

RECOGNITION

2007 College of Science and Engineering Denise M. McGuire Student Research Award

Prize Winners

Biological Sciences

Meghan McGee, Biological Effects of Endocrine Disrupting Chemicals on Fathead Minnow Reproductive Endpoints. Faculty Sponsor: Heiko Schoenfuss

Emily Messner, The Effects of WHI-P131 on T-Cell Function and Cytokine Secretion. Faculty Sponsor: Marina Cetkovic-Cvrlje

Fei Tsan, Does WHI-P131, an Inhibitor of Janus Tyrosine Kinase 3 (JAK3), Affect Mitogen-Induced T-Cell Proliferation in Vitro. Faculty Sponsor: Marina Cetkovic-Cvrlje

Chemistry

Koshali Fernando, Synthesis and Characterization of Vanadium Complexes with Potential Insulin Mimicking Properties. Faculty Sponsor: Mohammad Mahroof-Tahir

Rainer Grant, Expression, Purification, and Characterization of Two Human Aldehyde Dehydrogenases (ALDH3A1 & ALDH9A1). Faculty Sponsor: Lakshmaiah Sreerama

Aaron Gross, Synthesis of Ethylene Glycol Ether Aldehydes and Their Enzymatic Oxidation by Human Aldehyde Dehydrogenases. Faculty Sponsor: Lakshmaiah Sreerama

Faith Kabata, Antioxidant Studies of Antidiabetic Vanadium-Flavonoid Compounds. Faculty Sponsor: Mohammad Mahroof-Tahir

Elizabeth Krekelberg, Interaction of Ruthenium Complexes with DNA. Faculty Sponsor: Mohammad Mahroof-Tahir

Austin Pitcher, Cloning, Purification and Characterization of Human Aldehyde Dehydrogenase 7A1 and Its Ability to Catalyze the Detoxification of Certain Chemotherapeutics. Faculty Sponsor: Lakshmaiah Sreerama

Electrical and Computer Engineering

Josh Boesche, Justin Ficker & Joe Idziorek, Vulcan: Unattended Ground Vehicle. Faculty Sponsor: Mark Petzold

Andrew Nere, David Busacker & Tim Guertin, Wireless Restaurant System. Faculty Sponsor: Michael Glazos

Environmental and Technological Studies

Jacob Galzki, Investigation of Feedlot Contribution to Coliform Contamination in the Sauk River. Faculty Sponsor: Mitch Bender

Dan Nadeau, Analysis of Shoreline Soil along the Sauk River. Faculty Sponsor: Mitch Bender

Brian Sanoski, Geographical Information Systems (GIS) Study of Getchell Creek Watershed. Faculty Sponsor: Mitch Bender

Physics, Astronomy and Engineering Services

Tom Pundsack & Brandon Smith, Time-of-Flight Charge Mobility Measurements in Organic Semiconductors. Faculty Sponsor: Russell Lidberg

Honorable Mention

Chemistry

Raj Bhandari, Combining Principle Component Analysis and Self Modeling of Simple Fluorescence Mixtures: An Analytical Approach to Resolving Chemical Mixtures with No Prior Separation. Faculty Sponsor: Michael Dvorak

Todd Hoffman, Cloning, Purification and Characterization of Human Aldehyde Dehydrogenase ALDH5A1 and Its Ability to Catalyze Detoxification of Certain Chemotherapeutics and Environmental Contaminants. Faculty Sponsor: Lakshmaiah Sreerama

Graig Legatt, Insulin Mimetic Properties of Vanadium-Flavonoid Complexes. Faculty Sponsor: Lakshmaiah Sreerama

Environmental and Technological Studies

Todd Anderson, Riparian Property Owner Knowledge and Attitude Toward Environmental Regulation. Faculty Sponsor: Mitch Bender

Matt Lenz, Analysis of Nutrient Loading in St. Augusta Creek (St. Augusta, Minn.). Faculty Sponsor: Charles Rose

Physics, Astronomy and Engineering Services

Stephen Horvat & Josh Swanson, Degeneracy Pressure in a Quark-Gluon Plasma. Faculty Sponsor: Kevin Haglin

Participation

Biological Sciences

Brooke Jacobson, Comparing C-Star Performance in Two Species of Mullet in the Hawaiian Islands. Faculty Sponsor: Heiko Schoenfuss

Chemistry

David Petersen, Teratogenic Effects of Ethylene Glycol Ethers on *Xenopus Laevis* Development and Role of Aldehyde Dehydrogenases in Determining Teratogenicity. Faculty Sponsor: Lakshmaiah Sreerama

Electrical and Computer Engineering

Matt Eiden, Cory Frank & Taimour Ahmed, Weather Monitoring System with Wireless Capability (WMS). Faculty Sponsor: Mark Petzold

Mechanical and Manufacturing Engineering

Maria Melsha, DDG 1000 Program: MK57 Vertical Launch System Composite Void Study. Faculty Sponsor: Kenneth Miller

2007 St. Cloud State University Student Research Colloquium Poster Awards

Prize Winners

Best Poster (\$500 award)

Vulcan: Unattended Ground Vehicle

Presenters: Joseph Idziorek, Justin Ficker, Josh Boesche; Sponsor: Mark Petzold, Electrical and Computer Engineering

Honorable Mention (\$250 award)

Implementing Management Practices to Restore Native Vegetation at Minnesota Military Training Sites

Presenters: Joseph Carlyon & Joe Eisterhold; Sponsor: Jorge Arriagada, Biological Sciences

Investigation of Feedlot Contribution to Coliform Contamination in the Sauk River

Presenter: Jacob Galzki; Sponsor: Mitch Bender, Environmental and Technological Studies

Photochemistry of 2-Biphenylisocyanate

Presenter: Jon Schwenzfeier; Sponsor: Daniel Gregory, Chemistry

Semifinalists (in no particular order)

Charge Carrier Mobilities of Semiconductor Materials Determined Through Time-of-Flight Measurements

Presenters: Thomas Pundsack, Brandon Smith, Neale Haugen; Sponsor: Russell Lidberg, Physics, Astronomy and Engineering Science

Effect of WHI-P131 on Mixed Lymphocyte Reaction (MLR)

Presenters: Emily Messner, Gargi Dayama & Joseph Hobbs; Sponsor: Marina Cetkovic-Cvrlje, Biological Sciences

Remote Perimeter Access via Wireless Fingerprint Identification

Presenters: Brandon Smith, Adam Schulz & Matthew Plautz; Sponsor: Ratchaneekorn Thamvichai, Electrical and Computer Engineering

Irradiation Patterning of Co/Cu/Co GMR Layers for Use in Magnetic Random Access Memory

Presenter: Brandon Smith; Sponsor: Timothy Vogt, Electrical and Computer Engineering

Feeding Biomechanics of Silvery Minnow Fishes

Presenter: Amir Saleh; Sponsor: Heiko Schoenfuss, Biological Sciences

Salivary Testosterone and Cortisol Levels in Female Rugby Players

Presenter: Jennifer Triemstra; Sponsor: Maureen Tubbiola, Biological Sciences

2007 College of Science and Engineering Faculty Research Award

Associate Professor Heiko Schoenfuss, Biological Sciences (See p. 28)