

## Saturday, July 20, 2019

**KEY:** MH = Marriott Hotel

**CC** = Utah Valley Convention Center

Sci. B. = Science Bldg.; P.S. = Pope Science (UVU)

7–4	REGISTRATION	CC-East 1st Fl.
7–1	1 Quiet Room	CC-Business Center
7–1	1 Lactation Room	CC-First Aid Room

#### WORKSHOPS ARE AT BRIGHAM YOUNG UNIVERSITY-

#### EYRING SCIENCE CENTER (ESC)

8–5 W01	Learn Physics While Practicing Science: Intro. to ISLE	S415
8-5 W02	Physics Activities for the Life Sciences (PALS)	C247
8-5 W03	Developing and Implementing NGSS 3-D Physics Lessons	N153
8–5 W04	High Altitude Ballooning	N127
8–5 W05	Visualizing Contemporary Physics	C445
8–12 W06	Quantum Mechanics with Mathematica	N212
8–12 W07	Get the Facts Out: Changing the Conversation Around Teach	ning N106
8–12 W08	Fun and Engaging Labs	N131
8–12 W09	PIRA Lecture Demonstrations I & II Condensed: from PIRA	C215
8–12 W10	Mobilizing the Forgotten Army: Equipping TAs	C255
8–12 W11	Introductory Labs for Optical and Wave Physics	C425
8–12 W12	Understanding the Mathematical Constructs	N252
1–5 W13	Graph Out Loud	N362
1–5 W14	Using Universal Design for Learning to Prepare for Variation	ı in
	Physics Learners' Needs, Abilities and Interests	C255
1–5 W15	PICUP: Integrating Computation into Introductory Physics	N252
1–5 W16	LIGO & Interferometers	S420
1–5 W17	Using Astronomy Demonstration Videos	N131
1–5 W18	Getting Your Paper Published	C261
1-5 W19	Breaking Glass with Sound Waves (Make & Take)	N106
1–5 W20	Machine Learning in PER	C460
6–7	Finance Committee	MH-Aspen
6-7:30	Nominating Committee	CC-Cascade A
7–8	Governance Structure Committee	MH-Aspen
7–9	Drying 'White Tears:' Interrogating Whiteness and Racism	MH-Elm
7–10	Spanish Fork Fiesta Days Rodeo PRCA, ticket required	Offsite

# Sunday, July 21, 2019

7–4	REGISTRATION	CC-East 1st Fl
7–11	Quiet Room	CC-Business Center
7–11	Lactation Room	CC-First Aid Room
8–10	Publications Committee	MH-Aspen

WORKSHOPS ARE AT UTAH VALLEY UNIVERSITY

8–5 W22	Teaching Innovation and Entrepreneurship in Physics	Sci. B. 136
8–12 W23	An Introduction to Data Science with R-Studio	Sci. B. 138
8-12 W24	Designing Economical Outreach Kits for Physics	Sci. B. 132
8–12 W25	Creating Sustainable Change in University Departmen	ts P.S. 002
8–12 W26	Fun, Engaging, Effective, Lab Activities and Demos	P.S. 001
8–12 W27	Just-in-time Teaching	P.S. 004
8–12 W28	Demo Kit in a Box: Sound and Waves	P.S. 108
8–12 W29	A Primer on Computing with Python	Sci. B. 060
8–12 W30	Fostering Inclusivity in Physics: Resources, Strategies	Sci. B. 032
8–12 W31	PTRA: Cartoon Physics	P.S. 107
8–12 W32	Designing and Building Informal Programs	P.S. 268
8–12 W33	PICUP: Integrating Computation into Upper-Level Phys	ics P.S. 005
8–12 W34	Coding Integration in HS Physics and Physical Science	e P.S. 102
8–12 W35	Group-Worthy Tasks	Sci. B. 259
8–12 W36	New Resources for AP Physics	Sci. B. 238
8 am-10 pi	m H.S. Physics Photo Contest Voting & Viewing	CC-North 3rd F
9-4:30	K-12 Teachers Lounge	MH-Timpanogos
9–10:30	Meetings Committee	CC-Cascade A
10:30-4	Board of Directors Meeting I	MH-Asper
1–5 W37	Improving Pedagogical Content Knowledge of TAs	Sci. B. 060
1-5 W38	Getting Students to Think Critically in Intro Labs	P.S. 107
1-5 W39	Developing the Next Generation of Physics Assessmen	nts Sci. B. 138

