



## WV-BRIN Students Receive Research Awards



Left to Right: Jill Taylor, Danielle Large, Bernie Boswell

At the West Virginia EPSCoR annual meeting held in Charleston, WV, May 11 & 12, 2004, three WV-BRIN students received awards for the research they conducted as part of WV-BRIN program. Finalists for the West Virginia **Undergraduate Researcher of the Year** in the sciences were selected to participate based upon a research description and a letter of recommendation by the student's mentor. At the meeting, each finalist

displayed a poster of his/her research and was interviewed by a panel of judges who made the final decisions.

**Jill Taylor**, a junior from Fairmont State University (FSU), was selected as the 2004 West Virginia **Undergraduate Researcher of the Year** in the sciences. The title of her poster was "Investigating Apoptotic Mechanisms for the Prevention and Treatment of Cancer". Jill was supported last summer by a WV-BRIN pilot grant awarded to Dr. Albert Magro at FSU and conducted her research at FSU. She received a monetary award of \$1,000 and a commemorative plaque. Jill also was selected to participate in the Gateways to the Laboratory Program this past summer. The highly competitive program selects 13 freshmen and sophomores and is run by Cornell University/Sloan-Kettering Cancer Center/Rockefeller University in New York.

**Danielle Large**, a senior from Alderson-Broaddus College, was selected as first runner-up. Her poster was entitled "Effects of Chemotherapy on Matrix Metallo-proteinase Expression in Leukemia". Danielle was a 2003 summer intern at WVU/Health Sciences Center and conducted her research under the mentorship of Dr. Laura Gibson. She received a monetary award of \$500 and a commemorative plaque. Danielle was recently selected to receive a scholarship from the National Institutes of Health Undergraduate Scholarship Program for Individuals from Disadvantaged Backgrounds. This prestigious scholarship is awarded to only fifteen individuals each year. This past summer she worked at the NIH in the laboratory of Dr. Tae-Wook Chun in the NIAA, Laboratory of Immunopathogenesis Section (Dr. Anthony Fauci, Chief).

**Bernie Boswell**, a graduate of Shepherd University, was one of two second runner-up recipients. The title of his poster was "Does CPY2D6-Humanization Provide Resistance to MPTP-Induced Toxicity in Mice?". Bernie was a 2002 and 2003 summer intern and worked under the mentorship of Dr. Rob Haining at WVU/HSC. He received a monetary award of \$300 and a commemorative plaque. This fall, Bernie entered the biomedical sciences Ph.D. program at WVU/HSC.

### Institutions of the WV-INBRE

#### *Lead Universities*

Marshall University  
West Virginia University

#### *Network Research Institutions (NRIs)*

Bluefield State College (transitional)  
Fairmont State University  
West Liberty State College  
West Virginia State University  
Wheeling Jesuit University

#### *Network Outreach Institutions (NOIs)*

Alderson-Broaddus College  
Shepherd University  
West Virginia Wesleyan College

### Inside this issue:

Transition BRIN to INBRE	2
Ethel Gordon, PhD	2-3
Summer Research Program	3-5
Bioinformatics	5
Working in the labs	6
Pilot Grants	7
Research Awards	7
Research Day	8
Travel Grants	9
Publications	9
Steering Committee	10
Administrative Core	11

Supported by:



## **Transitioning from WV-BRIN to WV-INBRE**

### **Dr. Gary Rankin, Director**

### **Dr. James Sheil, Program Coordinator**

First there was BRIN, now there is INBRE! On July 1, 2004, we received notification that the WV-INBRE application had been funded by NIH. WV-INBRE is a five year award totaling more than \$16 million. The INBRE (IDeA Network of Biomedical Research Excellence) program is a continuation of the BRIN (Biomedical Research Infrastructure Network), but not all BRIN states received INBRE awards. Currently only 15 INBRE awards have been issued, with WV-INBRE being one of the first five awarded.

