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**GORDON RESEARCH CONFERENCES** *frontiers of science*

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**Nancy Ryan Gray, Ph.D.**

Director

**2008 GORDON RESEARCH CONFERENCE  
on PHOTOSYNTHESIS**

**FINAL PROGRESS REPORT**

DEPARTMENT OF ENERGY  
GRANT NO. DE-FG02-08ER15951

The Gordon Research Conference on PHOTOSYNTHESIS was held at Mount Holyoke College, South Hadley, Massachusetts, June 22-27, 2008. The Conference was well-attended with 172 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students. Of the 172 attendees, 50 voluntarily responded to a general inquiry regarding ethnicity which appears on our registration forms. Of the 50 respondents, 20% were Minorities – 4% Hispanic, 14% Asian & 2% African American. Approximately 28% of the participants at the 2008 meeting were women.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. Attached is a copy of the formal schedule and speaker program and the poster program. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field.

Thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Sincerely,  
*Wim Vermaas, PI & Conference Chairperson*  
ARIZONA STATE UNIVERSITY

# PHOTOSYNTHESIS

June 22-27, 2008  
Mount Holyoke College  
South Hadley, MA  
Chair:

**Wim F.J. Vermaas**

Vice Chair:

**Doug Bruce**

## Related Meeting Information

The Photosynthesis Gordon Research Conference was held in conjunction with the **Photosynthesis Gordon-Kenan Research Seminar**. Please refer to the Photosynthesis GKRS web page for more information.

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Photosynthesis is the most prevalent, natural way to convert solar energy to chemical energy in living systems, and is a major mechanism to ameliorate rising CO<sub>2</sub> levels in the atmosphere and to contribute to sustainable biofuels production. Photosynthesis is a particularly interdisciplinary field of research, with contributions from plant and microbial physiology, biochemistry, spectroscopy, etc. The Photosynthesis GRC is a venue by which scientists with expertise in complementary approaches such as solar energy conversion, molecular mechanisms of electron transfer, and “systems biology” (molecular physiology) of photosynthetic organisms come together to exchange data and ideas and to forge new collaborations. The 2008 Photosynthesis GRC will focus on important new findings related to, for example:

- function, structure, assembly, degradation, motility and regulation of photosynthetic complexes
- energy and electron transfer in photosynthetic systems; regulation and rate limitations
- synthesis, degradation and regulation of cofactors (pigments, etc.)
- functional, structural and regulatory interactions between photosynthesis and the physiology of the organism
- organisms with unusual photosynthetic properties, and insights from metagenomics and evolution
- bioenergy strategies involving solar energy conversion, and practical applications for photosynthetic organisms

This Conference will be immediately preceded by a **Gordon Research Seminar on Photosynthesis** (June 21-22, 2008, at the same location). This GRS prior to the Conference is designed for and organized by graduate students and postdocs, and is a mechanism to further encourage active participation by younger scientists interested in photosynthesis and its applications.

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## Contributors



## SUNDAY

2:00 pm - 11:00 pm	Arrival and Check-in
6:00 pm	Dinner
7:30 pm - 7:40 pm	Welcome / Introductory Comments by GRC Site Staff
7:40 pm - 9:30 pm	<b>Perspectives on Bioenergy and Photosynthesis I</b> Discussion Leader: <b>Daniel Nocera</b> (Massachusetts Institute of Technology)
7:40 pm - 8:30 pm	<i>Alexander M. Cruickshank Lecture:</i> <b>Daniel Nocera</b> (Massachusetts Institute of Technology) "Make like a leaf - A roadmap to addressing the global energy challenge"
8:30 pm - 8:45 pm	Discussion
8:45 pm - 9:05 pm	<b>Matthew Posewitz</b> (Colorado School of Mines and National Renewable Energy Laboratory) "Hydrogen production in water-oxidizing, phototrophic organisms: examination of the metabolic pathways"
9:05 pm - 9:15 pm	Discussion
9:15 pm - 9:30 pm	General Discussion

