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Nancy Ryan Gray, Ph.D.
Director

**2008 GORDON RESEARCH CONFERENCE
on SENSORY TRANSDUCTION IN MICROORGANISMS**

FINAL PROGRESS REPORT

DOE
GRANT NO. DE-FG02-08ER64514

The Gordon Research Conference on **SENSORY TRANSDUCTION IN MICROORGANISMS** was held at Ventura Beach Marriott, Ventura, California, January 13-18, 2008. The Conference was well-attended with 152 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.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field.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 As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings.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,
Ann Stock, Chairperson & PI

UMDNJ-ROBERT WOOD JOHNSON MEDICAL SCHOOL

SENSORY TRANSDUCTION IN MICROORGANISMS

January 13-18, 2008
Ventura Beach Marriott
Ventura, CA
Chair:
Ann M. Stock

Vice Chair:
Ann H. West

Research into the mechanisms involved in the sensing and responses of microorganisms to changes in their environments is currently very active in a large number of laboratories worldwide. An increasingly wide range of prokaryotic and eukaryotic species are being studied with regard to their sensing of diverse chemical and physical stimuli, including nutrients, toxins, intercellular signaling molecules, redox indicators, light, pressure, magnetic fields, and surface contact, leading to adaptive responses affecting motile behavior, gene expression and/or development.

The ease of manipulation of microorganisms has facilitated application of a broad range of techniques that have provided comprehensive descriptions of cellular behavior and its underlying molecular mechanisms. Systems and their molecular components have been probed at levels ranging from the whole organism down to atomic resolution using behavioral analyses; electrophysiology; genetics; molecular biology; biochemical and biophysical characterization; structural biology; single molecule, fluorescence and cryo-electron microscopy; computational modeling; bioinformatics and genomic analyses. Several model systems such as bacterial chemotaxis and motility, fruiting body formation in *Myxococcus xanthus*, and motility and development in *Dictyostelium discoideum* have traditionally been a focus of this meeting. By providing a basis for assessment of similarities and differences in mechanisms, understanding of these pathways has advanced the study of many other microbial sensing systems.

This conference aims to bring together researchers investigating different prokaryotic and eukaryotic microbial systems using diverse approaches to compare data, share methodologies and ideas, and seek to understand the fundamental principles underlying sensory responses. Topic areas include:

- Receptor Sensing and Signaling
- Intracellular Signaling (two-component, c-di-GMP, c-AMP, etc.)
- Intracellular Localization and the Cytoskeleton
- Motors and Motility
- Differentiation and Development
- Host/Pathogen and Host/Symbiont Interactions
- Intercellular Communication
- Microbes and the Environment

- Modeling Signaling Pathways

Contributors

EMBO Young Investigator Program
ASM Press
Qiagen, Inc.
New Brunswick Scientific Co., Inc.
Carl Storm International Diversity Fellowship
Gordon Research Conferences

SUNDAY

4:00 pm - 9:00 pm	Arrival and Check-in
4:00 pm - 6:00 pm	Welcome Reception
6:00 pm	Dinner
7:30 pm - 7:40 pm	Welcome / Introductory Comments by GRC Site Staff and Conference Chair Ann Stock
7:40 pm - 9:30 pm	RECEPTOR AMPLIFICATION AND ADAPTATION Discussion Leader: Philip Matsumura (University of Illinois, Chicago, USA) Philip Matsumura (University of Illinois, Chicago, USA) "Overview of bacterial chemotaxis"
7:50 pm - 8:10 pm	Sriram Subramaniam (National Cancer Institute, NIH, USA) "Molecular structure of the chemotaxis machinery in intact bacterial cells"
8:10 pm - 8:15 pm	Discussion
8:15 pm - 8:35 pm	Brian Crane (Cornell University, USA) "Molecular mechanisms of signal transduction in bacterial chemotaxis"
8:35 pm - 8:40 pm	Discussion
8:40 pm - 9:00 pm	George Ordal (University of Illinois, Urbana, USA) "The three adaptation systems of <i>Bacillus subtilis</i> chemotaxis"
9:00 pm - 9:05 pm	Discussion
9:05 pm - 9:25 pm	Jeffry Stock (Princeton University, USA) "Protein carboxyl methylation in signal transduction and disease"
9:25 pm - 9:30 pm	Discussion
MONDAY	
7:30 am - 8:30 am	Breakfast

