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GORDON RESEARCH CONFERENCES *frontiers of science*

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Nancy Ryan Gray, Ph.D.
Director

**2012 GORDON RESEARCH CONFERENCE
on VIBRATIONAL SPECTROSCOPY
FINAL PROGRESS REPORT**

DEPARTMENT OF ENERGY
GRANT NO. DE-SC0008071

The Gordon Research Conference on VIBRATIONAL SPECTROSCOPY was held at the University of New England, Biddeford, Maine, August 5-10, 2012. The Conference was well-attended with 138 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 138 attendees, 82 voluntarily responded to a general inquiry regarding ethnicity which appears on our registration forms. Of the 82 respondents, 15% were Minorities – 4% Hispanic, 10% Asian and 1% African American. Approximately 23% of the participants at the 2012 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In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field.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 As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings.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,
Franz Geiger, Conference Chairperson
NORTHWESTERN UNIVERSITY

Vibrational Spectroscopy
August 5-10, 2012
University of New England
Biddeford, ME
Chairs:
Franz M. Geiger & Edwin L. Sibert

Vice Chairs:
Arthur L. Utz & Mischa Bonn

The Vibrational Spectroscopy conference brings together experimentalists and theoreticians working at the frontiers of modern vibrational spectroscopy, with a special emphasis on spectroscopies that probe the structure and dynamics of molecules in gases, liquids, and at interfaces. The conference explores the wide range of state-of-the-art techniques based on vibrational motion. These techniques span the fields of time-domain, high-resolution frequency-domain, spatially-resolved, nonlinear, and multidimensional spectroscopies. The conference highlights both the application of these techniques in chemistry, materials, biology, the environment, and medicine as well as the development of theoretical models that enable one to connect spectroscopic signatures to underlying molecular motions including chemical reaction dynamics. The conference goal is to advance the field of vibrational spectroscopy by bringing together a collection of researchers who share common interests and who will gain from discussing work at the forefront of several connected areas. The intent is to emphasize the insights and understanding that studies of vibrations provide about a variety of molecular systems ranging from small polyatomic molecules to large biomolecules, nanomaterials, and environmental systems.

Contributors





SUNDAY

2:00 pm - 9:00 pm	Arrival and Check-in (Office Closed 6:00 pm - 7:00 pm)
6:00 pm	Dinner
7:30 pm - 7:40 pm	Welcome / Introductory Comments by GRC Site Staff
7:40 pm - 9:30 pm	Vibrational Motions in Chemical Reactions Discussion Leader: Tim Zwier (Purdue)
7:40 pm - 8:15 pm	Mathias Weber (Colorado/JILA) "Charge redistribution and charge transfer reactions in clusters"
8:15 pm - 8:25 pm	Discussion
8:25 pm - 9:00 pm	Andrew Orr-Ewing (Bristol) "Vibrationally resolved chemical reaction dynamics in solution"
9:00 pm - 9:10 pm	Discussion
9:10 pm - 9:30 pm	2-min Poster Talk Lightning Round I
9:30 pm	Welcome Reception

MONDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Vibrational Dynamics in Materials and Energy Conversion Discussion Leader: Nancy Levinger (Colorado State)
9:00 am - 9:35 am	Tim Lian (Emory) "Probing Molecular Structure and Ultrafast Dynamics at Adsorbate/Solid Interface by Time-Resolved Vibration SFG Spectroscopy"
9:35 am - 9:45 am	Discussion
9:45 am - 10:20 am	Aaron Massari (Minnesota) "Sum Frequency Generation Spectroscopy of Organic Transistors"
10:20 am - 10:30 am	Discussion
10:30 am	Coffee Break
11:00 am - 11:35 am	Abe Nitzan (Tel Aviv)