## MONDAY

7:30 am - 8:30 am	Breakfast
8:45 am	Group Photo
9:00 am - 12:30 pm	<b>Energy Transfer and Quenching</b> Discussion Leader: <b>Krishna Niyogi</b> (University of California - Berkeley) "Introductory remarks"
9:00 am - 9:15 am	
9:15 am - 9:35 am	<b>Roberto Bassi</b> (University of Verona) "Dynamics of Lhcb proteins during excess light dissipation"
9:35 am - 9:45 am	Discussion

9:45 am - 10:05 am	<b>Alexander Ruban</b> (Queen Mary, University of London) "Molecular events leading to the efficient and flexible energy dissipation in the photosystem II antenna"
10:05 am - 10:15 am	Discussion
10:15 am	Coffee Break
10:45 am - 11:05 am	<b>Diana Kirilovsky</b> (CEA-Saclay) "A photoactive carotenoid protein essential for photoprotection in cyanobacteria"
11:05 am - 11:15 am	Discussion
11:15 am - 11:35 am	<b>Leszek Fiedor</b> (Jagellonian University) "Molecular determinants of assembly and functioning of photosynthetic antenna complexes"
11:35 am - 11:45 am	Discussion
11:45 am - 12:05 pm	<b>Petra Fromme</b> (Arizona State University) "Photosystem I and its supercomplexes"
12:05 pm - 12:15 pm	Discussion
12:15 pm - 12:30 pm	General Discussion (Including Posters)
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>New Organisms and Evolutionary Considerations</b>
7:30 pm - 7:45 pm	Discussion Leader: <b>Robert Blankenship</b> (Washington University) "Introductory remarks"
7:45 pm - 8:05 pm	<b>Donald Bryant</b> (Pennsylvania State University) "Phishing for phototrophs in Yellowstone: metagenomics and the discovery of a sixth bacterial phylum with chlorophototrophs"
8:05 pm - 8:15 pm	Discussion
8:15 pm - 8:35 pm	<b>Rachael Morgan-Kiss</b> (Miami University) "Balancing the energy budget in the enigmatic photopsychrophile, <i>Chlamydomonas raudensis</i> UWO241"
8:35 pm - 8:45 pm	Discussion
8:45 pm - 9:05 pm	<b>Chris Howe</b> (University of Cambridge) "Evolution the tinkerer - the story of cytochrome c6A"
9:05 pm - 9:15 pm	Discussion
9:15 pm - 9:30 pm	General Discussion (Including Posters)

## TUESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>Supramolecular Structures and Assembly</b>

9:00 am - 9:15 am	Discussion Leader: <b>Beverley Green</b> (University of British Columbia) "Introductory remarks"
9:15 am - 9:35 am	<b>Conrad Mullineaux</b> (Queen Mary, University of London) "Dynamics of supermolecular photosynthetic structures in cyanobacteria and chloroplasts"
9:35 am - 9:45 am	Discussion
9:45 am - 10:05 am	<b>Ziv Reich</b> (Weizmann Institute) "Architecture and plasticity of thylakoid membrane networks"
10:05 am - 10:15 am	Discussion
10:15 am	Coffee Break
10:45 am - 11:05 am	<b>Egbert Boekema</b> (University of Groningen) "Electron microscopic investigations of photosystem I and photosystem II supercomplexes"
11:05 am - 11:15 am	Discussion
11:15 am - 11:35 am	<b>Helmut Kirchhoff</b> (University of Muenster) "Photosynthesis at the supramolecular level: Implications of macromolecular crowding for membrane functions"
11:35 am - 11:45 am	Discussion
11:45 am - 12:05 pm	<b>Congming Lu</b> (Chinese Academy of Science) "Identification of a multiprotein complex required for photosystem II assembly in <i>Arabidopsis thaliana</i> "
12:05 pm - 12:15 pm	Discussion
12:15 pm - 12:30 pm	General Discussion (Including Posters)
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Photosynthesis in the Oceans</b>
7:30 pm - 7:45 pm	Discussion Leader: <b>Paul Falkowski</b> (Rutgers University) "Introductory remarks"
7:45 pm - 8:05 pm	<b>Chris Bowler</b> (Ecole Normale Supérieure) "Genome-enabled studies of photosynthesis in marine diatoms"
8:05 pm - 8:15 pm	Discussion
8:15 pm - 8:35 pm	<b>Shaun Bailey</b> (Carnegie Institution of Washington) "Alternative electron pathways in marine cyanobacteria"
8:35 pm - 8:45 pm	Discussion
8:45 pm - 9:05 pm	<b>Felisa Wolfe-Simon</b> (Harvard University) "The geobiochemical evolution of the photosynthetic metalloproteome"
9:05 pm - 9:15 pm	Discussion

