

SHOWCASE OF

UNDERGRADUATE RESEARCH EXCELLENCE

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2018

15TH
ANNIVERSARY



CELEBRATING UNDERGRADUATE
RESEARCH AND CREATIVITY
ACROSS THE CURRICULUM

THURSDAY, APRIL 5, 2018

PEGASUS BALLROOM UCF STUDENT UNION

PRESENTED BY THE DIVISION OF TEACHING AND LEARNING

WELCOME TO THE 15TH ANNUAL SHOWCASE OF UNDERGRADUATE RESEARCH EXCELLENCE

The Showcase of Undergraduate Research Excellence (SURE) is a poster-based forum for University of Central Florida undergraduates to present their research and creative projects to the university community. Undergraduates from all disciplines are encouraged to present current or recently completed academic projects showcasing the diversity of topics, approaches, and interests at UCF. The Showcase serves as a resource for undergraduates not yet engaged in research and creative pursuits to learn how fellow students have developed their intellectual interests, current projects, and faculty connections. The Showcase also demonstrates to students, faculty, staff, alumni, and the Central Florida community that student research builds upon and enriches the UCF undergraduate experience. The Showcase is sponsored by the Office of Undergraduate Research, which is a unit of the Office of Undergraduate Studies. For more information about undergraduate research, please visit **www.our.ucf.edu**.

The Showcase is part of the 2018 Student Research Week, which celebrates the creative projects of UCF students from April 2 – 6, 2018.

www.showcase.ucf.edu

UNIVERSITY OF CENTRAL FLORIDA | ORLANDO, FLORIDA

SHOWCASE OF UNDERGRADUATE RESEARCH EXCELLENCE

Celebrating undergraduate research and creativity across the curriculum.

UNDERGRADUATE RESEARCH
DIVISION OF TEACHING AND LEARNING

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STUDENT POSTER SESSION I

(Pegasus Ballroom)12:00-1:30 P.M.

PRESENTER RECEPTION

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FACULTY MENTOR OF THE YEAR

(Cape Florida Ballroom)4:30 P.M.

Student Undergraduate Research Council

REMARKS AND PRESENTATION OF SCHOLARSHIPS

(Cape Florida Ballroom)4:30-5:00 P.M.

John C. Hitt

President

Elizabeth Dooley

Vice Provost of Teaching and Learning

Dean of Undergraduate Studies

2018 UCF STUDENT RESEARCH WEEK

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SHOWCASE JUDGES

The Office of Undergraduate Research is indebted to the following faculty for devoting a substantial amount of their time serving as Showcase judges.

Salvador Almagro-Moreno	David Harris	Anthony Pak-Hin Kong
Claudia Andl	Jae-Hoon Hwang	Silvia Pulido
Thomas Andl	Woo Hyoung Lee	Shawn Putnam
Cynthia Bayer	Susan Jardaneh	Susan Quelly
Christina Bouwens	Rohan Jowallah	Md Mamunur Rashid
Josh Breithaupt	Titel Jurca	Michael Rovito
Matthew Chin	Stephen Kuebler	Bridget Rubenking
Karin Chumbimuni-Torres	Akihiro Kushima	Anwar Sadmani
Leslee D'amato-Kubiet	Eunkyung Lee	Walter Sotero
Kristopher Davis	Tamra Legron-Rodriguez	Matt Stock
Charissa de Bekker	Daoji Li	Antonio Tapia
Aimee de Noyelles	Vicki Loerzel	Jacqueline Towson
Andrew Dickerson	Marta Lyons	Rani Vajravelu
Tina Dow	Amanda Major	John Venecek
Neil Duncan	Giovanna McClenachan	Jessica Waesche
Joseph Fanfarelli	Kausik Mukhopadhyay	Sharon Woodill
Steve Florczyk	Elizabeth Mustaine	Shelly Wyatt
Yulia Gerasimova	Patrick Pabian	Shamsunnahar Yasmin

SHOWCASE BENEFACTORS

Through the generosity of the following organizations and individuals, substantial scholarships will be awarded to students judged to have the best projects presented at the Showcase. The Office of Undergraduate Research and the planners of 2018 Student Research Week are grateful to these benefactors for their encouragement and support of student research at UCF. We are especially appreciative to the **UCF Student Government Association** for their generous contribution.

The Burnett Honors College
College of Arts and Humanities
College of Education and Human Performance
College of Engineering and Computer Science
College of Health and Public Affairs
College of Medicine
College of Nursing

Florida High Tech Corridor
Institute for Social and Behavioral Science
Kimberly Schneider and Ken Fedorka
Office of Research and Commercialization
Richard Harrison II
Student Government Association

FACULTY MENTORS

The faculty is a university's paramount asset, and the Office of Undergraduate Research recognizes the following UCF faculty mentors who have advised, counseled, tutored, and encouraged students presenting at today's showcase.

