ALABAMA’S GRADUATE RESEARCH SCHOLARS PROGRAM

- GRSP -

Is unique among National EPSCoR Programs. Few states have committed major resources toward the sponsorship and development of its next generation of researchers, scientists, and innovators.

The GRSP is a state investment in Alabama’s universities that will expand research output, attract quality graduate students and make our universities more competitive for quality faculty hires. The program will provide a highly trained workforce to fuel the growth of high technology companies in Alabama. A significant goal of the GRSP is to encourage interdisciplinary training and research, to train professionals for careers in the scrutinized fields, and to encourage individuals from underrepresented groups to consider careers in these fields.
# Table of Contents

Message from the ALEPSCoR Steering Committee Chair ......................................................... 4

Message from the ALEPSCoR Executive Director ..................................................................... 5

Overview ........................................................................................................................................ 6
Tables and Statistics ................................................................................................................................. 7

GRSP Presentation to the Alabama Commission on Higher Education ......................................... 8

Featured Research Scholars .................................................................................................................. 9-32
Scholars Listing, Round 10 ................................................................................................................. 10

GRSP and Beyond ............................................................................................................................... 33-71
Campus Coordinators ......................................................................................................................... 72-76

Appendices .......................................................................................................................................... 77-90
Index of Scholars ................................................................................................................................. 78
Alumni Roster/Expected Graduation Dates ......................................................................................... 79
Quick Reference Guide ......................................................................................................................... 80-88
AL EPSCoR Steering Committee ......................................................................................................... 89
November 2015

Dear Colleagues,

In 2014, the Alabama Legislature invested in Alabama’s future research capacity and economic prosperity by continuing the appropriation to the Alabama EPSCoR (ALEPSCoR). This program, managed through the Alabama Commission on Higher Education (ACHE) funds the Graduate Research Scholars Program (GRSP). The GRSP is a program that has offered research opportunities to over 226 graduate students with up to $25,000/year (sometimes multi-year) awards under the guidance of some of Alabama’s finest research scientists. At the GRSP Campus Coordinators’ meeting in May 2015, thirty-six Round 10 GRSP recipients were chosen. Of the thirty-six awardees, twenty-two are new to the program. These students will conduct EPSCoR supported (Experimental Program to Stimulate Competitive Research) research in Alabama through grants from the National Science Foundation (NSF), Department of Energy (DOE), National Aeronautics and Space Association (NASA), and the United States Department of Agriculture (USDA). The GRSP has assisted in the achievement of forty-five (45) Master’s degrees and one hundred twenty-nine (129) Ph.D. degrees as of December 2015. Projections for 2016 include three (3) more MS and twenty-one (21) PhD degrees.

I invite you to glance through the following pages to discover some of the exciting research being done by these students, which includes research in areas such as: phase change materials, 3-D engineered cardiac tissues, nanostructured biomedical sensors, nanoparticles for antibiotic resistant bacteria, stent coatings, cancer drug therapies, aircraft materials, new contrast agents for MRIs, and breast cancer. In addition, we have included updates from students previously featured in our annual GRSP publication; some are continuing their education and research, some have graduated and are busy with jobs, post-doctoral positions, or starting companies.

Thank you for your interest in the Alabama EPSCoR Program and especially the Graduate Research Scholars Program.

Sincerely,

Lynne Chronister
Chair, Alabama EPSCoR Steering Committee
Vice President for Research
University of South Alabama
November 2015

The Graduate Research Scholars Program (GRSP), now in Round Ten, continues to be a great opportunity for outstanding student and mentoring faculty members of Alabama. Each year as we gather updates from students on the impact of the GRSP I am always very impressed by the many students who tell us how the program affected their lives.

To highlight a few: Liwu Fan (p. 44) is now serving as visiting scholar in the Department of Nuclear Science and Engineering at Massachusetts Institute of Technology; Miranda Byrne-Steele (p. 39) serves as the Director of HudsonAlpha’s iRepertoire where they have developed the ability to take a snapshot of the immune system; Parimal Bapat (p. 37) is developing growth coatings for orthopedic devices; Keith Veronese (p. 67), chemist, has written two books and is working on a third; Charles Solvason (p. 64) is creating new software for researchers to better understand physical and chemical phenomena; Hamed Ghaednia (p. 47) is working to reduce engine friction at Ford Motor Company, and Rabih Al Ghossein recently accepted a position using 3D programming and printing along with laser engraving for a jewelry manufacturer in Tuscaloosa.

Other GRSP students have gone on to do post-doctoral work in Sweden (Johanna Cannon, p. 40); Germany (Hunter Sims, p. 63) and Russia (Ross Ptacek, p. 61); Amecia Elliott (p. 44) and Justin Havird (p. 48) are supported by NIH; Ke Jiang is working at Cold Spring Harbor Laboratory, and Tae Kim is at the UAH Center for Space Plasma and Aeronautics Research Center.

Our GRSP presenter at the December 2015 meeting of the Alabama Commission on Higher Education is Karim Budhwani, a former Ambassador of Trade for the state of Alabama, a CEO, and now a Round Ten GRSP Student working simultaneously on two PhDs.

I know you join me in wishing all GRSP students much success in their chosen career paths. I encourage you to take a few minutes to review the wonderful array of GRSP research and career paths. Alabama’s GRSP Program is an investment in Alabama’s future. With this document, we hope to show you how the GRSP has impacted our students, our institutions, and our state.

Sincerely,

Chris Lawson, Ph.D.
Alabama EPSCoR Executive Director
Department of Physics
University of Alabama at Birmingham
The Alabama Experimental Program to Stimulate Competitive Research (ALEPSCoR) Graduate Research Scholars Program (GRSP) was established in 2006 by the Alabama State Legislature through a $1 million increase in a line item appropriation to the Alabama Commission on Higher Education, fiscal agent for funds to the ALEPSCoR Program. The intent of the legislative funding is three-fold: 1) to strengthen and enhance the research capacity of ALEPSCoR institutions\(^1\) by positioning them to be more competitive in attracting eminent senior faculty, 2) to retain for Alabama the brightest and best of our graduate students for careers in disciplines related to science and engineering, and 3) to address the economic need for highly trained professionals to ensure the growth of emerging technology companies in this state.

Initially GRSP funding was targeted to support graduate students associated with the four (4) Centers of Excellence funded by the National Science Foundation (NSF) EPSCoR Infrastructure Improvement Award (RII-2). In FY 2007-08, the program was expanded to include qualified students at all ALEPSCoR universities whose proposed research or field of study and career interests are congruent with the funded science and technology EPSCoR programs of the National Science Foundation (NSF), Department of Energy (DOE), National Aeronautics Space Administration (NASA), U. S. Department of Agriculture (USDA), and the Environmental Protection Agency (EPA).

The success of Alabama’s long term commitment to promoting the education and careers of its most talented graduate students cannot be overstated. Since 2006, the Legislature has appropriated nearly $7.5 million in support of the GRSP. As of December 2015 an estimated 226 students have been recipients of 406 awards, with a number of students benefitting from multi-year full and partial awards. This support has led to the achievement of 129 PhD and 45 Master’s degrees.

The highly competitive process includes the circulation of a Request for Proposal, rigorous internal institutional review and ranking of applications, and selection by members of a peer review team which makes recommendations for final awards. The tenth round of competition was conducted April-May 2015. Of the 52 applications, 36 awards were granted which included 22 new GRSP recipients.

\(^1\)Alabama A&M University, Auburn University, Tuskegee University, The University of Alabama, University of Alabama at Birmingham, University of Alabama in Huntsville, and University of South Alabama.
**Tables and Statistics**

### MS Research Areas 2007-2015

1. Aerospace Engineering
2. Animal Science
3. Anthropology
4. Basic Medical Sciences
5. Bioengineering, Computer Science
6. Biological Science
7. Cellular and Molecular Biology
8. Chemical Engineering
9. Chemistry
10. Electrical and Computer Engineering
11. Electrical Engineering
12. Environmental and Civil Engineering
13. Environmental Science
14. Forestry
15. Ion Beam, Nanolithography, Physics
16. Materials Engineering
17. Materials Science
18. Materials Science and Engineering
19. Mechanical Engineering
20. Natural Resources, Environmental Studies
21. Optics and Lasers
22. Optics/Physics
23. Plant and Soil Science
24. Structural Biology
25. Surface Enhanced Raman Scattering
26. UV Nanolithography

**MS/PhD Degrees Achieved/Expected**

<table>
<thead>
<tr>
<th>Year</th>
<th>MS</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2008</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>2009</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>2011</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>2012</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>2013</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>2014</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>2015</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>129</td>
</tr>
</tbody>
</table>

### PhD Research Areas 2007-2015

1. Agriculture and Environmental Sciences
2. Air Quality and Land Use Change
3. Basic Medical Sciences
4. Biochemistry
5. Biochemistry and Molecular Biology
6. Bioengineering, Biology, Chemistry
7. Bioengineering, Chemistry, Life Sciences
8. Biological Sciences
9. Biomedical Engineering
10. Biomedical/Biotechnology
11. Bio-Nanocomposite Materials
12. Bio-Nanotechnology, Materials Science
13. Biotechnology
14. Biotechnology Science and Engineering
15. Catfish Genomics
16. Cellular and Molecular Biology
17. Chemical Biological Engineering
18. Chemical Engineering
19. Chemical Engineering, Bioengineering
20. Chemistry
21. Civil and Environmental Engineering
22. Civil Engineering
23. Civil, Constr and Envir Eng
24. Computer Science
25. Drug Delivery
26. Educational Research
27. Electrical and Computer Engineering
28. Electrical Engineering
29. Electrochemical Engineering
30. Energy, Fuel Cells
31. Engineering Science and Mechanics
32. Entomology/Microbiology
33. Environmental and Civil Engineering
34. Fish Genomics
35. Food Science
36. Forestry
37. Inorganic Chemistry
38. Interdisciplinary Engineering/ Materials
39. Science and Engineering
40. Laser Physics
41. Materials Science
42. Materials Science and Engineering
43. Materials Science, Physics
44. Mathematics
45. Mechanical Engineering
46. Metallurgical and Materials Engineering
47. Microbiology
48. Molecular Biology
49. Optical Science and Engineering
50. Physics
51. Polymer and Fiber Engineering
52. Space Science
53. Structural Biology
54. UV Nanolithography
55. Veterinary Biological Sciences
56. Veterinary Medicine

**MS/PhD Degrees Achieved/Expected**

<table>
<thead>
<tr>
<th>Year</th>
<th>MS</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2008</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>2009</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>2011</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>2012</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>2013</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>2014</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>2015</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>129</td>
</tr>
<tr>
<td>2016</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>2017</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>42</td>
</tr>
</tbody>
</table>
Karim I. Budhwani

Born in India, educated in the USA, striving to serve humanity all over the world

In addition to his professional responsibilities as CEO of elixir international, Karim I. Budhwani serves as a lecturer at the University of Alabama’s School of Business and Information Systems covering Health Informatics, Globalization, and Operational Planning and Optimization. He has served as Ambassador of Trade for his home State of Alabama on key trade missions to India, Australia, New Zealand, and Russia. He recently retired as the Chairman for both the Ismail Professionals Network (IPN) USA and the broader Global IPN Forum (GIF) which spans over 15 countries on 5 continents. Karim received his Bachelor of Arts magna cum laude in Computer Science, Economics, and Business Administration from Coe College, IA in May 1993. He received his Master of Science degree in Biomedical Engineering from the University of Alabama at Birmingham (UAB), AL in May 2015. He is currently also pursuing dual PhDs – or, as he refers to it, a PhD2 – in Materials Science and Engineering (MSE) and Biomedical Engineering (BME) with a focus in Nanomedicine at the UAB. He will be the first in UAB history to graduate with simultaneous dual PhDs. Educated in true liberal arts tradition, he knows everything about nothing and nothing about everything; a 21st century polymath. Jokes aside, Karim has always maintained that the two-fold purpose of acquiring knowledge is to better understand the fabric of existence and to serve others. This principle is the driving force for both, his pursuit of the PhD2, and for his relentless advancement of STEAM (science, technology, engineering, art, and math) as a tool for socio-economic development in Alabama, and around the world.

His focus on Nanomedicine is rooted in his observation of three emergent trends which could significantly impact human society over the next two to three decades. First, longevity is increasing. Second, sustained population growth is projected to take us into the 9 billion+ range. And, third, the information revolution is rapidly transforming ours into a knowledge society. While there are many ramifications of this, one implication lies on the edge between materials science and medicine. The healthcare sector already dominates nearly 20% of GDP. Cardiovascular diseases and cancers add up to over US $700 billion each year in financial costs alone. Aging and population growth are expected to further expand the problem space. The solution? Innovation.

Innovation, as one of his mantras goes, happens at the edges. And this is where he envisions his partnership with EPSCoR/NSF making a significant difference. Bridging his background – transdisciplinary education and research, two decades of professional leadership, and global service engagements – with a PhD2 in MSE and BME puts him at the optimal intersection of disciplines and experiences to engineer new paradigms in addressing this problem space including disease modeling, precision medicine, drug discovery, and safer and more effective delivery of chemotherapeutics. Moreover, given its importance and applicability, this research will draw more scientists, engineers, entrepreneurs, and leadership attention to Alabama. This transdisciplinary translational research will, therefore, not only help build viable pathways toward a better quality of life for patients and caregivers, but also provide significant return on investment in economic development and advancing both, the science of health and the health of science.

You can find out more about Karim at linkedin.com/in/bkarim and on page 12.
Alabama EPSCoR
Graduate Research Scholars Program

Featured Scholars
Round Ten Awardees are comprised of new and renewing students. Information on new students follows while updates on previously funded students can be found in the GRSP and Beyond Section starting on page 33.

<table>
<thead>
<tr>
<th>Name</th>
<th>Inst</th>
<th>degree</th>
<th>EPSCoR grant</th>
<th>Research Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherita Moses</td>
<td>AAMU</td>
<td>PhD</td>
<td>NSF 1158862</td>
<td>Physics/Optics</td>
</tr>
<tr>
<td>Mercedes Bartkovich</td>
<td>AAMU</td>
<td>MS</td>
<td>NSF 103660</td>
<td>Wildlife</td>
</tr>
<tr>
<td>Kevin Messenger</td>
<td>AAMU</td>
<td>PhD</td>
<td>NSF Co funding 1063101</td>
<td>Wildlife</td>
</tr>
<tr>
<td>Wesley Sims</td>
<td>AAMU</td>
<td>PhD</td>
<td>NSF 1158862</td>
<td>Applied Physics</td>
</tr>
<tr>
<td>Alan Hanley</td>
<td>AU</td>
<td>PhD</td>
<td>NSF EPS 1158862</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Petra Kercher</td>
<td>AU</td>
<td>PhD</td>
<td>NSF CBET 1150854</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Richard Mariita</td>
<td>AU</td>
<td>PhD</td>
<td>NSF EPS 1158862</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Narendra Sadhwani</td>
<td>AU</td>
<td>PhD</td>
<td>NSF IGERT 1069004</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Yi Zeng</td>
<td>AU</td>
<td>PhD</td>
<td>DOE DE-SC0002470</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Pengcheng Li</td>
<td>AU</td>
<td>PhD</td>
<td>NSF IGERT 1069004</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Kristy Crews</td>
<td>TU</td>
<td>PhD</td>
<td>NSF 1158862</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>Kausha Rao Prayakara</td>
<td>TU</td>
<td>Ph</td>
<td>NSF 1158862</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>Shatori Meadows</td>
<td>TU</td>
<td>Ph</td>
<td>NSF 1158862</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>Chukwuma E Nweke</td>
<td>TU</td>
<td>MS/PhD</td>
<td>NSF 1158862</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>Vertonica Powell-Rose</td>
<td>TU</td>
<td>Ph</td>
<td>NSF 1158862</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>Tyler Kaub</td>
<td>UA</td>
<td>PhD</td>
<td>NSF EPS 1158862</td>
<td>Metallurgical and Materials Engine</td>
</tr>
<tr>
<td>Kristine Marsone</td>
<td>UA</td>
<td>PhD</td>
<td>NSF IOS 1051682</td>
<td>Integrative Animal Behavior</td>
</tr>
<tr>
<td>Jason Tedstone</td>
<td>UA</td>
<td>PhD</td>
<td>NSF CBET-1159397</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Xiaoqing Wang</td>
<td>UA</td>
<td>PhD</td>
<td>NASA NNX11AM11A</td>
<td>Mechanical Engineering/Materials P</td>
</tr>
<tr>
<td>Zhichao Shan</td>
<td>UA</td>
<td>PhD</td>
<td>DOE SC0005392</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Jennifer Sherwood</td>
<td>UA</td>
<td>PhD</td>
<td>NSF DMR 1149931</td>
<td>Chemical and Biological Engineering</td>
</tr>
<tr>
<td>Grant Alexander</td>
<td>UAB</td>
<td>PhD</td>
<td>NSF 0952974</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>Justin Martin</td>
<td>UAB</td>
<td>PhD</td>
<td>NSF EPS 1158862</td>
<td>Inorganic Chemistry</td>
</tr>
<tr>
<td>Ethan Cagle</td>
<td>UAB</td>
<td>PhD</td>
<td>NSF EPS 1158862</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Karim Budhwani</td>
<td>UAB</td>
<td>PhD</td>
<td>NSF EPS 1158862</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>Zachary Lindsey</td>
<td>UAB</td>
<td>PhD</td>
<td>NSF EPS 1158862</td>
<td>Physics</td>
</tr>
<tr>
<td>Ninfala Constante</td>
<td>UAB</td>
<td>PhD</td>
<td>NSF EPS 1158862</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>Yuxi Sun</td>
<td>UAB</td>
<td>PhD</td>
<td>NSF 1443141</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>Rohit Dhariwal</td>
<td>UAH</td>
<td>PhD</td>
<td>NASA NNX13AB09A</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Sayed S. Mirshafieyan</td>
<td>UAH</td>
<td>PhD</td>
<td>NSF EPS 1158862 (Track 1)</td>
<td>Mechanical and Aerospace Engineering</td>
</tr>
<tr>
<td>Abubaker M. Tareki</td>
<td>UAH</td>
<td>PhD</td>
<td>NSF EPS 1158862 (Track 1)</td>
<td>Mechanical and Aerospace Engineering</td>
</tr>
<tr>
<td>Semih Dinc</td>
<td>UAH</td>
<td>PhD</td>
<td>NSF EEC-1359311</td>
<td>Mechanical and Aerospace Engineering</td>
</tr>
<tr>
<td>Zhitong Li</td>
<td>UAH</td>
<td>PhD</td>
<td>USDA EPSCoR 2014-67022-21618 and NSF EPSCoR RII 1158862</td>
<td>Electrical and Computer Engineering</td>
</tr>
<tr>
<td>Dipenkumar K. Barot</td>
<td>UAH</td>
<td>PhD</td>
<td>NASA NNX13AB09A</td>
<td>Physics</td>
</tr>
<tr>
<td>Jeffrey Kalagian</td>
<td>USA</td>
<td>MS</td>
<td>NASA NNX13AB09A</td>
<td>Chemical and Biomolecular Engineering</td>
</tr>
<tr>
<td>Justin Roberts</td>
<td>USA</td>
<td>MS</td>
<td>NSF 1350064</td>
<td>Biological Sciences</td>
</tr>
</tbody>
</table>
Dipenkumar Barot
The University of Alabama in Huntsville
Round 10 Recipient
Alabama NASA EPSCoR, Alabama Space Grant Consortium NNS13AB09A
Expected Graduation in May 2018, PhD, Optical Science and Engineering
dkb005@uah.edu

Objective
For my doctoral dissertation work, I plan to investigate ultra-low noise diode lasers based on optical frequency combs. I will then use these lasers to experimentally realize fiber-optic strain sensing with a strain resolution of the order of 1 femtostrain (i.e. 10^-15ε), which is a factor of 100 lower than the current state of the art.

Research Abstract
- Fiber-optic strain sensors have found a broad range of applications in civil engineering, aerospace engineering, oil/gas exploration, and geophysics and seismology. However, the current technology has not allowed fiber-optic sensors to reach their fundamental limit of sensitivities, especially at low frequencies. The limiting factor is the laser noise.
- By frequency-locking diode lasers to an optical frequency comb, we expect to significantly suppress laser phase noise at the low-frequency end.
- In addition, by using novel sensor configurations such as a Mach-Zehnder-Fabry-Parot hybrid interferometer, strain sensitivity is expected to improve by orders of magnitude.

List of Recent Publications/Presentations/ Honors None

What inspired you to continue graduate education and/or pursue research?
My unflinching thirst for knowledge inspired me to pursue graduate research work.

Future Plans
After finishing my PhD, I wish to join as a postdoctoral research fellow at any good research institution. After finishing my postdoctoral research work I want to work as a research scientist or research professor.

Mentor
Dr. Lingze Duan
Department of Physics
University of Alabama in Huntsville
301 Sparkman Dr., OB 201
Huntsville, AL 35899
256-824-2138
lingze.duan@uah.edu

Image of Dipenkumar Barot
Objective
Financial and productivity costs pale in comparison to the severe human and societal toll exacted by the more than 25 million lives claimed each year by cardiovascular diseases (CVD) and cancer. Further, it is estimated that over the next 5 years, lifetime probability of developing cancer will increase to 1-in-2 for men and 1-in-3 for women. In looking to the future, therefore, new treatment strategies, including safer and more effective drug delivery modalities, and better evaluation models must be developed to alleviate costs and enhance therapies. I address this head-on with my research focused squarely on enhancing efficacy of chemotherapeutic treatment modalities while reducing side effects by narrowing the area of delivery and release (localized) of chemotherapeutics and targeting (targeted) tumor tissue based on known biomarkers or factors.

Research Abstract
• Lab-On-A-Brane to recapitulate blood vessel interface and tumor microenvironment. I have already successfully (patent pending) completed this phase of my research project.
• Fabricate and load biocompatible polymer µbubbles for multi-trigger therapeutic delivery.
• Confirm targeted and localized delivery of therapeutics in tumor-on-a-brane microphysiological system (MPS).

List of Recent Publications/Presentations/ Honors
• Budhwani, K.; Thomas, V.; Sethu, P. Blood Vessel Lab-On-a-Brane. 4th Annual UAB Biomedical Engineering Research Symposium. 2015.
• Budhwani, K.; Sethu, P. Physiologically Relevant Planar Blood Vessel Mimics to Study Transendothelial Communication. 30th Annual UAB School of Medicine Trainee Research Symposium. 2015.
• Haglund, T.A.; Budhwani, K.; Sun, Y.; Sethu, P. Enhancing Target Cell Capture and Minimizing Non-Specific Binding using Pulsatile Flow for High Efficiency Isolation of Circulating Tumor Cells. 4th Annual UAB Biomedical Engineering Research Symposium. 2015.
• Sun, Y.; Haglund, T.A.; Rogers, A; Budhwani, K.; Sethu, P. Non-labeling Microfluids Leukocytes Sorting Technique. 4th Annual UAB Biomedical Engineering Research Symposium. 2015.
• NSF Graduate Research Fellowship Program 2015 Honorable Mention (UAB)
• Graduate Automotive Technology Education (US Department of Energy)
• President’s Volunteer Service Award (The White House)

What inspired you to continue graduate education and/or pursue research?
The two-fold purpose of acquiring knowledge is to better understand the fabric of existence and to serve others. This principle is the driving force for my pursuit of a PhD and academic research. Bridging my background – transdisciplinary education and research, two decades of professional leadership as founder and CEO of an Alabama technology firm, and global service engagements – with a nanomedicine focused PhD, uniquely positions me at the optimal intersection of disciplines and experiences to lead Alabama in overcoming challenges facing humanity over the next few decades.

Future Plans
Having already established a successful career as a founder and CEO and having served as an international trade ambassador for the State of Alabama, upon graduation, I will create new opportunities for STEM research and application in Alabama and beyond.

