

Alabama Alliance for Students with Disabilities in STEM

The Hotel at Auburn University and Dixon Conference Center

Saturday, April 2, 2011



Theme: *Broadening the Participation of Students with Disabilities in STEM: Promising Practices*

8:15 am - 8:45 am	Registration & Continental Breakfast		
8:45 am - 9:00 am	Opening Session (Auditorium) Opening Remarks - Dr. Overtoun Jenda, Associate Provost for Diversity and Multicultural Affairs		
9:00 am - 10:00 am	Using Assistive Technology to Reach Your Dreams - <u>Scott Renner</u> (Room A) Facilitator: AASD Personnel	Self-Advocacy in College and Work Settings: Know the Laws, Know Yourself, Know What You Need, and Know How to Get it- <u>Brian Burrows</u> (Room B) Facilitator: AASD Personnel	Students Enabling Students-Come share what your AASD-STEM advocacy group is doing or learn from other groups how to have an advocacy group (Room C) Facilitator: AASD Personnel
10:00 am - 10:15 am	Break		
10:15 am - 10:45 am	Poster Sessions presented by Internship Recipients and others (Governors Room)		
10:45 am - 11:45 am	STEM Inclusive Activities for Alabama Middle School and High School Students with Disabilities AASD Minigrant Recipient- Jacqueline Hundley (AU) (Room A) Facilitator: AASD Personnel	Research Presenters: Daniel Pulliam (AU) Julaunica Tigner (TU) (Room B) Facilitator: AASD Personnel	Research Presenters: Candice Adams (AU) Jennifer LePage (AUM) Joseph Shanahan (AU) (Room C) Facilitator: AASD Personnel
12:00 pm - 1:30 pm	Lunch (Ballroom A) Luncheon Speaker: Graham Sisson, Executive Director, Governor's Office on Disability. Evaluations and Closing Remarks		



AASD-STEM CONFERENCE PRESENTERS AND THEIR TOPICS

Scott Renner, Coordinator of Assistive Technology and Innovations, AU Center for Disability Research and Service

Using Assistive Technology to Reach Your Dreams

Presentation will discuss and show various types of Assistive Technology (AT) that support students with disabilities in Science, Technology, Engineering, and Mathematics (STEM). It will discuss ways students with disabilities can utilize AT to be successful in STEM. Participants will learn about various types of AT that can support them in their course work and careers.

Brian Burrows, Peer Advocate, Independent Living Resources of Greater Birmingham

Self-Advocacy in College and Work Settings: Know the Laws, Know Yourself, Know What You Need and Know How to get it.

During this session, Brian will discuss the similarities and differences of how to advocate for yourself in the college and work settings. Brian will also provide resources you will need to keep updated on what your rights and responsibilities are in the College and work settings.

Jacqueline Hundley, Instructor, Computer Science & Software Engineering Auburn University

STEM Inclusive Activities for Alabama Middle School and High School Students with Disabilities

This project provided students with disabilities an opportunity to attend a summer technology and science camp in an inclusive environment along with typical children. It also provided a workshop which used this program as a role-model to train K12 STEM teachers who are interested in implementing similar programs in their schools.

Graham Sisson - Executive Director, Governor's Office on Disability – Luncheon Speaker

Student Presenters

Daniel Pulliam (Auburn University) - A study of Novel Degradable Imprinted Networks

This Project aims to produce and study a degradable polymer network capable of binding and releasing Diclofenac, a non-steroidal anti-inflammatory drug, through the application of molecular imprinting.

Joseph Shanahan (Auburn University) - A Cloud Computing and Multimedia-based Java Course

Jennifer LePage (Auburn University Montgomery) - Paraoxonase Activity in Fresh/Frozen Serum and Plasma

Paraoxonase (PON) has been positively associated with cardiovascular disease through its antiatherogenic properties. The purpose of this investigation is to determine if serum or plasma should be used to perform this procedure.

Candice Adams (Auburn University) - A Web-Based Learning Environment to Support Chemistry

Increasing the use of technology is essential for the vitality of today's classroom because technology creates an environment that fosters positive attitudes toward learning and increases technologically literacy among K-12 students. Web-based applications that are centered on classroom lessons are effective at increasing literacy because it heightens students' motivation and interaction with technology.

Ashley Heard (Tuskegee University) - Synthesis and characterization of CaCO₃/TiO₂ nanoparticles

Calcium Carbonate (CaCO₃) is an abundant molecule that has extensively been used in medicine and can be found in teeth and bone. Because of its high level of biocompatibility, it is one of the materials of choice in fabrication of dense and porous bioceramics such as prosthetics and so on. Unfortunately, due to low mechanical reliability, especially in aqueous environments, calcium carbonate fails in heavy load-bearing applications. TiO₂/Ti has been used as synthetic biomaterial in bone graft due to its low density, corrosion resistance, low linear coefficient heat of expansion and high load-bearing potential. Due to the high cost and environmental hazard of the petroleum and mineral derived products, a growing effort has emerged in recent years on the research, development, and application of bio-materials obtained from renewable resources such as eggshell. Chicken eggshell is an industrial by-product that has been considered as one of the worst environmental hazards; however, it can offer a great material for bioceramics. The objective of the CaCO₃/TiO₂ nanoparticle was to synthesize and characterize a nanoparticle and to use the nanoparticle in biomedical and industrial use.

Julaunica Tigner (Tuskegee University) - Investigation of Traditional and Novel Techniques for Cooling in High Heat Flux Microelectronics Application

The growing demand for electronic devices to be smaller and faster has increased the energy released by these devices in the form of heat. Devices such as laptop computers are not exempted from these demands. The primary traditional technologies currently used to remove heat generated in these devices are fins and fans. Fins dissipate heat through contact with the surface area of a thermally conductive material like aluminum or copper. Fans dissipate heat through air convection. The objective of this study is to perform benchmarking experiments of traditional technologies and to compare the results with more novel technologies like the use of micro channels with water as the cooling fluid. Results are forthcoming.

Lachundra Mosley (Tuskegee University) - Modulation of miRNA Expression in Prostate Cancer Cells by the Dietary Flavonoid Quercetin

Prostate cancer in men is the most commonly diagnosed and the second most cause of death in men; it affects African Americans higher than any other ethnic group. There is a growing interest to prevent prostate cancer through dietary adjustments or supplements. Quercetin is a widely available dietary polyphenolic flavonoid that is abundant in the skins of fruits and vegetables, and has anticancer activities. Even though research on flavonoids and their anti-cancer potentials is ongoing, the mechanisms behind their abilities to inhibit carcinogenic processes are not fully understood. We propose that microRNA (miRNA) modulation is a potential candidate mechanism.