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.

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Spring Undergraduate Research Festival
Celebrating nine years of interdisciplinary undergraduate research & creative projects at The University of Iowa

April 10, 2013
2nd Floor Atrium
University Capitol Centre
104– Jienian Zhang
Do State Worksite Breastfeeding Statutes Influence Post-Birth Work Behavior of Mothers?
Majors: Sociology, Statistics
Mentor: Mary Noonan

105– Qiuting Zhou
Infants’ Multimodal Communication and Caregiver Responses
Majors: Psychology, Accounting
Mentor: Julie Gros–Louis, Zhen Wu

106– Hannah Zimmerman
Lexical Processing in Adults
Major: Speech and Hearing Sciences
Mentor: Karla McGregor
97 – Yuejia (Mandy) Teng  
*Scene-Based Contextual Cueing in Pigeons: Responding on Cue*  
Major: Psychology  
Mentor: Edward Wasserman

98 – Christina Valle  
*Community Resources and Literacy Development*  
Major: English  
Mentor: Deborah Linebarger

99 – David Villanueava  
*Psychosocial Factor in Predictions of Long-Term Survival in Ovarian Cancer Patients*  
Majors: Nursing, Human Physiology  
Mentor: Susan Lutgendorf

100 – Kelsey Warner  
*The Neuroanatomical Correlates of Egocentrism in Anchoring and Adjustment Estimations: A Pilot Study*  
Majors: Psychology, Speech and Hearing Sciences  
Mentor: Daniel Tranel

101 – Audrey Williams  
*View from the Bunker: A Study of Turkish Counterterrorism Policy Formation*  
Majors: Political Science, French, Arabic  
Mentor: Brian Lai, Zeynep Kadirbeyoğlu

102 – Ashley Willms  
*An evaluation of response effort on liquid consumption*  
Major: Health and Human Physiology  
Mentor: Brooke M. Holland, Linda J. Cooper-Brown

103 – Onalee Yousey  
*The Muslim Brotherhood as Electoral Victor*  
Majors: Political Science, International Studies  
Mentor: Vicki Hesli

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**Spring Undergraduate Research Festival**  
**Schedule**  
**Wednesday, April 10, 2013**

4.30PM—Opening Remarks  
Bob *Kirby*  
Director, Iowa Center for Research by Undergraduates

4.35PM-5.25PM—Poster Viewing /Judging

5.25PM- 5.40PM—Awards

5.40PM-6.30PM—Poster Viewing /Judging

5.40PM——Poster Awards  
Bob *Kirby* AND ICRU RESEARCH AMBASSADORS

Denotes 2013 Excellence in Undergraduate Research Award  
Denotes 2013 Distinguished Mentor Award
1 - Natalie Deam  
*Nature’s History*  
Majors: French, English, Comparative Literature  
Mentor: Roland Racevskis

2 - Elise Goodman  
*Oxford Bibliographies Online – Europe and the Globe, 1350–1700*  
Major: Art History  
Mentor: Julie Hochstrasser

3 - Nick Kleese  
*Food and Love: Living and Working on a French Goat Farm*  
Major: English  
Mentor: Mary Trachsel

4 - David Senter  
*Technology and 3D Design Production*  
Major: 3d Design  
Mentor: Monica Correia

5 - Lauren Vanchina  
*Caught Between Two Cultures: Modern “Negro” Concert Dancing at the Hampton Institute*  
Major: Art, Design Three Dimensional  
Mentor: Rebekah Kowal

6 - Laura Wang  
*Revolution: an Oral Chinese History*  
Majors: English, Chinese  
Mentor: Judy Polumbaum

91 - Shuqi (Ariel) Li  
*When You Fail to Keep Your Eye on the Prize: The Influence of Non-numeric Social Comparative Information on Judgments and Decisions*  
Major: Psychology  
Mentor: Paul Windschitl

92 - David Liao  
*Motion verbs and associated forms in Mandarin-speaking children’s narratives*  
Major: Speech and Hearing Science  
Mentor: Amanda Owen Van Horne

