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David Goldhaber-Gordon

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14. ABSTRACT
In conjunction with a program review for an ARO MURI, we hosted a two-day workshop on complex oxide electronics. The speakers were luminaries in the field, including two international participants: Peter Littlewood, Dmitri Basov, Peter Armitage, Sri Raghu, Kyle Shen, Andrea Caviglia, Alex Gray, Craig Fennie, Shahal Ilani, Art Ramirez, Allan MacDonald, Ashwin Vishwanath. Also several speakers from the MURI. The second day concluded with topical breakout groups on key and emerging subjects in complex oxide materials.

15. SUBJECT TERMS
Workshop, Strongly-correlated, Oxide, Mott Insulator

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a. REPORT	b. ABSTRACT	c. THIS PAGE			David Goldhaber-Gordon
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Report Title

Final Report: Travel funds for Stanford University to host Mott MURI Annual Review and Oxide Workshop, August 6-8, 2013

ABSTRACT

In conjunction with a program review for an ARO MURI, we hosted a two-day workshop on complex oxide electronics. The speakers were luminaries in the field, including two international participants: Peter Littlewood, Dmitri Basov, Peter Armitage, Sri Raghu, Kyle Shen, Andrea Caviglia, Alex Gray, Craig Fennie, Shahal Ilani, Art Ramirez, Allan MacDonald, Ashwin Vishwanath. Also several speakers from the MURI. The second day concluded with topical breakout groups on key and emerging subjects in complex oxide materials.

Enter List of papers submitted or published that acknowledge ARO support from the start of the project to the date of this printing. List the papers, including journal references, in the following categories:

(a) Papers published in peer-reviewed journals (N/A for none)

Received Paper

TOTAL:

Number of Papers published in peer-reviewed journals:

(b) Papers published in non-peer-reviewed journals (N/A for none)

Received Paper

TOTAL:

Number of Papers published in non peer-reviewed journals:

(c) Presentations

Number of Presentations: 0.00

Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Peer-Reviewed Conference Proceeding publications (other than abstracts):

(d) Manuscripts

Received Paper

TOTAL:

Number of Manuscripts:

Books

Received Book

TOTAL:

Received Book Chapter

TOTAL:

Patents Submitted

Patents Awarded

Awards

Graduate Students

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Post Doctorates

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Faculty Supported

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Under Graduate students supported

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Student Metrics

This section only applies to graduating undergraduates supported by this agreement in this reporting period

The number of undergraduates funded by this agreement who graduated during this period: 0.00

The number of undergraduates funded by this agreement who graduated during this period with a degree in science, mathematics, engineering, or technology fields:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and will continue to pursue a graduate or Ph.D. degree in science, mathematics, engineering, or technology fields:..... 0.00

Number of graduating undergraduates who achieved a 3.5 GPA to 4.0 (4.0 max scale):..... 0.00

Number of graduating undergraduates funded by a DoD funded Center of Excellence grant for Education, Research and Engineering:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and intend to work for the Department of Defense 0.00

The number of undergraduates funded by your agreement who graduated during this period and will receive scholarships or fellowships for further studies in science, mathematics, engineering or technology fields: 0.00

Names of Personnel receiving masters degrees

NAME

Total Number:

Names of personnel receiving PHDs

NAME

Total Number:

Names of other research staff

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Sub Contractors (DD882)

Inventions (DD882)

Scientific Progress

This was a workshop. It launched several collaborations, but we have not attempted to track them.