The BRIN program was a three year program that focused on general infrastructure building at the predominantly undergraduate institutions (PUIs). Faculty at the PUIs were eligible for pilot project and equipment grants, training and mentoring were offered, a summer research program for students and faculty was created, and the Appalachian Cardiovascular Research Network (ACoRN) was established and workshops in bioinformatics were offered.

Under the INBRE program there are several changes from the way the BRIN program was structured. First, the focus of the INBRE program is individual NIH R01 style research projects unified under the central theme of cellular and molecular biology with an emphasis on cardiovascular disease. These six investigator-initiated projects are located at Fairmont State University, West Liberty State College, West Virginia State University and Wheeling Jesuit University, with a seventh transitional project located at Bluefield State College. These five institutions form the Network Research Institutions (NRIs). In addition to supporting major research efforts at the NRIs, three institutions, Alderson-Broadus College, Shepherd University and West Virginia Wesleyan College are eligible for pilot project grants and constitute the Network Outreach Institutions (NOIs). The NOIs are institutions which have demonstrated the potential to become an NRI but need additional development. Under WV-INBRE, the Summer Research Program will remain intact, as will the presentation of state-of-the art workshops and training sessions in bioinformatics, grant writing skills, and faculty development.

The leadership of WV-INBRE contains many of the leaders of WV-BRIN. The Director is Dr. Gary Rankin (MU) and the Program Coordinator is Dr. James Sheil (WVU). Core Directors are: Outreach Core – Dr. Mark Reasor (WVU), Bioinformatics – Dr. Mary Davis (WVU), and ACoRN – Dr. Don Primerano (MU). Dr. Larry Harris (WVU) will now serve as the Evaluation Coordinator with Mike McCarthy (MU) serving as the Information Technology Coordinator. Dr. Elizabeth Murray (MU) is Assistant Bioinformatics Core Director and Dr. Robert Griffith (WVU) is Assistant Outreach Core Director. Together, this group will help lead the WV-INBRE effort to improve the biomedical research capacity and experience at the institutions of higher education throughout West Virginia.

## **Biomedical Research Scientist, Dr. Ethel Gordon, Joins Bluefield State College Faculty**



Dr. Ethel Gordon

Earlier this year, Dr. Patrick Muldoon, a chemistry professor at Bluefield State College, received notification that the West Virginia Biomedical Research Infrastructure Network (WV-BRIN) had approved his grant application to add a biomedical research faculty member to the College's School of Arts & Sciences. Recently, it was announced that Dr. Ethel Gordon had been selected to fill that position. Dr. Gordon spent the past seven years working in the Diabetes Division of the University of Massachusetts Medical School. As a biomedical researcher, Dr. Gordon studies transplantation immunology as a cure for diabetes and developed virus vaccine models to prevent hepatitis-C virus infection. She earned a Ph.D. in microbiology and molecular genetics from Rutgers University and the University of Medicine & Dentistry of New Jersey. During her postdoctoral training, she spent the following two years at Lindsley Kimball Research Institute in New York, during which time she designed an immunology system to determine the efficiency of DNA vaccines as a means of protection from hepatitis-C viruses.

Dr. Gordon also worked with internationally famous immunologist Dr. Emil Unanue during a subsequent research experience at Harvard University Medical School. She subsequently became involved in vascular cell biology at a Harvard teaching hospital. "I decided to continue my academic pursuits, because I wanted to return to microbiology projects," she recalled. "I had conducted microbiology research in the Biotechnology industry while obtaining a masters degree at Northeastern University, developing several virus vaccine models." For the past seven years, Dr. Gordon has worked in the Diabetes Division at the University of Massachusetts Medical School. "I conducted diabetes research with Dr. Aldo Rossini, Chief of the University of Massachusetts Diabetes Division," she noted. "I was able to conduct research that explored the immunology and genetics of diabetes, while also researching transplantation immunology-- seeking a potential cure for diabetes through the transplantation of pancreatic islets." She has two research manuscripts in active preparation.

