Science Division
Summer Research Poster Fair

Friday, October 23, 2015
12:30 pm—3:30 pm
DeVries Hall Atrium
2015 Student Research Conducted in Calvin Science Division Departments
Biology
Chemistry & Biochemistry
Computer Science
Engineering
Geology, Geography & Environmental Studies
Mathematics & Statistics
Nursing
Physics & Astronomy
Psychology

85 students funded (37 women and 48 men) working with
44 Calvin professors on
53 different projects
56% were externally funded by grants from outside of Calvin College
32% were funded by private donors

### Science Division Summer Research 1997-2015

![Graph showing number of students funded from 1997 to 2015.](image)

2015 Student Research Conducted Off-Campus
AbbVie Inc, North Chicago, IL
Au Sable Institute of Environmental Studies, Mancelona, Michigan
Centers for Disease Control and Prevention, Atlanta, Georgia
Helen DeVos Children’s Hospital, Grand Rapids, Michigan
Michigan State University, Lansing, Michigan
Pierce Cedar Creek Institute
University of Chicago, Illinois
University of Georgia
University of Houston, Texas
University of Illinois, College of Medicine at Rockford
University of Michigan, Ann Arbor, Michigan
Van Andel Research Institute, Grand Rapids, Michigan

Refreshments served on Level 3
2015 Science Division Summer Research Program Funding

The DeKock Chemistry Summer Research Fellowship
The Thedford P. Dirkse Summer Research Fellowship
The William H. and Celia I. Dornbush DeVries Family Student Research Fellowship
The Rollin M. Gerstacker Foundation Student Research Fellowship
The Jansma Family Research Fund in the Sciences and Business
The Jack and Lois Kuipers Applied Mathematics Endowment
Fritz and Carol Rottman Student Research Fellowship
Luke and Pauline Schaap Summer Research Fellowship
The Clarence (Bud) Star and Arlene Talen Star Student Research Fellowship
The John Van Zytveld Summer Student Research Fellowship
Hubert A. Vander Plas Memorial Student Research Fellowship
The Dr. Daniel J. Visser Student Research Fellowship in the Medical Sciences
Ken and Marcia Wierda Summer Research Fellowship
The Enno Wolthuis Summer Student Research Fellowship
Thomas and Bonnie Juett and Gladys and Ruth Wierenga Biology Department
Brummel Chair
Calvin Alumni Association
Chemistry Pfizer Fellowship
Meijer Chair
Program for Sustainability Engineering: gift from Joel and Linda Zylstra
Science Division
Arnold and Mabel Beckman Scholars Program
The Camille and Henry Dreyfus Foundation
Grand Valley State University
Hanes Foundation
Land Conservancy of West Michigan
Michigan Colleges Foundation
Michigan Department of Environmental Quality
Michigan Space Grant Consortium (MSGC)
National Institutes of Health (NIH)
National Science Foundation (NSF)
Robert Wood Johnson Foundation
Toyota
U.S. Environmental Protection Agency (EPA)
U.S. Fish & Wildlife
## Science Division Students Presenting Posters and their Locations

Numbering system:
1-12 indicates Level 1, poster 12; 2-3 indicates Level 2, poster 3, etc. S1 refers to the stairwell between Levels 0 and 1, S2 to the stairwell between Levels 1 and 2, and S3 to the stairwell between Levels 2 and 3

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<td>Alexander, Cara</td>
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<td>Bouma, David</td>
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</tbody>
</table>
(Level Zero)

0-1. Author: Alexis Bonnema
Title: Development of Solar Simulator System with High-Power Multi-Array LEDs
Advisor: Professor Yoon G. Kim, Engineering
Support: Program for Sustainability Engineering

0-2. Authors: David Dadzie, Alexis Bonnema
Title: Development of Constant-Current DC-DC Converter Modules for High-Power LEDs
Advisor: Professor Yoon G. Kim, Engineering
Support: Program for Sustainability Engineering