93 - Nathan Myhre  
*Interactions between DRD4 genotype and inconsistent parenting predict neuropsychological performance in youth*  
Majors: Psychology, Biology  
Mentor: Molly Nikolas

94 - Ana-Monica Racila  
*A radiogrammetric approach to the evaluation of environmental stress on the Late Neolithic populations buried at Bolores, Portugal*  
Major: Anthropology  
Mentor: Katina Lillios, Anna Waterman

95 - Samantha Skaar  
*Privy Findings: Ceramics from the Plum Grove Septic System*  
Majors: Anthropology, Linguistics  
Mentor: James Enloe

96 - Caitlin Stone  
*The effect of compression time constant on speech recognition*  
Major: Speech and Hearing Science  
Mentor: Yu-Hsiang Wu
84 – Sarah Doggett
Pragmatic Competency of Children with Mild-Severe Hearing Loss: A Pilot Study
Major: Speech and Hearing Science
Mentor: Elizabeth Walker

85 – Emma Evanovich
Responding to Social Comparisons: Depressed vs. Non-depressed Individuals
Major: Psychology
Mentor: Jerry Suls, Kathryn Bruchmann

86 – Nicole Filloon
Why Do Working Adults Return to School? How Employees Understand the Relationships Between Educational Credentials and Employment Opportunities
Major: Sociology
Mentor: David Bills

87 – Brooke Gambrall
Pastoral Care and AAC Devices
Major: Religious Studies
Mentor: Richard Hurtig

88 – Mary Gavert
Parental Attitudes Regarding Troubleshooting Hearing Aids and Cochlear Implants
Major: Speech and Hearing Science
Mentor: Lenore Holte, Elizabeth Walker

89 – Julie Gudenkauf
Behavioral and Functional Neuroimaging Correlates of Self-Monitoring in Older Adults
Major: Psychology
Mentor: Natalie Denburg

90 – Marco Jimenez
Sandwich Comparisons? The Effects of Multi-Directional Social Comparisons
Major: Psychology
Mentor: Jerry Suls, Kathryn Bruchmann

MATH & ENGINEERING POSTERS

7 – Jonathan Bachman
Fe(II) catalyzed electron transfer and atom exchange in goethite
Major: Chemical Engineering
Mentor: Michelle Scherer

8 – Wade Bloomquist
The Skein Algebra of a Punctured Torus
Major: Mathematics
Mentor: Charles Frohman

9 – Matthew Boddicker
Engineering an Electric Car
Major: Electrical Engineering
Mentor: James Maxted

10 – Colleen Brehm
Understanding Model Complexity for Hormone Transport within Stream Ecosystems
Majors: Civil Engineering, Geoscience
Mentor: Adam Ward

11 – Elliott Glenn
A Characterization of the Activated Monomer Mechanism via Grafting
Major: Chemical and Biochemical Engineering
Mentor: Julie Jessop

12 – Ben Goerdt
Computation and Display of Reliability for Virtually Visualized Circuit Boards
Major: Electrical and Computer Engineering
Mentor: Timothy Marler

13 – Adrianna Jarosz
Development of method to analyze musks in water by SPME/GC/MS
Major: Civil and Environmental Engineering
Mentor: Hans-Joachim Lehmler, Izabela Kania-Korwel
14 – Guanduo Li
Automated Sensor for Flowering and Vegetative Budburst
Major: Electrical Engineering
Mentor: Anton Kruger

15 – Brandon Pham
Modification of PEGylation Method to Reduce Particle Surface Charge
Major: Chemical Engineering
Mentor: Jennifer Fiegel

16 – Michael Seedorff
Can a computer algorithm find the truth behind noisy data?
Major: Statistics
Mentor: Kate Cowles

17 – Joseph Tank
Undergraduate Fluids Workshop
Major: Mechanical Engineering
Mentor: James Buchholz

18 – Hannah Taylor
Embedded Electronics for a Mussel-Based Biological Sensor
Major: Electrical Engineering
Mentor: Anton Kruger

