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Final Report: 2016 Quantum Science Gordon Research Conference

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5c. PROGRAM ELEMENT NUMBER
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6. AUTHORS

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAMES AND ADDRESSES
Gordon Research Conferences, Inc.
512 Liberty Lane

West Kingston, RI 02892 -1502

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS (ES)
U.S. Army Research Office
P.O. Box 12211
Research Triangle Park, NC 27709-2211

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The views, opinions and/or findings contained in this report are those of the author(s) and should not contrued as an official Department of the Army position, policy or decision, unless so designated by other documentation.

14. ABSTRACT

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a. REPORT	b. ABSTRACT	c. THIS PAGE			Jun Ye
UU	UU	UU	UU		19b. TELEPHONE NUMBER 303-735-3171

RPPR Final Report
as of 25-Jan-2018

Agency Code:

Proposal Number: 69591PHCF **Agreement Number: W911NF-16-1-0409**
INVESTIGATOR(S):

Name: Ph.D Jun Ye
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Phone Number: 3037353171
Principal: Y

Organization: **Gordon Research Conferences, Inc.**
Address: 512 Liberty Lane, West Kingston, RI 028921502
Country: USA
DUNS Number: 075712877 EIN: 050300482
Report Date: 14-Feb-2017 Date Received: 10-Jan-2018
Final Report for Period Beginning 15-Jul-2016 and Ending 14-Nov-2016
Title: 2016 Quantum Science Gordon Research Conference
Begin Performance Period: 15-Jul-2016 **End Performance Period:** 14-Nov-2016
Report Term: 0-Other
Submitted By: Nancy Ryan Gray Email: nih@grc.org
Phone: (401) 360-1505
Distribution Statement: 1-Approved for public release; distribution is unlimited.

STEM Degrees: 0 **STEM Participants:** 0

Major Goals: Organizing a Gordon Research Conference involves extensive communication with the research community to identify important issues at the frontiers of the field, and solicit suggestions for speakers and discussion leaders to participate in the conference. The Chair then contacts prospective participants to invite them to talk and discuss the nature of their contributions. The Chair then communicates the topics and aims of the conference through web pages, contact with relevant international professional bodies and email to members of the research community around the world to encourage applications for participation in the conference. The Chair is then responsible for assessing and accepting the applications and fielding a host of questions both concerning the technical content and practical aspects of conference participation.

Accomplishments: The 2016 Gordon Research Conference on Quantum Science was held on July 31 - August 5, 2016 at Stonehill College, Easton, MA. The Chairs for the meeting were Jun Ye (an experimental physicist working on the frontiers of quantum metrology and many-body physics at JILA, University of Colorado) and Frank Verstraete (a theoretical physicist working on the foundational aspects of quantum information science at University of Vienna). The Vice Chairs were Ana Maria Rey (University of Colorado) and Andrew Houck (Princeton University).

The aim of this conference was to explore frontier topics in the field of quantum science research, covering fundamental questions on quantum information and decoherence, entanglement and correlation dynamics, quantum sensing and fundamental physics, and new quantum systems. The program committee consisted of the four chairs, and Dave Wineland, Hans Briegel, Misha Lukin, Peter Zoller, Ignacio Cirac, Immanuel Bloch, David Huse, and Arno Rauschenbeutel.

The scientific program consisted of five evening sessions and four morning sessions, starting from Sunday night (July 31, 2016) and ending on Friday morning (August 5). The evening sessions featured one discussion leader and two invited speakers each. The morning sessions had one discussion leader and three invited speakers each. Besides exploring quantum information processing algorithm and architecture, important questions discussed included the connections between quantum entanglement, non-equilibrium dynamics, correlated states of matter, thermalization and decoherence. We addressed the implications of quantum entanglement for outstanding questions in condensed matter, high energy, and general relativity, while we explored the technological applications in quantum sensing and construction of interconnected and robust quantum systems.

We also held a student-focused Gordon Research Seminar (GRS) on July 30-31 (just before GRC). Jutho Haegeman (Univ. Vienna) and Jacob Covey (Univ. Colorado) are the student co-chairs. The interaction between

students and practicing scientists was a highlight of this conference.

The focus of the Gordon Research Seminar on Quantum Science was on the most timely ideas from quantum science and address such topics as the design and control of synthetic quantum matter, the evolution and thermalization of out-of equilibrium systems and its relation to many-body localization, as well as the application of entanglement theory and quantum error correction to our understanding of condensed matter, high-energy physics and quantum gravity.

Training Opportunities: Speakers, discussion leaders, poster presenters and attendees simultaneously contributed to and benefited from the collective skills and experience shared throughout the conference.

