The 8th Annual

Fall Undergraduate Research Festival

Wednesday, November 15, 2017
4:30pm-6:30pm

University of Iowa
University Capitol Centre
2nd floor South Atrium
Iowa City, Iowa
This event is hosted by the Iowa Center for Research by Undergraduates.

ICRU promotes undergraduate involvement in research and creative projects at the University of Iowa, serving students, staff, and faculty.

ICRU Director
Bob Kirby
bob-kirby@uiowa.edu

ICRU Program Coordinator
Melinda Licht
melinda-smits@uiowa.edu

www.uiowa.edu/icru
319.335.8336
icru@uiowa.edu
The 2017 Fall Undergraduate Research Festival is proud to showcase visual presentations focusing on the research and creative work performed by undergraduates at the University of Iowa. Presenters work in over 35 different departments, representing sciences, arts, and humanities.

Odd numbered posters will present from 4:30-5:30PM
Even numbered posters will present from 5:30-6:30PM

***Please note that at 5:30, all of the boards will be turned around to show the even numbering and the second hour presenters’ posters***

Many thanks to all of the people who make FURF a possibility - all undergraduates presenting their research and creative work, all poster judges, all mentors of undergraduate researchers, the Office of the Provost, the Office of the Vice President for Research and Economic Development, and the ICRU Research Ambassadors.

Programs with full abstracts are available on the ICRU website.

Upcoming ICRU Events and Opportunities
· Excellence in Undergraduate Research Award - February 9, 2018
· Distinguished Mentor Award - February 23, 2018
· ICRU Research Fellows Applications Due - TBA March 2018
· Research in the Capitol - April 3, 2018
· Spring Undergraduate Research Festival (SURF) - April 18, 2018
4:30-5:30PM Presenters
(odd numbers only)

1 - Jack Abrahamson
*Does the market overreact when firms miss earnings targets?*
Majors: Finance; Business Analytics and Information Systems
Mentor: Samuel Melessa (Accounting)

3 - Uzair Ahmed
*Contrast Induced Neurotoxicity Following Cerebral Diagnostic Angiogram*
Major: Human Physiology
Mentor: Santiago Ortega (Neurology)

5 - Nicholas Barry
*Hedge Fund Activism: A Review of Value Creation, Operational Efficiency, and Corporate Strategy in Targeted Firms*
Major: Finance
Mentor: Jeff Hart (Finance)

7 - Joshua Berger
*Legality and Corruption: Perception Bias in Government*
Majors: Economics; Political Science
Mentor: William Reisinger (Political Science)

9 - Anamar Blanes
*Exploring Actinide Chemistry in Environmentally Relevant Systems: Th(IV), U(VI), & Np(IV,V,VI) Bound by Macrocyclic Ligands*
Major: Chemistry
Mentor: Tori Forbes (Chemistry)
11 - Eleanor Burke
Everyday and Consumer Decision-Making by Adults on the Autism Spectrum
Major: Psychology
Mentors: Gary Gaeth (Marketing); Irwin Levin (Psychology)

13 - Allison Buser
The Andreae System: Defending Brewing Interests and Consolidating German-American Political Power in the 1914 Iowa State Elections
Major: History
Mentor: Stephen Warren (History)

15 - Rachel Canon
Cochlear Implant Limitations on Bicycle Riding in School Age Children
Major: Speech and Hearing Science
Mentor: Beth Walker (Communication Sciences and Disorders)

17 - Tori Cassady
SUMOylation in Anaplastic Thyroid Cancer
Major: Biomedical Sciences
Mentor: Ronald Weigel (Surgery)

19 - Elizabeth Cha
The microRNA-503 cluster on the X-chromosome targets several oncogenes and is coordinately down-regulated in endometrial endometrioid adenocarcinoma.
Major: Human Physiology
Mentor: Eric J. Devor (Obstetrics and Gynecology)

21 - Ioana Cherascu
Intraocular Gene Therapy in RS1 Mice
Major: Neurobiology
Mentor: Arlene Drack (Ophthalmology and Visual Sciences)
23 - Akanksha Chilukuri  
*Effects of Preeclampsia on Cortical Growth and Cortical-Dependent Behavior Using a Preeclampsia Mouse Model*  
Major: Neuroscience and Biochemistry  
Mentor: Hanna Stevens (Psychiatry)

