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# Nitric Oxide Biochemistry in Mammalian, Plant and Microbial Systems

February 18 - 19, 2017

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## Chairs

Courtney E. Sparacino Watkins and Filip Larsen

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## Ventura Beach Marriott

2055 Harbor Boulevard

Ventura, CA, US

## Conference Description

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Conference Overview: The Gordon Research Seminar (GRS) is a unique forum for graduate students, post-docs, and other scientists with comparable levels of experience and education to present and exchange new data and cutting edge ideas. All GRS attendees are expected to actively participate by giving an oral presentation or presenting a poster. Attendees are strongly encouraged to attend the preceding Gordon Research Conference (GRC) on nitric oxide at the same venue. The GRS compliments the GRC, occurring at the same venue and immediately preceding the GRC, but caters to students and early career investigators. GRS offers scientific, career, and leadership opportunity for early phase investigators, elaborated below.

Scientific component: The first GRS on Nitric Oxide (NO) will be held on **February 18-19, 2017** in Ventura CA and will explore NO biochemistry in mammalian, plant, and microbial systems. While the molecular mechanisms of NO production, metabolism, and function differ among in living organisms, understanding NO biochemistry in multiple systems can offer invaluable insights. The goal of the 2017 GRS on NO is to broaden our understanding of the NO molecule by connecting researchers from diverse research backgrounds.

The GRS on NO will consist of four sessions: The conference will begin with a keynote lecture (Session 1) from Professor Serpil Erzurum, an international expert in nitric oxide in lung physiology and pathophysiology. The subsequent two scientific session will focus on NO biochemistry. Session 2 will focus on nitric oxide biosynthesis, transformation, and function in physiology and pathophysiology. Session 3 will focus the molecular mechanisms of nitric oxide formation and signaling and the methodology used to study NO. Both sessions will feature oral and poster presentations by GRS



attendees. Posters will be displayed in an adjacent lecture hall throughout the conference, in an effort to facilitate discussion among attendees. The GRS will conclude with a career development seminar (Session 4), elaborated below.

**Career Development Component:** Session 4 is dedicated to career development and will focus on *how to complete an effective and efficient research fellowship*. Instead of the traditional lecture format, we organized a panel of established investigators and mentors (Drs. Rakesh Patel, Victor Darley-Usmar, Miriam Cortese-Krott, and Serpil Erzurum) to answer questions proposed by the GRS audience. Please come prepared to ask questions on career development and participate in this informative and inclusive group discussion.

**Leadership:** Because this is the first GRS on NO, we must establish a group of early career investigators in the NO field to carry on the GRS tradition by organizing subsequent conferences. Elections for the 2019 NO GRS co-chairs will be conducted during the 2017 conference. Every attendee will have the opportunity to vote for the next NO GRS co-chairs. Additionally, individuals interested in soliciting funds for the GRS, leveraging social media, and acting as discussion leaders, are encouraged to contact the GRS chairs.

## Related Meeting



This GRS will be held in conjunction with the "Nitric Oxide" Gordon Research Seminar (GRS). Those interested in attending both meetings must submit an application for the GRC in addition to an application for the GRS. Refer to the [associated GRC program page](#) for more information.

## Conference Program

Saturday	
2:00 pm - 5:00 pm	Arrival and Check-in
3:30 pm - 3:45 pm	Introductory Comments by GRC Site Staff / Welcome from the GRS Chair
3:45 pm - 4:30 pm	<b>Keynote Session: Nitric Oxide in Lung Physiology and Pathophysiology</b> <i>This session features a keynote lecture from Professor Serpil Erzurum, an international expert in nitric oxide in lung physiology and pathophysiology.</i> Discussion Leader: <b>Carl Koch</b> (University of Pittsburgh, USA)




3:45 pm - 4:15 pm	<b>Serpil Erzurum</b> (The Cleveland Clinic Foundation , USA) "Nitric Oxide in Lung Physiology and Pathophysiology"
4:15 pm - 4:30 pm	Discussion
4:30 pm - 6:00 pm	<b>Poster Session</b>
6:00 pm - 7:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Nitric Oxide Biosynthesis, Transformation, and Function</b> <i>This session will focus on NO biosynthesis, transformation, and function in humans and animal models of human disease.</i> Discussion Leaders: <b>Matthew Amdahl</b> (University of Pittsburgh, USA) and <b>Kenneth Childers</b> (University of Maryland, Baltimore County, USA)
7:30 pm - 7:45 pm	<b>Haitham Amal</b> (Massachusetts Institute of Technology, USA) "Reprogramming the SNO-Proteome in the Brain of the Shank3-KO Model of Autism Spectrum Disorder"
7:45 pm - 7:50 pm	Discussion
7:50 pm - 8:05 pm	<b>Vanessa Kress</b> (University of Cologne, Germany) "Regulation of GABA <sub>A</sub> Receptor Clustering by Gephyrin S-Nitrosylation and Dynein Light Chain"
8:05 pm - 8:10 pm	Discussion
8:10 pm - 8:25 pm	<b>Zixue Jin</b> (Baylor College of Medicine, USA) "Argininosuccinate Lyase Deficiency as a Model to Study Nitric Oxide Function in Bone"
8:25 pm - 8:30 pm	Discussion
8:30 pm - 8:45 pm	<b>Pallavi Bhargava</b> (University of Arizona, USA) "Characterization of Soluble Guanylyl Cyclase Induced Mitochondrial Biogenesis in Ischemia/Reperfusion Induced Acute Kidney Injury"
8:45 pm - 8:50 pm	Discussion