	"Vibrational heating, electronic heating and heat transport in molecular junctions"
11:35 am - 11:45 am	Discussion
11:45 am - 12:20 pm	John Asbury (Penn State) "Ultrafast Vibrational Probes of Electronic Processes in Materials"
12:20 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	<u>Poster Session I</u>
6:00 pm	Dinner
7:30 pm - 9:30 pm	Vibrational Dynamics in Biology
	Discussion Leader: Nien-Hui Ge (UC Irvine)
7:30 pm - 8:05 pm	Sharon Hammes-Schiffer (Penn State) "Ultrafast Dynamics of Photoinduced Proton-Coupled Electron Transfer Reactions in Solution"
8:05 pm - 8:15 pm	Discussion
8:15 pm - 8:50 pm	Paul Cremer (Penn State) "Investigating Ion Binding to Peptides and Surfaces by SFG"
8:50 pm - 9:00 pm	Discussion
9:00 pm - 9:30 pm	2-min Poster Talk Lightning Round II
9:30 pm	<u>Poster Session I</u> (continued)
TUESDAY	
7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Vibrations at Interfaces
	Discussion Leader: Sylvie Roke (EPFL)
9:00 am - 9:35 am	Ron Shen (UC Berkeley) "Some basic problems on surface sum-frequency spectroscopy"
9:35 am - 9:45 am	Discussion
9:45 am - 10:20 am	Jim Skinner (Wisconsin)
10:20 am - 10:30 am	Discussion
10:30 am	Coffee Break
11:00 am - 11:35 am	Elsa Yan (Yale) "Chiral Sum Frequency Generation Spectroscopy for Characterization of Protein Structures and Dynamics at Interfaces"
11:35 am - 11:45 am	Discussion
11:45 am - 12:20 pm	John Conboy (Utah) "A New Perspective on Lipid Membrane Structure and Dynamics Provided by Sum-Frequency Vibrational Spectroscopy"

12:20 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	<u>Poster Session II</u>
6:00 pm	Dinner
7:30 pm - 9:30 pm	Spatially Resolved Vibrational Spectroscopy
	Discussion Leader: Mischa Bonn (MPI Mainz)
7:30 pm - 8:05 pm	Steve Baldelli (Houston) "Sum Frequency Generation Microscopy of Monolayers on Metal and Metal Alloy Surfaces"
8:05 pm - 8:15 pm	Discussion
8:15 pm - 8:50 pm	Carol Hirschmugl (UW Milwaukee) "Infrared Imaging at the Diffraction Limit using a Multiple Beam Synchrotron Source and Focal Plane Array"
8:50 pm - 9:00 pm	Discussion
9:00 pm - 9:30 pm	2-min Poster Talk Lightning Round III
9:30 pm	<u>Poster Session II</u> (continued)

WEDNESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Vibrational Spectroscopy in the Environment
	Discussion Leader: Hongfei Wang (PNNL)
9:00 am - 9:35 am	Veronica Vaida (CU Boulder) "Vibrational spectroscopy of reactive processes in atmospheric chemistry"
9:35 am - 9:45 am	Discussion
9:45 am - 10:20 am	Mitchio Okumura (Cal Tech)
10:20 am - 10:30 am	Discussion
10:30 am	Group Photo / Coffee Break
11:00 am - 11:35 am	Vicki Grassian (Iowa) "Vibrational spectroscopy as a probe of surface adsorption and surface chemistry at environmentally relevant micro- and nano-particle interfaces"
11:35 am - 11:45 am	Discussion
11:45 am - 12:20 pm	Anne McCoy (Ohio State) "Spectral signatures of large amplitude vibrations: What information is encoded in the intensities?"
12:20 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	<u>Poster Session III</u>

6:00 pm	Dinner
7:00 pm - 7:30 pm	<u>Business Meeting</u> <i>Nominations for the next Vice Chair; Fill out Conference Evaluation Forms; Discuss future Site & Scheduling preferences; Election of the next Vice Chair</i>
7:30 pm - 9:30 pm	Vibrational Spectroscopy in Catalysis Discussion Leader: Art Utz (Tufts)
7:30 pm - 8:05 pm	Chris Williams (USC) "Viewing the Solid Catalyst - Liquid Interface with Attenuated Total Reflection Infrared Spectroscopy"
8:05 pm - 8:15 pm	Discussion
8:15 pm - 8:50 pm	Victor Batista (Yale) "Inverse Design of Catalysts for CO/CO ₂ Fuel Cells"
8:50 pm - 9:00 pm	Discussion
9:00 pm - 9:30 pm	2-min Poster Talk Lightning Round IV
9:30 pm	<u>Poster Session III</u> (continued)

THURSDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 11:45 am	New Methods for Probing Structure and Dynamics Discussion Leader: Ted Heilweil (NIST)
9:00 am - 9:35 am	Dan Neumark (UV Berkeley) "Slow electron velocity-map imaging of negative ions: applications to spectroscopy and dynamics"
9:35 am - 9:45 am	Discussion
9:45 am - 10:20 am	Tucker Carrington (Queen's) "Pruned basis methods for solving the vibrational Schroedinger equation without approximating the potential"
10:20 am - 10:30 am	Discussion
10:30 am	Coffee Break
11:00 am - 11:35 am	Hans-Dieter Meyer (Heidelberg) "The ionization spectrum of difluorobenzene, a full dimensional (30D) quantum simulation"
11:35 am - 11:45 am	Discussion
11:45 am - 12:20 pm	Shaul Mukamel (UC Irvine) "Multidimensional Coherent and Resonant Raman vibrational spectroscopy of biomolecules"
12:20 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time

4:00 pm - 6:00 pm	<u>Poster Session IV</u>
6:00 pm	Dinner
7:30 pm - 8:15 pm	Emerging Superstars Poster Talks (to be chosen at the meeting)
	Discussion Leader: Fleming Crim (UW Madison)
7:30 pm - 7:40 pm	TBA (Talk I)
7:40 pm - 7:45 pm	Discussion
7:45 pm - 7:55 pm	TBA (Talk II)
7:55 pm - 8:00 pm	Discussion
8:00 pm - 8:10 pm	TBA (Talk III)
8:10 pm - 8:15 pm	Discussion
8:15 pm - 9:15 pm	Keynote Lecture
8:15 pm - 9:05 pm	Keynote Lecture: Mark Johnson (Yale) "Structural analysis of reaction intermediates with cryogenic ion spectroscopy"
9:05 pm - 9:15 pm	Discussion
9:15 pm	<u>Poster Session IV</u> (continued) / Conclusion Reception

FRIDAY

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

Vibrational Spectroscopy (2012)

Name	Organization	Participation	Status
ACHTYL, JENNIFER L	NORTHWESTERN UNIVERSITY	Poster Presenter	Registered
ANGLIN, TIMOTHY C	UNIVERSITY OF MINNESOTA	Poster Presenter	Registered
ASBURY, JOHN B	PENN STATE UNIVERSITY	Speaker	Registered
ASCHAFFENBURG, DANIEL J	YALE UNIVERSITY	Poster Presenter	Registered
AVERILL, CHRISTOPHER M	PENN STATE UNIVERSITY	Poster Presenter	Registered
BALDELLI, STEVE	UNIVERSITY OF HOUSTON	Speaker	Registered
BATISTA, VICTOR S	YALE UNIVERSITY	Speaker	Registered
BIGGS, JASON D	UNIVERSITY OF CALIFORNIA, IRVINE	Poster Presenter	Registered
BONN, MISCHA	MAX PLANCK INSTITUTE FOR POLYMER RESEARCH	Vice Chair	Registered
BROOKES, JENNIFER F	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
BROWN, JAMES	QUEEN'S UNIVERSITY	Poster Presenter	Registered
BUCHANAN, LAUREN E	UNIVERSITY OF WISCONSIN - MADISON	Poster Presenter	Registered
CALABRESE, CARMELLA	CORNELL UNIVERSITY	Poster Presenter	Registered
CAMDEN, JON P	UNIVERSITY OF TENNESSEE	Poster Presenter	Registered
CARRINGTON, TUCKER	QUEENS UNIVERSITY	Speaker	Registered
CHEATUM, CHRISTOPHER M	UNIVERSITY OF IOWA	Attendee	Registered
CHEN, NAN	TUFTS UNIVERSITY	Poster Presenter	Registered
CONBOY, JOHN C	UNIVERSITY OF UTAH	Speaker	Registered
CREMER, PAUL S	TEXAS A&M	Speaker	Registered
CRIM, F. FLEMING	UNIVERSITY OF WISCONSIN	Discussion Leader	Registered
DAWADI, MAHESH B	THE UNIVERSITY OF AKRON	Poster Presenter	Registered
DOMBROWSKI, ERIC	TUFTS UNIVERSITY	Poster Presenter	Registered
DUNKELBERGER, ADAM	UNIVERSITY OF WISCONSIN-MADISON	Poster Presenter	Registered
DUNKELBERGER, EMILY B	UNIVERSITY OF WISCONSIN-MADISON	Poster Presenter	Registered
DUNLAP, BARBARA	UNIVERSITY OF ROCHESTER	Poster Presenter	Registered
EBBEN, CARLENA J	NORTHWESTERN UNIVERSITY	Poster Presenter	Registered
ESTRADA, CHARLENE F	JOHNS HOPKINS UNIVERSITY	Poster Presenter	Registered
FANG, CHONG	OREGON STATE UNIVERSITY	Poster Presenter	Registered
FU, LI	YALE UNIVERSITY	Poster Presenter	Registered
FUJISAKI, HIROSHI	NIPPON MEDICAL SCHOOL	Poster Presenter	Registered
GARAND, ETIENNE	UNIVERSITY OF WISCONSIN, MADISON	Poster Presenter	Registered
GE, NIEN-HUI	UC IRVINE	Discussion Leader	Registered
GEIGER, FRANZ M	NORTHWESTERN UNIVERSITY	Chair	Registered
GIBBS-DAVIS, JULIANNE M	UNIVERSITY OF ALBERTA	Poster Presenter	Registered
GOBROGGE, ERIC A	MONTANA STATE UNIVERSITY	Poster Presenter	Registered
GRASSIAN, VICKI H	UNIVERSITY OF IOWA	Speaker	Registered
GRIFFITH, ELIZABETH C	UNIVERSITY OF COLORADO, BOULDER	Poster Presenter	Registered

