



Spring
Undergraduate
Research Forum

April 5, 2008

Celebrating
Undergraduate
Research
at
The University of Iowa



Spring Undergraduate Research Forum Schedule

April 5, 2008

Poster Display 11:00 AM–1:30 PM

Welcome and Opening Remarks 11:00 AM

ROBERT KIRBY

Director, Iowa Center for Research by
Undergraduates

SALLY MASON

President

TOM ROCKLIN

Vice Provost

**Excellence in Undergraduate
Research Awards Presentation** 11:15PM

RICHARD HICHWA

Associate Vice President for Research
Development for Biological, Mathematical and Physical Science

Poster Awards Presentation 12:30PM

ROBERT KIRBY

Director, Iowa Center for Research by
Undergraduates

PRESENTERS

ARTS AND HUMANITIES

*Natalie Adams - AH 1

Constructing a Modern Performing Edition from an Original Work by François-René Gebauer (1773-1845)

Major: Music

Mentor: Jeffrey Agrell, Music

Melinda Brocka - AH 2

Modernizing the Historic: Exploring Green Preservation Techniques

Major: Art History

Mentor: Barbara Mooney, Art and Art History

Christina McClelland - AH 3

Promoting Iowa Artists Using the Web: The Daily Palette

Major: Art

Mentor: Jon Winet, Art and Art History

MATHEMATICS AND ENGINEERING

Jason Fries - ME 4

Mobile Sensor Instrumentation of Contact Graphs for Epidemiological Models

Majors: Computer Science, English

Mentor: Ted Herman, Computer Science

Austin Peiffer - ME 5

Musical Composition and Mathematics: The Geometry of Musical Events

Majors: Music, Mathematics

Mentor: Dennis Roseman, Mathematics

Peter Pellegrino - ME 6

Automated Lesion Segmentation Using Bayesian Classification

Major: Biomedical Engineering

Mentor: Vincent Magnotta, Radiology

*Stacy Sommerfeld - ME 7

Formulation and Optimization of an Aerosol Containing a Bacterial-Killing Enzyme

Major: Chemical Engineering

Mentor: Jennifer Fiegel, Pharmaceuticals & Chemical Engineering

NATURAL SCIENCES

Jason Allen - NS 8

Reduced Brain pH Causes Fear and Heightens Anxiety by Activating pH Sensitive Molecules

Majors: Integrative Physiology

Mentor: John Wemmie, Psychiatry

Adam Althaus - NS 9

Microglial Response to Apoptosis

Major: Biology

Mentor: Michael Dailey, Biology

Jean Caligiuri - NS 10

Use of Artificial Nests by Cavity-nesting Bees in Eastern Iowa Prairies

Majors: Physiology, Biology, Environmental Science

Mentor: Stephen Hendrix, Biology

PRESENTERS

Rebecca Coe - NS 11

Error Monitoring and Obstructive Sleep Apnea Syndrome

Majors: Biochemistry, Music

Mentor: Erik St. Louis, Neurology

John Froehlig Jr. - NS 12

Effects of Potassium Chloride on Thermal Stability of Calmodulin

Major: Biochemistry

Mentor: Madeline Shea, Biochemistry

Tyler Gunn - NS 13

Spatial Variability of Aerosol Particulate in Concentrated Animal Feeding Operations

Major: Chemical Engineering

Mentor: Thomas M. Peters, Occupational and Environmental Health

Atulya Iyengar - NS 14

Imaginal Odor Exposure Affects Olfactory Receptor Neuron (ab2A) Odor Coding in Drosophila Melanogaster

Majors: Biomedical Engineering, Biology

Mentor: Chun-Fang Wu, Biology

Kelly Johnson - NS 15

The Use of X-Ray Films Today To Predict the Success of Surgeries From 1930-1940: A Look at Transurethral Prostatectomy

Majors: Theatre Arts

Mentor: Charles Hawtreay, Urology

*Alexandra Keenan - NS 16

Identification and Characterization of Vaccine Candidates for Visceral Leishmaniasis

Majors: Biomedical Engineering, Biochemistry, International Studies

Mentor: Mary Wilson, Internal Medicine

Ting-I (Ann) Lee - NS 17

Effect of RGS6 Expression on CCK-A and TNF α Stimulation of NF κ B in Ar42J Pancreatic Acinar Cells

