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Expo Programs

Expo

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4-11-2014

## 2014 UAB Expo

University of Alabama at Birmingham

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The logo features the text "2014 EXPO" in a bold, yellow, sans-serif font. Below it, the words "An Exposition of Undergraduate Scholarship" are written in a smaller, yellow, sans-serif font. The background is a vibrant purple and green geometric design. A large, stylized, white, 3D-effect letter "S" is the central focus, with a thick black outline and a green shadow. The background includes various icons: a lightbulb, a globe, a person, a calculator, and a microscope, all in a light green color. A pink arrow points from the text "An Exposition of Undergraduate Scholarship" towards the "S" logo.

**2014 EXPO**

An Exposition  
of  
Undergraduate  
Scholarship

**7th Annual UAB EXPO**  
**April 11th 2014**

# 7<sup>th</sup> Annual UAB Expo

## An Exposition of Undergraduate Scholarship

### Welcome

The office of Undergraduate Research and UAB are proud to welcome you to the 7<sup>th</sup> annual UAB Expo: An Exposition of Undergraduate Scholarship. This year's Expo promises to be the largest to date, with nearly 200 presentations and approximately 340 student participants, representing many of the disciplines offered at UAB. Working with faculty, graduate students, peers, or individually, these talented and highly motivated students are an inspiration to the entire university. We would also like to acknowledge the student's mentors whose guidance and dedication made many of the projects you see today possible. We are sure you will enjoy their hard work and achievements.

Best Regards,

Nick Bieser  
Coordinator of Undergraduate Research

UAB EXPO 2014 Directors  
Jun Yu Jacinta Cai & Hylton Molzof

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\* - Indicates **Work in Progress**

## Schedule of Events

Events	Times	Location
Registration	6:45-7:45am	Campus Rec Center
Poster Judging	8:00-10:45am	Campus Rec Center
Poster Session 1	8:00-9:15am	Campus Rec Center
Poster Session 2	9:30-10:45am	Campus Rec Center
<b>Oral Presentations &amp; Judging</b> Session 1: Arts and Humanities 1 Session 2: Arts and Humanities 2 Session 3: Arts and Humanities 3 Section 4: Biological Life, and Physical Science Session 7: Social and Health Science 1 Session 8: Social and Health Science 2 Session 6: Business and International Studies 2	8:00 – 10:45 8:00 - 9:15 9:30 – 10:45 8:00 – 9:15 9:30 – 10:45 8:00 – 9:15 9:30 - 10:45 9:30 – 10:45	Campus Rec Center Fitness Room 1 Fitness Room 1 Room 150 Room 150 Fitness Room 2 Fitness Room 2 Fitness Room 4
Keynote Speaker	11:00-11:45	Volker Hall Lecture Room B
Awards Ceremony	11:45-12:30	Volker Hall Lecture Room B

## Keynote Speaker

**Michael Saag, Ph.D.**

"What is Translational Research? HIV is a prime example"

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Bio: Michael Saag, M.D., is director of the University of Alabama at Birmingham Center for AIDS Research and an internationally known expert on the virus that causes AIDS. Over the past three decades, Saag's achievements include making seminal discoveries in the genetic evolution of HIV in vivo, directing the first in-patient studies of seven of the 25 antiretroviral drugs, and developing an innovative, comprehensive HIV outpatient clinic blending patient care and high-quality clinical outcomes research. Now, Saag has released his first book, *Positive*, which chronicles his journey in helping turn the most deadly virus in human history into a manageable chronic disease.

# Oral Presentations

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## Session 1: Arts and Humanities 1

Fitness Room 1

8:00 A.M. – 8:15 A.M. Anwer Sharmin

***Girls' Education: A Global and Human Issue***

Mentor: Dr. Wendy Gunther-Canada, *Government*

8:15 A.M. – 8:30 A.M. Afsaneh Faki

***La Disponibilidad de la Asistencia Sanitaria para los Inmigrantes Hispanohablantes de Escasos Ingresos en Alabama\****

Mentor: María Jesús Centeno, *Foreign Languages and Literatures*

8:30 A.M. – 8:45 A.M. Nicolas Drogoul

***Photographing Literary Landscapes: Marcel Proust's France\****

Mentor: William Carter, *Foreign Languages*

8:45 A.M. – 9:00 A.M. Kevin Jiang, Aditi Jani, Anjali Wagle

***Big Brother or National Security? An Interdisciplinary Analysis of the NSA Leaks***

Mentor: Mike Sloane, *University Honors Program*

8:45 A.M. – 9:00 A.M. Shejuti Paul

***To Sell or Not to Sell: An Evaluation on Applied Organ Compensation Systems***

Mentor: Connie Stockhampte, *University Honors Program*

## Session 2: Arts and Humanities 2

## Fitness Room 1

9:30 A.M. – 9:45 A.M. Janie McDaniel

***Manners and Morals in Pride and Prejudice***

Mentor: Danny Siegel, *English Literature*

9:45 A.M. – 10:00 A.M. Sarah Domm

***Creation's Final Law: God and Evolution in Hardy and Tennyson's Poetry***

Mentor: William Rushton, *English*

10:00 A.M. – 10:15 A.M. Forrest Collins and Reese Koehler

***Beowulf to Bama: Storytelling Through the Ages***

Mentor: Nichole Lariscy, *English*

10:15 A.M. – 10:30 A.M. Sunney Poyner

***What Could Have Been Our History***

Mentor: Adam Vines, *English*

## Session 3: Arts and Humanities 3

## Room 150

8:00 A.M. – 8:15 A.M. Adelaide Beckman

***"This is your life and it's ending one minute at a time": Purpose and Meaninglessness in Turn of the Millennium American Film***