Continued on page 3

Dr. Gordon brings a wealth of scientific experience and professional energy to the College. "The position at Bluefield State College interested me because it created the opportunity to establish my own laboratory and lead the College into biomedical research," she added. "At Bluefield State College, I look forward to working with students as they develop their academic skills."

Dr. Gordon was recently awarded a pilot grant by the WV-BRIN entitled "Therapeutic Interventions to Accelerate Wound Healing in Diabetic Mice" to support her research. Additionally, she was selected as a summer fellow in the 2004 WV-BRIN summer research program with Dr. James Sheil of West Virginia University serving as her research mentor.



## **2004 WV-BRIN Summer Program Participants**

The Training and Mentoring Core of the WV-BRIN is pleased to announce the student intern and faculty fellow participants for the 2004 Summer Research Program. The summer program ran from June 7 – August 6. The WV-BRIN Summer Research Symposium was held on August 5 at the West Virginia University Health Sciences Center.

### **SUMMER STUDENT INTERNS, HOME INSTITUTIONS, AND MENTORS**

#### **Alderson-Broaddus College**

##### **Jennifer Crum**

Mentor: Dr. Berny Schreurs  
Blanchette Rockefeller Neurosciences Institute  
and Department of Physiology and Pharmacology  
West Virginia University Health Sciences Center

##### **Jessica Stone**

Mentor: Dr. Richard Dey, Department of Neurobiology and Anatomy  
West Virginia University Health Sciences Center

#### **Bluefield State College**

##### **Renee Ellis**

Mentor: Dr. Kathleen Brundage, Department of Microbiology, Immunology and Cell Biology  
West Virginia University Health Sciences Center

##### **Daniel Hodges**

Mentor: Dr. Todd Green, Department of Physiology  
Marshall University School of Medicine

##### **William Phlegar**

Mentor: Dr. Gary Wright, Department of Physiology,  
Marshall University School of Medicine

#### **Fairmont State University**

##### **Justin Morgan**

Mentor: Dr. Stan Hileman, Department of Physiology and Pharmacology  
West Virginia University Health Sciences Center

#### **Shepherd University**

##### **Nissa Thomsen**

Mentor: Dr. Rob Haining, Department of Basic Pharmaceutical Sciences  
West Virginia University Health Sciences Center

**Salem International University**

**Justin Sanders**

Mentor: Dr. Peter Gannett, Department of Basic Pharmaceutical Sciences  
West Virginia University Health Sciences Center

**West Liberty State College**

**Brandi Connors**

Mentor: Dr. Leah Hammer, Department of Physiology and Pharmacology  
West Virginia University Health Sciences Center

**Melinda Varney**

Mentor: Dr. Hongwei Yu, Department of Microbiology, Immunology, and Molecular Genetics,  
Marshall University School of Medicine

**Chelsea Walton**

Mentor: Dr. Will McCumbee, Department of Physiology  
Marshall University School of Medicine

**West Virginia State University**

**Dane Campbell**

Mentor: Dr. Laura Richardson, Department of Anatomy, Cell and Neurobiology,  
Marshall University School of Medicine

**Melissa Morton-Fishman**

Mentor: Dr. Michael Moore, Department of Biochemistry and Molecular Biology,  
Marshall University School of Medicine

**Ben O'Kelly**

Mentor: Dr. Gary Wright, Department of Physiology,  
Marshall University School of Medicine

**Kimberly Snodgrass**

Mentor: Dr. Elsa Mangiarua, Department of Physiology  
Marshall University School of Medicine

**Sabrena Thomas**

Mentor: Dr. Hongwei Yu, Department of Microbiology, Immunology and Molecular Genetics  
Marshall University School of Medicine

**Wheeling Jesuit University**

**Abra Bates**

Mentor: Dr. Al Berrebi, Department of Otolaryngology and the Sensory Neuroscience Research  
Center, West Virginia University Health Sciences Center

**Corey Baxter**

Mentor: Dr. Beverly Delidow, Department of Biochemistry and Molecular Biology,  
Marshall University School of Medicine

**Holly Dudash**

Mentor: Dr. Steve Alway, Division of Exercise Physiology  
West Virginia University Health Sciences Center