9:15 pm - 9:30 pm General Discussion (Including Posters)

## WEDNESDAY

7:30 am - 8:30 am Breakfast

### 9:00 am - 12:30 pm **Photosynthesis and Regulatory Interactions**

9:00 am - 9:15 am Discussion Leader: **Neil Hunter** (University of Sheffield)  
"Introductory remarks"

9:15 am - 9:35 am **Anja Krieger-Liszkay** (CEA-Saclay)  
"Photosynthetic electron flow and H<sub>2</sub>O<sub>2</sub> signaling in *Chlamydomonas*"

9:35 am - 9:45 am Discussion

9:45 am - 10:05 am **Annegret Wilde** (Humboldt University)  
"The potential of cyanobacterial non-coding RNAs in regulation of photosynthetic processes"

10:05 am - 10:15 am Discussion

10:15 am Coffee Break

10:45 am - 11:05 am **Roman Sobotka** (Czech Academy of Sciences Institute of Microbiology)  
"The role of ferrochelatase in the regulation of the tetrapyrrole biosynthesis pathway in *Synechocystis* 6803"

11:05 am - 11:15 am Discussion

11:15 am - 11:35 am **Masahiko Ikeuchi** (University of Tokyo)  
"Chromatic regulatory system of phycobilisome in *Synechocystis* sp. PCC 6803: A new green light receptor and unusual phycobilisome"

11:35 am - 11:45 am Discussion

11:45 am - 12:05 pm **Marion Eisenhut** (University of Rostock)  
"New insights into cyanobacterial photorespiratory metabolism"

12:05 pm - 12:15 pm Discussion

12:15 pm - 12:30 pm General Discussion (Including Posters)

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm Dinner

7:00 pm - 7:30 pm Business Meeting

(Nominations for the next Vice Chair; Fill out Conference Evaluation Forms; Discuss future Site & Scheduling preferences; Election of the next Vice Chair)

### 7:30 pm - 9:30 pm **Energy Conversion Factors and Limits**

7:30 pm - 7:45 pm Discussion Leader: **Thomas Moore** (Arizona State University)  
"Introductory remarks"

7:45 pm - 8:05 pm **Ron Milo** (Harvard University)  
"What governs the reaction center excitation wavelength of photosystems I

	and II"
8:05 pm - 8:15 pm	Discussion
8:15 pm - 8:35 pm	<b>David Kramer</b> (Washington State University) "Why is photosynthesis so inefficient, and what (if anything) can we do about it?"
8:35 pm - 8:45 pm	Discussion
8:45 pm - 9:05 pm	<b>John Golbeck</b> (Pennsylvania State University) "Synthesis of a hybrid Photosystem I/molecular wire/hydrogenase bioconjugate for the photocatalytic production of H <sub>2</sub> "
9:05 pm - 9:15 pm	Discussion
9:15 pm - 9:30 pm	General Discussion (Including Posters)

## THURSDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>Photosynthetic Electron Flow</b>
9:00 am - 9:15 am	Discussion Leader: <b>William Rutherford</b> (CEA-Saclay) "Introductory remarks"
9:15 am - 9:35 am	<b>Eva-Mari Aro</b> (University of Turku) "Auxiliary proteins involved in regulation, maintenance and repair of PSII"
9:35 am - 9:45 am	Discussion
9:45 am - 10:05 am	<b>William Cramer</b> (Purdue University) "Properties of the prosthetic groups unique to the cytochrome <i>b<sub>6</sub>f</i> complex"
10:05 am - 10:15 am	Discussion
10:15 am	Coffee Break
10:45 am - 11:05 am	<b>Kevin Redding</b> (Arizona State University) "Disassembly and degradation of Photosystem I by a multi-protein complex"
11:05 am - 11:15 am	Discussion
11:15 am - 11:35 am	<b>Giovanni Finazzi</b> (Institut de Biologie Physico-Chimique) "Fate of electrons leaving Photosystem I"
11:35 am - 11:45 am	Discussion
11:45 am - 12:05 pm	<b>Mark Schoettler</b> (Max-Planck-Institute, Golm) "Metabolic control of photosynthetic electron transport"
12:05 pm - 12:15 pm	Discussion
12:15 pm - 12:30 pm	General Discussion (Including Posters)
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm	Dinner

7:30 pm - 8:30 pm	<b>Recognition of Young Investigators</b>
8:30 pm - 9:30 pm	<b>Perspectives on Bioenergy and Photosynthesis II</b>
8:30 pm - 8:40 pm	Discussion Leader: <b>Daniel Nocera</b> (Massachusetts Institute of Technology) "Introductory remarks"
8:40 pm - 9:20 pm	<b>Yusuf Chisti</b> (Massey University) "Energy from microalgae"
9:20 pm - 9:30 pm	Discussion
<b>FRIDAY</b>	
7:30 am - 8:30 am	Breakfast
9:00 am	Departure



