



GORDON RESEARCH CONFERENCES

FINAL PROGRESS REPORT

US Department of Energy
Photosynthesis GRC/GRS

Grant Number DE-SC0017600

July 15-21, 2017

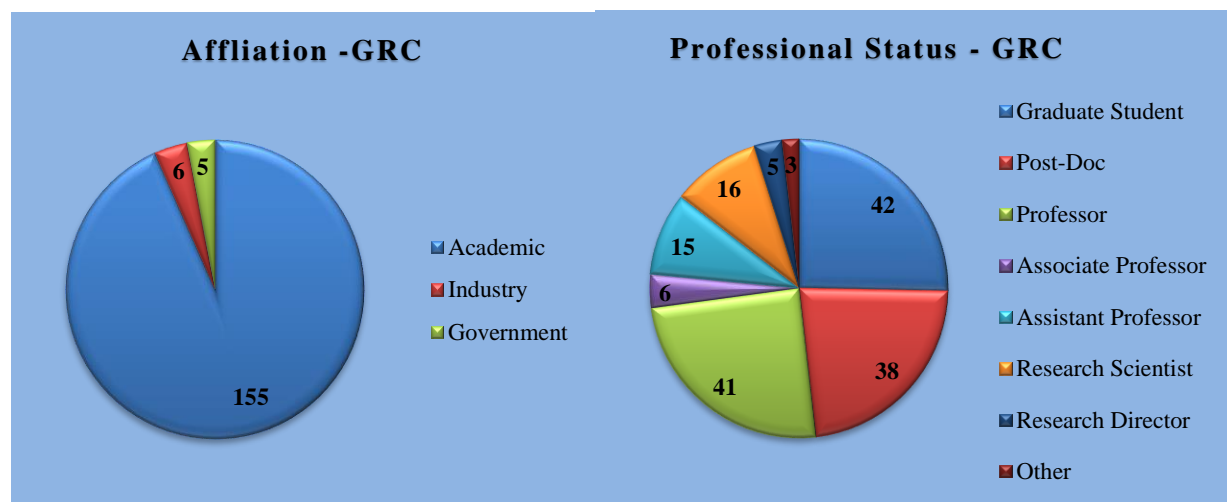
Operational Summary

The Gordon Research Conference (GRC) and Gordon Research Seminar (GRS) on Photosynthesis were held at the Sunday River Conference Center in Newry, Maine from July 15-21, 2017. The meeting covered a variety of scientific topics and the content presented was highly rated by participants.



Conference Participants

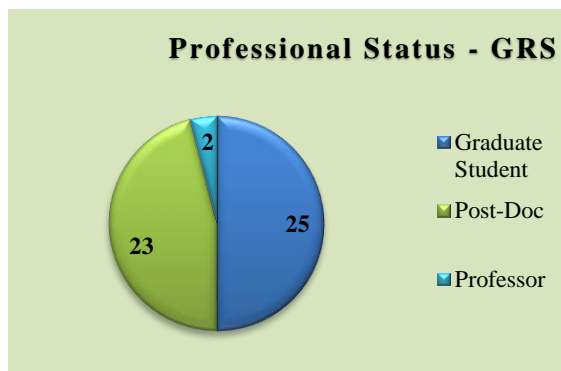
The Conference was well-attended with 166 participants. Scientists from academia represented 93% of the participants while attendees from government accounted for 3% and those from industry totaled 4%. The meeting also attracted a strong mix of young investigators and senior scientists. Students and post-docs accounted for 48% of all attendees. Approximately 37% of the participants at the 2017 meeting were women.



Gordon Research Seminars

Seminar Participants

The Seminar was well-attended with 50 participants. Scientists from academia represented 100% of the participants. Students and post docs combined accounted for 96% of all attendees. Approximately 58% of the participants at the 2017 seminar were women.



Conference Program

Photosynthesis is a process in which the energy of sunlight is captured to oxidize H₂O and to generate chemical bond energy in the form of ATP and reducing equivalents that can be used to fix inorganic carbon (CO₂). But photosynthesis is continually being tailored over evolutionary time to function in different environments ranging from the near boiling waters of the hot springs to the frigid conditions of the arctic tundra, and to adjust or acclimate as conditions in a given environment fluctuate. In this GRC we explored photosynthetic mechanisms with a focus on the dynamic nature of this process, the ways in which it has adjusted to markedly different environmental conditions and potential ways it can be used to support the activities of man.

Conference Budget

Funding provided by the DOE supported partial registration for 9 postdocs, 2 graduate students, and 3 assistant professors at the GRC and partial registration for 7 graduate students and 9 postdocs at the GRS.

Conference Feedback

Participants had an opportunity to provide feedback at the end of the Conference. The feedback collected from the meeting was extremely positive. Evaluations included numerous positive remarks regarding the number of young speakers involved and the informal discussions onsite. Evaluations from the GRS included positive comments regarding the keynote discussions, posters, and talks.

GRC would like to thank the DOE for its continued support of the meetings. The contributions received have been critical to the success of the conferences and are having a measurable impact in advancing the frontiers of science worldwide.

