



UNIVERSITY OF CENTRAL FLORIDA

Department of Physics Annual Productivity Report Academic Year 2018 – 2019

July 15th, 2019

1. Undergraduate Program

Undergraduate Student Credit Hours Generated in 2018-2019

COURSES	TOTAL SCH
All	43, 312

Summer 2018 Course Offering

Course Number	Course Title	Instructors	Total SCH
AST 2002	Astronomy	Montgomery, Cooney	1005
AST 3905	Independent Study	(several faculty)	6
AST 4912	Directed Research	(several faculty)	3
PHY 2048	General Physics using Calculus I	Flitsiyan, Velissaris	820
PHY 2049	General Physics using Calculus II	Chernyak, Stolbov	856
PHY 2053	College Physics I	Bhattacharya, Dubey	1448
PHY 2054	College Physics II	Brueckner	868
PHY 3905	Independent Study	(several faculty)	6
PHY 4803	Advanced Physics Laboratory	Velissaris	3
PHY 4904	Honors Thesis	(several faculty)	3
PHY 4912	Directed Research	(several faculty)	19
PSC1121	Physical Science	Brueckner	522
TOTAL:			5,559

Fall 2018 Course Offering

Course Number	Course Title	Instructors	Total SCH
AST 2002	Astronomy	Montgomery, Landsman, Cooney, Sarid, Soileau	3372
AST 3114	Space Weather	Montgomery	81
AST 4142	Asteroids, Comets, Meteorites	Campins	51
AST 4762	Astronomical Data Analysis	Harrington	24
AST 4912	Directed Research	(several faculty)	0
GLY 2038	Environmental Geosciences	Donoghue	132
GLY 4730	Marine Geosciences	Donoghue	66
PHY 1038	Energy, Climate Change and the Environment	Colwell	300
PHY 1935	Freshman Seminar	Al-Rawi	24
PHY 2020	Concepts of physics	J. Chini	297
PHY 2048	General Physics using Calculus I	Neupane, Z.Chen, Cooney, Dubey, Schulte Efthimiou, Flitsiyan	3688
PHY 2049	General Physics using Calculus II	Kokoouline, Chernyak, Al-Rawi, Nakajima, Efthimiou	2904

PHY 2053	College Physics I	Kaden, Dubey Bhattacharya, Rahman, Khondaker, Feng, Dubey	3156
PHY 2054	College Physics II	Lyakh, Kara, Vaida, Kang	2940
PHY 3101	General Physics using Calculus III	Dubey, Flitsiyan, Velissaris	588
PHY 3220	Mechanics I	Argenti	99
PHY 3323	Electricity and Magnetism I	Peale	156
PHY 3513	Thermal and Statistical Physics	Schelling	135
PHY 3722	Physics Lab - Electronics	Velissaris	54
PHY 3802	Intermediate Physics Lab	Bennett	51
PHY 3905	Independent Research	(several faculty)	2
PHY 3945	Physics Pedagogy Seminar	James	20
PHY 4424	Optics	Kokoouline	27
PHY 4604	Wave Mechanics I	Klemm	150
PHY 4903	Honors Directed Reading	(several faculty)	6
PHY 4904	Honors Directed Research	(several faculty)	1
PHY 4912	Directed Research	(several faculty)	28
PHY 4932	Physics basis of Life	Tatulian	18
PHY 4970	Honors Thesis	(several faculty)	9
PHZ 3151	Computer Methods in Physics	Stolbov	45
PHZ 3361	Radiation Interact & Detectors	Velissaris	24
PHZ 3601	Einstein Theory of Relativity	Efthimiou	30
PSC 1121	Physical Sciences	Brueckner, Efthimiou, Velissaris	1278
TOTAL:			19,756

Spring 2019 Course Offering

Course Number	Course Title	Instructors	Total SCH
AST 2002	Astronomy	Montgomery, Cooney, landsman	2850
AST 2037	Life In the Universe	Montgomery	117
AST 3110	Solar System Astronomy	Dove	75
AST 4152	Planetary Geophysics	Britt	57
GLY 4734	Coastal Systems	Donoghue	81
AST 4912	Directed Research	(several faculty)	6
PHY 1038	Energy Climate Change Environ	Colwell	219
PHY 2048	General Physics using Calculus I	M. Chini, Neupane, Jerousek, Fernandez, Tatulian, Efthimiou	3076
PHY 2049	General Physics using Calculus II	Kokoouline, Al-Rawi, Stolbov, Schelling, Efthimiou, Nakajima	2796
PHY 2053	College Physics I	Kaden, Dubey, Schulte, Brueckner, Khondaker	3220
PHY 2054	College Physics II	Tetard, Dubey, Vaida, Rahman	3096
PHY 3101	General Physics using Calculus III	Velissaris, Flitsiyan	489

PHY 3220	Mechanics I	Turkowski	66
PHY 3323	Electricity & Magnetism	Chanda	57
PHY 3752	Physics of Scientific Instruments	Velissaris	54
PHY 3802	Intermediate Physics Laboratory	Velissaris	54
PHY 3905	Independent Research	(several faculty)	6
PHY 3945	Physics Pedagogy Seminar	James	18
PHY 4012	Teaching Introductory Physics	J. Chini	18
PHY 4324	Electricity and Magnetism II	Peale	108
PHY 4605	Wave Mechanics II	Klemm	138
PHY 4803	Advanced Physics Laboratory	(several faculty)	54
PHY 4912	Directed Independent Research	(several faculty)	49
PHY 4970	Undergraduate Honors Thesis	(several faculty)	3
PHY 4971	Honors Undergraduate Thesis II	(several faculty)	3
PHZ 3113	Intro. Theor. Methods in Physics	Bhattacharya, Saha	141
PHZ 3150	Intro. Numerical Computing	Harrington	93
PHZ 4404	Solid State Physics	Lyakh	24
PHZ 4624	General Relativity	Cooney	36
PSC 1121	Physical Science	Brueckner, Efthimiou	993
TOTAL:			17,997

Physics B.S. Enrollment in the Last Five Years

Academic Year	Fall	Spring
2014-2015	169	155
2015-2016	161	158
2016-2017	182	177
2017-2018	223	206
2018-2019	211	195

Physics B.S. Degrees Awarded in the Last Five Years

Academic Year	Summer	Fall	Spring	Total
2014-2015	3	5	18	26
2015-2016	2	5	15	22
2016-2017	1	4	18	23
2017-2018	3	5	17	25
2018-2019	3	4	19	26

Physics Undergraduate Minor Degrees Awarded in the Last Five Years

Academic Year	Summer	Fall	Spring	Total
2014-2015	-	2	5	7
2015-2016	1	2	3	6
2016-2017	-	4	9	13
2017-2018	2	5	2	9
2018-2019	2	6	11	19

Physics Honors in the Major Theses

2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
3	3	1	5	2

B.S. Degree Graduates (27 in total)

Summer 2018	Fall 2018	Spring 2019	
Bejan Ghomashi Francisco de Torres Nicholas Ossi	Adrian Arnette Brian Ferrari Arnold Banner Sunny Patel	Darian Smalley Melody Green Thomas Lechner Courtney Pryor Samuel Borges Joshua Rabanal Justin Durham Luke Jansen Phillip Atkin	Steven Carolus Clay French Daniel Hildreth Eric Markowitz Jonathan Nesper John Hastings Alexander Hopkins Jonathan Brescia Bradley Corser Bryce Glenzer

2. Graduate Program

Graduate Student Credit Hours Generated in 2017-2018

COURSES	TOTAL SCH
All	1,723

Summer 2018 Course Offering

Course Number	Course Title	Instructors	Total SCH
AST6908	Independent Study	(several faculty)	6
AST 6918	Directed Research	(several faculty)	36
AST 7980	Dissertation	(several faculty)	18
PHY 5817	Building Physics Apparatus	Ishigami	8
PHY 6908	Independent Study	(several faculty)	19
PHY 6918	Directed Research	(several faculty)	140
PHY 6971	Thesis Research	(several faculty)	21
PHY 7980	Dissertation	(several faculty)	112
TOTAL:			360

Fall 2018 Course Offering

Course Number	Course Title	Instructors	Total SCH
GLY 5736	Marine Geology	Donoghue	3
AST 5145	Advanced Asteroids Comets & Meteor ADV	Campins	30
AST 5765	Advanced Astronomical Data Analysis	Harrington	9
AST 6918	Directed Research	(several faculty)	140
AST 7980	Dissertation	(several faculty)	112
PHY 5346	Electrodynamics I	Leuenberger	48
PHY 5606	Quantum Mechanics I	Schulte	51
PHY 6246	Classical Mechanics	Shivamoggi	45
PHY 6918	Directed Research	(several faculty)	111
PHY 6971	Directed Research	(several faculty)	9
PHY 7919	Dissertation	(several faculty)	6
PHY 7980	Dissertation	(several faculty)	123
PHZ 5432	Introduction to Soft Condensed Matter	Bhattacharya	12
PHZ 6420	First Prin. Comp. Meth. Condensed Matter	Stolbov	39
PHZ 6426	Condensed Matter Physics I	Klemm	30
TOTAL:			768

Spring 2019 Course Offering

Course Number	Course Title	Instructors	Total SCH
AST 5154	Advanced Planetary Geophysics	Britt	30
AST 5937	St: Physics of Planetary Proce	Bennett	24
AST 6918	Directed Research	(several faculty)	48
AST 7980	Dissertation	(several faculty)	15
PHY 5524	Statistical Physics	Bhattacharya	51
PHY 5917	Directed Research	(several faculty)	3
PHY 6347	Electrodynamics II	Peale	48
PHY 6624	Quantum Mechanics II	Schulte	48
PHY 6908	Independent Study	(several faculty)	12
PHY 6918	Directed Research	(several faculty)	108
PHY 7919	Dissertation	(several faculty)	12
PHY 7980	Dissertation	(several faculty)	124
PHZ 5156	Computational Physics	Stolbov	30
PHZ 5505	Plasma Physics	Kokoouline	15
PHZ 6428	Condensed Matter Physics II	Klemm	27
TOTAL:			595

Physics M.S. Enrollment in the Last Five Years

Academic Year	Fall	Spring
2014-2015	1	1
2015-2016	5	5
2016-2017	5	5
2017-2018	6	6
2018-2019	8	7

Physics M.S. Degrees Awarded in the Last Five Years

Academic Year	Summer	Fall	Spring	Total
2014-2015	4	-	-	4
2015-2016	2	6	4	12
2016-2017	4	2	4	10
2017-2018	4	3	7	14
2018-2019	2	5	2	9

Physics M.S. Graduates (14 in total)

Summer 2018	Fall 2018	Spring 2019
Rainer Berkley Rachel Evans	Jesse Thompson Keanna Jardine Sheila Bonnough Seth Calhoun Brandon Blue	Christopher Sims James Phillips

Physics Ph.D. Applications in the Last Five Years

Starting Term	Applied	Accepted	Enrolled
Fall 2014	118	40	21
Fall 2015	141	47	19
Fall 2016	149	26	23
Fall 2017	131	36	16
Fall 2018	96	33	14
Fall 2019	189	21	(21 expected)

Physics Ph.D. Enrollment in the Last Five Years

Academic Year	Fall	Spring
2014-2015	94	88
2015-2016	93	82
2016-2017	92	88
2017-2018	85	86
2018-2019	89	91

Physics Ph.D. Degrees Awarded in the Last Five Years

Academic Year	Summer	Fall	Spring	Total
2014-2015	5	7	9	21
2015-2016	4	9	4	17
2016-2017	4	3	7	14
2017-2018	4	3	5	13
2018-2019	4	2	6	12

Physics Ph.D. Graduates (12 in total)

Summer 2018

Jonathan Lee, *Impact of Ionizing Radiation and Electron Injection on Carrier Transport Properties in Narrow and Wide Bandgap Semiconductors.*
(Advisor: Elena Flitsiyan)

Michael Lodge, *Experimental confirmation of ballistic nanofriction and quasiparticle interference in Dirac materials.*
(Advisor: Masahiro Ishigami)

Charles Schambeau, *Analysis of Nucleus Properties of the Enigmatic Comet 29P/Schwassmann-Wachmann 1.*
(Advisor: Yanga Fernandez)

Mathew Wilcox, *Undergraduate Student Agreement With Reformed Introductory Physics Classes.*
(Advisor: Jacquelyn Chini)

Fall 2018

Daniel Bonior, *Mathematical Foundations of Adaptive Quantum Processing.*
(Advisor: Eduardo Mucciolo)

Zahra Hooshmand Gharehbagh, *Tuning chemical and optical properties of nanomaterials: From extended surfaces to finite nanoclusters.*
(Advisor: Talat Rahman)

Spring 2019

Tommy Boykin, *Structure of reflectin protein probed by solid-state nuclear magnetic resonance.*
(Advisor: Bo Chen)

Rebecca Cebulka, *Light Matter Interaction in Single Molecule Magnets.*
(Advisor: Enrique Del Barco)

Walter Malone, *A Theoretical Investigation of Small Organic Molecules on Transition Metal Surfaces.*
(Advisor: Abdelkader Kara)

Negar Othrooshi, *Nanoscale functional imaging by tailoring light-matter interaction to explore organic and biological systems.*
(Advisor: Laurene Tetard)

Alreza Safaei, *Nanoplasmonics in two-dimensional Dira and three-dimensional metallic nanostructure systems.*

(Advisor: Debashis Chanda)

William Tucker, *Chemistry and dissipation at mineral surfaces in the space environment.*

(Advisor: Patrick Schelling)

GTA Contracts Processed (in units of 0.50 FTE) in the Last Five Years

Academic Year	Summer	Fall	Spring
2014-2015	17.5	36	35
2015-2016	19	37	35
2016-2017	16	40.5	42
2017-2018	16.5	39	39
2018-2019	16	43	41

GRA Contracts Processed (in units of 0.50 FTE)

Academic Year	Summer	Fall	Spring
2014-2015	33.5	28.5	25
2015-2016	33.5	36	31.5
2016-2017	39	44	36
2017-2018	40.5	37	35
2018-2019	52	46	45

3. Department Personnel

Core Physics Faculty (57)