19 – Mary Weber
Simulation of potential futures to explore sustainable water management strategies in Mewat District (Haryana, India)
Major: Geoscience
Mentor: Adam Ward, Marian Muste

20 – Casey Westlake
Waste Not: The Fuel-Harvesting Toilet
Major: Engineering, Global Health, Environmental Science
Mentor: Craig Just

21 – Kasra Zarei
Using Sensor Networks to Determine the Effect of contact Precautions on Patient/HCW Interaction
Major: Biomedical Engineering, Psychology
Mentor: Alberto Segre

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**SOCIAL SCIENCES POSTERS**

77 – Kimberly Andersen
Stereotypes of the Aging Voice
Major: Speech and Hearing Science
Mentor: Jean K. Gordon

78 – Jacqueline Bannon
Are media messages reflected in people's causal explanations for diabetes?
Major: Nursing
Mentor: Sandra Daack-Hirsch, Lisa Shah

79 – Sarah Bannon
Improving Treatment Completion Among African-American Men In Domestic Violence Intervention Programs
Major: Psychology
Mentor: Erika Lawrence, Lori Adams

80 – Ryan Cronister
Motion verbs and associated forms in English-speaking children's narratives
Major: Speech and Hearing Science
Mentor: Amanda Owen Van Horne

81 – Katie Curran
Is the Family History of Type 2 Diabetes a Practical Screening Tool?
Major: Nursing
Mentor: Sandra Daack-Hirsch, Lisa Shah

82 – Kelly Daniels
Democratic Peace: Conflicts of Democracies Today
Major: Political Science, International Relations
Mentor: Sara Mitchell

83 – Lauren Diamond
Children’s speech perception in noise. Effects of age and presentation format
Major: Speech & Hearing Science
Mentor: Karen Kirk
71 - Michelle Sullivan
Comparing patterns of molecular evolution in nuclear-encoded mitochondrial genes in sexuals and asexual lineages of a New Zealand freshwater snail
Major: Biology
Mentor: Maurine Neiman, John Logsdon

72 - Marcus Tatum
Study of akirin1 Gene Function in C. elegans
Major: Biology
Mentor: Sarit Smolikove, Heather Brockway

73 - Benjamin Weidemann
Glycemic control by the brain renin-angiotensin system: a Role for peripheral AT2 receptors
Majors: Chemistry, Biology
Mentor: Justin Grobe

74 - Emily White
Motor and Cognitive Characteristics of Primary and Secondary Multiple Sclerosis Patients at 6 Months
Major: Health and Human Physiology
Mentor: Warren Darling

75 - Keyan Zarei
Association of cell death with CaMKII dependent mitochondrial fragmentation in H9c2 atrial myocytes following Isoproterenol treatment
Majors: Biochemistry, Psychology
Mentor: Mark Anderson

76 - Charles Zeman
Selective Separation of Fatty Acids through a Polydicyclopentadiene Membrane
Major: Chemistry
Mentor: Ned Bowen

22 - Ning Zhou
Characteristic Functions of Alternative Fund
Majors: Mathematics and Finance
Mentor: Palle Jorgensen

NATURAL SCIENCES POSTERS

23 - Joseph Ambrose
Development and Application of a 3D Tumorigenesis Model
Majors: Biology, Pre-Medicine
Mentor: David Soll, Deborah Wessels

24 - Stephen Belmustakov
Glutamate and Substance P receptors are co-localized in the Nucleus Tractus Solitarii
Majors: Biomedical Engineering, Pre-medicine
Mentor: William Tallman

25 - Michael Boller
Selective Detection of Drugs Using Molecular Imprinted Polymer Nanosensors
Major: Chemistry
Mentor: Amanda Haes

26 - Kevin Booth
OtoSCOPE: Revolutionizing the Genetic Diagnosis of Hearing Loss
Majors: Chemistry, American Sign Language
Mentor: Hela Azaiez

