

**JEFFRESS RESEARCH GRANT AWARDS**

The Allocations Committee of the Thomas F. and Kate Miller Jeffress Memorial Trust has announced the award of Jeffress Research Grants to the institutions listed below to support the research of the investigator whose name is given. The Jeffress Trust, established in 1981 under the will of Robert M. Jeffress, a business executive and philanthropist of Richmond, supports research in chemical, medical and other natural sciences through grants to non-profit research and educational institutions in the Commonwealth of Virginia. The Jeffress Research Grants being announced here have been awarded in 2000.

The Jeffress Memorial Trust is administered by Bank of America. Additional information about the program of the Trust may be obtained by writing to: Advisor, Thomas F. and Kate Miller Jeffress Memorial Trust, Bank of America, Private Bank, P. O. Box 26688, Richmond, VA 23261-6688.

Lizabeth A. Allison, The College of William and Mary. Nucleocytoplasmic Transport of the Thyroid Hormone Receptor: Alternate Pathways and Determinants of Nuclear Retention. \$14,950. (one year renewal).

Bao Ling Adam, Eastern Virginia Medical School. Identification and Characterization of Prostate Cancer Associated Proteins. \$15,000. (one year renewal).

Todd D. Averett, The College of William and Mary. Investigations of the Structure of the Nucleon by Parity Violating Electron Scattering. \$15,000. (one year renewal).

Carey K. Bagdassarian, The College of William and Mary. Enzymatic Activity and Protein-Matrix Flexibility: The Energetics and Dynamics of Catalysis by Cytidine Deaminase. \$14,000 (one year renewal).

Kari E. Benson, Lynchburg College. The Adaptive Value of Female Receptivity Signals. \$11,807. (one year)

David R. Bevan, Virginia Polytechnic Institute and State University. Molecular Modeling of Ligand Binding to Retinoic Acid Receptors. \$18,000. (one year).

John W. Bigbee, Virginia Commonwealth University/Medical College of Virginia. Studies on a Cell-substratum Adhesive Role for Neuronal Acetylcholinesterase. \$14,955. (one year renewal).

Peter Blackmore and Roy Williams, Eastern Virginia Medical School. Regulation of Platelet Aggregation by Phytoestrogens. \$15,000. (one year renewal).

Milton L. Brown, University of Virginia. Design, Synthesis and Evaluation of Novel Sodium Channel Blockers. \$30,000. (one year).

Amy H. Bouton and Joanna B. Goldberg, University of Virginia School of Medicine. *Helicobacter Pylori* and Its Effect on Host Cell Proliferation and Survival. \$15,000. (one year renewal).

Mafia Bykhovskaia and John Hackett, University of Virginia School of Medicine. Mechanisms Underlying Time-Course of Transmitter Release During Facilitated Neurosecretion. \$15,000. (one year renewal).

Judith B. Cain, Virginia Military Institute. The Determination of the Block Copolymer Exchange Rates by Nuclear Magnetic Resonance. \$19,500. (one year).

Christopher Carone, The College of William and Mary. Topics in Intermediate and High Energy Particle Theory. \$15,000. (one year renewal).

Vittorio Celli, University of Virginia. Opto-Electronic Processes in a Frozen Rydberg Gas. \$15,000. (one year renewal).

Corey L. Cleland, James Madison University. Influence of Neonatal Injury on Adult Pain Sensitivity. \$30,000. (one year).

Raymond J. Colello, Virginia Commonwealth University/Medical College of Virginia. Gene Delivery to the CNS: A Novel Approach Using Retroviral Vectors. \$12,665 (one year renewal).

Keith P. Corodimas, Lynchburg College. Adenosine Regulators of Emotional (fear) Learning: Role of A1 Receptors in the Amygdala, Hippocampus and Nucleus Accumbens. \$26,645. (one year).

Richard M. Costanzo, Virginia Commonwealth University. Transplantation of Olfactory Neurons from Genetically Altered Mice. \$30,000. (one year).

Harry Dankowicz, Virginia Polytechnic Institute and State University. Passive Gait in Anthropomorphic Bipedal Mechanisms Including Muscular Skeletal Modeling. \$15,000. (one year renewal).

Robin Lee Davies, Sweet Briar College. Investigations of the Cytotoxicity of Novel Diimine Complexes of Platinum (IV) and Palladium (IV). \$15,000. (one year renewal).

Cynthia J. Denbow, Virginia Polytechnic Institute and State University. Expression of Human Cystic Fibrosis Transporter Protein in Plants. \$24,000. (one year).

Michael Deschenes, The College of William and Mary. Recovery of Neuromuscular Junctions from Space Flight. \$14,930. (one year renewal).