Dr. Arthur Grossman, GRC Chair
Carnegie Institution for Science

Dr. Shai Saroussi, GRS Chair
Carnegie Institution for Science

Dr. Nancy Ryan Gray
President and Chief Executive Officer
Gordon Research Conferences

Photosynthesis

Gordon Research Conference

Photosynthetic Plasticity: From the Environment to Synthetic Systems

July 16 - 21, 2017

Chair Arthur R. Grossman/Vice Chair Petra Fromme

Grand Summit Hotel at Sunday River

97 Summit Road

Newry, Maine, US

Conference Program

Sunday

2:00 pm - 9:00 pm Arrival and Check-in

6:00 pm - 7:00 pm Dinner

7:30 pm - 7:40 pm Introductory Comments by GRC Site Staff / Welcome from the GRC Chair

7:40 pm - 9:30 pm **Keynote Session: Diel Cycle, Redox and Photosynthetic Control**

Discussion Leader: **Michel Goldschmidt-Clermont** (University of Geneva, Switzerland)

7:40 pm - 7:50 pm Introduction by Discussion Leader

7:50 pm - 8:20 pm **Sabeeha Merchant** (University of California, Los Angeles, USA)

"A Day in the Life of *Chlamydomonas*"

8:20 pm - 8:30 pm Discussion

8:30 pm - 8:50 pm **Alizee Malnoe** (University of California, Berkeley, USA)

"Molecular Players of Sustained Energy Dissipation"

8:50 pm - 8:55 pm Discussion

8:55 pm - 9:15 pm **Giovanni Finazzi** (CEA Grenoble, France)

"New Regulators of Photosynthetic Electron Flow"

9:15 pm - 9:20 pm Discussion

9:20 pm - 9:30 pm General Discussion

Monday

7:30 am - 8:30 am Breakfast

9:00 am - 12:30 pm **The Translational Potential of Photosynthesis**

Discussion Leader: **David Savage** (University of California, Berkeley, USA)

9:00 am - 9:10 am Introduction by Discussion Leader

9:10 am - 9:30 am **Cheryl Kerfeld** (Michigan State University / Lawrence Berkeley National Laboratory, USA)

"Beyond Structure and Function: The Carboxysome and the OCP as Units of Evolution and Engineering in Cyanobacteria"

9:30 am - 9:40 am Discussion

9:40 am - 10:00 am **Karen Mulfort** (Argonne National Laboratory, USA)

"Understanding the Structural Factors Dictating Charge Transfer in Synthetic and Biohybrid Architectures for Artificial Photosynthesis"

10:00 am - 10:10 am Discussion

10:10 am - 10:40 am Coffee Break

10:40 am - 10:55 am **Jeffrey Cameron** (University of Colorado Boulder, USA)

"Mechanical Regulation of Photosynthesis"

10:55 am - 11:00 am Discussion

11:00 am - 11:15 am **Imre Vass** (Biological Research Centre, Hungarian Academy of Sciences, Hungary)

"Computer Assisted Modeling of Photosynthetic Electron Transport in Cyanobacteria"

11:15 am - 11:20 am Discussion

11:20 am - 11:35 am **Silvia Ramundo** (University of California, San Francisco, USA)

"Transcriptional Activation of the Chloroplast Unfolded Protein Response Requires the Protein Kinase MARS1"

11:35 am - 11:40 am Discussion

11:40 am - 12:00 pm General Discussion

12:00 pm - 12:30 pm Poster Previews

12:30 pm - 1:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm **Poster Session**

6:00 pm - 7:00 pm Dinner

7:30 pm - 9:30 pm **Light Harvesting Complexes and Membrane Organization**

Discussion Leader: **Roberta Croce** (Vrije Universiteit Amsterdam, The Netherlands)

7:30 pm - 7:40 pm Introduction by Discussion Leader

- 7:40 pm - 8:00 pm **Zhenfeng Liu** (Chinese Academy of Sciences, China)
 "Structural Insights into Light Harvesting and Its Regulation in Plants"
- 8:00 pm - 8:10 pm Discussion
- 8:10 pm - 8:30 pm **Jun Minagawa** (National Institute for Basic Biology, Japan)
 "Acclimation of Photosynthetic Light-Harvesting in Nature"
- 8:30 pm - 8:40 pm Discussion
- 8:40 pm - 9:00 pm **Benjamin Engel** (Max Planck Institute of Biochemistry, Germany)
 "Native Molecular Architecture of the Chloroplast"
- 9:00 pm - 9:05 pm Discussion
- 9:05 pm - 9:15 pm **Maria Borisova-Mubarakshina** (Institute of Basic Biological Problems, Russian Academy of Sciences, Russia)
 "STN7 Kinase at the Crossroad Between Short-Term and Long-Term Acclimation: Potential Renewal of State Transitions After Completing the Long-Term Acclimation to High Light Conditions"
- 9:15 pm - 9:20 pm Discussion
- 9:20 pm - 9:30 pm General Discussion