9:00 am - 12:30 pm

BACTERIAL CHEMOTAXIS: MECHANISMS AND MODELS

Discussion Leader: **Michael Eisenbach** (Weizmann Institute of Science, Israel)

9:00 am - 9:20 am

Victor Sourjik (ZMBH, University of Heidelberg, Germany)

"Formation and positioning of chemosensory clusters in *E. coli*"

9:20 am - 9:25 am

Discussion

9:25 am - 9:45 am

Ned Wingreen (Princeton University, USA)

"Modeling chemosensing in *E. coli*: 'Assistance neighborhoods' and precise adaptation"

9:45 am - 9:50 am

Discussion

9:50 am - 10:10 am

Howard Berg (Harvard University, USA)

"Using fluorescence anisotropy to probe chemoreceptor function"

10:10 am - 10:15 am

Discussion

10:15 am - 10:35 am **Frederick Dahlquist** (University of California, Santa Barbara, USA)

"Protein-protein interactions during motor switching"

10:35 am - 10:40 am

Discussion

10:40 am - 11:10 am

Coffee Break

11:10 am

Group Photo

11:25 am - 11:45 am **Yuhai Tu** (IBM T. J. Watson Research Center, USA)

"From molecules to behavior: Understanding responses of *E. coli* to complex signals"

11:45 am - 11:50 am

Discussion

11:50 am - 12:10 pm **Igor Zhulin** (University of Tennessee - Oak Ridge National Laboratory, USA)

"Of land and sea: Metagenomics offers insights into microbial signal transduction"

12:10 pm - 12:15 pm

Discussion

12:15 pm - 12:25 pm Minitalk: **Barry Wanner** (Purdue University, USA)

"Mobility of individual newly expressed chemoreceptor proteins in *E. coli*"

12:25 pm - 12:30 pm

Discussion

12:30 pm

Lunch

1:30 pm - 4:00 pm

Free Time

4:00 pm - 6:00 pm

Poster Session 1

6:00 pm

Dinner

7:30 pm - 9:30 pm

RECEPTOR SENSING AND SIGNALING

Discussion Leader: **Gerald Hazelbauer** (University of Missouri, Columbia, USA)

7:30 pm - 7:50 pm

Barry Taylor (Loma Linda University, USA)

	"Structure-function relationships in aerotaxis signaling by Aer"
7:50 pm - 7:55 pm	Discussion
7:55 pm - 8:15 pm	Joseph Falke (University of Colorado, USA) "The receptor-kinase signaling complex: Recent advances"
8:15 pm - 8:20 pm	Discussion
8:20 pm - 8:40 pm	John S. Parkinson (University of Utah, USA) "Mutational analysis of the Tsr HAMP domain: A role for the membrane in transmembrane signaling?"
8:40 pm - 8:45 pm	Discussion
8:45 pm - 9:05 pm	John Spudich (University of Texas Medical School at Houston, USA) "Rhodopsins: Converting a proton pump into a phototaxis receptor"
9:05 pm - 9:15 pm	Discussion
9:15 pm - 9:25 pm	Minitalk: Gerald Hazelbauer (University of Missouri, Columbia, USA) "Correlating chemoreceptor activities with potential receptor-receptor interactions using nanodiscs"
9:25 pm - 9:30 pm	Discussion