Ahlam Al-Rawi <i>Associate Lecturer</i>	Joseph Donoghue <i>Associate Professor</i>	Michael Leuenberger <i>Professor – NSTC</i>
Luca Argenti <i>Assistant Professor</i>	Adrienne Dove <i>Assistant Professor</i>	Weili Luo <i>Professor</i>
Christopher Bennett <i>Assistant Professor</i>	Archana Dubey <i>Associate Lecturer</i>	Arkadiy Lyakh <i>Assistant Professor – NSTC</i>
Aniket Bhattacharya <i>Professor</i>	Costas Efthimiou <i>Associate Professor</i>	Michele Montgomery <i>Lecturer</i>
Daniel Britt <i>Pegasus Professor</i>	Xiaofeng Feng <i>Assistant Professor</i>	Eduardo Mucciolo <i>Professor and Department Chair</i>
Thomas Brueckner <i>Lecturer</i>	Yan Fernandez <i>Associate Professor</i>	Yasuyuki Nakajima <i>Assistant Professor</i>
Humberto Campins <i>Pegasus Professor</i>	Elena Flitsiyan <i>Associate Lecturer and Undergraduate Program Director</i>	Madhab Neupane <i>Assistant Professor</i>
Debashis Chanda <i>Associate Professor – NSTC</i>	Joseph Harrington <i>Professor</i>	Robert Peale <i>Professor</i>
Zenghu Chang <i>University Trustee Chair, Pegasus, and Distinguished Professor</i>	Masahiro Ishigami <i>Associate Professor</i>	Talat Rahman <i>Pegasus and Distinguished Professor</i>
Bo Chen <i>Associate Professor</i>	Michael Johnson <i>Professor and College Dean</i>	Haripada Saha <i>Professor</i>
Zhongzhou Chen <i>Assistant Professor</i>	William Kaden <i>Assistant Professor</i>	Patrick Schelling <i>Associate Professor</i>
Leonid Chernyak <i>Professor</i>	Hyeran Kang <i>Assistant Professor – NSTC</i>	Alfons Schulte <i>Professor</i>
Jacquelyn Chini <i>Assistant Professor</i>	Abdelkader Kara <i>Professor and Graduate Program Director</i>	Sergey Stolbov <i>Associate Professor</i>
Michael Chini <i>Assistant Professor</i>	Theodora Karalidi <i>Assistant Professor</i>	Suren Tatulian <i>Professor</i>
Lee Chow <i>Professor</i>	Saiful Khondaker <i>Professor – NSTC</i>	Laurene Tetard <i>Assistant Professor – NSTC</i>
Joshua Colwell <i>Pegasus Professor and Associate Chair</i>	Richard Klemm <i>Professor</i>	Volodymyr Turkowski <i>Research Assistant Professor</i>
James Cooney <i>Associate Lecturer</i>	Viatcheslav Kokoouline <i>Professor</i>	Mihai Vaida <i>Assistant Professor</i>
Enrique del Barco <i>Professor and Associate Dean</i>	Adam LaMee <i>Instructional Specialist</i>	Christos Velissaris <i>Associate Lecturer</i>
Kerri Donaldson Hanna <i>Assistant Professor</i>	Duy Le <i>Research Scientist</i>	Yi Wu <i>Assistant Scientist</i>

Affiliated Faculty (12)

Alexander Balaeff <i>Nanoscience Technology Center</i>	Peter Potrebko <i>Florida Hospital</i>	Tania Roy <i>Nanoscience Technology Center</i>
Zeidan Omar <i>Orlando Health</i>	Peter Delfyett <i>College of Optics</i>	Sampyo Hong <i>Brewton-Parker College, GA</i>
M. J. Soileau <i>College of Optics</i>	Martin Richardson <i>College of Optics</i>	Bhimsen Shivamoggi <i>Mathematics</i>
Beatriz Roldan Cuenya <i>Fritz Haber Institute, Germany</i>	Aristide Dogariu <i>College of Optics</i>	Konstantin Vodopyanov <i>College of Optics</i>

Post-Doctoral Associates (12)

Kevin Cannon <i>Britt group</i>	Shree Ram Acharya <i>Rahman group</i>	Zahra Hooshman Gharebagh <i>Rahman group</i>
Krishna Murari <i>Chang group</i>	Mathew Weidman <i>Chang group</i>	Jialin Li <i>Chang group</i>
Tong Wan <i>J. Chini group</i>	Seunghwoi Han <i>Chang group</i>	Erin Scanlon <i>J. Chini group</i>
Nicolas Douguet <i>Argenti group</i>	Nrismha Murty Madugula <i>M. Chini group</i>	Yangyang Liu <i>M. Chini and Neupane groups</i>

Staff Members (11)

Nathan Aultman <i>Cleanroom Technician</i>	Nikitta Campbell <i>Administrative Assistant II</i>
Shelley Glaspie <i>Administrative Assistant I</i>	Esperanza Soto Arcino <i>Graduate Admissions Coordinator</i>
Ray Ramotar <i>Laboratory Manager</i>	Phillip Chan <i>Laboratory Coordinator II</i>
Jessica Brooks <i>Contracts & Grants Specialist III</i>	Robert Wong <i>Machinist</i>
Elizabeth Rivera <i>Human Resources Assistant I</i>	Jill Dunn <i>Lab Technician</i>
Leida Vera Nater <i>Accounting Specialist III</i>	

Graduate Students (98 active in Spring 2018)

Abedin, Faisal	Forer, Joshua	Pathan, Md Afjal Khan
Adoah, Francis	Gholam, Shima	Phillips, James
Alam, Didarul	Greene, Johnnie	Pohl, Leos
Arose, Christopher	Guo, Tianyi	Regmi, Sabin
Arredondo, Anicia	Himes, Michael	Reinhart, Daniel
Asilador, Anthony	Hinkle, Mary	Reyes, Danielle
Austin Dave	Hosen, Md Mofazzel	Reyes, Justin
Barrett, Chance	Islam, Molla	Richardson, William
Bartley, Sarah	James, Westley	Rivera, Isabel
Beetar, John	Jardine, Keanna	Safaei, Alireza
Berkley, Rainier	Jarmak, Stephanie	Saghaye-Polkoo, Sajad
Berriel, Sasha	Jiang, Tao	Sajid, Muhammad
Blue, Brandon	Johnston, Ammon	Shabbir, Muhammad
Bonnough, Sheila	Journigan, Troie	Shinaberry, Gregory
Boykin, Tommy	Kabir, Firoza	Shouk, Nahi
Bryan Joshua	Kandel, Nabin	Shouk, Ruqayyah
Calhoun, Seth	Khaniya, Asim	Siddiquee, Hasan
Campbell, Tyler	Khatri, Gyan	Sims, Christopher
Cariker, Coleman	Kim, Sunghyun	Switzer, Eric
Cebulka, Rebecca	Larson, Jennifer	Thames, Tyrone
Challener, Ryan	LeBleu-DeBartola, Amy	Thompson, Jesse
Chambers, Wesley	Liu, Zhichen	Torres Davila, Fernand
Childs, Andre	Lough, Stephanie	Truong, Chau
Davila, George	Lowry, Vanessa	Tucker, William
Davis, Leslie	Malfavon, Andrew	Ud Din, Naseem
Dhakal, Gyanendra	Malone, Walter	Ur Rehman, Mahboob
Dhar, Bijoya	McIntyre, Kathleen	Vaidya, Priyanka
Dhara, Sayandip	Mehmood, Saad	Withanage, Sajeevi
Dissanayake, Charuni	Modak, Sushrut	Yuen, Chi Hong
Doty, Constance	Munir, Riffat	Zakhary, Justin
Eckert, Stephanie	Nickle, Cameron	Zaman, Nusaiba
Felker, Zachary	Otrooshi, Negar	Zamarripa, Brian
Ferrari, Brian	Parsons, Zackary	

Visitors

Andre de Souza , <i>Univ. Federal de Sergipe, Brazil</i> (July 2017 – June 2018). Host: Eduardo Mucciolo	Kristen Jones , <i>Arecibo Observatory</i> (October 2018). Host: Yan Fernandez
Jonathan White , <i>Friedrich Schiller Univ., Germany</i> (October 2017 – present). Host: Zenghu Chang	Laura Woodney , <i>Cal State San Bernardino</i> (March 2019). Host: Yanga Fernandez
Inanc Adagideli , <i>Sabanci Univ. Turkey</i> (July 2018). Host: Eduardo Mucciolo	Walt Harris , <i>University of Arizona</i> (March 2019). Host: Yanga Fernandez
Peng Xu , <i>Institute of Optics & Precision Mechanics, China</i> . Sept. (2017 – present). Host: Zenghu Chang	Jordan Steckloff , <i>Planetary Science Institute</i> (March 2019). Host: Yanga Fernandez
Claudio Chamon , <i>Boston University</i> (July 2018). Host: Eduardo Mucciolo	Christian Ott , <i>Max Planck Institute, Munich, Germany</i> (June 2018). Host: Zenghu Chang
Aiying Zhao , <i>Univ. of Science and Technology, China</i> (December 2017 – present). Host: Richard Klemm	Aaron Bernstein , <i>Harvard University</i> (May, 2019). Host: Zenghu Chang
Matthew Weidman , <i>Max Planck Gesellschaft, Munich, Germany</i> (August 2018). Host: Dr. Chang	Chunxi Yun , <i>Institute of Physics, Chinese Academy of Science</i> (October 2018). Host : Zenghu Chang
Jose Galicia Hernandez , <i>TEC Campus Puebla, Mexico</i> (April 2019 – present). Host: Talat Rahman	Esben Larsen , <i>Imperial College, London</i> (March 2018). Host: Zenghu Chang
Mehdi. Ayouz , <i>Ecole Central Supelec, Gif-sur-Yvette, France</i> (January 2019). Host: Viatcheslav Kokoouline	Hao Teng , <i>Institute of Physics, Chinese Academy of Science</i> (October 2018). Host: Zenghu Chan
Quian Gu , <i>Univ. of Science & Technology, China</i> (September 2018). Host: Richard Klemm	Xinkui He , <i>Institute of Physics, Chinese Academy of Science</i> (October 2018). Host: Zenghu Chang
Kun Zhao , <i>Intitute of Physics, Chinese Academy of Science</i> (October 2018). Host: Zenghu Chang	Anass Sibari , <i>Mohammed V. Univ., Morocco</i> (October 2018 – present). Host: Abdelkader Kara
Bart-Jan Nieburr , <i>Technical Univ. Munich, Germany</i> (January 2019). Host: Alfons Schulte	Christine Papadakis , <i>Technical University Munich, Germany</i> (January 2019). Host: Alfons Schulte

Colloquium Speakers

He Wang , <i>University of Miami</i> . Host: Zenghu Chang	Yasumasa Takano , <i>University of Florida</i> . Host: Yasuyuki Nakajima
Humberto Rodriguez , <i>USF</i> . Host: Masa Ishigami	Eleanor Sayre , <i>Kansas State University</i> . Host: Jacquelyn Chini
Talat Rahman , <i>UCF</i> . Host: Bo Chen	James J Hamlin , <i>University of Florida</i> . Host: Yasuyuki Nakajima
David Hurley , <i>INL</i> . Host: madhab Neupane	Lilia Woods , <i>University of South Florida</i> . Host: Madhab Neupane

Stephen J Hagen , <i>University of Florida</i> . Host: Alfons Schulte	Anish Roshi , <i>Arecibo Observatory</i> . Host Eduardo Mucciolo
Krzysztof Gofryk , <i>Idaho National Lab</i> . Host: Madhab Neupane	Javier Gonzalez , <i>Autonomous University, Mexico</i> . Host: Robert Peale
Shawna Hollen , <i>University New Hampshire</i> . Host: Masahiro Ishigami	Michael Hagan , <i>Brandeis University</i> . Host: Bo Chen
Abraham Nitzan , <i>University of Pennsylvania</i> . Host: Enrique Del Barco	Yoonseok Lee , <i>University of Florida</i> . Host: Masahiro Ishigami
Martin Muschol , <i>University of South Florida</i> . Host: Bo Chen	Denis Karaiskaj , <i>University of South Florida</i> . Host: Luca Argenti
Jason Eichenholz , <i>Luminar Technologies</i> . Host: Michael Chini	Suyang Xu , <i>Massachusetts Institute of Technology</i> . Host: Madhab Neupane
Stephen Eikenberry , <i>University of Florida</i> . Host: Humberto Campins	Robert Tycko , <i>National Institutes of Health</i> . Host: Bo Chen
Catherine Ann Royer , <i>Rensselaer Polytechnic Institute</i> . Host: Alfons Schulte	Jean-Luc Margot , <i>Univ. of California, Los Angeles</i> . Host: Yan Fernandez
Selvin Demir , <i>University of Michigan</i> . Host: Enrique Del Barco	Eleanor Sayre , <i>Kansas State University</i> . Host: Jacquelyn Chini

4. Faculty Productivity¹

Physics Faculty Scholarly Work in 2018-2019

Faculty Member	Indexed, peer-reviewed articles	Conference proceedings and Abstracts	Book chapters	Books	Invited presentations	Patents and disclosures
Argenti	3	4	-	-	4	-
Bennet	1	4	-	-	2	-
Bhattacharya	-	3	-	-	-	-
Britt	5	22	1	-	9	-
Campins	6	10	1	-	4	-
Chanda	17	3	-	-	10	3
Chang	5	6	-	-	19	2
B. Chen	-	-	-	-	3	
Chernyak	3	2	-	-	2	1
J. Chini	4	20	-	-	1	
M. Chini	3	5	-	-	5	
Chow	3	-	-	-	-	
Colwell	4	9	-	-	1	
Donaldson	1	-	-	-	-	
Donoghue	3	-	-	-	-	
Dove	3	-	-	-	3	
Feng	3	4	-	-	2	
Fernandez	2	17	-	-	2	
Flitsiyan	3	1	-	-	1	
Harrington	3	5	-	-	1	
Ishigami	-	1	-	-	-	
Kaden	4	1	-	-	1	
Kang	5	8	-	-	3	
Kara	5	7	-	-	5	

¹ In the publication lists, all UCF Physics affiliated authors are underlined.

Faculty Member	Indexed, peer-reviewed articles	Conference proceedings and Abstracts	Book chapters	Books	Invited presentations	Patents and disclosures
Khondaker	5	7	-	-	3	-
Klemm	3	4	-	-	4	-
Kokoouline	6	3	-	-	5	-
LaMee	-	-	-	-	3	-
Leuenberger	1	-	-	-	1	-
Le	7	14	-	-	-	3
Luo	1	1	-	-	1	1
Lyakh	4	6	-	-	5	3
Mucciolo	-	3	-	-	4	2
Nakajima	1	5	-	-	3	-
Neupane	2	1	-	-	5	-
Peale	5	3	-	-	1	2
Rahman	13	22	-	-	17	-
Saha	-	1	-	-	-	-
Schelling	-	1	-	-	-	-
Schulte	3	11	-	-	1	-
Stolbov	1	-	-	-	-	-
Tatulian	3	2	2	-	3	-
Tetard	6	-	-	-	10	-
Turkowski	1	4	-	-	2	-
Vaida	1	10	-	-	3	-
Wu	-	2	-	-	-	-

Department Summary

Peer-Reviewed Journals	Conference Proceedings and Abstracts	Book Chapters	Other Publications	Invited Presentations	Patents Received	Disclosures and Patent Applications
140	213	4	40	149	4	9

Articles in Peer-Reviewed Journals (140)

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43. D. DellaGiustina, B. Rizk, D. R. Golish, C. A. Bennett, L. Le Corre, C. d'Aubigny, K. Becker, K. N. Burke, P. H. Smith, C. Hergenrother, B. Clark, M. C. Nolan, M. Pajola, K. J. Walsh, B. Bierhaus, S. Sutton, M. Chojnacki, M. P. Milazzo, H. Campins, J. DeLeon, J. Licandro, E. E. Palmer, O. S. Barnouin, M. G. Daly, H. L. Enos, D. S. Lauretta, *First Resolved Images of Asteroid (101955) Bennu*. American Geophysical Union, Fall Meeting, December, 2018.
44. D. Franklin, Y-H. Lee, Z. He, D. Chanda, and S-T. Wu, *Large Area Multi-Layer Liquid Crystal Phase Modulators Enabled by Two-Photon Polymerization*. The Society for Information Display, San Diego, US, May 2018.