**Daniel Gallagher**

Mentor: Dr. Nilay Mukherjee, Department of Orthopedics  
West Virginia University Health Sciences Center

**Miranda Hanson**

Mentor: Dr. Daniel Flynn, Mary Babb Randolph Cancer Center  
and Department of Microbiology, Immunology and Cell Biology  
West Virginia University Health Sciences Center

**Rebecca Reindel**

Mentor: Dr. Monica Valentovic, Department of Pharmacology  
Marshall University School of Medicine

## **SUMMER FACULTY FELLOWS, HOME INSTITUTIONS, AND MENTORS**

### **Alderson-Broaddus College**

#### **Dr. Yi “Charlie” Chen**

Mentor: Dr. Bing-Hua Jiang, Mary Babb Randolph Cancer Center and Department of Microbiology, Immunology and Cell Biology  
West Virginia University Health Sciences Center

### **Bluefield State College**

#### **Dr. Ethel Gordon**

Mentor: Dr. Jim Sheil, Department of Microbiology, Immunology and Cell Biology  
West Virginia University Health Sciences Center

### **Fairmont State University**

#### **Dr. Yi Wang**

Mentor: Dr. Pingnian He, Department of Physiology and Pharmacology  
West Virginia University Health Sciences Center

### **Salem International University**

#### **Dr. Jiben Roy**

Mentor: Dr. Patrick Callery, Department of Basic Pharmaceutical Sciences  
West Virginia University Health Sciences Center

### **West Virginia State University**

#### **Dr. Tom Guetzloff**

Mentor: Mentor: Dr. Monica Valentovic, Department of Pharmacology  
Marshall University School of Medicine

#### **Dr. Harold Pinnick**

Mentor: Dr. Gary Rankin, Department of Pharmacology  
Marshall University School of Medicine



## **Spring WV-BRIN Bioinformatics Workshops**

### **Introduction to Proteomics**

June 1-4, 2004, Robert C. Byrd Health Sciences Center of West Virginia University

The Proteomics workshop included both lecture and laboratory components. Dr. Timothy Vincent, Director of the WVU Proteomics Core Facility, gave an overview of the use of proteomic techniques in the identification of proteins. Topics included separation and visualization of proteins on gels, mass spectrometric methods for protein identification and characterization, post-translation modification considerations and protein interactions. Participants toured the Proteomics Core Facility. The laboratory component was limited to 4 participants. They worked in the facility, performing sample preparation, 2-dimensional separation and analysis of proteins.

### **GeneSpring Beginning and Intermediate**

July 7-8, 2004, Robert C. Byrd Health Sciences Center of West Virginia University

Mildad Binas and Jish Mukerji, from SiliconGenetics, led a two day intensive workshop on how to use the GeneSpring package to analyze array data and more. The workshop is a computer-based interactive workshop. The twenty participants worked through examples with the instructor during the lecture-portion of the workshop and then worked on practice problems individually. The topics included importing data, normalization of data results across different array chips and methods of gene clustering and finding differences of gene expression between groups of samples.

Working in the Labs  
During the 2004 Summer Research Program



Miranda Hanson—Wheeling Jesuit University



Nissa Thomsen—Shepherd University



Jennifer Crum—Alderson -Broaddus College



Jessica Stone—Alderson - Broaddus College



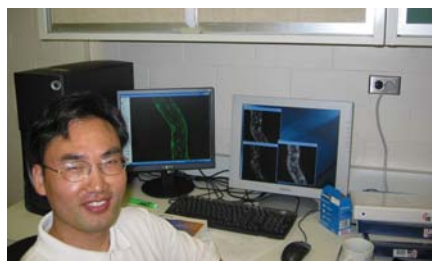
Justin Morgan—Fairmont State University



Renee Ellis—Bluefield State College



Justin Sanders—Salem International University



Dr. Yi Wang—Fairmont State University

## Pilot Grants

The WV-BRIN awarded the following Pilot Grants for 2003-2004 :