Results Dissemination: Conference Program

Honors and Awards: Nothing to Report

Protocol Activity Status:

Technology Transfer: Nothing to Report

GORDON RESEARCH CONFERENCES

FINAL PROGRESS REPORT
Army Research Office
Quantum Science GRC/GRS

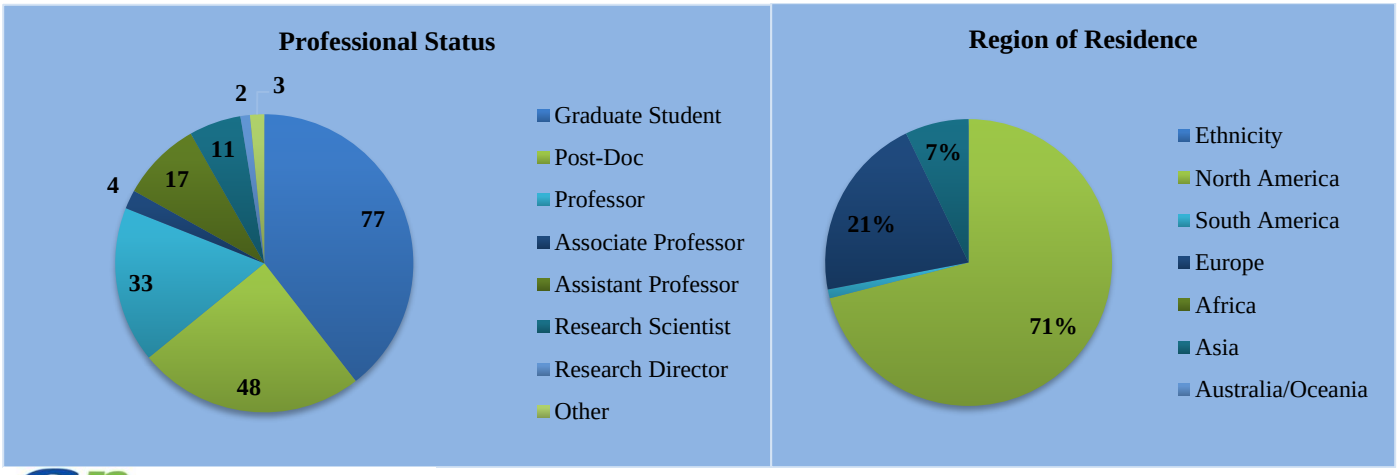
Grant Number W911NF-16-1-0409
July 30-August 5, 2016

Operational Summary

The Gordon Research Conference (GRC) and Gordon Research Seminar (GRS) on Quantum Science were held at the Stonehill College in Easton, Massachusetts from July 30-August 5, 2016. The meeting covered a variety of scientific topics and the content presented was highly rated by participants.

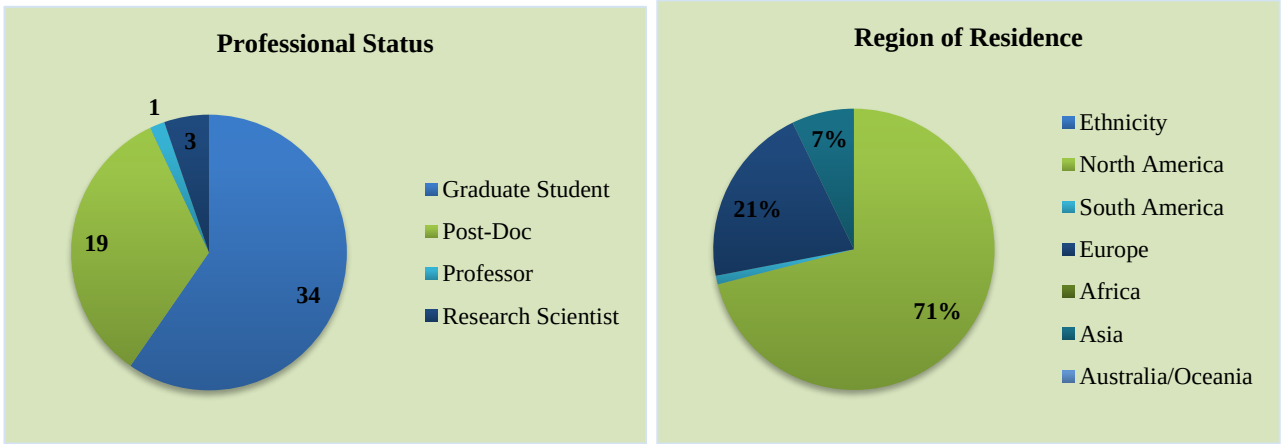
Conference Participants

The Conference was well-attended with 195 participants. Scientists from academia represented 93% of the participants while attendees from government accounted for 5% and those from industry totaled 2%. The meeting also attracted a strong mix of young investigators and senior scientists. Students and post-docs accounted for 64% of all attendees. Approximately 13% of the participants at the 2016 meeting were women.



Seminar Participants

The Seminar was well-attended with 57 participants. Scientists from academia represented 98% of the participants while attendees from government accounted for 2%. Students and post docs combined accounted for 93% of all attendees. Approximately 12% of the participants at the 2016 seminar were women.



Conference Program

The 2016 Gordon Research Conference on Quantum Science was held on July 31 - August 5, 2016 at Stonehill College, Easton, MA. The Chairs for the meeting were Jun Ye (an experimental physicist working on the frontiers of quantum metrology and many-body physics at JILA, University of Colorado) and Frank Verstraete (a theoretical physicist working on the foundational aspects of quantum information science at University of Vienna). The Vice Chairs were Ana Maria Rey (University of Colorado) and Andrew Houck (Princeton University).

The aim of this conference was to explore frontier topics in the field of quantum science research, covering fundamental questions on quantum information and decoherence, entanglement and correlation dynamics, quantum sensing and fundamental physics, and new quantum systems. The program committee consisted of the four chairs, and Dave Wineland, Hans Briegel, Misha Lukin, Peter Zoller, Ignacio Cirac, Immanuel Bloch, David Huse, and Arno Rauschenbeutel.