Mentor: Mike Sloan, *Psychology*

8:15 A.M. – 8:30 A.M. Brodie Foster

***Access to Healthcare Information in Birmingham\****

Mentor: Michele Foreman, *Media Studies*

8:30 A.M. – 8:45 A.M. Rebecca Hyde

***A Town Within a City: A Look into Five Points South\****

Mentor: Michele Foreman, *Media Studies*

8:45 A.M. – 9:00 A.M. Jennifer Baggett

***Ronald McDonald House\****

Mentor: Michele Forman, *Media Studies*

9:00 A.M. – 9:15 A.M. Ali Massoud

***Civil Rights and Immigrant Rights: The Ongoing Struggle for Equality in Alabama\****

Mentor: Michele Forman, *Digital Community Studies*

## **Session 4: Biological, Life, and Physical Sciences**

**Room 150**

9:30 A.M. – 9:45 A.M. Forrest Satterfield, Hayden Martin, Luke Miller, Alinea Esensoy

***Universal System of Actuators for Orthotics and Prosthesis\****

9:45 A.M. – 10:00 A.M. Hriday Bhambhani

***RSA Cryptosystem: A Novel Proof of Correctness Using Probability Distributions and a Particular Numeral System***

10:00 A.M. – 10:15 A.M. Pauleatha Diggs

***Investigating the Effects of Structural Modifications of Tau on the Tau-Fyn Interaction in Alzheimer's Disease***

Mentor: Erik Roberson, *Neurobiology*

10:15 A.M. – 10:30 A.M. Bigyan Mainali

***MicroRNA-27a promotes osteoblast proliferation by inducing G1-S phase transition***

Mentor: Mohammad Hassan, *Microbiology*

10:30 A.M. – 10:45 A.M. Matthew Sorensen

***The Physics of a Cyclotron Accelerator and its Application in the Production of the Radiopharmaceutical Fludeoxyglucose (FDG)\****

Mentor: Renato Camata, *Physics*

## **Session 5: Social and Health Science 1**

**Fitness Room 2**

8:00 A.M. – 8:15 A.M. Sarah Terry

***The Effects of Daily Caffeine Consumption on Sleep Quality and Pain Sensitivity***

Mentor: Burel Goodin, *Psychology*

8:15 A.M. – 8:30 A.M. Ashlon Schum

***The Effects of Racial Discrimination on Obesity Outcomes in the United States\****

Mentor: Irena Stepanikova, *Sociology*

8:30 A.M. – 8:45 A.M. Ethan Gossett

***The Associations Among Mindfulness, Pain Catastrophizing, and the Nociceptive Processing of Painful Stimuli\****

Mentor: Burel Goodin, *Psychology*

8:45 A.M. – 9:00 A.M. Bliss Chang & Harsh Shah

***Exploring a Lack of Female Residents at UAB Emergency Medicine Department***

Mentor: Derek Robinett, *Department of Emergency Medicine*

9:00 A.M. – 9:15 A.M. Ellen Grappe

***Denialism and Death: the Global Response to HIV/AIDS\****

Mentor: Nichole Lariscy, *English*

## **Session 6: Social and Health Science 2**

## **Fitness Room 2**

9:30 A.M. – 9:45 A.M. Sudhanshu Kaushik

***Equality Initiative***

Mentor: Bradley Newcomer, *Biomedical Sciences Program*

9:45 A.M. – 10:00 A.M. Kara Woods

***Individual Characteristics of Anti-Gun Control\****

Mentor: Perumean Chaney, *Justice Sciences*

10:00 A.M. – 10:15 A.M. Shelby Mullins & Yoonhee Ryder

***Remnants of the Lapita: Bridging Cultures From the Past and Making Connections For the Future***

Mentor: Sharyn Jones, *Anthropology*

10:15 A.M. – 10:30 A.M. Rebecca Graber

***Children of Bad Memories: The Effects on Children Born of Genocidal Rape in Rwanda***

Mentor: Lisa Sharlach, *Government*



10:30 A.M. – 10:45 A.M. Baines Deal  
***Let's talk about sex***

Mentor: Nichole Lariscy, *English*

## **Session 7: Business and International Studies 1**

**Fitness Room 4**

9:30 A.M.–9:45 A.M. Andreanna Johnson  
***Negotiating Styles: Men vs. Women***

Mentor: Karen Kennedy, *MIDE*

9:45 A.M. – 10:00 A.M. Yamini Bhat & Ashleigh Staples  
***Porn Makes the World Go Round?***