0-3. Author: Ha Ram (David) Kang
Title: Green Roof: Impact and Sustainability
Advisors: Professors Aubrey Sykes and Matthew Kuperus Heun, Engineering
Support: Program for Sustainability Engineering

0-4. Author: Curtis Kortman
Title: Building Energy Efficiency Meets Internet of Things
Advisor: Professor Matthew Kuperus Heun, Engineering
Support: Program for Sustainability Engineering

0-5. Author: Andrew Twining
Title: Simulation and Modeling of LED Characteristics in a Solar Simulator
Advisor: Professor Mark Michmerhuizen, Engineering
Support: Program for Sustainability Engineering

0-6. Authors: Jacob Milhorn, Vincent Robedatti
Title: Road Tests of the Acoustic Loads on the Back Panel of a Pickup Truck
Advisor: Professor Richard DeJong, Engineering
Support: Toyota

0-7. Authors: Vincent Rovedatti, Jacob Milhorn
Title: Vehicle Wind Noise Measurements in a Wind Tunnel with a Contoured Top Profile
Advisor: Professor Richard DeJong, Engineering
Support: Toyota

0-8. Author: Jake Hall
Title: BKM120 (Buparlisib) induces apoptosis in medulloblastoma through the inhibition of the PI3K signalling pathway and prevention of cell proliferation
Advisors: Giselle L. Saulnier Sholler M.D., Ping Zhao, Ph.D.
Location: Helen DeVos Children's Hospital, Grand Rapids, MI

0-9. Author: Marko Ivancich
Title: Mechanism of Action of Oligonucleotides Homologous to the Telomere Overhang and Development of a Nano-Delivery Vehicle for Melanoma to Increase its Efficacy
Advisor: Dr. Neelu Puri, PhD
Location: University of Illinois College of Medicine at Rockford
Support: SMaRT (Summer Medical Research Training)
0-10. Author: Nicole Joseph  
Title: MET Signaling in Triple Negative Breast Cancer  
Advisors: Carrie Graveel, Elizabeth Tovar  
Location: Van Andel Research Institute, Grand Rapids, Michigan  
Support: Van Andel Research Institute, Grand Rapids, Michigan

0-11. Author: Lauren Anderson  
Title: Cancer Curriculum Initiative  
Advisor: Professor Amy Wilstermann, Biology  
Support: Thomas and Bonnie Juett and Gladys and Ruth Wierenga

0-12. Author: Matthew Schepers  
Title: Mitigating the Negative Effects of Road Noise on Songbird Abundance With Conspecific Playback  
Advisor: Professor Darren Proppe, Biology  
Support: Jansma Family Research Fund in the Sciences and Business

0-13. Author: Alexandra Kuipers  
Title: Evaluating Change in Hip and Hind Limb Form and Function to Assess Evolution of Swimming Mode in Early Cetaceans  
Advisor: Professor Ryan M. Bebej, Biology  
Support: Science Division

0-14. Author: Brianna M. Busscher  
Title: Characterizing Commas: Discovery and exploration of a novel family of pleomorphic Rhizobiales bacteria isolated from herbivorous ants  
Advisor: Professor John T. Wertz, Biology  
Support: National Science Foundation (NSF)

0-15. Author: Garrett Bazany  
Title: Investigating the role of dimethyl fumarate in activating Nrf2 pathway associated genes and in the survival of motor neurons following MeHg-toxicity  
Advisor: Dr. William D. Atchison  
Location: Michigan State University  
Support: National Science Foundation (NSF) and ENDURE

0-16. Authors: David Bouma, Alaina Mahn, Jenna Van Bruggen  
Title: Great Lakes Restoration Initiative: Reassessment of Wildlife Reproduction and Health Impairments in the Saginaw Bay and River Raisin Areas of Concern and Grand Traverse Bay  
Advisor: Professor Keith A. Grasman, Biology  
Support: US Fish and Wildlife Service, William H. and Celia I. Dornbush DeVries Family Student Research Fellowship, Clarence (Bud) Star and Arlene Talen Star Student Research Fellowship

