

The International Conference on Electron Paramagnetic
Resonance Spectroscopy and Imaging of Biological Systems

EPR 2017 :

The 16th In Vivo EPR Spectroscopy and Imaging
The 13th Spin Trapping/Spin Labeling conferences

epr  2017

Morgantown, West Virginia, USA July 16-22, 2017

EPR2017 Conference information:

Lakeview Golf Resort & Spa,

One Lakeview Drive Morgantown, WV, USA,
26508



Lakeview
golf resort & spa

Registration materials may be picked up at the EPR2017 Registration deck (Governors Foyer) on Sunday July 16: 3:00 pm–6:00 pm or during Conference hours on July 17-21.

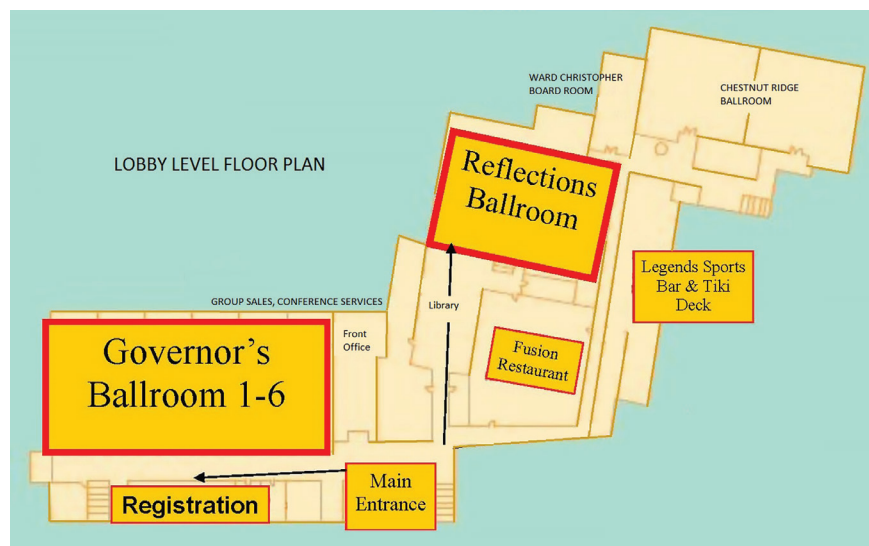
Mountaineer EPR school and main conference sections will take place at the *Governors Ballroom* according to the program.

Poster session will be held at the *Governors Foyer* (across the Conference meeting room) and available to set up from 3:00 pm on Sunday, July 16.

Conference reception will start with Bruker Biospin presentation at *Reflections Ballroom* on Sunday, July 16 at 6:00 pm. All attendees are cordially invited to join in on beverages and light diner.

Conference banquet and award ceremony will take place at *Reflections Ballroom* on Thursday, July 20 at 7:00 pm. You are welcome to enjoy fine food, life music and warm environment. Pre-registration required.

Conference lunches will be served at *Reflections Ballroom* from Monday, July 17 to Friday, July 21 at 1:00 pm.



Conference program:

Sunday, July 16

18:00-21:00	Welcome reception. BRUKER Presentation by Arthur Heiss.
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Monday, July 17

8:20-8:30	Opening ceremony
8:30-9:15	Mountaineer EPR school: Larry Berliner The evolution of Biomedical EPR (ESR). I. Free radical generation. Chair: Olivier Ouari
9:20-9:50	Ronald Mason, NIEHS, USA Fluorescent proteins such as GFP catalytically generate superoxide and H ₂ O ₂
9:50-10:10	Antonio Barbon, Padova University, Italy Generation of superoxide ions by nanographites and amorphous carbon nanopowders.
10:10-10:40	Coffee break II. EPR spin trapping/ oxidative stress biomarkers. Chairs: Stephen Leonard & Ronald Mason
10:40-11:05	Olivier Ouari, Aix-Marseille University, France Nitron spin traps for the EPR detection and characterization of transient free radicals.
11:05-11:30	Vincent Castranova, WVU, USA Use of Electron Paramagnetic Resonance to elucidate pathologic responses.

Monday, July 17 (continued...)