Mentor: Michael Sloane, *Psychology*

10:00 A.M. – 10:15 A.M. Abbey Hackett  
***A Social Revolution: How Social Media Has Changed Leadership***

Mentor: Keri Larson, *Information Systems*

10:15 A.M. – 10:30 A.M. Alyssa Mitchell  
***Package Design: The Past, Present, and the Public\****

Mentor: Marcus Hickson III, *Communications*

10:30 A.M. – 10:45 A.M. Tyler Mims  
***The Link Between Mental Imagery and Performance: In Baseball and Professional Selling***

Mentor: John Hansen, *Marketing, Industrial Distribution, and Economics*

# Poster Presentations

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## *Biological & Life Sciences*

1. **Use of Transcription Activator-Like Effector Endonucleases (TALENs) to Introduce Single Amino Acid Changes in *Drosophila Melanogaster* HP1a, HP1B, and HP1C\***

*Katherine Beaufait, Olivia Delmas*

Mentor: Nicole Riddle, *Biology*

2. **Analysis of Wear Occurrence in Postmortem Total Knee Replacements with Oxidized Zirconium Femoral Components\***

*Megan Bland, Kristine Austriaco*

Mentor: Alan Eberhardt, *Biomedical Engineering*

3. **PAAG Improves Cystic Fibrosis Sputum Viscosity and Elasticity Ex Vivo**

*Hannah Bowers*

Mentor: Steve Rowe, *Pulmonary, Allergy, and Critical Care Medicine*

4. **Universal Cell Growth Media Using Minimal Concentrations of Serum\***

*Benjamin Burgess, Alexander McArdle, Akhil Kaushik, Raymond Moosavi*

Mentor: Tino Unlap, *Biotechnology*

5. **Effect of MPTP in Activation of NLRP3 Inflammasome in Parkinson's Disease\***

*Lauren Cabaniss*

Mentor: Nabiha Yusuf, *Dermatology*

6. **Bond Strength of Four Universal Adhesives to Metal and Ceramic**

*Bright Chang*

Mentor: John O. Burgess, *Prosthodontics/Biomaterials*

**7. UniverCell\***

*Maggie Collier, Duyen Pham-Hua, Courtney Walker, Anisha Das*

Mentor: Tino Unlap, *Clinical and Diagnostic Sciences*

**8. The Transcription Factor ETS-1 is required for Endothelin-1 induced expression of Connective Tissue Growth Factor in Mesangial Cells**

*Madison Duckworth*

Mentor: Edgar Jaimes, *Nephrology*

**9. O-GlcNAc Expression in Transgenic Mice Models for Alzheimer's Disease\***

*Ramsha Farrukh*

Mentor: Lori McMahon, *Cellular Developmental and Integrative Biology*

**10. Identification of Differentially Expressed lncRNAs During Early Embryogenesis\***

*James Friedman*

Mentor: Keith Giles, *Biochemistry & Molecular Genetics*

**11. Validating and Characterizing an Inducible Model of Forebrain-Specific Sirt 1 Knockout\***

*Daniel Gilliam*

Mentor: David Sweatt, *Neurobiology*

**12. Antimicrobial Effect of a Pigment from Antarctic Bacterium on Streptococcus Mutans**

*Joshua Godwin*

Mentor: Asim Bej, *Biology*

**13. Diversification and Correlated Trait Evolution in Astrophorid Sponges (Porifera: Demospongiae)\***

*Hayden Hamidi*

Mentor: Robert Thacker, *Biology*

**14. Evaluation of Post-Hatchling Fitness Relative to Incubation Temperature, Sex, and Clutch in the Diamondback Terrapin, *Malaclemys terrapin***

*Marlee Hayes*

Mentor: Thane Wibbels, *Biology*

**15. Thermodynamic Profile of Ethidium Bromide Binding Quadruplex DNA\***

*Katherine Hymel, Tina Etminan, Steven Sheibley, Erin Watters*

Mentor: David Graves, *Chemistry*

**16. Neural Stem Cell-Derived Exosomes and Neuroprotection\***

*Aditi Jani*

Mentor: Brian Sims, *Neonatology*

**17. Methyl Supplementation Increases Brain-Derived Neurotrophic Factor DNA Methylation in the Epileptic Model**

*Jarvis Johnson*

Mentor: Farah Lubin, *Neurobiology*

**18. The Role of the Inflammasome in Pain Sensitivity\***

*Catherine Jones*

Mentor: Robert Sorge, *Psychology*

**19. Assessment of Prime Techniques for Establishing Sex Ratios of Hatchling Sea Turtles Based on Histology of AKGs\***

*Ryan Joy*

Mentor: Thane Wibbels, *Biology*

**20. Erythropoietin regulates the Vitamin D Receptor in Neural Stem Cells\***

*Kevin Shrestha*

Mentor: Brian Sims, *Neonatology*

**21. In Vitro Effects of Sulforaphane on p21 Expression and Proliferation of Breast Cancer Cells**

*Lacey Kennedy*

Mentor: Trygve Tollefsbol, *Biology*

**22. Characterization of rpoD, a major sigma factor gene in *Streptococcus mutans* SM4, derived from whole genome sequencing on an Illumina MiSeq platform\***

