

WV-INBRE NEWSLETTER

Volume 11
Spring 2008



WV-INBRE RESEARCH DEVELOPMENT GRANTS PRESENTED BY GOVERNOR MANCHIN

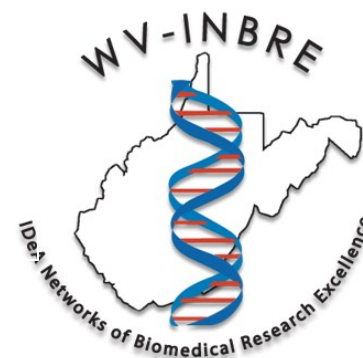
WV-INBRE is pleased to announce the award of \$80,000 in Research Development Grants to eight faculty representing five different colleges and universities in West Virginia. The awards were presented to the recipients by Governor Manchin on January 31, 2008 at the Undergraduate Research Day in the Capitol.

Dr. Tesfaye Belay of Bluefield State College was awarded \$15,000 for a project entitled "Immune Response Analysis of a Stress Mouse Model During Chlamydia Infection". Dr. David Chambers of Concord University received an award of \$10,000 to conduct research on "Recombinant Production and Biochemical Characterization of D. melanogaster and C. elegans ERM/merlin proteins". Dr. Darrell Crick, also of Concord Univer-



Dr. David Chambers, from Concord University, receives his Research Development Grant from Governor Manchin

sity was awarded \$15,000 for his project on "Bioactivity of compounds from Appalachian Euphorbiaceae, Fabaceae, and Solanaceae". Dr. Luke Huggins of West Virginia Wesleyan College was granted \$5,000 for purchasing equipment necessary for his research on "C. Elegans As A Model System For Determining Drug Action". Three faculty members from the University of Charleston received \$10,000 each for their projects. These were: Dr. Nina Koldzic-Zivanovic for a project entitled "Estrogen Regulation of Serotonin Transporter and Serotonin Autoreceptors in Vitro", Dr. Rebecca Meyers for a research in



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

Inside this issue:

Governor Presents Research Grants	1 - 3
Miranda Hanson	4
Message from the Principal Investigator	5
Undergraduate Research Day at the Capitol	6-7
Summer Research Program-2008	8-10
Bioinformatics Workshops	10
Steering Committee Members	11

Continued on page 2

Continued from cover page

“Expression and Functional Studies of Burkholderia Cenocepacia LlpE”, and Dr. Dean Reardon for “Inhibition of Metastasis Via Somatostatin Signaling In Breast Cancer Cell Lines”. The final award of \$5,000 was to Dr. Daniel Phillips of Bethany College for equipment necessary to conduct research in “Synthesis and Characterization of C8-Substituted Guanine Modified DNA Oligonucleotides”.

These outstanding research projects demonstrate clearly that quality Biomedical Research can be, and is, being carried out at the primarily undergraduate institutions in West Virginia. The grants begin in May 2008 and are contingent upon renewal of the WV-INBRE grant for the fiscal year 2008-2009.



Pictured left to right: Dr. Tesfaye Belay, from Bluefield State College, Governor Manchin, and Dr. Gary Rankin, WV-INBRE



Pictured left to right: Dr. Luke Huggins, West Virginia Wesleyan College and Governor Manchin



Pictured left to right: Dr. Darrell Crick, Concord University, Governor Manchin, and Dr. Gary Rankin, WV-INBRE



Pictured left to right: Dr. Dean Reardon, University of Charleston and Governor Manchin



Pictured left to right: Dr. Nina Ioldzic-Zivanovic, University of Charleston, Governor Manchin and Dr. Gary Rankin, WV-INBRE



Pictured left to right: Dr. Rebecca Myers, University of Charleston, Governor Manchin, and Dr. Gary Rankin, WV-INBRE

WV-INBRE Graduate Pursues Doctoral Studies at WVU
Invited Keynote Speaker for Wheeling Jesuit University Research Symposium



Miranda Hanson is currently a third-year graduate student in the Immunology & Microbial Pathogenesis Graduate Program at the West Virginia University (WVU) Health Sciences Center in Morgantown, WV. Beginning with her initial foray into biomedical research as a WV-INBRE 2004 Summer Program student intern from Wheeling Jesuit University (WJU), Hanson has decided to pursue career training in biomedical science research.

Hanson, a native of St. Clairsville, Ohio and daughter of Alan and Marsha Hanson, is a 2005 graduate of WJU, earning a bachelor of arts degree in biology. She is currently a graduate research assistant in the Department of Microbiology, Immunology and Cell Biology at West Virginia University. Hanson is in her third year of doctoral study in the Immunology & Microbial Pathogenesis Graduate Program at WVU. Her research focuses on the effects of prenatal cadmium exposure on the development of thymocytes, which are precursors of T lymphocytes.