0-17. Author: Stephan Buiter  
Title: Profilin and its effects on cytokinesis in fission yeast  
Advisor: Dr. David R. Kovar  
Location: University of Chicago, Illinois  
Support: National Science Foundation (NSF-REU)

0-18. Authors: Kara Smit, Phil Tubergen  
Title: Influence of Autumn Olive on Plant Community and Soil Composition  
Advisors: David Dornbos, PhD, Biology, Calvin College; Sara Syswerda, PhD  
Location: Pierce Cedar Creek Institute  
Support: Undergraduate Research Grant for the Environment (URGE)

(Stairwell Landing between Levels Zero and One)

S1-1. Author: Peter Boersma  
Title: UVB-induced Activation of K+ Channels in Corneal Epithelial Cells Via TNF-R1 and FADD  
Advisors: Professors John Ubels, Biology, and Loren Haarsma, Physics & Astronomy  
Support: Arnold and Mabel Beckman Scholars Program
S1-2. Authors: Courtney D. Glupker, Peter M. Boersma  
Title: Effects of Ba2+ on ultraviolet B –induced activation of K+ channels and apoptotic signaling pathways in corneal epithelial cells  
Advisors: Mark P. Schotanus, Biology, Professors Loren D. Haarsma, Physics & Astronomy, and John L. Ubels, Biology  
Support: National Institutes of Health (NIH)

S1-3. Author: John Leerar  
Title: Effect of UVB radiation on Na+-K+ ATPase in the corneal epithelium  
Advisor: Professor John L. Ubels  
Support: National Institutes of Health (NIH)

S1-4. Author: Matthew Oram  
Title: Wnt signalling increases β-oxidation in adipocytes  
Advisors: Dr. Ormand MacDougald, PhD, Dr. Hiroyuki Mori, M.D., PhD  
Location: University of Michigan, Ann Arbor, Michigan  
Support: Calvin College Biology Department

(Level One)

1-1. Author: Ryan DeGroot  
Title: Hydrologic Modeling of the Effects of Stormwater Runoff in Plaster Creek Watershed  
Advisors: Professors Julie Wildschut and Robert Hoeksema, Engineering  
Support: Michigan Department of Environmental Quality

1-2. Authors: YeaEun Lee, Thuy-Tien Nguyen, Andre Otte  
Title: Tracking Geographic and Taxonomic Sources of Fecal Microbes in Plaster Creek Tributaries  
Advisor: Professor Randall DeJong, Biology  
Support: DeKock Chemistry Summer Research Fellowship, Michigan Department of Environmental Quality

1-3. Authors: Dorthea Leisman and Emily Van Staalduinen  
Title: A Reassessment of the Grand Rapids Region's Flora After 100 Years of Development  
Advisor: Professor Dave Warners, Biology and Dr. Garrett Crow  
Support: Hanes Foundation, Land Conservancy of West Michigan and Calvin College Biology Department

1-4. Author: Leanna DeJong  
Title: Restoring Native Prairie Habitat in a Suburban Campus Landscape  
Advisor: Professor Dave Warners, Biology  
Support: Calvin College Biology Department

1-5. Authors: Leanna DeJong, Micah Warners  
Title: Identifying Effective Strategies for Restoring Native Forest Habitat from Suburban Lawn  
Advisor: Professor Dave Warners, Biology  
Support: Calvin College Biology Department

1-6. Authors: Deanna Geelhoed, Micah Warners  
Title: The Green Team and the Restoration of Plaster Creek  
Advisor: Professor Dave Warners, Biology  
Support: US Environmental Protection Agency (EPA) and the Michigan Colleges Foundation