45. Safaei, S. Chandra, M. N. Leuenberger, D. Chanda, *Cavity-induced excitation of Dirac plasmons on graphene for tunable, polarization, and angle-independent enhanced light absorption*. SPIE Photonics West, San Francisco, CA, February, 2019.
46. S. Chandra, D. Franklin, J. Cozart, A. Safaei, D. Chanda, *Metal-insulator transition-induced adaptive multispectral infrared camouflage*, SPIE Photonics West, San Francisco, CA, February, 2019.
47. J. Li, T. Guo, J. White, M. Weidman, Y. Wu, and Z. Chang, *Off-focus beam profile optimization for high-order harmonic generation*. JTh2A.9, CLEO: QELS_Fundamental Science, San Jose, CA, May 5 - 10, 2019.
48. J. White and Z. Chang, *Attosecond Phase Retrieval by Deep Neural Network*. FF2C. 4, CLEO: QELS_Fundamental Science, San Jose, CA, May 5 - 10, 2019.
49. Y. Chai, H. Cheng, X. Yu, A. Chew, X. Ren, Z. Chang, and M. J. Soileau, *Ultrashort laser-induced periodic structures on ZnSe substrate*. Laser-Induced Damage in Optical Materials Conference, Boulder, CO, September 23 - 26, 2018.
50. A. Chew, N. Douguet, C. Cariker, J. Li, X. Ren, Y. Yin, L. Argenti, Z. Chang, and W.T. Hill, *Attosecond Transient Absorption Spectroscopy near the L_{2,3}-edge of Argon*. Conference on Lasers and Electro-Optics, San Jose, CA, May 13 - 18, 2018.
51. L. H. Mach, X. Ren, Y. Yin, Y. Wang, and Z. Chang, *Generation of 1 mJ, 85 fs, 2.5 μm Pulses from a Cr²⁺:ZnSe Chirped Pulse Amplifier*. Conference on Lasers and Electro-Optics, San Jose, CA, May 13 - 18, 2018.
52. S. Han, P. Xu, Y. Wang, K. Zhao, and Z. Chang, *Streaking of Argon L-shell Auger emissions with > 250 eV attosecond X-ray pulses*. CLEO: QELS_Fundamental Science, San Jose, CA, May 5 - 10, 2019.
53. A. Carraro, R. Milazzo, F. Sgarbossa, G. Maggioni, W. Raniero, S. Carturan, D. Scarpa, L. Baldassarre, M. Ortolani, A. Ballabio, G. Isella, S. Modak, L. Chernyak, A. Andrighetto, D.R. Napoli, D. De Salvador, and E. Napolitani, *Ultralow resistivity in Ge by Sb deposition and pulsed laser melting*. EMRS Spring 2019 Symposium D (D.P1.26), Nice, France, May, 2019.
54. J. Yang, C. Fares, F. Ren, J. Lauenstein, S. J. Pearton, A. Khachatryan, N. J. H. Roche, J. Warner, S. Buchner, D. McMorrow, J. Kim, D. Shahin, K. Kovi, A. Thapa, Y. Lu, I. Ponomarev, J. Butler, A. Christou, M. Stavola, A.Y. Polyakov, J. Lee, S. Modak, E. Flitsiyan and L. Chernyak, *Recent Progress in Radiation Effects in Wide Bandgap and Ultra-Wide Bandgap Semiconductor Devices*. GOMACTech Conference, Albuquerque, NM, March 25 - 28, 2019.
55. A. Geraets, J. Chini, and E. Saitta, *Implementing Rehearsal Concept Modules for Graduate Teaching Assistant Professional Development*. Florida Annual Meeting and Exposition, Innisbrook, FL, May 9 - 11, 2019.
56. E. Saitta, W.D. James, M. Wilcox, and J. Chini, *Mixed messages: GTA perceptions of instructional expectations influenced by cross-tiered professional development*. American Chemistry Society Spring National Meeting, Orlando, FL, March 31 - April 4, 2019.

57. A. Gereats, J. Chini, E. Saitta, *Providing an authentic instructional experience through the development of rehearsal concept modules for a mixed-reality teaching simulator*. American Chemistry Society Spring National Meeting, Orlando, FL, March 31- April 4, 2019.
58. E. Scanlon and J. Chini, *Ability Profiles: A Framework for Conceptualizing Dimensions of Ability*. Universal Design for Learning International Research Summit, Orlando, FL, March 27 - 29, 2019.
59. J. Chini, *Updating the Inclusive Teaching Strategies Inventory for Postsecondary Physics Instructors*. American Association of Physics Teachers Winter Conference, Houston, TX, January 12 - 15, 2019.
60. B. Zamarripa Roman and J. Chini, *Success in Physics is Like...: A Researcher-participant Co-analysis*. American Association of Physics Teachers Winter Conference, Houston, TX, January 12 - 15, 2019.
61. J. Chini, C. Bustamante, K. Lamons, and W. James, *Individual vs Social Perspectives of Disability: Impact on Postsecondary Learners*. American Association of Physics Teachers Winter Conference, Houston, TX, January 12 - 15, 2019.
62. B. Zamarripa Roman and J. Chini, *Explicating Definitions of Success through Women's Metaphors of Success in Physics*. American Association of Physics Teachers Winter Conference, Houston, TX, January 12 - 15, 2019.
63. B. Zamarripa Roman and J. Chini, *El éxito es un rompecabezas: Organizando las piezas con análisis metafórico*. Reunión AAPT-MX : La física en STEM, Monterrey, Mexico, December 6, 2018.
64. C. M. Doty, E. K. H. Saitta, and J. Chini, *Graduate Teaching Assistants' Perspectives on Leading Student-centered Classes in Physics and Chemistry*. Physics Education Research Conference, Washington, D.C., August 1 - 2, 2018.
65. W. James, J. Schreffler, E. Vasquez, and J. Chini, *Implementing Universal Design for Learning Aligned Strategies in STEM Courses*. American Association of Physics Teachers Summer Conference, Washington, D. C., July 28 - August 1, 2018.
66. J. Chini, E. Scanlon, W. James, J. Schreffler, and E. Vasquez, *Using Universal Design for Learning to Prepare for Learner Variation in Postsecondary Physics*. American Association of Physics Teachers Summer Conference, Washington, D. C., July 28 - August 1, 2018.
67. E. Scanlon, W. James, J. Schreffler, E. Vasquez, and J. Chini, *Investigation of Introductory Physics Curricula Through an Accessibility Lens*. American Association of Physics Teachers Summer Conference, Washington, D.C., July 28 - August 1, 2018.
68. C. M. Doty, E. Saitta, and J. Chini, *Student-centered Teaching: Graduate Teaching Assistants' Expectations and Perceptions of Essential Pedagogical Skills*. American Association of Physics Teachers Summer Conference, Washington, D.C., July 28 - August 1, 2018.
69. B. Zamarripa Roman and J. Chini, *Characterization of Success in Physics from a Feminist Standpoint*. American Association of Physics Teachers Summer Conference, Washington, D.C., July 28 - August 1, 2018.

70. E. Scanlon and J. Chini, *Ability Profiles: A framework for conceptualizing dimensions of ability*. Proceedings of the Physics Education Research Conference, Washington, D.C., August 1 - 2, 2018.
71. B. Zamarripa Roman and J. Chini, *Success is a puzzle: Sorting out the pieces with metaphor analysis*. Proceedings of the Physics Education Research Conference, Washington, D.C., August 1 - 2, 2018.
72. W. James, C. Bustamante, K. Lamons, and J. Chini, *Beyond disability as weakness: Perspectives from students with disabilities*. Proceedings of the Physics Education Research Conference, Washington, D.C., August 1 - 2, 2018.
73. M. Wilcox and J. Chini, *Selling the studio style to students: A qualitative study*. Proceedings of the Physics Education Research Conference, Washington, D.C., August 1 - 2, 2018.
74. A. Vela, J. Chini, A. Baekey, and J. Walsh, *Variations in patterns of persistence*. Proceedings of the 2018 Physics Education Research Conference, Washington, D.C., August 1 - 2, 2018.
75. S. Gholam-Mirzaeimoghadar, E. Crites, J. E. Beetar, A. Chen, and M. Chini, *Anisotropic Polarization Dependence of High Harmonic Generation in BaTiO₃*. 49th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Fort Lauderdale, FL, 2018.
76. J. E. Beetar, S. Gholam-Mirzaei, S. Buczek, S. Solis, I. Castillo, and M. Chini, *Compression of Yb:KGW Laser Pulses with Multi-Plate and Hollow-Core Fiber Compressors*. 49th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Fort Lauderdale, FL, 2018.
77. S. Gholam-Mirzaeimoghadar, E. Crites, J. E. Beetar, A. Chen, and M. Chini, *Anisotropic Polarization Dependent High Harmonic Generation in the Ferroelectric Crystal BaTiO*. Conference on Lasers and Electro-Optics, San Jose, CA, 2018.
78. J. E. Beetar, S. Gholam-Mirzaeimoghadar, and M. Chini, *Compression of a Yb:KGW Laser with Multi-Plate and Hollow-Core Fiber Compressors*. Conference on Lasers and Electro-Optics, San Jose, CA, 2018.
79. Y. G. Jeong, R. Piccoli, D. Ferachou, V. Cardin, M. Chini, S. Hädrich, J. Limpert, R. Morandotti, F. Légaré, B. Schmidt, and L. Razzari, *33-fold pulse compression down to 1.5 cycles in a 6-m-long hollow-core fiber*. Conference on Lasers and Electro-Optics, San Jose, CA, 2018.
80. J. E. Colwell, L. W. Esposito, M. Green, and J. Payne-Avary, *Clues to Clumps and Holes in Saturn's Rings from Cassini-UVIS Stellar Occultations*. American Geophysical Union Fall Meeting, Washington DC, December 9 - 14, 2018.
81. K. M. Aye, L. W. Esposito, J. E. Colwell, R. G. Jerousek, and G. R. Stewart, *Texture of Saturn's C Ring Plateaus as Seen by Cassini ISS*. American Geophysical Union Fall Meeting, Washington D.C., December 9 - 14, 2018.
82. S. Eckert, J. E. Colwell, M. Green, J. Payne-Avary, Land . W. Esposito, *Sizes of Particles, Clumps, and Holes in Saturn's Rings from Cassini UVIS Stellar Occultation Statistics Including the Effects of*

- Scattered Signal*, American Geophysical Union Fall Meeting, Washington D.C., December 9 - 14, 2018.
83. M. Green, J. E. Colwell, J. Payne-Avary, L. W. Esposito, and S. Eckert, *Monte Carlo Simulations of Cassini Stellar Occultations to Explain Small Scale Structure in the Rings*. American Geophysical Union Fall Meeting, Washington D.C., December 9 -14, 2018.
 84. J. Payne-Avary, J. E. Colwell, M. Green, S. Eckert, and L. W. Esposito, *Microstructure of Saturn's Rings from Higher Order Moments of Cassini-UVIS Stellar Occultation Data*. American Geophysical Union Fall Meeting, Washington D.C., 9- 14 December 2018.
 85. J. Brisset, J. Colwell, A. R. Dove, C. Cox, and N. Mohammed, *Slow Impacts on Surfaces of Small Bodies: Coefficient of Restitution and Penetration Depth into the Regolith*. American Astronomical Society, DPS meeting , Knoxville, TN, 2018.
 86. S. Eckert, J. Colwell, M. Green, J. Payne-Avary, and L. Esposito, *Sizes of Particles, Clumps, and Holes in Saturn's Rings from Cassini UVIS Stellar Occultation Statistics*. American Astronomical Society, DPS meeting, Knoxville, TN, 2018.
 87. S. Jarmak, J. Colwell, J. Brisset, A. R. Dove, and A. Brown, *Experimental and Numerical Studies of Planetesimal Formation via Collisional Accretion*. American Astronomical Society, DPS meeting , Knoxville, TN, 2018.
 88. J. Colwell, L. W. Esposito, and J. Cooney, *Clumps and Holes in Saturn's Rings from Cassini UVIS Stellar Occultations*, 42nd COSPAR Scientific Assembly, Pasadena CA, 14 - 22 July, 2018.
 89. X. Feng, *Pd-catalyzed electrohydrogenation of dinitrogen to ammonia*. ACS Spring National Meeting & Exposition, Orlando, FL, April 2019.
 90. X. Feng, *Rational design of metal electrocatalysts for ambient ammonia synthesis*. AIChE Annual Meeting, Pittsburgh, PA, October, 2018.
 91. X. Feng, *Rational design of metal electrocatalysts for ambient ammonia synthesis*. Southeastern Catalysis Society 17th Annual Fall Symposium, Atlanta, GA, September, 2018.
 92. X. Feng, *Developing metal catalysts for efficient electroreduction of nitrogen to ammonia*. 256th ACS National Meeting, Boston, MA, August, 2018.
 93. E. A. Kramer, A. K. Mainzer, E. L. Wright, J. Bauer, R. M. Cutri, Y. Fernandez, T. Grav, J. Masiero, and T. Spahr, *Modeling the Photometric Behavior of the Near-Earth Comet Population*. 50th Lunar and Planetary Science Conference, Woodlands, Texas, March 18 - 22, 2019.
 94. J. M. Bauer, A. K. Mainzer, E. A. Kramer, T. Grav, J. Masiero, Y. R. Fernandez, M.S. Kelly, S. Protopapa, T. Spahr, K. J. Meech, C. M. Lisse, R. M. Cutri, D. Milewski, and E. L. Wright, *NEOWISE CO+CO₂ Observations of Active Centaurs: A Statistical Sample*. 50th Lunar and Planetary Science Conference, Woodlands, Texas March 18 - 22, 2019.