Mentor
Uday K. Vaidya
Objective
My objective is to develop a vision based trajectory-tracking system for mobile robots. This system will reduce the need for human intervention controlling vehicle motion.

Research Abstract
• In this research, we propose a solution to automatically control mobile robots on desired paths using computer vision. The robot automatically drives a desired path (or trajectory) by getting visual feedback from camera(s). It reconstructs its position, velocity, angles and rotation rates using a reference object during the motion.
• Our solution involves analytic calculations to determine vehicle position in 3D space computationally fast, which is critical for real time systems. The comprehensive project comprises three stages: a) generation of a 3D model of the referenced object, b) calculation of the 3D position of the vehicle, and c) controlling the vehicle on a path.
• In our previous studies, second and third stages have been successfully tested in a simulated environment and some results have been published. In this project, we target the first stage and then integrate our system into a real mobile robot.

List of Recent Publications/Presentations/ Honors

What inspired you to continue graduate education and/or pursue research?
Searching for the new and unknown has always been interesting and compelling for me. In my second year of college, I realized that the best option for me was to pursue a PhD and research better solutions.

Future Plans
My plan is to continue research in a R&D department for a or stay in the University as a faculty member. I would like to develop more robust and stable robotic systems as they have become very popular.

Mentor
Dr. Farbod Fahimi
UAH Mechanical and Aerospace Engineering
301 Sparkman Drive, Huntsville, AL 35899
(256) 824-5671
ff0002@uah.edu
Objective
The objective of this project is to develop a novel cardiovascular stent coating to ultimately improve the clinical outcomes of patients who receive stents for cardiovascular disease. This will be done through dynamic studies in a physiological condition-modeling bioreactor as well as within rabbit iliac arteries.

Research Abstract
• Stents are one of the most commonly implanted devices used in the treatment of cardiovascular disease, but problems persist with currently available stents.
• This project proposes a novel stent coating that will promote blood vessel healing, restore normal function, and reduce in-stent complications after stent deployment.
• We will investigate our coating under flow conditions in a bioreactor as well as within rabbit iliac arteries to ensure our coating can address the limitations of current stents.

List of Recent Publications

What inspired you to continue graduate education and/or pursue research?
I was inspired to pursue a career in research after my internships at the HudsonAlpha Institute for Biotechnology in Huntsville and the NASA Marshall Space Flight Center.

Future Plans
My goal is to become an independent scientific investigator and to conduct multidisciplinary and translational research in the fields of tissue engineering and regenerative medicine that has the potential for immediate beneficial impact on critical healthcare needs.
Developing an antimicrobial coating to prevent the spread of antibiotic-resistant bacteria using Janus nanoparticles

Alan Hanley
Auburn University

Round 10 Recipient
NSF EPSCoR RII # 1158862
Expected Graduation 2017, PhD, Chemical Engineering
amh0072@auburn.edu

Objective
To produce Janus nanoparticles using a new synthesis method that has the potential for scalability and to use this method to produce multi-modal nanoparticles that can bond to a surface as well as attract and destroy antibiotic-resistant bacteria cells.

Research Abstract
• Using two-sided nanoparticles, or Janus nanoparticles, to form self assembled “smart” structures.
• Proving the efficacy of a new Janus nanoparticle synthesis method that has the potential to be scaled up to meet an industrial demand.
• Tuning the parameters of this new method to develop strategies to make different types of Janus nanoparticles.
• Using this new synthesis method to create Janus nanoparticles that can bond to a surface and act as a antibacterial shield for said surface.
• Experimenting with different compounds to make up the hemispheres of these Janus nanoparticles in order to find more uses for these nanoparticles.

List of Recent Publications/Presentations/ Honors
• AIChE Annual Meeting 2014, Poster Presentation Scalable Synthesis Methods for Janus Nanoparticles
• Auburn University, 2014 Graduate Engineering Research Showcase, Poster Presentation Scalable Synthesis Methods for Janus Nanoparticles

What inspired you to continue graduate education and/or pursue research?
From the beginning of my undergraduate education, my intention was always to pursue a doctorate in chemical engineering. After completing my Master’s Degree, I took a year off from academia and worked as an engineer for an injection molding company. While I enjoyed my work, it became clear that research gave me more satisfaction, and that was when I decided to return to graduate school.

Future Plans
I have not yet decided on a career path following the completion of my PhD. I am open to either a career in academia or in industry, and look forward to seeing what opportunities are presented to me when the time comes.

Mentor
Dr. Allan E. David
Chemical Engineering
Auburn University
202 Ross Hall
Auburn, AL 36849
334-844-8119
aed0022@auburn.edu
Objective
My research aims to maximize carbon dioxide adsorption in composite silica-based adsorbents for the purpose of closed cabin air revitalization in spacecraft. A silica adsorbent, SBA-15, will be impregnated with various task-specific ionic liquids to create these composite adsorbents.

Research Abstract
• Novel adsorbents will be examined for closed cabin air revitalization in spacecraft (CO₂ capture).
• Experiments have shown these composite materials are complex.
• Nitrogen, CO₂, and water isotherms will be measured to determine sorbent capacities.
• Effects of crystallization and water uptake on CO₂ capacity will also be studied.

List of Recent Publications/Presentations/ Honors
• Graduated Magna Cum Laude from the University of South Alabama, BS, Chemical Engineering

What inspired you to continue graduate education and/or pursue research?
The desire to work in a graduate research environment inspired me to further my education and pursue a graduate degree in chemical engineering.

Future Plans
I will complete my MS in Chemical Engineering, enroll into the DSc program in Systems Engineering at the University of South Alabama, and continue to pursue further research opportunities.

Mentor
T. Grant Glover
Chemical and Biomolecular Engineering
University of South Alabama
150 Jaguar Drive
Mobile, AL 36688
251-460-7462
glover@southalabama.edu
Objective
Mechanisms of observed cardiac functional changes in Timothy syndrome patients can be elucidated through the comparison of 3D developing engineered cardiac tissues created using Timothy syndrome and control patient-derived human induced pluripotent stem cell (hiPSC) lines. This project will focus in particular on changes in extracellular matrix production, force of contraction, gene and protein expression, as well as functional differences in electrical signaling and calcium handling.

Research Abstract
- HiPSCs are patient-specific cells and can differentiate into contracting cardiomyocytes while maintaining their disease phenotype.
- Timothy syndrome is a multi-organ disorder which can cause lethal arrhythmias and can now be modeled and studied with the help of Timothy syndrome patient-derived hiPSCs.

List of Recent Publications/Presentations/ Honors

What inspired you to continue graduate education and/or pursue research?
I enjoyed working in the laboratory during my undergraduate studies at Clemson University as well as conducting research during my internship experience in R&D at Milliken & Company.

Future Plans
I would like to work for a pharmaceutical company to apply my experience in mammalian cell culture, biomaterials, and background in chemical engineering.

Mentor
Dr. Elizabeth A. Lipke
Chemical Engineering
Auburn University
212 Ross Hall
Auburn, AL 36832
334-844-2003
elipke@auburn.edu
**Objective**
Investigate the various subwavelength light trapping nanostructures such as the nano-trenches and nano rings grating. The applications of these nanostructures are biomedical sensors.

**Research Abstract**
- Sub-wavelength Perfect Light Absorption Devices.
- Polarization dependence or independence nano-trench biosensors.
- Oblique angle of incidence light.

**List of Recent Publications/Presentations/ Honors**

**Journal papers**
- Z. Li, H. Guo and J. Guo, “Polarization dependence of light trapping in 2D nanotrench arrays with oblique angle of incident light”(will publish)

**Conference papers and presentations**

**Membership and leadership**
- Treasurer, Student Chapter of OSA in University of Alabama in Huntsville, December 2013 – present.
- Member, Student Chapter of OSA in University of Alabama in Huntsville, August 2013 – present.
- Member, Student Chapter of SPIE in University of Alabama in Huntsville, August 2013 – present.

What inspired you to continue graduate education and/or pursue research?
The inspiration of my graduate education and pursuit of research is my enthusiasm for applied physics especially in the area of nano-optics.

**Future Plans**
Investigate the nano-trench properties with different incident angles. Investigate the metal rings grating with FDTD simulation software. Fabricate the metal rings grating by using e-beam lithography.

**Mentor**
Dr. Junpeng Guo  
Electrical Engineering  
University of Alabama in Huntsville  
301 Sparkman Dr NW  
Huntsville, Alabama 35899  
256-824-2421  
guoj@uah.edu
Objective
Design and optimize a cost-effective and environmentally-benign biorefinery process to compensate for the depletion of petroleum-derived fossil fuels using biomass as a renewable source of energy.

Research Abstract
• Design and simulate the biomass conversion process for producing liquid transportation fuels.
• Study the effects such as feedstock properties, market requirements and light gas treatment on the biomass conversion process.
• Evaluate the economic and environmental performance.

Recent Presentations

What inspired you to continue graduate education and/or pursue research?
Doing research in a new and renewable energy area was my inspiration for continuing graduate education.

Future Plans
I will finish constructing the whole biomass conversion process in Aspen Plus by using single-pass Fischer-Tropsch synthesis. Then I will compare the single-pass Fischer-Tropsch synthesis, Fischer-Tropsch synthesis with recycle, and supercritical Fischer-Tropsch synthesis.

Mentor
Dr. Mario R. Eden
Department of Chemical Engineering
Auburn University
210 Ross Hall
Auburn, AL 36849
(334) 844-2064
edenmar@auburn.edu
Objective
The goal of this research is to create a multilayered thin film structure capable of emission in the mid-infrared under electrical excitation. The needed materials and structure are being grown by pulsed laser deposition and analyzed using electrochemical impedance spectroscopy, atom probe analysis, x-ray diffraction, among other characterization techniques.

Research Abstract
• Deposition of zinc selenide (ZnSe) thin films of both n-type and p-type conductivity by incorporating the appropriate dopants using pulsed laser deposition.
• Measurement of the dopant concentrations of deposited films via electrochemical impedance spectroscopy and determination of dopant profile via atom probe analysis.
• Demonstration of epitaxial growth of active gain material, chromium-doped ZnSe (Cr2+:ZnSe), and incorporation into p-n junction structure.
• Fabrication of lattice-matched layers of ZnSe-based alloys to act as guiding layers (ZnSSe) and cladding layers (ZnMgSSe).

List of Recent Publications/Presentations/ Honors

What inspired you to continue graduate education and/or pursue research?
After teaching high school physics in the state of Alabama for over three years, I obtained a Master’s degree in secondary education in the pursuit of becoming a better teacher. Upon completion, I decided to further pursue my science education in order to better prepare me to translate complex scientific ideas into simpler terms for future students.

Future Plans
Since I joined the Department of Physics at UAB, I have been a teaching assistant for multiple sections of physics during my 4 years in the MS and PhD Physics Programs and enjoy talking with students about their future plans after finishing their degree. I have high hopes that I can play a part in reforming the educational landscape of the state of Alabama by passionately leading students to career paths in STEM fields.

Mentor
Dr. Renato P. Camata
Department of Physics
University of Alabama at Birmingham
1530 3rd Avenue South, CH 310
Birmingham AL 35294-1170
(205) 934-3518
camata@uab.edu
Objective
To pursue a PhD degree in Electrical Engineering and optical science technology.

Research Abstract
- Perfect light absorbers are photonic nanostructures that completely absorb light at the designed wavelengths.
- Fabricate unpatterned perfect light absorbers using two most abundant and low cost materials in nature, silicon and aluminum.
- Theses absorbers have ultra-thin thickness of about 1/14 of the peak absorption wavelength with wide angle operation.

List of Recent Publications/Presentations/ Honors

Patent
- S. S. Mirshafieyan and M. Paknekjad, “Design of capacitive micro-machined ultrasonic transducers (CMUTs),” Proceedings of the 10th Iranian Student Conference on Electrical Engineering, Isfahan, Iran, September 2007 (Best Poster Award, 1st Place).

What inspired you to continue graduate education and/or pursue research?
Increasing my academic knowledge and being a more productive person in society in order to help others.

Future Plans
To obtain a post-doctoral research position in nanophotonics area and find an academic research position.

Mentor
Dr. Junpeng Guo
Department of Electrical and Computer Engineering
The University of Alabama in Huntsville
301 Sparkman Drive
Huntsville, AL 35899
(256) 824-2421
guoj@uah.edu
Objective
To develop a cost-effective replacement for autoclave-processed carbon fiber reinforced bismaleimide (CF/BMI) composites presently used by the US Air Force and other industrial entities.

Research Abstract
• The central goal of this study is to create a more damage-tolerant, higher operating temperature, moisture-resistant CF/BMI composite material for lighter and more durable fighter jets and commercial aircraft.
• The effects of two different modifiers, Diallyl Bisphenol A/Siloxane-acrylic copolymer and Hydroxy-functionalized multi-walled carbon nanotubes, on the thermal and mechanical behavior of BMI-1 were studied.

List of Recent Publications/Presentations/Honors

What inspired you to continue graduate education and/or pursue research?
My motivation for pursuing research is to keep abreast of and contribute to cutting edge developments.

Future Plans
I am scheduled to complete my PhD studies and continue research on BMI composites.

Mentor
Dr. Shaik Zainuddin
Materials Science and Engineering
Tuskegee University
100 Chappie James Center
Tuskegee, AL 36088
334-724-4222
szainuddin@mytu.tuskegee.edu
Objective
The main objective of this research project is to develop a bio-based nanocomposite reinforced with natural fiber that has comparable properties, i.e. mechanical and thermal, of a synthetic composite material. Further research will be performed to investigate the life cycle assessment of the developed bio-based nanocomposite.

Research Abstract
• Study the influence of different nanoclays on the mechanical and thermal properties of bio-based epoxy polymer system.
• Investigate morphological changes and thermal properties of surface modified woven flax fiber as functions of varying chemical treatment.
• Fabricate and characterize an environmentally friendly bio-based flax fiber reinforced composite infused with nanoclay.
• Study biodegradability cycle of the bionanocomposite over a 90-day period and estimate a life cycle assessment from cradle to grave.

List of Recent Publications/Presentations/ Honors

Oral Presentations

Poster Presentations

What inspired you to continue graduate education and/or pursue research?
My husband and my family always encouraged me to reach for my dreams. I wanted to continue in the STEM field, but I wanted to use my undergraduate degree in Mathematics/Physics to develop useful applications that would impact the world in a positive manner. This opportunity in Material Science and Engineering has given me that opportunity and will provide me with the education, direction and credentials to reach my goal.

Future Plans
I would love to work in either the automotive or other transportation based companies to incorporate my academic, as well as my research experiences in the development and implementation of ‘green materials’. Through my years of research, I feel that I have developed the necessary skills to continue to help the environment in these industries.

Mentor
Dr. Mahesh V. Hosur
Material Science and Engineering
Tuskegee University
101 Chappie James Center
Tuskegee, AL 36088
334-724-4220
hosur@mytu.tuskegee.edu
Objective
The goal of my research is to accurately characterize the molecular differences between two related but behaviorally distinct forms of breast cancer.

Research Abstract
• Breast cancer is the leading cause of female cancer mortality in most developed countries.
• The two forms of breast cancer that were examined are notably different in terms of invasiveness and resistance to chemotherapy.
• We discovered significant differences in the composition of small molecules known as microRNAs between these two types of breast cancer.
• We believe these small regulatory molecules could be involved in the observed differences between these two breast cancer forms.

List of Recent Publications/Presentations/Honors
• Justin T. Roberts, Sara Elizabeth Cardin, and Glen M. Borchert. Burgeoning evidence indicates that microRNAs were initially formed from transposable element sequences. Mobile Genetic Elements. December 2014. PMID: 25054081 (Invited Review)

What inspired you to continue graduate education and/or pursue research?
Medical breakthroughs depend on research. I want to help bring therapies to as many people as possible.

Future Plans
I plan to enroll in a PhD program focusing on computational biology with a medical science emphasis.

Mentor
Glen Borchert, PhD
Biology, Pharmacology
University of South Alabama
Mobile, AL 36688
(251) 460-7310
borchert@southalabama.edu
Objective
The objective of my research is to develop low cost and highly efficient electrode materials for water splitting with solar energy.

Research Abstract
Hydrogen production by water splitting is highly desirable, however, the high cost and low efficiency of electrode materials prohibit the widespread application. My research involves synthesis of low cost electrode materials to replace noble metal for water splitting. For example, we will modify our activity water oxidation electrode containing titanium and oxygen with porous substrate to increase its surface area for further improve its water splitting ability. The function-structural relations of this new electrode will be fully understood using our advanced analytical tools.

List of Recent Publications/Presentations/ Honors

What inspired you to continue graduate education and/or pursue research?
The research of renewable and environmentally-friendly energy is significant and holds the promise for addressing energy challenges in the 21st century.

Future Plans
My future work plans are to obtain a PhD degree and pursue a career in the area of renewable energy.

Mentor
Dr. Shanlin Pan
Department of Chemistry
Box 870336
The University of Alabama
Tuscaloosa, AL 35401
(205) 348-6381
span1@ua.edu
Objective
The objective of this project is to evaluate the potential of ultrathin iron oxide nanowires for use as positive contrast agents for magnetic resonance imaging (MRI). Iron oxide nanoparticles as MRI contrast agents could potentially replace the current, toxic, commercially available contrast agents.

Research Abstract
• The current MRI contrast agent is gadolinium, a toxic heavy metal.
• Iron oxide nanoparticles can serve as safer, non-toxic, MRI contrast agents.
• Iron oxide nanoparticles must be extremely small (<4nm) in order to work as MRI contrast agents.
• The size limitation of the extremely small nanoparticles results in the particles being expelled from the body quickly.
• The nanowires have increased size in one dimension, and this could potentially result in longer circulation time within the body.
• The nanowires and extremely small nanoparticles will be compared and evaluated to determine if the shape has an effect on the nanoparticle behaviors.

List of Recent Publications/Presentations/ Honors
Presentations:

Publications:

What inspired you to continue graduate education and/or pursue research?
My combined interests in chemistry, biology, and engineering inspired me to pursue graduate education to build upon my undergraduate degree in chemical engineering and apply my knowledge and skills to biological research. I am also personally motivated and passionate about my research for personal reasons. My dad had a brain aneurism and the MRI lead to fast, accurate diagnosis, and was key to his recovery. This experience has served as motivation towards my research in developing iron oxide nanoparticles for MRI contrast agents.

Future Plans
After graduating with a PhD in chemical and biological engineering, I plan to continue my education by pursuing a post-doctoral position and eventually pursue a career in academic research.

Mentor
Dr. Yuping Bao
Chemical and Biological Engineering
University of Alabama
Tuscaloosa, Alabama 35487
(205) 348-9869
ybao@eng.ua.edu
Objective
The objective of this research is to demonstrate the feasibility of a proposed light-activated biomolecular immobilization technique for sensing biomolecules, including toxins, on polymeric surfaces.

Research Abstract
- The process is mediated by excitation of a dye-label attached to the biomolecule of interest with visible light of 488 nm wavelength. Biomolecules from an aqueous medium can be attached at any desired spot on the substrate simply by exposing the area to light.
- The area of the focused laser beam can control the spot-size of immobilized biomolecules. The technique is used to fabricate microarrays of immobilized antibodies (immunomicroarray) having spot-size of the order of 1 micron. This is a significant improvement over the typical commercial microarrays with spot-size in 10-100 micron range.
- The immobilization technique has first been characterized by attaching phospholipids and will further be developed by attaching common proteins like Avidin as well as other antibodies against toxins and pathogens known for potential bio-terrorism through food and water systems.

List of Recent Publications/Presentations/ Honors
- Wesley D. Sims, Shantel Hébert-Magee MD, Upender Manne, PhD, p53 codon 72 polymorphisms in African-American women with Triple-Negative Breast Cancer. Morehouse School of Medicine/Tuskegee University/University of Alabama Birmingham Comprehensive Cancer Center Partnership Summer Institute Symposium. Tuskegee, AL. 2012 (1st Place)

Mentor
Anup Sharma, PhD
Physics
Alabama A&M University
4900 Meridian St N
Normal, AL 35762
(256) 372-8102
anup.sharma@aamu.edu
**Objective**

The objective of my research is to develop microfluidic based approaches to accomplish cell sorting to enable rapid and activation-free cell separation.

**Research Abstract**

- The immediate immune and inflammatory information carried by leukocytes can be harnessed using high-throughput genomic, proteomic or flow cytometric approaches.
- Current cell sorting techniques either subject leukocytes to high stress (>350g) for long period (30 min) or possibly alter immune status of the leukocytes by antibody binding.
- We propose microfluidic approaches to sort leukocytes from the peripheral blood directly using microfluidic density gradient centrifugation which subjects cells to <200g forces for less than 1 minute.
- This approach provides rapid and stress-free isolation of leukocytes from blood for clinical analysis.

**List of Recent Publications/Presentations/Honors**


**What inspired you to continue graduate education and/or pursue research?**

The idea of developing medical devices to impact and improve the quality of life for patients has motivated me to pursue graduate education and research.

**Future Plans**

After completion of my doctoral education, I intend to pursue a career in academia in one of the Alabama Institutions in Biomedical Sciences/Engineering.

**Mentor**

Dr. Palaniappan Sethu  
Department of Med-Cardiovascular Disease  
University of Alabama at Birmingham  
1720 2nd Avenue South  
Birmingham, AL 35205  
205-975-4185  
psethu@uab.edu
Enhancing Nano/Bio Sensors in the Terahertz Regime Via Research in Tunable Metamaterials Using Liquid Crystals

Abubaker Tareki
University of Alabama in Huntsville

Round 10 Recipient
NSF EPSCoR RII # 1158862
Expected Graduation in 2018, PhD, Electrical Engineering
amt0014@uah.edu

Objective
To develop a platform of tunable components in the terahertz regime using liquid crystal (LC).

Research Abstract
The basic concept for the proposed platform is relatively straightforward in that a stratified structure will be engineered using LC layers and dielectric material layers coated with patterned metal layers. The metal layers will be used as electrodes for tuning the component properties.

• Material selection (choosing and testing) will be used as spacer and substrate for the proposed platform structure.
• Design and fabricate thin LC layers as tuning material.
• Design and fabricate metallic pattern (gold) as transparent and polarization independent electrode.

List of Recent Publications/Presentations/ Honors

What inspired you to continue graduate education and/or pursue research?
Due to Alabama’s state low cost of living, beautiful countryside, and the variety of existing high-tech industries, more and more scientists and engineers are attracted to the state.

Future Plans
I plan to obtain a post-doctoral research position for 1-3 years after getting my PhD, and then find a permanent research or teaching position.

Faculty Advisor
Robert Lindquist, PhD
Department of Electrical & Computer Engineering
University of Alabama in Huntsville
301 Sparkman Drive (EB 272)
Huntsville, AL 35899
(256)824-2882
lindquis@ece.uah.edu
**Objective**
To design the optimal polymer membrane(s) to absorb carbon dioxide from post-combustion flue gas.

**Research Abstract**
- Use modeling software to screen potential polymer membranes based on void space.
- Create and test polymer membranes in order to maximize permeability and find the perfect membrane for CO$_2$ capture from post-combustion flue gas.

**List of Recent Publications/Presentations/ Honors**
- Graduate Council Fellow, 2013-2014

**What inspired you to continue graduate education and/or pursue research?**
My desire to teach.

**Future Plans**
I plan to finish my doctoral degree and teach in high school or college.

**Mentor**
Jason E Bara, PhD
Chemical and Biological Engineering
The University of Alabama
Tuscaloosa, AL 35487
(205) 348-6836
jbara@eng.ua.edu
Xiaoqing Wang  
The University of Alabama

Round 10 Recipient  
NASA EPSCoR # NNX11AM11A  
Expected Graduation, 2017, PhD, Mechanical Engineering  
Xwang127@crimson.ua.edu

Objective
Develop relationships between process parameters and part properties in additive manufacturing of Inconel 718 alloy.