TUESDAY

7:30 am - 8:30 am	Breakfast
MOLECULAR MECHANISMS OF DIRECTED MOVEMENT	
	Discussion Leader: Alan Kimmel (National Institutes of Health, USA)
9:00 am - 9:20 am	Zhaomin Yang (Virginia Tech, USA) "Chemotaxis in <i>Myxococcus xanthus</i> : NarX-FrzCD chimeras and lack of adaptation to negative stimuli"
9:20 am - 9:25 am	Discussion
9:25 am - 9:45 am	John Kirby (University of Iowa, USA) "The chemosensory response to envelope stress via the CrdB lipoprotein"
9:45 am - 9:50 am	Discussion
9:50 am - 10:10 am	Rick Firtel (University of California, San Diego, USA) "Spatial temporal control of directional movement"
10:10 am - 10:15 am	Discussion
10:15 am - 10:25 am	Minitalk: Vaness McMains (National Institutes of Health, USA) "Specificity of the presenilin/gamma-secretase complex in control of <i>Dictyostelium</i> development"
10:25 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:20 am	Judith Armitage (University of Oxford, UK) "Structure/function comparison of the multiple CheYs and phosphatases from <i>R. sphaeroides</i> "

11:20 am - 11:25 am	Discussion
11:25 am - 11:45 am	Ikuro Kawagishi (Hosei University, Japan) "Chemotaxis and related signaling systems in <i>Vibrio cholerae</i> "
11:45 am - 11:50 am	Discussion
11:50 am - 12:10 pm	Liz Sockett (University of Nottingham, UK) "The predatory bite of <i>Bdellovibrio</i> "
12:10 pm - 12:15 pm	Discussion
12:15 pm - 12:25 pm	Minitalk: Masahiro Ito (Toyo University) "Single stator complex of bacterial flagellar motor can use both H ⁺ and Na ⁺ for stator force generator in alkaliphilic <i>Bacillus</i> "
12:25 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session 1
6:00 pm	Dinner
7:30 pm - 9:30 pm	INTRACELLULAR SIGNALING
	Discussion Leader: Alan Wolfe (Loyola University Chicago, USA)
7:30 pm - 7:40 pm	Alan Wolfe (Loyola University Chicago, USA) "What do onions, ogres, and signal transduction have in common?"
7:40 pm - 8:00 pm	Peter Satir (Albert Einstein College of Medicine of Yeshiva University, USA) "Sensory pathways in <i>Tetrahymena</i> cilia"
8:00 pm - 8:05 pm	Discussion
8:05 pm - 8:25 pm	William Loomis (University of California, San Diego, USA) "Signal transduction through histidine kinases and GPCRs leads to sporulation in <i>Dictyostelium</i> "
8:25 pm - 8:30 pm	Discussion
8:30 pm - 8:50 pm	Caroline Harwood (University of Washington, USA) "The Wsp chemosensory system controls exopolysaccharide synthesis via c-di-GMP"
8:50 pm - 9:00 pm	Discussion
9:00 pm - 9:10 pm	Minitalk: Jeremiah Marden (Indiana University, USA) " <i>Rhodospirillum centenum</i> utilizes cGMP as a signaling molecule to control cyst formation"
9:10 pm - 9:15 pm	Discussion
9:15 pm - 9:25 pm	Minitalk: Joachim Schultz (University of Tübingen, Germany) "The HAMP domain as a signal relay and a tool: from chemotaxis signaling to adenylyl cyclases"
9:25 pm - 9:30 pm	Discussion

WEDNESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	HIS-ASP PHOSPHORELAY SIGNALING
	Discussion Leader: Marion Hulett (University of Illinois, Chicago, USA)
9:00 am - 9:20 am	Kaz Shiozaki (University of California, Davis, USA) "Multistep phosphorelay linked to the stress MAP kinase cascade in fission yeast"
9:20 am - 9:25 am	Discussion
9:25 am - 9:45 am	Jan Fassler (University of Iowa, USA) "Effect of fungal wall composition on activity of the Sln1 sensor-kinase"
9:45 am - 9:50 am	Discussion
9:50 am - 10:10 am	Richard Calderone (Georgetown University Medical Center, USA) "Triazole hypersensitivity and lethality associated with deletion of the <i>Candida albicans</i> SSK1 response regulator"
10:10 am - 10:15 am	Discussion
10:15 am - 10:25 am	Minitalk: Roberto Bogomolni (University of California, Santa Cruz, USA) "The LOV-histidine kinases: a new family of two-component blue-light sensors in bacteria"
10:25 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:20 am	Kathleen Ryan (University of California, Berkeley, USA) "Non-kinase functions of DivL in <i>Caulobacter</i> cell cycle regulation"
11:20 am - 11:25 am	Discussion
11:25 am - 11:45 am	Michael Laub (MIT, USA) "Redesigning and rewiring the specificity of two-component signaling proteins"
11:45 am - 11:50 am	Discussion
11:50 am - 12:10 pm	James Hoch (Scripps Research Institute, USA) "Coordinating cell division and cell wall architecture with the YycFG two-component system"
12:10 pm - 12:15 pm	Discussion
12:15 pm - 12:25 pm	Minitalk: Tarek Msadek (Institut Pasteur, France) "A matter of life and death: cell wall homeostasis and the WalKR regulon"
12:25 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session 2
6:00 pm	Dinner
7:00 pm - 7:30 pm	<u>Business Meeting</u>