25 - Anna Crawford  
*Effects of perceived social support on cancer symptoms in advanced cancer patients*  
Major: Nursing  
Mentor: Stephanie Gilbertson-White (Nursing)

27 - Lin Di  
*Optimization of TNF-α Detection Assay for Measurement of Macrophage Suppression by Mesenchymal Stromal Cells*  
Major: Biomedical Engineering  
Mentor: James Ankrum (Biomedical Engineering)

29 - Abigail Dockum  
*“Upon the Fields of Friendly Strife”: The Role of Sport at the Iowa Pre-Flight School, 1942-1945*  
Major: History and Sport Studies  
Mentors: Thomas Oates (Sport Studies/Journalism); Alyssa Park (History)

31 - Taylor Dunn  
*The Electronegative ERG*  
Major: Biology  
Mentor: Arlene Drack (Ophthalmology)

33 - Isabella Dutra  
*Perceptual surprise improves action stopping by non-selectively suppressing motor activity via a neural mechanism for motor inhibition*  
Major: Psychology  
Mentor: Jan Wessel (Neurology)
35 - Abby Fronk
A Novel Tool for Monitoring Endogenous Progesterone Receptor Expression by mCherry using CRISPR-Cas9 Genome Editing Technique
Major: Cellular and Developmental Biology
Mentor: Shujie Yang (Obstetrics and Gynecology)

37 - Salma Haider
Preeclampsia
Major: Psychology
Mentor: Hanna Stevens (Psychiatry)

39 - Eric Hale
Characteristics of Mergers & Acquisitions: A Survey on Value Creation, Synergies, and Market Cyclicality
Major: Finance
Mentor: Amrita Nain (Finance)

41 - Cameron Hauser
Role of noradrenergic neurons of locus coeruleus in CO2-induced arousal
Major: Human Physiology
Mentor: Gordon Buchanan (Neurology)

43 - Morgan Hebert
Subjected to Science: the Children of the “Monster Study” and the Evolution of Modern Child Experimentation Standards
Major: History
Mentor: Alyssa Park (History)

45 - Michael Kegel
Cardiac specific deletion of IRS1 in adulthood does not prevent pressure overload-induced cardiac dysfunction
Majors: Biochemistry; Horn Performance
Mentors: Dale Abel (Internal Medicine); Eric Weatherford (Internal Medicine)
47 - Daniel Kelly
The Effect of Multiscale Texturing on the Optical Properties of Silicon
Major: Mechanical Engineering
Mentor: Fatima Toor (Electrical and Computer Engineering)

49 - Paige Kies
Sensing Extracellular Stress: Key Features of the Anti-Sigma Factor RsiV in Sensing Lysozyme
Major: Microbiology
Mentor: Craig Ellermeier (Microbiology and Immunology)

51 - Ariel Kopel
Characterization of Cone Synapse Development in the Absence of Cav1.4 or a2d-4
Major: Biochemistry
Mentor: Sheila Baker (Biochemistry)

53 - Alison Kramer
Isopach Maps of the Pennsylvanian lower Cherokee group in Southeast Iowa
Major: Geoscience
Mentor: Emily Finzel (Earth and Environmental Science)

55 - Kylie Krier
Two-Step Mechanism for Calmodulin Binding to Calcineurin: Pairing Greasy Hands and Gloves
Major: Interdisciplinary Science
Mentor: Madeline Shea (Biochemistry)

57 - Renae Kurpius
Curing Dose Rate Effects: Predicting Polymer Properties in Electron Beam Polymerization
Major: Chemical Engineering
Mentor: Julie Jessop (Chemical Engineering)
59 - Yahang Li
Mechanisms for Insulin-dependent Regulation of Skeletal Muscle Mitochondria by OPA-1
Major: Biomedical Engineering
Mentor: Antenor Hinton (Internal Medicine)

61 - Mikaela Mallin
Kctd15 and Tfap2 regulate melanocyte development via a negative feedback loop
Majors: Biomedical Science; Dance
Mentor: Robert Cornell (Anatomy and Cell Biology)

63 - Kyle McCarthy
Predicting Dose Rate Effects during EB-Polymerization using Monomer Chemistry
Major: Chemical engineering
Mentor: Julie Jessop (Chemical Engineering)

65 - Maisarah Mohd
In Their Own Words: Students' Most Significant Learning Experiences Related to Self-Awareness
Major: Psychology
Mentor: Wayne Jacobson (Office of the Provost)