Technology Transfer

Stanford University

2013 Oxide Interfaces & MURI Review

Agenda

Tuesday, August 6, 2013 **Complex Oxide Heterostructures & Novel Spectroscopies**

Kistler Conference Room

8:30 – 9:00 am	*Continental breakfast*	
9:00 – 9:10 am	David Goldhaber-Gordon Stanford	Welcome & Overview
9:10 – 9:50 am	Peter Littlewood University of Chicago/Argonne	Electronic reconstruction at oxide interfaces
9:50 – 10:30 am	Dmitri Basov UC San Diego	Probing correlated electron matter by infrared nano-spectroscopy and nano-imaging
10:30 – 10:45 am	*Coffee Break*	
10:45 – 11:25 am	N. Peter Armitage John Hopkins	THz investigations of exotic quantum states of matter
11:25 – 12:05 pm	Sri Raghu Stanford	Quantum critical metals and their instabilities: a "radically conservative" approach
12:05 – 1:30 pm	*Lunch*	
1:30 – 2:10 pm	Kyle Shen Cornell	New Spectroscopic Probes of Correlated Oxide Interfaces and Thin Films
2:10 – 2:50 pm	Andrea Caviglia TU Delft	Ultrafast magnetic dynamics in nickelates heterostructures
2:50 – 3:10 pm	Hanghui Chen Columbia	Engineering Correlation Effects via Artificially Designed Oxide Superlattices
3:10 – 3:30 pm	*Coffee Break*	
3:30 – 4:10 pm	Alex Gray SLAC	Ultrafast dynamics of THz electric-field-induced insulator-to-metal transition in VO2
4:10 – 4:35 pm	Adam Kajdos Santosh Raghavan UC Santa Barbara	A modulation doped, two-dimensional electron gas in SrTiO3 Subband structure of a high-density 2DEG in SrTiO3
4:35 – 5:15 pm	Craig Fennie Cornell	Controlling structural complexity
6:30pm	Welcome Dinner at Left Bank Brasserie in Menlo Park *(Shuttle departs from near conference room at 6:00 pm)*	

Stanford University

2013 Oxide Interfaces & MURI Review

Agenda

Wednesday, August 7, 2013 Novel Phenomena in Complex Oxides

Kistler Conference Room

8:30 – 9:00 am	*Continental breakfast*	
9:00 – 9:40 am	Leon Balents UC Santa Barbara	Doped Mott insulators – theoretical perspectives
9:40 – 10:20 am	Shahal Ilani Weizmann Institute	Local Electrostatic Imaging of Striped Domain Order in LaAlO3/SrTiO3
10:20 – 10:50 am	Patrick Gallagher Stanford	Electrostatic accumulation of carriers in oxide heterostructures & nanostructures
10:50 – 11:00 am	*Coffee Break*	
11:00 – 11:40 am	Arthur Ramirez UC Santa Cruz	Defects in Semiconductors
11:40 – 12:00 pm	Ru Chen UC Santa Barbara	TBD
Noon – 1:30 pm	*Lunch*	
1:30 – 2:10 pm	Allan MacDonald University of Texas at Austin	Spin-Orbit Interactions in Oxide Two-Dimensional Electron Systems
2:10 – 2:50 pm	Ashvin Vishwanath UC Berkeley	Novel Phenomena from Spin Orbit Coupling in Correlated Oxides
3:00 – 3:20 pm	*Coffee Break*	
3:20 – 3:30 pm	Assemble topical breakout groups	
3:30 – 4:00 pm	Breakout Groups	
4:00 – 5:00 pm	Report back & discuss with entire group	

Stanford University

2013 Oxide Interfaces & MURI Review

Agenda

Thursday, August 8, 2013 Mott – MURI Review

Kistler Conference Room

8:30 – 9:00 am	*Continental breakfast*	
9:00 – 9:20 am	Susanne Stemmer	Overview
9:20 – 9:50 am	Balents group	
9:50 – 10:20 am	Van De Walle group	
10:20 – 10:40 am	*Coffee Break*	
10:40 – 11:10 am	Stemmer group	
11:10 – 11:40 am	Allen group	
Noon – 1:30 pm	*Lunch*	
1:30 – 2:00 pm	Fadley group	
2:00 – 2:30 pm	Sawatzky group	
2:30 – 3:00 pm	Ramanathan Group	
3:00 – 3:20 pm	*Coffee Break*	
3:20 – 3:50 pm	Parkin group	
3:50 – 4:20 pm	Palmstrom group	
4:20 – 4:50 pm	Goldhaber-Gordon group	
4:50 – 5:15 pm	Feedback	