1–5	W38	Getting Students to Think Critically in Intro Labs	P.S. 107
1–5	W39	Developing the Next Generation of Physics Assessmen	nts Sci. B. 138
1–5	W41	Teaching Introductory Physics in Earth Science Contex	kt P.S. 005
1–5	W43	Teaching Physics towards Social Justice	P.S. 001
1–5	W44	Intermediate and Advanced Labs	P.S. 016
1–5	W45	Modifying Introductory Labs to Target Scientific Reason	oning P.S. 102
1–5	W46	Astronomy Research Seminar Workshop	Sci. B. 259
1–5	W47	Teaching About Work and Energy	Sci. B. 032A
1–5	W48	Curriculum Swap: Creating, Sharing, and Improving	Sci. B. 132
1–5	W49	STEP UP - Take Action to Engage Women in Physics	P.S. 203
4–6	Wo	orkshop: Commute of Power and Oppression	MH-Elm
5–6	Ex	ecutive Programs Committee	CC-Cascade A
5–6	Se	ction Representative and Officers Exchange	CC-Cascade C
5–6	AA	PT Tweet-up	Marriott Lobby Bar
6–7	Pro	ograms and Planning Committee I	CC-Cascade D
6–7	Un	dergraduate Meet-up	Marriott Lobby Bar
6:30-	-8:30	<b>Evening Registration</b>	CC-East 1st Fl.
7–7:	30 <b>A</b> w	vards: 2018 AAPT ALPhA Award	CC-Ballroom C
7:30-	-9:30	Welcoming Reception in the Exhibit Hall	CC-Exhibit Hall A
7:30-	-9:30	PIRA Resource Room	CC-Exhibit Hall C
7:30-	-9:30	TYC Resource Room	CC-Exhibit Hall C
7:30-	-9:30	SPS Undergrad. Research & Outreach Poster Session	CC-Exhibit Hall C

# Monday, July 22, 2019

7–5	REGISTRATION	CC-East 1st Fl.
7–11	Quiet Room	CC-Business Center
7–11	Lactation Room	CC-First Aid Room
7-8:30	Science Education for the Public Committee*	CC-Battle Creek
7-8:30	Teacher Preparation Committee*	MH-Willow
7-8:30	Diversity in Physics Committee*	CC-Soldier Creek
7-8:30	PTRA Oversight Committee	CC-Silver Creek
7-8:30	Graduate Education in Physics Committee*	MH-Maple
7-8:30	Educational Technologies Committee*	MH-Sycamore
7-8:30	Contemporary Physics Committee*	MH-Olympus
7-8:30	First Timers' Gathering, registration required	CC-Cascade A/B