Raymond Dessy, Virginia Polytechnic Institute and State University. Micro-Channel and Micro-Chip Separation and Analysis Systems Applicable to Glycoprotein Engineering. \$18,000. (one year).

David A. DeWitt and John Savory, Liberty University. Aluminum Induced Mitochondrial Injury, Oxidation Stress, and Apoptosis *in vitro*. \$15,000. (one year).

William B. Eggleston, Virginia Commonwealth University. Characterization of Epiallelism at the Maize r1 Locus. \$28,090. (one year).

Alan R. Esker, Virginia Polytechnic Institute and State University. Polymer Dynamics in Confined Geometries and Biomimetic Systems. \$15,000. (one year renewal).

Erik J. Fernandez, University of Virginia. Mass Spectrometry-Detected Hydrogen Exchange: A New Method for Analysing Protein Aggregation at the Residue Level. \$15,000. (one year renewal).

Mark H. Forsyth, The College of William and Mary. A Comparative Genomic Approach to Genetic Diversity Among Virulent and Avirulent *Helicobacter pylori*. \$21,675. (one year).

Gregory D. Foster, George Mason University. The Use of Molecular Markers to Delineate Sources of Organic Carbon and Hydrogeochemical Processes in the Potomac River Watershed. \$18,965. (one year).

Babette Fuss, Virginia Commonwealth University/Medical College of Virginia. Novel Mechanisms in CNS Myelination: Role of PD-1 $\alpha$ /ATX. \$30,000. (one year).

Shobha Ghosh, Virginia Commonwealth University/Medical College of Virginia. Cholesterol Ester Metabolism in Macrophage Foam Cells. \$15,000. (one year renewal).

William F. Glass, Eastern Virginia Medical School. Regulation of Mesangial Cell Hypertrophy by c-src and Rho. \$29,000. (one year).

Glenda Gillaspay, Virginia Polytechnic Institute and State University. Signal Termination in *Arabidopsis*. \$15,000. (one year renewal).

Aaron S. Goldstein, Virginia Polytechnic Institute and State University. A Radial Flow Chamber to Examine the Effect of Orientation and Cell-Cell Interactions on the Strength of Adhesion of the Epithelial Cells to Chemically Patterned Model Biomaterials. \$30,000. (one year).

Robert M. Granger, II, Sweet Briar College. What to do with the CO<sub>2</sub>? Studies of Novel CO<sub>2</sub> Reduction Catalysis. \$30,000. (one year).

Robert W. Granger and Robert J. Talmadge, Virginia Polytechnic Institute and State University. Role of the ATP-Dependent Ubiquitin-Proteasome Pathway in Cell Cycle Regulation of Normal and Dystrophic Muscle. \$30,000. (one year).

Carla B. Green, University of Virginia. Cell-Specific Ablation of Circadian Clock Function in the Vertebrate Retina. \$29,700. (one year).

Charles M. Grisham, University of Virginia. Structure and Mechanism of Adenylyl Cyclase Toxin. \$30,000. (one year).

Tai Liang Guo, Virginia Commonwealth University. Genistein Modulation of the Immune Responses in Mice. \$15,000. (one year renewal).

John T. Gupton, University of Richmond. The Application of B-Chloroenones to the Synthesis of Lamellarin G Trimethyl Ether and Related Alkaloids. \$20,000. (one year).

Gregory Hancock, The College of William and Mary. Deducing Uplift Rates and a Detailed Glacial Chronology for the Cordillera Blanca, Peru, using Radionuclides. \$17,542. (one year).

Georgia Ann Hammond, Radford University. Molecular and Genetic Characterization of *Cercospora zea-maydis*, a Fungal Pathogen of Corn. \$15,000. (one year renewal).

Brian E. Hanson, Virginia Polytechnic Institute and State University. Catalytic and Stoichiometric Pauson-Khand Reactions as a Potential Route to Novel Monomers for Polymeric Materials Synthesis. \$15,000. (one year renewal).

Catherine C. Hedrick, University of Virginia School of Medicine. Glucose-Mediated Regulation of Monocyte Endothelial Interactions in Vascular Disease and Diabetes. \$30,000. (one year).

W. Gary Hollis, Roanoke College. Electroactive Multi-metallocenes Assemblies. \$30,000. (one year).

Todd A. Houston, Virginia Commonwealth University. Design of Boron-Based Glycosidase Inhibitors. \$15,000. (one year renewal).

Helen I'Anson, Washington and Lee University. Metabolic Signals and Onset of Puberty. \$9,390. (one year renewal).

Allison Belsches Jablonski, Lynchburg College. Studies of Promoter regulation of HER2: Involvement with Estrogen Receptor Signaling. \$25,518. (one year).

David R. Jones, University of Virginia School of Medicine. Role of Bcl-X1 in Chemosensitization of Non-Small Cell Lung Cancer Following the Inactivation of NF-kB. \$29,000. (one year).

