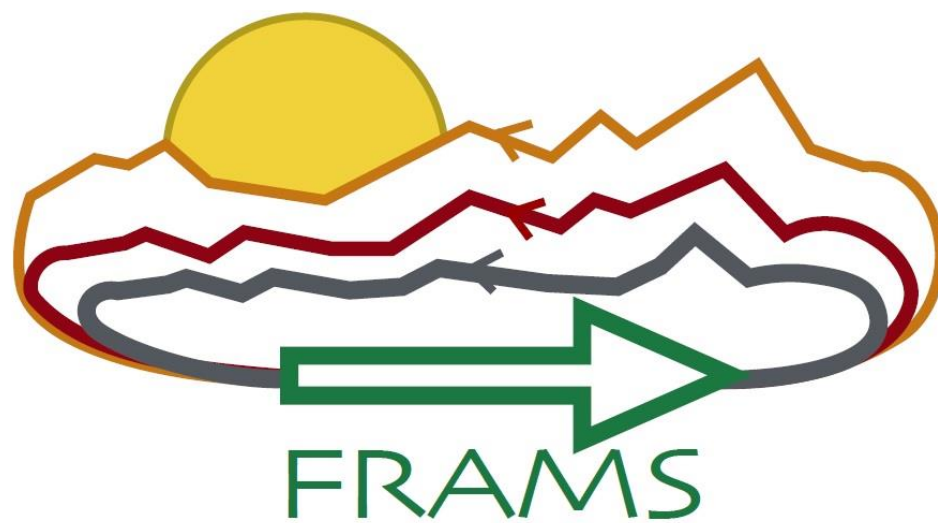


# 5<sup>th</sup> Front Range Advanced Magnetics Symposium

August 15<sup>th</sup>, 2019

University of Colorado – Boulder



University of Colorado  
Boulder

**NIST**

Colorado  
State  
University



UNIVERSITY  
OF WYOMING



COLORADO SCHOOL OF  
**MINES**  
EARTH · ENERGY · ENVIRONMENT



GEORGIA  
SOUTHERN  
UNIVERSITY

**JILA**



University of Colorado  
Colorado Springs



UNIVERSITY of  
**DENVER**

## Schedule

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**8:00 – 9:00 Registration, light breakfast, coffee, networking** **UMC 235**  
Session I posters can be hung up during this time at UMC West Ballroom

**9:00 – 9:10 Opening** **UMC 235**

**9:10 – 10:30 Oral Session I, Chair: Tom Silva** **UMC 235**

9:10 – 9:30 **Lincoln Carr** (Mines)

Complexity and nonlinear dynamics in the complex Ginzburg-Landau equation

9:30 – 9:50 **Mingzhong Wu** (CSU)

Magnetization switching utilizing topological surface states

9:50 – 10:10 **Henry C. Kapteyn** (JILA)

Setting the speed limit for spin manipulation-- ultrafast magnetism probed by short-wavelength light

10:10 – 10:30 **Karen Livesey** (UCCS)

The effective permeability of magnetic composites: which theory to use?

**10:30 – 11:00 Coffee break** **UMC 235**

**11:00 – 12:00 Oral Session II, Chair: Ron Goldfarb** **UMC 235**

11:00 – 11:20 **Kristen Buchanan** (CSU)

Spin / acoustic wave interactions

11:20 – 11:40 **Jifa Tian** (UW)

Current-induced opposite spin polarization in bulk-metallic  $\text{Bi}_2\text{Se}_3$  and bulk-insulating  $\text{Bi}_2\text{Te}_2\text{Se}$  topological insulator thin flakes

11:40 – 12:00 **Hua Chen** (CSU)

Quantum anomalous Hall effect through canted antiferromagnetism

**12:00 – 12:15 Group Photo at 5<sup>th</sup> floor terrace**

**12:15 – 13:55 Lunch and Poster Session I** **UMC West Ballroom**  
**Chairs: Grant Riley, Dmytro Bozhko**

Session I posters must be removed, and Session II posters may be hung up

**13:55 – 15:10 Oral Session III, Chair: Jinke Tang**

**UMC 235**

13:55 – 14:15 **Robert Camley** (UCCS)  
Creating magnetic rogue waves

14:15 – 14:35 **Dmytro Bozhko** (UCCS)  
Magnon Bose-Einstein condensate and supercurrents in YIG: on the road  
towards quantum limit

14:35 – 15:10 **Justin Shaw** (NIST)  
Broadband ferromagnetic resonance spectroscopy: the “Swiss Army knife” for  
understanding spin-orbit phenomena

**15:10 – 16:10 Coffee break and Poster Session II UMC West Ballroom**  
**Chairs: Karen Livesey, Jason Liu**

**16:10 – 17:10 Oral Session IV, Chair: TeYu Chien**

**UMC 235**

16:10 – 16:30 **Kate Ross** (CSU)  
Partial helical order in  $\text{Fe}_3\text{PO}_4\text{O}_3$ : disordered antiferromagnetic skyrmions

