: a study in Alzheimer's disease
3. Charles Ramassamy, Canada: Receptor for advanced glycation end products and glyoxalase-1 in the total circulating extracellular vesicles

from mild cognitive impairment and Alzheimer's disease patients

4. Alessandra Pecorelli, USA: Mitochondrial dynamics and quality control pathways impairment in Rett syndrome and autism spectrum disorder
5. Cristina Antinozzi, Italy: Sildenafil improves the redox homeostasis and pro-inflammatory activation in systemic sclerosis fibroblasts exposed to reactive oxygen species

12.00–13.00 **SFRR-Europe annual award lecture**

Chairs: Daniela Caporossi, Italy; Giovanni Mann, UK

Federico V Pallardó, Spain. Epigenetics in clinical practice. Examples in oxidative stress-related diseases

13.00–14.00 **Break**

14.00–15.00 **Oral presentations from submitted abstracts 4**

Chairs: Florian Gruber, Austria; Aleksandra Korac, Serbia

Speakers

1. Ana Despotovic, Serbia: Antiglioma effect of ascorbic acid and menadione combination in U251 glioblastoma cell line is mediated by ROS-dependent downregulation of Akt
2. Izabela Sadowska-Bartos, Poland: Nitroxide radical-containing redox nanoparticles protect neuroblastoma SH-SY5Y cells against 6-hydroxydopamine toxicity
3. Lorena Diaz Sanchez, UK: Hydrogen sulphide reduces TNF- α -mediated endothelial dysfunction by improving mitochondrial function
4. Katie Frenis, Germany: Microglial signaling mediates oxidative and inflammatory response to aircraft noise via lysozyme m⁺ cells
5. Matthew Smith, UK: Effects of changes in ambient oxygen levels and hypoxia-reoxygenation on intracellular zinc levels in human coronary artery endothelial cells

15.00–16.00 **Round table discussion: Redox biology in the 21st century: Challenges and opportunities**

Chairs: Giovanni Mann, UK; Mihajlo Spasic, Serbia

Invited discussants: Tilman Grune, Germany; Maria Paola Nitti, Italy; Helen Griffiths, UK; Richard Siow, UK; Anthony Newman, USA

16.00–16.30 **Break**

16.30–18.00 **Symposium 4**

Impact of pollution and other environmental stressors on cardiovascular disease and tissue damage

Chairs: Andreas Daiber, Germany; Juan Sastre, Spain

Speakers

1. Thomas Münzel, Germany: Environmental traffic noise triggers stress reactions, oxidative stress, inflammation and vascular dysfunction – comparison of studies in mice and men
2. Giuseppe Valacchi, Italy: Cutaneous and lung tissues as first targets of ozone induced tissue damage
3. Sanjay Rajagopalan, USA: Exposure to PM_{2.5} air pollution disrupts circadian rhythm through alterations in chromatin dynamics

18.00–18.30 **Break**

18.30–19.30 **General assembly**

Channel 2

11.00 – 12.00 **Poster session 6**

Chairs: Josiane Cillard, France; Juan Sastre, Spain

Posters 76-90

12.00 – 14.00 **Break**

14.00 – 15.00 **Poster session 7**

Chairs: Aleksandra Jankovic, Serbia; Fabio Virgili, Italy

Posters 91-105

15.00 – 16.00 **Poster session 8**

Chairs: Francesco Galli, Italy; Federico Pallardo, Spain

Posters 106-120

16.00 – 16.30 **Break**

16.30 – 17.30 **Poster session 9**

Chairs: Izabela Sadowska-Bartosz, Poland; Ivan Gout, UK

Posters 121-135

17.30 – 18.30 **Poster session 10**

Chairs: Consuelo Borrás, Spain; Moran Benhar, Israel

Posters 136-150

Friday, 18 June 2021

Channel 1

09.00–10.30 Symposium 5

Circadian rhythms and redox homeostasis: From redox signalling to chronotherapy

Chairs: Vanja Pekovic-Vaughan, UK; Bertrand Friguet, France

Speakers

1. Roman Kondratov, USA: Caloric restriction reprograms fatty acid oxidation in tissue specific manner
2. Vanja Pekovic-Vaughan, UK: NRF2/KEAP1 pathway is required to fine-tune circadian oscillations as part of the negative feedback loop of the molecular clock: implications for tissue homeostasis and therapeutic interventions
3. Annie Curtis, Ireland: Circadian rhythms in the innate immune system: how the molecular clock shapes inflammation through redox control

10.30–11.00 Break

11.00–12.30 Symposium 6

Redox regulation of muscle and nerve responses to injury

Chairs: Daniela Caporossi, Italy; Christian Gonzalez-Billault, Chile

Speakers

1. Christian Gonzalez-Billault, Chile/USA: Redox biology mechanisms involved in muscle and neuronal functions: an overview
2. George Rodney, USA: Role of NADPH oxidases in remodelling of dystrophic skeletal muscle
3. Arnau Hervera, Spain: NOX-dependent reactive oxygen species are essential regulators of axonal regeneration
4. Malcolm Jackson, UK: Redox cross-talk from motor nerves to skeletal muscle regulates muscle redox homeostasis

12.30–13.00 Awards and closing ceremony
