Research in the Capitol

March 10, 2008

Poster Display
11:00 a.m. – 2:00 p.m.

Remarks
11:00 a.m. – 11:15 a.m.

DAVID MILES
President, Board of Regents, State of Iowa

JOHN BRIGHTON
Vice President for Research and Economic Development
Iowa State University

RICHARD HICHWA
Associate Vice President for Research
University of Iowa

JAMES JURGENSON
Professor, Department of Biology
University of Northern Iowa

GARTH STROHBEHN
Undergraduate Student
University of Iowa
The Honors Programs at Iowa State University, The University of Iowa, and University of Northern Iowa have collaborated to create an annual event—Research in the Capitol—dedicated to celebrating student learning through undergraduate research.

The following students from the three Regents universities were chosen to present their research findings, discuss how research has enriched their education, and share with state legislators, state officials, and the public the way in which their investigations contribute to Iowa.

1- Takiyah Abdulmalik, Oxon Hill, Maryland
   Iowa State University
   Parameters affecting levels of gallicatechins in oolong teas
   Food Science
   Mentors: Sean O'Keefe (Virginia Tech), Aubrey Mendonca
   takirsoe@iastate.edu  

2- Natalie Adams, New Liberty, Iowa
   University of Iowa
   Constructing a modern performing edition from an original unpublished work by Francois Rene Gebauer (1733-1825)
   Music
   Mentor: Jeff Agrell
   natalie-adams@uiowa.edu

3- Jason Allen, Bussey, Iowa
   University of Iowa
   Reduced brain pH causes fear and heightens anxiety by activating pH sensitive molecules
   Integrative Physiology
   Mentor: John Wemmie
   jason-allen@uiowa.edu

4- Ashley Andrew, Sioux City, IA
   University of Northern Iowa
   Attitudes toward abortion and risky behaviors in Midwestern college students
   Family Services, Psychology
   Mentor: Elaine Eshbaugh
   asha05@uni.edu

5- Vinay Bajaj, Mumbai, India
   University of Northern Iowa
   The modification of human macrophages by green tea: The effects on podosomes and cellular pathways

6- Kristy Bellinger, Omaha, Nebraska
   Iowa State University
   Genetic relationships of bobcats in Iowa and surrounding Midwestern states
   Biology
   Mentors: Bill Clark, Dawn Reding, Anne Bronikowski
   kbellin@iastate.edu

7- Kristin Belzung, Ankeny, Iowa
   University of Northern Iowa
   Presence of phthalate esters in microwaveable meal trays and meals
   Health Promotion: Environmental Health
   Mentor: Catherine Zeman
   kbelzung@uni.edu

8- Lori Neuman-Lee Biggs, Adel, Iowa
   Iowa State University
   Feeding behavior altered by short-term atrazine exposure during incubation in map turtles (Graptemys)
   English, Biology
   Mentor: Fredric Janzen
   lorin215@iastate.edu

9- Justin Bohnet, Sanborn, Iowa
   University of Northern Iowa
   The effects of nanoscale disorder on the paramagnetic to ferromagnetic transition in melt-spun gadolinium-iron alloys
   Physics
   Mentor: Paul Shand
   justin44@uni.edu
10- David Brus, Denison, Iowa
University of Northern Iowa
Hydrogen fuel cells and the use of modular technology
Technology Education and Training
Mentor: Doug Hotek
dbrus@uni.edu

11- Rachel Butterworth, Apple Valley, Minnesota
Iowa State University
A survey of the public understanding of Doppler radar
Meteorology
Mentors: Cinzia Cervato, William Gallus, Jr., Kevin Kloesel (University of Oklahoma)
rbutter@iastate.edu

12- Lucas Carlstrom, Eldridge, Iowa
Iowa State University
Identification of a novel genetic analysis for Factor VII deficiency in canines
Animal Science, Microbiology
Mentor: Matthew Ellinwood
luke9575@iastate.edu