1-7. Authors: Charlotte Reynolds, Annaka Scheeres  
Title: Geographic Information System (GIS) Development for Plaster Creek Watershed  
Advisor: Professor Jason VanHorn, Geology, Geography & Environmental Studies  
Support: Michigan Department of Environmental Quality

1-8. Authors: Nicole Karl, Erika DeKoekkoek  
Title: Virtues and Character Strengths in Young Adults - What's the Impact?  
Advisor: Professors Julie E. Yonker, Psychology and Brian D. Cawley, Business  
Support: McGregor Summer Research Fellowships in Humanities and Social Sciences
1-9. Author: Bretton M. Hoekwater
   Title: Stigma After Exoneration? How Potential Employers View Those with a Wrongful Conviction
   Advisor: Professor Eric E. Jones, Psychology
   Support: Calvin College Science Division

1-10. Authors: Ye In Oh, Bethany Gorter
   Title: Longitudinal investigation of memory and executive functioning in internationally adopted children
   Advisors: Professors Emily Helder and Marjorie Gunnoe, Psychology
   Support: Calvin College Science Division and Psychology Department

1-11. Authors: Bethany Gorter, Ye In Oh
   Title: The relationship between cognitive inhibition and disinhibited social behaviors in internationally adopted children
   Advisors: Professors Emily Helder and Marjorie Gunnoe, Psychology
   Support: Calvin College Alumni Grant and the Ken and Marcia Wierda Summer Research Fellowship

1-12. Authors: Joshua W. Budi, Hannah E. Burrows, Thomas B. Sokolowski, Dominic K. Wong
   Title: Spatial Distribution and Identification of the Mottled Sculpin (Cottus bairdii) for Stream Quality Analysis in the Manistee River Watershed
   Advisors: Dr. Fred Van Dyke, Dr. Benjamin W. Van Ee
   Location: Au Sable Institute of Environmental Studies, Mancelona, Michigan
   Support: Little River Band of Ottawa Indians

1-13. Author: Kathryin E. Gerber
   Title: Worldwide meta-analysis of relationship between allergenic pollen and climate change
   Advisors: Paul Schramm, Dr. Shubhav Saha, Arie Manangan
   Location: Centers for Disease Control and Prevention, Atlanta, Georgia
   Support: ORISE (Oak Ridge Institute of Science and Education) Fellowship

1-14. Authors: Seth Verkaik, Jared Doezema, Noah Praamsma, Valerie Tan
   Title: Lymphatic Endothelial Cells induce HIV Infection in Resting CD4+ T cells
   Advisor: Professor Anding Shen, Biology
   Support: National Institutes of Health (NIH)

1-15. Authors: Noah Praamsma, Jared Doezema, Valerie Tan, Seth Verkaik
   Title: Culture oxygen levels show no effect on HIV infection of resting CD4+ T cells stimulated by endothelial cells
   Advisor: Professor Anding Shen, Biology
   Support: National Institutes of Health (NIH)

1-16. Authors: Jared Doezema, Noah Praamsma, Valerie Tan, Seth Verkaik
   Title: Kinetics of HIV infection in vitro: An investigation into latent reservoir formation and timing
   Advisor: Professor Anding Shen, Biology
   Support: Grand Valley State University

1-17. Authors: Wesley Dykstra, Dena DeKryger
   Title: Installation of Rain Gardens in the Alger Heights Community
   Advisors: Professor Dave Warners and Mike Ryskamp, Biology
   Support: Michigan Department of Environmental Quality

   (Stairwell Landing between Levels One and Two)

S2-1. Author: Jeremy Brands
   Title: Wildflower Bloom Times at Flat Iron lake Preserve
   Advisor: Professor Dave Warners, Biology
   Support: Fritz and Carol Rottman Student Research Fellowship
(Level Two)