### **Public WiFi at Convention Center**

UVCC\_PUBLIC\_WIFI; no password

7–8:30	Two Year College Breakfast, ticket required	MH-Oak	
•	n H.S. Physics Photo Contest Voting, Viewing	CC-North 3rd Fl	
8:30–10 8:30–10:20	Laura Greene: The Art of Effective Negotiation Workshop AA PER: Instructional Practices and TA/LA Training	MH-Elm MH-Bryce	
	AB Frontiers of Astronomy	CC-Cascade D	
8:30-10:30	AC Getting the Facts Out About STEM Teaching	CC-Cascade C	
	AD Physics of Digital Games	CC-Cascade E	
	AE Assessment Strategies, Esp. for Upper-division AF Researching Pedagogies and PER Resources	MH-Birch MH-Amphitheater	
	AG K-12 PER	MH-Cedar	
8:30-10:20	AH Outreach for Underserved Populations	MH-Arches	
8:30–10:30		MH-Canyon	
8:30–10:30 8:30–10:30	AJ The History of Computation in Physics Education AK Topical Discussion & Social for Students	MH-Aspen CC-Cascade A/B	
8:30–10:30		CC-Ballroom B	
8:30-10:30	AM PTRA: Physics of Sound	CC-Ballroom A	
8:30–10:30	•	MH-Juniper	
9–10 9–10	AO PER: Diversity, Equity and Inclusion: Designing Cur Spouse/Guest Gathering	rric. MH-Zion MH-Oak	
9:30–6	K-12 Teachers Lounge	MH-Timpanogos	
	6 What's New from PASCO Scientific?	CC-Soldier Creek	
10–5 10–5	PIRA Resource Room TYC Resource Room	CC-Exhibit Hall C CC-Exhibit Hall C	
10–5	Exhibit Hall Open	CC-Exhibit Hall A	
10:30-11	Break in Exhibit Hall	CC-Exhibit Hall A	
10:50	Raffle of Fire TV Stick in Exhibit Hall	CC-Exhibit Hall A	
11–11:30 11:30–12:30	Award: Halliday/Resnick Teaching-David Jackson  0 CW02 4th Law Labs: Sector Vector	CC-Ballroom C CC-Cascade D	
	O CW02 4111 Law Labs. Sector vector  O CW03 Macmillan Learning: Set Your Physics Lab Free	CC-Ballroom B	
11:30–1	Research in Physics Education (RiPE) Committee*	CC-Ballroom A	
11:30–1	Apparatus Committee*	MH-Arches	
11:30–1 11:30–1	History & Philosophy of Physics Committee*  Physics in High Schools Committee*	CC-Cascade C MH-Canyon	
11:30–1	ALPhA Committee*	MH-Zion	
11:30–1	Professional Concerns Committee*	MH-Sycamore	
11:30–1	Physics in Two-Year Colleges Committee*  Forly Career Professional Speed Naturaling	MH-Aspen	
11:30–1 11:30–1	Early Career Professional Speed Networking K-12 Teachers' Luncheon, <i>ticket required</i>	MH-Maple CC-Cascade A/B	
11:30–1:30		mpanogo Terrace	
11:30–1	Retired Physicists Luncheon, <i>ticket required</i>	Offsite	
12–1 12–1	<ul><li>CW01 Expert TA: Physics Video Series</li><li>CW04 PASCO's Wireless Smart Cart &amp; Accessories</li></ul>	CC-Cascade E CC-Soldier Creek	
1–1:30	On Your Own Break	oo oolalor orook	