## Photosynthesis (2008)

Name	Organization	Participation	Status
AHN, TAE K	LAWRENCE BERKELEY NATIONAL LAB.	Poster Presenter	Registered
ALBUS, CHRISTIN A	MAX-PLANCK-INSTITUTE OF MOLECULAR PLANTPHYSIOLOGY	Poster Presenter	Registered
ALLEN, JAMES P	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
AMUNTS, ALEXEY	TEL AVIV UNIVERSITY	Poster Presenter	Registered
ANANYEV, GENNADY M	PRINCETON UNIVERSITY	Poster Presenter	Registered
ARO, EVA-MARI	UNIVERSITY OF TURKU	Speaker	Registered
BAILEY, SHAUN	CARNEGIE INSTITUTION OF WASHINGTON	Speaker	Registered
BAILLEUL, BENJAMIN	IBPC - UMR7141 - UPMC	Poster Presenter	Registered
BARUCQ, LISE	CNRS	Poster Presenter	Registered
BASSI, ROBERTO	UNIVERSITY OF VERONA	Speaker	Registered
BLANKENSHIP, ROBERT E	WASHINGTON UNIVERSITY IN ST. LOUIS	Discussion Leader	Registered
BOEKEMA, EGBERT J	UNIVERSITY OF GRONINGEN	Speaker	Registered
BOWLER, CHRIS	ECOLE NORMALE SUPERIEURE	Speaker	Registered
BRICKER, TERRY M	LOUISIANA STATE UNIVERSITY	Poster Presenter	Registered
BRITT, R. DAVID	UNIVERSITY OF CALIFORNIA	Poster Presenter	Registered
BRUCE, DOUG	BROCK UNIVERSITY	Vice Chair	Registered
BRUDVIG, GARY W	YALE UNIVERSITY	Attendee	Registered
BRYANT, DONALD A	THE PENNSYLVANIA STATE UNIVERSITY	Speaker	Registered
BURDA, KVETOSLAVA	AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY	Poster Presenter	Registered
BURNAP, ROBERT L	OKLAHOMA STATE UNIVERSITY	Poster Presenter	Registered
CARRIERI, DAMIAN J	PRINCETON UNIVERSITY	Poster Presenter	Registered
CASTRO, CHRISTIAN	PENN STATE UNIVERSITY	Poster Presenter	Registered
CHEN, MIN M	UNIVERSITY OF SYDNEY	Poster Presenter	Registered
CHISTI, YUSUF	MASSEY UNIVERSITY	Speaker	Registered
CHOU, HOWARD H	UNIVERSITY OF CALIFORNIA, BERKELEY	Attendee	Registered
CHU, HSIU-AN	ACADEMIA SINICA, TAIWAN	Poster Presenter	Registered
COLLINS, AARON M	WASHINGTON UNIVERSITY	Poster Presenter	Registered
COX, NICHOLAS J	MPI FÜR BIOANORGANISCHE CHEMIE	Poster Presenter	Registered
CRAMER, WILLIAM A	PURDUE UNIVERSITY	Speaker	Registered
DAU, HOLGER	FREIE UNIV. BERLIN	Poster Presenter	Registered
DE ODROWAZ PIRAMOWICZ, MARZENA	INSTITUTE OF NUCLEAR PHYSICS PAN	Poster Presenter	Registered
DE VITRY-DELEPELAIRE, CATHERINE	IBPC	Poster Presenter	Registered
DEBUS, RICHARD J	UNIVERSITY OF CALIFORNIA, RIVERSIDE	Poster Presenter	Registered
DEGRIP, WILLEM J	LEIDEN UNIVERSITY	Poster Presenter	Registered
DI DONATO, MARIANGELA	VRIJE UNIVERSITEIT AMSTERDAM	Poster Presenter	Registered
DILBECK, PRESTON L	OKLAHOMA STATE UNIVERSITY	Attendee	Registered
DISMUKES, CHARLES G	PRINCETON UNIVERSITY	Poster Presenter	Registered
DONG, LONGYING	CORNING INC	Attendee	Registered
DUBINI, ALEXANDRA	NREL	Poster Presenter	Registered
DUFFY, CHRISTOPHER D. P.	THE UNIVERSITY OF SHEFFIELD	Poster Presenter	Registered
EATON-RYE, JULIAN J	UNIVERSITY OF OTAGO	Poster Presenter	Registered
EISENHUT, MARION	UNIVERSITY OF ROSTOCK	Speaker	Registered
ENGLISH, CHRISTINE M	NREL	Attendee	Registered
FALKOWSKI, PAUL	RUTGERS UNIVERSITY	Discussion	Registered