13- Peter Choi, Ames, Iowa
Iowa State University
Unable to focus: negative affect in proactive and reactive control
Psychology
Mentors: Robert West, Stephanie Travers (Luther College)
choip@iastate.edu

14- Zenab Chowdhry, Independence, Iowa
University of Northern Iowa
Militarization vs. democratization: A case study of Pakistan and India's divergent political paths since independence
Political Science
Mentor: Dhirendra Vajpeyi
chowdhry@uni.edu

15- Elise Cochrane, Swisher, Iowa
University of Northern Iowa
Special housing for freshman students: Beneficial or not?
Psychology
Mentor: Helen Harton
cochrane@uni.edu

16- Courtney Cornick, Bolingbrook, Illinois
Iowa State University
Diversity and group counseling
Psychology
Mentor: Nathaniel Wade
cornick@iastate.edu

17- Andrew Cyr, Cedar Rapids, Iowa
University of Northern Iowa
Effects of egg-incubation and acclimation temperature on selected temperature by painted turtles (Chrysemys picta) from Grundy County, Iowa
Biology
Mentor: Jeff Tamplin
acyr@uni.edu

18- Priscilla Delgado, Des Moines, Iowa
Iowa State University
Soybean Sudden Death Syndrome: Temperature effects on the fungal pathogen
Microbiology
Mentors: Leonor Leandro, Gladys Mbofung
pretzel@iastate.edu

19- Andrew Dust, Waterloo, Iowa
Iowa State University
Immigration in rural counties from 1950-2000: Waves or ripples?
Economics, Mathematics
Mentor: Peter Orazem
asdust@iastate.edu

20- Jeremiah Feltz, Beaman, Iowa
University of Northern Iowa
Conservation genetics of the Redside dace (Clinostomus elongatus)
Biology: Ecology & Systematics
Mentor: Peter Berendzen
jifeltz@uni.edu
21- Jason Fries, Ames, Iowa
University of Iowa
Mobile sensor instrumentation of contact graphs for epidemiological models
Computer Science
Mentor: Ted Herman
jason-fries@uiowa.edu

22- Ryan Gerling, Columbus Junction, Iowa
University of Iowa
Academic acceleration: Current practices and a policy template
History, Secondary Education
Mentor: David Lohman
ryan-gerling@uiowa.edu

23- Matthew Graaf, Humboldt, Iowa
University of Northern Iowa
Surface chemistry of benzene, ethylene and acetylene on porous glass
Chemistry, Physics
Mentor: Shoshanna Coon
mgraaf@uni.edu

24- Tyler Gunn, Iowa City, Iowa
University of Iowa
Spatial variability of particle air contaminants in swine concentrated animal feeding operations
Chemical Engineering
Mentor: Thomas Peters
tgunn@engineering.uiowa.edu

25- Thomas Heineman, Grinnell, Iowa
University of Iowa
Membrane Introduction Mass Spectrometric (MIMS) techniques applied to the photochemical activity of chromophores in Iowa's surface waters
Chemistry
Mentor: Mark Young
thomas-heineman@uiowa.edu

26- Isaac Hinton, Coralville, Iowa
Iowa State University
Forces experienced on the hamstring
Biology
Mentor: Tim Derrick
jordan23@iastate.edu

27- Atulya Iyengar, Waterloo, Iowa
University of Iowa
Imaginal conditioning affects olfactory receptor neuron (ab2A) odor coding in Drosophila Melanogaster
Biomedical Engineering
Mentor: Chun-Fang Wu
iyengar@engineering.uiowa.edu

28- Brian Kaplinger, Omaha, Nebraska
Iowa State University
Asteroid Deflection Research Initiative (ADRI): A comparison of low, medium, and high energy methods
Aerospace Engineering
Mentors: Bong Wie, John Basart
bdkaplin@iastate.edu