<u>Investigator</u>	<u>Affiliation</u>	<u>Funding</u>
<b>Dr. Jarrett Aguilar</b> Title: <i>Dapsone activation of DYP2C9: A molecular modeling study</i>	West Liberty State College	\$26,957
<b>Dr. Yi Charlie Chen</b> Title: <i>Mechanism of HIF-1 and VEGF inhibition by drugs</i>	Alderson-Broaddus College	\$30,000
<b>Dr. Mark Flood,</b> <b>Dr. Huey Miin Lee</b> <b>Dr. Robert Kreisberg</b> Title: <i>Analysis of cardiovascular disease genes</i>	Fairmont State University Salem International University West Liberty State College	\$87,600
<b>Dr. Ethel Gordon</b> Title: <i>Therapeutic interventions to accelerate wound healing in diabetic mice</i>	Bluefield State College	\$30,000
<b>Dr. Patrick Lai</b> Title: <i>Do carriers impact CTL priming &amp;/or epitope recognition?</i>	Salem International University	\$30,000
<b>Dr. Albert Magro</b> Title: <i>Gene expression in apoptotic MCF-7 and C-2610 cells</i>	Fairmont State University	\$30,000
<b>Dr. Robert Shurina</b> Title: <i>Can an AFAP fusion protein stimulate angiogenesis?</i>	Wheeling Jesuit University	\$30,000
<b>Dr. Robert Warburton</b> Title: <i>Proteomics of H-2Kb bm19 antigenic peptides</i>	Shepherd University	\$30,000

## WV-BRIN Undergraduate Students Receive Research Awards

In addition to the research awards received at the 2004 West Virginia EPSCoR meeting described in the lead article, undergraduate students from the predominantly undergraduate institutions (PUIs) of the WV-BRIN received numerous awards and recognition for the research they performed as part of their participation in the program.

**Justin Sanders**, of Salem International University, and a 2003 summer intern, won a first place award for student research at the 2004 West Virginia Academy of Sciences Meeting. Justin was mentored by Dr. Pete Gannett at WVU. Justin participated in the 2004 summer research program at WVU.

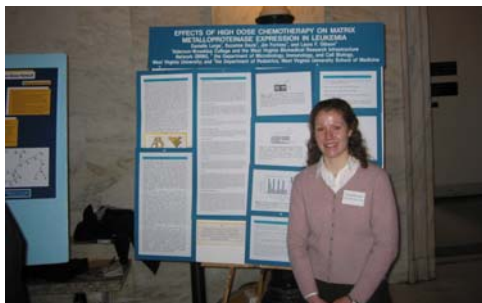
**Aaron Lee**, of Shepherd University, and a 2003 summer intern, received a first place award for his poster presentation on his summer research at the 6th Undergraduate Research Symposium held at the University of Maryland, Baltimore Campus, November 1, 2003. Aaron's mentor was Dr. Drew Shiemke at West Virginia University. This fall, Aaron entered the Ph.D. program in biochemistry at the University of Delaware.

**Monica Chroussis**, of Alderson-Broaddus College, and a 2003 summer intern, was selected to make a poster presentation on her summer research at annual Undergraduate Research Posters on the Hill event sponsored by the Council on Undergraduate Research held on Capitol Hill, Washington, DC, April 20, 2004. Of the eighty poster presentations, Monica's was one of two supported by the NCCR BRIN program.

**Monica Chroussis**, **Danielle Large**, **Joy Parsons** (all from Alderson-Broaddus College), **Antoinette Moran** (Wheeling Jesuit University), **Justin Sanders** (Salem International University), and **Kristina Whiting** (West Virginia State University) were selected to make poster presentations on their summer research at the **West Virginia Undergraduate Research Day at the Capitol** at the Capitol Rotunda in Charleston, West Virginia, February 26, 2004. **Melinda Varney** (West Liberty State College) and **Jill Taylor** (Fairmont State University), undergraduate students who were supported by WV-BRIN pilot grants, also made presentations at the event.