Research Abstract
• Microstructural characterization and mechanical properties of as-deposited Inconel 718 parts.
• Study the residual stress and its effects, and process parameter effects on the parts.

List of Recent Publications/Presentations/ Honors

What inspired you to continue graduate education and/or pursue research?
Amazing new things come out and always give me big surprises in exploring the world of research.

Future Plans
To obtain a PhD degree and pursue career in advanced manufacturing engineering.

Mentor
Y. Kevin Chou, PhD  
Mechanical Engineering Department  
University of Alabama  
NERC 1008  
Tuscaloosa, AL 35487  
(205)348-0044  
Kchou@eng.ua.edu
Objective
The focus of my research is to study nanoscale heat conduction of the Nanostructure Enhanced Phase Change Materials (NePCM) and enhance its thermal properties.

Research Abstract
- Studying the mechanism behind heat transfer enhancement of NePCM at nanoscale and how it can enhance the effectiveness of present thermal energy storage systems.
- The non-continuum heat transfer model is studied by a molecular dynamics simulation method.
- The molecular orientation distribution and the simulation box size effect of long-chain n-alkanes on nanoscale heat conduction of NePCM will be studied.

List of Recent Publications/Presentations/Honors
- International Centre for Heat and Mass Transfer (ICHMT) Travel Grant to attend the 6th International Symposium on Advances in Computational Heat Transfer, Rutgers University, 2015.

What inspired you to continue graduate education and/or pursue research?
To get a deeper understanding and further development on the research area of nanoscale heat transfer.

Future Plans
I would like to join a company or university which can support my research on the theory and application of nanoscale heat transfer.

Mentor
J. M. Khodadadi, Alumni Professor
Department of Mechanical Engineering
Auburn University
1418 Wiggins Hall
Auburn, AL 36849
(334) 844-3333
khodajm@auburn.edu
Malek Abunaemeh  
Alabama A&M University  
Recipient, Round 4, 5, and 6  
PhD, 2011, Physics  
abunaemeh@gmail.com

I graduated from Alabama A&M University with a PhD in Physics with a concentration on material science under the supervision of Dr. Ila. I was appointed part of the Physics Faculty at Talladega College from August 2011 until January 2013. I accepted a temporary position in Physics and Science education at Lehman College in New York City. In May 2014, I was appointed on the physics faculty at University of West Florida in Pensacola, Florida where I remained until June of 2015.

Laxman Adhikari  
University of Alabama in Huntsville  
Recipient, Round 9  
PhD, May 2015  
laxadhikari011@gmail.com

I recently completed my PhD degree in Physics from University of Alabama in Huntsville. The title of my dissertation was “The Transport of Turbulence in Large-Scale Inhomogeneous flows with Application to the Solar Wind”. Now, I am working in a postdoctoral position at the Center for Space Plasma and Aeronomic Research (CSPAR) at the University of Alabama in Huntsville. This work is similar to my PhD work. As a postdoc, I will be working on developing a turbulence transport model, which describes the turbulence transport phenomena associated with various quantities in the sub-Alfvenic coronal flows. Understanding turbulence in the sub-Alfvenic coronal flows is very important to explain the coronal heating and acceleration of the solar wind. Moreover, I will be working on developing a fluctuating density turbulence transport equation, which describes the density fluctuations in the heliosphere from 0.29 AU to 80 AU. In this case, I will also calculate density fluctuations from the Voyager 2 data sets, and then compare the theoretical result and the observed density fluctuations.


Md. Ariful Ahsan  
Tuskegee University  
Recipient, Round 8  
2015, MS, Chemistry  
hasan2897@mytu.tuskegee.edu

I completed my master’s degree in Chemistry from Tuskegee University in summer 2015. This EPSCoR fellowship helped me a lot throughout my master’s study and research. While working on my MS, I did research on materials chemistry. I synthesized Cu and Cu-Ni bimetallic nanoparticles. Then I tested their antimicrobial activity against gram positive and gram negative bacteria. From this study, significant results were obtained. We are going to publish two journal papers on my thesis work very soon. I also worked as a teaching assistant in the Department of Chemistry at Tuskegee University. I enrolled in the Chemistry PhD program at the University of Texas at El Paso starting fall semester 2015. I will continue my PhD research on materials chemistry.
Rabih Al Ghossein
Auburn University
Recipient, Round 9
August 2015, MS, Mechanical Engineering
rabihgh8@gmail.com

Upon my graduation in August 2015, I accepted a full-time position with a local jewelry company in Tuscaloosa, Alabama, named Benchmark Inc., as a product design engineer. The company’s drive and goals for the use of 3D programming, 3D printing and laser engraving methods for the design and manufacturing of the various jewelry products were of great interest to me. My main responsibilities are the design of wedding rings and bands using SolidWorks, and then implementing those drawings into algorithmic codes for the production of the rings using CNC, ACSYS laser machines and 3D printing molds.

Journal Publications:

Conference Publications:

Sharooz Amidi
The University of Alabama
Recipient, Rounds 7 and 8
Expected Graduation December 2015, PhD, Civil, Construction and Environmental Engineering
samidi@crimson.ua.edu

I am in my last semester at the University of Alabama and serving as a graduate teaching assistant in two senior design classes. I defended my PhD in August of 2015 and currently working on the publication of papers. I am still working on a project about the bond capacity of ultra-high performance concrete (UHPC) and normal Portland cement (NPC) concrete under Dr. Jialai Wang and Dr. Sriram Aaleti. In this project under the grant of Doctoral Research Enhancement Grant (RISE), which was awarded to me last year by the department of Civil, Construction, and Environmental Engineering, I have studied the strength and capacity of two different concrete substrates bonded together with different methods and subjected them to different environmental conditions. I expect to have a published manuscript from this research for a peer-reviewed journal by end of the fall semester.
Hasan Babaei  
Auburn University  
Recipient, Rounds 6, 7 and 8  
PhD, 2014, Mechanical Engineering  
hzb0004@tigermail.auburn.edu

I am currently a Postdoctoral associate at the Department of Chemical Engineering, University of Pittsburgh (Pitt) and visiting scholar in Department of Mechanical Engineering, Carnegie Mellon University (CMU). Prior to Pitt, I was a visiting scholar at University of Illinois at Urbana-Champaign (UIUC) for one year. During my one-year stay at UIUC, by utilizing first principle and phonon calculations, I investigated the thermoelectric properties of single-layer molybdenum disulfide (SL-MoS2) (a 2-D material) and found an anomalously large thermoelectric power factor. Moreover, I developed a new methodology in finding phonon relaxation times. During the past year at Pitt and CMU, I have been studying the mechanisms of heat transfer in Metal-organic frameworks (MOFs) during gas adsorption using molecular dynamics (MD) and grand canonical Monte Carlo (GCMC) simulations and spectral energy density (SED) calculations.

Journal Publications


Susan Balenger  
Auburn University  
Recipient, Rounds 4, 5 and 6  
PhD, 2011, Biological Sciences  
sbalenger@gmail.com

My research addresses fundamental questions regarding the evolution and ecology of natural host-parasite relationships, with the ultimate goal of identifying how such relationships influence the evolution of sexually dimorphic traits and behaviors and population genetics. As a postdoctoral researcher with Dr. Marlene Zuk at the University of Minnesota, I am studying the evolution of a call-less cricket in response to an acoustically orienting parasitoid fly. I also actively mentor undergraduate researchers and will be co-teaching a course called “Sex and Animal Behavior” at UMN this Fall.
To date, I have published a total of 19 peer-reviewed journal articles, 9 of which have been published since I completed my PhD at Auburn University in 2011. Since beginning my postdoc I have been an invited speaker at 2 national conferences and 6 university departments, in addition to contributing presentations at 6 national and international conferences. I am currently searching for a university faculty position in the fields of behavioral ecology and evolution.

**Parimal Bapat**  
University of Alabama at Birmingham  
Recipient, Rounds 3 and 4  
PhD 2011, Physics  
Parimal.Bapat@orchid-ortho.com

Since June 2011 I have been working at Orchid Orthopedic Solutions in Southfield, MI as a Research Engineer. Orchid is world’s largest contract manufacturer for orthopedic devices and our division is specialized in osteointegrative or bone in-growth coatings that are applied on these devices such as metallic hip stems, knees etc. We primarily make two kinds of coatings; one is thermal plasma sprayed porous titanium coating and other one is thermal plasma sprayed Hydroxyapatite or HA coating. My job is to maintain the quality of our existing products along with developing the next generation of coatings for orthopedic devices. One of my newly developed titanium coatings will be debuting in the market sometime towards the end of 2015. I also evaluate new technologies and collaborate with local and national universities to bring their technology in market. I am active ASTM (American Society of Testing and Materials) member and serve as member or F04.13, F04.15 and F042 committees.

Here is the link to my latest published article  

**Mercedes Bartkovich**  
Alabama A&M University  
Recipient, Rounds 9 and 10  
Expected Graduation May 2016, MS, Wildlife  
mbartkov@bulldogs.aamu.edu

My research continues with the use of stable isotope analysis and molecular sexing methods to look at breeding grounds and stopover patterns of four migrant songbird species that migrate through northern Alabama. Field work for this research includes mist netting and banding songbirds at multiple sites at the Walls of Jericho and the Winfred Thomas Agricultural Research Station. A majority of the field work was completed in 2006-2008, but I hope to continue a small side project this semester that will involve a bit more field work. This research also involved a great deal of lab work including preparing feathers for stable isotope analysis by cleaning them, extracting DNA, and running polymerase chain reactions to determine the sex of individuals. One of the most interesting things about this research is that all the data and lab samples were obtained using non-invasive methods. When I graduate in the spring of 2016, I hope to have 3 manuscripts ready to publish.

In addition to field and lab work, I have participated in various outreach activities and I presented my research at a number of conferences. In April, I was awarded 1st place for an oral presentation at the Alabama Chapter of The Wildlife Society, and was also awarded a travel grant to attend the Southeastern Association of Fish and Wildlife Agencies Annual Conference giving me the opportunity to network with professionals from both state and federal wildlife agencies. That networking opportunity will prove useful when applying to jobs starting in December.
GRSP and Beyond

Nathan Brock
University of South Alabama
Recipient, Round 7
MS, 2013, Mechanical Engineering
npb501@jagmail.southalabama.edu

Since graduating from the University of South Alabama I have been working for FSE Energy in Covington, Louisiana. My experience while working in the lab on projects for the Alabama Department of Energy proved to be invaluable at my current job. I am a project engineer for the design, installation, and commissioning of biomass power plants. Currently I am working on green energy power plants in British Columbia, Canada; Santiago, Chile; and Mayo County, Ireland.

My experience in the lab at the University of South Alabama has provided invaluable experience in obtaining my current job. My education and research would not have possible without the Alabama GRSP.

Todd Butler
University of Alabama
Recipient, Rounds 7, 8, and 9
PhD, August 2015, Metallurgical and Materials Engineering
eternallyscience@gmail.com

The Alabama EPSCOR fellowship has allowed me to continue my research on Shape Memory Alloys for a little over three years now. My work deals directly with a collaboration UA has with NASA’s Glenn Research Center. I was one of several that studied unique Ti-Ni-based shape memory alloy systems. This was in the hope of elucidating the phase equilibria and its influence on the martensitic transformation behavior. To my surprise, I discovered two novel phases that only appear to exist in ternary space. However, these precipitate phases were detrimental to the transformation behavior of my particular Ti-Ni-Au alloy. My work enhances the fundamental knowledge of the Ti-Ni-Au system and gives NASA insight on future steps with shape memory alloys.

I have combined all of my work into a large manuscript, which is currently under review at NASA. This work has also resulted in many conference presentations, as listed below. I plan to graduate with my PhD in metallurgical engineering in May 2016. Having also already defended my PhD proposal, I have only the dissertation defense as my final requirement to degree fruition. After graduation, I hope to find a job in industry dealing with the advanced characterization of novel alloys. My graduate school obtained skillset will aid in my success. Without the EPSCoR funds, my dreams of becoming a professional scientist may not have come true. Once again, I would like to thank the GRSP fellowship for assisting me with my scientific / academic endeavors!

Presentations
GRSP and Beyond

• T.M. Butler, G.B. Thompson, and M.L. Weaver, “Microstructural evolution and transformation behavior of an aged Ti-Ni-Au shape memory alloy,” presented at The International Conference on Shape Memory and Superelastic Technologies (SMST), Pacific Grove, CA, May 2014.

Miranda Byrne-Steele
University of Alabama in Huntsville
Recipient, Rounds 1, 2, 4, and 5
PhD, 2009, Biotechnology Science and Engineering
msteele@irepertoire.com

I am extremely grateful to Alabama GRSP program for the funding provided while obtaining my doctorate. This program is invaluable in terms of providing much needed support to graduate students throughout the state. Since graduating, I have been afforded tremendous opportunities to pursue research pertaining to human health within the state of Alabama. I am currently employed as the Director of R&D and Operations at iRepertoire, Inc. located in the HudsonAlpha Institute for Biotechnology in Huntsville, AL. iRepertoire was the first company to develop and commercialize immune repertoire sequencing technology and products. Using our patented multiplex PCR strategy and proprietary reagent systems, our core technology has allowed researchers worldwide to take a molecular snapshot of the immune system. This snapshot provides detailed insight into an individual’s health status and may be an important source of disease biomarkers. As an extension of our current technology, I have developed a patent-pending novel method to identify antigen-specific antibodies from the wealth of sequencing data produced by our core technology. Monoclonal antibodies are an important class of proteins widely used in applications ranging from diagnostic and research agents to therapeutic pharmaceuticals. I am also second author on a highly accessed publication entitled “DNA polymerase preference determines PCR priming efficiency.” In addition to my research and development roles at iRepertoire Inc., I also manage daily operations leading a team of 10-12 individuals in providing quality immune research products and services to laboratories both nationally and internationally. Serving as an adjunct faculty member at UAH, I also mentored a PhD candidate who graduated in May 2015. I would like to encourage the investment in Alabama’s future innovators.

Ethan Cagle
University of Alabama at Birmingham
Recipient, Rounds 9 and 10
Expected Graduation, 2017, PhD, Chemistry
eccagle@uab.edu

I recently started my third year in the Chemistry PhD program at UAB. In April, I passed my departmental literature seminar. I will be taking my qualifying exams in October and should be submitting my original research proposal soon after that and completing my requirements for becoming a PhD candidate. I presented at the 2013 Southeast Regional Meeting of the American Chemical Society and the 2015 Alabama EPSCoR Open House.
GRSP and Beyond

Johanna Cannon
Auburn University
Recipient, Rounds 3, 4, and 5
PhD, 2014, Biological Sciences
joie.cannon@gmail.com

I am currently a postdoctoral researcher at the Swedish Museum of Natural History (Naturhistoriska riksmuseet) in Stockholm. My PhD studies, while funded by the GRSP, addressed the evolutionary relationships of the marine invertebrate phylum Hemichordata, using molecular and genomic approaches. In my postdoctoral work, I am using these same molecular genomic tools to investigate the position of a different group of marine worms, the Acoelomorpha, within the animal tree of life. Understanding the evolutionary relationships among major lineages of invertebrate animals is important for contextualising insights gained from studies on model organisms, as well as understanding the origins of complex organ systems. Genomic approaches are allowing researchers to resolve the deepest branches in the tree of life, and to find answers to long-standing questions in early animal evolution.

As a GRSP scholar, I had the opportunity to participate in unique field work experiences in the US and abroad that directly contributed to my success in finding an ideal postdoctoral position immediately after graduation. After the completion of my postdoc, I am seeking an academic faculty position back in the United States.

Selected recent publications:


Andrew Cantrell
Alabama A&M University
Round 6 Recipient
MS 2011, Natural Resources, Environmental Studies
andrew.w.cantrell@gmail.com

I continue to serve as Program Manager/Wildlife Research Coordinator of the Avian and Herpetology Lab and have recently enrolled in the PhD program at Alabama A&M University. The main focus of my dissertation is the overwintering ecology of the Whooping Crane (Grus americana) at Wheeler National Wildlife Refuge. I am also conducting some side studies, one being the examining the distribution of and methyl-mercury concentrations within semi-aquatic turtles using non-invasive techniques. I have also started a small scale study examining the population dynamics of the American Alligator (Alligator mississippiensis) in north Alabama. In addition, I am also teaching two classes. I have to give credit to my family, my advisor, Dr. Yong Wang, and all my lab mates.
Yi Chen  
University of Alabama in Huntsville  
Recipient, Round 6  
PhD, 2011, Computer Science  
cyaicf@gmail.com  

I am currently an engineer working in a financial software company in the east bay of San Francisco area. Technically I am using the most innovative .net knowledge to build the mortgage financial software which contributed in the originating 30% loan in the whole United States.

Bo Cheng  
The University of Alabama  
Recipient, Round 9  
Expected Graduation, 2016, PhD, Mechanical Engineering  
bcheng1@crimson.ua.edu  

I am currently continuing my PhD study in the Mechanical Engineering Department at The University of Alabama. My research interest focuses on the field of beam-based powder bed additive manufacturing technology. Currently, I conduct finite element thermal and thermomechanical simulations of selective laser melting (SLM) and electron beam melting (EBM), part surface morphology observation and thermal conductivity measurement.

List of recent Publication/Presentations/Honors  
Ashwith Chilvery
Alabama A&M University
Recipient, Round 8
PhD, 2014, Materials Science and Engineering
ash_with2004@yahoo.com

I am currently working as an Assistant Professor in the Department of Physics at Xavier University in New Orleans, Louisiana. After pursuing a doctoral degree in the Applied Physics at Alabama A&M University, I worked as an Assistant Professor in the Division of Natural Sciences and Mathematics at Talladega College. During my tenure at Talladega College, I also served as the site-coordinator for Louis Stokes Alliance for Minority Participation (LSAMP) program, which empowers minority students to pursue STEM majors. I am also a proactive researcher with a focus on photovoltaics, sensors, and energy harvesting technologies.

Recent publications

Daniel Clayton
The University of Alabama
Recipient, Round 7
PhD, 2014, Metallurgical and Materials Engineering
nfdawahre@gmail.com

I am in my second year of teaching chemistry at Minot State University in Minot, ND. I was recently promoted from the rank of visiting assistant professor to assistant professor and am currently establishing my independent research, focusing on nanomaterials.

Ninfa Constante
University of Alabama at Birmingham
Recipient, Rounds 7, 9 and 10
Expected graduation in December 2015, PhD, Materical Science and Engineering
aleconst@uab.edu

My research paper “Utilization of algae blooms as a source of natural fibers for biocomposites material: Study of morphology and mechanical performance of lyngbya fibers” was submitted to the journal Algal and is currently under review. I was invited to review a paper for the Journal Applied Polymer Science. In the summer semester, the proposal “Sustainable Green Gardens” was submitted to the company BASF, the largest chemical producer in the world and is headquartered in Ludwigshafen,
Germany. We were invited to submit a proposal to the BASF Science Competition Challenge on Lightweight Solutions for a Sustainable Future. The proposal was successfully received and advanced to the review stage. During this fall semester I will submit two more papers on processing of algae biocomposites to the Journal of Reinforced Plastics and Composites. I am working on the modeling of the degradation of natural fiber composites. In addition, I will give my final dissertation defense around the second week of October.

Kristy Crews
Tuskegee University
Recipient, Rounds 9 and 10
Expected graduation May 2016, PhD, Materials Science and Engineering
kcrews9542@mytu.tuskegee.edu; crewsk05@yahoo.com

Currently, I am in the process of completing my PhD in Materials Science and Engineering. I will be completing this degree by the summer of 2016. During this time, I am actively looking for a job in the areas of chemistry, materials science, and engineering. I am the co-author on two papers that have been published entitled “Influence of Strong Acid Hydrolysis Processing on the Thermal Stability and Crystallinity of Cellulose Isolated from Wheat Straw” and “Chemical Functionalization and Characterization of Cellulose Extracted from Wheat Straw Using Acid Hydrolysis Methodologies”. Additionally, I have two papers that I am preparing for publication. During the summer I was part of a group that built a prototype of a portable water filter. This prototype was presented at the HBCU Makers for Change Showcase.

Rohit Dhariwal
The University of Alabama in Huntsville
Recipient, Rounds 9 and 10
Expected graduation December 2016, PhD, Mechanical Engineering
rr0029@uah.edu; d.rohit6@gmail.com

Various complex flow features such as boundary layer transition, flow separation and turbulence are often encountered in many applications for e.g. turbomachinery and scramjets. The objective of my research is to develop a novel, high-fidelity and computationally efficient solver, based on Large Eddy Simulation (LES) to predict combustion dynamics and instabilities in liquid rocket engines. The solver will enable practical LES of both external and internal high-Reynolds-number turbulent flows. I also contributed to the development of the stochastic theory for turbulence-particle interactions and am performing direct numerical simulations (DNS) of particle-laden turbulent flows. The particle pair relative motion statistics obtained using DNS will be analyzed and compared with those obtained using stochastic theory.

List of recent Publications/Presentations/Honors
• Argonne Training Program on Extreme-Scale Computing (ATPESC) Scholar, 2015.
Melike Dizbay-Onat  
University of Alabama at Birmingham

Recipient, Rounds 7, 8 and 9  
PhD, March 2015, Interdisciplinary Engineering/Environmental Health and Safety Engineering melike09@uab.edu

My research is “Natural Fiber Derived Activated Carbons for Industrial Emission Minimization and Capture”. This research focuses on natural based activated carbon fibers for emission capture from a basic study standpoint leading to applied products. The broad and societal impact of the research is in worker safety, improving quality of people's lives and ultimately leading to a clean pollution free work space. I completed my PhD in interdisciplinary Engineering/Environmental Health and Safety Engineering at UAB in March 2015. My plans for the future include building strength in each focal area of my research by extending sustainable/biomass material derived activated carbon applications such as liquid purification and electrical applications (e.g. battery electrodes and capacitors). I am currently searching for employment opportunities and plan to pursue my career in this field.

Publications/ Presentations/Honors

- UAB Department of Materials Science and Engineering – Achievement Award, 2015.
- UAB Department of Material Science and Engineering Award- Student Poster Award, 2014.

Amecia Elliott  
University of Alabama in Huntsville

Round 3 Recipient  
MS, 2009, Structural Biology
adelliott@gmail.com

I have recently completed my first year of post-doctoral training at the National Institutes of Health. My research involves the development of a light-sheet microscope to image neural activity brain-wide in Drosophila fruit flies to identify the activity patterns that underlie specific behaviors. I am now entering a new training program with a competitive NIH grant I recently received.

Liwu Fan  
Auburn University

Recipient, Rounds 5 and 6  
PhD, 2011, Mechanical Engineering
liwufan@zju.edu.cn; liwufan@gmail.com

After receiving my PhD from Auburn University, I spent two years working as a Postdoctoral Fellow at Zhejiang University, P.R. China. I was then promoted to Associate Professor of the Department of Energy Engineering at Zhejiang University in December 2013. Since September 2014, I have been a
Visiting Scholar of the Department of Nuclear Science and Engineering at Massachusetts Institute of Technology. My current research interests are focused on heat transfer involving multiphase and phase change with a wide range of applications to thermal energy conversion, management, and storage.

List of Recent Publications


Basil Farah
University of South Alabama
Recipient, Rounds 5, 6 and 6 Supplement
MS, 2012, Mechanical Engineering
basil.farah@gmail.com

I have been working with Tejas Research & Engineering, LLC in the Woodlands, Texas since November 2012. Tejas Research & Engineering is an organization of highly talented and driven engineers, researchers, and developers. Employees at Tejas R&E strive to achieve the impossible by pushing the boundaries of conventional thought with innovation, game changing services and products. As a design engineer, I am able to use my mechanical engineering skills to design, test, and develop new products. My very first few projects with Tejas R&E were research and development in nature. The training I received through the GRSP funding has equipped me with critical and investigative thinking, as well as data analysis skills. As a graduate research assistant at the University of South Alabama funded by GRSP, I learned to write effective, clear reports. These skills, and a few more, have played a role in my success in my current profession.
Carlton W. Farley, III
Alabama A&M University
Recipient, Rounds 7, 8, and 9
PhD, 2015, Physics
farleyc_19@yahoo.com

My initial research consisted of UVA photo-degradation of melanin and PBR thin films, light transmission through human epidermis, and Raman detection of hidden explosives. This year, I shifted my research to focus on Raman detection of common adulterants in foods. The foods I decided to focus on were Extra Virgin Olive Oil, honey, baby formula, and flour. I was able to detect lower concentrations of adulterants using standard detection techniques, while also reducing the overall time required to test a given sample. I defended my dissertation in August 2015, and accepted a Post-Doc position at AAMU with Dr. Sharma, to continue my research into Raman detection of food adulteration.