67 - Elissa Monteiro
Does Executive Functioning Mediate Links Between Childhood Attention-Deficit Hyperactivity Disorder Symptoms and Substance Use and Related Problems in Adulthood?
Major: Psychology
Mentor: Molly Nikolas (Psychological and Brain Sciences)

69 - Jane Nguyen
Diverse Interactions of the Multifunctional, Regulatory Domain of Replication Protein A
Major: Biochemistry
Mentor: Marc Wold (Biochemistry)
71 - Chibuzo Nwakama
*Filling in the Gaps- Getting More from Incomplete Data*
Major: Computer Science and Engineering
Mentor: Thomas Casavant (Center of Biostatistics and Computational Biology)

73 - Chioma Onuigbo
*Does Alcohol Consumption Increase Perceived Justifiability of Male-Initiated Unwanted Sexual Advances?*
Major: Psychology; Health and Human Physiology
Mentor: Teresa Treat (Psychological and Brain Sciences)

75 - Pooja Patel
*Analysis of non-homologous end joining pathway through the use of rpa-2, polq-1, and ku-70 mutants in C. elegans*
Major: Biomedical Sciences
Mentor: Sarit Smolikove (Biology)

77 - Joann Pfeiffer
*Shift to Fire Creation - Percussive Origins*
Major: Anthropology
Mentor: Matthew Hill (Anthropology)

79 - Julia Poska
*'It's Only Rock 'N' Roll': Violence, Decadence, and the Mythic Status of the Rolling Stones*
Major: Journalism and Mass Communication
Mentor: Donna Parsons (Music)

81 - Adisa Salesevic
*Three blind mice-- See how they swim*
Major: Cell and Developmental Biology
Mentor: Arlene Drack (Ophthalmology)
83 - Olivia Sandvold
Cell-Sorting Algorithms for Single-Photon Calcium Ion Imaging
Major: Biomedical Engineering
Mentor: Mathews Jacob (Electrical and Computer Engineering)

85 - Burhanudin Syed
Role of the MPC in Tumor Spheroid Growth and Formation
Major: Biomedical Engineering
Mentor: Eric Taylor (Biochemistry)

87 - Morgane Tatchoum
Investigating the Time Course of Fear Generalization
Major: Nursing
Mentor: Brinda Shetty (Iowa Biosciences Academy)

89 - Rebekah Truhan
The Grateful Dead: A GIS Approach to Determining the Correlation Between Habitation Sites and Burial Sites in the Woodland Period in Iowa.
Major: Anthropology
Mentor: James Enloe (Anthropology)

91 - Emma Weddle
Imami Shi’a Consolidation of Political Authority from the 5th/11th Century to the 10th/16th Century
Major: Religious Studies

93 - Xueying Zhao
Integrability and Separability of Visual Dimensions in the Pigeon
Major: Psychology
Mentor: Edward Wasserman (Psychological and Brain Sciences)

95 - Ryder Fink
Genetic modifiers of a Drosophila model of sodium channelopathies
Major: Human Physiology
Mentor: Toshihiro Kitamoto (Anesthesia)
97 – Olivia Lewis
*Effect of N-acetylcysteine on prenatally-stressed mouse placental redox biology*
Major: Nursing
Mentor: Hanna Stevens (Psychiatry)

99 - Sarah Steuve
*Uncoupling Protein (UCP)-2 and Platelet Function*
Major: Biology
Mentor: Rhonda Souvenir (Internal Medicine)

5:30-6:30 Presenters
(even numbers only)

2 - Serif Bacevac
*Deletion of OPA-1 alters calcium homeostasis and leads to an increase in MCU protein levels*
Major: Health and Human Physiology
Mentor: Antentor Hinton (Internal Medicine)

4 - Evan Bittner
*The Socialization of Socialism: Leftist Periodicals in Iowa, 1900-1920*
Major: History, English
Mentor: Colin Gordon (History)

6 - Audrey Brock
"She's Lost Control": Portrayals of Mentally Ill Women in Mid-20th Century Popular Culture
Major: History
Mentor: Douglas Baynton (History)
8 - Ashley Buksa
Better Close than Far: How Young Children Code Relative Proximity to a Landmark
Major: Health and Human Physiology; Health Promotion
Mentor: Jodie Plumert (Psychology)