GROSS, ELAD	UC BERKELEY	Poster Presenter	Registered
GRUENKE, NATALIE	NORTHWESTERN UNIVERSITY	Poster Presenter	Registered
HAMMES-SCHIFFER, SHARON	UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	Speaker	Registered
HAN, YANG	UNIVERSITY OF CALIFORNIA, IRVINE	Poster Presenter	Registered
HAREL, ELAD	NORTHWESTERN UNIVERSITY	Poster Presenter	Registered
HAYES, PATRICK L	UNIVERSITY OF COLORADO	Poster Presenter	Registered
HEILWEIL, EDWIN J	NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	Discussion Leader	Registered
HIRSCHMUGL, CAROL	UNIVERSITY OF WISCONSIN	Speaker	Registered
HOFFMAN, DAVID P	UNIVERSITY OF CALIFORNIA BERKELEY	Poster Presenter	Registered
HORE, DENNIS	UNIVERSITY OF VICTORIA	Poster Presenter	Registered
HOSSEINPOUR, SAMAN SH	ROYAL INSTITUTE OF TECHNOLOGY (KTH)	Poster Presenter	Registered
HSIEH, CHO-SHUEN	MPIP	Poster Presenter	Registered
IFTIMIE, RADU	UNIVERSITY OF MONTREAL	Poster Presenter	Registered
JAIN, AMBER	UW MADISON	Poster Presenter	Registered
JENA, KAILASH C	ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE	Poster Presenter	Registered
JEONG, KWANG SEOB	THE PENNSYLVANIA STATE UNIVERSITY	Poster Presenter	Registered
JOHNSON, MARK A	YALE UNIVERSITY	Speaker	Registered
JONES, BRYNNA H	UNIVERSITY OF MINNESOTA	Poster Presenter	Registered
KALUME, AIMABLE	MARQUETTE UNIVERSITY	Poster Presenter	Registered
KEATING, CHRISTOPHER S	TULANE UNIVERSITY	Poster Presenter	Registered
KELLEY, MATTHEW	NORTHWESTERN UNIVERSITY	Poster Presenter	Registered
KHALIL, MUNIRA	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
KIEDA, RYAN	UNIVERSITY OF WISCONSIN - MADISON	Poster Presenter	Registered
KIRTEY, JOHN D	MONTANA STATE UNIVERSITY	Poster Presenter	Registered
KURAMOCHI, HIKARU	RIKEN	Poster Presenter	Registered
LAGUTCHEV, ALEXEI S	UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	Poster Presenter	Registered
LEE, YUAN-PERN	NATIONAL CHIAO TUNG UNIVERSITY	Poster Presenter	Registered
LEE, CHRISTOPHER M	PENNSYLVANIA STATE UNIVERSITY	Poster Presenter	Registered
LEE, NAMHEY	JOHNS HOPKINS UNIVERSITY	Poster Presenter	Registered
LEVINGER, NANCY E	COLORADO STATE UNIVERSITY	Discussion Leader	Registered
LEYSSNER, FELIX	FREIE UNIVERSITÄT BERLIN	Poster Presenter	Registered
LI, YUNLIANG	UNIVERSITY OF IOWA	Poster Presenter	Registered
LIAN, TIM	EMORY UNIVERSITY	Speaker	Registered
LOMONT, JUSTIN	UNIVERSITY OF CALIFORNIA, BERKELEY	Poster Presenter	Registered
LONDERGAN, CASEY H	HAVERFORD COLLEGE	Poster Presenter	Registered
LOTZE, STEPHAN M	FOM-INSTITUTE AMOLF	Poster Presenter	Registered
LU, ZHOU	PACIFIC NORTHWEST NATIONAL LABORATORY	Poster Presenter	Registered
LUDWIG, RYAN	LEHIGH UNIVERSITY	Poster Presenter	Registered
LYNCH, MICHAEL S	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
MASSARI, AARON M	UNIVERSITY OF MINNESOTA	Speaker	Registered
MATSUZAKI, KORENOBU	RIKEN	Poster Presenter	Registered