Tuesday

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 12:30 pm **Carbon Metabolism and Alternative Electron Flow**
 Discussion Leader: **Rebekka Wachter** (Arizona State University, USA)
- 9:00 am - 9:10 am Introduction by Discussion Leader
- 9:10 am - 9:30 am **Matthew Posewitz** (Colorado School of Mines, USA)
 "Photosynthesis and Metabolic Partitioning in Salt Water Algae"
- 9:30 am - 9:40 am Discussion
- 9:40 am - 10:00 am **Pierre Cardol** (University of Liege, Belgium)
 "Evolution of Photosynthetic Electron Transfer Components in Secondary Alga *Euglena gracilis*"
- 10:00 am - 10:10 am Discussion
- 10:10 am - 10:40 am Coffee Break
- 10:40 am - 11:00 am **Moritz Meyer** (Princeton University, USA)
 "Dynamic Remodelling and Regulation of the CO₂-Fixing Micro-Compartment in

Chlamydomonas reinhardtii"

11:00 am - 11:10 am Discussion

11:10 am - 11:25 am **Christopher Gee** (University of California, Berkeley, USA)

"Determining the Molecular Mechanisms of Carbon Fixation in the Heterokont Algae,
Nannochloropsis oceanica"

11:25 am - 11:30 am Discussion

11:30 am - 11:45 am **Oliver Mueller-Cajar** (Nanyang Technological University, Singapore)

"Exploring the Diversity of Rubisco Activation Proteins"

11:45 am - 11:50 am Discussion

11:50 am - 12:05 pm **Shai Saroussi** (Carnegie Institution for Science, USA)

"Photosynthetic Flexibility During the Elimination of Major Sinks for Electrons"

12:05 pm - 12:10 pm Discussion

12:10 pm - 12:30 pm General Discussion

12:30 pm - 1:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm **Poster Session**

6:00 pm - 7:00 pm Dinner

7:30 pm - 9:30 pm **The Evolution of Photosynthetic Function**

Discussion Leader: **Christopher Howe** (University of Cambridge, United Kingdom)

7:30 pm - 7:40 pm Introduction by Discussion Leader

7:40 pm - 8:00 pm **Jan de Vries** (Dalhousie University, Canada)

"Of Stolen Plastids and the Evolution of Streptophyte Plastid-Nucleus Communication"

8:00 pm - 8:10 pm Discussion

8:10 pm - 8:30 pm **Eva Nowack** (Heinrich Heine University Düsseldorf, Germany)

"*Paulinella chromatophora* – Converting a Cyanobacterial Endosymbiont into a Full-Fledged
Photosynthetic Organelle"

8:30 pm - 8:40 pm Discussion

8:40 pm - 9:00 pm **Vasco Giovagnetti** (Queen Mary University of London, United Kingdom)

"The Dynamic Interplay Between Photoprotection and Photoinhibition in Photosynthetic
Organisms"

9:00 pm - 9:10 pm Discussion

9:10 pm - 9:30 pm General Discussion

Wednesday

7:30 am - 8:30 am Breakfast

8:30 am - 9:00 am Group Photo

9:00 am - 12:30 pm **Photosynthesis in the Environment**

Discussion Leader: **Barbara Demmig-Adams** (University of Colorado Boulder, USA)

9:00 am - 9:10 am Introduction by Discussion Leader

9:10 am - 9:30 am **Sarah Smith** (J. Craig Venter Institute, USA)

"Iron Limited Photosynthesis and Carbon Metabolism over Diel Cycles in *Phaeodactylum tricornutum*"

9:30 am - 9:40 am Discussion

9:40 am - 10:00 am **Katherine Mackey** (University of California, Irvine, USA)

"Shedding Light on *Synechococcus*: How Photosynthetic Adaptations Give Rise to Biogeographical Patterns in the Ocean"

10:00 am - 10:10 am Discussion

10:10 am - 10:30 am Coffee Break

10:30 am - 10:50 am **Devaki Bhaya** (Carnegie Institution for Science, USA)

"Functional and Genomic Diversity in Phototrophic Microbial Communities"

10:50 am - 11:00 am Discussion

11:00 am - 11:20 am **William Adams** (University of Colorado Boulder, USA)

"Photosynthetic Upregulation Relies on Increased Capacity for Foliar Sugar Export"

11:20 am - 11:30 am Discussion

11:30 am - 11:45 am **Maria Ermakova** (Australian National University, Australia)

"Photosynthetic Control by Cytochrome b6f Complex in C4 Model Plant *Setaria viridis*"

11:45 am - 11:50 am Discussion

11:50 am - 12:00 pm General Discussion

12:00 pm - 12:30 pm Poster Previews

12:30 pm - 1:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm **Poster Session**

6:00 pm - 7:00 pm Dinner

7:00 pm - 7:30 pm **Business Meeting**

Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair

7:30 pm - 9:30 pm **Control of Photosynthetic Processes**

Discussion Leader: **David Kramer** (Michigan State University, USA)