29- Alexandra Keenan, Urbandale, Iowa
University of Iowa
Cervical cancer screening and treatment strategies in Tamil Nadu, India
Biomedical Engineering
Mentor: Rangaswamy Rajagopal
abkeenan@engineering.uiowa.edu

30- Philip Kennedy, Cedar Rapids, Iowa
University of Iowa
Conditional same-different discrimination in pigeons
Psychology
Mentor: Ed Wasserman
philip-kennedy@uiowa.edu
31- Adam Lee, Elma, Iowa
University of Northern Iowa
Effects of spatial resolution of digital elevation models on watershed erosion modeling
Geology, Geography: GIS
Mentor: Ramanathan Sugumara
blakhak@uni.edu

32- Ashley Leyda, Bloomfield, Iowa
University of Iowa
Sex offender recidivism in Minnesota and the importance of news and legal coverage
Sociology
Mentor: Robert Baller
ashley-leyda@uiowa.edu

33- Kok Keong Lim, Selayang Baru, Selangor, Malaysia
Iowa State University
Understanding root health to improve soybean productivity in Iowa
Microbiology
Mentors: Leonor Leandro, Carlos Gongora-Canul
ronkklim@iastate.edu

34- Lipin Loo, Prai, Malaysia
University of Northern Iowa
Genetic alignment of the genomic sequence of *Fusarium verticillioides*
Biotechnology
Mentor: James Jurgenson
loolipin@uni.edu

35- Francisco Lovan, Clear Lake, Iowa
University of Iowa
p53-dependent and -independent roles of tumor suppressor DDB2 in tumorigenesis
Biology
Mentor: Toshiki Itoh
francisco-lovan@uiowa.edu

36- Rebecca Luchtel, Spirit Lake, Iowa
Iowa State University
Dietary egg white protein diets reduce cardiovascular disease biomarkers in rats
Nutritional Sciences
Mentor: Kevin Schalinske
rluchtel@iastate.edu

37- Katie Lutz, Ames, Iowa
Iowa State University
RecA targeted homologous recombination in zebrafish
Genetics
Mentors: Jeff Essner, Hsin-Kai Liao
klutz@iastate.edu

38- Hoang Mai, Iowa City, Iowa
University of Iowa
Enhancement of transfection by zeolites in human embryonic kidney cells
Chemical Engineering
Mentor: Aliasger Salem
ben-mai@uiowa.edu

39- Matt Martin, Rochester, Minnesota
Iowa State University
Imaging airflow over an airfoil near stall
Aerospace Engineering
Mentors: Hui Hu, Hirofumi Igarashi
mdmart1@iastate.edu

40- Megan Mathews, Bettendorf, Iowa
University of Iowa
How hard is it to learn words? A statistical learning paradigm for word acquisition
Psychology, Fine Art
Mentors: Bob McMurray, Larissa Samuelson
megan-mathews@uiowa.edu

41- Christina McClelland, Ames, Iowa
University of Iowa
The Daily Palette
Studio Art
Mentor: Jon Winet
christina-mcclelland@uiowa.edu
42- Sarah McConnell, Cedar Rapids, Iowa  
University of Northern Iowa  
Analysis of echoic properties in vocalizations of preverbal children on the autistic spectrum  
Communicative Disorders  
Mentor: Theresa Kouri  
smcconn@un.edu

43- Brandon Menke, Clive, Iowa  
University of Iowa  
PPARy activation through eicosanoid metabolism  
Biochemistry  
Mentor: Andrew Norris  
bmenke17@mchsi.com

44- Randyl Meyer, Muscatine, Iowa & Kayla Ferguson, Marquette, Iowa (coauthors)  
University of Northern Iowa  
Ice bath immersion of the hand alters continuous pressure sensory threshold  
Athletic Training; Athletic Training  
Mentor: Todd Evans  
rbmeyer@uni.edu; kf0515@uni.edu

45- Andrew Morse, Akron, Iowa  
University of Northern Iowa  
Children's occupational preferences regarding status and gender  
Psychology  
Mentor: Joshua Susskind  
morse@uni.edu