*Eddy Kim*

Mentor: Asim Bej, *Biology*

**23. The Determination of Sex Ratios of the Endangered Kemp's Ridley Sea Turtle: Padre Island National Seashore (2011-2012)\***

*Andrea Kirk*

Mentor: Thane Wibbels, *Biology*

**24. Adhesive Resin Cement Bond Strength Using Two Curing Modes**

*Taylor Knable*

Mentor: John Burgess, *Dentistry, Biomaterials*

**25. Polyalkyl phosphonates: Novel inorganic polymers for use in applications such as environmental toxic receptors, optical sensor protectors, and drug delivery systems\***

*Farid Marashinia*

Mentor: Gary Gray, *Chemistry*

**26. Quantifying Species Boundaries in the Porifera Tree of Life Using Partial 28S Ribosomal RNA Gene Sequences**

*Mark Mazenko*

Mentor: Bob Thacker, *Biology*

**27. The Study of Heterochromatin in *Drosophila melanogaster*\***

*Christine McBride, Katherine Owens*

Mentor: Nicole Riddle, *Biology*

**28. Novel Proteins in Neural Stem Cell-Derived Exosomes\***

*David Mulkey*

Mentor: Brian Sims, *Neonatology*

**29. Thermodynamic Analysis of Ethidium Bromide Binding with Duplex DNA\***

*Parth Patel, Millena Oliveira, Fred Stephens*

Mentor: David Graves, *Chemistry*

**30. Metabotropic Glutamate Receptor 4 Positive Allosteric Modulators Attenuate LPS-Induced Inflammation in Microglial Cells**

*Ranjani Ponnazhagen*

Mentor: David Standaert, *Neurology*

**31. Analysis of an ethidium-DNA adduct**

*Michael Longmire*

Mentor: David Graves, *Chemistry*

**32. Using Carapace Morphology to Assess Sexual Dimorphism in Hatchling Diamondback Terrapins, *Malachlemys terrapin*\***

*Kayla Rourke*

Mentor: Thane Wibbles, *Biology*

**33. Characterization of cold-shock family of genes in *Pseudomonas* sp. Ant30-3 derived from whole genome sequencing\***

*Adel Shabani, Eddy Kim*

Mentor: Asim Bej, *Biology*

**34. Wnt Signaling Regulates Osteoblast Growth through miR-27a\***

*Lubana Afreen*

Mentor: M.Q Hassan, *Oral and Maxillofacial Surgery*

**35. The Efficacy of a Novel Resveratrol – Pterostilbene Treatment Against Breast Cancer**

*Harsh Shah*

Mentor: Trygve Tollefsbol, *Biology*

**36. Assessment of Cytochrome C Oxidase Activity and Subunit Expression in the SN/MTA in Schizophrenia**

*Kristen Smith*

Mentor: Emma Perez-Costas, *Behavioral Neurobiology*

**37. Identification of Antibiotic Resistance Genes in an Antarctic Bacterium, *Hymenobacter* sp. L62-1 by Whole Genome Sequencing on MiSeq Platform\***

*Bailey Strobe, Eddy Kim, Adel Shabani*

Mentor: Asim Bej, *Biology*

**38. Development of Secondary Sexual Characteristics in Diamondback Terrapins *Malaclemys terrapin* : Evaluation of Sexing Technique in Juveniles**

*Pratyusha Thundena*

Mentor: Thane Wibbels, *Biology*

**39. Thermodynamic Analysis of Single Strand DNA Bound with Ethidium Bromide\***

*Richard Trieu, Ashley Dorner, Kelly Walters*

Mentor: David Graves, *Chemistry*

**40. Thermodynamic Analysis of Ethidium Bromide Binding Hairpin DNA\***

*Marina Triplett, Emily Milligan, Emily Butler*

Mentor: David Graves, *Chemistry*

**41. Greener Chemical Methods via alkene hydroformylation catalysts containing novel phosphoramidite ligands\***

*Shakya Tyus*

Mentor: Gary Gray, *Chemistry*

**42. Revive M.O.D**

*Marcus Wesley, Dilani Patel, Onna Bladwin, John Larrimore*

Mentor: Tino Unlap, *Clinical and Diagnostic Sciences*

**43. Cloning , Expression, and Purification of novel BRCT domains from Fungal PAR Polymerases**

*Perry Zackery*

Mentor: Margaret A. Johnson, *Chemistry*

**44. Dynamic changes in histone methylation and gene expression during memory reconsolidation\***

*Aidan O'Beirne*

Mentor: Timothy Jarome, *Neurobiology*

**45. Comparison of two bioinformatics software for the analysis of the cold shock family of proteins in three freshwater lakes in McMurdo Dry Valleys, Antarctica\***