27 - Elizabeth Buchanan
A Novel Gene Delivery Method Transduces Pancreatic Duct Epithelial Cells in Newborn Pigs
Major: Health and Human Physiology
Mentor: Aliye Uc

28 - Stephanie Chin
Surface Adsorption of Bicarbonate by Functionalized Silicalite-1 Nanoparticles in Solution
Major: Chemistry
Mentor: Sarah Larson
29 – Alex Crider
A New Enzyme in the Global Sulfur Cycle
Major: Biochemistry
Mentor: Mishtu Dey

30 – Atish Dey
Identification of Genes Involved in Candida Biofilm Synthesis
Major: Biochemistry
Mentor: David Soll, Srikantha Thyagarajan

31 – Eric Dinges
Bone Marrow Sparing Using Intensity Modulated Proton Therapy for Cervical Cancer Treatment
Major: Biomedical Engineering
Mentor: Dongxu Wang

32 – Aleksander Durumeric
Excess Electrons in Ionic Liquids
Major: Chemistry, Mathematics
Mentor: Claudio Margulis

33 – Alex Fanning
Cerebellar Neural Activity in Newborn Rats
Major: Psychology
Mentor: Mark Blumberg

34 – Daniel Farrell
Benzofurans via Annulation Reactions of Substituted Pyridines
Major: Biochemistry
Mentor: Chris Pigge

35 – Adam Foresman
Assessing function of the NARROW ABDOMEN ion channel in Drosophila circadian rhythms using site-specific transformation methods
Major: Biology
Mentor: Bridget Lear

64 – Amanda Philiph
Toll-Like Receptor 2 Ligands Prime Human Neutrophils
Major: Health and Human Physiology
Mentor: Jessica Moreland

65 – Alexander Podgorny
Neuroendocrine modulation of sleep under starvation stress in Drosophila
Major: Biology
Mentor: Toshi Kitamotoo

66 – Collin Post
Does the Alzheimer Drug Donepezil Influence Sympathetic Nerve Activity and Blood Pressure? Implications for Patients with Heart Disease
Major: Neurobiology
Mentor: Mark W. Chapleau, Francois M. Abboud

67 – Assad Qasim
Oral Health Knowledge Among Elderly Patients
Majors: Mathematics, Pre-Dentistry
Mentor: Michelle McQuistan

68 – Nick Rolston
Growth of III/V Semiconductor Nanowires with Molecular Beam Epitaxy
Majors: Physics, Math
Mentor: John Prineas

69 – Kanoe Russell
Behavioral defects of cells with mutations in the tumor suppressor protein PTEN are rescued by a PTEN-Like Protein (PTP).
Major: Biomedical Engineering
Mentor: David Soll, Daniel Lusche

70 – Susan Schmitz
Radio Observations of Molecular Clouds near the Galactic Center
Major: Physics and Astronomy
Mentor: Cornelia Lang
57 – Kaylee Lovelander
Investigating if Utrophin–GFP can be used to examine actin remodeling during Drosophila oogenesis
Major: Biology
Mentor: Tina Tootle

58 – Dagan Marx
Two Classes of Calmodulin Binding to IQ Motifs of Voltage–Gated Sodium Channels
Majors: Biochemistry, Environmental Science
Mentor: Madeline Shea

59 – Steve Mather
Mammalian oxygen sensing pathway dependence on HIF
Major: Biochemistry
Mentor: Mishtu Dey

60 – Allyson Mayer
Computational and experimental determination of histone acetylation as a function of nutrition in S. cerevisiae
Major: Biochemistry
Mentors: Charles Brenner, Danilo Diedrichs

61 – Sarah Mayer
Characterizing the effects of the D24Y mutation in actin to understand aortic disease in pregnancy
Majors: Biochemistry, Pre-Medicine
Mentor: Heather Bartlett

62 – Thomas Meirick
Determining the Prevalence of Staphylococcus aureus among two Iowa populations
Majors: Biochemistry, Economics
Mentor: Tara Smith

63 – Lauren Pass
Three-dimensional Modeling of Brain Cancer Cell Behavior in Real-Time
Majors: Neurobiology, Philosophy
Mentor: David Soll, Deborah Wessels