(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

MOTILITY AND LOCALIZATION

Discussion Leader: **Wenyuan Shi** (UCLA School of Medicine and Dentistry, USA)

7:30 pm - 7:50 pm

Guenther Gerisch (Max-Planck-Institut für Biochemie, Germany)
"Control of actin dynamics in chemotaxis and phagocytosis"

7:50 pm - 7:55 pm

Discussion

7:55 pm - 8:15 pm

Tam Mignot (Laboratoire de Chimie Bactérienne-Institut de Biologie Structurale et Microbiologie, France)
"Spatial regulation of *Myxococcus xanthus* directional motility"

8:15 pm - 8:20 pm

Discussion

8:20 pm - 8:40 pm

Lotte Søgaard-Andersen (Max Planck Institute for Terrestrial Microbiology, Germany)
"Intercellular signaling and dynamic protein localization in *Myxococcus xanthus*"

8:40 pm - 8:45 pm

Discussion

8:45 pm - 9:05 pm

David Zusman (University of California, Berkeley, USA)
"Dynamic localization of the FrzCD receptor in *Myxococcus xanthus*"

9:05 pm - 9:15 pm

Discussion

9:15 pm - 9:25 pm

Minitalk: **Wenyuan Shi** (UCLA School of Medicine and Dentistry, USA)
"Coordination of two motility systems in *Myxococcus xanthus*"

9:25 pm - 9:30 pm

Discussion

THURSDAY

7:30 am - 8:30 am

Breakfast

MOTILITY AND STRUCTURAL BASIS OF MOVEMENT

Discussion Leader: **Rüdiger Schmitt** (University of Regensburg, Germany)

9:00 am - 9:20 am

Shin-Ichi Aizawa (Prefectural University of Hiroshima, Japan)
"Three families in the flagellar world"

9:20 am - 9:25 am

Discussion

9:25 am - 9:45 am

Kelly Hughes (University of Utah, USA)
"Of corks, rods & rulers: how to construct the bacterial flagellum"

9:45 am - 9:50 am

Discussion

9:50 am - 10:10 am

Keiichi Namba (Osaka University, Japan)
"Protein export and ordered self-assembly for the formation of the bacterial flagellum"