2-1. Author: Karine Rose
Title: Efforts Towards the Synthesis of N-Alkyl 2-Pyridone Containing Isoquinoline Alkaloids
Advisor: Professor Carolyn Anderson, Chemistry & Biochemistry
Support: National Science Foundation (NSF), Calvin College Chemistry Pfizer Fellowship

2-2. Author: Brian Heidmann
Title: Efforts Towards the Synthesis of β- and γ-Amino Acids Containing N-Alkyl Pyridones
Advisor: Professor Carolyn Anderson, Chemistry & Biochemistry
Support: National Science Foundation (NSF)

2-3. Authors: David Zhang, Shamuel Auyeung, Joshua Ruiter
Title: Explorations in the Algebra of Homotopy Operations
Advisor: Professor James Turner, Mathematics & Statistics
Support: Jack and Lois Kuipers Applied Mathematics Endowment

2-4. Author: Andrew Folkerts
Title: Structural studies of cubic and hexagonal phases in lipids
Advisor: Professor Paul E. Harper, Physics & Astronomy
Support: Jack and Lois Kuipers Applied Mathematics Endowment

2-5. Authors: Chris Dilley, Mark Vander Stel, Patrick Crain
Title: TSGL: A Thread-Safe Graphics Library for teaching students about parallel computing
Advisor: Professor Joel Adams, Computer Science
Support: National Science Foundation (NSF)

2-6. Author: Javin Unger
Title: Educational Impacts in Computer Science
Advisor: Professor Serita Nelesen, Computer Science
Support: Jansma Family Research Fund in the Sciences and Business

2-7. Author: Isaac Zylstra
Title: Connecting Scratch and Kinect
Advisor: Professor Victor Norman, Computer Science
Support: Jansma Family Research Fund in the Sciences and Business

2-8. Author: Lydia Cupery
Title: Location Detection and Display in Next Generation 9-1-1 Systems
Advisor: Dr. Stephen Huang
Location: Department of Computer Science, University of Houston, Texas
Support: National Science Foundation (NSF-REU)

2-9. Authors: Conor Reidy, Noah PreFontaine
Title: Microwave Assisted Gold(I)-Catalyzed Rearrangement of N-Propargyloxypyridines
Advisor: Professor Carolyn Anderson, Chemistry & Biochemistry
Support: National Science Foundation (NSF)

2-10. Author: Evan O. Romero
Title: Asymmetric Gold(III)-catalyzed Rearrangement of N-Propargyloxypyridines
Advisor: Professor Carolyn Anderson, Chemistry & Biochemistry
Support: National Science Foundation (NSF)
2-11. Authors: Kayla J. Vander Stel, Abigail N. Leistra  
Title: A Single Molecule Force Spectroscopy Study of the Insulin-G-Quadruplex Interaction  
Advisor: Dr. Daniel J. Visser Student Research Fellowship in the Medical Sciences

2-12. Authors: Lydia J. DeJonge, Nicole L. Michmerhuizen, Margaret Van Winkle, Amanda B. Witte, Kylin K. Hamann  
Title: A Thermodynamic Study of the Interaction between Insulin and Insulin-Linked Polymorphic Region DNA  
Advisor: Professor Kumar Sinniah, Chemistry & Biochemistry  
Support: Rollin M. Gerstacker Foundation Student Research Fellowship

2-13. Author: Joy Christopher  
Title: Uncovering the Role of BASP1 as a Key Regulator of Amino Acid Sensing by mTOR  
Advisor: Dr. Ken Inoki  
Location: University of Michigan Life Sciences Institute, Ann Arbor, MI  
Support: Perrigo Company

2-14. Author: Wentiiirim Annankra  
Title: Initial Structural-Activity Relationship (SAR) Development of Arylcarbamate Series for the Treatment of Neglected Filarial Tropical Diseases  
Advisors: Marc Scanio, PhD; Thomas Van Geldern, PhD; Professor Jeffrey Rohde, PhD; Dale Kempf, PhD  
Location: AbbVie Inc., North Chicago, IL  
Support: Franciscan Institute for World Health (FIWH) & AbbVie Inc.

