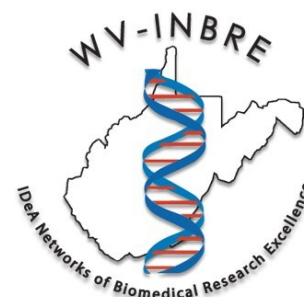


WV-INBRE NEWSLETTER

Volume 22
Fall/Winter 2016



Dr. Lucia Pirisi-Creek was Keynote Speaker at 15th Annual WV-INBRE Summer Research Symposium

The WV-INBRE 15th Annual Summer Symposium keynote speaker, Dr. Lucia Pirisi-Creek, is a Professor in the Department of Pathology, Microbiology and Immunology. She is also the Principal Investigator and Program Director of the South Carolina INBRE at the University of South Carolina School of Medicine.



Dr. Pirisi-Creek received her M.D. degree at the University of Sassari, Italy, in 1983, and joined the NIH/NCI in 1985 as a Fogarty Visiting Scientist. She moved to the University of South Carolina (USC)

Columbia, SC in 1987 and became Assistant Professor of Pathology at the USC School of Medicine in 1988. Dr. Pirisi-Creek is the author or co-author of over 70 scientific publications and has mentored/co-mentored 23 Ph.D.'s and numerous Master, and Undergraduate students in research.

Dr. Pirisi-Creek co-directs with her husband and collaborator, Dr. Kim E. Creek, an active, extramurally-funded research program focusing on the basic mechanisms of HPV-mediated transformation and the origin of cervical cancer. More recently, she has expanded her area of interest to include HPV-mediated cancers of the head and neck. She contributed substantially to the launch of Project EXPORT, then CC SPHERE, a collaborative center grant between USC and Claflin University, in Orangeburg, SC, in support of basic research, community-based participatory research, education/training and community outreach to address health disparities in HIV and HPV-mediated diseases.

Dr. Pirisi-Creek is Principal Investigator and Program Director of SC INBRE, an \$18.2M NIGMS program that provides support to over 20 faculty and hundreds of undergraduate and graduate students across the state builds research infrastructure at predominantly-undergraduate institutions. Under her leadership, SC INBRE's competitive renewal was funded in 2010, and

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Network Partners of the WV-INBRE

Lead Universities

Marshall University
West Virginia University

Predominantly Undergraduate Institutions (PUIs)

Alderson-Broaddus University
Bethany College
Bluefield State College
Concord University
Davis & Elkins College
Fairmont State University
Glennville State College
Mountain State University
Salem International University
Shepherd University
University of Charleston
West Liberty University
West Virginia State University
West Virginia Wesleyan College
Wheeling Jesuit University

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Message from the WV-INBRE Principal Investigator



It seems amazing that we have already entered the third year of the WV-INBRE Phase III award. Where has the time gone? We started Y16 of the grant on August 1, 2016 with an on-time Notice of Award and started issuing sub-awards as quickly as possible. While the sub-award process takes time to execute, we continue to make efforts to speed up getting funds to our investigators.

As some of you may know, our Program Coordinator, Dr. James Sheil, has taken medical leave to deal with several health issues. When he will return to WV-INBRE is unclear at this point, but we wish Jim all the best for a speedy recovery. In the meantime, Dr. Stanley Hileman, Professor of Physiology and Pharmacology and a member of the Blanchette Rockefeller Neuroscience Institute at West Virginia University, will join the WV-INBRE team as Interim Program Coordinator. He is already working with the Administrative Core on several matters, and we look forward to having Stan as a valuable member of the WV-INBRE family.

I can't say enough about the excellent summer programs we have each year. The summer mentors have been outstanding and the program gets stronger each year.

This year the summer research program began on May 23 and culminated on July 25, 2016 with the Summer Research Symposium at West Virginia University. A total of 25 undergraduate students from ten partner institutions worked on biomedical research projects as summer interns at Marshall and West Virginia Universities. Dr. Cynde Perry, Shepherd University, and Dr. Dawn Turner, University of Charleston, participated as Summer Faculty Fellows, conducting research at West Virginia University and Marshall University, respectively. From our Health Sciences and Technology Academy (HSTA) initiative, we also had five HSTA high school science teachers perform biomedical research at West Virginia, Marshall and Alderson Broaddus Universities. At the Summer Research Symposium, there were six oral presentations from our interns and faculty fellows and 77 abstracts presented. Our keynote speaker was Dr. Lucia Prisi-Creek from the University of South Carolina and the SC-INBRE Principal Investigator. Lucia gave an outstanding presentation about her research on human papilloma virus and cancer. It was another great day for sharing and learning about biomedical research in West Virginia!