11:30-11:55	Maria Kadiiska, NIEHS, USA Biomarkers of oxidative stress: Reinterpreting the best biomarker of oxidative stress in toxicity and disease.
11:55-12:20	Stephen Leonard, NIOSH, USA Electron Paramagnetic Resonance in determining occupational metal toxicity.
12:20-12:45	Frederick Villamena, OSU, USA Fluorescence Imaging of subcellular-targeted spin traps.
13:00-14:00	Lunch
	III. Macromolecular structure and function. Chairs: Alex Smirnov & Sunil Saxena
14:00-14:30	Jack Freed, Cornell, USA Modern ESR at ACERT and applications in biophysics.
14:30-14:55	Kurt Warncke, Emory University, USA Biocatalyst reactant-protein-solvent dynamical coupling revealed by multiple EPR probes and techniques.
14:55-15:20	Alex Smirnov, NSCU, USA Structure determination of oligomeric proteins in lipid bilayer environment by combining solid state NMR and long-range DEER constraints.
15:20-15:45	Candice Klug, Medical College of Wisconsin, USA Insights into the mechanism of LPS transport in E. coli using site-directed spin labeling EPR spectroscopy.
15:45-16:20	Coffee break

Monday, July 17 (continued...)

16:20-16:45	Sunil Saxena, University of Pittsburgh, USA Cu(II) as an ESR probe of protein structure and dynamics.
16:45-17:10	Sergey Dzuba, Inst. of Chemical Kinetics & Combustion, Russia Alternative mechanisms of the membrane-modifying action of antimicrobial peptides.
17:10-17:30	Tatyana Smirnova, NCSU, USA Electrostatics in silica-lipid hybrid structures.
17:30-17:50	Reza Dastvan, Vanderbilt University, USA Energy transduction and alternating access of the mammalian ABC transporter P-Glycoprotein.
19:00- 20:00	Dinner

*** Announcement!** To visit The Animal facility at Health Sciences Center of West Virginia University scheduled for Tuesday, July 18, everybody should wear closed toe shoes and fill out online form the Occupational Health Questionnaire.

Food and drink are prohibited in animal use areas in laboratories.

Tuesday, July 18

8:30-9:15	Mountaineer EPR school: Mark Tseytlin EPR techniques: from basics to state of the art.
	IV. EPR oximetry of tumor. Chair: Murali Krishna Cherukuri
9:20-9:50	Howard Halpern, University of Chicago, USA Guiding cancer therapy in preclinical models with EPR pO ₂ imaging.
9:50-10:20	Periannan Kuppusamy, Dartmouth, USA The first-ever multi-institutional clinical trial for tumor oximetry using EPR with OxyChip.
10:20-10:40	Coffee break
	V. EPR imaging. Chairs: Mark Tseytlin and Gareth Eaton
10:40-11:05	Jay Zweier, OSU, USA Fast scan EPR imaging for in vivo biomedical applications.
11:05-11:30	Hiroshi Hirata, Hokkaido University, Japan Three-dimensional oxygen mapping using a pair of isotopic nitroxyl radicals and CW-EPR-based single point imaging.
11:30-11:55	Kazuhiro Ichikawa, Nagasaki International University, Japan Development of high resolution DNP-MRI scanner for small animal imaging.
11:55-12:20	Boris Epel, University of Chicago, USA 720 MHz pulsed EPR oxygen imager.
12:20-12:45	Aharon Blank, Technion, Israel Compact ESR sensors for medical application.
13:00-14:00	Lunch
14:00-18:00	* Visit to IMMR center at HSC, WVU
19:00-20:00	Dinner
20:00-22:00	Poster Session

Wednesday, July 19

8:30-9:15	Mountaineer EPR school: Valery Khramtsov Spin probes and traps - molecular spies for EPR spectroscopy and imaging.
	VI. Imaging & anti-cancer pro-drugs. Chair: Robert Gillies
9:20-9:50	Murali Krishna Cherukuri, NCI, USA EPR/MRI imaging biomarkers to guide treatment in tumor bearing mice.
9:50-10:20	Lev Weiner, Weizmann Institute, Israel Redox active anticancer pro-drugs.
10:20-10:40	Coffee break
	VII. Nitroxide EPR probes. Chairs: Rui Tamura & Joseph Kao
10:40-11:05	Andrzej Rajca, University of Nebraska, USA Design and synthesis of nitroxide radicals for biophysical and biomedical applications.
11:05-11:30	Sandra & Gareth Eaton, University of Denver, USA Electron spin relaxation of nitroxides designed for DEER experiments.
11:30-11:55	Joseph Kao, University of Maryland, USA Designing spin probes with reduced membrane permeability.
11:55-12:20	Sergey Dikalov, Vanderbilt University, USA Studies of cellular accumulation and antioxidant activity of pyrrolidine and piperidine nitroxides.
12:20-12:45	Rui Tamura, Kyoto University, Japan Preparation of robust metal-free magnetic nanoemulsions encapsulating lowmolecular-weight nitroxide radicals and hydrophobic drugs directed toward MRI-visible targeted delivery system.

Wednesday, July 19 (continued...)