10:10 am - 10:15 am Discussion

10:15 am - 10:25 am	Minitalk: Tohru Minamino (Osaka University, Japan) "Intracellular pH measurement of <i>Salmonella</i> with a pH-sensitive GFP, pHluorin, and a newly developed pH imaging system"
10:25 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:20 am	Nyles Charon (West Virginia University, USA) "Unique aspects of <i>Borrelia burgdorferi</i> motility and chemotaxis"
11:20 am - 11:25 am	Discussion
11:25 am - 11:45 am	Michio Homma (Nagoya University, Japan) "Bacterial flagellar motor assembly in membrane"
11:45 am - 11:50 am	Discussion
11:50 am - 12:10 pm	Arash Komeili (University of California, Berkeley, USA) "Molecular mechanisms of magnetosome formation"
12:10 pm - 12:15 pm	Discussion
12:15 pm - 12:25 pm	Minitalk: Robert Belas (University of Maryland Biotechnology Institute, USA) "Digital holographic microscopy reveals prey-induced changes in swimming behavior of predatory dinoflagellates"
12:25 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session 2
6:00 pm	Dinner
7:30 pm - 9:30 pm	PATHOGENESIS AND VIRULENCE MECHANISMS
	Discussion Leader: Linda Kenney (University of Illinois, Chicago, USA)
7:30 pm - 7:50 pm	Linda Kenney (University of Illinois, Chicago, USA) "Global regulators and the evolution of cis-regulatory sequences in pathogenesis"
7:50 pm - 7:55 pm	Discussion
7:55 pm - 8:15 pm	Fitnat Yildiz (University of California, Santa Cruz, USA) "Biofilm formation in <i>Vibrio cholerae</i> "
8:15 pm - 8:20 pm	Discussion
8:20 pm - 8:40 pm	Karen Ottemann (University of California, Santa Cruz, USA) "The ulcer-causing pathogen <i>Helicobacter pylori</i> uses chemotaxis to find iron in the stomach"
8:40 pm - 8:45 pm	Discussion
8:45 pm - 9:05 pm	Fred Hughson (Princeton University, USA) "Transmembrane signal transduction in quorum sensing"
9:05 pm - 9:10 pm	Discussion

9:10 pm - 9:20 pm Minitalk: **Holger Sondermann** (Cornell University, USA)
"Regulation of the diguanylate cyclase response regulator WspR"
9:20 pm - 9:25 pm Discussion
9:25 pm - 9:30 pm Closing Announcements

FRIDAY

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



Registration List		
Name	Organization	Participation
Ann M. Stock	Umdnj-Robert Wood Johnson Medical School	Chair
Ann H. West	University Of Oklahoma	Vice Chair
Michael Eisenbach	Weizmann Institute Of Science	Discussion Leader
Gerald L. Hazelbauer	University Of Missouri-Columbia	Discussion Leader
F. Marion Hulett	University Of Illinois Chicago	Discussion Leader
Linda J. Kenney	University Of Illinois-Chicago	Discussion Leader
Alan R. Kimmel	National Institutes Of Health	Discussion Leader
Philip Matsumura	University Of Illinois At Chicago	Discussion Leader
Rudiger W. Schmitt	University Of Regensburg	Discussion Leader
Wenyuan Shi	University Of California, Los Angeles	Discussion Leader
Alan J. Wolfe	Loyola University Chicago	Discussion Leader
Shin-Ichi Aizawa	Prefectural University Of Hiroshima	Speaker
Judith P. Armitage	Oxford University	Speaker
Howard C. Berg	Harvard University	Speaker
Richard Calderone	Georgetown University Medical Center	Speaker
Nyles W. Charon	West Virginia University	Speaker
Brian R. Crane	Cornell University	Speaker
Frederick W. Dahlquist	University Of California, Santa Barbara	Speaker
Joseph J. Falke	University Of Colorado, Boulder	Speaker
Jan S. Fassler	University Of Iowa	Speaker
Richard A. Firtel	University Of California, San Diego	Speaker
Guenther Gerisch	Max-Planck-Institut Fuer Biochemie	Speaker
Caroline S. Harwood	University Of Washington	Speaker
James A. Hoch	Scripps Research Institute	Speaker
Michio Homma	Nagoya University	Speaker
Kelly T. Hughes	University Of Utah	Speaker
Frederick M. Hughson	Princeton University	Speaker
Ikuro Kawagishi	Hosei University	Speaker
John R. Kirby	University Of Iowa	Speaker
Arash Komeili	University Of California, Berkeley	Speaker
Michael Laub	Massachusetts Institute Of Technology	Speaker
William F. Loomis	University Of California, San Diego	Speaker
Tam Mignot	Cnrs	Speaker
Keiichi Namba	Osaka University	Speaker
George W. Ordal	University Of Illinois, Urbana	Speaker
Karen M. Ottemann	Uc Santa Cruz	Speaker
John S. Parkinson	University Of Utah	Speaker
Kathleen R. Ryan	University Of California, Berkeley	Speaker
Peter Satir	Albert Einstein College Of Medicine Of Yeshiva Uni	Speaker
Kazuhiro Shiozaki	University Of California, Davis	Speaker