10 - Mackenzie Cross & Katelyn Kelly
Mapping the Past: Photogrammetry and Spatial Analysis at Woodpecker Cave
Majors: Anthropology & Anthropology; Psychology
Mentor: James Enloe (Anthropology)

12 - Jacob Foubert
From Excavations to Occupations: Characterizing the Faunal Assemblage of a Late Woodland Site
Major: Anthropology
Mentor: James Enloe (Anthropology)

14 - Seif El Deen Gaber
On the Effective Allocation and Utilization of Foreign Aid
Major: Analytical Economics, Pre-Med Track

16 - Rebekah Gansemer
Majors: Anthropology; History
Mentor: James Giblin (History)

18 - Cindy Garcia
African American and Latino Interactions in Davenport
Majors: History; Journalism and Mass Communication
Mentor: Mariola Espinosa (History); Alyssa Park (History)

20 - Hannah Gulick
HaloSat - X-Ray Astronomy of the Hot Galactic Halo
Majors: Astronomy and Physics; English Creative Writing
Mentor: Philip Kaaret (Physics and Astronomy)

22 - Elise Heitmann & Arthur Wold
What's for Dinner?: Molluskan Faunal Remains at Woodpecker Cave
Major: Anthropology & Anthropology
Mentor: James Enloe (Anthropology)

24 - Rana Hewezi
Adipose Tissue OPA1 Is Required for Proper Adaptive Thermogenesis in Mice
Major: Biomedical Sciences
Mentor: Renata Pereira (Internal Medicine)

26 - Claire Jacobson
Arabic at IWP: A History
Majors: French; Arabic
Mentor: Natasa Durovicova (International Writing Program)

28 - Camille Jaime
The role of importin 9 and exportin 6 on position effect variegation
Majors: Cell Biology; Microbiology
Mentor: Tina Tootle (Anatomy and Cell Biology)

30 - Nicholas Jones
Calibration of VLA Radio Data from the Galactic Center Radio Arc
Major: Physics and Astronomy
Mentor: Cornelia Lang (Physics and Astronomy)

32 - Alethea Kapolas
Sandstone:shale ratio maps of Pennsylvanian lower Cherokee group in southeast Iowa
Major: Environmental Science
Mentor: Emily Finzel (Earth and Environmental Sciences)
34 - Kendall Kikuts
Fidelity Monitoring in Symptom Management Intervention for Advanced Cancer Patients
Major: Nursing
Mentor: Stephanie Gilbertson-White (Nursing)

36 - Virginia Lamas Meza
Analysis of 2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136) and its Hydroxylated Metabolites present in Transgenic Mice Brain
Major: Environmental Chemistry
Mentor: Hans-Joachim Lehmler (Occupational and Environmental Health)

38 - Rikki Laser
Deficits in REM sleep twitching indicate developmental delay in a mouse model of autism
Major: Neuroscience
Mentors: Mark Blumberg (Psychology, Biology); Cassandra Coleman (Psychology)

40 - Katie Lillis
Stimulation of the infralimbic cortex using stable step-function opsins decreases cocaine-seeking behavior after extinction training
Majors: Human Physiology; Psychology
Mentors: Ryan LaLumiere (Psychological and Brain Sciences); Vicky Ewald (Neuroscience)

42 - Jacob Locher
Separation of Midsize Organic Solutes Utilizing Polyvinylidene Fluoride Membranes and Their Derivatives
Major: Chemistry
Mentor: Ned Bowden (Chemistry)
44 - Alex Marti

Glucose Metabolism is Required for Platelet Hyperactivation in a Murine Model of Type 1 Diabetes Mellitus

Majors: Health and Human Physiology; Chinese
Mentor: Dale Abel (Internal Medicine)

46 - Maren McNees

Sexual Health Knowledge in Young Adults with Intellectual and Developmental Disabilities

Major: Nursing
Mentor: Melissa Lehan-Mackin (Nursing)

48 - Brian Miner

U.S. Involvement in Indonesia's Anti-Communist Purge

Major: History
Mentor: Stephen Vlastos (History); Alyssa Park (History)

50 - Sarah Mullen

Opposing Roles of Rac and Rho small GTPases in the Emergence of Drug-Resistant B-Raf Mutant Melanoma

Majors: Biochemistry; Microbiology
Mentor: Chris Stipp (Biology)