1:30-2:30	CW05 What's New in PASCO Capstone Software?	CC-Soldier Creek	
1:30–3:30 1:30–3:30	BA Share-a-thon: Active Learning for 2-Year Coll.  BB Best Practices in Educational Technology	CC-Cascade A/B CC-Cascade D	
1:30–3:30	BC Supporting Accessibility in Physics Education	CC-Cascade C	
1:30-3:30	BD The Graduate Physics Education Experience	MH-Bryce	
1:30–3:30	BE Current Materials for Program Self-Study	MH-Birch	
1:30–3:30 1:30–3:30	BF PTRA: Paper Drag Racers in Your Classroom BH Let's Listen to Women and Intl. Persons' Experience	MH-Amphitheater ces MH-Arches	
1:30-2:50	BI PER: Diversity, Equity and Inclusion: Gender Differen		
1:30-2:40	BJ PER: Student Understanding about Math. in Physic		
1:30–3:30 1:30–2:50	BK PICUP: Reports on Computational Physics BL Interactive Lecture Demonstrations	MH-Canyon CC-Ballroom B	
1:30–3	BM Building Lobby Science Exhibits	MH-Juniper	
1:30-2:30	BN Hot & Cold Physics Demos	MH-Aspen	
1:30–3:30 2:30–3:30	Simone Kolysh: Chasing Objectivity, Failing at Diversity		
3:30–3.30 3:30–4	Effective Undergrad. Depts: Curriculum, Cohesion, Care Exhibit Hall Break	CC-Exhibit Hall A	
3:50	Raffle of Telescope in Exhibit Hall	CC-Exhibit Hall A	
4–5	Plenary: Laura Greene, National High Magnetic Field L		
4–5 5–6	Outreach for Undergraduate Departments and Clubs K-12 Teachers Lounge – STEP UP event	CC-Cascade A/B MH-Timpanogos	
	CA Other Paper	CC-Cascade E	
	CB PER: Interdisciplinary Studies	CC-Cascade D	
	CC Physics Majors: Pre High School to Doctorate CD Technologies	CC-Cascade C CC-Ballroom C	
	CE PER: Curriculum and Instruction	MH-Cedar	
5:15-6:25	CF Introductory Courses: Fascinating Physics	MH-Amphitheater	
	CG Experiments for Introductory Labs	MH-Birch	
	CH Breaking Physics from Ground-breaking Experimental Science and Society: Climate Change	nts MH-Arches MH-Canyon	
	CJ Star Wars Physics	MH-Zion	
	CK PTRA: Quantum Computing in YOUR Classroom	CC-Ballroom A	
	CL PER: Institutional Change CM Doing physics and being	CC-Ballroom B MH-Juniper	
	CN Local Area Physics Groups	CC-Soldier Creek	
	CO Physicists with Disabilities	MH-Bryce	
5:15–6:45 6:45–8:30	Laura Greene: Leadership Skills for Women Workshop Einstein! Celebrating 100 Years, <i>ticket required</i>	MH-Elm MH-Aspen	
7–8:30	SPS Undergraduate Awards Reception	CC-Cascade A/B	
8:30-9:30	SPS Advisor	Marriott Lobby Bar	
8:30–10 8:30–10	Poster Session 1  Disability/Accessibility Meet-up  CC-Ti	CC-Exhibit Hall C	
8:30–10 8:30–10	Disability/Accessibility Meet-up CC-Ti High School Physics Share-a-thon	impanogo Terrace CC-Ballroom B	
9–12	Game Room Night	CC-Ballroom A	