8:50 pm - 9:05 pm	<b>Prattusha Sengupta</b> (AU-KBC Research Centre, Anna University, India) "Enhancing Shelf Life of Stored Red Blood Cells with Nitric Oxide"
9:05 pm - 9:10 pm	Discussion
9:10 pm - 9:25 pm	<b>Shuai Yuan</b> (LSU Health Sciences Center Shreveport, USA) "Cystathionine Gamma-Lyase Modulates Flow-Dependent Vascular Remodeling"
9:25 pm - 9:30 pm	Discussion
<b>Sunday</b>	
7:30 am - 8:30 am	Breakfast
9:00 am - 11:00 am	<b>Biochemical Mechanisms and Methods</b> <i>This session will focus the molecular mechanisms of nitric oxide formation and signaling, as well as NO detection methodology.</i> Discussion Leaders: <b>Mauro Tiso</b> (American University, USA) and <b>Haitham Amal</b> (Massachusetts Institute of Technology, USA)
9:00 am - 9:15 am	<b>Luisa Maia</b> (Research Unit on Applied Molecular Biosciences (UCIBIO), REQUIMTE / Universidade Nova de Lisboa, Portugal) "Nitrite Reduction by Molybdoenzymes: A Ubiquitous Pathway to Generate Nitric Oxide"
9:15 am - 9:20 am	Discussion
9:20 am - 9:35 am	<b>Danielle Guimaraes</b> (University of Pittsburgh, USA) "Nitrite Inhibits Mitochondrial Phosphodiesterase and Activates cAMP-PKA-AKAP1 Signaling to Modulate Mitochondrial Function and Cytoprotection in Normoxia"
9:35 am - 9:40 am	Discussion
9:40 am - 9:55 am	<b>Dominique Williams</b> (Stony Brook University, USA) "Nitric Oxide Regulation of Cyclic di-GMP Signaling and Biofilm Formation in <i>Agrobacterium vitis</i> "
9:55 am - 10:00 am	Discussion



10:00 am - 10:15 am	<b>Mauro Siragusa</b> (Goethe University Frankfurt, Germany) "Phosphorylation of eNOS on Tyrosine 656 Contributes to Endothelial Dysfunction <i>In Vivo</i> "
10:15 am - 10:20 am	Discussion
10:20 am - 10:35 am	<b>Alexandria Nichols</b> (University of Alabama at Birmingham, USA) "Improved Method of Oral Microbe Nitrate Reductase Activity Measurement "
10:35 am - 10:40 am	Discussion
10:40 am - 10:55 am	<b>Loruhama Delgado Rivera</b> (University of Illinois at Chicago, USA) "Discovery and Design of Inhibitors of H <sub>2</sub> S Synthesizing Enzymes"
10:55 am - 11:00 am	Discussion
11:00 am - 12:30 pm	<b>Poster Session</b> <i>Coffee will be served in the poster area from 11:00 am - 11:30 am</i>
12:30 pm - 1:30 pm	Lunch
1:30 pm - 2:30 pm	<b>Mentorship Component: How to Complete an Effective and Efficient Research Fellowship</b> <i>This session features a panel of established academic mentors (Drs. Erzurum, Patel, Cortese-Krott and Darley-Usmar) who will answer questions from the graduate student and post-doctoral GRS attendees. We will cover topics such as leadership, interviewing, and industry vs academia.</i> Discussion Leaders: <b>Shathiyah Kulandavelu</b> (Interdisciplinary Stem Cell Institute, University of Miami, USA) and <b>Taiming Liu</b> (Loma Linda University, USA)
1:30 pm - 2:30 pm	<b>Panel Discussion</b> <i>How to Complete an Effective and Efficient Research Fellowship</i> <ul style="list-style-type: none"> <li>• <b>Victor Darley-Usmar</b> (University of Alabama at Birmingham, USA)</li> <li>• <b>Serpil Erzurum</b> (The Cleveland Clinic Foundation , USA)</li> <li>• <b>Rakesh Patel</b> (University of Alabama at Birmingham, USA)</li> <li>• <b>Miriam Cortese-Krott</b> (Heinrich Heine University Dusseldorf, Germany)</li> </ul> 

2:30 pm - 3:00 pm	<b>Evaluation Period</b> <i>Fill in GRS Evaluation Forms</i>
3:00 pm	Seminar Concludes

## Contributors

 <b>KENAN INSTITUTE</b> <small>ENGINEERING, TECHNOLOGY &amp; SCIENCE</small> <b>NC STATE UNIVERSITY</b>	 <b>Predominantly Undergraduate Institution Fund (PUI)</b>	 <b>National Institutes of Health</b> <small>Turning Discovery Into Health</small>
 <small>PITTSBURGH HEART, LUNG, AND BLOOD</small> <b>vmi</b> <small>VASCULAR MEDICINE INSTITUTE</small>		