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The focus of the Gordon Research Seminar on Quantum Science was on the most timely ideas from quantum science and address such topics as the design and control of synthetic quantum matter, the evolution and thermalization of out-of equilibrium systems and its relation to many-body localization, as well as the application of entanglement theory and quantum error correction to our understanding of condensed matter, high-energy physics and quantum gravity.

Conference Budget

Funding provided by the Army Research Office supported partial registration for 5 postdocs, 14 graduate students, 20 professors, 1 assistant professor and 2 research scientists at the GRC and partial registration for 17 graduate students, 7 postdocs, 1 professor and 1research scientist 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 quality and diversity of talks, active poster sessions and the in formal discussions. Evaluations from the GRS included positive comments regarding the discussions, great talks and the question and answer time.

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

Dr. Jun Ye, GRC Chair
JILA, University of Colorado Boulder

Dr. Jutho Haegeman, GRS Chair
Ghent Univeristy

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

Quantum Science

Gordon Research Conference

Quantum Entanglement, New States of Matter, and Correlated Dynamics

July 31 - August 5, 2016

Stonehill College
Easton, MA

Chairs: Jun Ye & Frank Verstraete
Vice Chairs: Ana Maria Rey & Andrew Houck

Contributors

Meeting Program

Sunday	
2:00 pm - 9:00 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	**Computational Architecture, Entanglement/Computation Through Dissipation** Discussion Leader: **Ignacio Cirac** (Max Planck Institute of Quantum Optics, Germany)
7:40 pm - 8:00 pm	**Ignacio Cirac** (Max Planck Institute of Quantum Optics, Germany) "Quantum Information Processing and Dissipation"
8:00 pm - 8:10 pm	Discussion

8:10 pm - 8:40 pm	**Robert Schoelkopf** (Yale University, USA) "Cats in Microwave Cavities: Extending the Lifetime of Information by Error Correction"
8:40 pm - 8:50 pm	Discussion
8:50 pm - 9:20 pm	**Yiheng Lin** (National Institute of Standards and Technology / JILA, University of Colorado Boulder, USA) "Logic Gates and Alternative Entanglement Schemes for Trapped Ions"
9:20 pm - 9:30 pm	Discussion
Monday	
7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	**Quantum Information and Condensed Matter** Discussion Leader: **Matthew P. Fisher** (University of California, Santa Barbara, USA)
9:00 am - 9:30 am	**Matthew P. Fisher** (University of California, Santa Barbara, USA) "Quantum Cognition"
9:30 am - 9:45 am	Discussion
9:45 am - 10:15 am	**Ehud Altman** (Weizmann Institute of Science, Israel) "Computing Thermalizing Quantum Dynamics Using Tensor Networks"
10:15 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:30 am	**Matthew Hastings** (Microsoft, USA) "Improved Quantum LDPC Codes"
11:30 am - 11:45 am	Discussion
11:45 am - 12:15 pm	**Hannes Pichler** (Harvard University, USA) "Measuring the Entanglement Spectrum of Many-Body States"
12:15 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
6:00 pm	Dinner
7:30 pm - 9:30 pm	**Quantum Metrology, Sensing, and Other Areas (Chemistry/Biology)** Discussion Leader: **Vladan Vuletic** (Massachusetts Institute of Technology, USA)
7:30 pm - 8:00 pm	**Vladan Vuletic** (Massachusetts Institute of Technology, USA) "Entangling Many Atoms with One Photon"
8:00 pm - 8:10 pm	Discussion
8:10 pm - 8:40 pm	**David Reitze** (LIGO Laboratory, California Institute of Technology, USA) "LIGO: Where Quantum Science and High Energy Astrophysics Come to Meet"
8:40 pm - 8:50 pm	Discussion
8:50 pm - 9:20 pm	**Mark Kasevich** (Stanford University, USA) "Precision Inertial Sensing with Atom Interferometry"
9:20 pm - 9:30 pm	Discussion
Tuesday	
7:30 am - 8:30 am	Breakfast
8:30 am	Group Photo
9:00 am - 12:30 pm	**Hybrid Systems, Quantum Networks/Communication** Discussion Leader: **Eugene Polzik** (University of Copenhagen, Denmark)
9:00 am - 9:30 am	**Eugene Polzik** (University of Copenhagen, Denmark) "Quantum Mechanics in the Negative Mass Reference Frame"
9:30 am - 9:45 am	Discussion
9:45 am - 10:15 am	Alexander M. Cruickshank Lecture: **Mikhail Lukin** (Harvard University, USA) "New Interface Between Quantum Optics and Nanoscience"

10:15 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:30 am	**Oskar Painter** (California Institute of Technology, USA) "Quantum Optomechanics and Interfaces"
11:30 am - 11:45 am	Discussion
11:45 am - 12:15 pm	**Ronald Hanson** (Delft University of Technology, The Netherlands) "From a Loophole-Free Bell Test Towards a Quantum Internet"
12:15 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
6:00 pm	Dinner
7:30 pm - 9:30 pm	**Quantum Computation Algorithm, Error Corrections** Discussion Leader: **David Divincenzo** (RWTH Aachen University, Germany)
7:30 pm - 8:00 pm	**David Divincenzo** (RWTH Aachen University, Germany) "Electromagnetic Modeling for Microwave Quantum Computation"
8:00 pm - 8:10 pm	Discussion
8:10 pm - 8:40 pm	**Rainer Blatt** (University of Innsbruck, Austria) "Quantum Information Science with Trapped Ca+ Ions"
8:40 pm - 8:50 pm	Discussion
8:50 pm - 9:20 pm	**Barbara Terhal** (RWTH Aachen University, Germany) "Single-Mode Displacement Sensor"
9:20 pm - 9:30 pm	Discussion
Wednesday	
7:30 am - 8:30 am	Breakfast