Hanson was invited to be the Keynote Speaker for the Wheeling Jesuit Research and Scholarship Day Symposium on April 8, 2008. Designed as an extra-curricular event, the WJU research symposium drew students from all disciplines. Those who participated benefited from the chance to present and defend their thoughts in front of their colleagues, an important step in entering graduate school or the professional world. No one knows this better than Hanson, a former symposium participant and 2005 Wheeling Jesuit graduate.

Hanson gave a presentation about her undergraduate research experiences at Wheeling Jesuit University and the West Virginia IDeA Network for Biomedical Research Excellence (WV-INBRE), and how they served to prepare her for current graduate-level studies in the Ph.D. Program in Immunology & Microbial Pathogenesis at WVU Health Sciences Center. She also introduced her past mentor, Dr. Robert Shurina.

In 2004 Hanson was selected as a WV-INBRE Summer Research Program student intern and won the Biology poster session at the 2005 WJU Research Day Symposium, where she also presented her work with Dr. Shurina at WJU on AFAP-110 as a potential binding partner for the p85a subunit of PI3K. Dr. Bryan Raudenbush, WJU Associate Professor of Psychology and Director of Undergraduate Research, said that the Student Research and Scholarship Committee at WJU was unanimous on their agreement to invite Miranda to speak because of her great track record and wonderful success story. Hanson also credited her experience as a WV-INBRE Summer intern as primary motivation in her further pursuit of graduate training in biomedical research: "My internship through WV-INBRE provided me with a great deal of research experience that I could not receive at my undergraduate institution. In particular, my laboratory techniques and presentation skills were significantly improved. Prior to this opportunity, I was uncertain as to which career path I would choose in the medical field; however, following my experience, I was certain that I would pursue the research path. The indispensable knowledge I obtained from my internship gave me the confidence to work in a research setting."

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Message from the WV-INBRE Principal Investigator Gary O. Rankin, Ph.D

July 1, 2004 was the beginning date of WV-INBRE. As I am writing this message, we have almost completed four years as a program and have made important progress for biomedical research capabilities within West Virginia. Within a few weeks, NIH will distribute a new Funding Opportunity Announcement (FOA) for INBREs across the country to again compete for funding to continue their programs. Thus, the next few weeks and months will be a critical time for WV-INBRE's future.

The Administrative Core has already begun planning for the next round of WV-INBRE. An initial meeting was held April 7 in Charleston, WV to begin to discuss the various components that will be needed for the renewal application. This meeting was followed by a telephone conference of the AC on April 14, 2008 and further discussed at the Steering Committee meeting in Charleston, WV held on April 22. At this writing, the exact nature of the application requirements is unclear, since NIH has not issued the FOA. However, we are aware that the application must include an Administrative Core and a Bioinformatics Core as required Cores. Outreach is not expected to be a requirement in the renewal. The basic structure of the research network is unlikely to change significantly, with major projects at primarily undergraduate institutions (PUIs) still being a key component of the research network. Selection

of which PUI projects will be put forth in the renewal application as major projects will be determined via competition. As a result, all PUI faculty members will be able to submit a biomedical research application (new or competing continuation) using PHS form 398 that will be reviewed, scored and ranked. For competing continuation applications (i.e. applications from current NRI PIs who would like to extend their projects), progress in meeting the established benchmarks will be an important consideration in the review process. New biomedical research applications are also welcomed from any PUI faculty member. The overarching theme of the renewal will again be cellular and molecular biology, but other application focuses will also be considered. From these applications, the top PUI projects will be further reviewed by me and the AC for final selection. Guidelines and a timetable for submission of the PUI research applications are currently being developed and will be distributed as soon as possible, if not by the time you receive this newsletter.

Although much of our current effort is directed toward the WV-INBRE program renewal, we are also working toward the 2008 Summer Research Program. Drs. Mark Reasor, Robert Griffith and Elsa Mangiarua are hard at work developing the summer program which will culminate with the Summer Research Symposium on July 31, 2008 at West Virginia Univer-



sity. Summer interns and faculty fellows have already been selected and matched with research faculty at Marshall University and West Virginia University. So, we are looking for another exciting summer of WV-INBRE research.

Take care and have a great summer!

We have almost completed four years as a program and have made important progress for biomedical research capabilities within West Virginia.