95. C. M. Lisse, K. N. Singer, Y. R. Fernandez, J. M. Bauer, S. Protopapa, A. F. Cheng, H. A. Weaver, W. B. McKinnon, J. J. Kavelars, S. A. Stern, J. R. Spencer, C. B. Olkin, J. W. Parker, J. M. Moore, O. M. Umurhan, W. M. Grundy, L. A. Young, and A. Verbiscer, *Comets Sourced by KBOs - Comparison of SFDs Derived from Spitzer/Wise JFC Imaging and Pluto and Charon KBO Cratering Rates*. 50th Lunar and Planetary Science Conference, Woodlands, Texas March 18 - 22, 2019.
96. Y. R. Fernandez, H. A. Weaver Jr, and C. M. Lisse, *Characterizing the Behavior of Jupiter-Family Comets Beyond 4 AU*. American Geophysical Union, Fall Meeting, Washington D.C., 2018.
97. S. Sheppard, Y. Fernandez, A. Moullet, and D. A. Ragozzine, *Dwarf Planets: Their Diameters, Albedos, Colors and Satellites Compared*. 50th Meeting of the Division for Planetary Sciences, Knoxville, TN, October, 2018.
98. W. Perkins, J. Emery, D. Cruikshank, O. Dalle, M. Cristina, Y. Fernandez, K. Noll, N. Pinilla-Alonso, J. Stansberry, Dand . Trilling, *A Database of Fluxes and Albedos of Kuiper Belt Objects at 3.6 and 4.5 μm from Observations with the Spitzer Space Telescope*. 50th Meeting of the Division for Planetary Sciences, Knoxville, TN, October, 2018.
99. M. L. Hinkle, E. Howell, C. Magri, Y. Fernandez, R. J. Vervack, J. Crowell, and S. Marshall, *A Shape-based Thermophysical Model of (433) Eros*. 50th Meeting of the Division for Planetary Sciences, Knoxville, TN, October, 2018.
100. D. Trilling, A. McNeill, M. Mommert, J. Hora, D. Farnocchia, P. Chodas, J. Giorgini, H. Smith, S. Carey, C. M. Lisse, M. Werner, S. Chesley, J. Emery, G. Fazio, Y. Fernandez, A. Harris, M. Marengo, M. Mueller, A. Roegge, N. Smith, H. A. Weaver, K. Meech, and M. Micheli, *Spitzer observations of `Oumuamua and `Oumuamua's density and shape*. 50th Meeting of the Division for Planetary Sciences, Knoxville, TN, October, 2018.
101. L. Woodney, S. Coleman, I. Hernandez, Y. Fernandez, and S. Schambeau, *Monitoring the Activity of 29P/Schwassmann-Wachmann 1*. 50th Meeting of the Division for Planetary Sciences, Knoxville, TN, October, 2018.
102. Y. Fernandez, H. A. Weaver Jr, and C. M. Lisse, *Observed Behavior of Jupiter-Family Comets Beyond 4 AU*. 50th Meeting of the Division for Planetary Sciences, Knoxville, TN, October, 2018.
103. S. Schambeau, Y. Fernandez, L. Woodney, N. Samarasinha, K. Meech, M. Knight, M. Womack, G. Sarid, I. Hernandez, J. Montano, and B. Presler-Marshall, *Characterizing comets in the Centaur-to-Jupiter family transition*. 50th Meeting of the Division for Planetary Sciences, Knoxville, TN, October, 2018.
104. J. Bauer, A. Mainzer, E. Kramer, T. Grav, J. Masiero, Y. Fernandez, M. S. Kelley, S. Protopapa, T. Spahr, K. Meech, D. G. Milewski, and E. Wright, *CO+CO₂ Production with the Reactivated NEOWISE Mission*. 50th Meeting of the Division for Planetary Sciences, Knoxville, TN, October, 2018.
105. R. Vervack, P.D. Feldman, Y. Fernandez, M. Knight, C. Lisse, S. McCandliss, N. Dello Russo, and P. Tamblyn, *MESSENGER observations of three comets at small heliocentric distances*. 42nd COSPAR Scientific Assembly, Pasadena, California, July 14 - 22, 2018.

106. C. Schambeau, F. Fernandez, L. Woodney, N. Samarasinha, K. Meech, M. Womack, M. Knight, G. Sarid, I. Hernandez, J. Montano, and B. Presler-Marshall, *Investigating activity drivers of comets in the Centaur-to-Jupiter family transition*. Thermops III: Thermal Models for Planetary Science, Budapest, Hungary, February, 2019.
107. M. L. Hinkle, E. Howell, F. Fernandez, R. J. Vervack, C. Magri, S. Marshall, and J. Crowell, *Thermophysical model of (433) Eros*. Thermops III: Thermal Models for Planetary Science, Budapest, Hungary, February, 2019.
108. E. Kramer, A. Mainzer, E. L. Wright, J. Bauer, R.M. Cutri, Y. Fernandez, T. Grav, J. Masiero, and T. Spahr, *Modeling the Photometric Behavior of the Near-Earth Comet Population*. IAA Planetary Defense Conference, College Park, MD, April 29 - May 3, 2019.
109. J. M. Bauer, A. K. Mainzer, T. Spahr, T. Grav, E. A. Kramer, Y. R. Fernandez, J. R. Masiero, M. S. Kelley, S. Protopapa, J. Van Winkle, and E. L. Wright, *Surveying the Long-period comet hazard*. IAA Planetary Defense Conference, College Park, MD, April 29 - May 3, 2019.
110. J. Yang, Z. Chen, F. Ren, S. J. Pearton, G. Yang, J. Kim, J. Lee, E. Flitsiyan, L. Chernyak, and A. Kuramata, *ECS J. Solid State Sci. Technol.* 233rd ECS Meeting, Seattle, Washington, May 13 - 17, 2018.
111. A. Antuñano, L. Fletcher, G. Orton, H. Melin, J. Rogers, J. Harrington, P. T. Donnelly, N. Rowe-Gurney, and J. S. D. Blake, *Discovery and infrared characterisation of Jupiter's equatorial disturbance cycle*. AAS/DPS Meeting, New Orleans, LA, March, 2019.
112. K. McIntyre, J. Harrington, R. C. Challener, M. A. Reinhard, M. R. Green, Z. Scheffer, P. Jochum, and C. Millwater, *The current state of Spitzer secondary eclipse analyses: HD 209458 b*. AAS/DPS Meeting, New Orleans, LA, March, 2019.
113. R. C. Challener, J. Harrington, J. Jenkins, N. T. Kurtovic, R. Ramirez, J. Peña Zamudio, K. J. McIntyre, M. D. Himes, E. Rodríguez, G. Anglada-Escudé, S. Dreizler, A. Ofir, I. Ribas, P. Rojo, D. Kipping, R. P. Butler, P. J. Amado, C. Rodríguez-López, E. M. Kempton, E. Palle, and F. Murgas, *Improved methods for Spitzer systematic identification and removal*. AAS/DPS Meeting, New Orleans, LA, March, 2019.
114. J. Harrington, J. Jenkins, R. C. Challener, N. T. Kurtovic, R. Ramirez, J. Peña Zamudio, K. J. McIntyre, M. D. Himes, E. Rodríguez, G. Anglada-Escudé, S. Dreizler, A. Ofir, I. Ribas, P. Rojo, D. Kipping, R. P. Butler, P. J. Amado, C. Rodríguez-López, E. M. Kempton, E. Palle, and F. Murgas, *Spitzer's search for Proxima Centauri b transits*. AAS/DPS Meeting, New Orleans, LA, March, 2019.
115. M. D. Himes, and J. Harrington, *On the dayside atmospheric structure and composition of WASP-12b*. AAS/DPS Meeting Abstracts, New Orleans, LA, March, 2019.
116. M. Ishigami, *Electronic properties of tantalum disulfide on copper*. The International Winter School on Novel Materials, Austria March, 2019.

117. W. Kaden, *Ultrathin-film oxides as an inspiration and template for HDN model catalysis on thin-film molybdenum nitrides*. 78th Physical Electronics Conference, University of New Hampshire, June, 2018.
118. M. Lee and H. Kang, *Structural polymorphism in actin filaments modulates gelsolin binding*. American Society for Biochemistry and Molecular Biology (ASBMB) Annual Meeting, Orlando, FL, April 6 - 10, 2019.
119. J. Park, M. P. Lee, and H. Kang, *Macromolecular crowding modulates actin bundle formation induced by actin crosslinking proteins*. ASBMB Annual Meeting, Orlando, FL, April 6 - 9, 2019.
120. J. Heidings, A. Mathin, O. Phanstiel, and H. Kang, *Effects of Dihydromotuporamine C Derivatives on actin assembly dynamics*. ASBMB Annual Meeting, 2019.
121. Z. T. Untracht, A. Ozcan, S. Santra, and H. Kang, *Tracking and detection of bactericidal quantum dots*. ASBMB Annual Meeting, 2019.
122. L. Zhai and H. Kang, *The effect of caffeine on actin filament assembly*. ASBMB Annual Meeting, 2019.
123. N. Castaneda, M. Lee, H. J. Rivera-Jacquez, R. R. Marracino, J. X. Tang, T. R. Merlino, and H. Kang, *Molecular crowding modulates actin filament mechanics and structure*. ASBMB Annual Meeting, 2019.
124. N. Castaneda, M. Lee, H. J. Rivera-Jacquez, R. R. Marracino, T. R. Merlino, and H. Kang, *Molecular crowding modulates actin filament mechanics and structure*. American Physical Society March Meeting, Boston, MA, 2019.
125. N. Azim, N. CastanedaG, A. Diaz, H. Kang, and S. Rajaraman, *Multi-modal microelectrode arrays for the investigation of protein actin's electro-mechanosensing mechanisms toward neurodegenerative disease models on a chip*. A solid-State Sensors, Actuators and Microsystems Workshop, Hilton Head Island, SC, 2018.
126. N. Zaman, K. Lasri, and A. Kara, *Computational study of the adsorption of bi-metallic clusters*. American Physical Society March Meeting, Boston, MA, 2019.
127. M. Sajid, A. Khaniya, W. Kaden, and A. Kara, *Molybdenum Nitride Thin-Film Development and Screening*. American Physical Society March Meeting, Boston, MA, 2019.
128. A. Kara and W. Malone, *A SCAN+ rVV10 study of Thiophene adsorption on Ir, Rh, and Ag (100)*. American Physical Society March Meeting, Boston, MA, 2019.
129. M. Sajid, W. Kaden, and A. Kara, *Adsorption characteristics of small aromatic molecules on silica/Ru (0001)*. American Physical Society March Meeting, Boston, MA, 2019.
130. W. Malone, A. Kara, and W. Kaden, *A Density Functional Theory Study of the Adsorption of Thiophene on Transition Metal Surfaces*. American Physical Society March Meeting, Boston, MA, 2019.

131. N. Zaman, K. Lasri, and A. Kara, *Computational study of the adsorption of bi-metallic clusters*. Nano-Florida, 2018.
132. M. Sajid, W. Kaden, and A. Kara, *Adsorption characteristics of small aromatic molecules on silica/Ru (0001)*. Nano-Florida, 2018.
133. B. Chamlagain and S. Khondaker, *The effect of 2D-0D interface in the transport properties of Au nanoisland coated MoS₂ field effect transistors investigated via temperature dependent electron transport measurements*. UCF Research Week, Orlando, FL, April 1 - 5, 2019.
134. B. Chamlagain and S.I. Khondaker, *Tuning the transport property of MoS₂ field-effect transistor by assembling 2D-0D structure*. Florida Chapter AVS Science and Technology Society Annual Symposium, University of Central Florida, March 11 - 12, 2019.
135. V. Charles, S. Withanage, B. Chamlagain, and S. I. Khondaker, *Synthesis of Vertical MoO₂/MoS₂ Core-Shell Structure Using MoO₃ Thin Film as a Precursor via Chemical Vapor Deposition*. . Florida Chapter AVS Science and Technology Society Annual Symposium, University of Central Florida, March 11 - 12, 2019.
136. S. Withanage, M. Lopez, H. Kalita, H. Chung, T. Roy, Y. Jung, and S. I. Khondaker, *CVD Growth of Monolayer MoS₂ by Using MoO₃ Thin Films as a Precursor for Co-Evaporation*. MRS Fall Meeting and Exhibit, Boston, MA, November 25 - 30, 2018.
137. S. Withanage, M. Lopez, W. Sameen, V. Charles, and S. I. Khondaker, *Elucidation of the Growth Mechanism of MoS₂ During the CVD Process*. MRS Fall Meeting and Exhibit, Boston, MA, November 25 - 30, 2018.
138. S. Withanage and S. I. Khondaker, *CVD Growth of Monolayer MoS₂ on Sapphire Substrates by Using MoO₃ Thin Films as a Precursor for Co-Evaporation*. MRS Fall Meeting and Exhibit, Boston, MA, November 25 - 30, 2018.
139. S. Withanage, M. Lopez, V. Charles, H. Kalita, T. Roy, Y. Jung, and S. I. Khondaker, *CVD Growth of Monolayer MoS₂ by using MoO₃ Thin Film as a Precursor for Co-Evaporation*. Summer Workshop on Industry Application of Nanotechnology, University of Central Florida, August 4, 2018.
140. R. A. Klemm, Z. Zhao, J. Zhang, and Q. Gu, *Microscopic model of the Knight shift in anisotropic Type-II superconductors*. American Physical Society March Meeting, Boston, MA, 2019.
141. T. Kashiwagi, G. Kuwano, T. Imai, S. Nakagawa, R. Ota, K. Nakamura, Y. Ono, Y. Kanako, S. Kusunose, M. Tsujimoto, T. Yamamoto, H. Minami, R. Klemm, and K. Kadowaki, *Studies of radiation spectrum of Bi₂Sr₂CaCu₂O₈ high T_c superconducting terahertz emitters*. American Physical Society March Meeting, Boston, MA, 2019.
142. A. Vasquez, S. Bonnough, and R. A. Klemm, *Terahertz emission from annular microstrip antennas*. American Physical Society March Meeting, Boston, MA, 2019.

143. K. Delfanazari, R. Klemm, M. Tsujimoto, D. Cerconey, T. Yamamoto, T. Kashiwagi, and K. Kadowaki, *Characterization of cavity modal radiation patterns in superconducting coherent terahertz emitters*. American Physical Society March Meeting, Boston, MA, 2019.
144. C. H. Yuen, M. Ayouz, E. S. Endres, O. Lakhmanskaya, R. Wester, and V. Kokoouline, *Quantum tunneling isotope exchange reaction $H_2 + D^- \rightarrow HD + H^-$* . DAMOP 2018-49th Annual APS Division of Atomic, Molecular, and Optical Physics, Fort Lauderdale, FL, May -June, 2018.
145. R. Wester, O. Lakhmanskaya, M. Simpson, S. Murauer, M. Notzold, A. Schmidt-May, R. Wild, E. Endres, and V. Kokoouline, *Photodetachment spectroscopy of cold trapped molecular anions near threshold*. DAMOP 2018-49th Annual APS Division of Atomic, Molecular, and Optical Physics, Fort Lauderdale, FL, May - June, 2018.
146. V. Kokoouline, S. Fonseca dos Santos, A. Orel, and C. H. Yuen, *Dissociative electron attachment of polyatomic molecule at low collision energies: application to H_2CN* . DAMOP 2018-49th Annual APS Division of Atomic, Molecular, and Optical Physics, Fort Lauderdale, FL, May - June, 2018.
147. D. Le, Z. Hooshmand, T. B. Rawal, H. K. Jeong, P. Evans, P. A. Dowben, and T. S. Rahman, *Methoxy Formation Induced Defects On MoS_2* . FL Chapter of the AVS Symposium, Orlando, FL, May 7 - 8, 2018.
148. Z. Hooshmand, D. Le, and T. S. Rahman, *When intrinsic impurities give rise to a new Moiré pattern: New phase of $h-BN/Rh(111)$* . 78th Physical Electronics Conference - PEC, Durham, NH, June 26 - 28, 2018.
149. D. Le, P. Evans, Z. Hooshmand, T. B. Rawal, L. Bartels, P.A. Dowben, and T. S. Rahman, *Methoxy Formation Induced Defects on MoS_2* , AVS 65th International Symposium & Exhibition. Long Beach, CA, October 22-26, 2018.
150. S. R. Acharya, D. Le, S. Chiang, C. Fong, and T. S. Rahman, *Two dimensional phases of Ag on $Ge(111)$: insights from first-principles calculations*. American Physical Society March Meeting, Boston, MA, 2019.
151. Z. Hooshmand, P. E. Evans, D. Le, P. A. Dowben, and T. S. Rahman, *Symmetry controlled adsorption of di-iodobenzene on MoS_2* . American Physical Society March Meeting, Boston, MA, 2019.
152. Z. Hooshmand, D. Le, and T. S. Rahman, *Impurity induced chemical properties of BN on $Rh(111)$ studied by first principle calculations: A new phase*. AVS 65th International Symposium & Exhibition, Long Beach, CA, October 21-26, 2018.
153. D. Le and T. S. Rahman, *Effect of MoS_2 thickness on properties of adsorbed Au nanoparticles*. American Physical Society March Meeting, Boston, MA, 2019.
154. D. Le and T. S. Rahman, *Development of artificial neural network potential for hexagonal boron nitride with and without defects*. American Physical Society March Meeting, Boston, MA, 2019.
155. S. Joshi, D. Le and T. S. Rahman, *Metallization of the $Si(001)$ surface: An atomistic study using a neural network potential*. American Physical Society March Meeting, Boston, MA, 2019.