2-15. Author: Jonathan Lensing  
Title: Conditional Knockdown of Wnt3a Using the CRISPR/Cas9 System  
Advisors: Cassandra Diegel-Zylstra, Dr. Bart Williams  
Location: Van Andel Research Institute, Williams Lab, Grand Rapids, MI  
Support: National Institutes of Health (NIH)

2-16. Author: Megan Van Baren  
Title: When Broken Brakes are a Problem: Developing a TSC Cell-Based Screen for Compound Sensitivity  
Advisors: Dr. Jeff MacKeigan, Kellie Sisson, Matt Kortus  
Location: Van Andel Research Institute, Laboratory of Systems Biology, Grand Rapids, MI  
Support: Van Andel Research Institute

2-17. Authors: Matthew Link, Aaron Abma  
Title: Enabling automated, high-quality phase sensitive detection of quantum well and microcavity polariton spectra  
Advisor: Professor Ryan Balili, Physics & Astronomy  
Support: John Van Zytveld Summer Student Research Fellowship

2-18. Authors: Aaron Abma, Jonathan Shomsky  
Title: Optical Methods for Trapping Atoms and Making Cold Molecules  
Advisor: Professor Matthew Walhout, Physics & Astronomy  
Support: National Science Foundation (NSF) and Calvin College Science Division

2-19. Authors: Zachary Bruce, Peyton Benac  
Title: Crowded Field Photometry of Star Clusters M56 and NGC 6712  
Advisor: Professor Jason Smolinski, Physics & Astronomy  
Support: John Van Zytveld Summer Student Research Fellowship

2-20. Author: Chris Spedden  
Title: Discovery of a Third Body Orbiting the Contact Binary Star System V859 Cyg  
Advisor: Professor Larry Molnar, Physics & Astronomy
2-21. Authors: Cara Alexander, Daniel Van Noord, Chris Spedden  
Title: *Evidence of an Upcoming Stellar Merger and Luminous Red Nova*  
Advisor: Professor Larry Molnar, Physics & Astronomy  
Support: Hubert A. Vander Plas Memorial Student Research Fellowship

2-22. Author: Nathan McReynolds  
Title: *Asteroid Collision Families*  
Advisor: Professor Larry Molnar, Physics & Astronomy  
Support: Michigan Space Grant Consortium and Calvin College Science Division

*(Stairwell Landing between Levels Two and Three)*

S3-1. Authors: Elise Veurink, Rebekah Sytsma, Katie Verwys, Tega Ebeye  
Title: *A review of frequency of mother-daughter sexual communication and sexual risk behavior*  
Advisors: Professors Adjoke Ayoola and Barbara Timmermans, Nursing  
Support: Jansma Family Research Fund in the Sciences and Business, Robert Wood Johnson Foundation

S3-2. Author: Matt Raybaud  
Title: *Dutch Immigration to the United States*  
Advisor: Professor Henk Aay, Geology, Geography & Environmental Studies  
Support: Michigan Space Grant Consortium and Calvin College Science Division

*(Level Three)*

3-1. Author: Susan Hromada  
Title: *Investigation of Tyrosine-Cysteine Crosslinks in a Model Protein*  
Advisor: Professor David E. Benson, Chemistry & Biochemistry  
Support: Arnold and Mabel Beckman Scholars Program

3-2. Authors: Stephen Lander, Kylee Rosette  
Title: *The Role of MET in the Proliferation of Papillary Renal Cell Carcinoma*  
Advisor: Professor Brendan Looyenga, Chemistry & Biochemistry  
Support: National Institutes of Health (NIH)

3-3. Author: Adam Doorn  
Title: *Studying the Interaction between GluT-1 and Hras*  
Advisors: Professors Eric Arnoys, Brendan Looyenga and Larry Louters, Chemistry & Biochemistry  
Support: National Institutes of Health (NIH)