As we start Y16, we have four of the five major research awards funded. Dr. Evan Lau, a major research award PI at West Liberty University in Y15, has moved out of state leaving one award unfunded. Funds from his award will be distributed across other partner institution programs. However, this year we will also

have a competition for all five major research award slots. This competition is open for all eligible members of the partner institution network, and an RFA will be released very soon. In addition to our major research awards, for Y16, WV-INBRE has awarded five Next Generation Sequencing Pilot Grants, four Faculty Research Development Awards, and three Center for Natural Products Research Pilot Grants. Competition is currently underway for the Chronic Disease Research Program Pilot Grants, and the awardees will be announced very soon.

Next year, we will begin the process of preparing the next competing renewal for WV-INBRE. I can't stress enough the importance of citing WV-INBRE support in any abstract or publication where any part of the results comes from WV-INBRE funded activities (research grants, summer research program, HSTA Scholars, etc.) or if equipment (e.g. centrifuges, microscopes, freezers, etc.) purchased by WV-INBRE (no matter how long ago it was purchased) is used for conducting the research.

In the acknowledgement section, please cite the support of the West Virginia IDeA Network of Biomedical Research Excellence Grant No P20RR016477 and/or P20GM103434 (after May 1, 2012). These citations are vital to the success of WV-INBRE and helping us to be able to support biomedical research across West Virginia. If you have any questions about citing WV-INBRE support, please don't hesitate to contact me.

Introducing the Interim Program Coordinator for the WVU WV-INBRE Program

Dr. Stan Hileman is a professor with the Department of Physiology and Pharmacology in the College of Medicine at WVU. Dr. Hileman is a WV native, having grown up in Ripley, WV and received his B.S. in Animal and Veterinary Sciences from the Davis College of Agriculture, Natural Resources, and Design in 1985. After that, he earned an M.S. in 1988 and a Ph.D. in 1991 from the Department of Animal and Food Sciences at the University of Kentucky. He then did postdoctoral work at the University of Illinois (1991-1997) where he rose to the rank of visiting assistant professor in the Department of Veterinary Biosciences and then at Beth Israel Deaconess Medical Center/Harvard University (1997-2000) in the Division of Endocrinology and Metabolism.

Since joining WVU in 2000, Dr. Hileman has actively been involved in research, teaching and service. Dr. Hileman's research interests include the neural mecha-

nisms whereby the brain controls reproduction and energy homeostasis. He has been and currently is a principal investigator or co-investigator on grants obtained from several funding agencies, including the United States Department of Agriculture, National Institutes of Health, National Science Foundation, and the Veterans Administration. He has published over 50 scientific articles and several scientific reviews and book chapters.

During his time at WVU, Dr. Hileman has served on national grant review committees for both the USDA and the National Science Foundation and is a regular reviewer for many scientific journals. He has served on or chaired over 35 M.S. or Ph.D. student committees. With regard to teaching, Dr. Hileman lectures in advanced physiology and reproductive physiology courses for graduate, pharmacy, and dental students and serves as a facilitator for problem based learning exercises for medical students.

He is an active member of the Cellular and Integrative Physiology, Neuroscience, and Reproductive Physiology graduate programs and has been a long-standing participant in the Idea Network for Biomedical Research Excellence (INBRE) program. He also serves as the co-chair of the Van Liere Convocation Committee, which is the primary showcase for basic and clinical research being performed at the WVU Health Sciences Center.



15th Annual WV-INBRE Summer Symposium

Continued from front cover

again in 2015, each time securing five additional years of support for the program and expanding the SC INBRE network to 13 institutions, including two Historically Black Colleges and Universities (HBCUs). Dr. Pirisi-Creek is also a

founding member and the Secretary/Treasurer of the National Association of IDEA Principal Investigators (NAIPI), Charter Member and former Secretary/Treasurer of the International Papillomavirus Society, and Past President of the South Carolina Academy of Science.

The title of Dr. Pirisi-Creek's lecture at the Summer Symposium was "HPV and Can-

cer". Dr. Pirisi-Creek talked about her successful career path before describing her research. Her very enthusiastic presentation generated much interest and many questions from the audience. Throughout her talk, Dr. Pirisi-Creek encouraged the students to pursue careers in biomedical research.