156. T.B. Rawal, D. Le, T. S. Rahman, *Copper-supported single layer MoS₂ for higher alcohol synthesis from syngas: A DFT + kMC study*. ACS Spring National Meeting, Orlando, FL, March 31 - April 4, 2019.
157. T. Jiang, V. Turkowski, and T. S. Rahman, *Absorption and Emission Properties of Defect-Laden Single-Layer Hexagonal Boron Nitride*. FLAVS Symposium, Orlando, FL, March 2019.
158. T. Jiang, V. Turkowski, and T. S. Rahman, *Optical Properties of Defect-Laden Single-Layer Hexagonal Boron Nitride*. American Physical Society March Meeting, Boston, MA, 2019.
159. T. Jiang, T. B. Rawal, D. Le, and T. S. Rahman, *Methanol Partial Oxidation Mechanisms on a Single-site Catalyst Pt₁/ZnO(10-10): A First-principles Study*. NanoFlorida 2018, Melbourne, FL, October 5-7, 2018.
160. S. Joshi, D. Le, and T. S. Rahman, *Metallization of the Si(001) Surface: Molecular Dynamics Simulations using a Neural Network Potential*. FLAVS Symposium, Orlando, FL, March 11-12, 2019.
161. R. S. Berkley, Z. Hooshmand, and T. S. Rahman, *Characteristics of a Single Molecule Magnet ([Mn₃]₂ dimer) on Graphene*. M²QM All Hands On Meeting, Gainesville, FL, May 3-5, 2019.
162. N. Ud Din, V. Turkowski, and T. S. Rahman, *Ultrafast charge dynamics and photoluminescence in bilayer MoS₂*. American Physical Society March Meeting, Boston MA, 2019.
163. N. Ud Din, D. Le, and T. S. Rahman, *Redox active Metal Organic Chains for single site catalysis: A first-principles study*. FLAVS Symposium, Orlando, FL, March 11-12, 2019.
164. T. S. Rahman and S. R. Acharya, *Diffusion Kinetics study of adatom islands: Activation energy barriers predicted using data-driven approaches*. AVS 65th Meeting, Long Beach, CA, October 21-26, 2018.
165. R. Berkley, Z. Hooshmand, and T. S. Rahman, *Characteristics of a single molecular magnet (Mn₃ Dimer) on Graphene*. FLAVS Symposium, Orlando, FL, March, 2019.
166. S. R. Acharya and T. S. Rahman, *Diffusion kinetics study of adatom islands*. Association of Nepalese Physicist in America, E-Conference, July 21-22, 2018.
167. W. Luo, J. Huang, D. Smalley, and T. Liu, *Reversing Thermal Equilibration by Differential Magneto-Thermal Force*. American Physical Society March Meeting, Boston, MA, 2019.
168. M. Suttinger, R. Go, H. Shu, A. Azim, and A. Lyakh, *High Brightness Operation in Broad Area Quantum Cascade Lasers with Reduced Number of Stages*. CLEO, San Jose, California, May, 2019.
169. R. Go, H. Krysiak, M. Feters, P. Figueired, M. Suttinger, X. Fang, A. Eisenbach, J. Fastenau, D. Lubyshev, A. Liu, N. Huy, A. Morgan, S. Edwards, M. Furlong, and A. Lyakh, *Quantum cascade lasers on lattice-mismatched substrates*. Photonics West, San Francisco, February, 2019.

170. M. Suttinger, R. Go, H. Shu, A. Azim, and A. Lyakh, *Mid-Wave and Long-Wave Infrared Broad-Area Quantum Cascade Lasers*. MIOMD Conference, Flagstaff, Arizona, October, 2018.
171. A. Lyakh, *Optimization of broad-area quantum cascade laser design for very high power continuous wave operation*. Defence and Security Conference, Berlin, 2018.
172. A. Lyakh, *Monolithic integration of Quantum Cascade Lasers onto Si using metamorphic buffers*. IQCLSW conference, Cassis, France, 2018.
173. A. Lyakh, *Quantum Cascade Lasers on Metamorphic Buffer Layer*, Compound Semiconductor Week conference, Massachusetts Institute of Technology, MA, May 29 - June 1, 2018.
174. P. Patil, S. Kourtis, C. Chamon, E. R. Mucciolo, and A. E. Ruckenstein, *Quantum Annealing of XORSAT on Dilute Square Lattices*. American Physical Society March Meeting, Boston, MA, March, 2019.
175. S. Dhara, A. Hamma, and E. R. Mucciolo, *Quantum Coherence in the Ergodic and Many-Body Localized Phases*. American Physical Society March Meeting, Boston, MA, March, 2019.
176. J. Reyes and E. M. Stoudenmire, *Training Classifiers with a Multi-Grid DMRG Algorithm*. American Physical Society March Meeting, Boston, MA, March 2019.
177. Y. Nakajima, K. H. Siddiquee, R. Munir, C. Dissanayake, P. Vaidya, C. Nickle, E. Del Barco, D. VanGennep, and J. Hamlin, *Rotational symmetry breaking in the upper critical field of topological superconductor candidate CaSn_3* . American Physical Society March Meeting, Boston, MA, 2019.
178. K. H. Siddiquee, R. Munir, C. Dissanayake, X. Hu, S. Yadav, Y. Takano, E. S. Choi, and Y. Nakajima, *Quantum oscillations in topological semimetal candidate CaSn_3* . American Physical Society March Meeting, Boston, MA, 2019.
179. K. H. Siddiquee, R. Munir, C. Dissanayake, X. Hu, S. Yadav, Y. Takano, E.S. Choi, and Y. Nakajima, *De Haas–Van Alphen Effect investigation in topological semimetal candidate CaSn_3* . FL Chapter of the AVS Symposium, Orlando, FL, March, 2019.
180. C. Dissanayake, K. H. Siddiquee, R. Munir, W. Newsome, F. Uribe-Romo, X. Hu, S. Yadav, Y. Takano, E. S. Choi, and Y. Nakajima, *Quantum spin liquid state in three dimensional metal-organic frameworks*. FL Chapter of the AVS Symposium, Orlando, FL, March 2019.
181. R. Munir, K. H. Siddiquee, C. Dissanayake, P. Vaidya, C. Nickle, E. Del Barco, D. VanGennep, J. Hamlin, and Y. Nakajima, *Nematic superconductivity in topological semimetal CaSn_3* . FL Chapter of the AVS Symposium, Orlando, FL, March, 2019.
182. M. Neupane et al., *Distinct Multiple Fermionic States in a Single Topological System*. American Physical Society March Meeting, Boston, MA, 2019.
183. Z. E. Loparo, K. Ahmed, S. S. Vasu, A. V. Muraviev, P. Figueiredo, A. Lyakh, and R. E. Peale, *First Demonstration of an Acousto-Optically Modulated Quantum Cascade Laser As a Broadband, Time-Resolved Combustion Diagnostic*. ASME Turbo Expo 2018: Turbomachinery Technical Conference and Exposition, Oslo, Norway, June 11 - 15, 2018.

184. R. N. Evans, S. R. Calhoun, J. R. Brescia, J. W. Cleary, E. M. Smith, and R. E. Peale, *Far-infrared bands in plasmonic metal-insulator-metal absorbers optimized for long-wave infrared*. MRS Fall Meeting, Boston MA, November 25 - 30, 2018.
185. R. E. Peale, S. Calhoun, N. Dhakal, I. O. Oladeji, and F. J. González, *Spray-on thermoelectric energy harvester*. MRS Fall Meeting, Boston MA, November 26 - 30, 2018.
186. H. Saha, *Theoretical study of Valence and K shell double photoionization of Magnesium atoms using screening potential approximation*. APS Meeting on Atomic, Molecular and Optical physics, Wisconsin, Madison, May, 2019.
187. W. C. Tucker, B. D. Doan, A. H. Quadery, A. R. Dove, P. K. Schelling, *Physics, Atomic-scale simulation of chemistry and plastic deformation in dust grain aggregation*, 50th Annual Meeting, Division for Planetary Sciences, Knoxville, TN, October, 2018.
188. B. J. Niebuur, K. L. Claude, S. Pinzek, C. Cariker, K. N. Raftopoulos, V. Pipich, M. S. Appavou, A. Schulte, and C. M. Papadakis, *Pressure dependence of Poly(N isopropylamide) mesoglobule formation in aqueous solution*. 16th Conference of the International Association of Colloid and Interface Scientists, Rotterdam, Netherlands, May 21 - 25, 2018.
189. C. H. Ko, K. L. Claude, D. Schanzenbach, B. J. Niebuur, F. Jung, J. J. Kang, H. Frielinghaus, L. Barnsley, V. Pipich, B. Wu, A. Schulte, P. Mueller-Buschbaum, A. Laschewsky, and C. M. Papadakis, *Influence of Pressure on the Aggregation Behavior of Poly(N-isopropylamide)*. 14th European Summer School on Scattering Methods Applied to Soft Condensed Matter, Bombannes, France, 19 - 26 June, 2018.
190. C. H. Ko, K. L. Claude, D. Schanzenbach, B. J. Niebuur, F. Jung, J. J. Kang, H. Frielinghaus, L. Barnsley, V. Pipich, B. Wu, A. Schulte, P. Mueller-Buschbaum, A. Laschewsky, and C. M. Papadakis, *The structural, thermal and dynamic behavior of the thermoresponsive polymer poly (N-isopropylmethacryl amide)*. 32th European Colloid and Interface Society ECIS, Ljubljana, Slovenia, September 2 - 9, 2018.
191. C. H. Ko, K.-L. Claude, D. Schanzenbach, B. J. Niebuur, F. Jung, J.-J. Kang, H. Frielinghaus, L. Barnsley, V. Pipich, B. Wu, A. Schulte, P. Mueller-Buschbaum, A. Laschewsky, and C. M. Papadakis, *The structural, thermal and dynamic behavior of the thermoresponsive polymer poly(N-isopropylmethacryl amide)*. 4th German SNI Conference, Garching, Germany, September 17 -19, 2018.
192. B. J. Niebuur, L. Chiappisi, X. Zhang, F. Jung, A. Schulte, and C. M. Papadakis, *Kinetics of mesoglobule formation in aqueous PNIPAM solutions revealed with SANS and fast pressure jumps*. 4th German SNI Conference, Garching, Germany, September 17 -19, 2018.
193. L.-B. Chang, L. Chow, A. Schulte, S. F. Huang, M. J. Jeng, C. J. Yu, Y.-L. Hsieh, and W. S. Chen, *Fabrication of Gallium Nitride Waveguide for Oral Cancer Raman Spectrum Measurement*. International Conference on Materials and Applications for Sensors and Transducers, Bratislava, Slovakia, September, 2018.

194. B. J. Niebuur, W. Lohstroh, M. S. Appavou, A. Schulte, and C. M. Papadakis, *Water Dynamics in a Concentrated Poly(Nisopropylacrylamide) Solution at Variable Pressure*. American Physical Society March Meeting, Boston, MA, 2019.
195. B. J. Niebuur, L. Chiapissi, X. Zhang, F. Jung, V. Pipich, M. S. Appavou, A. Schulte, and C. M. Papadakis, *Formation and growth of mesoglobules in aqueous Poly(N-isopropylacrylamide) solutions at low and high pressures revealed with fast pressure jumps*. Spring Meeting of the German Physical Society, Regensburg, Germany, April, 2019.
196. C. H. Ko, K.-L. Claude, D. Schanzenbach, B. J. Niebuur, F. Jung, J.-J. Kang, H. Frielinghaus, L. Barnsley, V. Pipich, B. Wu, A. Schulte, P. Mueller-Buschbaum, A. Laschewsky, and C. M. Papadakis, *Influence of Pressure on the Aggregation Behavior of Poly(N-isopropylamide), The structural, thermal and dynamic behavior of the thermoresponsive polymer poly(Nisopropylmethacrylamide)*. Spring Meeting of the German Physical Society, Regensburg, Germany, April, 2019.
197. B. J. Niebuur, W. Lohstroh, M.S. Appavou, A. Schulte, and C. M. Papadakis, *Water Dynamics in a Concentrated Poly(Nisopropylacrylamide) Solution at Variable Pressure*. Spring Meeting of the German Physical Society, Regensburg, Germany, April, 2019.
198. B. J. Niebuur, G. P. Meledam, V. Pipich, M. S. Appavou, A. Schulte, and C. M. Papadakis, *Mesoglobules in PNIPAM solutions: Influence of pressure*. Spring Meeting of the German Physical Society, Regensburg, Germany, April, 2019.
199. N. Kandel and S. A. Tatulian, *Intrinsic fluorescence-based FRET: A novel approach to monitor early stages of amyloid aggregation*. 63rd Annual Meeting of the Biophysical Society, Baltimore, MD, March 2 - 6, 2019.
200. J. Guyette, B. Evangelista, S. A. Tatulian, and K. Teter, *Conformational resilience of protein disulfide isomerase*. Experimental Biology 2019 Conference, Orlando, FL, April 6 - 9, 2019.
201. V. Turkowski, S. R. Acharya, C. Garcia-Fernandez, N. Lorente, and T. S. Rahman, *Ground and excited states of iron-phthalocyanine: a DFT+DMFT analysis*. American Physical Society March Meeting, Boston, MA, 2019.
202. M. E. Vaida, *Defects engineering of 2D-TaS₂ and 2D-MoS₂: A route toward highly efficient CO hydrogenation and CO₂ reduction reactions*. American Chemical Society National Meeting and Expo, Orlando, FL, April, 2019.
203. B. Young, Md. A. K. Pathan, C. E. Jordon, T. Nguyen, N. Marrow, D. M. Popolan-Vaida, and M. E. Vaida, *The mechanism of acetylene formation via CO hydrogenation on defect rich 2D-MoS₂*. American Chemical Society National Meeting and Expo, Orlando, FL, April, 2019.
204. Md. A. K. Pathan, B. Young, C. E. Jordan, B. Blue, M. Ishigami, and M. E. Vaida, *Low-coordinated surface Ta atoms on 2D-TaS₂ for enhanced CO hydrogenation at low temperatures*. American Chemical Society National Meeting and Expo, Orlando, FL, April, 2019.