Brian Fayock
University of Alabama in Huntsville
Round 6 Recipient
PhD, 2013, Physics
brian.fayock@gmail.com

Initially funded in round 6 of the GRSP, I have since graduated from the University of Alabama in Huntsville, held two post-doctoral positions, and recently began a new position with Raytheon Company. Before starting my current position, a paper was accepted for publication in the Journal of Physics: Conference Series. The paper is based on a continuation of my graduate work and provides simulation results that point to the need for more details in global models of the heliosphere. While my new position as a Senior Engineer is not directly related to my previous research, it is both interesting and challenging. I hope to keep in touch with my advisors to help continue past projects in my spare time, as I consider them each to be valuable to current topics in their respective fields.

William Gaillard
University of Alabama in Huntsville
Recipient, Rounds 7, 8 and 9
Expected PhD, 2016, Electrical and Computer Engineering
wrg0001@uah.edu

Oligonucleotides are short DNA or RNA molecules with a wide range of functions in genetic testing, antisense therapy, artificial gene synthesis, DNA amplification, DNA sequencing, as molecular probes, and in forensics. The impact of this work will be to reduce the cost of oligonucleotides for research and commercial applications in all of these areas by a factor of 50.

The result of this research will be a reusable glass micro reactor and a commercialized tabletop workstation capable of generating 100 - 200 pmols of high purity customer specified oligonucleotides required to synthesize short chain DNA, complex transmembrane proteins, site specific proteins, and user generated proteins not otherwise found in nature. Chemical synthesis will be achieved inside a glass micro-reactor at greater than 98.5% efficiency in a single 60 minute process run at 1% of current cost. In addition, an electronic drive controller and optical spectroscopy system capable of driving 16 individual reactions with simultaneous closed loop controls will be developed and manufactured to evaluate and modify the reaction as needed in real time.
To date, the first generation micro reactors have been fabricated and tested. The second generation reactors, which will feature direct electronic integration, are in design phase. A custom drive circuit with 16 independent voltage control lines has been designed, built, and tested. Spectroscopic evaluation of the reaction chemistry at the scale of the micro reactors is complete. Other aspects of the design have been analyzed with the first set of reactors or with other microfabricated glass devices such as microcuvettes and microlenses. Demonstration of oligonucleotide synthesis in a micro reactor is on schedule for late 2015 to early 2016.

Hamed Ghaednia
Auburn University
Round 7 Recipient
PhD, 2014, Mechanical Engineering
hghaedni@ford.com

Currently, I am working as a Research Engineer at the Ford Motor Company in the Powertrain Research and Advanced Engineering Organization. I am responsible for delivering concepts and influencing engine fuel economy improvement through friction reduction. My job requires formulating ideas for engine friction reduction, evaluating various concepts using laboratory bench tests, motored component, engine, and vehicle tests; analyzing data, drawing conclusions, and presenting ideas to peers and management.

Recent Publications
• H. Ghaednia, R. L. Jackson “A third body contact model for particle contaminated electrical contacts”, 2014 IEEE 60th Holm Conference on Electrical Contacts (Holm).

Recent Awards and Honors
• Paul and Dee Dee Slade Young Investigators Finalist, Institute of Electrical and Electronics Engineers (IEEE).
• Travel Scholarship, American Society of Mechanical Engineers (ASME).
• E. Elmer Klaus Fellowship, Society of Tribologists and Lubrication Engineers (STLE).

Xibing Gong
The University of Alabama
Round 8 Recipient
PhD, 2014, Mechanical Engineering
xgongme@gmail.com

I am currently working as a research scientist in laser additive manufacturing at Alabama Specialty Products in Munford, Alabama. My research focus is still advanced manufacturing.
Justin Havird  
Auburn University  
Recipient, Rounds 6, 6 Supplement, and 7  
PhD, 2014, Biological Sciences  
Justin.Havird@colostate.edu

After graduating, I became a postdoctoral researcher, working with Dr. Daniel Sloan, at Colorado State University in Fort Collins, Colorado. I am pursuing a very different research focus than my work at Auburn, which was focused on ecology and physiology of aquatic animals. Nowadays I’m busy studying evolutionary genomics, specifically the evolutionary interactions between the mitochondrial and nuclear genomes. All complex lifeforms on this planet have these genomes and must maintain intricate interactions between them in order to generate their energy, but these two genomes evolve in very different ways. My current research is using a combination of laboratory, computational, and theoretical techniques to explore how these genomes maintain interactions in a group of plants with incredible variation in their mitochondrial genomes.

This research has attracted international attention and funding support. I was recently awarded a postdoctoral fellowship from the National Institutes of Health to pursue several projects related to this research, which will support me at Colorado State University for 3 years. This is because breakdowns in mito-nuclear genomic interactions have been linked to many diseases and ageing in general. I also had a recent publication in BioEssays, along with collaborators in Australia, describing a hypothesis for the evolution of sex based on mito-nuclear interactions. Again, this is because these interactions are very important across all complex life. Finally, I recently returned from a successful field season in Greece in which Dr. Sloan where I collected several species of plants with bizarre mitochondrial genomes that will play a major role in future research.

Alexander Hodge  
Auburn University  
Recipient, Round 7  
Expected graduation May 2016, PhD, Chemical Engineering  
ajh0018@auburn.edu

As a PhD student in the Lipke Lab at Auburn University, my research interest has been primarily in the area of cardiac tissue engineering and myocardial regeneration and repair. Inability to replicate the properties of native myocardium (such as electrophysiology, mechanical strength, and cell-cell connectivity) is a major limitation preventing the transition of novel regeneration strategies (such as incorporation of engineered heart tissue into the damaged heart) into clinical treatments for patients with heart disease. My research incorporates biomimetic materials, principally nitric oxide releasing compounds and semi conducting polymers, into cellular environments to drive maturation of pluripotent cell-derived cardiac myocytes. The resulting cells are characterized to identify changes in gene and protein expression, as well as improvement in functional cellular properties (electrophysiology and calcium handling). In order
to quantify the electrophysiology and calcium handling of the resulting cell types, I have constructed an optical mapping platform to quantify electrical and calcium wave propagation among cardiac cell monolayers and tissues using custom-built MATLAB scripts.

I am currently working towards the completion of my degree in Chemical Engineering (anticipated graduation in May 2016). I am looking for a full-time position in the areas of tissue engineering, upstream bioprocessing, or medical device development.

Publications:

William Jeff Horne
The University of Alabama
Round 8 Recipient
PhD, May 2015, Chemical and Biological Engineering
wjeffreyhorne@yahoo.com

Since receiving my GRSP fellowship, I completed my PhD at the University of Alabama, and am now employed as an instructor with the Department of Chemical and Biological Engineering. I am teaching two sections of Process Controls, and I am also continuing to perform research in the laboratory with Dr. Jason Bara, my advisor. I was awarded Graduate Student of the Year by the Engineering Council of Birmingham in spring of 2015 and I have published two manuscripts in peer-reviewed journals:

Kailash C. Jajam  
Auburn University  
Round 7 Recipient  
PhD, 2013, Mechanical Engineering  
kcjajam@illinois.edu

Since graduating from Auburn University, I have served as a Postdoctoral Research Associate at the University of Illinois at Urbana-Champaign. My research interests are solid mechanics, experimental mechanics, mechanics of materials, fracture mechanics, materials processing and characterization, and finite element analysis.

List of Recent Presentation, Honors and Publications
- Distinguished Dissertation Award for best doctoral dissertation, Auburn University, AL (2014)

Ke Jiang  
Auburn University  
Recipient, Rounds 1, 2 and 4  
2010, PhD, Biological Sciences  
biojiangke@gmail.com

Supported by GRSP and advised by Dr. Leslie Goertzen, I graduated with a PhD in Botany in 2010 from Auburn University. I moved to Cold Spring Harbor Laboratory (CSHL) in New York and started a PostDoc in Dr. Zach Lippman’s lab in May 2010. I spent four years at CSHL studying genetics, genomics and the development of the tomato. I had several journal publications including Nature, Nature Genetics and PLoS Genetics. In the summer of 2014, I moved to Indianapolis, Indiana and joined Dow AgroSciences as a research scientist. I continued research on plants, with greater variety including corn, soybean, canola, cotton and sunflowers. I am working on various genetic and genomic problems in plants, including genomic variations, QTL mapping, mutant characterization, and polyploid genome evolution, etc.

Ivy Krystal Jones  
Tuskegee University  
Recipient, Rounds 1 and 2  
MS, 2009, Mechanical Engineering  
ivykrystal@gmail.com

Since receiving my MS from Tuskegee University, I went on to complete both MS and PhD degrees in Physics from Hampton University at the Crystal Physics Laboratory in 2009 and 2015. While my dissertation research focused on solid-state eye safe laser material development, I have worked on multidisciplinary research projects from bioengineering molecular ligation techniques to the evaluation of hybrid space-survivable nanocomposites. I am also interested in studying condensed
matter physics as well as high pressure experimental applications. I am currently applying for a Postdoctoral Research Staff Member position specifically in the high pressure physics group and the condensed matter section with the Physics Division in the Physical & Life Sciences Directorate at Lawrence Livermore National Laboratory.

Recent Poster Presentations
- SPIE Photonics West – LASE 2014, Lasers and Applications in Science and Engineering
- “Material Preparation, Spectroscopic Analysis, and Cross-Section Modeling of Pr3+:PbCl2 for 1.6 μm Gain Media Application” 19th Annual School of Science Research Symposium – April 17th – 18th, 2014 Hampton University - “Mathematics: The Foundation of Research and Innovation”.

Tyler Kaub
The University of Alabama
Recipient, Rounds 9 and 10
Expected graduation May 2018, PhD, Metallurgical and Materials Engineering
tmkaub@crimson.ua.edu

Thin film stress is a result of the impingement and interaction of adatoms on the surface and at grain boundaries. This can result in both tensile and compressive behavior. When the intrinsic thin film stress is large, this can lead to the premature failure of thin films by contributing to delamination. Often the film stress is manipulated by processing, through varying the growth temperature, film growth rate, and/or vacuum pressure. I am exploring a new means of stress control by using the intrinsic properties of the materials themselves. In alloys, different species can segregate, which can be used to manipulate the adatom growth behavior of the deposited film. Using this solute segregation, it is proposed that the stress within the film will be controlled through interfacial behavior.

In the past year, I have been able to demonstrate controllable compressive behavior in Cu(Ni) films by controlling the amount of Ni presence in the grain boundary. The Ni content was measured using atom probe tomography. The research has involved international collaboration with Professor Julie Cairney and Dr. Peter Felfer at the University of Sydney in implementing interfacial energy analysis of my atom probe data. These results have been submitted for publication in a peer review journal. Future work is underway to develop a model that predicts how the stress changes as a function of segregation and atomic size within the free volume of the grain boundary. My current plan is to complete my PhD by May 2018. I would like to thank the GRSP fellowship for assisting me in pursuing my academic endeavors.

Presentations
Wonkyu Kim  
University of Alabama in Huntsville  
Recipient, Rounds 7, 8 and 9  
PhD, December 2015, Electrical and Computer Engineering  
wk0001@uah.edu  

I am investigating plasmonic light absorber and antireflection coating for biochemical sensors and efficient solar energy harvesting. I designed and fabricated a perfect absorber having an array of gold disks on dielectric and gold layer. Because the pattern of the absorber structure determines the absorption wavelength and bandwidth, my current research topic is to design several different arrays of gold disks to tune these properties. Successful achievement of the research will have a high impact in designing chemical sensors and light absorbing devices, such as solar cells.

List of recent Publication/Presentations/Honors

Tae Kim  
University of Alabama in Huntsville  
Recipient, Round 7  
PhD, 2014, Physics  
tae.kim@uah.edu  

I have been a postdoctoral research assistant at the Center for Space Plasma and Aeronomics Research at UAH since September 2014. My primary research topic is solar wind modeling using state-of-the-art supercomputers, which is applicable to space weather forecasting. Most recently I participated in the “New Horizons Flyby Modeling Challenge” organized by the Community Coordinated Modeling Center at NASA (http://ccmc.gsfc.nasa.gov/missionsupport/NewHorizons_support.php) where I showcased my predictions of the space environment around Pluto at the time of the New Horizons spacecraft flyby. Currently I am involved in development of an advanced solar wind model ahead of the upcoming Solar Probe Plus and Solar Orbiter missions that will explore the vast space between the solar corona and Earth for many years.

Wei Li  
The University of Alabama  
Recipient, Rounds 3 and 4  
PhD, 2010, Chemical and Biological Engineering  
helloweil@hotmail.com; utweili@mail.utexas.edu  

I am currently a Research Assistant Professor at the University of Houston (UH). I am developing an academic program on clean energy conversion and storage technologies, while continuing research
addressing the scientific challenges for widespread usage of the clean energy technologies, mainly including fuel cells, lithium ion batteries, etc. Specifically, my research focuses on the development of novel materials, which can reduce the cost and improve the performance and durability of proton exchange membrane fuel cells and intermediate temperature fuel cells for zero emission vehicles and stationary power sources, enhance the performance of direct methanol fuel cells for portable power sources, and increase the capacity and charge rate of lithium ion batteries for electric vehicles. I am also doing research on the development of green chemical routes based on fuel cells to recycle lead from waste lead-acid batteries used as start-up batteries in vehicles and 2nd generation high-temperature superconductor tape. Overall, my research aims to approach a sustainable energy future and a clean environment.

Shikai Liu
Auburn University
Round 8 Recipient
MS, 2014, Statistics
PhD, 2014, Fish Molecular Genetics

I conducted a one-year post-doctoral training and am currently working as a research fellow (level II) in the school of Fisheries, Aquaculture and Aquatic Sciences at Auburn University. I am continuing with genome research work in catfish, focusing on unravelling the secrets in the genome underlying those important production and performance traits such as disease resistance, low-oxygen tolerance and fast-growth. In July, 2015, I was awarded a NIGMS (National Institute of General Medical Sciences) Travel Fellowship Award to participate in a training course on statistical genetics and genomics at the University of Alabama-Birmingham.

List of Recent Publications:
Richard Mariita  
Auburn University  
Recipient, Rounds 9 and 10  
Expected graduation December 2016, PhD, Biological Sciences  
RMM0025@auburn.edu; Mariitarichard@gmail.com

My current research responsibilities include undertaking metagenomic and genomic analyses of microbial assemblages from open water and the gut of the native, but highly invasive ctenophore, Mnemiopsis leidyi from Mobile Bay and determining the dispersion of microbial assemblages and their functional capabilities. I also investigate the potential for these assemblages and gut isolates to carry antibiotic resistance genes.

I am currently writing manuscripts from thesis work with the following titles:

• Seasonal variability in the diversity and functional capabilities of the free living microbial assemblages and antibiotic resistance determinants of an estuary system highest during cold seasons. (Target Journal: Applied and Environmental Microbiology).
• Metagenomic assessment of ctenophore gut microbial assemblages reveals existence of essential microbiota and potential to disperse antibiotic resistance genes during winter. (Target Journal: FEMS Microbiology Ecology).
• Isolation, characterization and genome based analysis of novel ctenophore (M. leidyi) gut Staphylococcus species harboring antibiotic resistance genes. (Target Journal: BMC Microbiology).

Recent Poster Presentations

Kristine Marson  
The University of Alabama  
Recipient, Rounds 8, 9 and 10  
Expected graduation May 2017, PhD, Integrative Animal Behavior  
krismars02@yahoo.com

Most organisms are exposed to some level of predictable or unpredictable environmental variation across time or space that affects the way they balance investments into survival or reproduction. Variable environments will favor strategies that provide an opportunity for some offspring to survive and reproduce in the next generation, despite the fact that ideal conditions exist only part of the time. In some populations, selection might favor plasticity, whereby individual phenotypes are shaped by prevailing current conditions, increasing the likelihood that the phenotype ‘fits’ the environment. Alternatively, selection might favor bet hedging, which minimizes risk by increasing phenotypic variation among offspring and enhancing the likelihood that at least some offspring will survive.

My research aims to determine if: 1) the timing of reproduction within a population is a result of the employment of specific strategies, 2) if the use of particular strategies can explain phenotypic variation among populations, and 3) whether strategies vary more within or between regions defined by unique patterns of weather fluctuation. To examine these specific aims, we use the mangrove rivulus fish, a self-fertilizing hermaphrodite. As a result of this fish’s incredibly unique method of reproduction, it has the ability to produce offspring that are genetically identical to themselves and to all other offspring. This quality makes them an ideal organism to examine how environmental conditions affect the variation within and among populations. We have collected data on reproductive investment across seasons both in the field and in the laboratory under common garden conditions for two years to determine variation in reproductive timing within populations of mangrove rivulus fish. These data indicated that different mangrove rivulus populations invest into reproduction differently over time and across their range. We also have three consecutive seasons of field collections to evaluate distributions of size and body shape. Our goal is to utilize the trait distributions and reproductive timing to identify which strategy or strategies, if any, are operating within populations across the range of mangrove rivulus within Florida and The Keys. While variation in the timing of reproduction is recognized across species’ ranges, variation in the use of reproductive strategies has not been studied across broadly spaced populations. This research will elucidate how populations of mangrove rivulus respond to fluctuating environmental conditions and potentially resolve the influence of environmental variation and its timing on the evolution of reproductive strategies across a broad geographical range.
Justin Martin
University of Alabama at Birmingham
Recipient Rounds 8, 9, and 10
Expected graduation, May 2016, PhD, Inorganic Chemistry
martin89@uab.edu

I have completed my PhD candidacy and am currently on the path to graduation. I officially received my Masters Degree in August and am planning to graduate with my PhD in spring of 2016.

Recent Publications, Presentations, and Honors
• Martin, J. R.; Lucius, A. L.; Gray, G. M. “Metallathiacrown Ethers: Synthesis and Characterization of Transition-Metal Complexes Containing α,ω-Bis(phosphite)-Polythioether Ligands and an Evaluation of Their Soft Metal Binding Capabilities” Organometallics 2015, DOI: 10.1021/acs.organomet.5b00693.
• J. R. Martin, A. L. Lucius and G. M. Gray “Metallathiacrown Ethers: Synthesis and Characterization of Transition Metal Complexes Containing α,ω-Bis(phosphite)-polythioether Ligands and an Evaluation of Their Soft Metal Binding Capabilities” Organometallics Accepted: Aug. 28, 2015
• Presentation at NSF ALEPSCoR Science and Technology Open House 2015
• Presentation at UAB Graduate Student Research Days 2015 (2nd Place)
• NSF highlight: [Link]

Shatori Meadows
Tuskegee University
Recipient, Rounds 9 and 10
Expected graduation in July 2017, PhD, Materials Science and Engineering
smeadows0183@mytu.tuskegee.edu

With support from GRSP, I completed my MS in Materials Science and Engineering at Tuskegee University. While working on my MS degree at Tuskegee University, award winning presentations included first place at The Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM) and second place at The National Technical Association (NTA) Conference. I am now a 1st year PhD student in Materials Science and Engineering at Tuskegee University working in the area of nanobiomaterials with a focus on bio-based and recycled polymers and will continue publishing journal papers in this area. I am forever grateful for receiving the GRSP award which allowed me the resources to conduct research that will aid in environmental protection and sustainability of materials.
Kevin Messenger  
Alabama A&M University  
Recipient, Rounds 8, 9 and 10  
Expected graduation in May 2016, PhD, Wildlife  
kevinrmessenger@gmail.com  

I am continuing to work on my PhD degree. I spent another three months in China during the summer of 2015 conducting field work. Highlights of the summer included finding three new species of frogs. Currently I am busying publishing papers on the new species, working on my dissertation, and starting to look for jobs.

Renato A. Minaminsawa  
Alabama A&M University  
Round 3 Recipient  
MS, 2008, Physics  
radiarefm@yahoo.com.br  

After completing my Physics PhD degree at RWTH Aachen in Germany in 2011, I performed a Postdoc at the Paul Scherrer Institute in Switzerland in the same field of semiconductor devices till 2013. This period rendered many high ranking publications, including two in "Nature" on the effect of ultra high strain in semiconductor electronic and optical devices. Since then I have started working as a semiconductor device scientist and project manager at the Corporate Research Center of ABB, also in Switzerland, with a focus on the development of wide bandgap power semiconductor devices for future applications in power electronics. In parallel, I have lectured at the ETHZ and acquired several public research grants amounting about $ 2M.

Syed Misbahuddin  
University of South Alabama  
Round 8 Recipient  
MS, 2014, Chemical Engineering  

I am currently employed as a process engineer at Enonik Corporation in Theodore, Alabama.
Sherita Moses  
Alabama A&M University  
Recipient, Rounds 9 and 10  
Expected graduation May 2017, PhD, Physics  
miss.moses.2012@gmail.com  

I am pursuing my degree, presently enrolled in Spectroscopy and Physical Optics and Interferometry. I am also working on my research with gold nanoparticles, bio-extracts, and breast cancer. I have a patent filed and pending, and am waiting to see where this journey will lead me.

To date, I have won 1st place at a STEM day poster competition, presented another poster at the EPSCoR 2015 Science and Technology Open House, prepared a poster for the Tennessee Academy of Science Meeting, jointly published two abstracts, co-authored a publication SPIE proceedings, and am working on future publications.

Manju Nanjappa  
Auburn University  
Round 4 Recipient  
PhD, 2012, Veterinary Biological Sciences  
mzk0006@tigermail.auburn.edu  

I graduated from Auburn University in Fall 2012. Since then I have worked as a postdoctoral associate in Dr. Paul Cooke’s lab at the University of Florida’s College of Veterinary Medicine in Gainesville, Florida. I study the role of progesterone and estrogen receptors in the development of the uterus in mice.

Recent Publications

Santosh K. Ojha  
Alabama A&M University  
Recipient, Rounds 7, 8 and 9  
Expected graduation Fall 2015, PhD, Plant and Soil Science  
ojhamost@yahoo.com  

The objective of my research is to investigate the relationship between aboveground dry live biomass (AGB) productivity and tree species diversity with consideration of species characteristics, stand stocking, site productivity, functional groups, and environmental attributes in Alabama forests and.
in eastern young forests of the United States. Some preliminary results were presented at Society of American Foresters (SAF) National Convention, annual meeting of the Ecological Society of America, Science and Technology Open House sponsored by Alabama EPSCoR and Tuskegee University, and STEM day events at Alabama A&M University. I am working on my dissertation now, and will graduate in the Fall semester of 2015. I am also preparing manuscripts from my dissertation for publication.

Jeremy Peppers  
University of Alabama at Birmingham  
Recipient, Rounds 7, 8 and 9  
Expected graduation 2015, PhD, Physics  
jpeppers@uab.edu

I am currently writing my dissertation and continuing research in the area of mid-IR laser materials. Additional work has been done on chromium and iron doped zinc selenide and zinc sulfide under visible excitation. The chromium results have been presented at SPIE Photonics West 2015 while results pertaining to Cr:ZnSe and Fe:ZnSe have been presented at CLEO 2015 and published in the OSA journal Optics Express. I am also editing a paper to submit for publication related to production and characterization of Fe:ZnSe quantum dots. I intend to bring closure to these research areas and complete my doctoral studies.