WV-INBRE Interns from Marshall University



Front row, from left to right: Abha Maskey (WVSU), Kaden Hudson (UC), Claire Shanholtzer (WVSU) and Samantha Smith (WVWC)
Back row, from left to right: Nicholas Akins (D&E), Marshall Barbe (A-B), Madison Jennings (UC) and Evan McClanahan (WVWC)

WV-INBRE Interns from West Virginia University



Front row, from left to right: Molly Lovern (SU), Shruthi Sreekumar (SU), Hannah Haller (FSU), Joshua Franklin (SU) and Dr. Cydne Perry (SU)
Second row, from left to right: Jessica Amberman (SU), Mackenna Boone (UC), Brooke McVaney (WVWC), Tim Nguyen (SU), Ryan O'Connell (D&E) and Brandon Sellers (D&E)
Third row, from left to right: Jennifer Korcsmaros (SU), Mireia Fabrega (A-B), Seth Bergeron (A-B), Brittany Fullbright (BC) and Colton Allen (D&E)
Last row, from left to right: Elijah Roberts (WVSU), David Runyon (UC), Brett Szeligo (WJU) and Darin LeMasters (WVWC)

WV-INBRE Announces 2016 Summer Faculty Fellowships

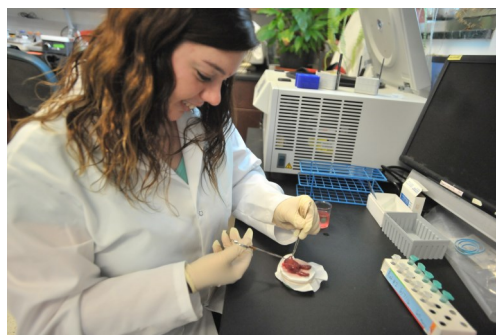


Dr. Cydne Perry (pictured on the left) is an Assistant Professor in the Department of Business Administration and Family and Consumer Sciences at Shepherd University. She conducted her summer research at WVU in Dr. Joseph McFadden's lab.

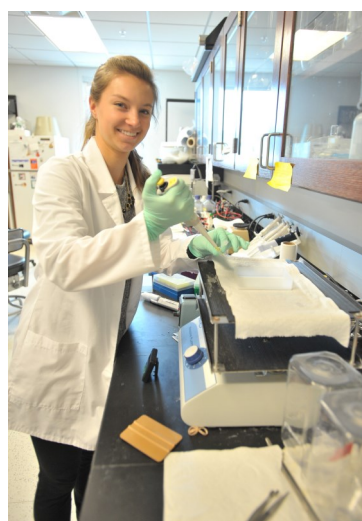


Dr. Dawn Turner (pictured on the right) is an Assistant Professor of Biology at the University of Charleston. She conducted her summer research in Dr. Jiang Liu's lab at Marshall University.

WV-INBRE participants working in the labs



Claire Shanholtzer
West Virginia
State University



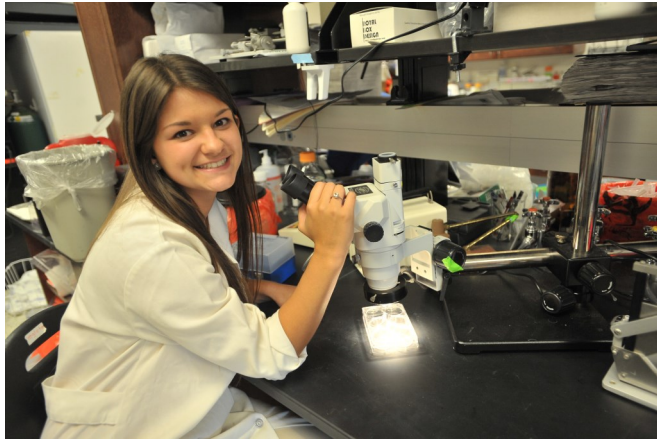
Samantha Smith
West Virginia
Wesleyan College