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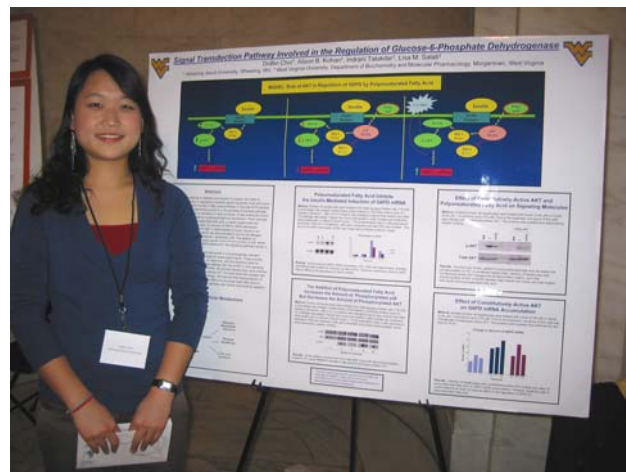
Summer Interns Make Presentations at the Undergraduate Research Day at the Capitol

Five interns from the 2007 Summer Research Program were selected to present posters on their summer research at the 5th Undergraduate Research Day at the Capitol on January 31st at the West Virginia State Capitol Building in Charleston. Jason McNair, Alderson-Broaddus College; DoBin Choi, Wheeling Jesuit University; Christine Lansdale, West Virginia Wesleyan College; Kelly Reneau, Bethany College;

and Somaiah Ahmed, University of Charleston were among 90 undergraduate students in science technology, engineering and math from colleges and universities throughout West Virginia who discussed their research in the Capitol Rotunda. Opportunities were available for student presenters to meet with state legislators from their home districts as well as interested faculty and students from around the state.



Jason McNair, Alderson-Broaddus College, discusses his poster entitled, “Diabetes Induced Oxidative Stress in Mitochondrial Subpopulations”, with Jim Sheil, PhD, WV-INBRE Program Coordinator.

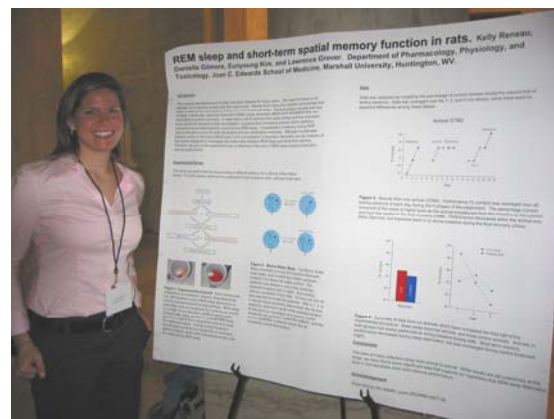


DoBin Choi, Wheeling Jesuit University, with her poster entitled, “Signal Transduction Pathway Involved in the Regulation of Glucose-6-Phosphate Dehydrogenase “.

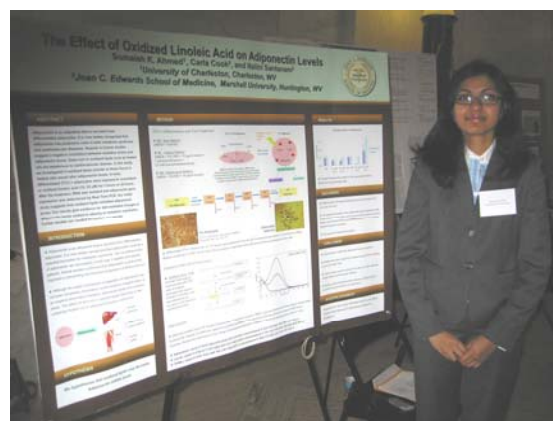
**Summer Interns Make Presentations
at the Undergraduate Research Day at the Capitol
(Continued)**



Christine Lansdale, West Virginia Wesleyan College with her poster entitled, "Regulation of Kruppel-Like Factor 6 (klf6) Tumor-Suppressor Gene By Retinoic Acid In Human Melanoma".



Kelly Reneau, from Bethany College, with her poster entitled, "REM Sleep and Short-Term Spatial Memory".



Somaiah Ahmed, University of Charleston, with her poster entitled, "The Effect of Oxidized Linoleic Acid on Adiponectin Levels".

2008 SUMMER RESEARCH PROGRAM PARTICIPANTS ANNOUNCED

Twenty six undergraduate students and one faculty member have been selected to participate in the 2008 WV-INBRE Summer Research Program. Seventeen student interns and the one faculty fellow will conduct biomedical research projects at the West Virginia University Health Sciences Center under the direction of a faculty mentor; nine student interns will participate at Marshall University. The program will run from June 2, 2008 through August 1, 2008 with the 7th Annual Summer Research Symposium being held at the West Virginia University Health Sciences Center on July 31st. Participants will present their research in poster and oral formats. Dr. Robert R. Ruffolo, Jr., Vice President of Research and Development and Senior Vice President at Wyeth Pharmaceuticals will present the keynote address.