R. Elizabeth Sockett	University Of Nottingham	Speaker
Lotte Sogaard-Andersen	Max Planck Institute For Terrestrial Microbiology	Speaker
Victor Sourjik	Universitat Heidelberg, Zmbh	Speaker
John L. Spudich	University Of Texas Medical School	Speaker
Jeffry B. Stock	Princeton University	Speaker
Sriram Subramaniam	Nci/Nih	Speaker
Barry L. Taylor	Loma Linda University	Speaker
Yuhai Tu	Ibm Research	Speaker
Ned Wingreen	Princeton University	Speaker
Zhaomin Yang	Virginia Tech	Speaker
Fitnat H. Yildiz	University Of California, Santa Cruz	Speaker
Igor Zhulin	University Of Tennessee - Oak Ridge National Lab	Speaker
David R. Zusman	University Of California, Berkeley	Speaker
Phillip D. Aldridge	Icamb, Newcastle University	Poster Presenter
Gladys Alexandre	University Of Tennessee	Poster Presenter
Divya N. Amin	University Of Missouri	Poster Presenter
Rina Barak	Weizmann Institute Of Science	Poster Presenter
Christopher M. Barbieri	Umdnj-Rwjms	Poster Presenter
Robert Belas	University Of Maryland Biotechnology Institute	Poster Presenter
James E. Berleman	University Of Iowa	Poster Presenter
Jaya Bhatnagar	Cornell University	Poster Presenter
Amber Bible	University Of Tennessee	Poster Presenter
Roberto A. Bogomolni	University Of California, Santa Cruz	Poster Presenter
Richard W. Branch	University Of Oxford	Poster Presenter
Mostyn T. Brown	University Of Oxford	Poster Presenter
Brian J. Cantwell	Unitveristy Of Tennessee	Poster Presenter
Yong-Suk Che	Osaka University	Poster Presenter
Sean D. Crosson	University Of Chicago	Poster Presenter
Nicolas J. Delalez	University Of Oxford	Poster Presenter
Kevin M. Devine	Smurfit Institute Of Genetics	Poster Presenter
Snezana Djordjevic	University College London	Poster Presenter
Robert G. Endres	Imperial College London	Poster Presenter
Annette H. Erbse	University Of Colorado, Boulder	Poster Presenter
Hajime Fukuoka	Tohoku Universitiy	Poster Presenter
Michael Y. Galperin	Ncbi, National Institutes Of Health	Poster Presenter
Rong Gao	Univ. Of Medicine & Dentistry Of Nj	Poster Presenter
Laura Garcia Mondejar	Universitat Tubingen	Poster Presenter
Mathieu Gauthier	Laval University	Poster Presenter
Mark Gomelsky	University Of Wyoming	Poster Presenter
Takanori Hirano	University Of Utah	Poster Presenter
David T. Hughes	University Of Texas Southwestern Medical Center	Poster Presenter

