

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 how their work contributes to Iowa with state legislators, state officials, and the public.

1-Rachel Allen-Holbrook, Iowa City, Iowa
University of Iowa
Health and microfinance: The relationship between the microfinance institution, Mahasemam, and Meenakshi Mission Hospital and Research Centre in Tamil Nadu, India
International Studies, Anthropology
Mentors: Rangaswamy Rajagopal, Edwin Bands
rachel-allen-holbrook@uiowa.edu

2-Neysa Allworth, Wapello, Iowa
University of Northern Iowa
Synthetic investigation into a doubly-linked permethylated cyclopentadienyl ligand
Chemistry
Mentor: Martin Chin
neysa@uni.edu

3-Kira Anderson, Cedar Falls, Iowa
University of Northern Iowa
The effect of two stretching protocols on the reactive strength index in female soccer and rugby players
Physical Education: Sport Psychology, Exercise Science
Mentor: Robin Lund
kira13@uni.edu

4-Lezlie Anderson-Jones, Sioux Falls, South Dakota
University of Northern Iowa
The signal transduction pathway for the dopamine D1A receptor in transfected human embryonic kidney cells
Biology
Mentor: Carl Thurman
mspearl@uni.edu

5-Aaron Andrews, Center Point, Iowa
Iowa State University
Does swine manure impact soil health?
Agricultural Systems Technology
Mentor: Matthew Helmers
andrews1@iastate.edu

6-James Ankrum, Eldora, Iowa
University of Iowa
A pilot study of the effect of a task loading simulator on the muscular response of operators in vibration environments
Biomedical Engineering
Mentor: David Wilder
james-ankrum@uiowa.edu

7-Andrew Ansorge, Storm Lake, Iowa
Iowa State University
Coherence of rainfall propagation as simulated by Weather Research and Forecasting Model using two different convective schemes
Meteorology
Mentors: Adam Clark, James Correia Jr.
ajsorge@iastate.edu

8-Andrea Austin, Vinton, Iowa
University of Northern Iowa
Cell cycle analysis of atrazine-treated human cells using flow cytometry
Biology: Biomedical
Mentor: Kavita Dhanwada
austin21@uni.edu

56-Laura Vonnahme, Dubuque, Iowa
University of Iowa
Geranylgeranyl pyrophosphate depletion alters mRNA levels of small GPTases in multiple myeloma cells
Biology, Spanish
Mentor: Raymond Hohl
laura-vonnahme@uiowa.edu

57-Lisa Wasko, Urbandale, Iowa
Iowa State University
Vineyard management practices influence grape berry properties among cultivars
Biology, Horticulture
Mentor: Gail Nonnecke
lwasko@iastate.edu

58-Catherine Whiting, Waterloo, Iowa
University of Iowa
VLA imaging of Cygnus X-3 jets at 8.5 GHz
Physics, Astronomy
Mentor: Steven Spangler
catherine-whiting@uiowa.edu

59-Lisa Willman, Bluegrass, Iowa
Iowa State University
Urban overflow: The gentrification of a prominent Denver neighborhood
Architecture, Psychology, Spanish
Mentor: Mikesch Muecke
lisaanne@iastate.edu

60-Alyson Young, Libertyville, Iowa
Iowa State University
Identifying mismatches between software engineering artifacts using concern models
Computer Engineering
Mentor: Hridesh Rajan
ayoung11@iastate.edu

43-Esperanza Pintor, Des Moines, Iowa
University of Northern Iowa
*Discrimination against migrant workers under
guest-worker programs: Lessons from the Bracero
Program*
Sociology
Mentor: Gabrielle Kuenzli
espintor@uni.edu

44-Jessica Reese, Des Moines, Iowa
Iowa State University
*Nitrate concentrations in ground water beneath
riparian buffers in central Iowa*
Meteorology
Mentor: William Simpkins
jreese@iastate.edu

45-Daniel Rhodes, Marion, Iowa
University of Northern Iowa
*Student perceptions of Facebook as communication
tool: A quantitative analysis*
Communications
Mentor: Roberta Davilla
darhodes@uni.edu

46-Brett Roberts, Carroll, Iowa
University of Iowa
Iowa Civic Analysis Network (I-CAN)
Journalism, Political Science
Mentor: Tom Rice
brett-roberts@uiowa.edu

47-Stephen Robinson, Story City, Iowa
Iowa State University
*Genetic relationships between Nicaraguan and
North American freshwater mussels (Bivalvia:
Unionidae)*
Biochemistry
Mentors: Kevin Roe, Jeanne Serb
srobins@iastate.edu

48-Allison Rockwell, Urbandale, Iowa
University of Iowa
Research in Russia: Studying adolescent motivation
English, Russian
Mentor: Laurie Croft
allison-rockwell@uiowa.edu

49-Mark Rosmann, Harlan, Iowa
50-Andrea McKern, Ames, Iowa
Iowa State University
*Evaluation of organic pest management treatments for
Bean Leaf Beetle*
Agronomy / Liberal Studies
Mentor: Kathleen Delate
bobbrkr@iastate.edu, acmckern@iastate.edu