46- Jacob Reed, Muscatine, Iowa  
University of Northern Iowa  
The comparison of two strategies on recovery after exhausting exercise  
Physical Education: Exercise Science  
Mentor: Robin Lund  
reedj52@uni.edu

47- Stacey Reisdorph, Cedar Rapids, Iowa  
University of Northern Iowa  
Morphometry and rates of evolution within the Pennsylvanian fusulinid Beedeina (Ardmore Basin, Oklahoma)  
Geology, Earth Science  
Mentor: John Groves  
sreis@uni.edu

48- Kayla Resnick, Anchorage, Alaska  
University of Iowa  
Mill Creek archaeological artifact analysis  
Anthropology  
Mentor: Steve Lensink  
kayla-resnick@uiowa.edu

49- Mark Rosmann, Harlan, Iowa  
Iowa State University  
Improving soil quality in Iowa organic farming systems  
Agronomy, History  
Mentor: Kathleen Delate  
bobbrkr@iastate.edu

50- Mileka Scurlock, Omaha, Nebraska  
Iowa State University  
Perceptions and attitudes toward physical activity of postmenopausal African American women  
Kinesiology  
Mentor: Panteleimon Ekkekakis  
mscur@iastate.edu

51- Brian Sellers, Cedar Falls, Iowa  
University of Northern Iowa  
Design and conversion for an electric plug-in vehicle  
Electrical and Information Engineering Technology  
Mentor: Reg Pecen  
brian154@uni.edu
52- Vanessa Sheppard, Cedar Rapids, Iowa  
University of Northern Iowa  
Scenic designs and design research for "Pillar of Society" (Ibsen) and "Midsummer Night's Dream"  
Theatre  
Mentor: Jay Edelnant  
vtheatre@uni.edu

53- Garth Strohbehn, Boone, Iowa  
University of Iowa  
Trans-endothelial migration selects for prostate cancer cells with a mesenchymal phenotype  
Biochemistry, Chemistry  
Mentor: Michael Henry  
garth-strohbehn@uiowa.edu

54- Lindsay Thompson, Huxley, Iowa  
Iowa State University  
The effect of task complexity on walking in young adults  
Kinesiology and Health (Pre-Physical Therapy)  
Mentors: Kristin Lowry, Ann Smiley-Oyen  
lindsayt@iastate.edu

55- Joe Thorngren, Moline, Illinois  
University of Iowa  
A universal health care system in the United States: Just not practical  
Political Science  
Mentor: Robert Baller  
joseph-thorngren@uiowa.edu

56- Robert Tuttle, Des Moines, Iowa  
University of Iowa  
Rural development: Cultivating sustainable development  
International Studies

57- Annie Twohig, Sioux City, Iowa  
University of Iowa  
The effect of Botulinum toxin as a function of the extent of vocal tremor  
Speech and Hearing Science, Psychology  
Mentor: Eileen Finnegan  
anntwohig@uiowa.edu

58- Andrea VanWaardhuizen, Ames, Iowa  
University of Northern Iowa  
Effects performing authentic research has on secondary science educators' classroom practices: Year two  
Chemistry Teaching  
Mentor: Dawn Del Carlo  
andreajv@uni.edu

59- Bethany Wilcoxon, Atlantic, Iowa  
Iowa State University  
The Corn Belt's ethanol plants: Do locational factors matter?  
Community & Regional Planning  
Mentors: Monica Haddad, Francis Owusu, Gary Taylor  
bethanyw@iastate.edu

60- Nathan Willis, Omaha, Nebraska & Sam Wagner, Webster City, Iowa (coauthors)  
Iowa State University  
Student design of a satellite for lunar surface analysis and solar sailcraft demonstration  
Aerospace Engineering; Aerospace Engineering, Mathematics  
Mentors: Bong Wie, Matthew Nelson  
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