205. C. E. Jordan, B. Blue, Md. A. K. Pathan, B. Young, B. Blue, M. Ishigami, and M. E. Vaida, *CO₂ reduction on defect rich 2D-TaS₂ layers on Cu(111)*. American Chemical Society National Meeting and Expo, Orlando, FL, April, 2019.
206. B. Blue, D. Le, M. Ishigami, T. Rahman, and M. E. Vaida, *Scanning tunneling microscopy and spectroscopy of Ar-sputtered TaS₂/Cu(111) at 78K: Investigating catalytic mechanisms*. Spring 2019 American Chemical Society National Meeting and Expo, Orlando, FL, April, 2019.
207. Md. A. K. Pathan, B. Young, C. E. Jordan, N. Marrow, T. Nguyen, B. Blue, M. Ishigami, and M. E. Vaida, *Mechanistic understanding of hydrocarbon fuels formation from syngas on 2D-TaS₂/Cu(111) catalysts*. UCF- Graduate Research Forum, Orlando, FL, April, 2019.
208. B. Young, Md. A. K. Pathan, C. Jordon, T. Nguyen, N. Marrow, D. M. Popolan-Vaida, and M. E. Vaida, *Mechanistic Understanding of Acetylene Formation via CO Hydrogenation Reaction on 2D-MoS₂ Based Catalysts*. UCF- Graduate Research Forum, Orlando, FL, April, 2019.
209. Md. A. K. Pathan, B. Young, C. E. Jordan, B. Blue, M. Ishigami, and M. E. Vaida, *Synthesis and characterization of large area 2D-TaS₂ on Cu(111) catalyst for the conversion of syngas to hydrocarbon fuel*. Florida Chapter of the AVS Symposium, Orlando, FL, March, 2019.
210. B. Young, Md. A. K. Pathan, C. Jordon, T. Nguyen, N. Marrow, D. M. Popolan-Vaida, and M. E. Vaida, *Mechanistic understanding of acetylene formation via CO hydrogenation reaction on 2D-MoS₂ based catalysts*. Florida Chapter of the AVS Symposium, Orlando, FL, March, 2019.
211. C. E. Jordan, Md. A. K. Pathan, and M. E. Vaida, *CO₂ capturing, activation, and splitting on two dimensional tantalum disulfide*. Florida Chapter of the AVS Symposium, Orlando, FL, March, 2019.
212. K. Murari, Y. Yin, Y. Wu, X. Ren, and Z. Chang, *Gain-optimized 2.05 μm pulses at 20 mJ and 1 kHz from multi-pass Ho:YLF amplifier*. Conference on Lasers and Electro-Optics, Optical Society of America, May, 2019.
213. J. Li, T. Guo, J. White, M. Weidman, Y. Wu, and Z. Chang, *Off-focus beam profile optimization for high-order harmonic generation*. Conference on Lasers and Electro-Optics, Optical Society of America, May, 2019.

Book Chapters (4)

1. Z. Kris, E. B. Bierhaus, D. T. Britt, B. Clark, C. M. Hartzell, L. Gertsch, A. V. Kulchitsky, A. V. Johnson, J. B. Metzger, P. Reeves, and S. Paul, *Geotechnical Properties of Asteroids Affecting Surface Operations, Mining, and In Situ Resource Utilization Activities*, in *Primitive Meteorites and Asteroids*, pp. 439-476 (Elsevier, 2018).
2. H. Campins, J. de León, J. Licandro, A. Hendrix, J. A. Sanchez, and V. Ali-Lagoa, *Compositional Diversity Among Primitive Asteroids*. In *Primitive Meteorites and Asteroids* (Elsevier, 2018).
3. S. A. Tatulian and N. Kandel, *Membrane Pore Formation by Peptides Studied by Fluorescence Techniques*, in *Lipid-Protein Interactions*, J. H. Kleinschmidt ed. (Springer, 2018).

4. S. A. Tatulian, *FTIR Analysis of Proteins and Protein-Membrane Interactions*, in *Lipid-Protein Interactions*, J. H. Kleinschmidt ed. (Springer, 2018).

Other Publications (40)

1. N. Douguet, B.I. Schneider, and L. Argenti, *Application of the Complex Kohn Variational Method to Attosecond Spectroscopy*. Preprint arXiv:1807.02183, 2018.
2. Ghomashi, N. Douguet, and L. Argenti, *Resonant Anisotropic Emission in Two-Photon Interferometric Spectroscopy*. Preprint arXiv:1811.10160, 2019.
3. V. Gruson, L. Barreau, Á. Jiménez-Galan, F. Risoud, J. Caillat, A. Maquet, B. Carré, F. Lepetit, J-F. Hergott, T. Ruchon, L. Argenti, R. Taïeb, F. Martín, and P. Salières, *Attosecond dynamics through a Fano resonance: Monitoring the birth of a photoelectron*. Preprint arXiv:1903.11698, 2019.
4. S. Donsa, N. Douguet, J. Burgdörfer, I. Březinová, and L. Argenti, *Circular holographic ionization-phase meter*. Preprint arXiv:1904.04380, 2019.
5. D. T. Britt, *What Ever Happened to the Future?* SSERVI Exploration Science Forum, 2018.
6. D. T. Britt. and L. Pohl, *The Dehydration of Serpentine Polymorphs: Implications for the Evolution of NEA Carbonaceous Chondrite Parent Bodies*. SSERVI Exploration Science Forum, 2018.
7. C. Schultz, D. T. Britt, K. M. Cannon, Z. Landsman, P. Metzger, and M. Peppin, *Exploring the Physical Properties of High-Fidelity Phobos Regolith Simulants*". SSERVI Exploration Science Forum, 2018.
8. Zhang, T. Jiang, Y. Yang, Y. Sun, P. Ma, and D. T. Britt, *How space weathering may change the directional and polarization reflectance of surface regolith of airless bodies?* 50th Division for Planetary Science Meeting, 220.04, 2018.
9. L. Pohl and D. T. Britt, *Dehydration of Major Constituents of Carbonaceous Chondrites - Spectra and Compositional Changes*. 50th Division for Planetary Science Meeting, 505.03, October, 2018.
10. C. J. A. Howett, D. T. Britt, et al. *Colors of (486958) 2014 MU69 as Observed by New Horizons' Multi-Spectral Visible Imaging Camera (MVIC)*. 50th Lunar and Planetary Science Conference, 1982, 2019.
11. J. M. Moore, D. T. Britt, et al. *The Geology of 2014 MU69 ("Ultima Thule"): Initial Results from The New Horizons Encounter*. 50th Lunar and Planetary Science Conference, 2152, 2019.
12. W. B. McKinnon, D. T. Britt, et al. *A Pristine "Contact Binary" in the Kuiper Belt: Implications from the New Horizons Encounter with 2014 MU69 ("Ultima Thule")*. 50th Lunar and Planetary Science Conference 2019, 2767, 2019.
13. S. B. Porter, D. T. Britt, et al. *A Contact Binary in the Kuiper Belt: The Shape and Pole of (486958) 2014 MU69*. 50th Lunar and Planetary Science Conference, 1611, 2019.

14. K. N. Singer, D. T. Britt, et al. *Impact Craters on 2014 MU69: Implications for the Geologic History of MU69 and Kuiper Belt Population Size-Frequency Distributions*. 50th Lunar and Planetary Science Conference, 2239, 2019.
15. W. M. Grundy, R. P. Binzel, D. T. Britt, et al. *486958 2014 MU69 Ultima Thule Surface Composition Overview*. 50th Lunar and Planetary Science Conference, 2473, 2019.
16. S. Protopapa, D. T. Britt, et al. *Comparing Ultima Thule with Comet Nuclei: Colors and Composition*. 50th Lunar and Planetary Science Conference 2732, 2019.
17. H. A. Weaver, S. A. Stern, D. T. Britt, et al. *"Comparing (486958) 2014 MU69 to Cometary Nuclei: Shapes and Surfaces"*. 50th Lunar and Planetary Science Conference, 2982, 2019.
18. K. M. Cannon and D. T. Britt, *Into the Mire: The Behavior of Fines in a Mud Ocean on Ceres and Other Carbonaceous Bodies*, 50th Lunar and Planetary Science Conference, 2038, 2019.
19. L. Pohl and D. T. Britt, *The Dehydration and Alteration of Cronstedtite*. 50th Lunar and Planetary Science Conference, 2527, 2019.
20. J. C. Cook, D. T. Britt, et al. *Comparison of Near Infrared Spectra Between Pluto-System Objects and 486958 2014 MU69: Analysis of New Horizons Spectral Images*. 50th Lunar and Planetary Science Conference, 2818, 2019.
21. D. P. Cruikshank, W. M. Grundy, D. T. Britt, et al. *The Colors of 486958 2014 MU69 ("Ultima Thule"): The Role of Synthetic Organic Solids (Tholins)*. 50th Lunar and Planetary Science Conference, 2051, 2019.
22. C. M. Dalle Ore, D. T. Britt, et al. *Color and Albedo of Ultima Thule: A Comparison to TNOs and Centaurs*. 50th Lunar and Planetary Science Conference, 2770, 2019.
23. R. P. Binzel, D. T. Britt, et al. *Highly Localized Seasonal Cold-Trapping in the Neck of 2014 MU69 'Ultima Thule*. 50th Lunar and Planetary Science Conference, 2933, 2019.
24. E. Quirico, D. T. Britt, et al. *Spectral Properties of 486958 2014MU69 (Ultima Thule) Versus 67P/Churyumov-Gerasimenko*. 50th Lunar and Planetary Science Conference 2487, 2019.
25. K. D. Runyon, D. T. Britt, et al. *Theoretical Underpinnings on Aeolian Transport on 2014 MU69 "Ultima Thule*. 50th Lunar and Planetary Science Conference, 1670, 2019.
26. F. Scipioni, C. M. Dalle Ore, D. T. Britt, et al. *Ultima Thule, TNOs ,and the Irregular Satellites of the Outer Planets: Spectroscopic and Color Comparison*. 50th Lunar and Planetary Science Conference, 2843, 2019.
27. Z. Chang, *Enhancing keV high harmonic signals generated by long-wave infrared lasers*. Preprint arXiv:1904.10233, 2019.

28. N. Saito, H. Sannohe, N. Ishii, T. Kanai, N. Kosugi, Y. Wu, A. Chew, S. Han, Z. Chang, and J. Itatani, *Real-time observation of electronic, vibrational, and rotational dynamics in nitric oxide with attosecond soft X-ray pulses*. Preprint arXiv: 1904.10456, 2019.
29. M. Suttinger, R. Go, A. Azim, E. Sanchez, H. Shu, and A. Lyakh, *High Brightness, Broad-Area Buried Heterostructure Quantum Cascade Lasers*. IEEE Photonics, 2019.
30. S. Kourtis, C. Chamon, E. R. Mucciolo, and A. E. Ruckenstein, *Fast Counting with Tensor Networks*. Preprint arXiv:1805.00475, 2018.
31. L. Zhang, S. Kourtis, C. Chamon, E. R. Mucciolo, and A. E. Ruckenstein, *Ultra-slow Spin Dynamics in a Translationally Invariant Spin Model for Multiplication and Factorization*. Preprint arXiv:1812.01621, 2018.
32. P. Patil, S. Kourtis, C. Chamon, E. R. Mucciolo, and A. E. Ruckenstein, *Obstacles to Quantum Annealing in a Planar Embedding of XORSAT*. Preprint arXiv:1904.01860. 2019.
33. K. H. Siddiquee, R. Munir, C. Dissanayake, P. Vaidya, C. Nickle, E. Del Barco, D. VanGennep, J. Hamlin, and Y. Nakajima, *Nematic superconductivity in topological semimetal CaSn_3* . Preprint arXiv:1901.02087, 2019.
34. Y. Nakajima, T. Metz, C. Eckberg, K. Kirshenbaum, A. Hughes, R. Wang, L. Wang, S. R. Saha, I. L. Liu, N. P. Butch, Z. Liu, S.V. Borisenko, P.Y. Zavalij, and J. Paglione, *Planckian dissipation and scale invariance in a quantum-critical disordered pnictide*. Preprint arXiv:1902.01034, 2019.
35. H. M. Abouelkhair, N. A. Orlovskaya, and R. E. Peale, *Growth of MoS_2 Thin Films with Microdome Texture as Omnidirectional Light Trap for Solar Cell Applications*. IEEE Xplore, 2018.
36. C. H. Ko, K. L. Claude, D. Schanzenbach, B. J. Niebuur, F. Jung, J. J. Kang, H. Frielinghaus, L. Barnsley, V. Pipich, B. Wu, A. Schulte, P. Mueller-Buschbaum, A. Laschewsky, and C. M. Papadakis, *The structural, thermal and dynamic behavior of the thermoresponsive polymer poly(*N*-isopropylmethacrylamide)*. Annual report, Chair of functional materials, Physics Department, TU, Munich, 2018.
37. B. J. Niebuur, L. Chiappisi, X. Zhang, F. Jung, A. Schulte, and C. M. Papadakis. *Formation and growth of mesoglobules in aqueous poly(*N*-isopropylacrylamide) solutions revealed with kinetic small-angle neutron scattering and fast pressure jumps*. Annual report, Chair of functional materials, Physics Department, TU, Munich 2018.
38. N. Kandel and S. A. Tatulian, *Intrinsic fluorescence-based FRET: A novel approach to monitor early stages of amyloid aggregation*. Poster and flash-talk presentation at 63rd Annual Meeting of the Biophysical Society, Baltimore, MD, March 2 - 6, 2019 (*Biophys. J.* **116**, 3, p. 351a, 2019).
39. J. Guyette, B. Evangelista, S. A. Tatulian, and K. Teter, *Conformational resilience of protein disulfide isomerase*. Experimental Biology 2019 Conference, Orlando, FL, April 6 – 9, 2019 (*The FASEB*, **33**, 1, p. 780.3, 2019).

Invited Presentations (149)

Argenti (4)

1. *New time-dependent ab initio close-coupling programs for atomic and molecular ionization.* International Workshop Attosecond Physics at the Nanoscale, Center for Theoretical Physics of complex Systems (PCS) of the Institute for Basic Science (IBS), Daejeon, Korea, October, November, 2018.
2. *Attosecond studies of electronic concerted motion: an ab initio perspective.* DAMOP, Graduate Student Symposium, Fort Lauderdale, FL, USA, May - June, 2018.
3. *A new time-dependent ab initio close-coupling program for atomic ionization.* Annual CompAS Meeting, Lund University, Sweden, June, 2018.
4. *A new time-dependent ab initio close-coupling program for atomic ionization.* ITAMP Workshop Developing Flexible and Robust Software in Computational Atomics and Molecular Physics, ITAMP, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, May, 2018.

Bennett (2)

1. *Extraterrestrial Contributions to the Prebiotic Inventory of the Early Earth from Meteorites.* American Chemical Society National Meeting, Orlando, FL, March - April, 2019.
2. *Radiation in the Outer Solar System – Potential Implications for Centaurs.* Centaur Exploration Workshop, Florida Space Institute, Orlando, FL, March, 2019.

Britt (9)

1. *Making asteroid, Lunar, and Martian simulants.* Solar System Small Body Exploration, School of Mechatronics Engineering, Harbin Institute of Technology, China, July, 2018.
2. *Thermal and mechanical weathering of Near-Earth Asteroids.* Solar System Small Body Exploration, School of Mechatronics Engineering, Harbin Institute of Technology, China, July, 2018.
3. *Asteroids as ores and the future of ISRU.* Solar System Small Body Exploration, School of Mechatronics Engineering, Harbin Institute of Technology, China, July, 2018.
4. *Asteroid-meteorite spectral link.* Solar System Small Body Exploration, School of Mechatronics Engineering, Harbin Institute of Technology, China, July, 2018.
5. *Asteroid Regoliths: What we have learned from Bennu and Ryugu.* Qian Xuesen Laboratory of Space Technology, Academy of Space Technology, China, May, 2019.
6. *Cometary Simulants: Guessing the Mineralogy of the Primordial Solar System.* Qian Xuesen Laboratory of Space Technology, Academy of Space Technology, China, May, 2019.