The results of a research project in which **Monica Chroussis** participated during her summer internship were presented at the 2004 Annual Meeting of the Society of Toxicology in Baltimore, Maryland, March 22, 2004. The poster was entitled "Comparison between intraperitoneal and aspiration routes of exposure to evaluate the immunotoxic effects of a mixture of herbicides". In addition to Ms. Chroussis, the co-authors were Keith Salazar, John Barnett and Rosana Schafer.

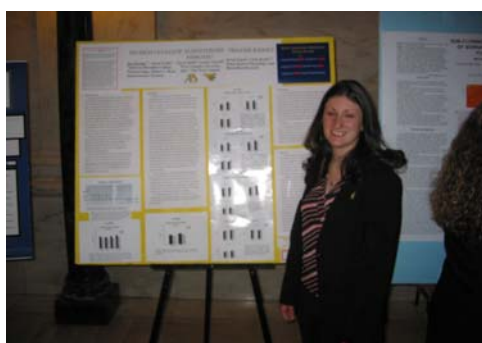
## WV-BRIN Students Participate in the West Virginia Undergraduate Research Day at the Capitol, Charleston, WV on February 26, 2004



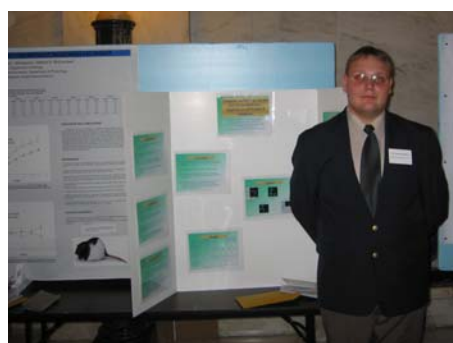
Danielle Large — Alderson-Broaddus College



Jill Taylor— Fairmont State University



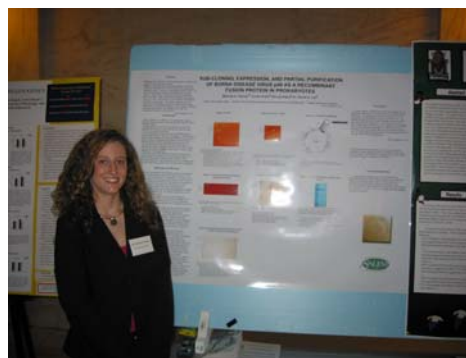
Joy Parsons — Alderson-Broaddus College



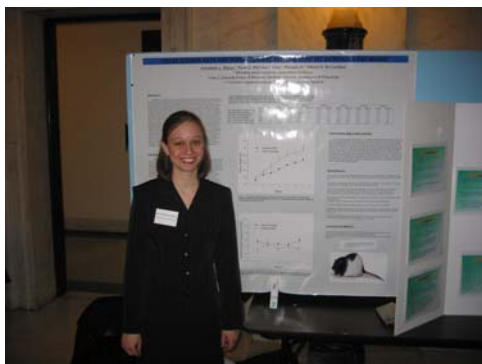
Justin Sanders — Salem International University



Kristina Whiting — West Virginia State University



Mindy Varney — West Liberty State College



Antoinette Moran — Wheeling Jesuit University



Monica Chrousis— Alderson - Broaddus College



## Travel Grants

### The WV-BRIN has awarded the following travel grants:

**Dr. Albert Magro**, Fairmont State University, attended the Programmed Cell Death Symposium, Cold Spring Harbor Laboratory, September 17-21, 2003. His presentation was entitled “Gene expression in MCF-7 cells and CRL-2610 cells upon the induction of apoptosis”.

**Monica Chroussis**, Alderson-Broaddus College, attended the Undergraduate Research Day at the Capital, Charleston, WV, February 26, 2004. Her presentation was entitled “The effect of herbicides on the thymus and bone marrow after inhalation exposure”.

**Danielle Large**, Alderson-Broaddus College, attended the Undergraduate Research Day at the Capital, Charleston, WV, February 26, 2004. Her presentation was entitled “Effects of chemotherapy on matrix metalloproteinase expression in leukemia”.