52 - Camille Mumm

Investigating the cis-regulation of periplakin, a relevant zebrafish periderm gene

Major: Biology; Informatics
Mentor: Robert Cornell (Anatomy and Cell Biology)

54 - Thomas Osborne

Using the Vector Space Model to Predict Regulons and EGC Expression in S. aureus

Major: Microbiology; Computer Science
Mentor: Wilmara Salgado-Pabon (Microbiology)
56 - Crystal Padilla  
*Evaluating the Effects of a Patient-derived MAFB Mutation on Murine Craniofacial Development*  
Major: Biology; Pre-Pharmacy  
Mentor: Martine Dunnwald (Anatomy and Cell Biology)

58 - Sam Ponnada  
*Effects of Metallicity on High Mass X-ray Binary Formation*  
Major: Physics, Astronomy, and Mathematics  
Mentor: Philip Kaaret (Physics and Astronomy)

60 - Julia Rohn  
*Creating the Encomium: The Progression of Emma of Normandy's Political Career*  
Major: History  
Mentor: Alyssa Park (History)

62 - Megan Ryan  
*Herbert Hoover & The American Relief Administration’s Efforts In Soviet Russia, 1921-1923; Anti-Soviet Sentiment Stymies Success*  
Major: History  
Mentors: Landon Storrs (History); Alyssa Park (History)

64 - Ashley Segura-Roman  
*Identifying the role of ANGPTL8 in regulating endothelial lipase and HDL levels*  
Major: Biochemistry; Psychology  
Mentor: Brandon Davies (Biochemistry)

66 - John Sheeley  
*Do CFOs with Investment Banking Backgrounds Make More Acquisitions?*  
Major: Finance  
Mentor: Samuel Melessa (Accounting)
68 - Aaron Silva  
*The Impact of Plasmon Resonance on Black Silicon's Optical Properties*  
Major: Biomedical Engineering  
Mentor: Fatima Toor (Electrical and Computer Engineering)

70 - Phoebe Snydersmith  
*Effect of Normative Feedback on College Women's Self-Evaluations*  
Major: Psychology  
Mentor: Teresa Treat (Psychological and Brain Sciences)

72 - Megan Sorenson  
*Summer Internship with the Swedish American Museum*  
Major: History

74 - Joe Steinbronn  
*The Kenya Coastal Strip Commission*  
Major: History  
Mentor: James Giblin (History)

76 - Josh Stringer  
*The Greatest American Comeback: Harry S. Truman and the 1948 Election*  
Major: History  
Mentor: Colin Gordon (History)

78 - Leon Sun  
*Investigating the Role of Ion Pumps in Auditory Sensation*  
Major: Human Physiology  
Mentor: Daniel Eberl (Biology)

80 - Emily Vaughan  
*Massive Online Open Courses and Accessibility*  
Majors: English and Creative Writing; Cinematic Arts

82 - Kaitlyn Vote & Allison Woitte  
*The Representation of Women in Star Trek*  
Major: Undeclared & Theatre Arts
84 - Taylor Wingert
*Do U.S. presidential election attributes affect the performance of U.S. equity markets?*
Majors: Finance; Economics
Mentor: Jeffrey Hart (Finance)

86 - Tsun Ming Yuen
*Analyzing spatial localization of neuronal Golgi apparatus as continuous distributions*
Major: Chemical Engineering
Mentor: N. Charles Harata (Molecular Physiology and Biochemistry)

88 - Christine Buchanan
*Analyses of Quality of Life Survey of patients and parents with Pediatric Brain Tumor*
Major: Spanish; Human Physiology
Mentor: Mariko Sato (Hematology/Oncology)

90 - Joshua Dunigan
*Calcium-Triggered Activation of Calcineurin: Release of the Auto-Inhibitory Domain is Regulated by Calmodulin*
Major: Genetics; Biotechnology
Mentor: Madeline Shea (Biochemistry)

92 - Vijayvardhan Kamalumpundi & Kara Misel
*Differential mRNA expression of key metabolic genes across mouse liver lobes*
Major: Human Physiology & Biochemistry
Mentor: Eric Taylor (Biochemistry)

94 - Marissa Roseman
*Do parasites help drive life history variation in natural populations?*
Major: Biology; Environmental Science
Mentor: Maureen Neiman (Biology)