7. *Lunar ISRU: Fuel, Habitats, and Landing Pads*. Qian Xuesen Laboratory of Space Technology, Academy of Space Technology, China, May, 2019.
8. *ISRU in Lunar Polar Terrain*. Qian Xuesen Laboratory of Space Technology, Academy of Space Technology, China, May, 2019.
9. *Asteroids as Ores: Asteroid ISRU*". Qian Xuesen Laboratory of Space Technology, Academy of Space Technology, China, May, 2019.

Campins (4)

1. *NASA's OSIRIS-REx Mission, Laboratory for Atmospheric and Space Physics*. University of Colorado, July 20, 2018.
2. *First Results from NASA's OSIRIS-REx Asteroid Sample Return Mission*. Invited Presentation to Employees at NASA's Kennedy Space Center, Orlando, FL, April 16, 2019.
3. *First Results from NASA's OSIRIS-REx*. UCF's Planetary Journal Club, Orlando, FL, April 19, 2019.
4. *NASA's OSIRIS-REx Mission*. UCF-SEDS Meeting, Orlando, FL, October 5, 2018.

Chanda (10)

1. *Printed Optoelectronics*. SPIE Photonics West, San Francisco, February, 2019.
2. *Skin-like Full-Color Angle Independent Plasmonic Reflective Displays*. Conference on Electronic Materials and Nanotechnology for Green Environment, Jeju Island, South Korea, November, 2018.
3. *Skin-like Full-Color Angle Independent Plasmonic Reflective Displays*, International Conference on Metamaterials and Plasmonics, Marseille, France, June, 2018.
4. *Bio-inspired Uncooled Multi-Spectral Infrared Imaging with mK Range Temperature Resolution*. SPIE DCS Conference, Orlando, FL, May, 2018.
5. *Research of Uncooled Focal Plane IR Technology*. Northrop Grumman Symposium, Baltimore, Maryland, May, 2018.
6. *Nanophotonics for Real Life Applications*. Liquid Crystal Institute, University of Kent, Kent, Ohio, May, 2019.
7. *Uncooled High sensitive Infrared Detection*. NASA Jet Propulsion Laboratory, Pasadena, CA, May, 2018.
8. *Nanophotonics for Real Life Applications*. Army Research Laboratory, Aberdeen, Maryland, October, 2018.
9. *Spectroscopic Identification of Plastics*. University of Antioquia, Medellin, Colombia, August, 2018.

10. *Nanophotonics for Real Life Applications*. Stanford Research Institute, CA, October, 2018.

Chang (19)

1. *Advanced MIR Lasers for HHG beyond the O K-edge*. MIR MURI Annual Meeting Imperial College, London, UK, April, 2019.
2. *Novel high power infrared lasers for strong field science*. Directed Energy Science & Technology Symposium, Destin, FL, April, 2019.
3. *Institute for the Frontier of Attosecond Science and Technology*. Mini-Workshop on Attosecond Physics, UCF, Orlando, FL, April, 2019.
4. *New generation attosecond X-rays driven by MIR lasers*. Joint-Attosecond-MURI Annual Meeting, Arlington, VA, November, 2018.
5. *Attosecond transient spectroscopy using “water window” X-rays*. Joint-Attosecond-MURI Annual Meeting, Arlington, VA. November, 2018.
6. *From Chirped Pulse Amplification to Attosecond X-rays*. International Symposium on Light Driven Dynamics, East China Normal University, Shanghai, China, 2018.
7. *New generation attosecond X-rays for ultrafast spectroscopy and imaging*. 32nd International Congress on High Speed Imaging and Photonics, Enschede, NL, October, 2018.
8. *A novel attosecond driving laser centered at 2.5 μm based on Cr:ZnSe*. 21st Southeast Ultrafast Conference, Atlanta, GA, August, 2018.
9. *Tabletop Ultrafast X-rays for Metrology of Magnetic Materials*. DARPA DSO Topological Excitations in Electronics Program Review Meeting, Columbus, OH, August, 2018.
10. *Attosecond X-rays generated with mid-infrared lasers*. PALM International School 2018, Attosecond Science: from ultrafast sources to applications, Gif-sur-Yvette, France, May - June, 2018,
11. *Approaching the Attosecond keV X-ray Frontier*. Conference on Lasers and Electro-Optics, San Jose, CA, May, 2018.
12. *Attosecond X-rays Driven by MIR Lasers*. Symposium on Recollision Physics, Montebello, Canada, May, 2018.
13. *Attosecond Optics*. University of Rochester, April, 2019.
14. *Approaching the Attosecond keV X-ray Frontier*. Department of Physics, Science & Technology, Missouri, March, 2019.
15. *From Chirped Pulse Amplification to Attosecond X-rays*. Department of Physics, University of Miami, FL, October, 2018.

16. *Development of High-Energy and Ultrashort Infrared Laser Systems*. Finisar Corporation, Sunnyvale, CA, October, 2018.
17. *Development of High-Energy and Ultrashort Infrared Laser Systems*. KLA-Tencor Corporation, Milpitas, CA, October, 2018.
18. *Development of High-Energy and Ultrashort Infrared Laser Systems*. Lumentum Operations, Milpitas, Milpitas, CA, October, 2018.
19. *Development of Ultrafast Laser Systems for Temporal and Spatial Resolution*. KLA-Tencor Corporation. Milpitas, CA, August, 2018.

B. Chen (3)

1. *Mechanism of the Polymorphism and Curvature Control of the HIV Capsid Protein Assemblies Probed by a Novel Coarse Grain Model*. ACS National Meeting, Orlando, FL, March, 2019.
2. *Structural characterization of the Rous Sarcoma Virus capsid protein in its tubular assembly and simulations of the self-assemblies of the HIV capsid protein*. Department of Chemical Engineering, UC, Irvine, February, 2019.
3. *Solid state NMR characterization of biomolecular materials*. College of Pharmacy, USF. September, 2018.

Chernyak (2)

1. *Effects of Electron Injection in Wide Bandgap Semiconductors*. Physics Department, University of Padua, Italy, October, 2019.
2. *Charge Trapping in Ultra-Wide Bandgap Semiconductors*. Hungarian Academy of Science, Budapest, Hungary. April, 2019.

J. Chini (1)

1. *Using a Mixed Reality Simulator to Retool STEM GTAs' Teaching Practices for Active Learning Environments*. Tong Wan, Florida International University, April, 2019.

M. Chini (5)

1. *Controlling High-order Harmonic Generation in Solids*. 49th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Fort Lauderdale, FL, 2018.
2. *Ultrafast Metrology and Attoscience in Solids*. Mini-Workshop on Attosecond Physics, University of Central Florida, Orlando, FL, 2019.
3. *Crystal Symmetry and High-Order Harmonic Generation from Solids*. Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM, 2019.

4. *Controlling High-order Harmonic Generation in Solids*. Department of Physics, Friedrich-Schiller-Universität, Jena, Germany, 2018.
5. *High-order harmonic and attosecond spectroscopy*. Department of Physics, Friedrich-Schiller-Universität, Jena Germany, 2018.

Colwell (1)

1. *Saturn's Ring Particles and Clumps*. 15th Annual Meeting of the Asia Oceania Geosciences Society, Honolulu, HI, June, 2018.

Dove (3)

1. *Judging an Airless Body by its Cover - How Surface Features Can Reveal the History of Changes on and Beneath the Surface of an Airless Body*. AGU Fall Meeting, Washington, D.C. 2018.
2. *Exploring photoelectron plasma processes in the laboratory and in space*. Florida Chapter of the AVS Science and Technology in Society 2018 Annual Symposium, Orlando, FL, 2018.
3. *Dust Dynamics on Planetary Surfaces*. Daytona State College STEMinar Series, Daytona, FL, November, 2018.

Feng (2)

1. *Grain-boundary-supported active sites in heterogeneous electrocatalysis*. ACS Spring 2019 National Meeting & Exposition, Orlando, FL, April, 2018.
2. *Rational design of metal electrocatalysts for renewable energy conversion*. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, June, 2018.

Fernandez (2)

1. *Arecibo Under New Management*. Small Bodies Assessment Group 19th Meeting, College Park, MD, June, 2018.
2. *Presentation of the Road-Map for the Arecibo Future*. Arecibo Observatory Futures Workshop, San Juan, Puerto Rico, February, 2019.

Flitsiyan (1)

1. *Time-Resolved Cathodoluminescence Studies in Ultra-Wide Bandgap Oxides*. Honors Seminar Series, Seminole State College, March, 2019.

Harrington (1)

1. *Bayesian deep learning for exoplanet atmospheric retrieval*. Workshop on Bayesian Deep Learning (NeurIPS 2018), Montreal, Canada, 2018.

Kaden (1)

1. *Development of epitaxially supported molybdenum-nitride thin-films suitable for HDN materials-gap investigations.* ACS National Meeting and Exposition, Orlando, April, 2019.

Kang (3)

1. *How molecular crowding modulates actin filament mechanics and structure.* Florida Annual Meeting and Exposition, Biophysical Chemistry Symposium. Palm Harbor, FL, May 2019.
2. *Introduction to nanoscience and nanotechnology.* Summer Workshop on Nanotechnology UCF, Orlando, FL, August 2018.
3. *How molecular crowding modulates actin cytoskeleton nanomechanics.* Korea University, Seoul, May, 2018.

Kara (5)

1. *Interface Characteristics of 2D Organic Materials on Metal Surfaces.* IRSEC18, Rabat, Morocco, December, 2018.
2. *Computational Materials Science: Density Functional Theory.* UM6P, Morocco, December, 2018.
3. *Computational Materials Science: Molecular Dynamics.* UM6P, Morocco, July, 2018.
4. *Interface Characteristics of 2D Organic Materials on Metal Surfaces.* Czech Academy of Science, June, 2018.
5. *Multi-scale Modeling of Materials.* University Mohamed 6 Polytechnic, Morocco, July, 2018.

Khondaker (3)

1. *Two dimensional materials: synthesis, properties and applications.* FL Chapter of the AVS Symposium, Orlando, FL, March, 2019.
2. *Directed assembly of single walled carbon nanotubes via dielectrophoresis (DEP).* MRS Fall meeting, Boston, November, 2018.
3. *Carbon nanotube, graphene and 2D materials for electronic device applications.* Workshop on industrial application of nanotechnology, UCF, August, 2018.

Klemm (4)

1. *Microscopic Theory of the Knight's Shift in Anisotropic Superconductors.* Plasma2019 International Workshop, UCF, Orlando, FL, January, 2019.

2. *Terahertz emission from the intrinsic Josephson junctions in a thin slitted annular microstrip antenna of the high-temperature superconductor, Bi2Sr2CaCu2O*. International Conference on Electronic Materials and Applications, Orlando, FL January, 2019.
3. *Microscopic Theory of the Knight Shift in Anisotropic Superconductors*. Vortex International Workshop, U. Antwerpen, Antwerpen, Belgium, May, 2019.
4. *A relativistic electron in an anisotropic conduction band*, research seminar. Wright-Patterson Air Force Base, Dayton, OH, August, 2018.

Kokoouline (5)

1. *Universal theoretical approach for determination of cross sections for dissociative recombination, rotational, vibrational, electronic excitation of molecular ions*. Laboratory Astrophysics in the Era of Multi-messenger Astronomy, Clemson University, Clemson, SC, May, 2019.
2. *Universal theoretical approach for determination of cross sections for dissociative recombination, rotational, vibrational, electronic excitation of molecular ions*. 20th International Conference on Atomic Processes in Plasmas, National Institute of Standards and Technology, Gaithersburg, MD, April, 2019.
3. *Electron-molecule scattering using Quantemol in applications for astrophysics*. Electron Scattering Cross Sections for Plasma Physics and Chemistry with Quantemol-N, London, UK, September, 2018.
4. *Formation of negative ions by radiative and dissociative attachment in the ISM*. Détection, excitation et réactivité des anions interstellaires, Saint-Florent, France, June, 2018.
5. *Evaluation of theoretical and experimental cross sections for rotational and vibrational excitation of the H₂O molecule in collisions with electrons*. National Fusion Research Institute, Seoul, South Korea, May 9, 2019.

LaMee (3)

1. *Teaching 6-12 Science Content with Coding and Data Visualization*. American Association of Physics Teachers national conference, Washington, D.C., July, 2018.
2. *Clinical Educator Supervision*. Seminole County Schools teacher mentorship program Sanford, May, 2019.
3. *Analysis of High School Science Enrollment Demographics in Florida*. Florida Association of Science Supervisors, Orlando, May, 2019.

Leuenberger (1)

1. *Defects in transition metal dichalcogenide monolayers*. Wyoming Summer School, Casper, in honor of Lu Sham's 80th Birthday, Wyoming, July, 2018.

Luo (1)

1. *Magnetically Localizing Heat in a Quasi 1D Magnetic Fluid*. Colloquium, Department of Physics, Temple University, Philadelphia, PA, April, 2019.

Lyakh (5)

1. *Quantum cascade lasers on lattice-mismatched substrates*. Photonics West, San Francisco, 2019.
2. *Mid-Wave and Long-Wave Infrared Broad-Area Quantum Cascade Lasers*. MIOMD conference, Flagstaff, Arizona, 2018.
3. *Optimization of broad-area quantum cascade laser design for very high power continuous wave operation*. Defence and Security Conference, Berlin, 2018.
4. *Quantum Cascade Lasers on Metamorphic Buffer Layer*. Compound Semiconductor Week conference, MIT, MA, 2018.
5. *QCL technology and its current challenges*. Seminar at Night Vision Labs, Washington D.C., 2018.

Mucciolo (4)

1. *Quantum Vertex Model for Reversible Classical Computing*. IBM QuantaLab Quantum Computing School, INL, Braga, Portugal, October, 2018.
2. *New Developments at the Interface between Physics and Computer Science*. Department of Physics, Emory University, Atlanta, GA, December, 2018.
3. *Entanglement Complexity and Irreversibility in Classical and Quantum Circuits*. Department of Physics, Instituto Superior Tecnico, Lisbon, Portugal, November, 2018.
4. *Quantum Computation: How it Works, What it Can Do, and Where it Stands and New Developments at the Interface between Physics and Computer Science*. School of Engineering, University of Porto, Porto, Portugal, November, 2018.

Nakajima (3)

1. *Tunable superconductivity and magnetism in topological semimetal candidate RPdBi*. J-Physics 2018: International Workshop on New Materials and Crystal Growth, Awaji, Japan, June 2018.
2. *Nematic superconductivity in a topological semimetal*. Plasma 2019 Workshop, Orlando, FL, January 2019.
3. *Nematic superconductivity in topological semimetal CaSn3*. Department of Physics, University of Florida, Gainesville, FL, April, 2019.