MCCOY, ANNE B	OHIO STATE UNIVERSITY	Speaker	Registered
MEYER, HANS-DIETER	HEIDELBERG UNIVERSITY	Speaker	Registered
MOORE, DAVID T	LEHIGH UNIVERSITY	Poster Presenter	Registered
MORITA, MASATO	INSTITUTE OF ATOMIC AND MOLECULAR SCIENCES	Poster Presenter	Registered
MUIR, RYAN D	PURDUE UNIVERSITY	Poster Presenter	Registered
MUKAMEL, SHAUL	UNIVERSITY OF CALIFORNIA, IRVINE	Speaker	Registered
NEUMARK, DANIEL M	UNIVERSITY OF CALIFORNIA BERKELEY	Speaker	Registered
NGUYEN, SON	UC, BERKELEY	Poster Presenter	Registered
NI, YICUN	UNIVERSITY OF WISCONSIN-MADISON	Poster Presenter	Registered
NITZAN, ABRAHAM	TEL AVIV UNIVERSITY	Speaker	Registered
NOACK, KRISTINA	INSTITUTE OF ENGINEERING THERMODYNAMICS	Poster Presenter	Registered
O'BRIEN, DANIEL B	UNIVERSITY OF MINNESOTA	Poster Presenter	Registered
OKUMURA, MITCHIO	CALIFORNIA INSTITUTE OF TECHNOLOGY	Speaker	Registered
OKUR, HALIL I	TEXAS A&M UNIVERSITY	Poster Presenter	Registered
ORR-EWING, ANDREW	UNIVERSITY OF BRISTOL	Speaker	Registered
PEIN, BRANDT C	UNIVERSITY OF ILLINOIS AT URBANA CHAMPAIGN	Poster Presenter	Registered
PELAEZ-RUIZ, DANIEL	UNIVERSITY OF HEIDELBERG	Poster Presenter	Registered
PEREZ, KATHRYN	CALIFORNIA INSTITUTE OF TECHNOLOGY	Poster Presenter	Registered
PERRY, DAVID S	THE UNIVERSITY OF AKRON	Poster Presenter	Registered
PETERSEN, POUL B	CORNELL UNIVERSITY	Poster Presenter	Registered
PETERSON, ERIC E	TUFTS UNIVERSITY	Poster Presenter	Registered
PRESTON, THOMAS J	UNIVERSITY OF BRISTOL	Poster Presenter	Registered
RAO, YI	COLUMBIA UNIVERSITY	Poster Presenter	Registered
REYNOLDS, ANTHONY	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
RIMSHAW, ADAM D	PENNSYLVANIA STATE UNIVERSITY	Poster Presenter	Registered
RIVERA, CHRISTOPHER A	UNIVERSITY OF MARYLAND	Poster Presenter	Registered
ROKE, SYLVIE	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE (EPFL)	Discussion Leader	Registered
ROSARIO-ALOMAR, MANUEL F	UNIVERSITY OF PUERTO RICO	Poster Presenter	Registered
SCHROEDER, MARKUS	UNIVERSITY OF HEIDELBERG	Poster Presenter	Registered
SCHWAIGHOFER, ANDREAS	AIT AUSTRIAN INSTITUTE OF TECHNOLOGY GMBH	Poster Presenter	Registered
SHEN, RON	UNIVERSITY OF CALIFORNIA, BERKELEY	Speaker	Registered
SHRESTHA, MONA	NORTHWESTERN UNIVERSITY	Poster Presenter	Registered
SIBERT, EDWIN L	UNIVERSITY OF WISCONSIN-MADISON	Chair	Registered
SINGH, PRASHANT	RIKEN	Poster Presenter	Registered
SKINNER, JAMES L	UNIVERSITY OF WISCONSIN	Speaker	Registered
SLENKAMP, KARLA M	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
SMITH, ANGELA	LEHIGH UNIVERSITY CHEMISTRY DEPARTMENT	Poster Presenter	Registered
SMITH, KATHRYN A	UNIVERSITY OF UTAH	Poster Presenter	Registered
TABOR, DANIEL P	UNIVERSITY OF WISCONSIN	Poster Presenter	Registered
TAINTER, CRAIG J	UNIVERSITY OF WISCONSIN-MADISON	Poster Presenter	Registered
TOAL, SIOBHAN E	DREXELL UNIVERSITY	Poster Presenter	Registered

TORO, CARLOS	UNIVERSITY OF MARYLAND	Poster Presenter	Registered
UNGER, MIRIAM	UNIVERSITY OF WISCONSIN - MILWAUKEE	Poster Presenter	Registered
UTZ, ARTHUR L	TUFTS UNIVERSITY	Vice Chair	Registered
VAIDA, VERONICA	UNIVERSITY OF COLORADO, BOULDER	Speaker	Registered
VELARDE, LUIS	PACIFIC NORTHWEST NATIONAL LABORATORY	Poster Presenter	Registered
VINAYKIN, MIKHAIL	UNIVERSITY OF SOUTHERN CALIFORNIA	Poster Presenter	Registered
WANG, ZHUGUANG	YALE UNIVERSITY	Poster Presenter	Registered
WANG, HONGFEI	PACIFIC NORTHWEST NATUIONAL LABORATORY	Discussion Leader	Registered
WEBER, MATHIAS	UNIVERSITY OF COLORADO	Speaker	Registered
WILLIAMS, MICHAEL R	YALE UNIVERSITY	Poster Presenter	Registered
WILLIAMS, CHRISTOPHER T	UNIVERSITY OF SOUTH CAROLINA	Speaker	Registered
WOLK, ARRON B	YALE UNIVERSITY	Poster Presenter	Registered
XIAO, DEQUAN	YALE UNIVERSITY	Poster Presenter	Registered
YACOVITCH, TARA I	UNIVERSITY OF CALIFORNIA, BERKELEY	Poster Presenter	Registered
YAN, ELSA C.Y.	YALE UNIVERSITY	Speaker	Registered
ZALESNY, ROBERT	WROCLAW UNIVERSITY OF TECHNOLOGY	Poster Presenter	Registered
ZHANG, WENKAI	SLAC NATIONAL ACCELERATOR LABORATORY	Poster Presenter	Registered
ZHOU, XIBIN	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	Poster Presenter	Registered
ZWIER, TIMOTHY S	PURDUE UNIVERSITY	Discussion Leader	Registered

138 Attendees