*Phillip R.E. Fisher Jr.*

Mentor: Asim Bej, *Biology*

**46. Powerade as a Base for Universal Media**

*Tyler Orem, Courtney Rogers, Rohit Borah, Isabell Moon*

Mentor: Tino Unlap, *Clinical and Diagnostic Sciences*

**47. Effects of Natural Compounds, EGCG and SFN, on the Metastasis of Ovarian Cancer Cells**

*Mira Patel*

Mentor: Trygve Tollefsbol, *Biology*

**48. Isolation and Characterization of a Novel Phage Infecting *Acinetobacter guillouiae***

*Jordan Gallardo, Alexander Johnson, Emil Kurian, Jessica Maya, Sean McMahon, Brenna Nye, Brooke Pruitt, Surabhi Rao*

Mentor: Denise Monti, *Biology*

**49. Genomic Characterization of Mycobacteriophage Lucky2013**

*Tiffany Colburn, Sarah Swalley, Edwin Tsay, Elizabeth Tuttle, Neha Udayakumar, Justin Wemberly, Katrina Sahawneh*

Mentor: Denise Monti, *Biology*



## *Arts & Humanities*

**50. Implications of Alabama HB-56: Law, Religion, Education and Health\***

*Candace Cooper, Ellen Johnston, Tommy McRae, Eddie Hardin*

Mentor: Lourdes Sánchez-López, *Foreign Languages and Literatures*

**51. Globalization and the Disparities in Labor Law: United States and Latin America**

*Estefania Cuellar, Erika Jackson, Courtney Turner*

Mentor: Lourdes Sánchez-López, *Foreign Languages and Literatures*

**52. The Economic Impact of Film in America**

*Jennifer Baggett*

Mentor: Amy Atkisson, *Experiential Learning Scholars Program*

**53. La Disponibilidad de la Asistencia Sanitaria para los Inmigrantes Hispanohablantes de Escasos Ingresos en Alabama\***

*Afsaneh Faki*

Mentor: María Jesús Centeno, *Foreign Languages and Literatures*

**54. An Exploratory Analysis of Judicial Ideology and the U.S. Supreme Court, 1946-2012**

*Avi Yadav*

Mentor: John J. Sloan III, *Justice Sciences*

**55. Alabama HB-56 and Its Comparative Effects on Education Opportunities for Hispanics and Latinos**

*Judi Hakim, Hannah Bowers, Emily Collinsworth, Ryan Lee*

Mentor: Lourdes Sánchez-López, *Foreign Languages and Literatures*

**56. Political Racism in Arab American Communities**

*Dana Al-Farhan*

Mentor: Lamia BenYoussef, *Department of Foreign Languages and Literatures*

**57. Abita Brewing Company Identity**

*Alyssa Mitchell*

Mentor: Doug Barrett, *Art + Art History*

**58. Implications of Free Trade Agreements between the United States and Latin America\***

*Zachary Tenner, Abbie Thomas, Samuel Prada*

Mentor: Lourdes Sánchez-López, *Foreign Languages and Literatures*

## *Business, Financial, & International Studies*

### **59. Repo 105, the Accounting Transaction that was Felt Around the World**

*Dennis Brooks Jr.*

Mentor: Arline Savage, *Accounting and Finance Department Chair*

### **60. Social Learning: A Study of Micro-Learning Technology Adoption**

*Jory Eaton*

Mentor: Paul Di Gangi, *Management, Information Systems, & Quantitative Methods*

### **61. A New Age in Employee Relations: Adjusting Communication for Millennials**

*Kirsten Ebert*

Mentor: John Wittig, *Communication Studies*

### **62. Economic Conditions and Health: The Role of Income Inequality**

*Jordan Jones*

Mentor: Joshua Robinson, *Marketing, Industrial Distribution, Economics*

### **63. Cost and Benefits of International Students for the US**

*Daniel Kwon*

Mentor: Joshua Robinson, *Economics*

### **64. Emotional Intelligence - Education in Leadership Building**

*Jaina Patel*

Mentor: Barbara Wech, *Management*

### **65. The Accounting Recruitment Process: Recruiters and Students' Perspectives**

*Sarika Patel*

Mentor: James Worrell, *Accounting and Finance*

**66. Jefferson County Bond Analysis: A Municipal Meltdown in the South**  
*Kyle Portwood*

Mentor: Andreas Rauterkus, *Accounting and Finance*

**67. A Review of the Employment Non-Discrimination Act's (ENDA's) Long-Established Battle with Congress and Its Possible Implications in the Workplace\***