13:00-14:00	Lunch
14:30-18:00	Excursion to Coopers Rock
19:00-20:00	Dinner
20:00-22:00	Poster Session

Thursday, July 20

8:30-9:15	Mountaineer EPR school: Harold Swartz In vivo EPR, preclinical and clinical: challenges and opportunities.
	VIII. Tumor microenvironment. Chairs: Howard Halpern & Timothy Eubank
9:20-9:50	Robert Gillies, Moffitt Cancer Center, FL, USA Extracellular acidification is necessary and sufficient for metastasis.
9:50-10:15	Timothy Eubank, WVU, USA Investigating macrophage HIFs in TME regulation using an EPR approach.
10:15-10:40	Mikhail Dikov, OSU, USA In vivo EPR monitoring of TME modulation and targeting lung metastasis by antagonizing A2B adenosine receptor.
10:40-11:10	Coffee break
	IX. Spin probes. Chair: Jay Zweier & Benoit Driesschaert
11:10-11:35	Yves-Michel Frapart, Paris Descartes University, France EPR imaging: a synergetic adventure in mathematics, spectroscopy and chemistry.
11:35-12:00	Benoit Driesschaert, WVU, USA Continuous flow chemistry with in-line EPR monitoring for the synthesis of multifunctional biocompatible triarylmethyl spin probes.

Thursday, July 20 (continued...)

12:00-12:25	Andrey Bobko, WVU, USA Boronic acid –based trityl probes for diol recognition.
12:25-12:45	Qian Li, University of Alabama, USA Detection of hyperoxia-induced oxidants in murine-transformed Clara cells.
13:00-14:00	Lunch
	X. Free radicals and oxidative stress in neurological diseases and cardiology. Chairs: Jim Liu & Eric Kelley
14:00-14:30	Jim Liu, University of New Mexico, USA Measurement of cerebral oxygen in neurological disorders.
14:30-14:55	Rheal Towner, Oklahoma Medical Research Foundation, USA In vivo MRI-detectable free radical trapping detection assessment in neurological diseases.
14:55-15:15	Bruno Fink, NOxygen, Germany EPR Spectroscopy serving human health: cardiovascular risk assessment.
15:15-15:35	Eric Kelley, WVU, USA Swapping one free radical for another to address metabolic/ cardiovascular dysfunction allied to obesity.
15:35-15:55	Valerian Kagan, University of Pittsburgh, USA Free radical lipid oxidation – out of hand or on a tight leash?
15:55-16:30	Coffee break
16:40-18:00	Poster session/Informal discussion
19:00-23:00	Farewell Banquet. Award ceremony

Friday, July 21

8:30-9:15	Mountaineer EPR school: David Lurie Overhauser MRI of free radicals.
	XI. DNP-MRI. Chair: David Lurie
9:20-9:50	Hideo Utsumi, University of Shizuoka, Japan Development of new field-cycling DNP-MRI for free radical imaging.
9:50-10:10	Vasil Denysenkov, Goethe University, Germany Continuous-flow DNP polarizer for in-vivo MRI applications at 1.5 T.
10:10-10:40	Coffee break
	XII. EPR applications and method developments. Chairs: Hitoshi Ohta & Boris Epel
10:40-11:05	Hitoshi Ohta, Kobe University, Japan Developments of Multi-Extreme THz ESR: towards the biological application.
11:05-11:30	Jens Niklas, Argonne National Laboratory, IL , USA Multi-frequency EPR of bio-hybrid systems for hydrogen production.
11:30-11:55	Jason Sidabras, Max Planck Institute, Germany Multi-frequency resonator development.
11:55-12:20	Alexander Stolin, WVU, USA A prototype combined PET-EPRI scanner: initial testing.

Friday, July 21 (continued...)

12:20-12:45	Maxim Voinov, NCSU, USA EPR of ionizable nitroxides at cryogenic temperatures: pros and cons.
13:00-14:00	Lunch
	XIII. Selected oral presentations. Chairs: Andrey Bobko & Lawrence Berliner
14:00-14:20	Stephen DeVience, University of Maryland, USA Metabolic imaging of energy metabolism in traumatic brain injury using hyperpolarized [1-13C]pyruvate.
14:20-14:40	Agnieszka Drzał, Jagiellonian University, Krakow, Poland Oxygen release by ultrasound sensitive O ₂ microbubbles in solution and in vivo: temporal study.
14:40-15:00	Maximilian Groening, Univ. Halle-Wittenberg, Germany Optimization of particulate sensors for EPR oximetry.
15:00-15:20	Wilson Schreiber, Dartmouth, USA Technical improvements for practical in vivo Oximetry Measurements.
15:20-15:40	Closing Ceremony