List of recent Publication/Presentations/Honors
• SPIE Photonics West LASE 2015 (Poster presented February 10, 2015), San Francisco California, Spectroscopic characterization of Cr2+ ions in ZnSe/ZnS crystals under visible excitation  
• OSA CLEO 2015 (Talk presented May 15, 2015), San Francisco California, Mid-IR and Near-IR Photoluminescence of Fe2+ and Cr2+ ions in ZnSe excited via ionization transitions  
• OSA Optics Express (Paper published) Mid-IR Photoluminescence of Fe2+ and Cr2+ ions in ZnSe crystal under excitation in charge transfer bands

Maria Poupard  
Tuskegee University  
Round 9 Recipient  
MS, 2015, Materials Science and Engineering  
mnavarro5623@mytu.tuskegee.edu

My research project at Tuskegee University was to obtain a comprehensive understanding of jute fiber under treatments and conditions to increase its potential for small and high-end applications including sport, furniture, interior parts for automobiles, etc. Finally, working on a number of projects including class work, I have seen the endless opportunities in the field of materials science and engineering, especially in biomaterials for biomedical application. I realize that modern health care would be not possible without the use of advanced materials. Therefore, I am applying for a PhD position at the University of Manchester, UK, and I would like to work in biomechanical, musculoskeletal models, and design of medical devices.

Recent Presentations
2nd Place Graduate (Masters) Poster Competition Winner at the 5th NSF-EPSCoR Science and Technology Open House held in Montgomery, Alabama on January 30th, 2015.
Shantanu Pradhan
Auburn University
Recipient, Round 8
Expected graduation 2016, PhD, Chemical Engineering
szp0023@auburn.edu

I continue the pursuit of my PhD under the advisorship of Dr. Elizabeth Lipke at Auburn University and expect to graduate in 2016. I am working in the subdiscipline of tissue engineering and cancer research. The title of my dissertation is: “Development of 3D tissue engineered models of breast cancer for the investigation of tumorigenic and angiogenic phenomena”.

Development of anti-cancer drugs is a major focus in the field of cancer research. Testing the efficacy of drug candidates is a vital step in this process. Currently, a majority of drugs are tested on cancer cells grown in petri dishes (2D culture) and subsequently in animal models (rat, mice etc.) before proceeding to clinical trials. However, 2D culture and animal models do not accurately represent the human physiology and hence most of the drugs successful in the initial stages fail to be effective in clinical trials. In our lab, we aim to bio engineer 3D cancer tissue, so that it closely replicates native cancer tissues of the human body. Our 3D cancer models incorporate cancer cells of different types (breast, colon, prostate, etc.) and are cultured within a polymer-based biomaterial similar to human tissue. We study the growth, disease progression and aggressiveness of the cancer cells within the 3D tissues. Once developed, these 3D models would provide more clinically relevant information of drug efficacies and thereby improve the development process of new anti-cancer drugs. So far, my research has resulted in one publication and one patent as detailed below:

- 2013 1st Place Winner, Poster Competition, Graduate Scholars Symposium 2013, Auburn University, 2014 1st Place Winner, Poster Competition, AL-EPSCoR Science and Technology Open House 2014, Montgomery, AL, USA.
- 2014 Recipient, Auburn University Research Initiative in Cancer (AURIC) Graduate Fellowship.
- 2014 Outstanding Poster Award, Georgia Tech Biomaterials Day 2014, Atlanta, GA.
- 2014 3rd Place Winner, AIChE Area 8b (Biomaterials) Graduate Student Award Session, AIChE 2014 Annual Meeting, Atlanta, GA.
- 2014 Distinguished Graduate Engineering Student Award, Auburn University, AL.

Kaushal Prayakarao
Tuskegee University
Recipient, Rounds 8, 9, and 10
Expected graduation May 2016, PhD, Materials Science and Engineering
kprayakarao2649@mytu.tuskegee.edu

I’m still continuing my degree and am in the final phase of compiling the chapters from the research results and data obtained from the research objectives. The results are satisfying and will help me publish the data as a journal article. I’m also assisting other graduate and undergraduate students with their research work at my research facility.
Recent Publications

- Kaushal R. Prayakara, Sudan Ahmed, Heshmat A. Aglan & Mahmood Fateh, Effect of Preheating on the Quality of Slot Welded Railhead Repairs, Submitted to Taylor & Francis NDE.

Ross Ptacek
University of Alabama at Birmingham
Round 6 Recipient
PhD, 2013, Mathematics

I finished by PhD in Applied Mathematics in August 2013, did a one year post doc at the Higher School of Economics in Moscow, and am currently serving in a post doctoral position at the University of Florida.

Dheeraj Raju
The University of Alabama
Round 2 Recipient
PhD, 2012, Educational Research
seeth001@uab.edu

As an Assistant Professor in the Center for Nursing Research at the UAB School of Nursing, I am using the application of data mining techniques in predicint pressure ulcers, predicting student graduation, and introducing business analytics predictive models in supply chain management. In addition, I am introducing item response theory models in nursing research and application of linear and multilevel modeling in program evaluation.


Diane Render
Tuskegee University
Recipient, Rounds 7 and 8
PhD, 2014, Materials Science and Engineering
Diane.Render@nrc.gov

Since June 2014, I have been working at the Nuclear Regulatory Commission as a Project Manager in the Division of Operating Reactor Licensing. As a Project Manager, I am responsible for the day-to-day interaction with our NRC counterparts that are overseeing daily activity at the nuclear power plants across the US. During these interactions, we discuss maintenance and any changes that are happening at the plant. I oversee all licensing actions that the plant may request and make sure to engage with our technical divisions any safety concerns that may be presented. I am the liaison between the plant personnel and the technical divisions, so that we all are able to ensure adequate protection of the public health and safety.
Kathleen Ann Roberts  
Alma A&M University  
Recipient, Rounds 4, 5, and 6  
PhD, 2013, Agricultural and Environmental Sciences  
kokopelliclay@gmail.com  
I am currently working as an adjunct instructor at Bishop State Community College in Mobile, Alabama. I love my job, teaching anatomy and physiology classes. I hope this will become full time at some point, but I also work as an independent contractor writing grants.

Mary Ellen Rogers-Moore  
Tuskegee University  
Recipient, Rounds 2, 4 and 5  
PhD, 2010, Material Sciences  
I’m still at GE Aviation in Ellisville, Mississippi.

K. Neil Ruckart  
University of South Alabama  
Recipient, Rounds 8 and 9  
MS, 2014, Chemical Engineering  neil.ruckart@gmail.com  
In December 2014, I completed my Master’s Degree in Chemical Engineering at the University of South Alabama and began as a Process Engineer at Hargrove E+C in Mobile, AL. Over the past year, I have been able to utilize the engineering fundamentals I obtained during my time as a graduate student and put them to practical use on a variety of projects for multiple industrial clients. Much like research, working for an engineering consultant firm is a fast-paced environment. This requires an ability to research and educate oneself on new concepts within a short time window while staying within a defined budget. Additionally, one must be able to keep multiple projects and directions moving forward without letting work quality or client expectations suffer. Within six months of work, I received my first Process Lead role on a process improvement project for a client with a total installed cost of $2.5 million. I truly owe a debt of gratitude to my advisor, Dr. T. Grant Glover, and the Alabama EPSCoR GRSP Program for allowing me the opportunity to refine my skills and preparing me for the challenges of my current Process Engineer position.

Ghanem Sabeeh  
University of South Alabama  
Round 9 Recipient, Chemical Engineering  
MS, 2014, gls1323@jagmail.southalabama.edu  
I successfully defended by Masters thesis and graduated in December 2014. I am currently employed by Evonik Industries in Mobile, Alabama as a process engineer.
Narendra Sadhwani  
Auburn University  
Recipient, Rounds 8, 9 and 10  
Expected PhD Fall 2016, Chemical Engineering  
nss0006@auburn.edu  

I am continuing my doctoral degree at Auburn University. I am working in the field of biomass gasification and post graduation would like to pursue a research based job in the energy industry. During the course of receiving the GRSP funding, I have had one major publication and am on course for two more. Additionally, I won the ‘2014 Three Minute Thesis’ competition at Auburn university and completed at the conference of southern graduate schools’ annual meeting in 2015.

Maninder Sandy  
Auburn University  
Recipient, Round 4  
PhD, 2011, Veterinary Medicine  
mzs0011@auburn.edu  

I am currently preparing for Pathology boards while completing my Pathology residency at the Auburn University College of Veterinary Medicine. I have passed general pathology boards and continue as a part time post-doc in Dr. Bruce Smith’s lab.

Hunter Sims  
The University of Alabama  
Recipient, Round 4  
PhD, 2013, Physics  
hunter.r.sims@gmail.com  

I am in the third and final year of a postdoctoral position at the Forschungszentrum (Research Center) Jülich in Germany. My responsibilities here are split between research and serving as a teaching assistant, with some assorted additional proofreading duties related to being the nearest native English speaker. My research here is focused on understanding the structural distortions in the material KCuF3, particularly in understanding why they behave oddly as a function of temperature. In doing so, I was able to discover a new structural instability in this type of lattice (which is shared by a number of high temperature superconductors, solar cell materials, and other interesting systems) that does not depend on the kinds of interactions (electron-phonon or superexchange) that generally give rise to such distortion. I have also been working with a group back at UA to study the properties of certain layered sulfides for renewable energy applications. In the coming months, I will begin applying for faculty positions and/or postdoctoral positions in physics, mostly likely back in the States.
**John Smith**  
*University of Alabama at Birmingham*  
Recipient, Rounds 4, 5 and 6  
PhD, 2013, Materials Science and Engineering  
jsmith@fontaineheavyhaul.com

I have continued my role as product development engineer for Fontaine Heavy Haul a subsidiary of Marmon Highway Technologies, moving from Jasper, Alabama (Fontaine Engineered Products R&D) to Springville, Alabama.

---

**Charles Solvason**  
*Auburn University*  
Round 5 Recipient  
2011, PhD, Chemical Engineering  
c.solvason@bre.com

I have been developing software for Bryan Research & Engineering (BRE) in Bryan, Texas since graduating Auburn University in 2011 with a PhD in Chemical Engineering. In this role, I implement the models, algorithms, and optimization methods developed by the process systems community into a universal chemical process simulator. The simulator provides researchers with the cyberinfrastructure necessary to better understand chemical and physical phenomena, ultimately resulting in an improved efficiency of fundamental research. I have recently finished adding group based characterization methods to the simulator and am currently implementing more complex characterization methods, including those developed under the Alabama EPSCoR GRSP.

I also remain active in the research community. Over the last year, I presented new research on graph theoretical algorithms at the annual meeting of the American Institute of Chemical Engineers (AIChE) and published a journal article on characterization based multi-scale molecular design in Frontiers of Energy Research. Recently, I have had the good fortune to be nominated to serve as a programming coordinator for Area 10a of the Computer and Systems Technology (CAST) division of AIChE. I am excited for this opportunity and look forward to contributing my unique perspective.

---

**Brandie Stringer**  
*Alabama A&M University*  
Recipient, Rounds 7 and 8  
MS, 2014, Plant and Soil Science  
brandie.stringer@gmail.com

I finished my MS degree last fall and am currently serving as Coordinator for the Confucius Institute at Alabama A&M University. AAMU’s Confusius Institute, along with its partner institution, Nanjing Forestry University, provide meaningful student/faculty exchanges to teach Chinese culture and language.

I am interviewing for and hope to attain an environmental consulting position with a state government organization. I am also working on a publication.
Po Sun  
University of Alabama in Huntsville  
Recipient, Rounds 6 and 6 Supplement  
PhD, 2012, Optical Science and Engineering  
I am working for Jabil Circuit, Inc. in San Jose, California as a design engineer. My job is to design and develop test process for new optical products including camera modules, laser projectors, wearable devices, etc. I also help solve issues in the production process.

Raja Suradhi  
Alabama A&M University  
Recipient, Rounds 7, 8, and 9  
Expected PhD, Fall 2015, Applied Physics/Materials Science  
rsurabhi@bulldogs.aamu.edu  
I am currently working as a Physics Instructor at Talladega College. I still plan to continue my research at Alabama A&M University while teaching at Talladega College after my graduation.

Recent Publications
• Raja Surabhi, Mohan Aggarwal, Ashok K Batra, Shekar Gupta, Design of a low-cost automatic diameter control Czochralski (CZ) crystal growth system with VB.6 software, Advanced Science, Engineering and Medicine, Volume 6, Number 12, pp. 1274-1279(6), DOI: http://dx.doi.org/10.1166/asem.2014.1638, (January 2015).

Samer Sweden  
University of South Alabama  
Recipient, Rounds 3, 4, and 5  
PhD, 2010, Basic Medical Sciences  
samer_swedan@yahoo.com  
After graduating from the University of South Alabama with a PhD in Basic Medical Sciences in July 2010, I went back to my home country of Jordan where I joined the faculty in the Department of Medical Laboratory Sciences at Jordan University of Science and Technology. There, I have taught and supervised various microbiology and laboratory science courses, and have been actively engaged in bio-medical research. I became the Dean’s assistant during the academic year 2013/2014. At the beginning of the academic year 2014/2015, I became the chairman of the Medical Laboratory Sciences Department.
Khalid Tantawi  
University of Alabama in Huntsville  
Recipient, Rounds 5, 6, and 6 Supplement  
PhD, 2012, Electrical Engineering  
khalid.tantawi@gmail.com

I am currently an instructor of Mechatronics in Motlow College, Smyrna, TN. I am also an active member of the Tennessee Textbook Advisory Panel, and the Tennessee Academy of Science. I have also started working with Siemens Technik Akademie in certifying instructors for the Siemens Mechatronic Systems Certification. I am a level 2 certified instructor.

Merlin Theodore  
Tuskegee University  
Round 1 Recipient  
PhD, 2008, Materials Science and Engineering  
Merlin.Theodore@sglacf.com

I am now Head of Excellence at SGL Automotive Carbon Fiber in Moses Lake, Washington.

Boniface Tiimob  
Tuskegee University  
Recipient, Rounds 7, 8 and 9  
Expected graduation May 2016, MS and PhD, Materials Science and Engineering

I continue to develop biodegradable antimicrobial polymer blend materials with different properties for food and medical packaging. I synthesize and extract antimicrobial agents from plant and poultry residues incorporating these materials into biopolymer blends to substitute biodegradable and microbial growth-inhibiting packaging materials.

Recent Publications and Honors:
- First (1st) place graduate poster presentation, the George Washington Carver Lecture Series, Tuskegee University, 30th October, 2014.

Keerthi Venkataramanan  
University of Alabama in Huntsville  
Recipient, Rounds 6 and 6 Supplement  
PhD, 2012, Biotechnology Science and Engineering

Since my graduation from UAHuntsville, I served as a post doc in Dr. Terry Papoutsakis Lab at the University of Delaware working on systems biology. A short summary of the research in Delaware is below.
Research Project

Clostridium acetobutylicum is the model organism for solvent and acid production by anaerobic fermentation. The metabolites produced by the organism are toxic to the bacteria and hence induces a metabolite specific stress response. Stress response and stress tolerance of microbes to chemical metabolites, though interrelated, are complex phenomenon, controlled by multiple parameters that affect growth and metabolism. A better understanding of the stress response will lead to the engineering and development of new strain that tolerate growth inhibiting toxic chemicals. My research focus is on understanding and modeling complex cellular processes involved in stress response and tolerance though the approach of experimental systems biology.

Currently, I am a microbial physiologist at Novozymes North America, Inc. in Franklinton, North Carolina working on microbial fermentation to find biological and sustainable solutions in the field of BioAg (Ag-Biotech).

Keith Veronese
University of Alabama at Birmingham
Recipient, Rounds 3 and 4
PhD, 2011, Chemistry

I earned my PhD in Chemistry from the University of Alabama at Birmingham in 2011 and am currently working as a science writer. My second book, Rare: The High-Stakes Race to Satisfy Our Need for the Scarcest Metals on Earth, was released in early 2015 and featured in the journal Nature with Korean and Japanese translations of the book forthcoming. Rare takes an in-depth look at the little-known, illusive metals that power everything from smartphones to PS4s to nuclear weapons and the extent nations and corporations will go to extract them the furthest reaches of the globe.

I also write for Wired Magazine and am currently working on a piece for the New York Times as well as my third book. I currently reside in Birmingham, Alabama.

Benquan Wang
University of Alabama at Birmingham
Recipient, Round 9
Expected PhD 2017, Biomedical Engineering
benquan.wang@gmail.com

I transferred to University of Illinois at Chicago to continue my PhD.

Recent Publication
Resole phenol formaldehyde resins have been widely used in various applications due to their outstanding physical and chemical properties of flame retardancy, solvent resistance, thermal stability, and rigidity. However, major disadvantages have been associated with the synthesis of resole phenol formaldehyde resins. One disadvantage includes the toxic effects of the phenol and formaldehyde chemical precursors on the human body. When phenol is ingested, it causes kidney and liver damage. It also becomes hazardous when inhaled, causing health issues ranging from gastrointestinal irritation, liver injury, and muscular effects. When formaldehyde is inhaled, it may result in respiratory symptoms as well as eye, nose, and throat irritations. Cases have also been noted where exposure to formaldehyde has caused reproductive effects in women. In order to produce less hazardous materials, many studies are using more renewable resources, lignocellulosic, as partial replacement with the phenolic synthesis starting precursors. As the world’s most abundant renewable resource, lignocellulosic biomass has been acknowledged for potential uses to produce chemicals and biomaterials. Lignin, making up 10-25% of lignocellulosic biomass, is the second most abundant natural polymer with cellulose being number one. Lignin is a three-dimensional, highly cross-linked macromolecule composed of three types of substituted phenols which include: coniferyl, sinapyl, and p-coumaryl alcohols by enzymatic polymerization yielding a vast number of functional groups and linkage. As a natural and renewable raw material, obtainable at an affordable cost, and great chemical and physical properties, lignin’s substitution potential extends to any products currently sourced from petrochemical substances. Similarly, to others work, in order to create less hazardous materials, the goal of the current research is geared towards extracting lignin from different lignocellulosic biomass sources to be used as partial replacement for the phenol precursor at various ratios in the synthesis of novel resole phenolic type systems. “This material is based on work supported by the National Science Foundation under Grant No.NSF EPS-1158862 and IGERT.”

Recent Publication

graduate research career into teaching. Lake Erie College currently only offers degrees in chemistry and biology as part of the Natural Sciences Department. My goal is to promote growth in the number of physics courses being offered. Accordingly, I am working on curriculum development for several new undergraduate physics courses with plans for offering a minor in physics, which will eventually progress into a bachelor’s degree in physics.

I am currently developing an introductory nanoscience course, which will include topics closely related to my research work as a graduate student at UAB. Due to the support of the GRSP, the majority of my time was spent on studies in the growth and characterization of micro- and nano-sized structures. The experience I gained in research as a graduate student, along with the professional development programs geared towards nanotechnology education I participated in, has made me well-equipped to create an active-learning nanoscience course that will be beneficial to chemistry and biology degree-seeking students planning to continue on to graduate studies.

Recent publication
Measuring Earth’s Local Magnetic Field Using a Helmholtz Coil. Jonathan E. Williams Phys. Teach. 52, 236 (2014); http://dx.doi.org/10.1119/1.4868941

Jingyuan Xiong
Auburn University
Recipient, Rounds 6 and 6 Supplement
PhD, 2012, Chemistry and Biochemistry
jzx0004@tigermail.auburn.edu

I graduated with a PhD from Auburn University’s Department of Chemistry and Biochemistry in August 2012. Because of personal reasons, I returned to Chengdu, China in late 2012 and got a job in Sichuan University in early 2013. I’m currently working as the deputy director of Research Center for Public Health and Preventive Medicine in School of Public Health Sichuan University as an associate professor/research fellow. My responsibilities include teaching 1-3 courses each semester, doing research in the field of public health, administration work for the research center, lab management and so on.

I have just started my research with a grant from Chinese National Science Foundation (2015-2017). My research is mainly focused on life science and medicine, including pulmonary fibrosis and bacteria biofilm (drug-resistance related).
Yaolin Xu
The University of Alabama
Round 7 Recipient
PhD, 2014, Chemical and Biological Engineering
yxu22@crimson.ua.edu

Currently, I am working as a visiting scholar at Professor Yuping Bao’s lab at the University of Alabama. My main research is in the development and characterization of novel and safe iron oxide-based contrast agents, which are used to enhance the performance of the magnetic resonance imaging (MRI) applications. Within the last year, I published three manuscripts and was recently awarded the Excellence in Research by a Doctoral Student by the University of Alabama.

Recent Publications

Lin Yang
University of Alabama in Huntsville
Recipient, Rounds 7, 8, and 9
Expected graduation May 2016, PhD, Physics
Lin Yang <ly0003@uah.edu>

Right now I am working on the last year of my PhD study. I will start to look for a job soon after my dissertation defense. In the last three years we have performed an in-depth study of optical sampling by cavity tuning (OSCAT) and its applications for ranging and imaging. OSCAT is a novel scheme which enables cost-effective realization of a fast tunable optical delay using a single femtosecond laser. I have developed a dynamic model of OSCAT and demonstrated the remote motion tracking based on fast OSCAT. This technique offers a ready solution for lidar as the large interferometer imbalance is naturally supplied by the long target distance and the rapid delay scan enables fast motion tracking. Recently I demonstrated other applications of OSCAT in depth-resolved imaging (DROI) and 3D profilometry. I also have built a locking system to study the group velocity dispersion (GVD) of optical pulses traveling in free space. I am now exploring another potential application of OSCAT: Spectroscopy. In addition, I am working on a locking system to lock two diode lasers to a frequency comb laser to develop FLFC-based multi-wavelength interferometry.

Publications, Conference Proceedings, and Presentations:
- L. Yang, L. Duan, “Optical Coherence Tomography and Profilometry based on Optical Sampling by Cavity Tuning,” in Frontiers in Optics (FiO) 2015/Laser Science XXVIII, San Jose, California, October 2015.

Yang Zou
University of Alabama in Huntsville
Recipient, Rounds 6 and 6 Supplement
PhD, 2011, Optical Science and Engineering
libihua@gmail.com

Since graduation, I have been working as a research scientist at Axometrics, Inc. in Huntsville, Alabama. My PhD research experience in optical science and engineering provided me with the expertise and skills required in my current job. As an optical scientist, I conduct research into new applications for polarimetry and ellipsometry in several key markets, like liquid crystal display, organic light-emitting diode display, optical film, biomedical and optical test equipment. I develop new optical models and instruments, test samples, analyze data and report results.

I am now working on an image processing technique to improve the results of our OSCAT-based OCT system and exploring other potential applications for industry. We are also working on a locking system to lock two diode lasers to a frequency comb laser to develop FLFC-based multi-wavelength interferometry.

GRSP Campus Coordinators, from left to right: Dr. Tommy Coleman, AAMU; Dr. John Wiest, UA; Dr. David Berkowitz (front), UAH; Dr. Chris Lawson (back), UAB; Dr. John Steadman, USA; Dr. Frank (Skip) Bartol, AU; and Dr. Mahesh Hosur, TU.
Alabama EPSCoR
Graduate Research Scholars Program

Campus Coordinators
Each of the seven Alabama EPSCoR member institutions has an appointed campus coordinator. Campus Coordinators, in collaboration with the Alabama EPSCoR State Office and each GRSP faculty advisor, manage the GRSP awards. Campus Coordinators serve as the main point of contact for their respective institution.