9:00 am - 12:30 pm	**Many-Body Entanglement and Dynamics, Decoherence, Thermalization/Localization**
	Discussion Leader: **Eugene Demler** (Harvard University, USA)
9:00 am - 9:30 am	**Eugene Demler** (Harvard University, USA) "Mesoscopic Physics with Ultracold Atoms"
9:30 am - 9:45 am	Discussion
9:45 am - 10:15 am	**Markus Greiner** (Harvard University, USA) "Measurement of Entanglement Entropy in a Quantum Many-Body System"
10:15 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:30 am	**Charles Marcus** (Niels Bohr Institute, University of Copenhagen, Denmark) "Majorana Electronics"
11:30 am - 11:45 am	Discussion
11:45 am - 12:15 pm	**Christian Gross** (Max Planck Institute of Quantum Optics, Germany) "Exploring the Many-Body Localization Transition in Two Dimensions"
12:15 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
6:00 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	**Strongly Interacting Photons, Cavity QED with Real and Artificial Atoms**
	Discussion Leader: **Darrick Chang** (ICFO - The Institute of Photonic Sciences, Spain)
7:30 pm - 8:00 pm	**Darrick Chang** (ICFO - The Institute of Photonic Sciences, Spain)

	"Atomic Physics Meets Nanophotonics: Creating Complex Quantum States of Matter and Light"
8:00 pm - 8:10 pm	Discussion
8:10 pm - 8:40 pm	**Jeff Kimble** (California Institute of Technology, USA) "Strong Atom-Light Interactions in Photonic Crystals"
8:40 pm - 8:50 pm	Discussion
8:50 pm - 9:20 pm	**Konrad Lehnert** (JILA, University of Colorado Boulder, USA) "Quantum Science and Technology with Electromechanical Devices"
9:20 pm - 9:30 pm	Discussion
Thursday	
7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	**Novel Quantum Systems, Such as Long-Range Interactions, Spin-Orbit Coupling** Discussion Leader: **Francesca Ferlaino** (University of Innsbruck, Austria)
9:00 am - 9:30 am	**Francesca Ferlaino** (University of Innsbruck, Austria) "Exploring Dipole-Dipole Interactions in Ultracold Gases of Magnetic Atoms"
9:30 am - 9:45 am	Discussion
9:45 am - 10:15 am	**John Bollinger** (National Institute of Standards and Technology, USA) "Quantum Spin Dynamics and Entanglement Generation with Hundreds of Trapped Ions"
10:15 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:30 am	**Deborah Jin** (JILA, University of Colorado Boulder, USA) "Quantum Gas of Polar Molecules"
11:30 am - 11:45 am	Discussion
11:45 am - 12:15 pm	**Antoine Browaeys** (Institut d'Optique, CNRS, France) "Implementation of Spin Hamiltonians in Arrays of Individual Rydberg Atoms"

12:15 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
6:00 pm	Dinner
7:30 pm - 9:30 pm	**Quantum Science in High Energy and General Relativity** Discussion Leader: **Igor Pikovski** (Institute for Theoretical Atomic, Molecular and Optical Physics (ITAMP), Harvard University, USA)
7:30 pm - 8:00 pm	**Igor Pikovski** (Institute for Theoretical Atomic, Molecular and Optical Physics (ITAMP), Harvard University, USA) "Gravitational Phenomena in Low-Energy Quantum Systems"
8:00 pm - 8:10 pm	Discussion
8:10 pm - 8:40 pm	**Norbert Schuch** (Max Planck Institute of Quantum Optics, Germany) "Topological Order and Tensor Networks: A Holographic Perspective"
8:40 pm - 8:50 pm	Discussion
8:50 pm - 9:20 pm	**Brian Swingle** (Stanford University, USA) "Measuring Quantum Information Scrambling"
9:20 pm - 9:30 pm	Discussion
Friday	
7:30 am - 8:30 am	Breakfast
9:00 am	Departure

Quantum Science (GRS)

Gordon Research Seminar

Quantum Simulation, Entanglement and Dynamics of Condensed Matter Systems and Field Theories

July 30-31, 2016

Stonehill College
Easton, MA

Chairs: Jutho Haegeman & Jacob Covey

Contributors

Meeting 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 by the GRS Conference Chair
3:45 pm - 4:30 pm	**Keynote Session: Polarons in Electron Systems and Ultracold Atoms**
	Discussion Leader: **Puneet Murthy** (University of Heidelberg, Germany)
3:45 pm - 4:20 pm	**Eugene Demler** (Harvard University, USA) "Polarons in Electron Systems and Ultracold Atoms"
4:20 pm - 4:30 pm	Discussion
4:30 pm - 6:00 pm	Poster Session
6:00 pm	Dinner
7:30 pm - 9:30 pm	**Topological Order, Error Correction and Quantum Gates**
	Discussion Leader: **Dong-Ling Deng** (Condensed Matter Theory Center and Joint Quantum Institute, University of Maryland, College Park, USA)
7:30 pm - 7:50 pm	**Guillaume Dauphinais** (Université de Sherbrooke, Canada) "Fault-Tolerant Error Correction for Systems of Non-Abelian Anyons"
7:50 pm - 8:00 pm	Discussion
8:00 pm - 8:20 pm	**Timothy Hsieh** (Kavli Institute for Theoretical Physics, USA) "Bulk Topological Proximity Effect"
8:20 pm - 8:30 pm	Discussion