3-4. Author: Jeremy Wodarek  
Title: *The Building of a GluT1 Knockout*  
Advisors: Professors Eric Arnoys, Brendan Looyenga and Larry Louters, Chemistry & Biochemistry  
Support: National Institutes of Health (NIH)

3-4A. Author: Evans Lodge  
Title: *Protective Population Behavior Change in Outbreaks of Emerging Infectious Diseases*  
Advisor: Dr. John Drake, PhD  
Location: Odum School of Ecology, University of Georgia  
Support: National Science Foundation

3-5. Author: Lauren Strohbehn  
Title: *The Correlation of GluT1 Translocation to Lipid Rafts with its Activity*  
Advisor: Professor Larry Louters, Chemistry & Biochemistry  
Support: Ken and Marcia Wierda Summer Research Fellowship

3-6. Author: Johnson Cochran  
Title: *Distribution and Location of Surface GLUT1 by Fractionation*  
Advisor: Professor Larry Louters, Chemistry & Biochemistry  
Support: National Institutes of Health (NIH)
3-7. Author: Leesha Gunnink  
Title: *The Mechanism of Curcumin Inhibition on GluT1*  
Advisor: Professor Larry Louters, Chemistry & Biochemistry  
Support: National Institutes of Health (NIH)

3-8. Authors: Sherrice Zhang  
Title: *The Iodocyclocarbamation Reaction of N- Allyl-N-arylcarbamates and N-Dienymethyl-N-arylcarbamates*  
Advisors: Professors Michael Barbachyn and Ronald Blankespoor, Chemistry & Biochemistry  
Support: Brummel Chair

3-9. Author: Robert Hohlman  
Title: *The Iodocyclocarbamation Reaction of N-Allenymethyl-N-arylcarbamates*  
Advisor: Professor Michael Barbachyn, Chemistry & Biochemistry  
Support: Brummel Chair

3-10. Author: Alex Boomsma  
Title: *The Bromocyclocarbamation and Iodocyclocarbamation Reactions of N- Allyl-N-arylcarbamates and N-Homoallyl-N-arylcarbamates*  
Advisor: Professor Michael Barbachyn, Chemistry & Biochemistry  
Support: Enno Wolthuis Summer Student Research Fellowship

3-11. Author: Tasha Thong  
Title: *Binding Interactions of Copper(I) and Phenanthroline Based Ligands*  
Advisor: Professor Douglas A. Vander Griend, Chemistry & Biochemistry  
Support: National Science Foundation (NSF)

3-12. Authors: Anna Michmerhuizen, Tasha Thong  
Title: *The Binding Interactions of Triazolophane with Halides*  
Advisor: Professor Douglas A. Vander Griend, Chemistry & Biochemistry  
Support: National Science Foundation (NSF)

3-13. Authors: Andrew D. Rylaarsdam, Lucas J. VanLaar  
Title: *Examining Biomolecule Folding by UV/Vis Spectroscopy*  
Advisor: Professor Douglas A. Vander Griend, Chemistry & Biochemistry  
Support: Camille and Henry Dreyfus Foundation

3-14. Author: Lucas J. VanLaar  
Title: *Effective Atomic Size Concept: A Dilemma*  
Advisor: Professor Roger L. DeKock, Chemistry & Biochemistry  
Support: National Science Foundation (NSF) and the Camille and Henry Dreyfus Foundation

3-15. Author: Jared Weidman  
Title: *The Relationship Between Atomic Size, Charge, and Polarizability*  
Advisor: Professor Roger L. DeKock, Chemistry & Biochemistry  
Support: Camille and Henry Dreyfus Foundation

3-16. Authors: Shane Bolhuis, Michael VandenBerg  
Title: *Fluorescent Flora*  
Advisor: Professor Mark Muyskens, Chemistry & Biochemistry  
Support: Thedford P. Dirkse Summer Research Fellowship