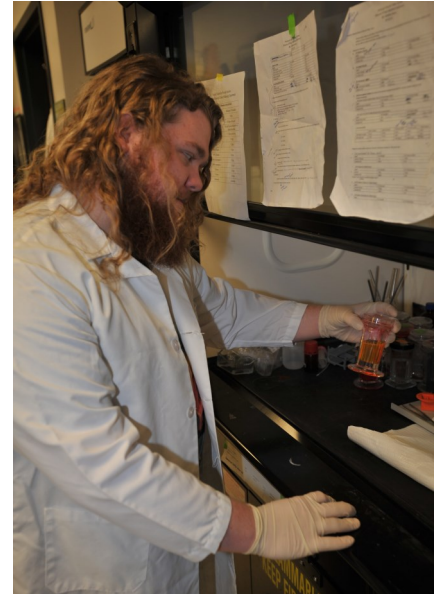
Nicholas Akins
Davis & Elkins
College



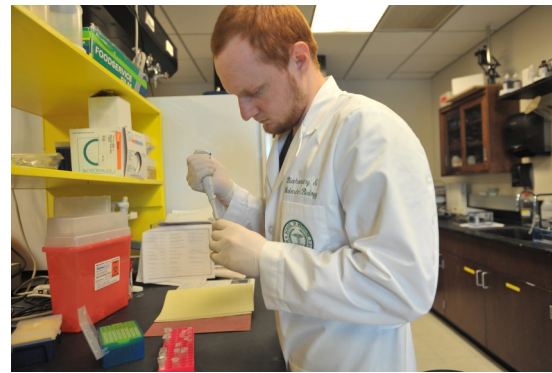
WV-INBRE participants working in the labs



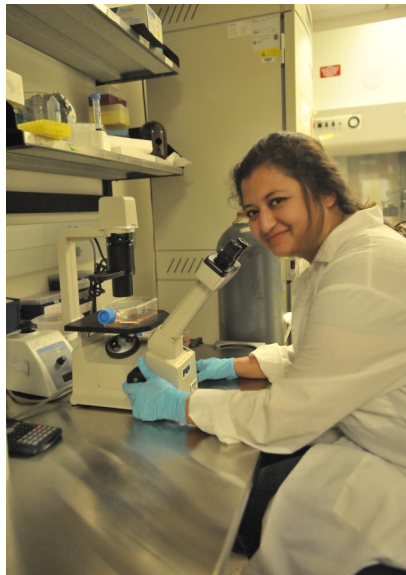
Kaden Hudson
University of Charleston



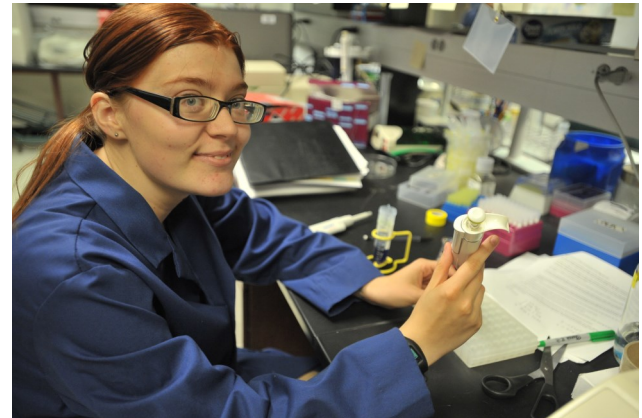
Marshall Barbe
Alderson Broaddus
University



Evan McClanahan
West Virginia
Wesleyan College



Abha Maskey
West Virginia
State University



Madison Jennings
University of Charleston



BSC Faculty Researcher Receives \$420K Grant



Dr. Tesfaye Belay, Professor of Biology at Bluefield State College, has been awarded an Academic Research Enhancement Award (R15) from the National Institute of Health (NIH) in the amount of \$420K over three years. The goals of the AREA program include supporting meritorious research, providing research opportunities to students, and strengthening the research environment at the institution.

This award represents significant advances in the career of Dr. Belay, research at Bluefield State College and the NIH funded West Virginia-IDeA Network of Biomedical Research Excellence (WV-INBRE) program, of which Dr. Belay is a 10-year fellow and the college is a partner. One goal of

WV-INBRE is to support promising biomedical research at WV-INBRE consortium schools such that pilot data can be collected to support researchers' direct requests to federal funding agencies.

Dr. Gary O. Rankin, Principal Investigator of WV-INBRE, stated that, "Dr. Belay has been a valuable member of the WV-INBRE research network for many years. He continues to make important advances in his area of infectious disease research and receipt of this NIH award is testament to the quality and significance of his work. Dr. Belay has also been a strong supporter of undergraduate research at Bluefield State College and has a long track record on involving students in his work and taking them to national research meetings. Many of his students have won awards at national meetings for their presentations, which speaks very highly of Dr. Belay's research and mentoring skills. We are also extremely happy that Dr. Belay has received the first NIH grant award among our partner researchers."