Mohammed Kalimi, Virginia Commonwealth University/Medical College of Virginia. Protective Effects of Steroids Against Neurotoxin-Induced Hippocampal Cell Death: Cellular and Molecular Mechanisms. \$15,000. (one year renewal).

Kenneth R. Kambis, The College of William and Mary. The Effects of Caloric Restriction on Mood States at Sea Level and High Altitude. \$10,797. (one year).

Karen Kester, Virginia Commonwealth University. Microsatellite Analysis of Spatial and Temporal Variation. \$15,000. (one year renewal).

Eugene B. Kolomeisky, University of Virginia. Theory of Low-Dimensional Bose-Einstein Condensation. \$20,000. (one year).

Robert H. Kretsinger and Robert H. Bauerle, University of Virginia. Engineering the Active Site of an Enzyme. \$26,270. (one year).

Gary M. Kupfer, University of Virginia School of Medicine. Function of the Fanconi Anemia Protein Complex. \$15,000. (one year renewal).

Sophia Lee, Virginia Commonwealth University/Medical College of Virginia. The Role of the Transforming Growth Factor-beta Isoforms in Excisional Wound Healing. \$25,925. (one year).

Rong Li, University of Virginia School of Medicine. Mutational Analysis of the BRCT Motif in BRCA1. \$15,000. (one year renewal).

Thurman E. Lockhart, Virginia Polytechnic Institute and State University. Effects of Age-Related Changes in Hamstring Activation Rate and Heel Contact Velocity on the Biomechanics of Slips and Falls. \$30,000. (one year).

Janos Luka, Eastern Virginia Medical School. Cloning of the Human Herpesvirus-6 (HHV-6) Genome as an Infectious Bacterial Artificial Chromosome: A New Approach to Facilitate Genetic Analysis of Viral Functions. \$21,700. (one year).

Mary C. Mahony and Peter Blackmore, Eastern Virginia Medical School, Jones Institute for Reproductive Medicine. Involvement of the MAP Kinase Signaling Cascade in Sperm Hyperactivated Motility. \$30,000. (one year).

Richard T. Marconi, Virginia Commonwealth University/Medical College of Virginia. Identification of Genus Wide Themes in *Borrelial* Pathogenesis: The Role of the Rep Gene Family. \$15,000. (one year renewal).

Kurt McCammon and Paul Ratz, Eastern Virginia Medical School. Calcium Regulation of the Detrusor Contractions. \$15,000. (one year renewal).

Karen McGrady, University of Richmond. Synthesis and Characterization of Novel Polymer Electrolytes. \$13,733. (one year).

Michael A. McVoy, Virginia Commonwealth University/Medical College of Virginia. Class I Down-Regulation by Human Herpesvirus 6 and Guinea Pig Cytomegalovirus. \$15,000. (one year renewal).

Jonathan D. Monroe, James Madison University. Structure-Function Studies on Apoplastic  $\alpha$ -Glucosidases of *Arabidopsis thaliana*. \$15,000. (one year renewal).

John R. Morris, Virginia Polytechnic Institute and State University. Molecular Beam Studies of Interfacial Reactions Using Functionalized Self Assembled Microlayers. \$15,000. (one year renewal).

Timothy J. Newman, University of Virginia. Localization Transitions in Directed Polymer Systems (and their relation to biological phenomena). \$21,500. (one year).

Linda L. Phillips and Thomas Reeves. Virginia Commonwealth University/Medical College of Virginia. The Role of Dopaminergic Systems in Recovery Following Traumatic Brain Surgery. \$10,000. (one year renewal).

Sergio Oehninger and Mahmood Morshedi, Eastern Virginia Medical School. Identification, Characterization of Cellular Pathways and Prevention of Apoptosis in Spermatozoa of Infertile Men. \$30,000. (one year).

Brent E. Owens, The College of William and Mary. Geochronology and Geochemistry of the State Farm Gneiss: Oldest Precambrian Crust in the Goochland Terrane, Piedmont Province, Virginia?. \$13,900. (one year renewal).

Mark A. Palmer, Virginia Commonwealth University. Examination of the Dendritic to Granular Transition During Solidification. \$30,000. (one year).

Manish S. Patankar and Frank A. Lattanzio, Eastern Virginia Medical School. Structural and Functional Analysis of the Ovarian Tumor Marker CA 125. \$29,800. (one year).

K. Kevin Pfister, University of Virginia. Mechanism of Adenovirus Transport Along Microtubules. \$27,105. (one year).

Gregory M. Plunkett, Virginia Commonwealth University. Interpreting Biogeographic Patterns in Araliacea. \$15,000. (one year renewal).