7:30 pm - 7:40 pm Introduction by Discussion Leader

7:40 pm - 8:05 pm **Francis-Andre Wollman** (Institut de Biologie Physico-Chimique (IBPC), CNRS, France)

"Contributions of Functional Studies to the Understanding of Structural Features in Photosynthesis"

8:05 pm - 8:15 pm Discussion

8:15 pm - 8:35 pm **Gilles Peltier** (CEA Cadarache / CNRS / Aix Marseille University, France)

"Interplay Between Oxygen Photoreduction Pathways and the Regulation of Photosynthetic Electron Transport"

8:35 pm - 8:45 pm Discussion

8:45 pm - 9:05 pm **Dimitris Petroustos** (CEA Grenoble, France)

"Light and Carbon Metabolism-Dependent Regulation of Photoprotection"

9:05 pm - 9:15 pm Discussion

9:15 pm - 9:30 pm General Discussion

Thursday

7:30 am - 8:30 am Breakfast

9:00 am - 12:30 pm **Reaction Centers: Structure, Function and Dynamics**

Discussion Leader: **Nathan Nelson** (Tel Aviv University, Israel)

9:00 am - 9:10 am Introduction by Discussion Leader

9:10 am - 9:30 am **Junko Yano** (Lawrence Berkeley National Laboratory, USA)

"X-Ray Crystallography and X-Ray Spectroscopy of the Water Oxidation Reaction in Photosystem II"

9:30 am - 9:40 am Discussion

9:40 am - 10:00 am **Yuval Mazor** (The Biodesign Institute, Arizona State University, USA)

"Structure Function Studies of the Cyanobacterial Photosystem I Complex"

10:00 am - 10:10 am Discussion

10:10 am - 10:30 am Coffee Break

10:30 am - 10:50 am **Jian-Ren Shen** (Okayama University, Japan)

"Mechanism of Photosynthetic Water-Splitting from a Structural Point of View"

10:50 am - 11:00 am Discussion

11:00 am - 11:20 am **Raimund Fromme** (Arizona State University, USA)

"The High Resolution Structure of the *Heliobacterium modesticaldum* - A Different Reaction Centre"

11:20 am - 11:30 am Discussion

11:30 am - 11:50 am **Genji Kurisu** (Osaka University, Japan)

"X-Ray Structure of the Type-I Reaction Center from *Heliobacterium modesticaldum* at 3.2 Å Resolution"

11:50 am - 12:00 pm Discussion

12:00 pm - 12:15 pm **Usha Lingappa** (California Institute of Technology, USA)

"Manganese and the Evolution of Photosystem II"

12:15 pm - 12:20 pm Discussion

12:20 pm - 12:30 pm General Discussion

12:30 pm - 1:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 5:30 pm **Poster Session**

5:30 pm - 7:30 pm **Keynote Session: Developing and Implementing New Approaches**

Discussion Leader: **Robert Blankenship** (Washington University in St. Louis, USA)

5:30 pm - 5:40 pm Introduction by Discussion Leader

5:40 pm - 6:10 pm **W.E. Moerner** (Stanford University, USA)

"What Can We Learn from Single-Molecule Imaging and Trapping? From Super-Resolution Microscopy to Multivariate Photodynamics of Individual Pigment-Proteins in Solution"

6:10 pm - 6:20 pm Discussion

- 6:20 pm - 6:40 pm **Gabriela Schlau-Cohen** (Massachusetts Institute of Technology, USA)
 "Dynamics of Photosynthetic Light Harvesting: From Conformational Changes to Excitation Energy Transfer"
- 6:40 pm - 6:45 pm Discussion
- 6:45 pm - 6:55 pm **Vivek Tiwari** (University of Michigan, USA)
 "Two Dimensional Fluorescence Detected Electronic Spectroscopy for Spatially Resolved and Subassemble Measurements"
- 6:55 pm - 7:00 pm Discussion
- 7:00 pm - 7:10 pm **Setsuko Wakao** (University of California, Berkeley, USA)
 "Dissection of Reactive Oxygen Species-Specific Response During High Light Shift by Comparative Transcriptome Analysis"
- 7:10 pm - 7:15 pm Discussion
- 7:15 pm - 7:25 pm **Han Bao** (Michigan State University, USA)
 "Functional Characterization of a New Family of Orange Carotenoid Proteins"
- 7:25 pm - 7:30 pm Discussion
- 8:00 pm - 9:00 pm Dinner

Friday

- 7:30 am - 8:30 am Breakfast
- 9:00 am Departure

Contributors

Photosynthesis (GRS)
Gordon Research Seminar

Decoding the Dynamic Nature of Photosynthesis: Sensing, Regulation, and Remodeling