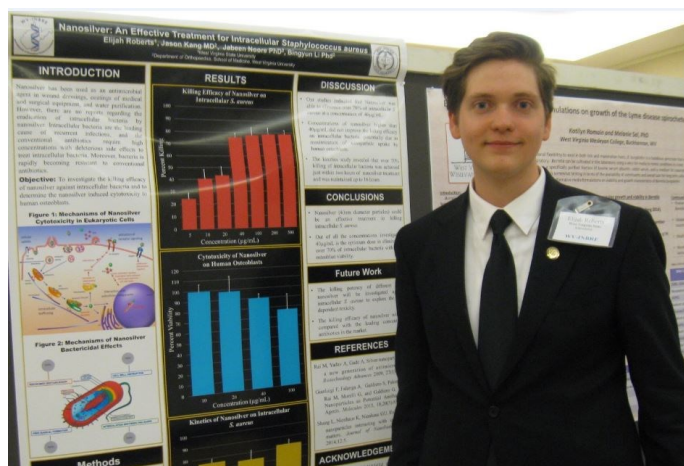
"WV-INBRE has given me the opportunity to develop the grant (which focuses upon chlamydia genital infection in a mouse model)," Belay explained. "The experience my students and I were able to gain through prior WV-INBRE-funded research has been essential

in receiving this major grant. The NIH award is an indication of Bluefield State College's increasing research capability and performance. The grant is extremely important to BSC and it is invaluable to me," Belay continued. "The grant provides an opportunity to involve three students in research this year, which will prepare them to enter graduate school or secure positions involving research as a career."

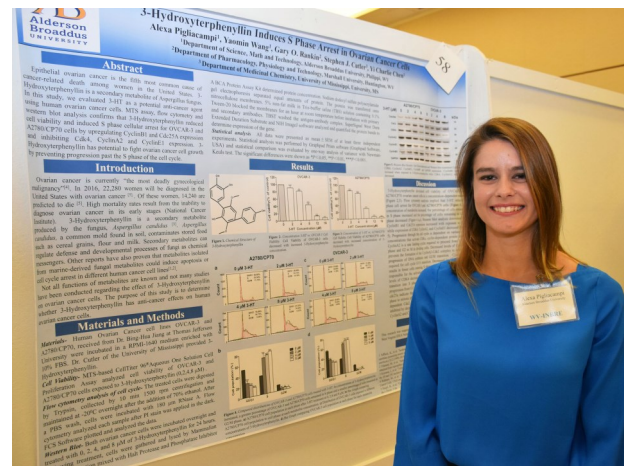
"INBRE's support has been instrumental in providing Bluefield State's undergraduate students with the unique opportunity to work side-by-side with outstanding faculty such as Dr. Belay," observed Dr. Marsha Krotseng, Bluefield State College President. "We are thrilled to receive this significant award from NIH. It is a testament to the impact of Dr. Belay's work and will enable the College to take our research efforts to a new level."

This NIH AREA grant will create greater opportunities for current and future BSC students to receive outstanding STEM-centered education," Belay explained. "It's a 'win/win' situation that benefits the College, our students, and the community."

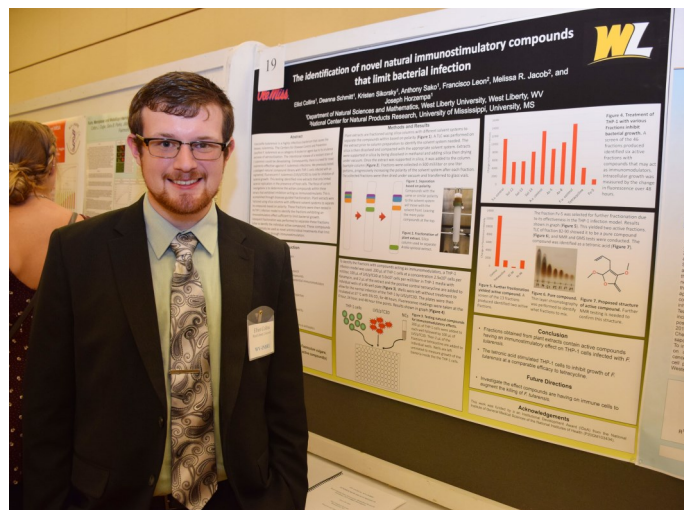
Summer Participants Presenting Posters at WV-INBRE Symposium