*Kelvin Ramsey*

Mentor: Scott Boyar, *Management, Information Systems, & Quantitative Methods*

**68. Assessing the Control Environment: The HealthSouth Case**  
*Amanda Reidy*

Mentor: Arline Savage, *Accounting and Finance*

**69. Policy Effects of the Welfare Reform Act of 1996 on Crime Rates**  
*Robert Zebrowski*

Mentor: Griffin Edwards, *Marketing, Industrial Distribution, Economics*

**70. Generational differences and their influence on negotiation style**  
*Emily Mosley*

Mentor: Jennifer Fries Taylor, *Marketing, Industrial Distribution, & Economics*

**71. Find Your Own Leadership\***  
*Yujie Zheng*

Mentor: Grant T. Savage, *Management*

**72. Determine How Servant Leadership Inspires Innovation**  
*Kellee Pearson*

Mentor: Scott Boyar, *Management*

**73. *Creating Leaders through adversity***

*Margaret Yeh*

Mentor: Mike Sloane, *Psychology*

## *Physical Sciences*

### **74. Implementation and Calibration of an Optical Trapping System for the Study of Complex Fluids\***

*Phillip Allman*

Mentor: Renato P. Camata, *Physics*

### **75. I Move, Therefore I Am (not a bot): Mobile Malware Prevention with User-Transparent Hand Movements\***

*Anders Borg*

Mentor: Nitesh Saxena, *Computer and Information Sciences*

### **76. Method for the determination of trajectory angles of directional secretory vesicles in cultured astrocytes**

*Chapin Cavender*

Mentor: Vladimir Parpura, *Neurobiology*

### **77. Enzymatic Degradation Effect on the Mechanical Integrity of Electrospun Scaffolds\***

*Sami Chowdhury*

Mentor: Vinoy Thomas, *Material Science and Engineering*

### **78. Transition Metal Model Complexes of Asymmetric Catalysts**

*Rachel Davidson*

Mentor: Gary Gray, *Chemistry*

### **79. Autonomous Projectile Firing Robot**

*Jonathan Dyke, Brandon Pelotto, Danny Mullane, Willie Lewis*

Mentor: David Green, *Electrical Engineering*

### **80. Compressed sensing in a multilinear sparse system of genomic interactions**

*Alexandra Fry*

Mentor: Carmeliza Navasca, *Mathematics*

**81. Formulation of Carbon Nanotube Inks for Dip-Pen Nanolithography**

*Allison Goins*

Mentor: Derrick Dean, *Materials Science and Engineering*

**82. Power Assisted Metal Rod Cutter\***

*Thomas Haglund, Regina Burpo, Taniedra Walker, William Haselden,  
Deondra Scott*

Mentor: Alan Eberhardt, *Biomedical Engineering*

**83. Team HotShot\***

*Caleb Howard, Sami Khan, Jimmy Ho, Arnold Ahouansou*

Mentor: David Green, *Electrical and Computer Engineering*

**84. Inverting the Standard: Comparison of Introductory College Physics' Course Designs\***

*Erika LeBakken*

Mentor: Thomas Nordlund, *Physics*

**85. Engineering an Autonomous, Mobile, Dart-Shooting Robot**

*Chase Long, Kuni Scisum, Ronald Fairley, Keith Johnson*

Mentor: David Green, *Electrical and Computer Engineering*

**86. Exploring the Temperature Dependence of the Insulator-to-Metal Transition in Vanadium Oxide Using THz Spectroscopy\***

*Renny Medved*

Mentor: David Hilton, *Physics*

**87. Recumbent Patient Weight: A Proposed Design\***

*Kyle Murdock, John Powell, Punith Thogaripally, Kiley Smith, Likhitha  
Pathivada*

Mentor: Alan Eberhardt, *Biomedical Engineering*

**88. Piezo-Ceramic Actuated Proximal Catheter to Inhibit Entry-Point Occlusion in Hydrocephalus\***

*Valentine Nwachukwu, Jessica Wright, Joshua Mcquitty, John Franks, Steven Johnson*

Mentor: Alan Eberhardt, *Biomedical Engineering*

**89. Magical Mathematics: The Art of Shuffling\***

*Sahil Patel*

Mentor: Shannon Starr, *Mathematics*

**90. Nanodiamond-resveratrol Combination Therapies for Prostate Cancer\***

*Aliza Poonawalla*

Mentor: Derrick Dean, *Materials Engineering*

**91. Formation of Ribbon-like Structures of Electrospun Polymeric Nanofibers**

*Joshua Wetuski*

Mentor: Andrei Stanishevsky, *Physics*

**92. Development of Polyacrylamide Molecularly Imprinted Polymer for Biosensing Application**

*Ethan White*

Mentor: Aaron Catledge, *Physics*

**93. Electron Paramagnetic Resonance Spectroscopic Investigation of Growth Defects in Fe-doped Semi-insulating GaN\***

*James Jones*

Mentor: Mary Ellen Zvanut, *Physics*



## *Service Learning*

**94. Cultivating Minds, Connecting Hearts: YouAB Learning**

*Anmol Ahuja, Hannah Coffin, Sydney Sheppard, Itia Dowdwell*

Mentor: Diane Tucker, *Science and Technology Honors Program*

**95. Counseling: Beyond the Classroom\***

*Junhi Chang & Kathryn Vollenweider*

Mentor: Lauren Michal, *GCL Honors Program*

**96. AIDS: Conceal Don't Feel!\***

*Chelsey Chaplin, Sarah Peacock*

Mentor: Nichole Lariscy, *English*

**97. Is Woodlawn in a Food Desert?**

*Solomon Gibson, John Shelley, Subria Spencer, Garrett Payne, Leontay Timmons*

Mentor: Becky Reamey, *GCL Honors Program*

**98. The Impact of the Earned Income Tax Credit on Impoverished Communities**

*Sunhith Donti, Elizabeth Earwood, Sarah Griffin, Joel Jiles*

Mentor: Becky Reamey, *GCL Honors Program*

**99. UAB Neuroscience Day with Alabama Brain Bee 2014: Increasing an Awareness of Neuroscience in High School Students**