8:30 pm - 8:50 pm	**Itsik Cohen** (Hebrew University of Jerusalem, Israel) "Two-Qubit Gate with Trapped Ions Under Long-Wavelength Radiation"
8:50 pm - 9:00 pm	Discussion
9:00 pm - 9:20 pm	**Sagar Vijay** (Massachusetts Institute of Technology, USA) "Fracton Topological Order, Generalized Lattice Gauge Theory and Duality"
9:20 pm - 9:30 pm	Discussion
Sunday	
7:30 am - 8:30 am	Breakfast
9:00 am - 11:00 am	**Quantum Magnetism and Many-Body Localization** Discussion Leader: **Michael Goldman** (Harvard University, USA)
9:00 am - 9:20 am	**Jacob Smith** (Joint Quantum Institute, University of Maryland, College Park, USA) "Quantum Thermalization and Localization in a Trapped Ion Quantum Simulator"
9:20 am - 9:30 am	Discussion
9:30 am - 9:50 am	**Maria Moreno-Cardoner** (ICFO - The Institute of Photonic Sciences, Spain) "Subradiant Collective States in Atomic Arrays"
9:50 am - 10:00 am	Discussion
10:00 am - 10:20 am	**Huanqian Loh** (Massachusetts Institute of Technology, USA) "Long-Lived Spin Coherence in Ultracold Fermionic NaK Molecules"
10:20 am - 10:30 am	Discussion
10:30 am - 10:50 am	**Pranjal Bordia** (Quantum Many Body Systems Division (MPQ), Ludwig Maximilian University of Munich, Germany) "Probing Many-Body Localization with Ultracold Fermions in Optical Lattices"
10:50 am - 11:00 am	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	Lunch
1:30 pm - 2:30 pm	**Entanglement in Quantum Matter** Discussion Leader: **Xiaopeng Li** (Condensed Matter Theory Center and Joint Quantum Institute, University of Maryland, College Park, USA)
1:30 pm - 1:50 pm	**Zhexuan Gong** (Joint Quantum Institute, University of Maryland, College Park, USA) "Entanglement Area Law for Long-Range Interacting Systems"
1:50 pm - 2:00 pm	Discussion

2:00 pm - 2:20 pm	**Philipp Preiss** (Heidelberg University, Germany) "Measuring Entanglement Entropy in Synthetic Matter"
2:20 pm - 2:30 pm	Discussion
2:30 pm - 3:00 pm	Evaluation Period *Fill in GRS Evaluation Forms*
3:00 pm	Seminar Concludes

Quantum Science GRC – Registration List

Name	Organization	Participation	Status
Aggarwal, Nancy	LIGO, MIT	Poster Presenter	Registered
Altman, Ehud	UC Berkeley	Speaker	Registered
Arrangoiz-Arriola, P	Stanford University	Attendee	Registered
Asenjo-Garcia, Ana	Caltech	Poster Presenter	Registered
Axline, Christopher	Yale University	Poster Presenter	Registered
Barik, Sabyasachi	IREAP	Attendee	Registered
Beck, Mark	Whitman College	Poster Presenter	Registered
Béguin, Jean-Baptiste	Niels Bohr Institute	Poster Presenter	Registered
Bhaskar, Mihir K	Harvard University	Poster Presenter	Registered
Blatt, Rainer	University of Innsbruck	Speaker	Registered
Bollinger, John J	National Institute of Standards and Technology	Speaker	Registered
Bondar, Denys I	Princeton University	Poster Presenter	Registered
Bordia, Pranjal	Ludwig Maximilian University of Munich	Poster Presenter	Registered
Borregaard, Johannes	Harvard University	Poster Presenter	Registered
Brekenfeld, Manuel	Max Planck Institute of Quantum Optics	Poster Presenter	Registered
Browaeys, Antoine	Institut d'Optique, CNRS	Speaker	Registered
Burgers, Alex P	California Institute of Technology	Poster Presenter	Registered
Cabrera, Renan	Princeton University	Poster Presenter	Registered
Chang, Darrick	ICFO - The Institute of Photonic Sciences	Speaker	Registered
Chen, Edward H	Massachusetts Institute of Technology	Poster Presenter	Registered
Chien, Chihchun	University of California, Merced	Poster Presenter	Registered
Chong, Yonuk	Korea Research Institute of Standards and Science	Attendee	Registered
Cirac, Ignacio	Max Planck Institute of Quantum Optics	Speaker	Registered
Clemens, James P	Miami University	Poster Presenter	Registered
Cline, Julia	JILA, University of Colorado at Boulder	Poster Presenter	Registered
Cohen, Itsik	Hebrew University of Jerusalem	Poster Presenter	Registered
Cortese, John	Massachusetts Institute of Technology	Attendee	Registered
Coto, Raul	Pontificia Universidad Catolica de Chile	Poster Presenter	Registered
Covey, Jacob	JILA/NIST-University of Colorado-Boulder	Poster Presenter	Registered
Cox, Kevin C	JILA, University of Colorado at Boulder	Poster Presenter	Registered
Crocker, Clayton T	UMD, JQI	Poster Presenter	Registered
Curcic, Tatjana	AFOSR	Attendee	Registered
Dauphinais, Guillaume	Université de Sherbrooke	Poster Presenter	Registered
Davis, Emily J	Stanford University	Poster Presenter	Registered
De Greve, Kristiaan	Harvard University - Department of Physics	Poster Presenter	Registered
De Leon, Nathalie P	Princeton University	Attendee	Registered
Demler, Eugene	Harvard University	Speaker	Registered
Deng, Dong-Ling	Joint Quantum Institute, University of Maryland	Poster Presenter	Registered
Divincenzo, David P	RWTH Aachen University	Speaker	Registered