Dr. David Berkowitz
University of Alabama in Huntsville (UAH)

Dr. David Berkowitz is the Dean of Graduate Studies and Director of the Office of International Engagement at UAH. Prior to his appointment, he was the Associate Dean of the College of Business Administration, the Director of the Innovation, Commercialization and Entrepreneurship Lab (ICE Lab), and the Director of the Integrated Enterprise Lab. David is also a Professor of Marketing and continues to educate students in conjunction with his administrative roles. He has experience as a product developer, small business owner and academic. His current research focuses on the intersection between Product Development and Supply Chain for Complex Long Lifecycle products. His research has appeared in leading academic journals such as the Journal of Retailing, Journal of Advertising Research, Journal of Advertising, European Journal of Marketing, European Journal of Innovation Management, Defense Acquisition Review Journal and the Journal of Product Innovation Management. At UAH, Dr. Berkowitz teaches Marketing High Technology Products, Managing Technology, Development, and Marketing Management. He is the past Director of the Center for the Management of Technology at UAH. Dr. Berkowitz was a founding board member of Alabama Launchpad.

Dr. Berkowitz earned his Ph.D. in Marketing and Applied Statistics from the University of Alabama, a MBA from the University Texas at Austin and a B.A. in Accounting from Rutgers University at Camden. Dr. Berkowitz worked for 12 years with Hallmark Cards. Dr. Berkowitz developed and implemented several analytical models and managed new product introductions while working with Hallmark Cards. He was involved with site selection, retail acquisition, international licensing and franchising. Dr. Berkowitz also co-owned and operated a small retail business with his wife for 6 years. Dr. Berkowitz has consulted with numerous organizations on performance based logistics, customer satisfaction, strategic planning, brand loyalty and product development issues. For more information contact Dr. Berkowitz at berkowd@uah.edu or 256-824–6952.

Dr. Frank “Skip” Bartol
Auburn University

Dr. Frank F. (Skip) Bartol is the Alabama USDA EPSCoR State Agency Director, Alumni Professor of Reproductive Biology in the Department of Anatomy, Physiology and Pharmacology, Associate Dean for Research and Graduate Studies, and Interim Director of the Scott-Ritchey Research Center in the College of Veterinary Medicine at Auburn University (AU). Additionally, since its establishment in September, 2014, Dr. Bartol serves with Dr. Greg Barsh of the HudsonAlpha Institute for Biotechnology, as co-Director of the HudsonAlpha/Auburn University Center for Comparative Genomics and Translational Research. A member of the AU faculty since 1983, Bartol obtained the BS degree from Virginia Tech and both MS and Ph.D. degrees through the Interdisciplinary Reproductive Biology Program from the University of Florida. Additionally, he obtained advanced training in molecular biology as a Visiting Scientist and Scholar in the Center for Animal Biotechnology at Texas A&M University. In 2005, Bartol was honored
by his doctoral alma mater when he was named a Donald Henry Barron Lecturer at the University of Florida in recognition of “outstanding research and scholarly activities in the field of reproductive biology.” His research, which focuses on identification of mechanisms regulating development and function of female reproductive tract tissues in domestic ungulates, has been supported by competitive grants from the USDA National Research Initiative, the National Institute of Food and Agriculture (NIFA), the National Science Foundation, and private organizations in the U.S. and abroad, as well as by the Alabama Agricultural Experiment Station. Dr. Bartol served as Panel Manager for the U.S. NIFA Animal Reproduction program in 2014 & 2015. He is an active member of the Society for the Study of Reproduction (SSR), the American Society of Reproductive Immunology (ASRI), and the Society for Theriogenology (SFT), and was elected as an Honorary Member of the Society of Phi Zeta, the honor society of veterinary medicine, for “distinguished service in the advancement of science relating to the animal industry.” An advocate of the responsible use of animals in research and education, Dr. Bartol has served as chair of the Auburn University Institutional Animal Care and Use Committee, and both Animal Care and Experimentation and Animal Ethics sub-committees for the SSR. In addition to teaching the graduate course in reproductive biology at AU, Bartol lectures in bioethics and animal law in the AU veterinary curriculum and has spoken nationally and internationally on these topics. For more information, contact Dr. Bartol at 334.844.3700 or bartoff@auburn.edu

Dr. Mahesh Hosur
Tuskegee University

Dr. Hosur is the Alabama NSF EPSCoR Agency Director as well as NSF-EPSCoR RII grant headquartered at Tuskegee University. He also leads the effort on the Nano and Biomaterials thrust. The thrust also consists of researchers at Auburn University, University of Alabama at Birmingham, the University of Alabama, and the University of South Alabama. Together, they study a broad spectrum of areas connected to materials research and engineering including nanotechnology, advanced biomaterials, carbon/epoxy composites, epoxy syntactic foams, and nanomaterials for drug delivery applications. The research has the potential to create a new generation of automobile, aircraft, spacecraft, locomotives and sporting goods materials. Further, the nanotechnology work could lead to new types of biosensors, drug delivery systems, and heat exchangers.

Dr. Hosur earned his B.E. in Civil Engineering, M. Tech in Aeronautical Engineering and Ph.D. in Aerospace Engineering from India. He is currently Interim Head and Professor in Materials Science Engineering at Tuskegee University. For more information, contact Dr. Hosur at 334.724.4220 or hosur@myu.tuskegee.edu.

Dr. John M. Wiest
The University of Alabama

Dr. John M. Wiest is a Professor of Chemical and Biological Engineering and Associate Dean for the College of Engineering, and has been at the University of Alabama since 1995. He received his Ph.D. in 1986 from the University of Wisconsin and has held positions at Sydney University, the University of Wisconsin, and Purdue University. His research interests are in the areas of rheology and non-Newtonian fluid mechanics and include structural and molecular theories for rheologically complex materials, and thermoviscoelasticity. For more information, contact Dr. Wiest at 205.348.1727 or jwiest@eng.ua.edu.
**Dr. Chris Lawson**  
University of Alabama at Birmingham

Dr. Christopher M. Lawson is a Professor of Physics at UAB and Executive Director of Alabama EPSCoR. He also serves as the Vice Chairman of the Coalition of EPSCoR States. At UAB, Dr. Lawson has been Principal Investigator (PI) for numerous grants awarded from NSF, ARO, ARL, AFOSR, and NASA. Before coming to UAB in 1993, Dr. Lawson was Manager and then Director of Optical Sciences at BDM Corporation in McLean, Virginia. He received his Ph.D. in Physics at Oklahoma State University in 1981 under Richard C. Powell (former President, Optical Society of America) and he received his M.S. degree in Physics from the University of Colorado at Boulder in 1979.

Dr. Lawson’s personal research is directed toward the development of nonlinear optical materials for optical power limiting applications. Dr. Lawson is also involved in the COSS-related development of optical spectroscopic sensors for detection of toxic substances. Dr. Lawson has published over 60 research articles and two book chapters, and he has also edited or co-edited eight books published by the International Society for Optical Engineering.

For more information, contact Dr. Lawson at 205.975.5059 or lawson@uab.edu.

**Dr. Tommy Coleman**  
Alabama A&M University

Dr. Tommy L. Coleman serves as Alabama A&M University Campus Coordinator for Alabama Experimental Programs to Stimulate Competitive Research (EPSCoR) Graduate Research Scholars Program (GRSP). He is also Professor of Soil Science and Remote Sensing in the Department of Biological and Environmental Sciences. He served 13 years as Director of the NASA University Research Center for Hydrology, Soil Climatology and Remote Sensing (HSCaRS). During his 35+ years at AAMU, Dr. Coleman has managed/directed numerous research projects, centers and other federal grants which exceed $16M. The NASA HSCaRS Research Center was the largest project he managed receiving more than $11M from NASA and ~$1,500,000 from AAMU state appropriations from 1995 – 2007) employing an average of 19 Ph.D. scientists and 9 staff. He has received a number of awards and honors for his contributions to the field of soil science and remote sensing and GIS, including Strathmore’s Who’s Who Worldwide 2008; Ukrainian Ecological Academy of Sciences 2004; the NAFEO Distinguished Leadership Research Achievement Award 1999; elected as a Soil Science Society of America Fellow 1998; elected as an American Society of Agronomy Fellow 1997; the Morrison-Evans Outstanding Researcher Award 1997 given by the 1890 Association of Research Directors, and a three-time recipient of the School of Agricultural and Environmental Sciences Outstanding Researcher Award, 1996, 1995 and 1992, and several USDA Peer Review Panels.

Dr. Coleman has an extensive publication record with 75+ refereed journal and proceedings publications, 100+ non refereed scientific publications, 135+ scientific abstracts and 23+ technical publications. For more information, please contact Dr. Coleman at 256-372-4192 or tommy.coleman@aamu.edu.
Dr. John W. Steadman
University of South Alabama

John W. Steadman, P.E., serves as the Alabama Department of Energy (DOE) EPSCoR State Agency Director, the Dean of Engineering at the University of South Alabama, and is a licensed professional engineer. Dr. Steadman previously served as Associate Dean and Head of the Department of Electrical Engineering at the University of Wyoming. He earned his B.S. and M.S. degrees in electrical engineering from the University of Wyoming and the Ph.D. degree from Colorado State University. Dr. Steadman was a research engineer for General Dynamics, Convair Division in San Diego, California before joining the faculty at the University of Wyoming and served as a Distinguished Visiting Professor at the United States Air Force Academy.

Dr. Steadman has received several awards, including the IEEE United States Activities Board Citation of Honor, the NCEES Distinguished Service Award with Special Commemoration, the Wyoming Engineering Society Outstanding Engineer Award, and the AT&T Foundation Award for Excellence in Teaching. Professor Steadman was appointed to the Board of Registration for Professional Engineers and Professional Land Surveyors in Wyoming by three different governors serving on that board for more than sixteen years. He has also been active in the National Council of Examiners for Engineering and Surveying (NCEES), serving on several of the national committees, as treasurer, and as the national president in 1993-94.

In addition to his engineering education responsibilities, Dr. Steadman was 2004 President of IEEE-USA, Past Chair of the Board of Governors of the Order of the Engineer, and participates in accreditation of engineering programs for ABET. Dr. Steadman is the author of more than 60 journal publications, book chapters and patents. He has been honored with election to Fellow grade in the National Society of Professional Engineers and the American Society for Engineering Education. For more information, contact Dr. Steadman at 251.460.6140 or jsteadman@southalabama.edu.
Alabama EPSCoR
Graduate Research Scholars Program

Appendices
<table>
<thead>
<tr>
<th>GRSP Student</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abunaemeh, Malek</td>
<td>34</td>
</tr>
<tr>
<td>Adhikari, Laxman</td>
<td>34</td>
</tr>
<tr>
<td>Ahsan, Md. Ariful</td>
<td>34</td>
</tr>
<tr>
<td>Al Ghossein, Rabih</td>
<td>35</td>
</tr>
<tr>
<td>Amidi, Sharooz</td>
<td>35</td>
</tr>
<tr>
<td>Babaei, Hasan</td>
<td>36</td>
</tr>
<tr>
<td>Bapat, Parimal</td>
<td>37</td>
</tr>
<tr>
<td>Bartkovich, Mercedes</td>
<td>37</td>
</tr>
<tr>
<td>Brock, Nathan</td>
<td>38</td>
</tr>
<tr>
<td>Budhwani, Karim</td>
<td>5, 8, 12</td>
</tr>
<tr>
<td>Butler, Todd</td>
<td>38</td>
</tr>
<tr>
<td>Byrne-Steele, Miranda</td>
<td>39</td>
</tr>
<tr>
<td>Cagle, Ethan</td>
<td>39</td>
</tr>
<tr>
<td>Cannon, Johanna</td>
<td>40</td>
</tr>
<tr>
<td>Cantrell, Andrew</td>
<td>40</td>
</tr>
<tr>
<td>Chen, Yi</td>
<td>41</td>
</tr>
<tr>
<td>Cheng, Bo</td>
<td>41</td>
</tr>
<tr>
<td>Chilvery, Ashwith</td>
<td>42</td>
</tr>
<tr>
<td>Clayton, Daniel</td>
<td>42</td>
</tr>
<tr>
<td>Constante, Ninfa</td>
<td>42</td>
</tr>
<tr>
<td>Crews, Kristy</td>
<td>43</td>
</tr>
<tr>
<td>Dhariwal, Rohit</td>
<td>43</td>
</tr>
<tr>
<td>Dinc, Semih</td>
<td>44</td>
</tr>
<tr>
<td>Dizbay-Onat, Melike</td>
<td>44</td>
</tr>
<tr>
<td>Elliott, Amicia</td>
<td>44</td>
</tr>
<tr>
<td>Fan, Liwu</td>
<td>44</td>
</tr>
<tr>
<td>Farah, Basil</td>
<td>45</td>
</tr>
<tr>
<td>Farley III, Carlton W</td>
<td>46</td>
</tr>
<tr>
<td>Fayock, Brian</td>
<td>46</td>
</tr>
<tr>
<td>Gaillard, William</td>
<td>46</td>
</tr>
<tr>
<td>Ghaednia, Hamed</td>
<td>47</td>
</tr>
<tr>
<td>Gong, Xibing</td>
<td>47</td>
</tr>
<tr>
<td>Grant, Alexander</td>
<td>47</td>
</tr>
<tr>
<td>Hanley, Alan</td>
<td>48</td>
</tr>
<tr>
<td>Havird, Justin</td>
<td>48</td>
</tr>
<tr>
<td>Hodge, Alexander</td>
<td>48</td>
</tr>
<tr>
<td>Horne, William</td>
<td>49</td>
</tr>
<tr>
<td>Jajam, Kailash</td>
<td>50</td>
</tr>
<tr>
<td>Jiang, K</td>
<td>50</td>
</tr>
<tr>
<td>Jones, Ivy Kystal</td>
<td>50</td>
</tr>
<tr>
<td>Kalagian, Jeffrey</td>
<td>51</td>
</tr>
<tr>
<td>Kaub, Tyler</td>
<td>51</td>
</tr>
<tr>
<td>Kercher, Petra</td>
<td>52</td>
</tr>
<tr>
<td>Kim, Wonkyu</td>
<td>52</td>
</tr>
<tr>
<td>Kim, Tae</td>
<td>52</td>
</tr>
<tr>
<td>Li, Zhitong</td>
<td>53</td>
</tr>
<tr>
<td>Li, Pengcheng</td>
<td>54</td>
</tr>
<tr>
<td>Li, Wei</td>
<td>54</td>
</tr>
<tr>
<td>Lindsey, Zachary</td>
<td>55</td>
</tr>
<tr>
<td>Liu, Shikai</td>
<td>55</td>
</tr>
<tr>
<td>Marita, Richard</td>
<td>55</td>
</tr>
<tr>
<td>Marson, Kristine</td>
<td>55</td>
</tr>
<tr>
<td>Martin, Justin</td>
<td>56</td>
</tr>
<tr>
<td>Meadows, Shatori</td>
<td>56</td>
</tr>
<tr>
<td>Messenger, Kevin</td>
<td>57</td>
</tr>
<tr>
<td>Minamisawa, Renato A</td>
<td>57</td>
</tr>
<tr>
<td>Mirshafieyan, Sayed</td>
<td>57</td>
</tr>
<tr>
<td>Misbahuddin, Syed</td>
<td>57</td>
</tr>
<tr>
<td>Moses, Sherita</td>
<td>58</td>
</tr>
<tr>
<td>Nanjappa, Manju</td>
<td>58</td>
</tr>
<tr>
<td>Nweke, Chukwuma</td>
<td>58</td>
</tr>
<tr>
<td>Ojha, Santosh K</td>
<td>59</td>
</tr>
<tr>
<td>Peppers, Jeremy</td>
<td>59</td>
</tr>
<tr>
<td>Poupard, Maria</td>
<td>59</td>
</tr>
<tr>
<td>Powell-Rose, Vertonica</td>
<td>60</td>
</tr>
<tr>
<td>Pradhan, Shantanu</td>
<td>60</td>
</tr>
<tr>
<td>Prayakaraao, Kaushal</td>
<td>60</td>
</tr>
<tr>
<td>Ptacek, Ross</td>
<td>60</td>
</tr>
<tr>
<td>Raju, Dheeraj</td>
<td>60</td>
</tr>
<tr>
<td>Render, Diane</td>
<td>61</td>
</tr>
<tr>
<td>Roberts, Justin</td>
<td>61</td>
</tr>
<tr>
<td>Roberts, Kathleen Ann</td>
<td>62</td>
</tr>
<tr>
<td>Rogers-Moore, Mary Ellen</td>
<td>62</td>
</tr>
<tr>
<td>Ruckart, K. Neil</td>
<td>62</td>
</tr>
<tr>
<td>Sabeeh, Ghanem</td>
<td>62</td>
</tr>
<tr>
<td>Sadhwani, Narendra</td>
<td>63</td>
</tr>
<tr>
<td>Sandey, Maninder</td>
<td>63</td>
</tr>
<tr>
<td>Shan, Zhichao</td>
<td>64</td>
</tr>
<tr>
<td>Sherwood, Jennifer</td>
<td>64</td>
</tr>
<tr>
<td>Sims, Wesley</td>
<td>65</td>
</tr>
<tr>
<td>Sims, Hunter</td>
<td>65</td>
</tr>
<tr>
<td>Smith, John</td>
<td>66</td>
</tr>
<tr>
<td>Solvason, Charles</td>
<td>66</td>
</tr>
<tr>
<td>Stringer, Brandie</td>
<td>66</td>
</tr>
<tr>
<td>Sun, Yuxi</td>
<td>66</td>
</tr>
<tr>
<td>Sun, Po</td>
<td>66</td>
</tr>
<tr>
<td>Suradhi, Raja</td>
<td>66</td>
</tr>
<tr>
<td>Swedan, Samer</td>
<td>66</td>
</tr>
<tr>
<td>Tantawi, Khalid</td>
<td>66</td>
</tr>
<tr>
<td>Tareki, Abubaker</td>
<td>66</td>
</tr>
<tr>
<td>Tedstone, Jason</td>
<td>66</td>
</tr>
<tr>
<td>Theodore, Merlin</td>
<td>66</td>
</tr>
<tr>
<td>Tiimob, Boniface</td>
<td>66</td>
</tr>
<tr>
<td>Venkataramanan, K.P</td>
<td>66</td>
</tr>
<tr>
<td>Veronese, Phillip Keith</td>
<td>67</td>
</tr>
<tr>
<td>Wang, Xiaoxing</td>
<td>67</td>
</tr>
<tr>
<td>Wang, Benquan</td>
<td>67</td>
</tr>
<tr>
<td>Watkins, Dereca</td>
<td>68</td>
</tr>
<tr>
<td>Williams, Jonathan</td>
<td>68</td>
</tr>
<tr>
<td>Xiong, Jingyuan</td>
<td>69</td>
</tr>
<tr>
<td>Xu, Yaolin</td>
<td>70</td>
</tr>
<tr>
<td>Yang, Lin</td>
<td>70</td>
</tr>
<tr>
<td>Zeng, Yi</td>
<td>70</td>
</tr>
<tr>
<td>Zou, Yang</td>
<td>70</td>
</tr>
</tbody>
</table>

**GRSP Campus Coordinators**

Bartol, Frank ..................................71, 73
Berkowitz, David ..............................71, 73
Coleman, Tommy ................................71, 75
Hosur, Mahesh ................................71, 74
Lawson, Chris ..................................5, 71, 75
Steadman, John ................................71, 76
Wiest, John ....................................71, 74

Kevin Messenger, while in China during summer 2015, discovered three new species of frogs.
Alumni Roster and Expected Graduation Dates

**GRSP Alumni**

**2007**
Andrew Gallian, PhD  
Hunter Hyche, MS  

**2008**
Chethan Acharya, PhD  
Sai Santosh Bangalore, MS  
Jeal Reddy Bathi, PhD  
Fernando Calzanni, MS  
Bopha Chhay, PhD  
Cosmin Dumitrescu, PhD  
Vijay Eppakayala, MS  
Sergio Fobi, PhD  
Wanda Denise Jones, PhD  
Deepak V. Kini, MS  
Renato A. Minamisawa, MS  
Humberto Rangel, PhD  
Redahagn Silesi, PhD  
Jean Michel Taguenan, PhD  
Merlin Theodore, PhD  

**2009**
Sudhir Aluwalia, PhD  
Miranda Byrne-Steele, PhD  
Matt Dodson, MS  
Dechassa Duressa, PhD  
Amicia Elliott, MS  
Tiffany Frazier, MS  
Ester Haugabrooks, MS  
Erin Imsand, PhD  
David Johnson, MS  
Ivy Kystal Jones, MS  
Changsu Kim, PhD  
Shantel King, MS  
GiHan Kwon, PhD  
Samuel Owens, Jr., PhD  
Yu Xiang, MS  
Shaik Zainuddin, PhD  
Min Zhong, PhD  
Huizhen Zhu, PhD  

**2010**
Joel Andrews, PhD  
Celina Bochis, PhD  
Bethany Crean-Harris, MS  
Erin Donovan, PhD  
Hannah Harding, MS  
Tarig Hassan, MS  
Chengdong Huang, PhD  
Ronny Hughes, PhD  
Ke Jiang, PhD  
Wei Li, PhD  
Yahao Lu, PhD  
Alan Martinez, PhD  
Jessie Mayo, Jr., PhD  
NoSoung Myoung, PhD  
Ablash Nair, PhD  
Tiffany Nelson-Williams, PhD  
Larissa Parsley, PhD  
Mary Ellen Rogers-Moore, PhD  
Ines Sampayo, MS  
Shoieb Shaik, MS  
Samer Swedish, PhD  
Jonathan Williams, PhD  
Nyeida Wright-Bolden, PhD  
Chuanling Xu, PhD  
Qing Yang, PhD  

**2011**
malek Abuanaemeh, PhD  
Farhana Afroz, MS  
Aldington Allie, PhD  
Susan Balenger, PhD  
Parimal Bapat, PhD  
Christina Booher Schmidt, PhD  
Andrew Cantrell, MS  
Yi Chen, PhD  
Yanli (Joyce) Chen, PhD  
Tomeka Colon, PhD  
Liwu Fan, PhD  
Jason Freeman, PhD  
Stephanie Freeman, PhD  
Bianzhu Fu, PhD  
Emily Gordon, MS  
Aliresa Hassenzadeh, PhD  
Li Qiu, PhD  
Paul Robertson, MS  
Maninder Sandey, PhD  
Resa Sarvestani, PhD  
Justin Sheff, PhD  
Danalea Skarra, MS  
John Smith, PhD  
Charles Solvason, PhD  
Gregory Strawder, PhD  
Yuri Terkhov, PhD  
Noboru Togawa, PhD  
Phillip Keith Veronese, PhD  
Randall Wilson, PhD  
Bradford Wilson, MS  
Yong K. Wong, PhD  
Xin Yang, PhD  
Yang Zou, PhD  

**2012**
Sandra Brundidge-Young, PhD  
Basil Farah, MS  
Luai Hasoun, PhD  
Mohammad Hossain, PhD  
Jianguo Lu, PhD  
Mallory Messersmith, MA  
Manju Nanjappa, PhD  
Reewahur Rahman, PhD  
Dheeraj Raju, PhD  
Po Sun, PhD  
Khalid Tantawi, PhD  
K.P. Venkataramanan, PhD  
Jingyan Xiong, PhD  
Samantha Delmont Hastings, PhD  
Justin Havird, PhD  
Caleb Hill, PhD  
Tae Kim, PhD  
Shikai Liu, PhD  
Erim McDonald, MS  
Syed Misbahuddin, MS  
Selcuk Poyraz, PhD  
Diane Render, PhD  
Hunter Rogers, PhD  
Sandra Sadat, MS  
Brandie Stringer, MS  
Yaolin Xu, PhD  

**2013**
David Baah, PhD  
Nathan Brock, MS  
Johanna Cannon, PhD  
Caitlin Cassidy, PhD  
Talitha Caudle, PhD  
Sayna Ebrahimi, PhD  
Brian Fayock, PhD  
Kailash Jajam, PhD  
Sungmin Kim, MS  
Zeyu Pan, PhD  
Ross Patscek, PhD  
Kathleen Ann Roberts, PhD  
Gang Shen, PhD  
Redahagn Silesi, PhD  
Hunter Sims, PhD  
Padma Sundaram, PhD  
Arefin Taudh, PhD  
Alfred Tcherbi-Narteh, PhD  
Christopher Ward, PhD  
Yuanli Zhang, PhD  