David L. Popham, Virginia Polytechnic Institute and State University. Protein Interactions During Peptidoglycan Wall Synthesis in *Bacillus subtilis*. \$30,000. (one year).

John S. Poutsma, The College of William and Mary. Computational Studies of the Structure and Energetics on Non-Protein Amino Acids. \$25,000. (one year).

Raina S. Robeva, Bessie H. Kirkwood, Tim Loboschewski, Sweet Briar College. Electroencephalographic and Psychometric Differences Between Female College Students With and Without Attention Deficit/Hyperactivity Disorder. \$15,000. (one year renewal).

Sarah C. Rutan, Virginia Commonwealth University. Characterization of Chemical Dynamics in Complex Systems. \$15,000. (one year renewal).

Ravi F. Saraf, Virginia Polytechnic Institute and State University. Interfacial and External Field Effects on Self-Assembled and Ultra Thin Polymer films. \$15,000. (one year renewal).

Mohamadi A. Sarkar, Virginia Commonwealth University. Development of a Biosensor by Immobilizing Human Recombinant Oxidative Enzymes in a Lipid Bilayer on Gold Electroplated with Silver. \$29,260. (one year).

Heidi Scrable, University of Virginia School of Medicine. Molecular Basis of Hippocampal Learning. \$15,000. (one year renewal).

Rita Shiang, Virginia Commonwealth University/Medical College of Virginia. *In vivo* and *in vitro* Models of Treacher Collins Syndrome. \$20,000. (one year).

Merry J. Sleight and Geoffrey F. Birchard, George Mason University. Physiological Effects of Prenatal Sensory Stimulation in Bobwhite Quail. \$9,875. (one year).

Stanton Q. Smith, Virginia Military Institute. A Synthetic Study of the Rhopaladins: A Newly Discovered Bis-Indole Alkaloid. \$17,400. (one year).

Albert T. Sneden, Virginia Commonwealth University. New Phenylpropanoid Glycosides from Virginia *POLYGONUM* Species. \$15,000 (one year renewal). :

Daniel E. Sonenshine and Wayne Hayes, Old Dominion University. Immune Dysfunction in Ticks: Why Certain Ticks Transmit *Borrelia Burgdorferi* and Other Disease-Causing Microbes. \$15,000. (one year renewal).

Dorothy Spangenburg and Frank Lattanzio, Eastern Virginia Medical School. Thyroxine Hormone in Metamorphosing Jellyfish. \$15,000. (one year renewal).

Robert F. Spencer, Virginia Commonwealth University/Medical College of Virginia. Auditory Neuropathy in the Jaundiced Gunn Rat. \$28,400. (one year).

Wayne M. Stalick, George Mason University. A Mild Versatile Synthesis of Functionalized  $\gamma$ -Carbolines Derivatives. \$30,000. (one year).

David W. Sukow, Washington and Lee University. High-Frequency Oscillations from a Semiconductor Laser with Two Delayed Optical Feedbacks. \$30,000. (one year).

Douglas R. Taylor, University of Virginia. Using the Y-Chromosome Microsatellites in *Silene latifolia* to Study the Origin and Spread of Agriculture in Europe. \$30,000. (one year).

Uwe Tauber, Virginia Polytechnic Institute and State University. Scaling and Universality in Non-Equilibrium Systems. \$29,502. (one year).

Gary C. Tepper, Virginia Commonwealth University. Development of a Microwave-Based Gamma Radiation Detector. \$14,400. (one year renewal).

Bruce J. Turner, Virginia Polytechnic Institute and State University. Immunogenetic Variation in Natural Populations of a Homozygous Clonal Vertebrate. \$15,000. (one year renewal).

Kenneth E. Van Ness, Washington and Lee University. Viscous Behavior of Miscible Polymeric Blends. \$15,000. (one year renewal).

Stephen P. Watton, Virginia Commonwealth University. Immobilization of Transition Metal Complexes in Porous Silicate Media. \$15,000. (one year renewal).

Ian G. Welsford, James Madison University. Biochemistry of Novel Antibacterial Substances Isolated from Gastropod Integument. \$30,000. (one year).

Robert E. Welsh, The College of William and Mary. A Multi-Modality Gamma-Ray Imaging Device for Biological Research on Small Animals. \$29,850. (one year).

Debra L. Wohl, University of Richmond. The Importance of Functionally Redundant Species on an Ecosystem Process. \$26,960. (one year).

H. T. Wright, Virginia Commonwealth University/Medical College of Virginia. Alzheimer's Amyloid Peptide Interactions with Serpins and Cell Surface Receptors. \$15,000. (one year renewal).

Jeffrey S. Young, University of Virginia School of Medicine. Role of Nuclear Factor-Kappa B in Post Trauma Acute Lung Dysfunction. \$29,935. (one year).