16:30 – 16:50 **Meenakshi Singh** (Mines)  
Thermal effects in superconductor-ferromagnet hybrids

16:50 – 17:10 **William Rice** (UW)  
Broadband optical detection using the spin Seebeck effect

**17:10 – 17:30 Closing remarks and poster prizes**

**UMC 235**

## Posters I (12:15 – 13:55)

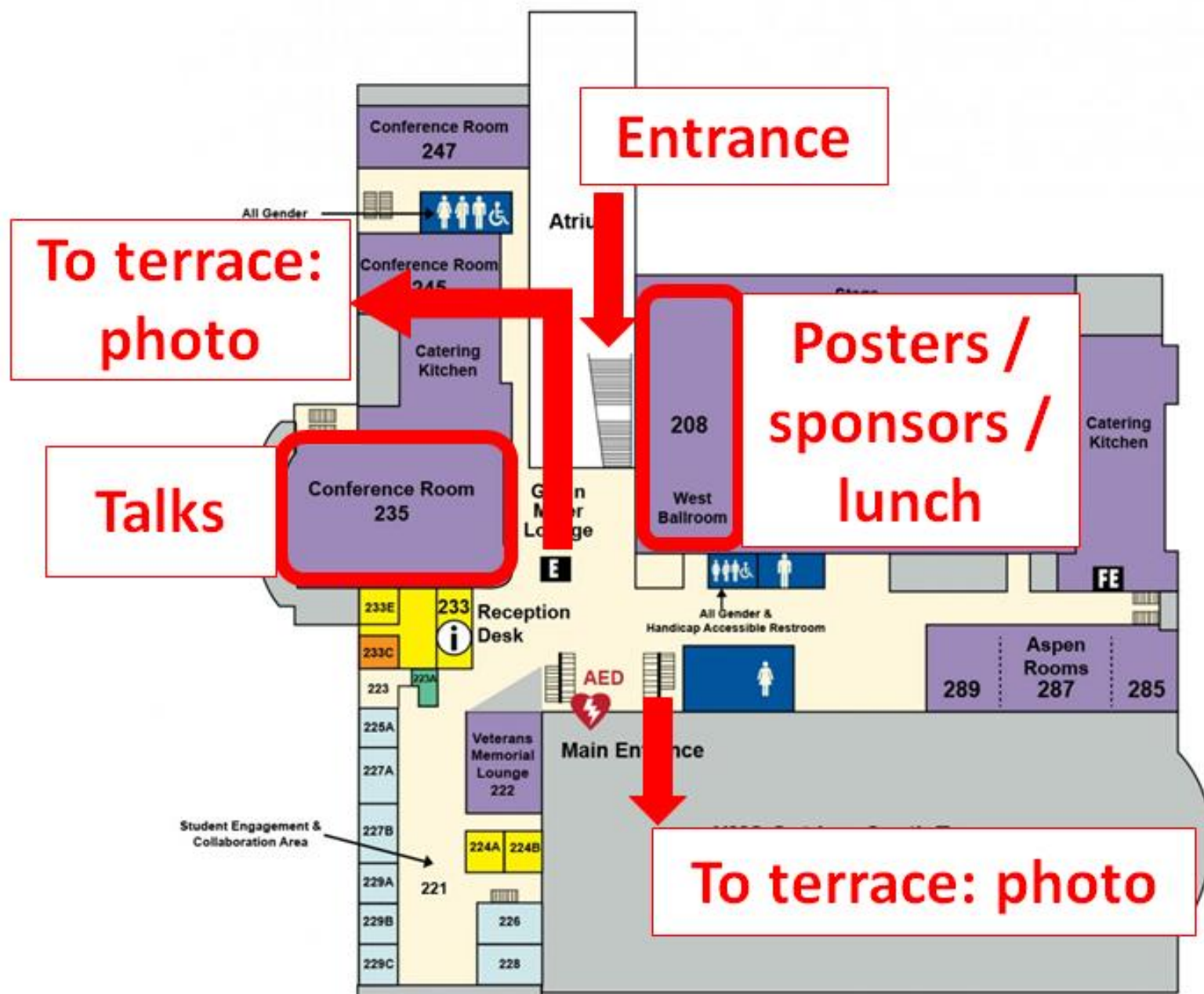
	Presenter	School	Poster Title
1	Steffen Säubert	CSU	Search of microscopies of quantum annealing
2	Kevin Dorney	JILA, CU Boulder	Topologically structured extreme ultraviolet beams with designer angular momentum for novel magnetic spectroscopies and imaging
3	George Smith	Mines	Hybrid materials for magnetocaloric refrigeration
4	Andrew Treglia	CSU	Shedding some light on the ground state of $\text{YbCl}_3$
5	Rachel K. Bennet	DU	Enhancement of thermal spin injection effects in nonlocal spin valves on silicon nitride membranes
6	Abigail A. Firme	UW	Possible spin ice formation in magnetic 2D covalent organic frameworks
7	Spencer Johnson	CSU	Tailored nuclear spin dynamics in a coordination-complex vessel
8	Christian Gentry	JILA, CU Boulder	Direct light-induced spin transfer between elemental sublattices in a spintronic Heusler material via femtosecond laser excitation
9	Kirsten Bragg	Mines	Thermoelectric effects in superconductor-ferromagnetic hybrid systems
10	Josh Lauzier	CSU	Structural and magnetic characterization of FeRh/Ni bilayers
11	Patrick Yarbrough	UCCS	Far-infrared reflection from heterostructures made of ultrathin ferromagnetic films
12	Sam Bleser	DU	Spin transport in semiconductors probed via spin Hall effect
13	Subash Kattel	UW	Magneto-optical spectroscopy of magnetically doped colloidal nanocrystals
14	Danielle Yahne	CSU	Magnetic phase competition in the XY pyrochlore $\text{Er}_2\text{Sn}_2\text{O}_7$
15	Monika Arora	NIST	Controlling Dzyaloshinskii-Moriya interaction with the change of $\text{TaO}_x$
16	Daniel Shaw	CSU	Measurements using resonant ultrasound spectroscopy
17	Jonathon Davidson	UCCS	Analytic model for magnetic skyrmions
18	Matthew R. Natale	DU	Heat and charge transport in thin film vanadium dioxide and examination of the Weidemann-Franz Law
19	Matt Williams	CSU	Adding disorder to the transverse field Ising materials $\text{CoNb}_2$
20	Casey Chalifour	UCCS	Static applied fields alter the Néel relaxation time of the magnetization in nanoparticles
21	Carla Flores	CSU	The effects of Dzyaloshinskii-Moriya interactions on the dynamics of magnetic vortices and magnetic skyrmions.
22	Narendra Shrestha	UW	Interface properties of multilayer EuO/Pt films
23	Lena Bruno	CSU	Labview code for a sample rotation stage