2008 Summer Interns and Fellow by Location of Internship/Fellowship

West Virginia University Health Sciences Center

INTERNS

Ayodele Akinyemi – Shepherd University.
Mentor: Dr. Han-Gang Yu

Ashley Berardi – Bethany College
Mentor: Dr. Al Berrebi

DoBin Choi – Wheeling Jesuit University
Mentor: Dr. Lisa Salati

Dean Curtis – Shepherd University
Mentor: Dr. John Thomas

Michelle Duckworth – Alderson-Broaddus College
Mentor: Dr. Robert Brock

Ann Federoff – Alderson-Broaddus College
Mentor: Dr. Mike Gunther

Jessica Johnson – Shepherd University
Mentor: Dr. Zhongxin Wu

Christopher Jones – University of Charleston
Mentor: Dr. Yon Rojanasakul

Mallory McCartney – Davis & Elkins College
Mentor: Dr. Jun Liu

Jason McNair - Alderson-Broaddus College
Mentor: Dr. John Hollander

2008 SUMMER RESEARCH PROGRAM PARTICIPANTS ANNOUNCED
(Continued)

Hiliary Miller – Shepherd University
Mentor: Dr. Mario Scuri

Alissa Moss – Bethany College
Mentor: Dr. Brad Hillgartner

Cody Nichols - West Virginia Wesleyan College
Mentor: Dr. Steve Alway

Sarah Owen – West Virginia Wesleyan College
Mentor: Dr. Joan Olson

Amanda Seebaugh – West Virginia Wesleyan College
Mentor: Dr. Stan Hileman

Katherine Sterner – Shepherd University.
Mentor: Dr. Laura Gibson

Andrew White – University of Charleston
Mentor: Dr. Peter Perrotta

FELLOW

Dr. Luke Huggins - West Virginia Wesleyan College
Mentor: Dr. Linda Vona-Davis

Marshall University School of Medicine

INTERNS

Daniel Bertolotti – West Virginia State University
Mentor: Dr. Larry Grover

Amanda Estep – University of Charleston
Mentor: Dr. Michael Moore

Adam Hackney – University of Charleston
Mentor: Dr. Richard Niles

Lavina Jaswani - University of Charleston
Mentor: Dr. Will McCumbee

Daniel Palmer – West Virginia State University
Mentor: Dr. Gary Rankin

(Continued from page 9)

LeeAnn Reed - University of Charleston
Mentor: Dr. Vince Sollars

Allison Teter - West Virginia Wesleyan College
Mentor: Dr. Hongwei Yu

Tierra Williams - University of Charleston
Mentor: Dr. Monica Valentovic

Brian Wolf - West Virginia Wesleyan College
Mentor: Dr. Maiyon Park

Summer 2008 WV-INBRE Bioinformatics Workshops

June 23-24

West Virginia University Health Sciences Center

June 25-26

Marshall University

Invitrogen's Vector NTI *Advance*TM is a full-featured highly integrated desktop suite of bioinformatics applications for sequence analysis, to enable the mining, analysis, presentation, and storage of biological data. An Invitrogen bioinformatics specialist will conduct the training. The topics to be covered include:

- Vector NTI *Advance*TM Database structure and organization and user interface
- Display Setup (Restriction Map, Feature Map, Sequence Pane, Open Reading Frames, and Motifs)
- Translations: Amino acid display, New protein, and Proteins with splicing
- Reverse (Back) Translations
- Cloning (Construction)
- Importing and Exporting of Molecule file types (GenBank, EMBL, FASTA, and text)
- Importing and Exporting of Batch Molecule files (Archives, Directory of Text Files with HTML web page creation)

- PCR Analyses
- Design Mode of Cloning
- Restriction Digest Analyses
- BioAnnotator: Import, Setup, Use, and Customization
- AlignX: Import, Setup, Use, and Customization
- Contig Express: Import, Setup, Use and Customization
- BLAST Searches and BLAST Viewer
- AlignX Blocks
- PubMed-Entrez Search and Citation Viewer
- GenomBench: accessing DAS, downloads and analytical tools
- 3D-Mol
GCG File Converter

There is no charge to participate but registration is required. All instruction will be held in computer labs. There will be lecture, hand-on work and problem sessions. Attendance is limited to 10.

Registration Information

To register, contact Dr. Mary Davis, WV-INBRE Bioinformatics Core Director (mdavis@hsc.wvu.edu).

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