July 15 - 16, 2017

Chairs Shai Saroussi and Silvia Ramundo

Grand Summit Hotel at Sunday River
97 Summit Road
Newry, Maine, US

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 **Keynote Session: Regulating the Dynamics of Photosynthesis**
Discussion Leader: **Silvia Ramundo** (University of California, San Francisco, USA)
- 3:45 pm - 3:50 pm Introduction by Discussion Leader
- 3:50 pm - 4:20 pm **Roberta Croce** (Vrije Universiteit Amsterdam, The Netherlands)
"Breaking the Dogma: Oxygenic Photosynthesis Without Carotenoids"
- 4:20 pm - 4:30 pm Discussion
- 4:30 pm - 6:00 pm **Poster Session**
- 6:00 pm - 7:00 pm Dinner
- 7:30 pm - 9:30 pm **Photosynthesis and the Environment**
Discussion Leader: **Hila Toporik** (Arizona State University, USA)
- 7:30 pm - 7:35 pm Introduction by Discussion Leader
- 7:35 pm - 7:50 pm **Han Bao** (Michigan State University, USA)
"Functional Characterization of a New Family of Orange Carotenoid Proteins"
- 7:50 pm - 7:55 pm Discussion
- 7:55 pm - 8:10 pm **Nicoletta Liguori** (Vrije Universiteit Amsterdam, The Netherlands)
"Different Carotenoid Conformations Have Distinct Functions in Light Harvesting Regulation in Plants"
- 8:10 pm - 8:15 pm Discussion

- 8:15 pm - 8:30 pm **Cynthia Amstutz** (University of California, Berkeley, USA)
 "OTK1 Regulates CHL-Dependent Non-Photochemical Quenching in *Arabidopsis thaliana*"
- 8:30 pm - 8:35 pm Discussion
- 8:35 pm - 8:50 pm **Ming-Yang Ho** (Pennsylvania State University, USA)
 "Remodeling of Photosynthetic Complexes in Far-Red Light"
- 8:50 pm - 8:55 pm Discussion
- 8:55 pm - 9:10 pm **Christopher Gisriel** (Arizona State University, USA)
 "Structure of a Homodimeric Photosynthetic Reaction Center"
- 9:10 pm - 9:15 pm Discussion
- 9:15 pm - 9:30 pm General Discussion

Sunday

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 11:00 am **Integration of Photosynthesis with Metabolism and Alternative Electron Flow**
 Discussion Leader: **Shai Saroussi** (Carnegie Institution for Science, USA)
- 9:00 am - 9:05 am Introduction by Discussion Leader
- 9:05 am - 9:20 am **Karen Zinzius** (University of Muenster, Germany)
 "Importance of Calredoxin for Stress Acclimation and Fine-Tuning of Photosynthesis"
- 9:20 am - 9:25 am Discussion
- 9:25 am - 9:40 am **Felix Buchert** (Institut de Biologie Physico-Chimique Paris, France)
 "A Gamma-Subunit Point Mutation of F₁F_o ATP Synthase Results in Tolerance to Reactive Oxygen Species *In Vitro* and in *Chlamydomonas reinhardtii* Chloroplasts"
- 9:40 am - 9:45 am Discussion
- 9:45 am - 10:00 am **Shivani Upadhyaya** (Tata Institute of Fundamental Research, India)
 "Cross-Talk Between TOR Kinase Activity, N-Starvation and Photosystems in *Chlamydomonas reinhardtii*"
- 10:00 am - 10:05 am Discussion
- 10:05 am - 10:20 am **Vivekanand Tiwari** (Weizmann Institute of Science, Israel)
 "Plastoquinol Terminal Oxidase (PTOX) Disulfide-State and Its Implications on Photosynthesis Regulation"
- 10:20 am - 10:25 am Discussion

10:25 am - 10:40 am **Juliana Artier** (Oklahoma State University, USA)

"Structure-Function Studies of the CO₂ Uptake Protein CupA of the NDH-13 Complex in Cyanobacteria"

10:40 am - 10:45 am Discussion

10:45 am - 11:00 am General Discussion

11:00 am - 12:30 pm **Poster Session**

Coffee will be served in the poster area from 11:00 am - 11:30 am

12:30 pm - 1:30 pm Lunch

1:30 pm - 2:30 pm **Synthetic Restructuring of Photosynthesis** Discussion Leader: **Marcia Ortega Ramos** (Pennsylvania State University, USA)

1:30 pm - 1:35 pm Introduction by Discussion Leader

1:35 pm - 1:50 pm **Jenny Zhang** (University of Cambridge, United Kingdom)

"Photochemical Performance of Photosystem II *In Vitro* vs *In Vivo*"

1:50 pm - 1:55 pm Discussion

1:55 pm - 2:10 pm **Vinzenz Bayro-Kaiser** (Tel Aviv University, Israel)

"Temperature-Sensitive PSII: A Novel Approach for Sustainable Photosynthetic Hydrogen Production"