Dordevic, Tamara	Harvard University	Poster Presenter	Registered
Dwyer, Bo L	Harvard University	Poster Presenter	Registered
Eddins, Andrew W	University of California, Berkeley	Poster Presenter	Registered
Efetov, Dmitri K	MIT	Poster Presenter	Registered
Epstein, Ryan J	Northrop Grumman	Poster Presenter	Registered
Fedortchenko, Serguei	Université Paris Diderot	Poster Presenter	Registered
Felicetti, Simone	Laboratoire Matériaux et Phénomènes Quantiques	Poster Presenter	Registered
Ferlaino, Francesca	University of Innsbruck	Speaker	Registered
Ferri, Francesco	Laboratoire Kastler Brossel (ENS) - Paris	Poster Presenter	Registered
Finkelstein, Ran	Weizmann Institute of Science	Poster Presenter	Registered
Fisher, Matthew P. A	University of California, Santa Barbara	Speaker	Registered
Flick, Johannes	Max Planck Institute for Structure & Dynamics of Matter	Poster Presenter	Registered
Gerber, Justin	University of California - Berkeley Physics Department	Poster Presenter	Registered
Gieseler, Jan	Harvard University	Poster Presenter	Registered
Gillman, Edward	Imperial College London	Poster Presenter	Registered
Goldman, Michael L	Harvard University	Poster Presenter	Registered
Gong, Zhexuan	Joint Quantum Institute, University of Maryland	Poster Presenter	Registered
Gontijo Campos, Andre	Princeton University	Poster Presenter	Registered
Grau, Matthew	ETH Zürich	Poster Presenter	Registered
Greif, Daniel G	Harvard University	Attendee	Registered
Greiner, Markus	Harvard University	Speaker	Registered
Gross, Christian	Max Planck Institute of Quantum Optics	Speaker	Registered
Gujarati, Tanvi P	The University of Michigan	Poster Presenter	Registered
Gullans, Michael	National Institute of Standards and Technology	Poster Presenter	Registered
Hacquebard, Luke	McGill University	Poster Presenter	Registered
Haegeman, Jutho	Ghent University	Attendee	Registered
Hanson, Ronald	Delft University of Technology	Speaker	Registered
Harrington, Patrick M	Washington University	Attendee	Registered
Hastings, Matthew B	Microsoft	Speaker	Registered
Hood, Jonathan D	Caltech	Poster Presenter	Registered
Houck, Andrew	Princeton University	Vice Chair	Registered
Hu, Ming-Guang	Harvard University	Poster Presenter	Registered
Humphreys, Peter C	TU Delft	Poster Presenter	Registered
Hutson, Ross	JILA/University of Colorado at Boulder	Poster Presenter	Registered
Isaev, Leonid	JILA, University of Colorado Boulder	Poster Presenter	Registered
Janitz, Erika W	McGill University	Poster Presenter	Registered
Ji, Geoffrey	Harvard University	Poster Presenter	Registered
Johri, Sonika	Intel Labs, Intel Corporation	Poster Presenter	Registered
Ju, Jung Jin	Electronics and Telecommunication Research Institute	Attendee	Registered
Kalb, Norbert	Delft University of Technology	Poster Presenter	Registered
Kao, Wil	Stanford University	Poster Presenter	Registered