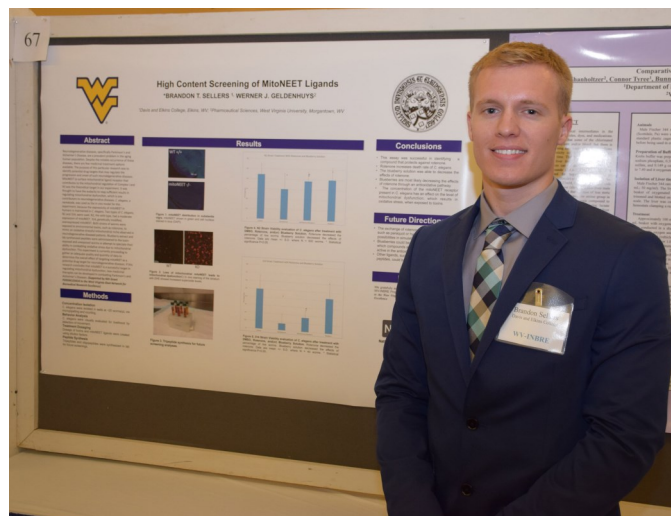
Elijah Roberts, from West Virginia State University, presented his poster “Nanosilver: An Effective Treatment for Intracellular Staphylococcus aureus.”



Alexa Pigliacampi, from Alderson Broaddus University, presented her poster “3-Hydroxyterphenyllin Induces S Phase Arrest in Ovarian Cancer Cells.”

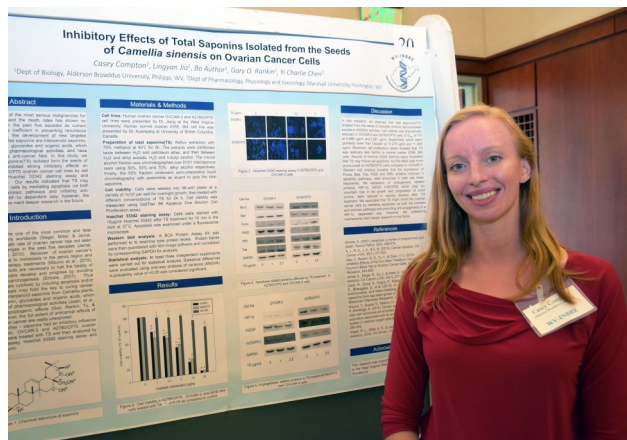


Elliott Collins, from West Liberty University, presented his poster “The identification of novel natural compounds that limit bacterial infection through immunostimulation.”

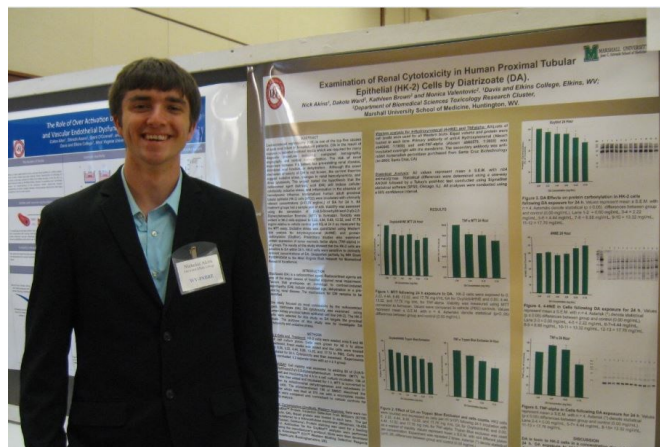


Brandon Sellers, from Davis & Elkins College, presented his poster “High-Content Screening of MitoNEET Ligands.”

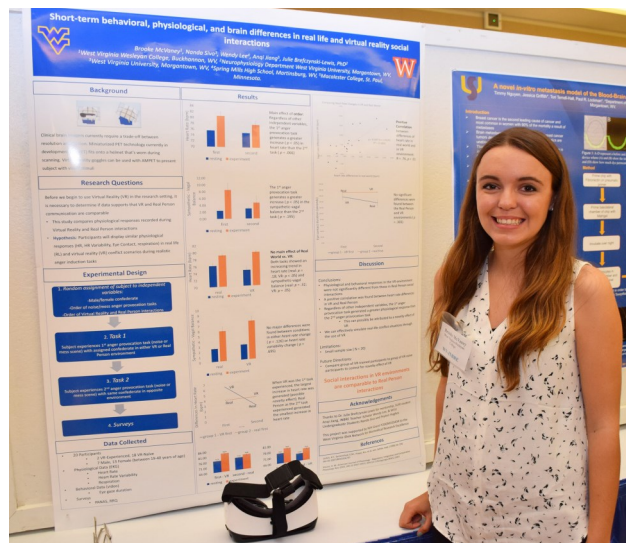
Summer Participants Presenting Posters at WV-INBRE Symposium



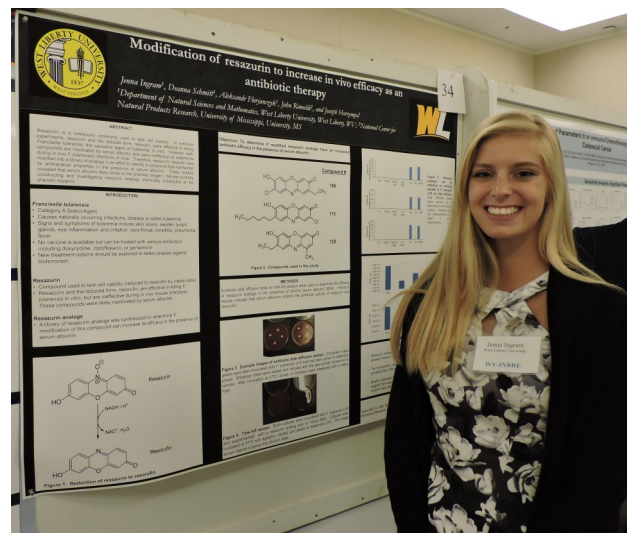
Casey Compton, of Alderson Broaddus University, presented her poster “Inhibitory effects of total saponins isolated from the seeds of *Camellia sinensis* on ovarian cancer cells.”



Nicholas Akins, of Davis and Elkins College, presented his poster “Examination of Renal Cytotoxicity in Human Proximal Tubular Epithelial (HK-2) Cells by Diatrizoate (DA).”



Brooke McVaney, of West Virginia Wesleyan College, presented her poster “Short-term behavioral, physiological, and brain differences in real life and virtual reality social interactions.”



Jenna Ingram, of West Liberty University, presented her poster “Modification of resazurin to increase in vivo efficacy as an antibiotic therapy.”

WV-INBRE Provides Biomedical Research Opportunities to HSTA Scholars and WV High School Science Educators

The partnership between WV-INBRE and the Health Sciences & Technology Academy (HSTA) program is focused on encouraging undergraduate students, who have demonstrated an interest in biomedical research through their participation in the HSTA program while in high school, to continue to develop this interest in biomedical research once they enroll at West Virginia University, Marshall University or one of the PUIs.

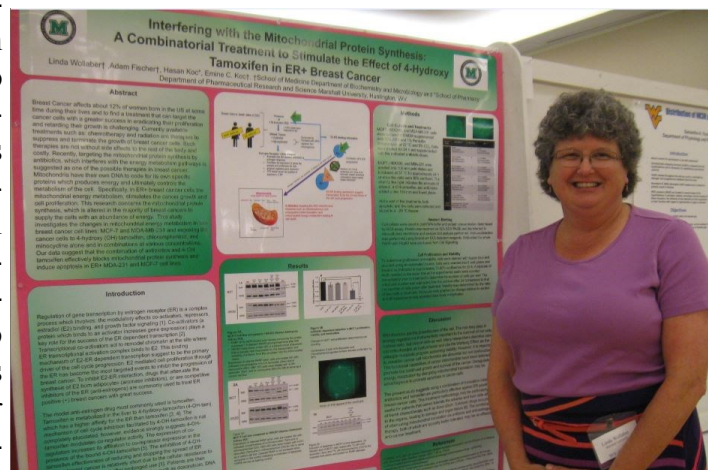
During the 2015-2016 academic year there were a total of 11 HSTA scholars that participated in the program. There were 7 interns located at a PUI institution, 3 interns at Marshall University and 1 intern at West Virginia University. These students were: Malcolm Lee with Dr. Yi Charlie Chen at Alderson-Broadus University, Maya Patterson and Nikole Smalls with Dr. Tesfaye Belay at Bluefield State College, Jillian Mayle with Dr. Albert Magro at Fairmont State University, Anna Gaughenbaugh and Jenna Ingram with Dr. Joseph Horzempa at West Liberty University, Franklin Lyons of West Virginia State University with Dr. Rebecca Linger at the University of Charleston, Shakira Bowman with Dr. Monica Valentovic, Mikayla Buchanan with Dr. Nalini Santanam, and Amber Bryant with Dr. Sandrine Pierre at Marshall University, and Melissa Ashman with Dr. Paul Chantler at West Virginia University. All interns presented their research at the 15th Annual WV-INBRE Summer Research

Symposium at West Virginia University in Morgantown WV on July 25, 2016.

Another component of this joint program is to provide opportunities for high school science educators to participate in biomedical research for up to nine weeks during the summer with a mentor at West Virginia University, Marshall University, or one of the WV-INBRE funded PUI laboratories. Participation is open to high school science educators who teach in the state of West Virginia during the previous academic school year. The goal of this part of the program is to provide research opportunities to interested science teachers with the expectation they will take their research experience back into their classrooms and inspire their students to pursue biomedical research opportunities once they enter college. Additionally, it is anticipated that the techniques they learn from the research will enhance the scientific teaching experience in the classroom.

For summer 2016, 5 high school science educators were awarded 7/9-week research internships: Wendy Lee from Spring Mills High School worked with Dr. Julie Breczynski-Lewis and Sa-

mantha Young of University High School worked with Dr. Stan Hileman, both at West Virginia University; Seth Perry from Hurricane High School worked with Dr. Monica Valentovic and Linda Wollaber from Winfield High School worked with Dr. Emine Koc, both at Marshall University; and Casey Compton from Webster County High School worked with Dr. Yi Charlie Chen at Alderson-Broadus University. All interns presented their research at the 15th Annual WV-INBRE Summer Research Symposium in Morgantown WV on July 25, 2016.



Pictured above :

Linda Wollaber, a High School Science Educator from Winfield High School, worked with Dr. Emine Koc at Marshall University and presented her poster "Interfering with the mitochondrial protein synthesis; a combinatorial treatment to stimulate the effect of 4-hydroxy tamoxifen in ER+ breast cancer."

WV-INBRE Next Generation Sequencing Small Grant Program

The WV-INBRE program continues to support biomedical research that relies on Next Generation Sequencing (NGS) technology. NGS enables the rapid and relatively inexpensive high throughput sequencing of whole genomes, whole exomes, transcriptomes and microbiomes. These analyses can enable the discovery of disease susceptibility variants, metabolic or signal transduction pathways, and changes to microbiome composition. In each year of phase III, WV-INBRE solicits NGS research applications through a request for applications. The solicitation is open to biomedical investigators at West Virginia University, Marshall University and WV primarily undergraduate institutions that are part of the WV-INBRE network. The intent of the program is to allow investigators to gather preliminary data for NIH grant applications.

For Y16, WV-INBRE was able to make NGS awards to five network investigators:

(1) Piyali Dasgupta, PhD,

Department of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University. Project title: Choline acetyltransferase antagonists in lung cancer: Molecular Mechanisms.

(2) Jim Denvir, PhD and Jung Han Kim, PhD, Department of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University. Project title: Interaction of genetics, diet, and microbiome in an obese diabetic mouse model.

(3) Jeremy McAleer, PhD, School of Pharmacy, Marshall University. Project Title: Identifying the Trp-AhR axis transcriptome in human CD4 T cells.

(4) Travis Salisbury, PhD, Department of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University. Project title: Defining Novel AHR-regulated Transcriptomes to Suppress Breast Cancer in Obesity.

(5) Matthew Swearingen, PhD, Department of Biological Sciences, Bethany College. Project title: Elucidation of the Shear-Stressome of Biofilms in a Catheter Model.

WV-INBRE will issue a new request for applications for these awards in January 2017. We anticipate making 5-7 \$15,000 awards in August 2017. We advise applicants to discuss proposals with the directors of the Genomics and Bioinformatics Cores (Don Primerano, Mary Davis and Jim Denvir) in order to clarify experimental design, expectations and cost. Genomic analyses require sophisticated analytical tools, some of which are commercial products while others are publically available. The WV-INBRE network continues to provide access to Partek Genomics Suite and Ingenuity Pathway Analysis (IPA) and shares these tools with network investigators.



WV-INBRE-SUPPORTED WVWC STUDENT WON TOP AWARD

James Gainer, from West Virginia Wesleyan College, won the "First Place for Excellence in Poster Presentation by an Undergraduate Student" at the West Virginia Academy of Science meeting held at Marshall University on April 9, 2016. He conducted his WV-INBRE supported summer research in the laboratory of Dr. Luke Huggins.

Congratulations, James!

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