Hyejin Hwang	Ewha Womans University	Poster Presenter
Yuchi Inoue	Tohoku University	Poster Presenter
Masahiro Ito	Toyo University	Poster Presenter
Sakthimala Jagadeesan	Max-Planck Institute For Terrestrial Microbiology	Poster Presenter
Mark S. Johnson	Loma Linda University	Poster Presenter
Cecile Jourlin-Castelli	Centre National De La Recherche Scientifique	Poster Presenter
Yevgeniy V. Kalinin	Cornell University	Poster Presenter
Masaomi Kanbe	Prefectural University Of Hiroshima	Poster Presenter
Kajal Kanchan	University Of Tuebingen	Poster Presenter
Alla O. Kaserer	University Of Oklahoma	Poster Presenter
Cezar M. Khursigara	Nci, Nih	Poster Presenter
Paphavee Lertsetthakarn	University Of California, Santa Cruz	Poster Presenter
Mingshan Li	University Of Missouri	Poster Presenter
Linda E. Loedok	University Of Heidelberg, Zmbh	Poster Presenter
Jeremiah N. Marden	Indiana University	Poster Presenter
Nancy Martin	Queen's University	Poster Presenter
Emilia M. Mauriello	University Of California, Berkeley	Poster Presenter
Vanessa C. McMains	Niddk/Nih	Poster Presenter
Jonathan L. McMurry	Kennesaw State University	Poster Presenter
Tohru Minamino	Osaka University	Poster Presenter
Beronda L. Montgomery-Kaguri	Michigan State University	Poster Presenter
Nao Moriya	Osaka University	Poster Presenter
Patricia Mowery	Hobart & Wm. Smith Colleges	Poster Presenter
Tarek Msadek	Institut Pasteur	Poster Presenter
Susanne Mueller	University Of Iowa	Poster Presenter
Dorothee Murat	University Of California, Berkeley	Poster Presenter
Hiro Nakamura	Riken Yokohama Institute	Poster Presenter
Shuichi Nakamura	Osaka University	Poster Presenter
Seong-Won Nam	Ewha Womans University	Poster Presenter
Beiyan Nan	University Of California, Berkeley	Poster Presenter
Matthew B. Neiditch	University Of Medicine & Dentistry Of Nj	Poster Presenter
Silke Neumann	Zentrum Fur Molekulare Biologie Heidelberg (Zmbh)	Poster Presenter
Noriko Ohta	Hosei University	Poster Presenter
Davi R. Ortega	University Of Tennessee / Ornl	Poster Presenter
Sungsu Park	Ewha Womans University	Poster Presenter
Miguel P. . Pessanha	Requimte - Universidade Nova Lisboa	Poster Presenter
Teuta Pilizota	University Of Oxford	Poster Presenter
Abiola M. Pollard	Cornell University	Poster Presenter
Steven L. Porter	Oxford University	Poster Presenter
Simon Rainville	Universite Laval	Poster Presenter
Jun Sasaki	University Of Texas Medical School	Poster Presenter

Ansley E. Scott	University Of California At Berkeley	Poster Presenter
Satoshi Shibata	Prefectural University Of Hiroshima, Crest Jst	Poster Presenter
Holger Sondermann	Cornell University	Poster Presenter
Yoshiyuki Sowa	Oxford University	Poster Presenter
Kalin E. Swain	University Of Colorado At Boulder	Poster Presenter
Hui Tan	University Of Oklahoma	Poster Presenter
Kai M. Thormann	Max-Planck-Institute For Terrestrial Microbiology	Poster Presenter
Dany Truchon	Laval University	Poster Presenter
Luke Ulrich	Agile Genomics, Llc	Poster Presenter
Gottfried Unden	University Of Mainz	Poster Presenter
Kottayil I. Varughese	University Of Arkansas	Poster Presenter
Barry L. Wanner	Purdue University	Poster Presenter
Kylie J. Watts	Loma Linda University	Poster Presenter
Sigrun Wegener-Feldbrugge	Max-Planck-Institute For Terrestrial Microbiology	Poster Presenter
Melissa M. Wragg	University Of Sheffield	Poster Presenter
Jiang Wu	Indiana Univesity	Poster Presenter
Zhe Yang	Ucla	Poster Presenter
Junhua Yuan	Harvard University	Poster Presenter
Xiaodong X. Zhao	University Of Oklahoma	Poster Presenter
Sonia L. Bardy	University Of Michigan	Attendee
Alexandrine M. Bilwes	Cornell University	Attendee
Patricia Hartzell	University Of Idaho	Attendee
Akihiko Ishijima	Tohoku University	Attendee
Ee Hyun Kim	Ewha Womans University	Attendee
Eunseo Lee	Ewha Womans University	Attendee
Janine R. Maddock	University Of Michigan	Attendee
Christopher VV. Rao	University Of Illinois At Urbana-Champaign	Attendee
Joachim E. Schultz	University Of Tuebingen	Attendee
Mingming Wu	Cornell University	Attendee
Kang Wu	University Of Illinois At Urbana Champaign	Attendee