2:10 pm - 2:15 pm Discussion

2:15 pm - 2:30 pm General Discussion

2:30 pm - 3:00 pm **Evaluation Period**

Fill in GRS Evaluation Forms

3:00 pm Seminar Concludes

Contributors

Photosynthesis GRC 2017

Name	Organization	Participation
Adams, William W	University of Colorado Boulder	Speaker
Allen, James P	Arizona State University	Poster Presenter
Amstutz, Cynthia L	University of California, Berkeley	Poster Presenter
Antoshvili Zilberman, Maya	Tel Aviv University	Poster Presenter
Artier, Juliana	Oklahoma State University	Poster Presenter
Avenson, Tom	LI-COR Biosciences	Poster Presenter
Azai, Chihiro	Ritsumeikan University	Poster Presenter
Bailey, Shaun	Synthetic Genomics	Attendee
Banerjee, Gourab	Yale University	Poster Presenter
Bao, Han	Michigan State University	Speaker
Bar-Zvi, Shira	Technion	Poster Presenter
Bayro-Kaiser, Vinzenz	Tel Aviv University	Poster Presenter
Bhaya, Devaki	Carnegie Institution for Science	Speaker
Blankenship, Robert E	Washington University in St. Louis	Discussion Leader
Blikstad, Cecilia	UC Berkeley	Attendee
Borisova-Mubarakshina, Maria	Russian Academy of Sciences	Speaker
Bricker, Terry M	Department of Biological Sciences	Poster Presenter
Buchert, Felix E	Institut de Biologie Physico-Chimique Paris	Poster Presenter
Burnap, Robert L	Oklahoma State University	Poster Presenter
Cameron, Jeffrey C	University of Colorado Boulder	Speaker
Canniffe, Daniel P	The Pennsylvania State University	Poster Presenter
Cardol, Pierre	University of Liege	Speaker
Cariani, Zev	Miami University	Poster Presenter
Chen, He	Rutgers, the State University of New Jersey	Poster Presenter
Coe, Jesse D	Arizona State University	Poster Presenter
Compton, Ashley	Massachusetts Institute of Technology	Poster Presenter
Cook, Gregory P	Miami University	Poster Presenter
Crisafi, Emanuela E	Leiden Institute of Chemistry, LIC	Poster Presenter
Croce, Roberta	Vrije Universiteit Amsterdam	Discussion Leader
Danon, Avihai	Weizmann Institute of Science	Poster Presenter
Dau, Holger	Free University Berlin, Physics Department	Poster Presenter
Davidi, Lital	UCLA	Poster Presenter
de Lichtenberg, Casper	Umea Universitet	Poster Presenter
de Vries, Jan	Dalhousie University	Speaker
Debus, Richard J	University of California, Riverside	Poster Presenter
Demmig-Adams, Barbara	University of Colorado Boulder	Discussion Leader
Discianno, Erin M	Arizona State University	Attendee
Dismukes, Charles	Rutgers University	Poster Presenter
Dobson, Zachary	ASU	Poster Presenter

Dominguez Martin, Maria A	Michigan State University	Poster Presenter
Dost, Maria	Humboldt Universitat zu Berlin	Poster Presenter
Eaton-Rye, Julian J	University of Otago	Poster Presenter
Egami, Yuki	Graduate school of Ritsumeikan University	Poster Presenter
Endelman, Benjamin	UC Berkeley	Poster Presenter
Engel, Benjamin	Max Planck Institute of Biochemistry	Speaker
Ennist, Nathan M	University of Pennsylvania	Poster Presenter
Ermakova, Maria	Australian National University	Speaker
Finazzi, Giovanni	CEA Grenoble	Speaker
Fromme, Petra	Arizona State University	Vice Chair
Fromme, Raimund	Arizona State University	Speaker
Fuciman, Marcel	University of South Bohemia	Poster Presenter
Fulgosi, Hrvoje	Institute Rudjer Boskovic	Poster Presenter
Gee, Christopher W	University of California, Berkeley	Speaker
Ghosh, Ipsita	Yale University	Poster Presenter
Giovagnetti, Vasco	Queen Mary University of London	Speaker
Gisriel, Christopher J	Arizona State University	Poster Presenter
Goldschmidt-Clermont, Michel	University of Geneva	Discussion Leader
Govindjee,	University of Illinois at Urbana-Champaign	Poster Presenter
Green, Beverley R	University of British Columbia	Poster Presenter
Grossman, Arthur R	Stanford University	Chair
Gunner, Marilyn	City College of New York	Attendee
Gwizdala, Michal	University of Pretoria	Poster Presenter
Haumann, Michael	Freie Universitaet Berlin	Poster Presenter
Herdean, Andrei G	Gothenburg University	Poster Presenter
Ho, Ming-Yang	Pennsylvania State University	Poster Presenter
Hou, Harvey Jian-Min	Alabama State University	Poster Presenter
Howe, Christopher	University of Cambridge	Discussion Leader
Huang, Jingcheng	Michigan State University	Poster Presenter
Ibrahim, Iskander IM	Purdue University	Poster Presenter
Ilik, Petr	Palacky University	Poster Presenter
Itoh, Shigeru	Nagoya University	Poster Presenter
Jones, Alex	Arizona State University	Attendee
Kalra, Isha	Miami University	Poster Presenter
Kanazawa, Atsuko	Michigan State University	Poster Presenter
Kayanja, Gilbert	Purdue University	Poster Presenter
Kerfeld, Cheryl	Michigan State University	Speaker
Koochak, Haniyeh	Institute of Biological Chemistry	Poster Presenter
Kozuleva, Marina	Tel Aviv University	Poster Presenter
Kramer, David	Michigan State University	Discussion Leader
Krishnan, Maithili	Leiden University	Poster Presenter