Karpov, Michael	Weizmann Institute of Science	Poster Presenter	Registered
Kasevich, Mark A	Stanford University	Speaker	Registered
Kim, Hwanmun	University of Maryland	Poster Presenter	Registered
Kim, Jin-Sung	Princeton University	Poster Presenter	Registered
Kimble, Jeff	California Institute of Technology	Speaker	Registered
Kinnunen, Jami J	Aalto University	Poster Presenter	Registered
Kirchmair, Gerhard	Institute for Quantum Optics and Quantum Information	Poster Presenter	Registered
Kleinbaum, Ethan	Princeton University	Attendee	Registered
Kollar, Alicia J	Stanford University	Poster Presenter	Registered
Kortan, Ahmet R	U.S. Department of Energy	Attendee	Registered
Kou, Angela	Yale University	Poster Presenter	Registered
Krastanov, Stefan	Yale University	Poster Presenter	Registered
Krayzman, Lev	Yale University	Poster Presenter	Registered
Kuznetsov, Andrej	University of Oslo	Poster Presenter	Registered
Landsman, Kevin A	University of Maryland-Joint Quantum Institute	Poster Presenter	Registered
Lehnert, Konrad W	JILA, University of Colorado Boulder	Speaker	Registered
Levine, Harry	Harvard University Physics Department	Poster Presenter	Registered
Li, Xiaopeng	Joint Quantum Institute, University of Maryland	Poster Presenter	Registered
Li, Zhaozhe	ICFO	Poster Presenter	Registered
Lin, Yiheng	JILA, University of Colorado Boulder	Speaker	Registered
Loh, Huanqian	Massachusetts Institute of Technology	Poster Presenter	Registered
Lukin, Mikhail	Harvard University	Speaker	Registered
Lyon, Stephen A	Princeton University	Poster Presenter	Registered
Magnan, Eric M	Joint Quantum Institute	Poster Presenter	Registered
Marcus, Charles M	Niels Bohr Institute, University of Copenhagen	Speaker	Registered
Marinelli, Matteo	ETH Zurich	Poster Presenter	Registered
Marti, George E	NIST, JILA, CU Boulder	Poster Presenter	Registered
Mathew, Ranchu	University of Maryland	Poster Presenter	Registered
Maurer, Peter	Stanford University	Poster Presenter	Registered
McGrew, William F	NIST	Poster Presenter	Registered
Mehta, Karan	Massachusetts Institute of Technology	Poster Presenter	Registered
Mesterhazy, David	University of Bern	Poster Presenter	Registered
Miyake, Akimasa	University of New Mexico	Poster Presenter	Registered
Morales, Andrea	ETH Zuerich	Poster Presenter	Registered
Moreno-Cardoner, Maria	ICFO - The Institute of Photonic Sciences	Poster Presenter	Registered
Muniz, Juan A	California Institute of Technology	Poster Presenter	Registered
Muraleedharan, G	CQuIC, University of New Mexico	Poster Presenter	Registered
Murch, Kater W	Washington University	Poster Presenter	Registered
Murthy, Puneet A	University of Heidelberg	Poster Presenter	Registered
Musa, Mohamed O	Gulf University for Science and Technology	Poster Presenter	Registered
Narla, Anirudh	Yale University	Poster Presenter	Registered

Nicholson, Travis L	MIT	Poster Presenter	Registered
Omar, Yasser	Physics of Information and Quantum Technologies Group	Poster Presenter	Registered
Painter, Oskar	California Institute of Technology	Speaker	Registered
Peaudecerf, Bruno M	University of Strathclyde	Poster Presenter	Registered
Peng, Lucas S	California Institute of Technology	Poster Presenter	Registered
Pepino, Ron	FSC	Poster Presenter	Registered
Perczel, Janos	MIT-Harvard Center for Ultracold Atoms	Poster Presenter	Registered
Pfaff, Wolfgang	Yale University	Poster Presenter	Registered
Pichler, Hannes	Harvard University/ITAMP	Speaker	Registered
Pikovski, Igor	Harvard University	Speaker	Registered
Polzik, Eugene	University of Copenhagen	Speaker	Registered
Preiss, Philipp M	Heidelberg University	Poster Presenter	Registered
Qi, Xiaodong	CQuIC, University of New Mexico	Poster Presenter	Registered
Reiter, Florentin	Harvard University	Poster Presenter	Registered
Reitze, David	LIGO Laboratory, California Institute of Technology	Speaker	Registered
Rey, Ana Maria	Jila, University of Colorado	Vice Chair	Registered
Richerme, Phil	Indiana University	Poster Presenter	Registered
Schittko, Robert	Harvard University	Poster Presenter	Registered
Schoelkopf, Robert J	Yale University	Speaker	Registered
Schuch, Norbert	Max Planck Institute of Quantum Optics	Speaker	Registered
Schwartz, Sylvain	MIT - Harvard Center for Ultracold Atoms	Attendee	Registered
Segev, Yair	Weizmann Institute of Science	Poster Presenter	Registered
Semba, Kouichi	National Institute of Infor & Communications Tech	Attendee	Registered
Shahmoon, Ephraim	Harvard University	Poster Presenter	Registered
Shankar, Athreya	University of Colorado Boulder	Poster Presenter	Registered
Shen, Chao	Yale University	Poster Presenter	Registered
Sigillito, Anthony J	Princeton University	Poster Presenter	Registered
Simon, David S	Stonehill College	Poster Presenter	Registered
Smith, Jacob	Joint Quantum Institute, University of Maryland	Poster Presenter	Registered
Solyom, Adrian O. W.	McGill University	Poster Presenter	Registered
Son, Wonmin	Sogang University	Poster Presenter	Registered
Sonderhouse, Lindsay	University of Colorado at Boulder	Poster Presenter	Registered
Stajic, Jelena	Science	Attendee	Registered
Streed, Erik W	Griffith University	Poster Presenter	Registered
Sukachev, Denis D	Harvard University	Poster Presenter	Registered
Sundaresan, Neereja	Princeton University	Poster Presenter	Registered
Sushkov, Alexander	Boston University	Attendee	Registered
Swingle, Brian	Stanford University	Speaker	Registered
Taylor, Stephen	Benjamin Lev Lab, Stanford University	Poster Presenter	Registered
Terhal, Barbara	RWTH Aachen University	Speaker	Registered
Thompson, Jeff	Princeton University	Attendee	Registered