**2014**
Md. Ariful Ahsan, MS  
Vitus Apalangya, PhD  
Hasan Babaei, PhD  
Peter Barfknecht, PhD  
Ashwath Chilvery, PhD  
Daniel Clayton, PhD  
Padraic T. Conner, MS  
Anne Coppa, PhD  
Hamed Ghaednia, PhD  
Kibing Gong, PhD  
Emily Gordon, PhD  
Yuanli Zhang, PhD  

**2015**
Jason Adhikari, PhD  
Rabih Al Ghossein, MS  
Sharooz Amidi, PhD  
Austin Branch, MS  
Todd Butler, PhD  
Nina Constante, PhD  
Morgan Davis, Jr., MS  
Melike Dizbay-Onat, PhD  
Carlton W. Farley III, PhD  
William Horne, PhD  
Patrick Huang, PhD  
Dan Ke, PhD  
Wonkyu Kim, PhD  
Rongwen Lu, PhD  
Santosh K. Ojha, PhD  
Delicia Peoples, PhD  
Jeremy Peppers, PhD  
Maria Poupard, MS  
K. Neil Ruckart, MS  
Ghanem Sabeeb, MS  
Shoieb Shaik, PhD  
Raja Suradhi, PhD  
William Willoughby, PhD  
Yuan Zeng, PhD  

**Expected Graduation Dates for GRSP Scholars**

**2016**
Mercedes Bartkovich, MS  
Bo Cheng, PhD  
Kristy Crews, PhD  
Nabil Daware, PhD  
Rohit Dharwal, PhD  
Semih Dinc, PhD  
William Gaillard, PhD  
Hong Guo, PhD  
Alexander Hodge, PhD  
Jeffrey Kalagian, MS  
Petra Kercher, PhD  
Zachary Lindsey, PhD  
Richard Marita, PhD  
Justin Martin, PhD  
Kevin Messenger, PhD  
Vertonica Powell-Rose, PhD  
Shantanu Pradhan, PhD  
Kaushal Prayakarao, PhD  
Justin Roberts, MS  
Narendra Sadhwani, PhD  
Zhichao Shan, PhD  
Boniface Tiimob, MS/PhD  
Dereca Watkins Hubbard, PhD  
Lin Yang, PhD  

**2017**
Ethan Cagle, PhD  
Alexander Grant, PhD  
Alan Hanley, PhD  
Pengcheng Li, PhD  
Kristine Marson, PhD  
Shartori Meadows, PhD  
Sayed Mirshafieyan, PhD  
Sherita Moses, PhD  
Chukwuma Nweke, MS/PhD  
Jennifer Sherwood, PhD  
Wesley Sims, PhD  
Yuxi Sun, PhD  
Jason Tedstone, PhD  
Xioqing Wang, PhD  
Yi Zeng, PhD  