Majors: Biochemistry

Mentor: Rory A. Fisher, Pharmacology

Francisco Lovan - NS 18

p53-Dependent and -Independent Roles of Tumor Suppressor DDB2 in Tumorigenesis

Major: Biology

Mentor: Toshiki Itoh, Pathology

Brandon Menke - NS 19

Eicosanoid Metabolism Affects Adipogenesis Through PPAR- γ

Majors: Biochemistry, Biology

Mentor: Andrew Norris, Pediatrics

Robert Null - NS 20

Gain - TEM Mode Matching in an External Laser Cavity

Majors: Physics, Biochemistry

Mentor: John Prineas, Physics and Astronomy

Michelle Potts - NS 21

Particle Physics Research using Geant4

Majors: Electrical Engineering, Physics

Mentor: Yasar Onel, Physics and Astronomy

Michael Schulz - NS 22

Fabrication and Use of PDMS Thimbles in Green Chemistry

Major: Chemistry

Mentor: Ned B. Bowden, Chemistry

PRESENTERS

Mark Smalley - NS 23

Wavelength Dependence of Mineral Dust Light Scattering

Majors: Physics, Astronomy

Mentor: Paul Kleiber, Physics and Astronomy

Allison Smith - NS 24

The Feasibility of Tracking the Patella with Surface Markers

Major: Biomedical Engineering

Mentors: John Albright and H. John Yack, Physical Therapy

Samantha Watkins - NS 25

Mechanisms of Contraction-Induced Injury in Muscular Dystrophy

Majors: Chemical & Biochemical Engineering

Mentor: Kevin Campbell, Molecular Physiology & Biophysics

Ryan Whitaker - NS 26

Optimization of Cell Internalization Assays for RNA Aptamers Derived by Cell Based SELEX

Major: Chemical Engineering

Mentor: Paloma Giangrande, Internal Medicine

SOCIAL SCIENCES

Chelsea Georgesen - SS 27

Defining Terrorism Globally

Majors: International Studies, Spanish

Mentor: Brian Lai, Political Science

Emily Georgia - SS 28

Understanding the Link Between Premarital Cohabitation and Subsequent Marital Distress: Significance of Decision to Cohabit

Major: Psychology

Mentor: Erika Lawrence, Psychology

Ryan Gerling - SS 29

Academic Acceleration: Current Practices and a Policy Template

Majors: History, Secondary Education Certification

Mentor: David Lohman, Psychological & Quantitative Foundations

Philip Kennedy - SS 30

Conditional Same-Different Discrimination in Pigeons

Majors: Psychology, Anthropology

Mentor: Ed Wasserman, Psychology

Whitney Lester - SS 31

Agreement Between Maternal Ratings and Self-Ratings of Adolescent Personality and Behavior

Major: Psychology

Mentors: Don Fowles & Lee Anna Clark, Psychology

Ashley Leyda - SS 32

Sex Offender Recidivism in Minnesota and the Importance of Law and News Coverage

Major: Sociology

Mentor: Robert Baller, Sociology

Megan Mathews - SS 33

How Hard is it to Learn Words?: A Statistical Learning Paradigm for Language Acquisition

Majors: Psychology, Art

Mentors: Bob McMurray & Larissa Samuelson, Psychology

Erika Mekies - SS 34

Sentence Shaper: Its Effects on Grammaticality in Non-Fluent Aphasia

Major: Speech & Hearing Science

Mentor: Jean K. Gordon, Communication Sciences and Disorders

PRESENTERS

Jennifer Merickel - SS 35

Facilitatory Effects of Lexical Neighborhood Competition

Majors: German, Linguistics

Mentor: Bob McMurray, Psychology

Kayla Resnick - SS 36

Mill Creek Archaeological Artifact Analysis

Major: Anthropology

Mentor: Steve Lensink, Anthropology

Patrick Romani - SS 37

Volition and the Personality Structure of Alcohol Outcome Expectancies

Major: Psychology

Mentor: Lee Anna Clark, Psychology

Ashlee Swinton - SS 38

Family Structure, Poverty, and Mental Health: An Analysis of the Relationships

Majors: Psychology, Sociology

Mentors: Mary Campbell & Mary Noonan, Sociology

*Danielle Theriault - SS 39

Clinical Utility of RBANS on Assessing Cognitive Deficits in HD Participants

Major: Psychology

Mentor: Kevin Duff, Psychiatry

Joseph Thorngren - SS 40

The United States Health Care Epidemic: Past, Present, Future

Majors: Political Science, Sociology

Mentor: Robert Baller, Sociology

Tana Truelove - SS 41

Task Boundaries Effect Implicit Learning

Major: Psychology

Mentor: Eliot Hazeltine, Psychology

Ann Twohig - SS 42

The Effects of Botulinum Toxin and Vowel Duration on Tremor Severity Rating

Majors: Speech and Hearing Science, Psychology

Mentor: Eileen Finnegan, Communication Sciences and Disorders

* Denotes Excellence in Undergraduate Research Award Recipients

Iowa Center for Research by Undergraduates

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.

www.uiowa.edu/icru