Tokunaga, Yuuki	NTT Labs.	Poster Presenter	Registered
Tse, Maggie	MIT - LIGO Lab	Poster Presenter	Registered
Urbach, Elana K	Harvard University	Poster Presenter	Registered
Venkatramani, Aditya V	Harvard University	Attendee	Registered
Verstraete, Frank	University of Vienna	Chair	Registered
Vijay, Sagar	Massachusetts Institute of Technology	Poster Presenter	Registered
Villar, Alessandro S	American Physical Society	Attendee	Registered
Vool, Uri	Yale University	Poster Presenter	Registered
Vuletic, Vladan	Massachusetts Institute of Technology	Speaker	Registered
Walsworth, Ronald L	Harvard University	Attendee	Registered
Wan, Yong	National Institute of Standards and Technology	Poster Presenter	Registered
Wang, Xin	City University of Hong Kong	Poster Presenter	Registered
Wang, Dongsheng	University of British Columbia	Poster Presenter	Registered
Welte, Stephan	Max Planck Institute of Quantum Optics	Poster Presenter	Registered
Wilson, Andrew	NIST	Poster Presenter	Registered
Witmer, Jeremy D	Stanford University	Attendee	Registered
Wong-Campos, David	University of Maryland, Joint Quantum Institute	Poster Presenter	Registered
Wu, Hao	JILA, University of Colorado / NIST	Poster Presenter	Registered
Wu, Yewei	University of Colorado Boulder	Poster Presenter	Registered
Wunderlich, Christof	University of Siegen	Poster Presenter	Registered
Xu, Wenchao	University of Illinois at Urbana-Champaign	Poster Presenter	Registered
Ye, Jun	JILA, University of Colorado Boulder	Chair	Registered
Yelin, Susanne	University of Connecticut	Poster Presenter	Registered
Yu, Leo	Stanford University	Poster Presenter	Registered
Yuan, Haidong	Chinese University of Hong Kong	Poster Presenter	Registered
Zhang, Gengyan	Princeton University	Poster Presenter	Registered
Zhang, Yaxing	Yale University Physics	Poster Presenter	Registered
Zhdanov, Dmitry V	Northwestern University	Poster Presenter	Registered
Zhu, Bihui	JILA	Poster Presenter	Registered
Zhu, Guanyu	Joint Quantum Institute, University of Maryland	Poster Presenter	Registered
Zou, Chang-Ling	Yale University	Poster Presenter	Registered

Quantum Science GRS – Registration List

Name	Organization	Participation	Status
Bhaskar, Mihir K	Harvard University	Poster Presenter	Registered
Bondar, Denys I	Princeton University	Poster Presenter	Registered
Bordia, Pranjal	Ludwig Maximilian University of Munich	Speaker	Registered
Brekenfeld, Manuel	Max Planck Institute of Quantum Optics	Poster Presenter	Registered
Chen, Edward H	Massachusetts Institute of Technology	Poster Presenter	Registered
Cline, Julia	JILA, University of Colorado at Boulder	Poster Presenter	Registered
Cohen, Itsik	Hebrew University of Jerusalem	Speaker	Registered
Covey, Jacob	JILA/NIST-University of Colorado-Boulder	Chair	Registered
Dauphinais, Guillaume	Université de Sherbrooke	Speaker	Registered
Davis, Emily J	Stanford University	Poster Presenter	Registered
Demler, Eugene	Harvard University	Speaker	Registered
Deng, Dong-Ling	Joint Quantum Institute, University of Maryland	Discussion Leader	Registered
Efetov, Dmitri K	MIT	Poster Presenter	Registered
Fedortchenko, Serguei	Université Paris Diderot	Poster Presenter	Registered
Felicetti, Simone	Laboratoire Matériaux et Phénomènes Quantiques	Poster Presenter	Registered
Ferri, Francesco	Laboratoire Kastler Brossel (ENS) - Paris	Poster Presenter	Registered
Gillman, Edward	Imperial College London	Poster Presenter	Registered
Goldman, Michael L	Harvard University	Discussion Leader	Registered
Gong, Zhexuan	Joint Quantum Institute, University of Maryland	Speaker	Registered
Grau, Matthew	ETH Zürich	Poster Presenter	Registered
Hacquebard, Luke	McGill University	Poster Presenter	Registered
Haegeman, Jutho	Ghent University	Chair	Registered
Harrington, Patrick M	Washington University	Poster Presenter	Registered
Hsieh, Timothy H	Kavli Institute for Theoretical Physics	Speaker	Registered
Humphreys, Peter C	TU Delft	Poster Presenter	Registered
Jamadagni, Amit G	Birla Institute of Technology and Science, Pilani	Poster Presenter	Registered
Janitz, Erika W	McGill University	Poster Presenter	Registered
Ji, Geoffrey	Harvard University	Poster Presenter	Registered
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Murthy, Puneet A	University of Heidelberg	Discussion Leader	Registered
Peaudecerf, Bruno M	University of Strathclyde	Poster Presenter	Registered
Preiss, Philipp	Heidelberg University	Speaker	Registered
Qi, Xiaodong	CQuIC, University of New Mexico	Poster Presenter	Registered
Reiter, Florentin	Harvard University	Poster Presenter	Registered
Schittko, Robert	Harvard University	Poster Presenter	Registered
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Welte, Stephan	Max Planck Institute of Quantum Optics	Poster Presenter	Registered
Yu, Leo	Stanford University	Poster Presenter	Registered
Zhang, Yaxing	Yale University Physics	Poster Presenter	Registered