		Leader	
FIEDOR, LESZEK	JAGIELLONIAN UNIVERSITY	Speaker	Registered
FINAZZI, GIOVANNI	CNRS, INSTITUT DE BIOLOGIE PHYSICO CHIMIQUE	Speaker	Registered
FLUEGEL, CLAUDIA	MAX-PLANCK-INSTITUT OF MOLECULAR PLANT PHYSIOLOGY	Poster Presenter	Registered
FROMME, PETRA	ARIZONA STATE UNIVERSITY	Speaker	Registered
GOLBECK, JOHN H	PENN STATE UNIVERSITY	Speaker	Registered
GORAL, TOMASZ	QUEEN MARY, UNIVERSITY OF LONDON	Poster Presenter	Registered
GOVINDJEE,	UNIVERSITY OF ILLINOIS	Poster Presenter	Registered
GREEN, BEVERLEY R	UNIVERSITY OF BRITISH COLUMBIA	Discussion Leader	Registered
GUNNER, MARILYN	CITY COLLEGE OF NEW YORK	Poster Presenter	Registered
HADDY, ALICE	UNC-GREENSBORO	Poster Presenter	Registered
HAMBOURGER, MICHAEL S	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
HARBINSON, JEREMY	WAGENINGEN UNIVERSITY	Poster Presenter	Registered
HILLIER, WARWICK	AUSTRALIAN NATIONAL UNIVERSITY	Poster Presenter	Registered
HO, FELIX M	UPPSALA UNIVERSITY	Poster Presenter	Registered
HOFMANN, ECKHARD	RUHR-UNIVERSITY BOCHUM	Poster Presenter	Registered
HOLZWARTH, ALFRED	MAX PLANCK INST FUER BIOINORGANIC CHEMISTRY	Poster Presenter	Registered
HOU, HARVEY JIAN-MIN	UMASS DARTMOUTH	Poster Presenter	Registered
HOWE, CHRISTOPHER	UNIVERSITY OF CAMBRIDGE	Speaker	Registered
HUANG, LIBAI	ARGONNE NATIONAL LAB	Poster Presenter	Registered
HUNTER, NEIL	UNIVERSITY OF SHEFFIELD	Discussion Leader	Registered
IKEUCHI, MASAHIKO	UNIVERSITY OF TOKYO	Speaker	Registered
INOUE, KENTARO	UNIVERSITY OF CALIFORNIA-DAVIS	Poster Presenter	Registered
ISLAM, RAFIQL	UNIVERSITY OF HYOGO	Poster Presenter	Registered
JAHS, PETER	UNIVERSITY OF DUESSELDORF	Poster Presenter	Registered
JENSEN, POUL E	UNIVERSITY OF COPENHAGEN	Poster Presenter	Registered
JOHNSON, SOPHIA	RUTGER'S UNIVERSITY	Poster Presenter	Registered
JOHNSON, MATTHEW P	QUEEN MARY UNIVERSITY OF LONDON	Poster Presenter	Registered
JOHNSON, WADE	SUSQUEHANNA UNIVERSITY	Poster Presenter	Registered
JOLLEY, CRAIG	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
KALLAS, TOIVO	UNIVERSITY OF WISCONSIN-OSHKOSH	Poster Presenter	Registered
KANA, RADEK	ACADEMY OF SCIENCES	Poster Presenter	Registered
KELLEY, RICHARD F	MIT	Poster Presenter	Registered
KENNIS, JOHN T	VRIJE UNIVERSITEIT	Poster Presenter	Registered
KIANG, NANCY Y	NASA GODDARD INSTITUTE FOR SPACE STUDIES	Poster Presenter	Registered
KIRCHHOFF, HELMUT	UNIVERSITY OF MUENSTER	Speaker	Registered
KIRILOVSKY, DIANA	CNRS-CEA	Speaker	Registered
KOLLING, DERRICK R	PRINCETON UNIVERSITY	Poster Presenter	Registered
KRAMER, DAVID	WASHINGTON STATE UNIVERSITY	Speaker	Registered
KRAUSZ, ELMARS R	AUSTRALIAN NATIONAL UNIVERSITY	Poster Presenter	Registered
KRUSE, OLAF	UNIVERSITY OF BIELEFELD	Attendee	Registered
KUFRYK, GALYNA I	1 NATIONAL RENEWABLE ENERGY LABORATORY	Poster Presenter	Registered
LAISK, AGU	TARTU UNIVERSITY	Poster Presenter	Registered
LARKUM, ANTHONY W	UNIVERSITY OF SYDNEY	Poster Presenter	Registered
LICHTENSTEIN, BRUCE R	UNIVERSITY OF PENNSYLVANIA	Poster Presenter	Registered
LIN, SU	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered

LISZKAY, ANJA	CEA-SACLAY	Speaker	Registered
LIU, HAIJUN	LOUISIANA STATE UNIVERSITY	Poster Presenter	Registered
LIU, XINYAO	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
LU, CONGMING	INSTITUTE OF BOTANY, CHINESE ACADEMY OF SCIENCES	Speaker	Registered
LUBNER, CAROLYN E	PENNSYLVANIA STATE UNIVERSITY	Poster Presenter	Registered
MAGNUSON, ANN	UPPSALA UNIVERSITY	Poster Presenter	Registered
MAJERAN, WOJCIECH J	CORNELL UNIVERSITY	Poster Presenter	Registered
MAMEDOV, FIKRET T	UPPSALA UNIVERSITY	Poster Presenter	Registered
MARIN, ALESSANDRO	FREE UNIVERSITY AMSTERDAM	Poster Presenter	Registered
MCCONNELL, IAIN L	YALE UNIVERSITY	Poster Presenter	Registered
MCNEELY, KELSEY	PRINCETON UNIVERSITY	Poster Presenter	Registered
MIELKE, STEVEN P	NASA GODDARD INSTITUTE FOR SPACE STUDIES	Attendee	Registered
MILO, RON	HARVARD UNIVERSITY	Speaker	Registered
MINAGAWA, JUN	HOKKAIDO UNIVERSITY	Poster Presenter	Registered
MOORE, THOMAS A	ARIZONA STATE UNIVERSITY	Discussion Leader	Registered
MOORE, GARY F	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
MOORE, VICKI	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
MOORE, ANA L	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
MORGAN-KISS, RACHAEL	MIAMI UNIVERSITY	Speaker	Registered
MOROSINOTTO, TOMAS	UNIVERSITÀ DEGLI STUDI DI PADOVA	Poster Presenter	Registered
MULLINEAUX, CONRAD	QUEEN MARY UNIVERSITY OF LONDON	Speaker	Registered
NIEDERMAN, ROBERT A	RUTGERS UNIVERSITY	Poster Presenter	Registered
NIYOGI, KRISHNA K	UNIVERSITY OF CALIFORNIA, BERKELEY	Discussion Leader	Registered
NOCERA, DANIEL G	MIT	Speaker	Registered
NOWACZYK, MARC M	RUHR-UNIVERSITY BOCHUM	Poster Presenter	Registered
NOY, DROR	WEIZMANN INSTITUTE OF SCIENCE	Poster Presenter	Registered
PAKRASI, HIMADRI B	WASHINGTON UNIVERSITY	Attendee	Registered
PANDIT, ANJALI	LEIDEN UNIVERSITY	Poster Presenter	Registered
PASCAL, ANDREW A	CEA-SACLAY	Poster Presenter	Registered
PAWLOWICZ, NATALIA P.	VRIJE UNIVERSITEIT AMSTERDAM	Poster Presenter	Registered
PETERSON, RICHARD B	CONNECTICUT AGRICULTURAL EXPERIMENT STATION	Poster Presenter	Registered
PINCHUK, GRIGORIY E	PACIFIC NORTHWEST NATIONAL LABORATORY	Poster Presenter	Registered
POLUEKTOV, OLEG G	ARGONNE NATIONAL LABORATORY	Poster Presenter	Registered
PEPELKOVA, HANA	THE UNIVERSITY OF MICHIGAN	Poster Presenter	Registered
POSEWITZ, MATTHEW	COLORADO SCHOOL OF MINES	Speaker	Registered
PUSHKAR, YULIA	PURDUE UNIVERSITY	Poster Presenter	Registered
REDDING, KEVIN E	ARIZONA STATE UNIVERSITY	Speaker	Registered
REICH, ZIV	WEIZMAN INSTITUTE	Speaker	Registered
ROEGNER, MATTHIAS	RUHR-UNIVERSITY-BOCHUM	Poster Presenter	Registered
ROMERO, ELISABET	VRIJE UNIVERSITEIT AMSTERDAM	Poster Presenter	Registered
ROOSE, JOHNNA	LOUISIANA STATE UNIVERSITY	Poster Presenter	Registered
RUBAN, ALEXANDER V	QUEEN MARY UNIVERSITY OF LONDON	Speaker	Registered
RUTHERFORD, WILLIAM	IBITEC-S CEA-SACLAY	Discussion Leader	Registered
SANTABARBARA, STEFANO	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
SAVIKHIN, SERGEI	PURDUE UNIVERSITY	Poster Presenter	Registered
SCHOETTLER, MARK	MAX-PLANCK-INSTITUTE FOR MOLECULAR PLANT	Speaker	Registered