Kurashov, Vasily N	The Pennsylvania State University	Poster Presenter
Kurusu, Genji	Osaka University	Speaker
Kuzminov, Fedor	Synthetic Genomics	Poster Presenter
Lambert, William	Synthetic Genomics Inc	Poster Presenter
Levitan, Orly	Rutgers University	Poster Presenter
Li, Meng	Washington State University	Poster Presenter
Liguori, Nicoletta N	Vrije Universiteit Amsterdam	Poster Presenter
Lingappa, Usha	California Institute of Technology	Speaker
Liu, Zhenfeng	Chinese Academy of Sciences	Speaker
Lucker, Ben F	Michigan State University	Poster Presenter
Luna-Chavez, Cesar	Arizona State University	Attendee
Lyska, Dagmar A	UC Berkeley	Poster Presenter
Mackey, Katherine	University of California, Irvine	Speaker
Magdaong, Nikki M	Washington University in St. Louis	Poster Presenter
Malnoe, Alizee	University of California, Berkeley	Speaker
Mamedov, Fikret T	Uppsala University	Poster Presenter
Mandal, Manoj	CUNY	Poster Presenter
Marco, Pini	Tel Aviv University	Poster Presenter
Matta, Divya K	CUNY	Poster Presenter
Mazor, Yuval	The Biodesign Institute, Arizona State University	Speaker
Merchant, Sabeeha	University of California, Los Angeles	Speaker
Messinger, Johannes	Umea University	Poster Presenter
Meyer, Moritz	Princeton University	Speaker
Miller, Neil T	Oklahoma State University	Poster Presenter
Milrad, Yuval	Tel Aviv University	Poster Presenter
Minagawa, Jun	National Institute for Basic Biology	Speaker
Mitra, Mautusi	University of West Georgia	Poster Presenter
Moerner, W.E.	Stanford University	Speaker
Morgan-Kiss, Rachael	Miami University	Attendee
Morris, Jonathan M	University of California, Berkeley	Poster Presenter
Mueller-Cajar, Oliver M	Nanyang Technological University	Speaker
Mulfort, Karen L	Argonne National Laboratory	Speaker
Nawrocki, Wojciech J	VU Amsterdam	Poster Presenter
Nelson, Nathan	Tel Aviv University	Discussion Leader
Niederman, Robert A	Rutgers University	Poster Presenter
Nowack, Eva	Heinrich Heine University Duesseldorf	Speaker
Oh-Oka, Hirozo	Osaka University	Poster Presenter
Ortega Ramos, Marcia	Pennsylvania State University	Poster Presenter
Pace, Ronald J	Australian National University	Poster Presenter
Pakrasi, Himadri B	Washington University	Poster Presenter
Pandit, Anjali	Leiden University, Leiden Institute of Chemistry	Poster Presenter

Peltier, Gilles	CEA Cadarache / CNRS / Aix Marseille University	Speaker
Petroutsos, Dimitris	CEA Grenoble	Speaker
Posewitz, Matthew	Colorado School of Mines	Speaker
Puthiyaveetil, Sujith	Purdue University	Attendee
Ramanan, Charusheela	Max Planck Institute for Polymer Research	Poster Presenter
Ramundo, Silvia	University of California, San Francisco	Speaker
Rangsritkitphoti, Pattarasiri	University of New Brunswick	Poster Presenter
Redding, Kevin E	Arizona State University	Poster Presenter
Roy-Chowdhury, Shatabdi	Arizona State University	Poster Presenter
Ruiz-Sola, M. Aguila	CEA Grenoble	Poster Presenter
Sanz-Luque, Emanuel	Carnegie Institution for Science	Poster Presenter
Saper, Gadiel	Technion - Israel Institute of Technology	Poster Presenter
Saroussi, Shai	Carnegie Institution for Science	Speaker
Sato, Yoshihiro	Gettysburg College	Poster Presenter
Savage, David	University of California, Berkeley	Discussion Leader
Sawyer, Anne	Ruhr University Bochum	Poster Presenter
Schlau-Cohen, Gabriela S	Massachusetts Institute of Technology	Speaker
Schonborn, Matthias B	Freie Universitat Berlin	Poster Presenter
Shen, Jian-Ren	Okayama University	Speaker
Shen, Gaozhong	Pennsylvania State University	Poster Presenter
Simon, Philipp	Freie Universitat Berlin, Department of Physics	Poster Presenter
Smith, Sarah	J. Craig Venter Institute	Speaker
Sohail, Sara H	The University of Chicago	Attendee
Styring, Stenbjörn	Department of Chemistry-Ångström	Poster Presenter
Suga, Michi	Okayama University	Poster Presenter
Tiwari, Vivekanand	Weizmann Institute of Science	Poster Presenter
Tiwari, Vivek	University of Michigan	Speaker
Toporik, Hila	Arizona State University	Poster Presenter
Upadhyaya, Shivani A	Tata Institute of Fundamental Research	Poster Presenter
Utschig, Lisa M	Argonne National Laboratory	Poster Presenter
Vass, Imre	Hungarian Academy of Sciences	Speaker
Vaughn, Michael D	BioLogic USA	Attendee
Vinyard, David J.	Louisiana State University	Poster Presenter
Vo Pham, Long	Uppsala University	Poster Presenter
Wachter, Rebekka M	Arizona State University	Discussion Leader
Wakao, Setsuko	University of California, Berkeley	Speaker
Weissman, Joseph C	ExxonMobil Research & Engineering	Attendee
Wolf, Benjamin M	Washington University in St. Louis	Poster Presenter
Wollman, Francis-Andre	Institut de Biologie Physico-Chimique (IBPC), CNRS	Speaker
Wyber, Rhys	University of Wollongong	Poster Presenter
Yacoby, Iftach	TAU	Poster Presenter

