

3-10-2008

## Research in the Capitol [Program], March 10, 2008

University of Northern Iowa. University Honors Program.

Iowa State University. Honors Program.

*See next page for additional authors*

Copyright ©2008 University of Northern Iowa

Follow this and additional works at: [https://scholarworks.uni.edu/programs\\_rcapitol](https://scholarworks.uni.edu/programs_rcapitol)



Part of the [Higher Education Commons](#)

*Let us know how access to this document benefits you*

---

### Recommended Citation

University of Northern Iowa. University Honors Program., Iowa State University. Honors Program., and University of Iowa. Honors Program., "Research in the Capitol [Program], March 10, 2008" (2008). *Research in the Capitol Programs*. 6.

[https://scholarworks.uni.edu/programs\\_rcapitol/6](https://scholarworks.uni.edu/programs_rcapitol/6)

This Program is brought to you for free and open access by the Honors Program at UNI ScholarWorks. It has been accepted for inclusion in Research in the Capitol Programs by an authorized administrator of UNI ScholarWorks. For more information, please contact [scholarworks@uni.edu](mailto:scholarworks@uni.edu).

---

**Authors**

University of Northern Iowa. University Honors Program., Iowa State University. Honors Program., and University of Iowa. Honors Program.

# 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.

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 of Biology

University of Northern Iowa

GARTH STROHBEHN

Undergraduate Student

University of Iowa



IOWA STATE UNIVERSITY  
OF SCIENCE AND TECHNOLOGY

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 galliccatechins 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, Iowa

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

Biology

Mentor: Bart Bergquist

vinay@uni.edu

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: Dharendra 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  
jffeltz@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  
smconn@un.edu

43- Brandon Menke, Clive, Iowa  
University of Iowa  
PPAR $\gamma$  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 Pecan  
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  
Mentor: Rangaswamy Rajagopal  
robert-tuttle@uiowa.edu

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  
ann-twohig@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  
andrea@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, Mathematics  
Mentors: Bong Wie, Matthew Nelson  
nwillis@iastate.edu; thewags@iastate.edu

## Iowa Regents Universities Honors Program Contacts

ROBERT KIRBY

Director

Iowa Center for Research by Undergraduates

Associate Director

University of Iowa Honors Program

The University of Iowa

443 Blank Honors Center

Iowa City, Iowa 52242-0454

Phone: 319-335-1684

FAX: 319-335-0549

robert-kirby@uiowa.edu

LAURA MERRICK

Assistant Director

Undergraduate Research and Scholarship

University Honors Program

Iowa State University

2130 Jischke Honors Building

Ames, Iowa 50011-1150

Phone: 515-294-0172

FAX: 515-294-2970

lmerrick@iastate.edu

JESSICA MOON

Director

University Honors Program

University of Northern Iowa

2401 College St.

Cedar Fall, Iowa 50614-0355

Phone: 319-273-3175

FAX 319-273-4319

jessica.moon@uni.edu