## PHYSIOLOG

SCHULTE, TIM	RUHR-UNIVERSITY BOCHUM	Poster Presenter	Registered
SHINOPOULOS, KATHERINE E	YALE UNIVERSITY	Poster Presenter	Registered
SOBOTKA, ROMAN	INSTITUTE OF MICROBIOLOGY	Speaker	Registered
SONEWALD, JOHN F	BIO-LOGIC USA	Attendee	Registered
SPANO, ANTHONY J.	UNIVERSITY OF VIRGINIA	Poster Presenter	Registered
STAHL, ANDREAS D	VRIJE UNIVERSITEIT AMSTERDAM FEW	Poster Presenter	Registered
STUBNA, AUDRIA C	UNIVERSITY OF PENNSYLVANIA	Attendee	Registered
STYRING, STENBJORN	UPPSALA UNIVERSITY	Poster Presenter	Registered
TAKAHASHI, SHUNSUKE	RITSUMEIKAN UNIVERSITY	Poster Presenter	Registered
TAMIAKI, HITOSHI	RITSUMEIKAN UNIVERSITY	Poster Presenter	Registered
TELFER, ALISON	IMPERIAL COLLEGE LONDON	Attendee	Registered
TIEDE, DAVID M	ARGONNE NATIONAL LABORATORY	Poster Presenter	Registered
TIKKANEN, MIKKO	UNIVERSITY OF TURKU	Poster Presenter	Registered
TOTH, SZILVIA Z.	BIOLOGICAL RESEARCH CENTER, SZEGED	Poster Presenter	Registered
ULAS, GOZDE	YALE UNIVERSITY	Poster Presenter	Registered
UTSCHIG, LISA M	ARGONNE NATIONAL LABORATORY	Poster Presenter	Registered
VAN DER EST, ART J	BROCK UNIVERSITY	Poster Presenter	Registered
VAN GORKOM, HANS J	LEIDEN UNIVERSITY	Poster Presenter	Registered
VAN GRONDELLE, RIENK	VRIJE UNIVERSITEIT AMSTERDAM	Attendee	Registered
VASILIEVA, LIUDMILA G	INSTITUTE OF BASIC BIOLOGICAL PROBLEMS	Poster Presenter	Registered
VERMAAS, WIM F.J.	ARIZONA STATE UNIVERSITY	Chair	Registered
VERMAAS, JOSH V	ARIZONA STATE UNIVERSITY	Attendee	Registered
WEN, JIANZHONG	WASHINGTON UNIVERSITY IN ST. LOUIS	Poster Presenter	Registered
WILDE, ANNEGRET	HUMBOLDT UNIVERSITY	Speaker	Registered
WOLFE-SIMON, FELISA L	HARVARD UNIVERSITY	Speaker	Registered
XU, QING	J. CRAIG VENTER INSTITUTE	Poster Presenter	Registered
YACHANDRA, VITTAL K	LAWRENCE BERKELEY NATIONAL LABORATORY	Poster Presenter	Registered
YANO, JUNKO	LAWRENCE BERKELEY NATIONAL LAB.	Poster Presenter	Registered
YAO, DANNY C	ARIZONA STATE UNIVERSITY	Poster Presenter	Registered
YI, XIAOPING	LOUISIANA STATE UNIVERSITY	Poster Presenter	Registered
YOCUM, CHARLES F	UNIVERSITY OF MICHIGAN	Attendee	Registered
YONEDA, AKI	WASHINGTON UNIVERSITY IN ST. LOUIS	Attendee	Registered
YU, JIANPING	NATIONAL RENEWABLE ENERGY LABORATORY	Poster Presenter	Registered
ZAZUBOVITS, VALTER	CONCORDIA UNIVERSITY	Poster Presenter	Registered
ZHANG, SHULU	LOUISIANA STATE UNIVERSITY	Poster Presenter	Registered
ZHOU, CHAO	ARIZONA STATE UNIVERSITY	Attendee	Registered
ZHU, SONGHUA	UNIVERSITY OF BRITISH COLUMBIA	Poster Presenter	Registered