51-Lindsay Sandersfeld, Solon, Iowa
University of Northern Iowa
*A novel method to reduce phosphorus pollution in Iowa
waters*
Biology
Mentor: Ed Brown
lindsays@uni.edu

52-Katherine Serrano, Bettendorf, Iowa
University of Iowa
*High cholesterol and oxidative stress are potential
therapeutic targets to slow the progression of aortic valve
stenosis*
Biomedical Engineering
Mentors: Jordan Miller, Donald Heistad
kristine-serrano@uiowa.edu

53-Erica Spies, Muscatine, Iowa
University of Northern Iowa
*Father-son bonding: The influence of paternal relation-
ships on college males' sexual behavior and values*
Family Services
Mentor: Gary Gute
espies@uni.edu

54-Grant Thompson, Des Moines, Iowa
Iowa State University
Digital Art on Campus project
Horticulture, Landscape Architecture
Mentor: Allison Sheridan
glthomp@iastate.edu

55-Andrea VanWaardhuizen, Waterloo, Iowa
University of Northern Iowa
*Effects performing authentic research has on secondary
science teachers' classroom practices*
Chemistry Teaching, Biochemistry
Mentor: Dawn Del Carlo
andrea@uni.edu

9-Scott Barron, Vinton, Iowa
University of Northern Iowa
*Testing molecular diversity with morphology: A
morphometric and meristic analysis of the Rosyface
Shiner species complex*
Biology
Mentor: Peter Berendzen
smb2@uni.edu

10-Karin Brandt, Ute, Iowa
Iowa State University
*Sustainability through community participation in
development projects: Education, health, and in
northern agriculture Ghana*
Political Science, International Studies
Mentor: Robert Mazur
klbrandt@iastate.edu

11-Andrea Butson, Hampton, Iowa
Iowa State University
Illuminated manuscript
Graphic Design
Mentors: Cheri Ure, Paula Curran
albutson@iastate.edu

12-Robert Cunningham, Waverly, Iowa
University of Northern Iowa
*Thermal stability of covalently bound hydrocarbon
monolayers on porous silicon*
Chemistry, Biology
Mentor: Shoshanna Coon
robby22@uni.edu

13-Kelly Delmonico, Lakeville, Minnesota
Iowa State University
*Social programs and the needy: Is allocation
equitable in Iowa?*
Community and Regional Planning
Mentor: Monica Haddad
kmd8185@iastate.edu

14-Bancha Dounggratanaex-chai, Chumphon,
Thailand
Iowa State University
Endoscopy Multimedia Information System
Computer Science
Mentors: Johnny Wong, Wallapak Tavanapong
bancha@iastate.edu

15-Shana Drahn, Cedar Rapids, Iowa
University of Iowa
*International development: Microfinance for
women-run enterprises*
International Studies
Mentor: Rangaswamy Rajagopal
shana-drahn@uiowa.edu

16-Katherine Edwards, Fountain Hills, Arizona
Iowa State University
Nutrient recycling in biorefinery systems
Agricultural and Biosystems Engineering
Mentors: Robert Anex, Albert Bennett
kaedward@iastate.edu

17-Lee Falkena, Tabor, Iowa
University of Iowa
*Origin of Pb isotope variations on Fe-Mn crusts
from the Izu-Bonin forearc*
Geoscience, Religious Studies
Mentor: David Peate
lee-falkena@uiowa.edu

18-John Fordyce, Aurelia, Iowa
University of Northern Iowa
*Predictors of law school performance in the first
year*
Economics
Mentor: Lisa Jepsen
jfordyce@uni.edu

19-Eric Fritz, Ackley, Iowa
Iowa State University
*The Animal QTLdb, a computer database that helps
researchers catalog genetic regions important to
livestock production.*
Animal Science
Mentor: James Reecy
erfvvet@iastate.edu

20-Alexandra Frost, Cedar Falls, Iowa
University of Northern Iowa
Descriptive epidemiology of injuries and illnesses at a university wellness and recreation center: 1987 to 2005
Athletic Training
Mentor: Thomas Dompier
frosty@uni.edu

21-Adam Heiniger, Oakville, Iowa
University of Iowa
Modelling the slowing of light by quantum wells
Physics, Mathematics
Mentor: John Prinea
adam-heiniger@uiowa.edu

22-Laura Hirschey, Medford, New Jersey
University of Iowa
Iowa Honors Wind Quintet
Music
Mentor: Benjamin Coelho
laura-hirschey@uiowa.edu

23-Sarah Huffer, Austin, Minnesota
University of Northern Iowa
Meeting the needs of adolescent females in physical education
Physical Education
Mentor: Cynthia Herndon
huff35@uni.edu

24-Jon Humston, Iowa City, Iowa
University of Northern Iowa
The role social factors play in undergraduate research experiences
Chemistry Teaching
Mentor: Dawn Del Carlo
jonhum@uni.edu