36 – Matthew Golden
Chronic TNF induces developmental stage-dependent changes in the intestinal barrier function
Major: Microbiology
Mentor: Steven McElroy

37 – Paula Gomez
Preferred Methods for Presenting Treatment Options to Elderly Patients
Majors: Art, Human Physiology
Mentor: Michelle McQuistan

38 – Emily Gross
TNF-α primes neutrophil elastase release, role for the NAPDH oxidase
Major: Integrative Physiology
Mentor: Jessica Moreland

39 – Bradley Hamilton
The Effects of fimH adherence protein variation on biofilm density among Salmonella serovars
Major: Microbiology
Mentor: Steven Clegg

40 – Brett Hanson
2d and 3d Tumorigenesis Models Reveal Unique Behaviors in Cancer Cell Lines and Human tumor Tissue
Major: Microbiology
Mentor: David Soll

41 – Susanna Harris
CrdA Protein Regulation of Ampicillin Resistance in Myxococcus xanthus
Major: Microbiology
Mentor: John Kirby

42 – Thomas Heiderscheit
Developing Kinetic and Physical Models for Nanoparticle–Enhanced Spectroscopy
Major: Chemistry
Mentor: Amanda Haes
43 – Steven Henning
Modulation of Neuronal Pathways in C. elegans as Potential Therapy for Neurodegenerative Illness
Major: Biology
Mentor: Veena Prahlad

44 – Katherine Hixon
IRF6 in Skin Homeostasis
Major: Biomedical Engineering
Mentor: Martine Dunnwald

45 – Stacey Howes
The Effects of Hypergravity on Development of the Heart and Behavior in Xenopus laevis
Major: Biology
Mentor: Darrell Wiens

46 – Chun-Sing (Kevin) Huang
Divide and Conquer: Deletion analysis identifies functional domains of a bacterial cell division protein
Major: Microbiology
Mentor: David Weiss

47 – Katherine Hummels
Characterization of a Chemosensory Kinase Regulating Gliding and Twitching Motility in Myxococcus xanthus
Majors: Microbiology, Studio Art
Mentor: John Kirby

48 – Amanda Irish
Evaluation of a Modified Paleolithic Dietary Intervention in the Treatment of Relapsing–Remitting Multiple Sclerosis
Majors: Human Physiology, Pre–Medicine
Mentor: Warren Darling

49 – Austin Kammerer
The Metabolism of 2,2′,3,3′,6,6′-Hexachlorobiphenyl (PCB136) by Liver Microsomes is Species Dependent.
Major: Environmental Chemical Science
Mentor: Hans-Joachim Lehmler

50 – Bhavatharini Kasinathan
The relationship between proteolysis and the akirin pathway in Synaptonemal Complex Disassembly during C. elegans meiosis
Major: Biochemistry
Mentor: Sarit Smolikove

51 – Tanzeh Khan
Developing Ring-X Gynandromorph Mosaics to Probe Links between Neuroanatomical Loci and Aberrant Motor Patterns in Drosophila
Majors: Biomedical Engineering, Pre–Medicine
Mentor: Chun–Fang Wu

52 – Ian Lamb
Dietary therapy for genetically inherited neurological defects in Drosophila
Majors: Biomedical Engineer, Pre–medicine
Mentor: Toshi Kitamoto

53 – Max Lassise
Overcoming Strain Limitations Using Nanowires
Major: Physics
Mentor: John Prineas

54 – James Latanski
Interactive mechanistic insight between Prolyl 4-Hydroxylase 3 and peculiar mammalian pathways
Major: Health and Human Physiology
Mentor: Mishtu Dey

55 – Bradley Loren
Thermochromism in Salicylideneaniline Derivative Co–Crystals
Majors: Chemistry, Political Science
Mentor: Leonard MacGillivray

56 – Ryan Loris
Magnetic Effects on MnO2 | Zn Alkaline Batteries
Major: Chemistry
Mentor: Joana Leddy