Latifa S	Kenneth Fedorka	Victoria Loerzel	Bhimsen Shivamoggi
JoAnne Adams	Xiaofeng Feng	Amelia Lyons	Nicholas Shrubsole
Rhaleah Ahangri	Cristina Fernandez-Valle	Kevin Mackie	Zhisheng Shuai
Kareem Ahmed	Stephen Florczyk	Kate Mansfield	Valerie Sims
Ahlam Al-Rawi	Anna Forsman	Hansen Mansy	Virginia Smith
Deborah Altomare	Meghan Gabriel	Alexander Mantzaris	Janan Smither
Claudia Andl	Denise Gammonley	Crystal Maraj	Yongho Sohn
Diane Andrews	Luciana Garbayo	Chase Mason	Mary Lou Sole
Danielle Atkins	Stefanie Garcia	Artem Masunov	Zixia Song
Amro Awad	Jeanette Garcia	Barry Mauer	Julia Soulakova
Jack Ballantyne	Ivan Garibay	Talea Mayo	Sandra Sousa
Sarah Barber	Romain Gaume	Daniel Mcconnell	Amber Southwell
Sejal Barden	Ryan Gelfand	K. Kai McKinstry	John Starbuck
Jonathan Beever	Yulia Gerasimova	Stephen Medeiros	Tara Strutt
Aniket Bhattacharya	Ranajay Ghosh	Shreyes Melkote	Kiminobu Sugaya
Christopher Blackwell	Leonid Glebov	Cecilia Milanes	Marisol Parra Tatge
Richard Blair	Ann Gleig	Nikola Mirilovic	Suren Tatulian
Patrick Bohlen	Edward Gonzalez-Tennant	Joanna Mishtal	Dalena Taylor
Robert Borgon	Ali Gordon	Doan Modianos	Laurene Tetard
Ali Borji	Elizabeth Grauerholz	Ram Mohapatra	Ken Teter
Annette Bourgault	Steffen Guenzel	Dorel Moldovan	Gunes Tezcur
Andrew Boutton	Melanie Guldi	Brian Moore	Justine Tigno-Aranjuez
Emily Bradshaw	Michael Hampton	Sarah Moore	Jacqueline Towson
Donna Breit	Erin Hanson	Sean Moore	J. Marla Toyne
Candice Bridge	Nancy Harrington	Karen Mottarella	Natalie Underberg-Goode
Julie Brisset	Maria Harrington	Mustapha Mouloua	Fernando Uribe-Romo
James Brophy-Ellison	Elizabeth Harris	Saleh Naser	Kuppapalalle Vajravelu
Matthew Bryan	Sally Hastings	David Nash	Rani Vajravelu
Anne Bubriski-McKenzie	Alicia Hawthorne	Charles Negy	Anna Valdes
Ricardo Burguet	Emily Heider	Madhab Neupane	Rita Fuchs
Shawn Burke	Florencio Hernandez	Megan Nickels	Subith Vasu
Angeline Bushy	James Hickman	Dan Novatnak	Adan Vela
Giselle Carnaby	Peggy Hill	Nina Orlovskaya	Nicole Verity
Necati Catbas	Eric Hoffman	Judith Ortiz	Jeanine Viau
Farrah Cato	Richard Hofler	Anthony Pak-Hin Kong	Alvaro Villegas
Ratna Chakrabarti	Kathleen Hohenleitner	Sudeshena Pal	Laurence von Kalm
Debopam Chakrabarti	Su-I Hou	Jennifer Parham	Ezekiel Walker
Lisa Chambers	Ayanna Howard	Marisol Parra-Tatge	Linda Walters
Debashis Chanda	Jae-Hoon Hwang	Vern Paxson	Ze Wang
Susan Chase	Masahiro Ishigami	Philip Peters	Keri Watson
Jason Chesnut	Maria Marta Jacob	Otto Phanstiel	Danielle Webster
Matthew Chin	Peter Jacques	Jonathan Powell	John Weishampel
Michael Chini	Julian Jara-Ettinger	Leandra Preston-Sidler	Brittney Wells
Jacquelyn Chini	Florian Jentsch	Shawn Putnam	Tracy Wharton
Latarsha Chisholm	Mollie Jewett	Guo-Jun Qi	Sandra Wheeler
Roy Choudhury	Mark Kamrath	Susan Quelly	Stephanie Wheeler
Karin Chumbimuni-Torres	Aravinda Kar	Seetha Raghavan	Grace White
Amy Cole	Abdelkader Kara	Wanda Raimundi-Ortiz	Shannon Whitten
Joshua Colwell	Jennifer Kent-Walsh	Christian Ravela	Lana Williams
Geoffrey Cook	Annette Khaled	Amy Reckdenwald	Pamela Wisniewski
Alicja Copik	Saiful Khondaker	Michael Reid	Sharon Woodill
Leslee D'Amato-Kubiet	Joseph Kider	Martin Richardson	Thomas Wright
Kristopher Davis	Sherron Roberts	Fernando Rivera	Muge Yayla Kullu
Charissa de Bekker	Joo Kim	Cecilia Rodriguez-Milanés	Margaret Zaho
Damian Dechev	Yoon-Seong Kim	Kyle Rohde	Ricardo Zaurin
Jonathan Decker	Stephen King	Shermineh Rostami Fairchild	Antonis Zervos
Desiree Diaz	Joshua King	Michael Rovito	Lei Zhai
Andrew Dickerson	Richard Klemm	Tania Roy	Teng Zhang
Melissa Dodd	Dmitry Kolpashchikov	Erin Saitta	
Melinda Donnelly	Anthony Pak Hin Kong	Suha Saleh	
Joseph Donoghue	Ash Konstantine	Mohtashem Samsam	
Adrienne Dove	Alice Korosy	Maria Santana	
Archana Dubey	Alla Kourova	Swadeshmukul Santra	
Neil Duncan	Melih Kullu	William Steven Saunders	
Steven Duranceau	Ranganathan Kumar	Anna Savage	
Robert Dvorak	Sarah Landreville	Kristen Schellhase	
Steven Ebert	Gary Leavens	Joseph Schmidt	
Dawn Eckhoff	Woo Hyoung Lee	Alfons Schulte	
Joellen Edwards	Eunkyung Lee	John Schultz	
Costas Efthimiou	Lorraine Leon	Sudipta Seal	
Jennifer Elliott	Marie Leticee	William Self	
Eric Eschneller	Daoji Li	Erin Seney	
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DISTINGUISHED UNDERGRADUATE RESEARCHER AWARD (DURA)

In January 2010, the Student Undergraduate Research Council, in collaboration with the Office of Undergraduate Research, developed DURA, formerly known as the Undergraduate Research of the Month program. Each month a new student is honored with the award. Students are nominated by advisers, mentors, or peers. The following students were recognized in 2017.

January

Shirley Dorsainvil

Research Project: Does Distance Matter?: Predictors of Infidelity And Jealousy In Geographically Close Versus Long Distance Romantic Relationship

Mentor: Dr. Grace White (Psychology)

February

Nicholas Kosan

Research Project: Controlling Light with Spatially Variant Photonic Crystals

Mentor: Dr. Stephen Kuebler (Optics and Photonics)

March

Lianne Brito

Research Project: Using Triaxial Accelerometer and Gyroscope Sensors for Activity Recognition in Construction Sites

Mentor: Dr. Kevin Mackie (Civil, Environmental, and Construction Engineering)

April

Jeanine Garcia

Research Project: Ponatinib as a Potential Therapeutic Drug for Neurofibromatosis Type 2

Mentor: Dr. Cristina Fernandez-Valle (Burnett School of Biomedical Sciences)

May

Heidi Waite

Research Project: Rhythmic Larval Release in the Estuarine Crab *Dyspanopeus sayi*: Entrainment by Temperature Cycles

Mentor: Dr. Linda Walters (Biology)

June

Lauren Gandy

Research Project: Optimized Protocol for Detection of Organic and Inorganic Gunshot Residue

Mentor: Dr. Candice Bridge (Chemistry)

July

Tatiana Molden

Research Project: OC Sensor for Detection of DNA Methylation

Mentor: Dr. Dmitry Kolpashchikov (Chemistry)

August

Ari Hadar

Research Project: Evaluating the Formation of Suspected Carcinogenic Disinfection By-Products in Drinking Water Using Fluorescence and UV254 Absorbance

Mentor: Dr. Steven Duranceau (Civil, Environmental, and Construction Engineering)

September

Zachariah Neemeh

Research Project: Flocks, Swarms, Crowds, and Societies: On the Scope and Limits of Cognition

Mentor: Dr. Luis H. Favela (Philosophy)

October

George Walters-Marrah

Research Project: Effects of Knocking Out the Transporter Gene BB_0329 in *Borrelia burgdorferi*

Mentor: Dr. Kyle H. Rohde (Burnett School of Biomedical Sciences)

November

Michael Martinez

Research Project: Russian Studies and STARTALK

Mentor: Dr. Alla Kourova (Modern Languages)

December

Joshua Bowren

Research Project: Fully Autonomous Real-Time Autoencoder Augmented Hebbian Learning Through the Collection of Novel Experiences

Mentor: Dr. Kenneth Stanley (Computer Science)

Applications are available at www.our.ucf.edu/current/award-programs.

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The Undergraduate Research Council promotes the involvement of undergraduates in the ongoing activities of the UCF research community and advises the Office of Undergraduate Research about policies and programs that pertain to undergraduate research at UCF.

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