25-Courtney Ihde, Farmersburg, Iowa
University of Northern Iowa
Thomas Jefferson's biographers: Historiography and Sally Hemings
History
Mentor: John Johnson
cihde@uni.edu

26-Haley Kemp, Bloomington, Illinois
University of Iowa
Same-different learning in humans and pigeons
Psychology
Mentor: Edward Wasserman
haley-kemp@uiowa.edu

27-Michael Loux, Sac City, Iowa
University of Northern Iowa
Quartz grain surface textures as indicators of infilling processes and depositional environments associated with ice-wedge casts in northeast Iowa
Applied Mathematics
Mentor: James Walters
mloux@uni.edu

28-Jessica Maves, Iowa City, Iowa
Iowa State University
The radicalization of Muslims in the United Kingdom
Political Science, International Studies
Mentor: Jeffrey Schroeder
jamaves@iastate.edu

29-Matthew Morrill, Des Moines, Iowa
Iowa State University
Snake habitat use in an Iowan wetland community
Zoology
Mentors: Anne Bronikowski, Eugenia Farrar
angmar@iastate.edu

30-John Morrison, Iowa City, Iowa
University of Iowa
Dynamic quantification of cell motility in the scratch wound healing assay
Biomedical Engineering
Mentor: Michael Mackey
john-morrison@uiowa.edu

31-Latisha Myers, Ames, Iowa
University of Iowa
Responses of children with attention deficit hyperactivity disorder (ADHD) to a medical procedure
Mentor: Ann Marie McCarthy
latisha-myers@uiowa.edu

32-Tom Niblock, Nevada, Iowa
University of Iowa
The impact of HIV/AIDS in Africa on labor productivity and income levels
Economics, Religious Studies
Mentor: Beth Ingram
thomas-niblock@uiowa.edu

33-Scott Nichols, Clive, Iowa
University of Iowa
Using galE Escherichia coli to understand increased virulence of "smooth" bacteria
Biochemistry
Mentor: Theresa Gioannini
scott-nichols@uiowa.edu

34-Sarah Nichols, Grand Mound, Iowa
University of Northern Iowa
Foreign devil, devil incarnate: Demonizing the other in medieval Europe
Art: History Emphasis
Mentor: Charles Adelman
muses9@uni.edu

35-Chad Niederhuth, Stockport, Iowa
Iowa State University
Subcellular targeting of Agrobacterium tumefaciens T-DNA in the plant cell
Agronomy
Mentors: Kan Wang, Francois Tournay
chadn@iastate.edu

36-Angela Ott, Clear Lake, Iowa
University of Northern Iowa
Język: Attitudes towards language in Poland
Anthropology
Mentor: Cyndi Dunn
aott@uni.edu

37-Kevin Owens, Cedar Rapids, Iowa
University of Iowa
Perceived discrimination among single-race and biracial adults
Sociology, Economics
Mentor: Mary Campbell
kevin-owens@uiowa.edu

38-Joshua Parcel, Washta, Iowa
Iowa State University
The effectiveness of conservations practices on water quality: a state-level analysis at the watershed scale
Accounting, Economics
Mentor: Hongli Hennessy
joshp@iastate.edu

39-Mike Park, Pusan, South Korea
University of Iowa
Best schools for athletes
Sociology, Health and Sport Studies
Mentor: Christopher Kelley
christopher-p-kelley@uiowa.edu

40-Lori Pedersen, Bettendorf, Iowa
University of Northern Iowa
Who is an American?
Social Work
Mentor: Laura Praglin
pedersel@uni.edu

41-Alicia Persaud, Amana, Iowa
University of Iowa
In the name of the nation: Contextualizing the Narmada Valley Development Project: Gandhi, Nehru and contradictory nationalisms
Anthropology, Women's Studies
Mentors: Rudi Colloredo-Mansfeld, Meena Khandelwal
alicia-persaud@uiowa.edu

42-Michael Petrie, Dixon, Illinois
University of Iowa
Real-time degradation-based prognostic methodology for improving reliability and maintenance logistics
Biomedical Engineering
Mentor: Geb Thomas
michael-petrie@uiowa.edu

IOWA REGENTS' UNIVERSITIES
HONORS PROGRAM CONTACTS:

ROBERT KIRBY

Director
Iowa Center for Research by Undergraduates
Associate Director
University Honors Program
The University of Iowa
443 Blank Honors Center
Iowa City, IA 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, IA 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 Falls, IA 50614-0355
Phone: 319.273.3175
FAX: 319.273.4319
jessica.moon@uni.edu

Research in the Capitol

March 5, 2007

Poster Display
10:00 a.m. – 2:00 p.m.

Remarks
10:30 a.m. – 10:45 a.m.

MICHAEL GARTNER
President, Board of Regents, State of Iowa

RICHARD HICHWA
Associate Vice President for Research
University of Iowa

JOEL HAACK
Dean of the College of Natural Sciences,
University of Northern Iowa

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



IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY