



WV-INBRE Investigators, Students Featured in Statewide Biomedical Research Conference

The 4th Annual West Virginia COBRE/INBRE Conference – *Building Biomedical Research in West Virginia* was held October 26-27, in Morgantown, WV on the West Virginia University (WVU) Health Sciences campus. The two-day meeting highlighted the accomplishments of the four West Virginia biomedical research initiatives funded through the Institutional Development Award (IDEA) program of the National Center of Research Resources (NCRR) of the National Institutes of Health (NIH). This year the statewide conference was hosted by the COBRE in Sensory Neuroscience, organized by Dr. George Spirou (PI) and planned by Angela Harrison, Administrator. COBRE/INBRE conference participants

included students and faculty from the COBRE in Sensory Neuroscience at WVU, the COBRE for Transcription Factors in Cancer at Marshall University (MU), the COBRE for Signal Transduction and Cancer at WVU, and the WV-INBRE program jointly run by MU and WVU. Keynote presentations were given by special guests - Fred Taylor, Ph.D., Director of the IDEA Program, NIH/NCRR and Krishan Arora, Ph.D., Program Officer, INBRE Program, NIH/NCRR. Taylor discussed the structure and impact of the overall IDEA program and Arora provided insight into NCRR’s small business grant opportunities.

WV-INBRE participation included an introduction by Dr. Gary Rankin (MU), WV-INBRE Principal Investigator, to the “INBRE Podium Talks” session on the first afternoon of the conference. This session was moderated by Dr. James M. Sheil (WVU), WV-INBRE Program Coordinator. Two WV-INBRE faculty project investigators from predominantly undergraduate institutions presented talks on their WV-INBRE-funded research: Dr. Robert Harris, West Virginia State University (WVSU) discussed his group’s research on “Response of Smooth Muscle Vascular Cells to Stretch”, and Dr. Yi Charlie Chen, Alderson-Broaddus College, presented his lab’s research on “Signaling Pathways in Flavonoids-Inhibiting Tumor Growth”.

Continued on page 2

Inside this issue:

COBRE/INBRE Conference	1-2
Summer Research Symposium	3
Symposium Poster Presentations	4-6
Students working in the labs	7-9
Message from the PI	10
Steering Committee Members	11

Institutions of the WV-INBRE

Lead Universities

Marshall University
West Virginia University

Network Research Institutions (NRIs)

Alderson-Broaddus College
Fairmont State University
West Liberty State College
West Virginia State University
Wheeling Jesuit University

Network Outreach Institutions (NOIs)

Bethany College
Bluefield State College
Concord University
Davis & Elkins College
Shepherd University
University of Charleston
West Virginia Wesleyan College

Extended Outreach Institutions (EOIs)

Glenville State College
Mountain State University
Salem International University

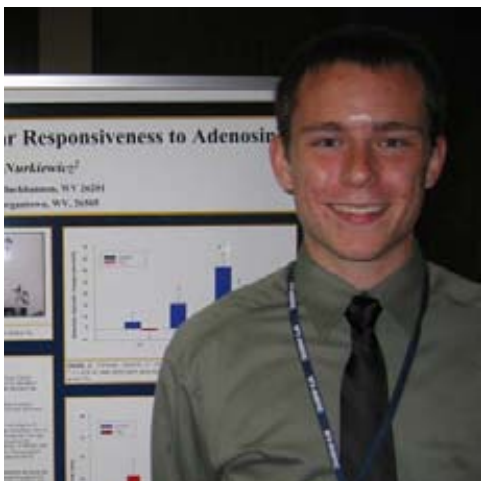
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Several student presentations from past WV-INBRE interns were also featured in the INBRE



Tierra Williams

Podium Talks session. Tierra Williams, currently a senior at University of Charleston, discussed her INBRE summer research project in Dr. Monica Valentovic's lab at MU, entitled "S- Adenosylmethionine Modulation of Acetaminophen Effects on Hepatic Glutathione Peroxidase Activity". Josh Briscoe, a graduate of West Wesleyan College currently a first-year medical stu-



Josh Briscoe

dent at WVU, presented his INBRE summer research project in Dr. Tim Nurkiewicz's lab at WVU, entitled "Particulate Matter Exposure and Microvascular Responsiveness to Adenosine". Briscoe intends to continue with this project in Nurkiewicz's lab at WVU this summer. The final presentation in the INBRE Podium Talks session was given by Miranda Hanson, currently a 4th-year Ph.D. candidate at WVU. She is a former WV-INBRE



Miranda Hanson

summer intern who returned to her home institution, Wheeling Jesuit University (WJU), and continued her research interests with WV-INBRE project investigator, Dr. Robert Shurina. Following graduation from WJU, Hanson enrolled in the Ph.D. program in Microbiology, Immunology & Cell Biology at WVU. Hanson discussed her current Ph.D. dissertation research, entitled "Immunotoxic Effect of Prenatal Cadmium Exposure on Murine Offspring".

In addition to the oral presentations given during the INBRE Podium Talks session, five WV-INBRE poster presentations were featured in the poster session on the second afternoon of the conference.

These included the following: (1) "Shear Induced Alignment of Vascular Smooth Muscle Cells is Accompanied by Activation of Akt Signaling" by Robert Harris' group (WVSU); (2) "Metalloproteinases Released from Apoptotic Glioblastoma Cells Enhance the Invasiveness of Non-apoptotic Glioblastoma Cells" by Dr. Albert Magro's group at Fairmont State University; (3) "Molecular Dynamics of Cytochrome P450 2C9 Containing an Oxoheme" by Dr. Jarrett Aguilar's group at West Liberty State College (WLSC); (4) "Creation of Stable SVEC 4-10 AFAP-110 Transfectants" by Dr. Robert Shurina's group (WJU); and (5) "Stimulation of IL-8 by mm-LDL and ox-PAPC Treated Human Aortic Endothelial Cells" by the ACoRN group headed by Dr. Robert Kreisberg (WLSC).



Robert Harris, PhD



Charlie Chen, PhD

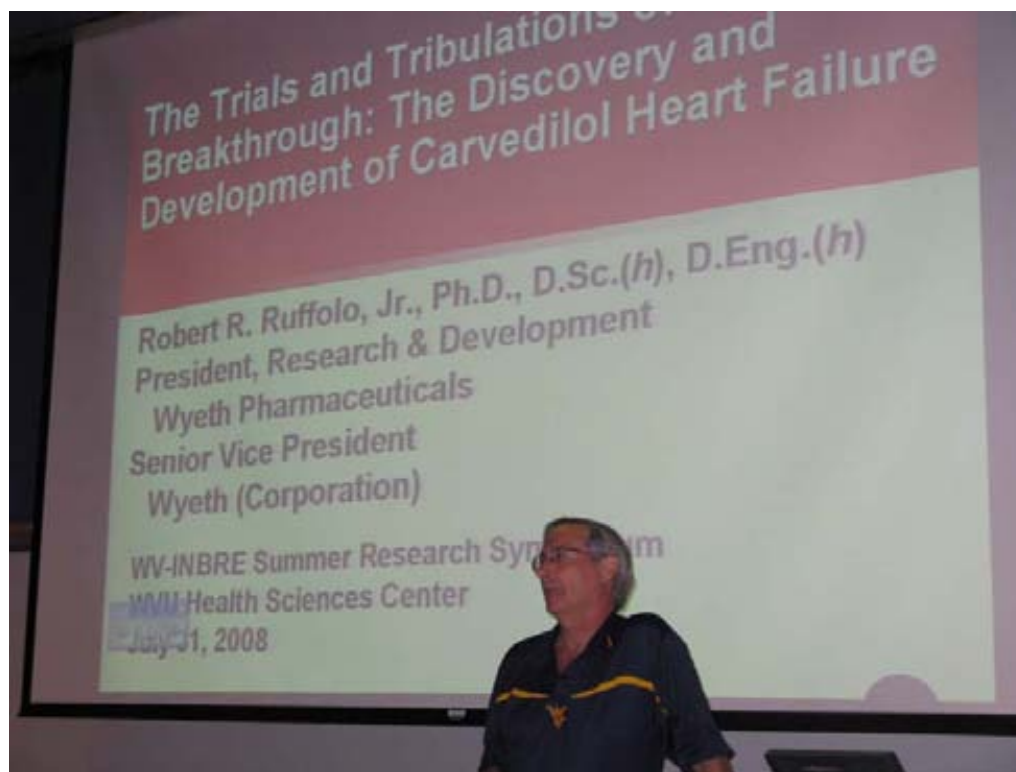
WV-INBRE Holds 7th Annual Summer Research Symposium

The Robert C. Byrd Health Sciences Center of West Virginia University was the venue for the 7th Annual WV-INBRE Summer Research Symposium held on July 31st, 2008. The symposium featured both oral and poster presentations by participants in the state-wide network including faculty and undergraduate summer interns and a summer faculty fellow who participated in the WV-INBRE Summer Research Program. This biomedical research program is conducted jointly at Marshall University and West Virginia University. Faculty and students conducting research at

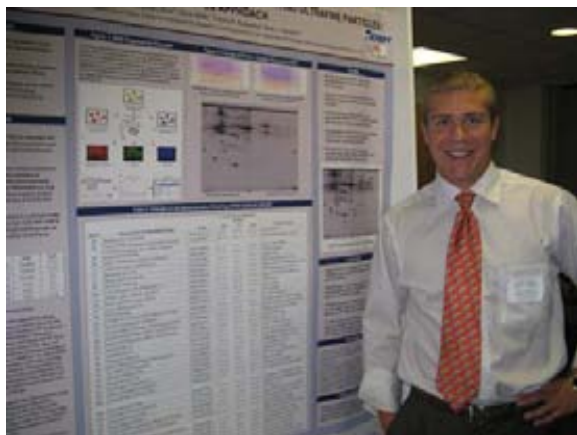
their home institutions also presented the results of their research activities. Fifty-three poster presentations were displayed including three from the Summer Undergraduate Research Experience (SURE) program held at Marshall University.

The keynote speaker for the symposium was **Dr. Robert Ruffolo**, President of Research & Development, Wyeth Pharmaceuticals and Senior Vice President, Wyeth Corporation. Dr. Ruffolo's presentation was entitled "**The Trials and Tribulations of a Medical Breakthrough: The Discovery and De-**

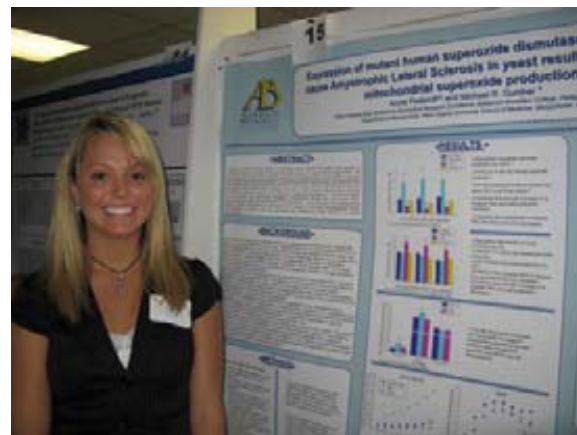
velopment of Carvedilol for Heart Failure". Dr. Ruffolo described the effort he directed at GlaxoSmithKline in developing carvedilol for which he faced significant opposition due to preconceived ideas about the anticipated harmful activity of the drug. His belief that the drug would be beneficial to patients with congestive heart failure, in spite of the resistance he received from within the company, and his perseverance in this effort provided an inspirational message to all in attendance; "If you believe in something, never give up."



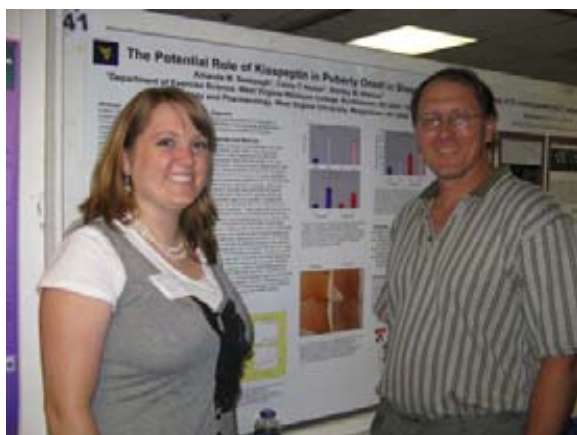
Symposium Poster Presentations



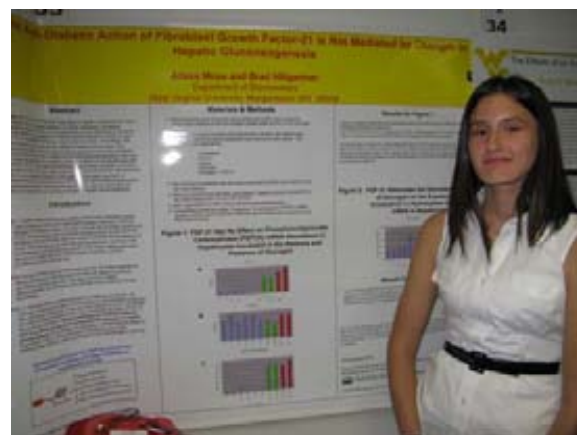
Andrew White, University of Charleston stands beside his poster presentation entitled “Plasma Protein Changes following Exposure to Fine and Ultrafine Particles: A Proteomics Approach.”



Annie federoff, Alderson-Braoddu College, stands beside her poster presentation entitled “Expression of mutant human superoxide dismutase proteins that cause Amyotrophic Lateral Sclerosis in yeast results in increased mitochondrial superoxide production.”

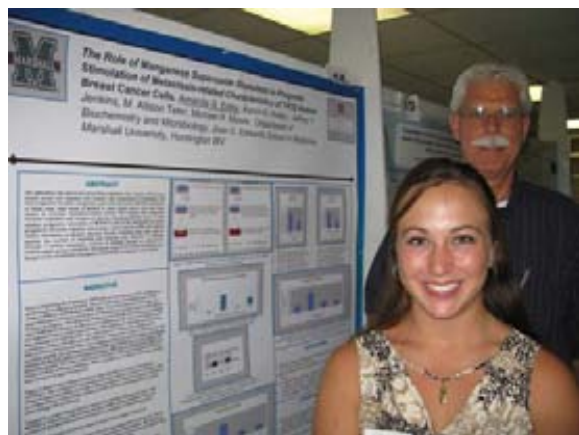


Amanda Seebaugh, West Virginia Wesleyan College, stands beside her mentor, Stanley Hileman , PhD, West Virginia University, with their poster presentation entitled “ The Potential Role of Kisspeptin in Puberty Onset in Sheep.”

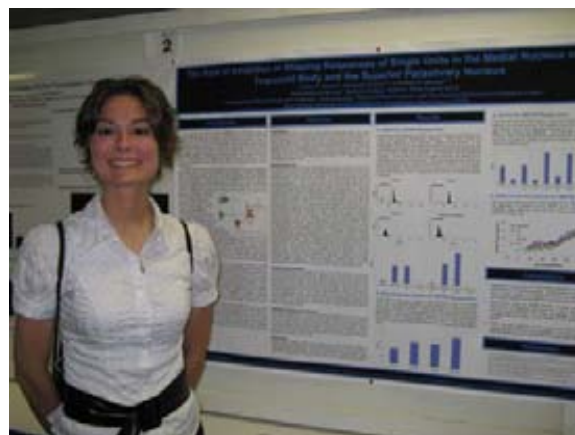


Alissa Moss, Bethany College, stands beside her poster presentation entitled “Action of Fibreblast Growth Factor-21 Is Not Mediated by Changes in Hepatic Gluconeogenesis”

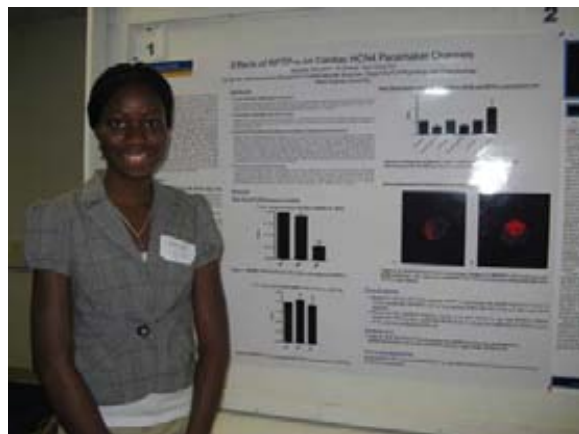
Symposium Poster Presentations (continued)



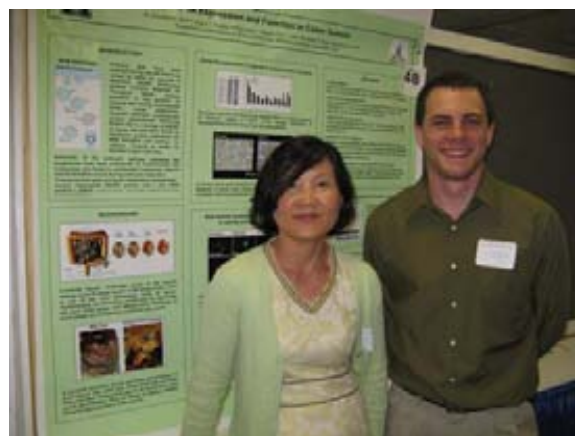
Amanda Estep, University of Charleston, stands with her mentor, Michael Moore, PhD, Marshall University and their poster entitled "The Role of Manganese Superoxide Dismutase in Progestin Stimulation of Metastasis-related Characteristics of T47D Human Breast Cancer Cells."



Ashley Berardi, Bethany College, stands beside her poster presentation entitled "The Role of Inhibition in Shaping Responses of Single Units in the Medial Nucleus of the Trapezoid Body and the Superior Paraolivary Nucleus."

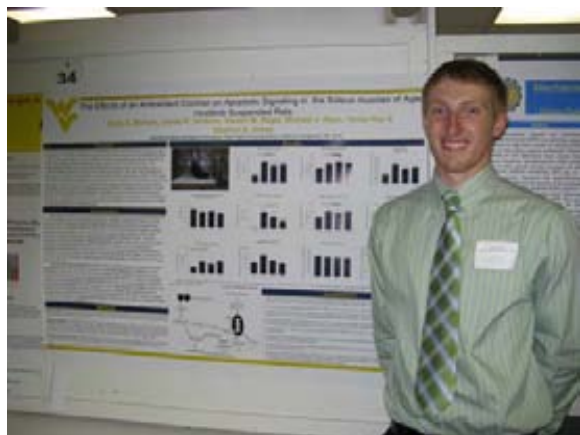


Ayodele Akinyemi, Shepherd University, stands beside her poster presentation entitled "Effect of RPTP on HCN4 Pacemaker Channel."

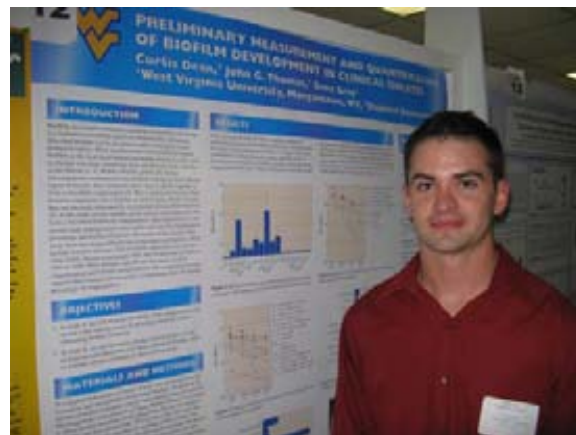


Christopher Wolfe, West Virginia Wesleyan College, stands beside his mentor, Maiyon Park, PhD, Marshall University in front of their poster presentation entitled "CHMP1A Expression and Function in Colon Tumors."

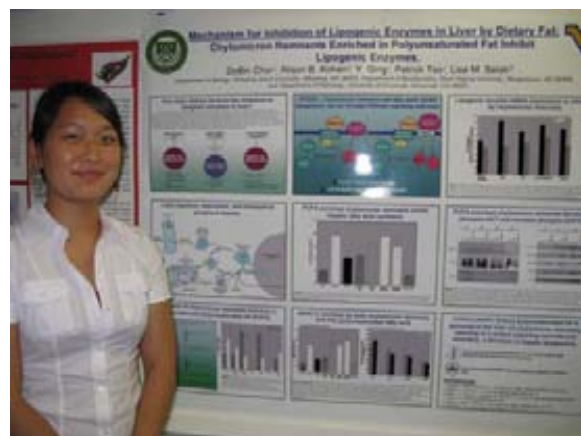
Symposium Poster Presentations (continued)



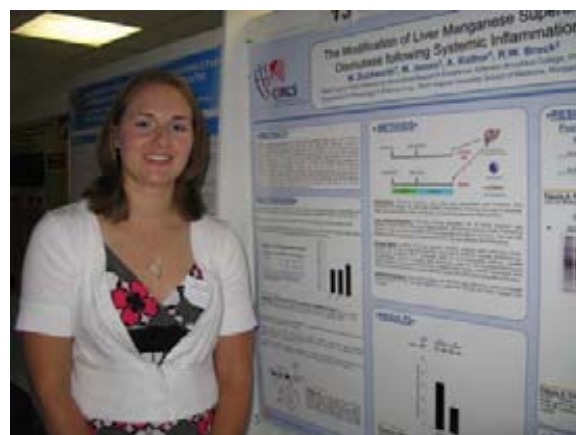
Cody Nichols, West Virginia Wesleyan College stands beside his poster entitled “The Effects of an Antioxidant Cocktail on Apoptotic Signaling in the Soleus muscles of Aged Hindlimb Suspended Rats.”



Curtis Dean, Shepherd University, stands beside his poster entitled “Preliminary Measurement and Quantification of Biofilm Development in Clinical Isolates.”

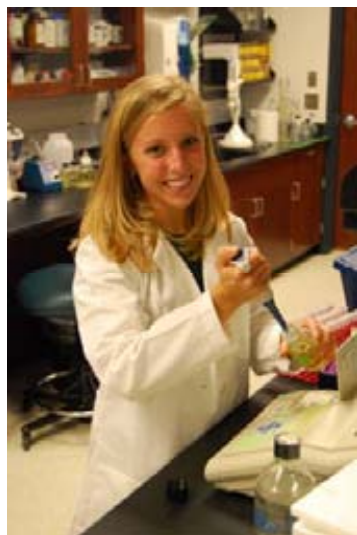


DoBin Choi, Wheeling Jesuit University stands beside her poster entitled “Mechanism for Inhibition of Lipogenic Enzymes in Liver by Dietary Fat: Chylomicron Remnants Enriched in Polyunsaturated Fat Inhibit Lipogenic Enzymes.”

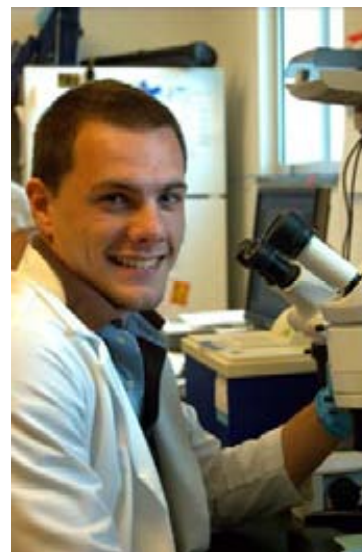


Michelle Duckworth, Alderson-Broaddus College, stands beside her poster entitled “The Modification of Manganese Superoxide Dismutase following a Systemic Inflammation.”

Summer Students Working In The Labs



Allison Teter, a student from West Virginia Wesleyan College, worked in Dr. Hongwei Yu's lab at Marshall University.



Chris Wolfe, a student from West Virginia Wesleyan College, worked in Dr. Maiyon Park's lab at Marshall University.



Amanda Seebaugh, a student from West Virginia Wesleyan College, worked in Dr. Stan Hileman's lab at West Virginia University.

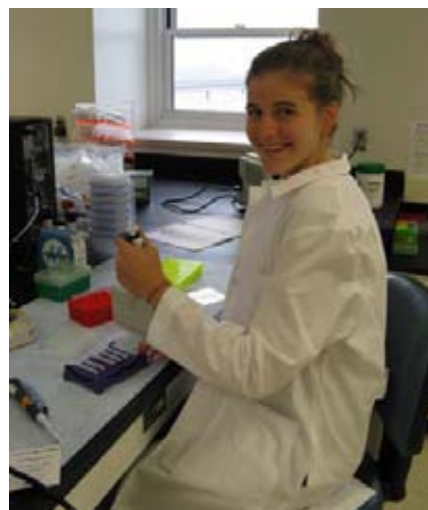


Amanda Estep, from the University of Charleston, worked in Dr. Mike Moore's lab at West Virginia University.

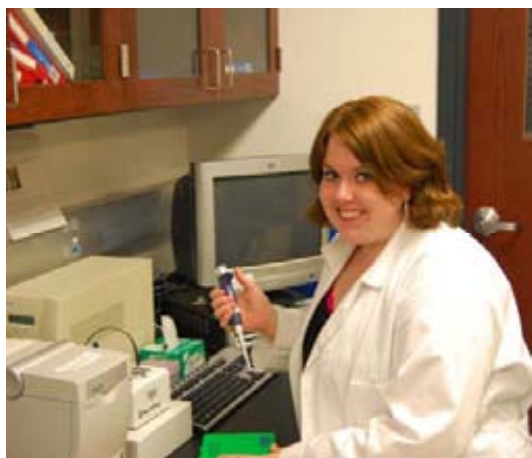
Students Working In The Labs (Continued)



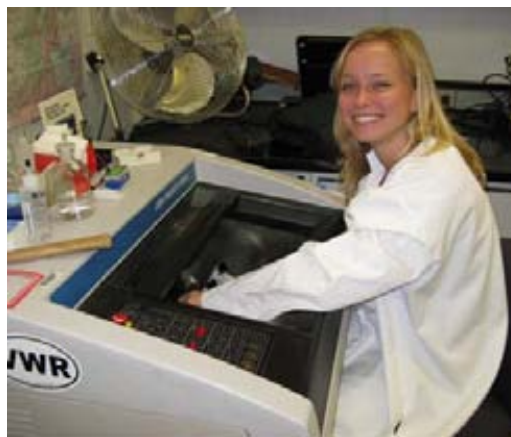
Katie Sterner, a student from Shepherd University, worked in Dr. Laura Gibson's lab at West Virginia University.



Hillary Miller, a student from Shepherd University, worked in Dr. Mario Scuri's lab at West Virginia University.

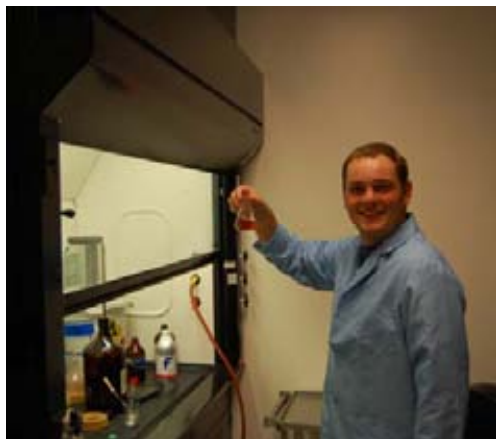


Lee Ann Reed, a student from the University of Charleston, worked in Dr. Vince Sollars' lab at Marshall University



Jessica Johnson, a student from Shepherd University, worked in Dr. Zhongxin Wu's lab at West Virginia University.

Students Working In The Labs (continued)

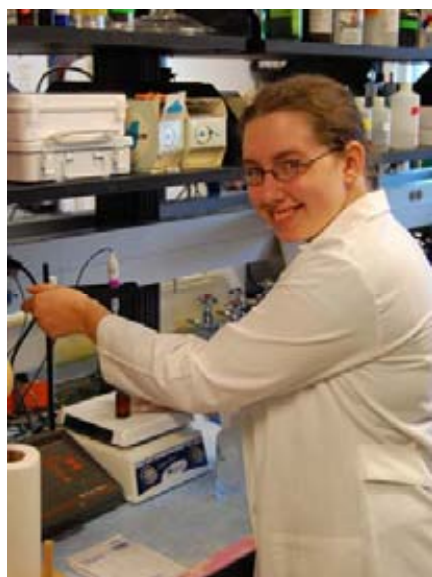


Dan Palmer, a student from West Virginia State University, worked in Dr. Gary Rankin's lab at Marshall University.

Faculty Fellow-



Luke Huggins, PhD, from West Virginia Wesleyan College, worked in Dr. Linda Vona-Davis' lab at West Virginia University.



Tierra Williams, a student from the University of Charleston, worked in Dr. Monica Valentovic's lab at Marshall University.

Message from the WV-INBRE Principal Investigator

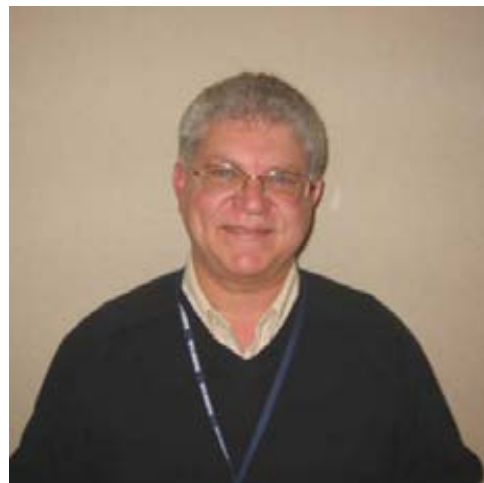
Gary O. Rankin, Ph.D

It is hard to believe that we are in the final year of the current WV-INBRE award from the National Institutes of Health (NIH). But, we are. Looking back over what we have accomplished during the last four years and what lies ahead this year is very gratifying. We now have an established, interactive biomedical research network with Marshall University and West Virginia University serving as lead institutions. Major research projects have been funded at Alderson-Broadus College (Dr. Charlie Chen), Fairmont State University (Drs. Flood and Magro), West Liberty State College (Drs. Aguilar and Kreisberg), West Virginia State University (Dr. Harris) and Wheeling Jesuit University (Dr. Shurina). These institutions have formed our Network Research Institutions (NRIs). In addition, there are now ten colleges and universities that form the Network Outreach Institutions where biomedical research projects are beginning to develop. The Appalachian Cardiovascular Research Network (ACoRN) program involved two NRI investigators to continue projects started under the BRIN award from NIH and developed three new areas of investigation related to cardiovascular disease.

We have also been very active training undergraduate students in biomedical research through research projects funded by WV-INBRE as well as via our summer research program. This summer we had another successful summer program coordinated by Drs. Mark Reasor, Robert Griffith and Elsa

Mangiarua with 26 undergraduate interns and one primarily undergraduate institution (PUI) faculty member participating in research at the lead institutions. The program culminated with 57 research presentations from network faculty and students during the 7th Annual WV-INBRE Summer Research Symposium held on July 31, 2008 at West Virginia University. Dr. Mary Davis also worked to train network students and faculty in bioinformatics through workshops held over the summer at the lead institutions. To date, over 130 network students and faculty members have received training in bioinformatics areas thanks to workshops organized by WV-INBRE.

To continue to build on this foundation, we submitted a competitive renewal application for the WV-INBRE program to the NIH on July 22, 2008. This proposal has requested five years of funding to support biomedical research projects at network research partners, continue the summer research program, and expand the ACoRN project into Eastern Kentucky (another IDeA state). We have proposed working more closely with the Health Science Technology Academy (HSTA) and COBRE programs in West Virginia to help promote the “pipeline” of students interested in biomedical research from the high school level into graduate programs in the health sciences. We have also proposed to continue the bioinformatics core to train West Virginians in these important areas and to support ongoing biomedical research across the



State. Our application was reviewed in October, 2008 by a special NIH Study Section, and we will know the funding decision from the National Center of Research Resources (NCRR) in early 2009. This review process will also help us identify areas of strengths and areas that need improvement. To that end, I would remind all network faculty of the need to publish the results of their research projects and acknowledge support for the WV-INBRE grant. Please include a statement in the acknowledgement section of your papers that indicate your work was “...supported (or supported in part) by NIH grant 5P20RR016477 to the West Virginia IDeA Network of Biomedical Research Excellence”.

Looking back over what we have accomplished during the last four years and what lies ahead this year is very gratifying.

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