*Saadia Miran*

Mentor: Diane Tucker, *Psychology & STH Honors Program*

**100. Global Health Service Learning: Stove Reform in the Dominican Republic\***

*Katherine Hymel, Millena Oliveria, Rebecca Sylvester, Blake Hand*

Mentor: Kristine Hearld, *Health Services Administration*

**101. Under the Sheets with HIV\***

*Haley Hummer, Kathryn Vollenweider*

Mentor: Nicole Lariscy, *English*

**102. 2014 Regional Science Olympiad at UAB**

*Soojin Kim, Peter Lee, Paul Lee*

Mentor: Diane C. Tucker, *Psychology & STH Honors Program*

**103. Academic Performance and Creativity through Desert Island Supply Co.\***

*Reese Koehler, Anissa Latham-Brown, Taylor Byas, Emily Montoya*

Mentor: Becky Reamey, *GCL Honors Program*

**104. Young Writers in Birmingham: Connecting UAB to its Community**

*Jessica Lamar, Rebekah Fountain, Kim Jones, Jessica Middleton, Jascha Zywicki*

Mentor: Jaci Wells, *English*

**105. Responding to Food Deserts\***

*Natalie Hull, Sean McMahon*

Mentor: Rebecca Reamey, *Honors College*

**106. Using Narrative Theatre to Intercept Negative Public Rhetoric of HIV/AIDS\***

*Carron Stone, Solomon Gibson*

Mentor: Nichole Lariscy, *English*

**107. The Continuation of the Alabama Academy of Science**

*Calla McCulley, Diego Roman, Aaron Stuber, Lamario Williams*

Mentor: Diane Tucker, *Psychology & STH Honors Program*

**108. Afterschool Programs in Woodlawn\***

*Ellen Grappe, Regan Gaskin, Forrest Collins, Aseel Dib*

Mentor: Becky Reamey, *GCL Honors Program*

**109. Second Language Acquisition in Early Childhood and Service Learning\***

*Chase Nordman*

Mentor: Lourdes Sanchez-Lopez, *Foreign Languages and Literatures*

**110. Service Learning in Education and Mentoring with Sav-A-Life**

*Sarah Spence*

Mentor: Angela Jukkala, *Nursing*

**111. Reducing HIV/AIDS Stigma in the 18-24 Year Old MSM Population in order to Improve or Create Outreach Resources for the 1917 Clinic\***

*Carron Stone, Brooks Hinnant*

Mentor: Ria Herald, *Sparkman Center*

**112. Cahaba Valley Health Care: From humble beginnings to a promising future**

*Judi Hakim, Jennifer Denzine, Cristina Salazar*

Mentor: Lourdes Sanchez-Lopez, *Foreign Languages and Literatures*

**113. Evaluation of WE Community Garden's 5<sup>th</sup> Annual Collard Green**

*Andrew Viegas, Weslie Shannon, Tamika Smith*

Mentor: Lynda Wilson, *Nursing*

**114. The City of Birmingham and the Hispanic community: connecting for a better future.**

*Sylvia Peral*

Mentor: Lourdes Sanchez-Lopez, *Foreign Languages and Literatures*

**115. Like a Good Neighbor...\***

*Brittany Phillips*

Mentor: Lourdes Sanchez-Lopez, *Foreign Languages and Literatures*

**116. First Teachers @ Home: Preempting the Effects of Poverty on Early Childhood Academic Development in English-Speaking and Spanish-Speaking Households\***

*Patrick Breen*

Mentor: Lourdes-Sánchez-López, *Foreign Languages and Literatures*

**117. The Bilingual Clinic Through My Eyes\***

*Zachary Tenner*

Mentor: Lourdes Sánchez-López, *Foreign Languages and Literatures*

## *Social, Behavioral, & Health Sciences*

**118. Differences in smoking cessation by race/ethnicity and health insurance status**

*Alison Allen, Jessica Williams*

Mentor: Jessica Williams, *Health Care Management*

**119. Survey Analysis to Assess Doctor-Patient Communication and Patient Expectations in a Community-Based Health Clinic**

*Megan Battles*

Mentor: Jessica Williams, *Health Care Management*

**120. A Survey of the Healthcare Information Management Workforce in Rural Alabama Physician Practices**

*Jennifer Dingle*

Mentor: Jerry M. Trimm, *Health Services Administration*

**121. A Systematic Approach to Hospital Financial Management\***

*Arun Nakhasi*

Mentor: Bradley Newcomer, *Health Services Administration*

**122. The Importance of a Preoperative Lymphoscintigraphy for a Successful Sentinel Lymph Node Biopsy in Breast Cancer and Melanoma Patients**