Neupane (5)

1. *Experimental realization of topological Superconductor*. Plasma 2019 Workshop, University of Central Florida, Orlando, FL, January, 2019.
2. *Thermal Energy Transport under Irradiation*. All-Hands Meeting, Idaho Falls, ID, April, 2018.
3. *Experimental realization of topological insulator and beyond*. Department of Physics, University of Florida, Gainesville, November, 2018.
4. *Experimental Realization of Topological Insulator and Beyond*. 18th Kavli Frontier of Science Chinese-American symposium, Nanjing, China, October, 2018.
5. *Illumination of the Emergent Quantum Materials by Attosecond Pulses*. AFOSR Program Review, Arlington, VA, June, 2018.

Peale (1)

1. *Infrared Materials and Devices*. Short course. FL Chapter of the AVS Symposium, UCF, Orlando, FL, March 2019.

Rahman (17)

1. *Unraveling & manipulating properties of 2D materials: old stuff with new promises*. AMOSS Workshop, University of Milan-Bicocca, Italy, November, 2018.
2. *Multiple excitations, excited states, and ultrafast charge dynamics in functional materials: theory meets experiments*. Palestinian Conference VI, Tulkarm, Palestine, August, 2018.
3. *Manipulating properties of 2D materials: old stuff with new promises*. Palestinian Conference VI, Tulkarm, Palestine, August, 2018.
4. *Surfaces, interfaces, and catalysis: what can machine learning do?* 2nd Interfacing Machine Learning and Experimental Methods for Surface Structures Workshop, Graz, Austria, July, 2018.
5. *Catalysts, ultrafast spin dynamics, MGI & all else*. MGI & Exascale Symposium, Spetses, Greece, June, 2018.
6. *Multiple excitations, excited states, and ultrafast charge dynamics in functional materials: theory meets experiments*. Palestinian Conference VI, Tulkaram, August, 2018.
7. *Manipulating chemical activity of 2D materials: MoS₂ and h-BN*. Surface Science Seminar, Lawrence Berkeley Laboratory, May, 2018.
8. *Metal Organic Coordinated Networks*. M2QM EFRC Kickoff Meeting, University of Florida, November, 2018.

9. *Mentoring: Changing Departmental Culture*. APS Bridge Program Conference, Stanford, November, 2018.
10. *Tuning properties of 2D materials: old dog new tricks*. Physics Colloquium, UCF, January, 2019.
11. *Tuning properties of 2D materials: old dog new tricks*. Computational Material Design, COMSATS University of Technology, Islamabad, March, 2019.
12. *Novel and technologically relevant properties of 2D materials*. Quaid-e-Azam University, Islamabad, March, 2019.
13. *Modern paradigms in research and education: active learning to interdisciplinary research*. Einstein Symposium, NED College of Engineering, Karachi, March, 2019.
14. *Old materials with novel properties: you can teach an old dog new tricks in the flatland*. LIFE Program Plenary Talk, UCF, March, 2019.
15. *Self-Learning KMC for multiscale simulation of nanoscale diffusion*. 258th ACS Annual Meeting, Orlando, March, 2019.
16. *Tuning properties of 2D materials: old dog new tricks*. Chalmers University, Gothenburg, April, 2019
17. *Stabilization of SMMs: interplay of ligands and substrates*. M2QM-All Hands Meeting, University of Florida, May, 2019.

Schulte (1)

1. *Vibrational Spectroscopy and Applications in Soft Matter*. Polymer Seminar, Physics Department, TU Munich, Germany, July, 2018.

Tatulian (3)

1. *Structure and Cytotoxicity of Amyloid Beta Hetero-Oligomers: New Biomarkers for Alzheimer's Disease*. Florida Health Alzheimer's Disease Awareness and Research Symposium, Florida Hospital, Orlando, FL, June, 2018.
2. *Structure, Aggregation, and Cytotoxicity of Amyloid Beta Peptide*. University of Maryland Institute for Physical Science and Technology, College Park, MD, October, 2018.
3. *Isotope-Edited FTIR Spectroscopy Identifies Unique Structure of Amyloid Beta Hetero-Oligomers*. Institute for Bioscience and Biotechnology Research. National Institute of Standards and Technology, Rockville MD, October, 2018.

Tetard (10)

1. *Toward new routes to monitor light-matter interaction at the nanoscale*. 4th Annual European Forum on Nanoscale IR Spectroscopy (EFNS), University of Amsterdam, Netherlands, September, 2019.

2. *Nanoscale functional toolbox for materials in renewable energy*. 5th Euro-Mediterranean Conference in Materials and Renewable Energies, Marrakech, Morocco, June, 2019.
3. *Nanoscale functional imaging of 2D materials for nanoelectronics and catalysis*. Florida Chapter of the AVS Symposium, Orlando, FL, USA, March, 2019.
4. *Evaluating the mechanisms of catalysis of defect laden h-BN at the micro- and nano-scales*. ACS Meeting, Orlando, FL, USA, March, 2019.
5. *Nanoscale infrared spectroscopy for emerging materials*. Bruker Workshop on the Latest Advances in AFM, nanoIR, and Nanoindenters: New Modes to Enable New Research, University of Central Florida, Orlando, FL, USA, February, 2019.
6. *Multiscale studies to quantify nano-agrochemicals uptake and their effect on plant tissues*. Materials Innovation for Sustainable Agriculture Symposium, UCF, Orlando, FL, November, 2018.
7. *Nanoscale exploration of decomposition of lignocellulosic biomaterials in liquid environments*. Frontiers in Biorefining conference, St Simons Island, GA, November, 2018.
8. *Multiscale Exploration of Plants' Responses to External Physicochemical Factors*. Nanoflorida Conference, Florida Institute of Technology, Melbourne, FL, October, 2018.
9. *Nanoscale Imaging and Spectroscopy of Plant Systems and Pathogens*, Research Conference on Nanoscale Science and Engineering for Agriculture and Food Systems, Mount Holyoke College, South Hadley, MA, June, 2018.
10. *Multifrequency Atomic Force Microscopy for Nanoscale Functional Analysis*. International Scanning Probe Microscopy ISPM Conference, Tempe, AZ, May, 2018.

Turkowski (2)

1. *Ab initio studies of the excited states and ultrafast charge dynamics in 2D transition metal dichalcogenides*. XXVII International Materials Research Congress, Cancun, Mexico, August, 2019.
2. *Multiparticle interactions and femtosecond charge dynamics in two-dimensional transition metal dichalcogenides*. Florida Chapter of the AVS Symposium, Orlando, FL, March, 2019.

Vaida (3)

1. *Tracking the ultrafast charge carrier dynamics on photocatalytic materials with femtosecond XUV laser pulses*. Institute of Surface Chemistry and Catalysis, Ulm University, Ulm, Germany, July, 2018.
2. *Surface photoinduced and photocatalytic reactions for the generation of fuels*, Abbe Center of Photonics. Friedrich-Schiller-University, Jena, Germany July, 2018.
3. *Monitoring the ultrafast charge carrier dynamics at surfaces decorated with metal particles*, Institute of Quantum Optics. Friedrich-Schiller-University, Jena, Germany July, 2018.

Patents Awarded (4)

1. A. Lyakh, *Spectrometer device with stabilized laser and related devices and methods*. U.S. Patent No. 10,020,635 B1, July 10, 2018.
2. A. Lyakh, *Quantum cascade laser system with power scaling and related methods and devices*, U.S. Patent No. 10,177,535 B1, January 8, 2019.
3. C. Chamon, E. Mucciolo, A. E. Ruckenstein, and Z. Yang, *Systems and Methods for Universal Reversible Computing*. U.S. Patent No. 2019/0122134 A1, April 25, 2019.
4. J. W Cleary, R. E. Peale, E. Smith, J. Nath, *Wavelength-selective thermal detection apparatus and methods*," U.S. Patent No. 10,101,212, October 16, 2018.

Disclosures and Patent Applications (9)

1. D. Chanda, A. Safaei, and M. N. Leuenberger, *Extraordinary Dynamically Tunable Absorption in Monolayer Graphene*. U.S. Patent Office Application No. 15/782,948, 2018.
2. D. Chanda, M. N Leuenberger, A. Safaei, S. Chandra, *Plasmon-Assisted Photo-thermoelectric Effect-Based Detection of Infrared Radiation on Asymmetrically Patterned Graphene*. US Patent App. 62/725,297, 2018.
3. D. Chanda, A. Safaei, and M. N. Leuenberger, *High-Efficiency Broadband Mid-Infrared Flat Lens*. Disclosure, 2018.
4. K. Murari, Y. Yin, and Z. Chang, *Multi-millijoule Holmium Laser System*. Disclosure, August 21, 2018.
5. Z. Chang, X. Ren, Y. Yin, L. Mach, *High Energy Broadband Laser System, Methods, and Applications*. U.S. Patent Office Application No. 16/032,808, January 1, 2019.
6. W. Luo, J. Huang, and D. Smalley, U.S. Patent Application No. 62/751,012, 2018.
7. A. Lyakh and Suttinger, *Method Of Making QCL With Optimized Brightness*. Disclosure, January, 2019.
8. C. Chamon and E. Mucciolo, *Techniques for Securely Executing Code that Operates on Encrypted Data on a Public Computer*. U.S. Patent Office Application No. PCT/US/18/66019, December 18, 2018.
9. L. Chernyak, R. E. Peale, J. Lee, and C. Fredricksen, *Radiation-Defect Mitigation in INAS/GASB Strained-Layer Superlattice Infrared Detectors and Related Methods*. U.S. Patent Application No. 16/260,861, January 29, 2019.

External Funding: May 8, 2018 – May 7, 2019 (US \$)

Faculty Member	New Funding	Expenditures
Luca Argenti	\$ 46,151.94	\$ 35,603.20
Chris Bennett	\$ 259,564.78	\$ 89,380.29
Aniket Bhattacharya	-	\$ 6,459.38
Richard Blair	\$ 1,124.00	\$ 134,762.18
Julie Brisset	\$ 41,408.25	\$ 53,696.84
Daniel Britt	\$ 758,572.51	\$ 696,158.65
Humberto Campins	\$ 122,669.65	\$ 164,717.16
Kevin Cannon	\$ 23,110.51	\$ 15,535.22
Zenghu Chang	\$ 1,427,290.39	\$ 1,336,869.46
Bo Chen	\$ 66,000.00	\$ 11,800.87
Zhongzhou Chen	\$ 163,886.95	\$ 2,860.21
Leonid Chernyak	\$ 697,432.52	\$ 178,784.04
Jackie Chini	-	\$ 98,802.30
Mike Chini	\$ 556,486.00	\$ 288,291.10
Lee Chow	\$ 3,000.00	\$ 210.00
Josh Colwell	\$ 185,646.98	\$ 357,700.63
James Cooney	-	\$ 12,912.07
Enrique Del Barco	\$ 30,000.00	\$ 73,699.11
Kerri Donaldson Hanna	\$ 1,000.00	-
Joseph Donoghue	-	\$ 17,457.01
Addie Dove	\$ 76,682.25	\$ 363,673.43
Costas Efthimiou	-	\$ 546.95
Yan Fernandez	\$ 4,916,508.46	\$ 3,579,417.05
Elena Flitsiyan	\$ 14,150.00	\$ 11,374.30
Joseph Harrington	\$ 126,547.00	\$ 223,076.76
Masa Ishigami	\$ 143,492.89	\$ 101,977.60
Bill Kaden	\$ 26,844.17	\$ 60,677.37
Abkelkader Kara	-	\$ 68,506.60
Richard Klemm	\$ 9,998.00	\$ 2,208.13
Viacheslav Kokouline	\$ 72,524.00	\$ 69,854.21
Eduardo Mucciolo	\$ 196,656.33	\$ 74,652.47
Madhab Neupane	\$ 685,479.00	\$ 302,646.14
Robert Peale	-	\$ 61,384.61
Talat Rahman	\$ 774,991.70	\$ 674,373.95
Alfons Schulte	\$ 3,400	\$ 3,400
Suren Tatulian	\$ 36,716.60	\$ 129,105.84
Volodymyr Turkowski	\$ 217,421.00	\$ 32,189.10
TOTAL	\$ 11,684,755.88	\$ 9,334,764.23

Evolution of Total External Funding in the Last Five Years (US \$)

	2014 – 2015	2015 – 2016	2016 – 2017	2017-2018	2018-2019
New Funding	\$5,902,456.15	\$5,742,883.19	\$5,694,593.51	\$6,109,978.39	\$11,684,755.88
Expenditures	\$5,864,749.18	\$6,764,007.75	\$5,447,730.42	\$5,619,615.09	\$9,334,764.23

5. Awards

Faculty

Chang, Zenghu – inducted into National Academy of Inventors, Florida Chapter (November 2018)

Chen, Zhongzhou – NSF CAREER award (March 2019)

Chini, Jackie – COS RIA award (March 2019)

Chini, Michael – DOE Early Career Award (May, 2018)

Colwell, Joshua – Pegasus Professor (February 2019)

Colwell, Joshua – UCF Luminary Award (July 2018)

Colwell, Joshua – University Award for Outstanding Graduate Student Advisor

Cooney, James – COS TIP Award (April 2019)

Dove, Adrienne – UCF Luminary Award (July 2018)

Flitsiyan, Elena – Excellence in Undergraduate Teaching Award (January 2019)

Kokooline, Slava – COS RIA award (March 2019)

Khondaker, Saiful – inducted into National Academy of Inventors, Florida Chapter (November 2018)

Neupane, Madhab – NSF CAREER award (February 2019)

Rahman, Talat – Fellow of the Royal Society of Chemistry, UK (February 2019)

Schulte, Alfons – inducted into National Academy of Inventors, Florida Chapter (November 2018)

Schulte, Alfons – August-Wilhelm Scheer Visiting Professorship, Technical University of Munich (July 2018)

Tatulian, Suren – COS RIA award (March 2019)

Tetard, Laurene – NSF CAREER award (February 2019)

Students

Beetar, John – 3 Minute Thesis Award, Graduate Research Forum (April 2019)

Berkley, Rainier – 3 Minute Thesis Award, Graduate Research Forum (April 2019)

Brescia, Johnathan – Order of Pegasus Award (February 2019)

Davis, Leslie – Mentoring Matters Award for her impactful mentoring of another student in Physics (April 2019)

Dissanayake, Charuni – Doctoral Research Support Award (March 2019)

Himes, Michael – University Award for Excellence by a Graduate Teaching Assistant (March 2019)

Ferrari, Brian – Outreach for the Stars Award for promoting physics and other STEM fields (April 2019)

Hooshmand Gharebagh, Zahra – Graduate Research Award, American Vacuum Society (November 2018)

Joshi, Sonalo – Undergraduate Physical Sciences and Math Award (April 2019)

Khayatt, Jamal – Honorable mention, Founder's Day Award Committee (February 2019)

McIntyre, Katie – Above and Beyond Award for tireless volunteering (April 2019)

SPS (Society of Physics Students) – Outstanding Chapter Award (December 2018)

Torres-Davila, Fernando – Doctoral Research Support Award (March 2019)

Yuen, Isaac – 3 Minute Thesis Award, Graduate Research Forum (April 2019)

Zamarripa-Roman, Brian – 1st place, Graduate Research Poster Presentation, APS Joint Conference of the Bridge Program and the National Mentoring Community (November 2018)