Yano, Junko
Zhang, Jenny Z
Zhang, Ru
Zinzius, Karen

Lawrence Berkeley National Laboratory
University of Cambridge
Donald Danforth Plant Science Center
University of Muenster

Speaker
Poster Presenter
Attendee
Poster Presenter

Photosynthesis (GRS) (2017)

Name	Organization	Participation
Amstutz, Cynthia L	University of California, Berkeley	Speaker
Antoshvili Zilberman, Maya	Tel Aviv University	Poster Presenter
Artier, Juliana	Oklahoma State University	Speaker
Banerjee, Gourab	Yale University	Poster Presenter
Bao, Han	Michigan State University	Speaker
Bar-Zvi, Shira	Technion	Poster Presenter
Bayro-Kaiser, Vinzenz	Tel Aviv University	Speaker
Buchert, Felix E	Institut de Biologie Physico-Chimique Paris	Speaker
Canniffe, Daniel P	The Pennsylvania State University	Poster Presenter
Compton, Ashley	Massachusetts Institute of Technology	Poster Presenter
Crisafi, Emanuela E	Leiden Institute of Chemistry, LIC	Poster Presenter
Croce, Roberta	Vrije Universiteit Amsterdam	Speaker
Dominguez Martin, Maria Agustina	Michigan State University	Poster Presenter
Egami, Yuki	Graduate school of Ritsumeikan University	Poster Presenter
Ermakova, Maria	Australian National University	Poster Presenter
Ghosh, Ipsita	Yale University	Poster Presenter
Giovagnetti, Vasco	Queen Mary University of London	Speaker
Gisriel, Christopher J	Arizona State University	Speaker
Gwizdala, Michal	University of Pretoria	Poster Presenter
Ho, Ming-Yang	Pennsylvania State University	Speaker
Huang, Jingcheng	Michigan State University	Poster Presenter
Koochak, Haniyeh	Institute of Biological Chemistry	Poster Presenter
Krishnan, Maithili	Leiden University	Poster Presenter
Kurashov, Vasily N	The Pennsylvania State University	Poster Presenter
Levitan, Orly	Rutgers University	Poster Presenter
Li, Meng	Washington State University	Poster Presenter
Liguori, Nicoletta N	Vrije Universiteit Amsterdam	Speaker
Malnoe , Alizee	University of California, Berkeley	Poster Presenter
Marco, Pini	Tel Aviv University	Poster Presenter
Matta, Divya K	CUNY	Poster Presenter
Milrad, Yuval	Tel Aviv university	Poster Presenter
Morris, Jonathan M	University of California, Berkeley	Poster Presenter
Nawrocki, Wojciech J	VU Amsterdam	Poster Presenter
Ortega Ramos, Marcia	Pennsylvania State University	Discussion Leader
Ramundo, Silvia	University of California, San Francisco	Chair
Rangsritphoti, Pattarasiri	University of New Brunswick	Poster Presenter
Roy-Chowdhury, Shatabdi	Arizona State University	Poster Presenter
Sanz-Luque, Emanuel	Carnegie Institution for Science	Poster Presenter
Saper, Gadiel	Technion - Israel Institute of Technology	Poster Presenter

Saroussi, Shai	Carnegie Institution for Science	Chair
Sawyer, Anne	Ruhr University Bochum	Poster Presenter
Simon, Philipp	Freie Universitat Berlin, Department of Physics	Poster Presenter
Smith, Sarah	J. Craig Venter Institute	Poster Presenter
Sohail, Sara H	The University of Chicago	Poster Presenter
Tiwari, Vivekanand	Weizmann Institute of Science	Speaker
Toporik, Hila	Arizona State University	Discussion Leader
Upadhyaya, Shivani A	Tata Institute of Fundamental Research	Speaker
Vo Pham, Long	Uppsala University	Poster Presenter
Zhang, Jenny Z	University of Cambridge	Speaker
Zinzius, Karen	University of Muenster	Speaker