**2018**
Dipenkumar K. Barot, PhD  
Budhwan Karim, PhD  
Tyler Kaub, PhD  
Zhitong Li, PhD  
Semih Tareki, PhD  

79
<table>
<thead>
<tr>
<th>FUNDING ROUNDS</th>
<th>LAST NAME</th>
<th>FIRST NAME</th>
<th>INST.</th>
<th>GOAL</th>
<th>DATE</th>
<th>RESEARCH FIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>4, 5, 6</td>
<td>Abunaemeh</td>
<td>Malek</td>
<td>AAMU</td>
<td>PhD</td>
<td>2011</td>
<td>Materials Science, Physics</td>
</tr>
<tr>
<td>3</td>
<td>Acharya</td>
<td>Chethan</td>
<td>UA</td>
<td>PhD</td>
<td>2008</td>
<td>Chemical and Biological Engineering</td>
</tr>
<tr>
<td>1</td>
<td>Adams</td>
<td>Brian</td>
<td>USA</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>9</td>
<td>Adhikari</td>
<td>Laxman</td>
<td>UAH</td>
<td>PhD</td>
<td>2015</td>
<td>Space Science</td>
</tr>
<tr>
<td>6</td>
<td>Afroz</td>
<td>Farhana</td>
<td>UA</td>
<td>MS</td>
<td>2011</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>8</td>
<td>Ahsan</td>
<td>Md. Ariful</td>
<td>TU</td>
<td>MS</td>
<td>2014</td>
<td>Chemistry</td>
</tr>
<tr>
<td>9</td>
<td>Al Ghossein</td>
<td>Rabih</td>
<td>AU</td>
<td>MS</td>
<td>2015</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Alexander</td>
<td>Grant</td>
<td>UAB</td>
<td>PhD</td>
<td>2017</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Allie</td>
<td>Aldington</td>
<td>TU</td>
<td>PhD</td>
<td>2011</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Aluwalia</td>
<td>Sudhir</td>
<td>AU</td>
<td>PhD</td>
<td>2009</td>
<td>Veterinary Biological Sciences</td>
</tr>
<tr>
<td>7, 8</td>
<td>Amidi</td>
<td>Sharooz</td>
<td>UA</td>
<td>PhD</td>
<td>2015</td>
<td>Civil, Constr and Envir Eng</td>
</tr>
<tr>
<td>4, 5</td>
<td>Andrews</td>
<td>Joel</td>
<td>USA</td>
<td>PhD</td>
<td>2010</td>
<td>Biochemistry and Molecular Biology</td>
</tr>
<tr>
<td>6, 6S, 7</td>
<td>Apalangya</td>
<td>Vitus</td>
<td>TU</td>
<td>PhD</td>
<td>2014</td>
<td>Material Sciences</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Baah</td>
<td>David</td>
<td>TU</td>
<td>PhD</td>
<td>2013</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>6, 7, 8</td>
<td>Babaei</td>
<td>Hasan</td>
<td>AU</td>
<td>PhD</td>
<td>2014</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Balenger</td>
<td>Susan</td>
<td>AU</td>
<td>PhD</td>
<td>2011</td>
<td>Biological Science</td>
</tr>
<tr>
<td>2</td>
<td>Bangalore</td>
<td>Sai Santosh</td>
<td>UAB</td>
<td>MS</td>
<td>2008</td>
<td>Electrical and Computer Engineering</td>
</tr>
<tr>
<td>3, 4</td>
<td>Bapat</td>
<td>Parimal</td>
<td>UAB</td>
<td>PhD</td>
<td>2011</td>
<td>Physics</td>
</tr>
<tr>
<td>7, 8</td>
<td>Barfknecht</td>
<td>Peter</td>
<td>UAB</td>
<td>PhD</td>
<td>2014</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Barot</td>
<td>Dipenkumar K.</td>
<td>UAH</td>
<td>PhD</td>
<td>2018</td>
<td>Physics</td>
</tr>
<tr>
<td>9, 10</td>
<td>Bartkovich</td>
<td>Mercedes</td>
<td>AAMU</td>
<td>MS</td>
<td>2016</td>
<td>Wildlife</td>
</tr>
<tr>
<td>1, 2</td>
<td>Bathi</td>
<td>Jejal Reddy</td>
<td>UA</td>
<td>PhD</td>
<td>2008</td>
<td>Civil and Environmental Engineering</td>
</tr>
<tr>
<td>2</td>
<td>Bochis</td>
<td>Celina</td>
<td>UA</td>
<td>PhD</td>
<td>2010</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>9</td>
<td>Branch</td>
<td>Austin</td>
<td>AU</td>
<td>MS</td>
<td>2015</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>7</td>
<td>Brock</td>
<td>Nathan</td>
<td>USA</td>
<td>MS</td>
<td>2013</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>5, 6</td>
<td>Brundidge-Young</td>
<td>Sandrea</td>
<td>TU</td>
<td>PhD</td>
<td>2012</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>FUNDING ROUNDS</td>
<td>LAST NAME</td>
<td>FIRST NAME</td>
<td>INST.</td>
<td>GOAL</td>
<td>DATE</td>
<td>RESEARCH FIELD</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>------------</td>
<td>-------</td>
<td>-------</td>
<td>---------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>10</td>
<td>Budhwani</td>
<td>Karim</td>
<td>UAB</td>
<td>PhD</td>
<td>2018</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Butler</td>
<td>Todd</td>
<td>UA</td>
<td>PhD</td>
<td>2015</td>
<td>Metallurgical and Materials Engineering</td>
</tr>
<tr>
<td>1, 2, 4, 5</td>
<td>Byrne-Steele</td>
<td>Miranda</td>
<td>UAH</td>
<td>PhD</td>
<td>2009</td>
<td>Bioengineering, Biology, Chemistry</td>
</tr>
<tr>
<td>9, 10</td>
<td>Cagle</td>
<td>Ethan</td>
<td>UAB</td>
<td>PhD</td>
<td>2017</td>
<td>Chemistry</td>
</tr>
<tr>
<td>3</td>
<td>Calzzani</td>
<td>Fernando</td>
<td>AAMU</td>
<td>MS</td>
<td>2008</td>
<td>Surfance Enhanced Raman Scattering</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Cannon</td>
<td>Johanna</td>
<td>AU</td>
<td>PhD</td>
<td>2013</td>
<td>Biological Science</td>
</tr>
<tr>
<td>6</td>
<td>Cantrell</td>
<td>Andrew</td>
<td>AAMU</td>
<td>MS</td>
<td>2011</td>
<td>Natural Resources, Environmental Studies</td>
</tr>
<tr>
<td>4, 5</td>
<td>Cassidy</td>
<td>Caitlin</td>
<td>UAH</td>
<td>PhD</td>
<td>2013</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>3, 4</td>
<td>Caudle</td>
<td>Talitha</td>
<td>UAH</td>
<td>PhD</td>
<td>2013</td>
<td>Biomedical/Biotechnology</td>
</tr>
<tr>
<td>3</td>
<td>Chen</td>
<td>Yanli (Joyce)</td>
<td>AU</td>
<td>PhD</td>
<td>2011</td>
<td>Chemical Engineering, Bioengineering</td>
</tr>
<tr>
<td>6</td>
<td>Chen</td>
<td>Yi</td>
<td>UAH</td>
<td>PhD</td>
<td>2011</td>
<td>Computer Science</td>
</tr>
<tr>
<td>9</td>
<td>Cheng</td>
<td>Bo</td>
<td>UA</td>
<td>PhD</td>
<td>2016</td>
<td>Mechanical Engineering/Manufacturing</td>
</tr>
<tr>
<td>1, 2</td>
<td>Chhay</td>
<td>Bopha</td>
<td>AAMU</td>
<td>PhD</td>
<td>2008</td>
<td>Materials Science, Physics</td>
</tr>
<tr>
<td>8</td>
<td>Chilvery</td>
<td>Ashwith</td>
<td>AAMU</td>
<td>PhD</td>
<td>2014</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>7</td>
<td>Clayton</td>
<td>Daniel</td>
<td>UA</td>
<td>PhD</td>
<td>2014</td>
<td>Metallurgical and Materials Engineering</td>
</tr>
<tr>
<td>5, 6</td>
<td>Colon</td>
<td>Tomeka</td>
<td>AAMU</td>
<td>MS</td>
<td>2011</td>
<td>Materials Engineering</td>
</tr>
<tr>
<td>7, 8</td>
<td>Conner</td>
<td>Padraic T.</td>
<td>AAMU</td>
<td>MS</td>
<td>2014</td>
<td>Forestry</td>
</tr>
<tr>
<td>7, 9, 10</td>
<td>Constante</td>
<td>Ninfa</td>
<td>UAB</td>
<td>PhD</td>
<td>2015</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>7, 8</td>
<td>Coppa</td>
<td>Anne</td>
<td>UA</td>
<td>PhD</td>
<td>2014</td>
<td>Metallurgical and Materials Engineering</td>
</tr>
<tr>
<td>1, 2</td>
<td>Crean-Harris</td>
<td>Bethany</td>
<td>AU</td>
<td>MS</td>
<td>2010</td>
<td>Animal Science</td>
</tr>
<tr>
<td>9, 10</td>
<td>Crews</td>
<td>Kristy</td>
<td>TU</td>
<td>PhD</td>
<td>2016</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>7, 8</td>
<td>Davis, Jr.</td>
<td>Morgan</td>
<td>UA</td>
<td>MS</td>
<td>2015</td>
<td>Materials Science</td>
</tr>
<tr>
<td>8, 9</td>
<td>Dawahre</td>
<td>Nabil</td>
<td>UA</td>
<td>PhD</td>
<td>2016</td>
<td>Material Science</td>
</tr>
<tr>
<td>9, 10</td>
<td>Dhariwal</td>
<td>Rohit</td>
<td>UAH</td>
<td>PhD</td>
<td>2016</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Dinc</td>
<td>Semih</td>
<td>UAH</td>
<td>PhD</td>
<td>2016</td>
<td>Mechanical and Aerospace Engineering</td>
</tr>
<tr>
<td>FUNDING ROUNDS</td>
<td>LAST NAME</td>
<td>FIRST NAME</td>
<td>INST.</td>
<td>GOAL</td>
<td>DATE</td>
<td>RESEARCH FIELD</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
<td>------------</td>
<td>-------</td>
<td>-------</td>
<td>----------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Dizbay-Onat</td>
<td>Melike</td>
<td>UAB</td>
<td>PhD</td>
<td>2015</td>
<td>Interdisciplinary Engineering/Materials Science and Engineering</td>
</tr>
<tr>
<td>2</td>
<td>Dodson</td>
<td>Matt</td>
<td>AU</td>
<td>MS</td>
<td>2009</td>
<td>Cellular and Molecular Biology</td>
</tr>
<tr>
<td>1</td>
<td>Donovan</td>
<td>Erin</td>
<td>AU</td>
<td>PhD</td>
<td>2010</td>
<td>Cellular and Molecular Biology</td>
</tr>
<tr>
<td>4</td>
<td>Dumitrescu</td>
<td>Cosmin</td>
<td>UA</td>
<td>PhD</td>
<td>2008</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>4</td>
<td>Duressa</td>
<td>Dechassa</td>
<td>AAMU</td>
<td>PhD</td>
<td>2009</td>
<td>Molecular Biology</td>
</tr>
<tr>
<td>7</td>
<td>Ebrahimi</td>
<td>Sayna</td>
<td>USA</td>
<td>MS</td>
<td>2013</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>3</td>
<td>Elliott</td>
<td>Amicia</td>
<td>UAH</td>
<td>MS</td>
<td>2009</td>
<td>Structural Biology</td>
</tr>
<tr>
<td>3</td>
<td>Eppakayala</td>
<td>Vijay</td>
<td>UA</td>
<td>MS</td>
<td>2008</td>
<td>Environmental Engineering</td>
</tr>
<tr>
<td>1, 2</td>
<td>Fabi</td>
<td>Sergio</td>
<td>UA</td>
<td>PhD</td>
<td>2008</td>
<td>Physics</td>
</tr>
<tr>
<td>5, 6</td>
<td>Fan</td>
<td>Liwu</td>
<td>AU</td>
<td>PhD</td>
<td>2011</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>5, 6, 6S</td>
<td>Farah</td>
<td>Basil</td>
<td>USA</td>
<td>MS</td>
<td>2012</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Farley III</td>
<td>Carlton W.</td>
<td>AAMU</td>
<td>PhD</td>
<td>2015</td>
<td>Physics</td>
</tr>
<tr>
<td>6</td>
<td>Fayock</td>
<td>Brian</td>
<td>UAH</td>
<td>PhD</td>
<td>2013</td>
<td>Physics</td>
</tr>
<tr>
<td>1</td>
<td>Floyd</td>
<td>Melissa</td>
<td>UAB</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>3</td>
<td>Frazier</td>
<td>Tiffany</td>
<td>AAMU</td>
<td>MS</td>
<td>2009</td>
<td>Surfance Enhanced Raman Scattering</td>
</tr>
<tr>
<td>4, 5</td>
<td>Freeman</td>
<td>Stephanie</td>
<td>AAMU</td>
<td>PhD</td>
<td>2011</td>
<td>Air Quality and Land Use Change</td>
</tr>
<tr>
<td>5, 6</td>
<td>Freeman</td>
<td>Jason</td>
<td>UAB</td>
<td>PhD</td>
<td>2011</td>
<td>Chemistry</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Fu</td>
<td>Bianzhu</td>
<td>UA</td>
<td>PhD</td>
<td>2011</td>
<td>Metallurgical and Materials Engineering</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Gaillard</td>
<td>William</td>
<td>UAH</td>
<td>PhD</td>
<td>2016</td>
<td>Electrical and Computer Engineering</td>
</tr>
<tr>
<td>1</td>
<td>Gallian</td>
<td>Andrew</td>
<td>UAB</td>
<td>PhD</td>
<td>2007</td>
<td>Physics</td>
</tr>
<tr>
<td>7</td>
<td>Ghaednia</td>
<td>Hamed</td>
<td>AU</td>
<td>PhD</td>
<td>2014</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>8</td>
<td>Gong</td>
<td>Xibing</td>
<td>UA</td>
<td>PhD</td>
<td>2014</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>2</td>
<td>Goodson</td>
<td>Kenya</td>
<td>UA</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>3, 4</td>
<td>Gordon</td>
<td>Emily</td>
<td>UAH</td>
<td>MS 2011, PhD 2014</td>
<td>2011/2014</td>
<td>Structural Biology</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Guo</td>
<td>Hong</td>
<td>UAH</td>
<td>PhD</td>
<td>2016</td>
<td>Electrical and Computer Engineering</td>
</tr>
<tr>
<td>FUNDING ROUNDS</td>
<td>LAST NAME</td>
<td>FIRST NAME</td>
<td>INST.</td>
<td>GOAL</td>
<td>DATE</td>
<td>RESEARCH FIELD</td>
</tr>
<tr>
<td>----------------</td>
<td>------------</td>
<td>------------</td>
<td>-------</td>
<td>------</td>
<td>-------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>10</td>
<td>Hanley</td>
<td>Alan</td>
<td>AU</td>
<td>PhD</td>
<td>2017</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>4</td>
<td>Harding</td>
<td>Hannah</td>
<td>TU</td>
<td>MS</td>
<td>2010</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Hasoun</td>
<td>Luai</td>
<td>USA</td>
<td>PhD</td>
<td>2012</td>
<td>Basic Medical Sciences</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Hassan</td>
<td>Tarig</td>
<td>TU</td>
<td>PhD</td>
<td>2010</td>
<td>Bio-Nanocomposite Materials</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Hassenzadeh</td>
<td>Alireza</td>
<td>UAH</td>
<td>PhD</td>
<td>2011</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>3, 4, 6, 7</td>
<td>Hastings</td>
<td>Samantha</td>
<td>UAB</td>
<td>PhD</td>
<td>2014</td>
<td>Inorganic Chemistry</td>
</tr>
<tr>
<td>2</td>
<td>Haugabrooks</td>
<td>Ester</td>
<td>TU</td>
<td>MS</td>
<td>2009</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>6, 6S, 7</td>
<td>Havird</td>
<td>Justin</td>
<td>AU</td>
<td>PhD</td>
<td>2014</td>
<td>Biological Science</td>
</tr>
<tr>
<td>8</td>
<td>Hill</td>
<td>Caleb</td>
<td>UA</td>
<td>PhD</td>
<td>2014</td>
<td>Chemistry</td>
</tr>
<tr>
<td>7</td>
<td>Hodge</td>
<td>Alexander</td>
<td>AU</td>
<td>PhD</td>
<td>2016</td>
<td>Chem Eng</td>
</tr>
<tr>
<td>8</td>
<td>Horne</td>
<td>William</td>
<td>UA</td>
<td>PhD</td>
<td>2015</td>
<td>Chemical and Biological Engineering</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Hossain</td>
<td>Mohammad</td>
<td>AU</td>
<td>PhD</td>
<td>2012</td>
<td>Microbiology</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Huang</td>
<td>Chengdong</td>
<td>AU</td>
<td>PhD</td>
<td>2010</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>1, 2, 4, 5</td>
<td>Hughes</td>
<td>Ronny</td>
<td>UAH</td>
<td>PhD</td>
<td>2010</td>
<td>Bioengineering, Chemistry, Life Sciences</td>
</tr>
<tr>
<td>8, 9</td>
<td>Hwang</td>
<td>Patrick</td>
<td>UAB</td>
<td>PhD</td>
<td>2015</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>1</td>
<td>Hyche</td>
<td>Hunter</td>
<td>UA</td>
<td>MS</td>
<td>2007</td>
<td>Environmental Engineering</td>
</tr>
<tr>
<td>3</td>
<td>Imsand</td>
<td>Erin</td>
<td>AU</td>
<td>PhD</td>
<td>2009</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>7</td>
<td>Jajam</td>
<td>Kailash</td>
<td>Au</td>
<td>PhD</td>
<td>2013</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>1, 2, 4</td>
<td>Jiang</td>
<td>Ke</td>
<td>AU</td>
<td>PhD</td>
<td>2010</td>
<td>Biological Science</td>
</tr>
<tr>
<td>2, 4</td>
<td>Johnson</td>
<td>David</td>
<td>UAB</td>
<td>MS</td>
<td>2009</td>
<td>Bioengineering, Computer Science</td>
</tr>
<tr>
<td>1, 2</td>
<td>Jones</td>
<td>Ivy Kystal</td>
<td>TU</td>
<td>MS</td>
<td>2009</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>1, 2</td>
<td>Jones</td>
<td>Wanda Denise</td>
<td>TU</td>
<td>PhD</td>
<td>2008</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Kalagian</td>
<td>Jeffrey</td>
<td>USA</td>
<td>MS</td>
<td>2016</td>
<td>Chemical and Biomolecular Engineering</td>
</tr>
<tr>
<td>9, 10</td>
<td>Kaub</td>
<td>Tyler</td>
<td>AU</td>
<td>PhD</td>
<td>2018</td>
<td>Metallurgical and Materials Engineering</td>
</tr>
<tr>
<td>7, 8</td>
<td>Ke</td>
<td>Dan</td>
<td>UAH</td>
<td>PhD</td>
<td>2015</td>
<td>Optical Science and Engineering</td>
</tr>
<tr>
<td>FUNDING ROUNDS</td>
<td>LAST NAME</td>
<td>FIRST NAME</td>
<td>INST.</td>
<td>GOAL</td>
<td>DATE</td>
<td>RESEARCH FIELD</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>------------</td>
<td>--------</td>
<td>----------</td>
<td>---------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>10</td>
<td>Kercher</td>
<td>Petra</td>
<td>AU</td>
<td>PhD</td>
<td>2016</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>1, 2, 4</td>
<td>Kim</td>
<td>Changsu</td>
<td>UAB</td>
<td>PhD</td>
<td>2009</td>
<td>Physics</td>
</tr>
<tr>
<td>7, 8</td>
<td>Kim</td>
<td>Tae</td>
<td>UAH</td>
<td>PhD</td>
<td>2014</td>
<td>Physics</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Kim</td>
<td>Wonkyu</td>
<td>UAH</td>
<td>PhD</td>
<td>2015</td>
<td>Electrical and Computer Engineering</td>
</tr>
<tr>
<td>7</td>
<td>Kim</td>
<td>Sungmin</td>
<td>USA</td>
<td>MS</td>
<td>2013</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>2</td>
<td>King</td>
<td>Shantel</td>
<td>TU</td>
<td>MS</td>
<td>2009</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>1</td>
<td>Kini</td>
<td>Deepak V.</td>
<td>UAB</td>
<td>MS</td>
<td>2008</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>1</td>
<td>Knowles</td>
<td>Kaye</td>
<td>AAMU</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>3</td>
<td>Kwon</td>
<td>GiHan</td>
<td>UA</td>
<td>PhD</td>
<td>2009</td>
<td>Energy, Fuel Cells</td>
</tr>
<tr>
<td>10</td>
<td>Li</td>
<td>Pengcheng</td>
<td>AU</td>
<td>PhD</td>
<td>2017</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>3, 4</td>
<td>Li</td>
<td>Wei</td>
<td>UA</td>
<td>PhD</td>
<td>2010</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Li</td>
<td>Zhitong</td>
<td>UAH</td>
<td>PhD</td>
<td>2018</td>
<td>Electrical and Computer Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Lindsey</td>
<td>Zachary</td>
<td>UAB</td>
<td>PhD</td>
<td>2016</td>
<td>Physics</td>
</tr>
<tr>
<td>8</td>
<td>Liu</td>
<td>Shikai</td>
<td>AU</td>
<td>PhD</td>
<td>2014</td>
<td>Fish Genomics</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Lu</td>
<td>Jianguo</td>
<td>AU</td>
<td>PhD</td>
<td>2012</td>
<td>Catfish Genomics</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Lu</td>
<td>Yahao</td>
<td>UA</td>
<td>PhD</td>
<td>2010</td>
<td>Electrochemical Engineering</td>
</tr>
<tr>
<td>8</td>
<td>Lu</td>
<td>Rongwen</td>
<td>UAB</td>
<td>PhD</td>
<td>2015</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>9, 10</td>
<td>Marita</td>
<td>Richard</td>
<td>AU</td>
<td>PhD</td>
<td>2016</td>
<td>Biological Science</td>
</tr>
<tr>
<td>8, 9, 10</td>
<td>Marson</td>
<td>Kristine</td>
<td>UA</td>
<td>PhD</td>
<td>2017</td>
<td>Integrative Animal Behavior</td>
</tr>
<tr>
<td>8, 9, 10</td>
<td>Martin</td>
<td>Justin</td>
<td>UAB</td>
<td>PhD</td>
<td>2016</td>
<td>Inorganic Chemistry</td>
</tr>
<tr>
<td>3, 4</td>
<td>Martinez</td>
<td>Alan</td>
<td>UAB</td>
<td>PhD</td>
<td>2010</td>
<td>Physics</td>
</tr>
<tr>
<td>3 (deceased)</td>
<td>Mayo, Jr.</td>
<td>Jessie</td>
<td>TU</td>
<td>PhD</td>
<td>2010</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>8</td>
<td>McDonald</td>
<td>Erin</td>
<td>USA</td>
<td>MS</td>
<td>2014</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>9, 10</td>
<td>Meadows</td>
<td>Shartori</td>
<td>TU</td>
<td>MS/PhD</td>
<td>2017</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>8, 9, 10</td>
<td>Messenger</td>
<td>Kevin</td>
<td>PhD</td>
<td>2016</td>
<td></td>
<td>Wildlife</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Messersmith</td>
<td>Mallory</td>
<td>UAB</td>
<td>MA</td>
<td>2012</td>
<td>Anthropology</td>
</tr>
<tr>
<td>FUNDING ROUNDS</td>
<td>LAST NAME</td>
<td>FIRST NAME</td>
<td>INST.</td>
<td>GOAL</td>
<td>DATE</td>
<td>RESEARCH FIELD</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>------------</td>
<td>-------</td>
<td>------</td>
<td>--------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Michael</td>
<td>Kimberly</td>
<td>UA</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>3</td>
<td>Minamisawa</td>
<td>Renato A.</td>
<td>AAMU</td>
<td>MS</td>
<td>2008</td>
<td>Ion Beam, Nanolithography, Physics</td>
</tr>
<tr>
<td>10</td>
<td>Mirshafieyan</td>
<td>Sayed</td>
<td>UAH</td>
<td>PhD</td>
<td>2017</td>
<td>Mechanical and Aerospace Engineering</td>
</tr>
<tr>
<td>8</td>
<td>Misbahuddin</td>
<td>Syed</td>
<td>USA</td>
<td>MS</td>
<td>2014</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>9, 10</td>
<td>Moses</td>
<td>Sherita</td>
<td>AAMU</td>
<td>PhD</td>
<td>2017</td>
<td>physics/optics</td>
</tr>
<tr>
<td>1, 2, 4, 5</td>
<td>Myoung</td>
<td>NoSoung</td>
<td>UAB</td>
<td>PhD</td>
<td>2010</td>
<td>Physics</td>
</tr>
<tr>
<td>4, 5</td>
<td>Nair</td>
<td>Abilash</td>
<td>UA</td>
<td>PhD</td>
<td>2010</td>
<td>Engineering Science and Mechanics</td>
</tr>
<tr>
<td>4</td>
<td>Nanjappa</td>
<td>Manju</td>
<td>AU</td>
<td>PhD</td>
<td>2012</td>
<td>Veterinary Biological Sciences</td>
</tr>
<tr>
<td>1</td>
<td>Ndeqwa</td>
<td>Eunice</td>
<td>TU</td>
<td>MS</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>3</td>
<td>Nelson-Williams</td>
<td>Tiffany</td>
<td>TU</td>
<td>PhD</td>
<td>2010</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Nweke</td>
<td>Chukwuma</td>
<td>TU</td>
<td>MS/PhD</td>
<td>2017</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Ojha</td>
<td>Santosh K.</td>
<td>AAMU</td>
<td>PhD</td>
<td>2015</td>
<td>Forestry</td>
</tr>
<tr>
<td>1, 2</td>
<td>Owens, Jr.</td>
<td>Samuel</td>
<td>UAB</td>
<td>PhD</td>
<td>2009</td>
<td>Chemistry</td>
</tr>
<tr>
<td>7</td>
<td>Pan</td>
<td>Zeyu</td>
<td>UAH</td>
<td>PhD</td>
<td>2013</td>
<td>Electrical and Computer Engineering</td>
</tr>
<tr>
<td>1, 2</td>
<td>Parsley</td>
<td>Larissa</td>
<td>AU</td>
<td>PhD</td>
<td>2010</td>
<td>Microbiology</td>
</tr>
<tr>
<td>8</td>
<td>Peoples</td>
<td>Delicia</td>
<td>TU</td>
<td>PhD</td>
<td>2015</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Peppers</td>
<td>Jeremy</td>
<td>UAB</td>
<td>PhD</td>
<td>2015</td>
<td>Physics</td>
</tr>
<tr>
<td>9</td>
<td>Poupard</td>
<td>Maria</td>
<td>TU</td>
<td>MS</td>
<td>2015</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Powell-Rose</td>
<td>Veronica</td>
<td>TU</td>
<td>PhD</td>
<td>2016</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>8</td>
<td>Poyraz</td>
<td>Selcuk</td>
<td>AU</td>
<td>PhD</td>
<td>2014</td>
<td>Polymer and Fiber Engineering</td>
</tr>
<tr>
<td>8</td>
<td>Pradhan</td>
<td>Shantanu</td>
<td>AU</td>
<td>PhD</td>
<td>2016</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>8, 9, 10</td>
<td>Prayakarao</td>
<td>Kaushal</td>
<td>TU</td>
<td>PhD</td>
<td>2016</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>6</td>
<td>Ptacek</td>
<td>Ross</td>
<td>UAB</td>
<td>PhD</td>
<td>2013</td>
<td>Mathematics</td>
</tr>
<tr>
<td>3, 4</td>
<td>Qiu</td>
<td>Li</td>
<td>UAH</td>
<td>PhD</td>
<td>2011</td>
<td>Structural Biology</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Rahman</td>
<td>Rezwahur</td>
<td>UA</td>
<td>PhD</td>
<td>2012</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>2</td>
<td>Raju</td>
<td>Dheeraj</td>
<td>UA</td>
<td>PhD</td>
<td>2012</td>
<td>Educational Research</td>
</tr>
<tr>
<td>FUNDING ROUNDS</td>
<td>LAST NAME</td>
<td>FIRST NAME</td>
<td>INST.</td>
<td>GOAL</td>
<td>DATE</td>
<td>RESEARCH FIELD</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------</td>
<td>------------</td>
<td>-------</td>
<td>------</td>
<td>--------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Rangel</td>
<td>Humberto</td>
<td>UA</td>
<td>PhD</td>
<td>2008</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>7, 8</td>
<td>Render</td>
<td>Diane</td>
<td>TU</td>
<td>PhD</td>
<td>2014</td>
<td>Materials Science</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Roberts</td>
<td>Kathleen Ann</td>
<td>AAMU</td>
<td>PhD</td>
<td>2013</td>
<td>Agriculture and Environmental Sciences</td>
</tr>
<tr>
<td>10</td>
<td>Roberts</td>
<td>Justin</td>
<td>USA</td>
<td>MS</td>
<td>2016</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>6</td>
<td>Robertson</td>
<td>Paul</td>
<td>AAMU</td>
<td>MS</td>
<td>2011</td>
<td>Optics and Lasers</td>
</tr>
<tr>
<td>8</td>
<td>Rogers</td>
<td>Hunter</td>
<td>AU</td>
<td>MS</td>
<td>2014</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>2, 4, 5</td>
<td>Rogers-Moore</td>
<td>Mary Ellen</td>
<td>TU</td>
<td>PhD</td>
<td>2010</td>
<td>Material Sciences</td>
</tr>
<tr>
<td>8, 9</td>
<td>Ruckart</td>
<td>K. Neil</td>
<td>USA</td>
<td>MS</td>
<td>2015</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>9</td>
<td>Sabeeh</td>
<td>Ghanem</td>
<td>USA</td>
<td>MS</td>
<td>2015</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>4, 5, 7</td>
<td>Sadat</td>
<td>Sandra</td>
<td>AAMU</td>
<td>MS</td>
<td>2014</td>
<td>Optics/Physics</td>
</tr>
<tr>
<td>8, 9, 10</td>
<td>Sadhwani</td>
<td>Narendra</td>
<td>AU</td>
<td>PhD</td>
<td>2016</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>4, 5</td>
<td>Sampayo</td>
<td>Ines</td>
<td>USA</td>
<td>MS</td>
<td>2010</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>4</td>
<td>Sandey</td>
<td>Maninder</td>
<td>AU</td>
<td>PhD</td>
<td>2011</td>
<td>Veterinary Medicine</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Sarvestani</td>
<td>Reza</td>
<td>UAH</td>
<td>PhD</td>
<td>2011</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>3, 4</td>
<td>Schmidt</td>
<td>Christina</td>
<td>AU</td>
<td>PhD</td>
<td>2011</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>3, 4, 5, 5</td>
<td>Shaik*</td>
<td>Shoieb</td>
<td>TU</td>
<td>MS</td>
<td>2010</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>6</td>
<td>Shaik*</td>
<td>Shoieb</td>
<td>UA</td>
<td>PhD</td>
<td>2015</td>
<td>Electrical and Computer Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Shan</td>
<td>Zhichao</td>
<td>UA</td>
<td>PhD</td>
<td>2016</td>
<td>Chemistry</td>
</tr>
<tr>
<td>3, 4, 5, 6</td>
<td>Sheff</td>
<td>Justin</td>
<td>UAB</td>
<td>PhD</td>
<td>2011</td>
<td>Inorganic Chemistry</td>
</tr>
<tr>
<td>6, 65, 7</td>
<td>Shen</td>
<td>Gang</td>
<td>UA</td>
<td>PhD</td>
<td>2013</td>
<td>Materials Science</td>
</tr>
<tr>
<td>10</td>
<td>Sherwood</td>
<td>Jennifer</td>
<td>UA</td>
<td>PhD</td>
<td>2017</td>
<td>Chemical and Biological Engineering</td>
</tr>
<tr>
<td>3</td>
<td>Sileshi</td>
<td>Redahagn</td>
<td>AAMU</td>
<td>MS 2008, PhD 2013</td>
<td>2008</td>
<td>UV Nanolithography</td>
</tr>
<tr>
<td>10</td>
<td>Sims</td>
<td>Wesley</td>
<td>AAMU</td>
<td>PhD</td>
<td>2017</td>
<td>Applied Physics</td>
</tr>
<tr>
<td>4</td>
<td>Sims</td>
<td>Hunter</td>
<td>AU</td>
<td>PhD</td>
<td>2013</td>
<td>Physics</td>
</tr>
<tr>
<td>FUNDING ROUNDS</td>
<td>LAST NAME</td>
<td>FIRST NAME</td>
<td>INST.</td>
<td>GOAL</td>
<td>DATE</td>
<td>RESEARCH FIELD</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------</td>
<td>------------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>1, 2, 4</td>
<td>Skarra</td>
<td>Danalea</td>
<td>USA</td>
<td>MS</td>
<td>2011</td>
<td>Basic Medical Sciences</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Smith</td>
<td>John</td>
<td>UAB</td>
<td>PhD</td>
<td>2011</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>5</td>
<td>Solvason</td>
<td>Charles</td>
<td>AU</td>
<td>PhD</td>
<td>2011</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>6</td>
<td>Strawder</td>
<td>Gregory</td>
<td>TU</td>
<td>PhD</td>
<td>2011</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>7, 8</td>
<td>Stringer</td>
<td>Brandie</td>
<td>AAMU</td>
<td>MS</td>
<td>2014</td>
<td>Plant and Soil Science</td>
</tr>
<tr>
<td>10</td>
<td>Sun</td>
<td>Yuxi</td>
<td>UAB</td>
<td>PhD</td>
<td>2017</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Sun</td>
<td>Po</td>
<td>UAH</td>
<td>PhD</td>
<td>2012</td>
<td>Optical Science and Engineering</td>
</tr>
<tr>
<td>6, 6S, 7</td>
<td>Sundaram</td>
<td>Padma</td>
<td>AU</td>
<td>PhD</td>
<td>2013</td>
<td>Drug Delivery</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Suradhi</td>
<td>Raja</td>
<td>AAMU</td>
<td>PhD</td>
<td>2015</td>
<td>Basic Medical Sciences</td>
</tr>
<tr>
<td>1,2,3</td>
<td>Taguenang</td>
<td>Jean Michel</td>
<td>USA</td>
<td>PhD</td>
<td>2010</td>
<td>Basic Medical Sciences</td>
</tr>
<tr>
<td>5, 6, 6S</td>
<td>Tantawi</td>
<td>Khalid</td>
<td>UAH</td>
<td>PhD</td>
<td>2012</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Tareki</td>
<td>Abubaker</td>
<td>UAH</td>
<td>PhD</td>
<td>2018</td>
<td>Mechanical and Aerospace Engineering</td>
</tr>
<tr>
<td>7</td>
<td>Tauhid</td>
<td>Arefin</td>
<td>TU</td>
<td>MS</td>
<td>2013</td>
<td>Materials Science</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Tcherbi-Narteh</td>
<td>Alfred</td>
<td>TU</td>
<td>PhD</td>
<td>2013</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>10</td>
<td>Tedstone</td>
<td>Jason</td>
<td>UA</td>
<td>PhD</td>
<td>2017</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>4</td>
<td>Terkhov</td>
<td>Yuri</td>
<td>UAB</td>
<td>PhD</td>
<td>2011</td>
<td>Laser Physics</td>
</tr>
<tr>
<td>1</td>
<td>Theodore</td>
<td>Merlin</td>
<td>TU</td>
<td>PhD</td>
<td>2008</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Tiimob</td>
<td>Boniface</td>
<td>TU</td>
<td>MS/PhD</td>
<td>2016</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>1, 2, 4, 5, 6</td>
<td>Togawa</td>
<td>Noboru</td>
<td>UA</td>
<td>PhD</td>
<td>2011</td>
<td>Environmental and Civil Engineering</td>
</tr>
<tr>
<td>3 (military service)</td>
<td>Torgerson</td>
<td>Sarah</td>
<td>UAH</td>
<td>PhD</td>
<td>2012</td>
<td>Biotechnology Science and Engineering</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Venkataraman</td>
<td>K.P.</td>
<td>UAH</td>
<td>PhD</td>
<td>2012</td>
<td>Biotechnology Science and Engineering</td>
</tr>
<tr>
<td>3, 4</td>
<td>Veronese</td>
<td>Phillip Keith</td>
<td>UAB</td>
<td>PhD</td>
<td>2011</td>
<td>Chemistry</td>
</tr>
<tr>
<td>10</td>
<td>Wang</td>
<td>Xioqing</td>
<td>UAB</td>
<td>PhD</td>
<td>2017</td>
<td>Mechanical Engineering/Materials Processing</td>
</tr>
<tr>
<td>9</td>
<td>Wang*</td>
<td>Benquan</td>
<td>UAB</td>
<td>PhD</td>
<td>2017</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>FUNDING ROUNDS</td>
<td>LAST NAME</td>
<td>FIRST NAME</td>
<td>INST.</td>
<td>GOAL</td>
<td>DATE</td>
<td>RESEARCH FIELD</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------</td>
<td>---------------</td>
<td>------</td>
<td>-------</td>
<td>-------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>7</td>
<td>Ward</td>
<td>Christopher</td>
<td>AU</td>
<td>PhD</td>
<td>2013</td>
<td>Material Sciences</td>
</tr>
<tr>
<td>2</td>
<td>Watkins</td>
<td>Renita</td>
<td>AAMU</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>7</td>
<td>Watkins Hubbard</td>
<td>Dereca</td>
<td>TU</td>
<td>PhD</td>
<td>2016</td>
<td>Material Sciences</td>
</tr>
<tr>
<td>1, 2, 4, 5</td>
<td>Williams</td>
<td>Jonathan</td>
<td>UAB</td>
<td>PhD</td>
<td>2010</td>
<td>Physics</td>
</tr>
<tr>
<td>7, 8</td>
<td>Watkins Hubbard</td>
<td>Dereca</td>
<td>TU</td>
<td>PhD</td>
<td>2016</td>
<td>Material Sciences</td>
</tr>
<tr>
<td>2, 6</td>
<td>Watkins Hubbard</td>
<td>Dereca</td>
<td>TU</td>
<td>PhD</td>
<td>2016</td>
<td>Material Sciences</td>
</tr>
<tr>
<td>1, 2, 4</td>
<td>Wilson</td>
<td>Randall</td>
<td>UAH</td>
<td>PhD</td>
<td>2011</td>
<td>Structural Biology</td>
</tr>
<tr>
<td>4</td>
<td>Wilson</td>
<td>Randall</td>
<td>UAH</td>
<td>PhD</td>
<td>2011</td>
<td>Structural Biology</td>
</tr>
<tr>
<td>7</td>
<td>Watkins Hubbard</td>
<td>Dereca</td>
<td>TU</td>
<td>PhD</td>
<td>2016</td>
<td>Material Sciences</td>
</tr>
<tr>
<td>1</td>
<td>Xiang</td>
<td>Yu</td>
<td>AU</td>
<td>MS</td>
<td>2009</td>
<td>Biological Science</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Xiong</td>
<td>Jingyuan</td>
<td>AU</td>
<td>PhD</td>
<td>2012</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>4</td>
<td>Xu</td>
<td>Chuanling</td>
<td>AU</td>
<td>PhD</td>
<td>2010</td>
<td>Food Science</td>
</tr>
<tr>
<td>7</td>
<td>Xu</td>
<td>Yaolin</td>
<td>UA</td>
<td>PhD</td>
<td>2014</td>
<td>Chem/Bio Engineering</td>
</tr>
<tr>
<td>9</td>
<td>Yang</td>
<td>Xin</td>
<td>AU</td>
<td>PhD</td>
<td>2011</td>
<td>Biological Science</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Yang</td>
<td>Xin</td>
<td>UAH</td>
<td>PhD</td>
<td>2016</td>
<td>Physics</td>
</tr>
<tr>
<td>5, 6</td>
<td>Yang</td>
<td>Xin</td>
<td>UA</td>
<td>PhD</td>
<td>2011</td>
<td>Biological Science</td>
</tr>
<tr>
<td>7</td>
<td>Yang</td>
<td>Lin</td>
<td>UAH</td>
<td>PhD</td>
<td>2016</td>
<td>Physics</td>
</tr>
<tr>
<td>10</td>
<td>Yang</td>
<td>Lin</td>
<td>UAH</td>
<td>PhD</td>
<td>2016</td>
<td>Physics</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Zainuddin</td>
<td>Shaik</td>
<td>TU</td>
<td>PhD</td>
<td>2009</td>
<td>Materials Science and Engineering</td>
</tr>
<tr>
<td>9</td>
<td>Zeng</td>
<td>Yuan</td>
<td>AU</td>
<td>PhD</td>
<td>2015</td>
<td>Entomology/Microbiology</td>
</tr>
<tr>
<td>10</td>
<td>Zeng</td>
<td>Yuan</td>
<td>AU</td>
<td>PhD</td>
<td>2017</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>6, 6S, 7</td>
<td>Zhang</td>
<td>Yuanli</td>
<td>UAB</td>
<td>PhD</td>
<td>2013</td>
<td>Physics</td>
</tr>
<tr>
<td>1, 2</td>
<td>Zhong</td>
<td>Min</td>
<td>AU</td>
<td>PhD</td>
<td>2009</td>
<td>Biological Science</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Zhu</td>
<td>Huizhen</td>
<td>UA</td>
<td>PhD</td>
<td>2009</td>
<td>Energy, Fuel Cells</td>
</tr>
<tr>
<td>6, 6S</td>
<td>Zou</td>
<td>Yang</td>
<td>UAH</td>
<td>PhD</td>
<td>2011</td>
<td>Optical Science and Engineering</td>
</tr>
</tbody>
</table>
ALABAMA EPSCOR STEERING COMMITTEE

Dr. Richard B. Marchase  
Vice President for Research and Economic Development  
University of Alabama at Birmingham  
1530 3rd Ave. S, AB 720-E  
Birmingham, AL 35294-0107  
Phone: 205-934-1294, Fax: 205-975-2533  
Email: marchase@uab.edu

Dr. Elizabeth French  
Proxy for Dr. Gregory Fitch  
Director, Office of Institutional Effectiveness and Planning,  
Alabama Commission on Higher Education  
P.O. Box 302000  
Montgomery, AL 36130-2000  
Phone: 334-242-179, Fax: 334-242-0270  
Email: elizabeth.french@ache.alabama.gov

Dr. Shaik Jeelani  
Vice President for Research and Sponsored Programs  
Tuskegee University  
101 Chappie James Center  
Tuskegee, AL 36088  
Phone: 334-552-1088, Fax: 334-724-4224  
Email: jeelanis@mytu.tuskegee.edu

Dr. Ray Vaughn  
Vice Chair, Alabama EPSCoR Steering Committee (4/2015)  
Vice President for Research  
University of Alabama in Huntsville  
VBRH M-17  
301 Sparkman Drive  
Huntsville, AL 35899  
Phone: 256-824-6100; Fax: 256-824-6783  
Email: Ray.Vaughn@uah.edu

Ms. Lynne U. Chronister  
Chair, Alabama EPSCoR Steering Committee (4/2015)  
Vice President for Research  
University of South Alabama  
AD 200  
307 University Boulevard North  
Mobile, AL 36688-0002  
Phone: (251) 460-6333; Fax: (251) 460-7955  
Email: ichronister@usouthal.edu

Dr. Lloyd Walker  
Dean and 1890 Research Director  
College of Agriculture, Life and Natural Sciences  
Alabama A&M University  
P.O. Box 1087  
Normal, AL 35762  
Phone: 256-372-5783, Fax: 256-372-5906  
Email: Lloyd.Walker@aamu.edu

Dr. John Mason  
Vice President for Research and Economic Development  
Auburn University  
202 Samford Hall  
Auburn, AL 36849-5112  
Phone: 334-844-4794  
Fax: 334-844-5971  
Email: jmason@auburn.edu

Dr. Carl Pinkert  
Vice President for Research and Economic Development  
The University of Alabama  
Office for Research  
Box 870117  
Tuscaloosa, AL 35487-0117  
Phone: 205-348-4566, Fax: 205-348-4989  
Email: cap@ua.edu

Non-Voting  
Christopher M. Lawson, Ph.D.  
Executive Director, Alabama EPSCoR  
Vice-Chair, Coalition of EPSCoR States  
Professor, Department of Physics  
770N Administration Building  
1720 2nd Avenue South  
Birmingham, AL 35294-0107  
Office: (205) 975-5059  
Email: lawson@uab.edu