## Posters II (15:10 – 16:10)

	Presenter	School	Poster Title
1	Chuanpu Liu	CSU	Damping in Y3Fe5O12 thin films with perpendicular anisotropy
2	Dinesh Baral	UW	Study of chromium tribromide by scanning tunneling microscopy and spectroscopy (STMS)
3	Angie Davidson	DU	Zero spin Hall alloy
4	Logan Sutton	CSU	Influence of W doping on properties of Sol-gel synthesized Ni/VO <sub>2</sub> bilayers
5	John Stroud	UCCS	Fighting magnetic forces in the nanoworld with coating: study of Mn <sub>0.5</sub> Zn <sub>0.5</sub> Fe <sub>2</sub> O <sub>4</sub> uncoated and coated with PVP
6	Aron Guerrero	GS	Developing nanoscale magnetometry using NV-centers in diamonds
7	Gavin Hester	CSU	A novel strongly-spin orbit coupled quantum dimer magnet: Yb <sub>2</sub> Si <sub>2</sub> O <sub>7</sub>
8	Grant Riley	NIST	Intrinsic damping in FeRh thin films
9	Uppalaiah Erugu	UW	2D electron gas at EuO/LaAlO <sub>3</sub> interface
10	Cassidy Jackson	CSU	Nuclear-spin-pattern control of electron-spin dynamics in a series of V(IV) complexes
11	Tim Reed	UCCS	Nuclear relaxation time calculations with Phyton platform
12	John Ringler	CSU	Single-ion anisotropy in lattice-disordered quasi-1D Ising system CoNb <sub>2</sub> O <sub>6</sub>
13	Wafa AlHuaid	DU	Measurement of spin-dependent Seebeck effect in ferromagnetic metals
14	Tom Silva	NIST	Using FMR to measure spin orbit torques
15	Tim DeLazzer	CSU	Synthesis and inelastic neutron scattering analysis of D-Er <sub>2</sub> Si <sub>2</sub> O <sub>7</sub>
16	Jason Nobles	UCCS	Uniform micro-dispersed Gadolinium discs as a magnetic resonance imaging temperature contrast agent
17	Michael Knight	Mines	3d-cation doped BaZrO <sub>3</sub> : solid solubility from magnetic characterization
18	Colin Sarkis	CSU	Spin glass dynamics within an ordered AFM phase in quasi-1D Ising material CoNb <sub>2</sub> O <sub>6</sub>
19	Michael Roos	DU	Exchange interactions in YIG-GGG interface
20	Chen-Ting Liao	JILA, CU Boulder	Direct imaging of nanometric magnetic metalattice in 3D
21	David Marchfield	CSU	Vanadium tetracyanoethylene
22	Paul Couture	UCCS	FMR and FORC analysis of ferromagnetic granules in media
23	Katherine Nygren	CSU	Spin wave and surface acoustic wave coupling



Second Floor





**GMW** *Associates*