## **Tuesday, July 23, 2019**

6–8	AAF	PT Fun Run/Walk, registration required	Offsite
7–4	REG	GISTRATION	CC-East 1st Fl.
7–11	Qui	et Room	CC-Business Center
7–11	Lac	tation Room	CC-First Aid Room
7-8:30	Awa	ards Committee (closed)	MH-Willow
7-8:30	Phy	sics Bowl Advisory Committee	MH-Maple
8 am-10 pi	m H.S	S. Physics Photo Contest Voting, Viewing	CC-North 3rd Fl
8:30-9:40	DA	Building Professional Networks	CC-Cascade E
8:30-9:50	DB	PER: Student Understanding and Innovative Tools	CC-Cascade D
8:30-10	DC	Upper Division/Graduate Labs	CC-Cascade C
8:30-10	DD	The Discovery of Gravitational Waves: Four Years	Later MH-Bryce
8:30-9:50	DE	PER: Assessment, Grading and Feedback II	MH-Birch
8:30-10	DF	Introductory Courses: Approaches to Instruct.	MH-Amphitheater

8	8:30–9:30 DG 30 Demos in 60 Minutes	MH-Cedar
8	8:30–10 DH TPT Favorites	MH-Arches
8	8:30–10 DI The Art and Science of Teaching	MH-Canyon
8	8:30–10 DJ Contributing To, and Using, the Living Physics Portal	MH-Aspen
8	8:30–10 DK Informal Physics Education Research	MH-Zion
8	8:30–10 DL Solo PER	CC-Ballroom A
8	8:30–10 DM PER: Student Understanding, Concept Inventories	CC-Ballroom B
8	8:30-10 DN How Scientific Societies Are Addressing Harassment	t
	and Sexual Misconduct Issues	CC-Soldier Creek
(	9:30–4 K-12 Teachers Lounge	MH-Timpanogos
-	10–4 Exhibit Hall Open	CC-Exhibit Hall A
-	10–4 PIRA Resource Room	CC-Exhibit Hall C
-	10–4 TYC Resource Room	CC-Exhibit Hall C
-	10–10:30 Break in Exhibit Hall	CC-Exhibit Hall A
	10:20 Raffle of Fire HD 8 Tablet in Exhibit Hall	CC-Exhibit Hall A
-	10:30–12 <b>Awards:</b> Millikan, Tom Greenslade; DSCs	CC-Ballroom C
	12–1 <b>CW07</b> Carolina Biological Supply Company Workshop	CC-Cascade D
	12–1 <b>CW09</b> Introducing Pivot Interactives from Vernier	CC-Silver Creek
	12–1:30 <b>CW08</b> Pearson: College Physics Workshop	CC-Cascade E
	,	e Veras restaurant
	12–1:30 International Physics Education Committee*	MH-0ak
	12–1:30 Laboratories Committee*	CC-Ballroom A
	12–1:30 Space Science and Astronomy Committee*	MH-Sycamore
	12–1:30 Physics in Undergraduate Education Committee*	MH-Elm
	12–1:30 Women in Physics Committee*	CC-Soldier Creek
	12–1:30 Physics in Pre-High School Education Committee*	MH-Maple
	12–1:30 Interests of Senior Physicists Committee*	MH-Willow
	12–1:30 PIRA Committee*	CC-Cascade C
	12–1:30 PERTG Town Hall	CC-Ballroom C
	1–2 <b>CW10</b> Vernier Solutions for Physics and Chromebooks	CC-Silver Creek
	1:30–3:10 EA Effective Practices in Educational Technology	CC-Cascade E
	1:30–3:30 EB Best Practices for Maker Spaces	CC-Cascade D
	1:30–3:30 EC NSF-Spon. Phys. & Astro. Projects Crossing Discipline	
	1:30–3:20 ED STEP UP - Take Action to Engage Women in Physics	MH-Bryce
	1:30–3:30 EE Sharing Approaches to Meaningful Writing in intro Lab	MH-Birch MH-Amphitheater
	1:30–3:10 EF Physics Labs for Life Science Students 1:30–3:30 EG Teaching and Engaging Students at HSIs	MH-Cedar
	1:30–3:30 EH Professional Skills for Graduate Students	MH-Arches
	1:30–3 El Science & Society: Teaching Structural Understanding	MH-Canyon
	1:30–3:30 EJ Early Career Topical Discussion	MH-Aspen
	2–3 EK Cutting-edge Physics in Developing Countries	CC-Cascade C
	1:30–3:30 EL Improving Student Understanding of Quantum Mech.	CC-Ballroom B
	2–2:50 EM PhysTEC in 50 States	CC-Ballroom A
	1:30–3:30 EN Highlights of the PICUP Collection	CC-Cascade A/B
	1:30–3:20 EO Universal Design for Learning	CC-Ballroom C
	3:30–4 Break in Exhibit Hall	CC-Exhibit Hall A
	3:50 Raffle of Telescope in Exhibit Hall	CC-Exhibit Hall A
4	4–5 <b>Plenary:</b> Claire Gmachl, Princeton University	CC-Ballroom C
Ę	5:15-6:35 FA PER: Assessment, Grading and Feedback	MH-Zion
Į	5:15–6:45 FB PER: Student Underst. about Upper-Division Physics	MH-Canyon
Ę	5:15–6:45 FC PER: Attitudes/Beliefs about Students or Teaching	MH-Arches
Į	5:15–6:45 FD PER: Diversity, Equity & Inclusion	MH-Bryce
Į	5:15–6:35 FE Interactive Video, Simulations, Gamification, and VR	MH-Birch
Į	5:15–6:45 FF PTRA: Gravitational Waves	CC-Ballroom B
Į	5:15–6:45 FG Physics for Refugees & Street Children	MH-Amphitheater
	5:15–6:45 FI Innovations in Teaching Astronomy	CC-Cascade E
	5:15–6:45 FJ Methods vs. Topics: Scaffolding & the 3-Legged Stool	CC-Cascade D
	5:15–6:45 FK Quantitative Methods in PER: A Critical Examination	CC-Ballroom A
	5:15–6:45 FL PER: Diverse Investigations	MH-Aspen
	5:15–6:45 FN Labs Beyond the First Year (BFYIII): 1 Year Later	CC-Soldier Creek
	5:15–6:35 FO Teacher Training/Enhancement	MH-Cedar
	7–8:30 Summer Meeting Picnic, <i>ticket required</i>	Offsite-BYU
8	8:30–9:30 Demo Show	Offsite-BYU
	Wednesday, July 24, 20	)19