*Michael Pugh*

Mentor: Norman Bolus, *Clinical and Diagnostic Sciences*

**123. Cardiovascular Disease and Healthcare Literacy in the Minority Spanish Speaking Population\***

*Victoria Whited*

Mentor: Norman Bolus, *Nuclear Medicine Technology*

**124. Young Breast Cancer Survivorship Network**

*Jacqueline Bui, Anna Hoenig, Martha "Katie" Jones, Brittany Calhoun*

Mentor: Karen Meneses, *School of Nursing*

**125. Evaluation of Childhood Obesity Interventions in Jamaica and the Caribbean\***

*Catriana Cantu, Beenish Kamran, Hazeza Kochi, Mallika Mahalingam, Aarin Palomares*

Mentor: Henna Budhwani, *Health Care Organization and Policy*

**126. Creating and Piloting a Vulnerability Index to Assess Health Needs of the Homeless Population in Central Alabama**

*William Carter, Agam Dhawan, Stephen Voss*

Mentor: Lynda Wilson

**127. Autism not equally diagnosed across ethnicity and race**

*Courtney Fletcher*

Mentor: Gail Wallace, *Sociology*

**128. Knowledge of Pregnancy and Prenatal Care**

*Emily Pugh, Lauren Vaughan, Alecia Cruzado, Jessica Patterson*

Mentor: Angela Jukkala, *Nursing*

**129. A New Perspective on the Impact of Internalized HIV-related Stigma on Adherence to HIV Treatment: the Underlying Interpersonal Mechanisms**

*Christopher Helms*

Mentor: Bulent Turan, *Psychology*

**130. Musculoskeletal Health in Peripubertal Girls\***

*Pranayraj Kondapally*

Mentor: Krista Casazza, *Nutritional Sciences*

**131. Using Small Molecules to Effect Trafficking of Delta F508 CFTR on Plasma Membrane\***

*Katie Jones, Katherine Kulp*

Mentor: Tino Unlap, *Clinical and Laboratory Science*

**132. The Effect of Mobility Limitations on Depressive Symptoms and Positive Affect in Older Adults with Diabetes**

*Jamaal Little*

Mentor: Olivio Clay, *Psychology*

**133. 3D Optical Scanning for Body Morphology and Volume Rendering\***

*Kathryn McCurnin*

Mentor: Mark Bolding, *Radiology*

**134. Assessing the Relationship of Health Literacy and Numeracy with Glycemic Control in a Sample of Low Income African Americans with Diabetes**

*John Shelley*

Mentor: Andrea Cherrington, *Preventative Medicine*

**135. Mental Health in Foster Children\***

*Taylor Simpsom*

Mentor: Kathryn Morgan, *African American Studies*

**136. How Healthy Is She?: Examining Factors Related to African American Female Adolescent Obesity Rates**

*Amy Kincaid Thomas*

Mentor: Martinique Perkins Waters, *Psychology*

**137. Adherence to HIV Treatment: Assessing the Unique Predictive Roles of Experience Sampling and Questionnaire Measures of Stigma and Treatment Self-Efficacy\***

*Christy Thai*

Mentor: Bulent Turan, *Psychology*

**138. Investigating the Correlation Between Parental Age at Birth and a Diagnosis of Autism Spectrum Disorder In a Sample of Children with Developmental Delays**

*Peter Waselkov*

Mentor: Sarah O'Kelley, *Psychology*

**139. Barriers and Facilitators Related to Physical Activity and Exercise Among Injured Service Members and Their Families**

*Gaylen Patterson*

Mentor: Laura Dreer, *Ophthalmology*

**140. The Cost Benefit Evaluation of HPV Prevention and Detection Methods in Developing Countries**

*Tushar Kumar, Nicole Rodriguez, Kara Arnold, Lauren Gist, Raghavendra Kasa*

Mentor: Henna Budhwani, *Public Health*

**Vitamin D regulation by retinoic acid in neural stem cells**

*Nikhita Jain*

Mentor: Brian Sims, *Neonatology*

\* - Indicates **Work in Progress**



# Back Cover

## Schedule of Events

Events	Times	Location
Registration	6:45-7:45am	Campus Rec
Poster Judging	8:00-10:45am	Campus Rec
Poster Session 1	8:00-9:15am	Campus Rec
Poster Session 2	9:30-10:45am	Campus Rec
<b>Oral Presentations &amp; Judging</b> Session 1: Arts and Humanities 1 Session 2: Arts and Humanities 2 Session 3: Arts and Humanities 3 Section 4: Biological Life, and Physical Science Session 7: Social and Health Science 1 Session 8: Social and Health Science 2 Session 6: Business and International Studies 2	8:00 – 10:45 8:00 - 9:15 9:30 – 10:45 8:00 – 9:15 9:30 – 10:45 8:00 – 9:15 9:30 - 10:45 9:30 – 10:45	Campus Rec Center Fitness Room 1 Fitness Room 1 Room 150 Room 150 Fitness Room 2 Fitness Room 2 Fitness Room 4
Keynote Speaker	11:00-11:45	Volker Hall Lecture Room B
Awards Ceremony	11:45-12:30	Volker Hall Lecture Room B