**Joy Parsons** - Alderson-Broaddus College, attended the Undergraduate Research Day at the Capital, Charleston, WV, February 26, 2004. Her presentation was entitled “Do high levels of aldosterone trigger kidney fibrosis?”.

**Antoinette Moran** – Wheeling Jesuit University, attended the Undergraduate Research Day at the Capital, Charleston, WV, February 26, 2004. Her presentation was entitled “Obesity related hypertension associated with high fat diet in Zucker rats”.

**Dr. Yi “Charlie” Chen** – Alderson-Broaddus College, attended the 65th Annual Meeting of the Association of Southern Biologists, Memphis, TN, April 14-17, 2004. His presentation was entitled “Inhibition of hypoxia-inducible factor 1 $\alpha$  and vascular endothelial growth factor by anti-cancer drugs in human ovary carcinoma cells”.

**Joy Parsons** - Alderson-Broaddus College, attended the 65th Annual Meeting of the Association of Southern Biologists, Memphis, TN, April 14-17, 2004. Her presentation was entitled “Do high levels of aldosterone trigger kidney fibrosis?”

**Danielle Large** - Alderson-Broaddus College, attended the 65th Annual Meeting of the Association of Southern Biologists, Memphis, TN, April 14-17, 2004. Her presentation was entitled “Effects of chemotherapy on matrix metalloproteinase expression in leukemia”.

**Dr. Roger Seeber** – West Liberty State College, attended the 2004 Annual Meeting of the West Virginia Academy of Sciences, Athens, WV, April 4-5, 2004. His presentation was entitled “Extraction and isolation of hypericin and hyperforin from various sources of St. John’s Wort”.



## Publications

**Lela Taylor**, a 2002 summer intern, was co-author on a publication which contained the results of her summer research project. The citation is **Brett M. Hall, James E. Fortney, Lela Taylor, Hillary Wood, Lin Wang, Scott Adams, Suzanne Davis, Laura F. Gibson**, “Stromal cells expressing elevated VCAM-1 enhance survival of B-lineage tumor cells”, **Cancer Letters** 207: 229-239, 2004.

**Drs. Patrick K. Lai and Jiben Roy**, Salem International University, have published the following article, “Antimicrobial and chemopreventive properties of herbs and spices”, **Current Medicinal Chemistry** : 11: 1451-1460, 2004.

**Dr. Yi Charlie Chen**, Alderson-Broaddus College, has co-authored a publication containing research he conducted as WV-BRIN summer fellow. The citation is: **Jing Fang, Zongxian Cao, Yi Charlie Chen, Eddie Reed, and Bing-Hua Jiang**, “9- $\beta$ -D-arabinofuranosyl-2-fluoroadenine inhibits expression of Vascular Endothelial Growth Factor through Hypoxia-Inducible Factor-1 in human ovarian cancer cells”, **Molecular Pharmacology** 66: 178-186, 2004.

**Dr. Jarrett Aguilar**, West Liberty State College, has co-authored a publication containing research he conducted as WV-BRIN summer fellow. The citation is: **M.A. Hummel, P.M. Gannett, J.S. Aguilar and T.S. Tracy**. “Effector-mediated alteration of substrate orientation in cytochrome P450 2C9”, **Biochemistry** 43: 7207-14, 2004.

## Steering Committee Members

Gary Rankin, PhD  
Principal Investigator  
Marshall University  
1542 Spring Valley Drive  
School of Medicine  
Huntington, WV 25704  
rankin@marshall.edu

James M. Sheil, PhD  
Program Coordinator  
West Virginia University  
Room 2070 HSN  
PO Box 9177  
Morgantown, WV 26506  
jsheil@hsc.wvu.edu

L. Howard Aulick, PhD  
VP for Research  
Marshall University  
1542 Spring Valley Drive  
School of Medicine  
Huntington, WV 25704  
aulick@marshall.edu

Donald A. Primerano, PhD  
Director, ACoRN  
Marshall University  
1542 Spring Valley Drive  
Huntington, WV 25704  
primeran@marshall.edu

Mark J. Reasor, PhD  
Director, Outreach Core  
West Virginia University  
PO Box 9229  
Morgantown, WV 26506  
mreasor@hsc.wvu.edu

Charles L. Harris, PhD  
Evaluations Coordinator  
West Virginia University  
PO Box 9142  
Morgantown, WV 26506  
clharris@hsc.wvu.edu

Mary E. Davis, PhD  
Director, Bioinformatics Core  
West Virginia University  
PO Box 9229  
Morgantown, WV 26506  
mdavis@wvu.edu

Michael J. McCarthy, MA  
Information Technology Coordinator  
Marshall University  
1542 Spring Valley Drive  
School of Medicine  
Huntington, WV 25704  
mccarthy@marshall.edu

Vickie Sanders, MA  
Administrative Associate  
WV-BRIN Office  
Room 2995 HSN  
PO Box 9177  
Morgantown, WV 26506  
vsanders@hsc.wvu.edu

Kristen Webb, BS  
Administrative Associate  
Marshall University SOM  
1542 Spring Valley Drive  
Huntington, WV 25704  
perry12@marshall.edu

### NRI Representatives

Patrick Muldoon, PhD  
Bluefield State College  
Arts and Sciences  
219 Rock Street  
Bluefield, WV 24701

Mark Flood, PhD  
Fairmont State University  
Biology Department  
1201 Locust Avenue  
Fairmont, WV 26554

Robert Kreisberg, PhD  
West Liberty State College  
Natural Sciences  
Arnett Hall, Room 103  
West Liberty, WV 26074

Robert Harris, PhD  
West Virginia State University  
Biology Department  
PO Box 1000  
Institute, WV 25112-1000

Robert Shurina, PhD  
Wheeling Jesuit University  
Biology Department  
316 Washington Avenue  
Wheeling, WV 26003

### NOI Representatives

Yi Chen, PhD  
Alderson-Broaddus College  
Biology Department  
College Hill Road  
Philippi, WV 26416

Robert Warburton, PhD  
Shepherd University  
Chemistry Department  
301 King Street  
PO Box 3210  
Shepherdstown, WV 25443

### External Advisory Committee

Alice Lee, PhD  
Associate Professor and Director of  
Howard Hughes Program  
Washington & Jefferson College  
60 S. Lincoln Street  
Washington, PA 15301

Jeff Vance, PhD, MD  
Duke University Medical Center  
Genomics Research Laboratories  
Center for Human Genetics  
Durham, NC 27710

Ken Ramos, PhD  
Professor and Chair, Department of  
Biochemistry & Molecular  
Biology and Director, Center for  
Genetics and Molecular Medicine,  
University of Louisville  
Louisville, KY 40292



Gary Rankin, Ph.D.  
Marshall University  
Principal Investigator

## WV-INBRE Administrative Core Members



James M. Sheil, Ph.D.  
West Virginia University  
Program Coordinator



Donald A. Primerano, Ph.D.  
Marshall University  
ACoRN Director

Charles L. Harris, Ph.D.  
West Virginia University  
Evaluation Coordinator



Mark J. Reasor, Ph.D.  
West Virginia University  
Outreach Core Director



Michael J. McCarthy, M.S.  
Marshall University  
Information Technology  
Coordinator



Mary E. Davis, Ph.D.  
West Virginia University  
Bioinformatics Core  
Director



Kristen Webb, B.S.  
Marshall University  
Administrative Associate



Vickie Sanders, M.A.  
West Virginia University  
Administrative Associate





Supported by:



TEL: 304-293-0775

WE'RE ON THE WEB!  
[WWW.WV-INBRE.NET](http://WWW.WV-INBRE.NET)

FAX: 304-293-4426

WV-INBRE  
West Virginia University  
Health Sciences Center North  
Room 2095  
PO Box 9177  
Morgantown, WV 26506-9177

Place address label here