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7–11 Quiet Room	CC-Business Center
7–11 Lactation Room	CC-First Aid Room
8–3 REGISTRATION	CC-East 1st Fl.
7–8 Venture Fund Review Committee/Bauder Endowment	MH-Maple
7–8:30 PERLOC (closed)	MH-Aspen
7-8:30 Programs and Planning Committee II	CC-Cascade A/B
8:30-9:30 Awards: Klopsteg Memorial Lecture, Jodi Ann Cooley	CC-Ballroom C
9:30-10:30 Membership and Benefits Committee	MH-Maple
9:30–11 Poster Session 2	CC-Exhibit Hall C
11–11:45 President Town Hall	CC-Ballroom C
12–1 Past Officers Luncheon	MH-Maple
12–1:10 GA PER: Student Understanding and Interactions	CC-Cascade E
12–1:30 GB PER: Curriculum and Instruction II	CC-Cascade D
12–1 GC PER: Underrepresented Populations in Phys. Courses	CC-Cascade C
12–1 GD Introductory Courses: Analyzing Outcomes	MH-Bryce
12–1:10 GE K-12 PER II	MH-Birch
12–1:20 GF Pedagogical Reform for Introductory Labs	MH-Amphitheater
12–1:30 GG Ethics in the Practice and Application of Science	MH-Cedar
12–1:20 GH Machine Learning in Physics and Physics Curriculum	MH-Arches
12–1:10 GJ PER: Student Understanding and Problem-Solving	MH-Aspen
12–1:20 GK PER: Diverse Investigations II	MH-Zion
12–1:30 GL PER: Student Understanding and Cognition	CC-Ballroom B
12–1:30 GM Evidence-based Approaches to Comm. Partnerships	CC-Cascade A/B
12–1:10 GN Upper Division/Graduate Courses	CC-Soldier Creek
1–1:30 2020 Orlando Papersort Orientation	CC-Battle Creek
1:30–3 <b>APS Plenary:</b> Jack Burns, Pearl Sandick	CC-Ballroom C
3–4:30 Nominating Committee II	MH-Maple
3–4:30 PERC Bridging Session	CC-Ballroom C
3–5:30 AAPT Board of Directors Meeting II	MH-Aspen
3:30–5 HA Post-Deadline Abstracts I	CC-Cascade E
3:30–5 HC Post-Deadline Abstracts III	CC-Cascade C
3:30–5 Post-Deadline Poster Session	CC-Exhibit Hall C
5–6 PERC Posters I	CC-Exhibit Hall C
8–10 PERC Posters II	CC-Exhibit Hall C

<sup>\*</sup> Committee meetings – all attendees welcome

#### WiFi code at Marriott

Network: Marriott\_Conference; Password: AAPT2019