



Expanding the Relevance of Photosynthesis Research for the Next Generation of Plant Scientists

April 29 - 30, 2017

Chairs

Berkley J. Walker and Yu Wang

Renaissance Tuscany Il Ciocco

Via Giovanni Pascoli

Lucca (Barga), IT

Conference Description

The Gordon Research Seminar on CO₂ Assimilation in Plants from Genome to Biome 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.

There has been recent major investment towards increasing CO₂ assimilation and yield by improving our understanding of assimilation pathways, screening natural and cultivated varieties for elite traits, exploring plant interactions with the environment and quantifying CO₂ gas exchange from the leaf to the canopy level. This investment has not only produced exciting discoveries regarding the fundamental function and potential of photosynthesis, but has also inspired a fresh generation of researchers hungry to contribute in unique ways to our future understanding of plant biology. This Gordon Research Seminar is devoted to both reporting advances in "Grand Challenge" efforts focused on re-designing photosynthesis as well as highlighting novel and unexpected directions for future photosynthesis research. Speakers will be selected based on how much the reported work advances "Grand Challenge" goals for increasing photosynthetic efficiency or expands the relevance of photosynthesis in novel and unexpected ways.

Funding Notice: The CO₂ Assimilation Chairs are committed to increasing diversity at the GRS and GRC and have therefore set aside funds to support the participation of eligible underrepresented minority students, faculty and scientists. More information including application is available at

<http://bit.ly/2eL2X4v>.

Related Meeting





This GRS will be held in conjunction with the "CO₂ Assimilation in Plants from Genome to Biome" Gordon Research Conference (GRC). 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	
1:30 pm - 4:30 pm	Arrival and Check-in
3:00 pm - 3:15 pm	Introductory Comments by GRC Site Staff / Welcome from the GRS Chair
3:15 pm - 4:00 pm	Keynote Session: Insights into the Present and Future of Global Agriculture Discussion Leader: Yu Wang (University of Illinois, USA)
3:15 pm - 3:45 pm	Maricelis Acevedo (Cornell University, USA) "The Future of Agriculture: How Will You Have Impact?"
3:45 pm - 4:00 pm	Discussion
4:00 pm - 5:30 pm	Poster Session
5:30 pm - 7:30 pm	Progress in Advancing the Grand Challenges of Photosynthesis Research Discussion Leader: Douglas Orr (Lancaster University, United Kingdom)
5:30 pm - 5:50 pm	Sanu Shameer (University of Oxford, United Kingdom) "A Diel Constraint-Based Modelling Approach to Study Photosynthesis"
5:50 pm - 6:00 pm	Discussion



6:00 pm - 6:20 pm	Susanna Boxall (University of Liverpool, United Kingdom) "Phenotypic Consequences of Silencing the Primary Nocturnal Carboxylase and Its Circadian Phospho-Regulator in the Crassulacean Acid Metabolism Model <i>Kalanchoë</i> "
6:20 pm - 6:30 pm	Discussion
6:30 pm - 6:50 pm	Coralie Salesse-Smith (Boyce Thompson Institute, Cornell University, USA) "Overexpression of Rubisco Chaperones and Subunits Increases Rubisco Content and CO ₂ Assimilation in Maize"
6:50 pm - 7:00 pm	Discussion
7:00 pm - 7:20 pm	Florian Busch (The Australian National University, Australia) and Johannes Kromdijk (University of Illinois at Urbana-Champaign, USA) "New Perspectives on Mesophyll Conductance"
7:20 pm - 7:30 pm	Discussion
8:00 pm - 9:00 pm	Dinner
Sunday	
7:30 am - 8:30 am	Breakfast
9:00 am - 11:00 am	New Directions and Innovations in Understanding Carbon and Water Exchange Discussion Leader: Steven Driever (Wageningen University, The Netherlands)
9:00 am - 9:20 am	Shyam Pariyar (University of Bonn, Germany) "Do Aerosols Affect the Stomatal Responses to Humidity and Increased CO ₂ ?"
9:20 am - 9:30 am	Discussion
9:30 am - 9:50 am	Dianne Pater (University of California, San Diego, USA) "Examining Natural Variation in Water Use Efficiency Traits in Diverse Accessions of <i>Brassica napus</i> L"
9:50 am - 10:00 am	Discussion



10:00 am - 10:20 am	Pauline Lemonnier (University of Illinois at Urbana-Champaign, USA) "Does Phloem Loading Influence Plant Photosynthetic Responses to Elevated Atmospheric [CO ₂]?"
10:20 am - 10:30 am	Discussion
10:30 am - 10:50 am	Meisha Holloway-Phillips (Australian National University, Australia) "Applications with d18O CO ₂ : How Well Do Our Assumptions Hold?"
10:50 am - 11:00 am	Discussion
11:00 am - 12:30 pm	Poster Session <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	Mentorship Component: Career Panel Discussion Leader: Berkley Walker (Heinrich Heine University Düsseldorf, Germany)
1:30 pm - 2:30 pm	Panel Discussion <i>Now What? Career Options Inside and Out of the Ivory Tower</i> <ul style="list-style-type: none"> • Anna Armstrong (Nature Publishing Group, United Kingdom) • Alexander Galle (Bayer CropScience NV, Belgium) • Stephen Long (University of Illinois at Urbana-Champaign, USA) • Elsie Randall (Lawrence Berkeley National Laboratory, USA) • Joy Ward (University of Kansas, USA)
2:30 pm - 3:00 pm	Evaluation Period <i>Fill in GRS Evaluation Forms</i>
3:00 pm	Seminar Concludes

Contributors



 <p>Gordon Research Conferences</p>		 <p>International Society of Photosynthesis Research</p>
 <p>METER ENVIRONMENT</p>	 <p>ARC CENTRE OF EXCELLENCE FOR translational photosynthesis</p>	<p>FUNCTIONAL PLANT BIOLOGY</p>
 <p>CONVIRON Building Partnerships Creating Solutions</p>	 <p>CEPLAS Cluster of Excellence on Plant Sciences</p>	<p>WALZ</p>
	<p>LI-COR</p>	

