The Multidisciplinary Seed Funding Program was offered from 2005 to 2014, and was then replaced in 2014 by the Research Seed Funding Program. The goal of MSF was to provide seed funding for projects that (a) involved areas relevant to institutional research priority; (b) are multidisciplinary and could produce immediate impact; and (c) build thematic teams with serious prospects to attract additional and new research dollars, particularly encouraging collaborations across ODU’s colleges. For more information on current intramural funding programs offered by the Office of Research, visit [http://www.odu.edu/facultystaff/research/funding/opportunities/intramural-funding](http://www.odu.edu/facultystaff/research/funding/opportunities/intramural-funding)

### 2014 Recipients

**“3D Facial Expression and Visual Stimuli Analysis for Autism Spectrum Disorders”** $48,000.

- **Khan Iftekharuddin**, Vision Lab, Chair of Electrical and Computer Engineering (PI); **Michel Audette**, Assistant Professor, Modeling, Simulation and Visualization Engineering (Co-PI) and **John Harrington**, MD, Department of Pediatrics, EVMS and CHKD (Co-PI).
- **Consultants**: Norou Diawara, Mathematics and Statistics; Jonna Bobzien, Communication Disorders and Special Education; Jiang Li, Electrical and Computer Engineering

**“Assessing and Preventing Falls in Multiple Sclerosis (MS): An Integrative Approach,”**$42,740.

- **Corey Rynders**, Assistant Professor, Human Movement Sciences (PI); **Steven Morrison**, Professor/Director of Research, School of Physical Therapy and Athletic Training (Co-PI); **Sheri Colberg**, Professor, Human Movement Sciences (Co-PI); **Jacob Sossnoff**, Department of Kinesiology and Community Health, University of Illinois at Urbana-Champaign (Co-PI); **Myla Goldman**, Department of Neurology, University of Virginia Medical School (Co-PI).

- Robert Bruno, Assistant Professor, School of Molecular Diagnostics and Translational Sciences (PI) and Patrick Sachs, Assistant Professor, School of Molecular Diagnostics and Translational Sciences (PI).
- Consultants: Christian Zemlin, Computer & Electrical Engineering; Vincent Njar, Medicinal Chemistry, University of Maryland Center for Biomolecular Therapeutics; Lynn Elmore, Department of Pathology, Medical College of Virginia; Gilbert Smith, Center for Cancer Research, National Cancer Institute

“Development of a Multidisciplinary Approach for Assessing Climate Change and Sea Level Rise Impact on Tidal Wetlands in Lynnhaven Bay, VA,” $49,000.

- Gangfeng Ma, Assistant Professor, Civil and Environmental Engineering (PI); Xixi Wang, Associate Professor, Civil and Environmental Engineering (Co-PI); Hua Liu, Assistant Professor, Political Science and Geography (Co-PI).

“Investigation of Musical Rhythms in the Brain,” $48,000.

- Dean Krusienski, Associate Professor, Electrical & Computer Engineering (PI); Douglas Owens, F. Ludwig Diehn Endowed Chair, Instrumental Music Education and Associate Professor of Music (Co-PI); Jerry Shih, MD, Associate Professor of Neurology, Mayo Clinic of Florida (Co-PI).
- Consultants: James Bliss, Psychology; James Kosnik, Music History; Kamal Chemali, MD, Center for Music and Medicine, Sentara and EVMS.

2013 Recipients


- Shuiwang Ji, Computer Science (PI).
- Consultants: Andrey Chernikov, Computer Science; Nikos Chrisochoides, Computer Science; Jiang Li, Electrical & Computer Engineering; Sudhir Kumar, School of Life Sciences, Arizona State University; Patric Lundberg, Microbiology and
Molecular Cell Biology, EVMS; Christopher Osgood, Biological Sciences.

“Defibrillation of Cardiac Tissue with Nanosecond Pulsed Electric Fields,” $50,000.

- Christian Zemlin, Electrical & Computer Engineering/Frank Reidy Research Center for Bioelectrics (PI) and Andrey Pakhomov, Frank Reidy Research Center for Bioelectronics, (Co-PI).
- Consultants: Masha Sosonkina, Modeling, Simulation & Visualization Engineering and Arkady Pertsov, Department of Pharmacology, SUNY Upstate Medical University.

“For a Sustainable Future on Earth: High-Tech Biochar,” $50,000.

- James W. Lee, Chemistry and Biochemistry (PI) and Sandeep Kumar, Civil & Environmental Engineering (Co-PI).
- Consultant: Patrick G. Hatcher, Batten Endowed Chair in Physical Sciences, Chemistry and Biochemistry.

“The Utilization of Video Face Replacement Technology (VFRT) for Routine Clinical Procedures in Children with Autism Spectrum Disorder (ASD),” $46,088

- Jonna Bobzien, Communication Disorders & Special Education (PI); Chung-Hao Chen, Electrical & Computer Engineering (Co-PI); Ann Bruhn, Dental Hygiene (Co-PI); Debra M.G. Murray, Nursing (Co-PI); Rebecca Deal Poston, Nursing (Co-PI); Amy Lee, Nursing, (Co-PI).

“Toward Solutions to Big Data Challenges in Multiple Disciplinary Applications,” $50,000.

- Yaohang Li, Computer Science (PI); Duc T. Nguyen, Civil Engineering (Co-PI); Masha Sosonkina, Modeling, Simulation, & Visualization Engineering (Co-PI).
- Consultant: Jin Wang, Mathematics.

2012 Recipients

“An Innovative Approach to Understanding the Anterior Cruciate Ligament Injury Enigma: A Combination of In Vitro, In Vivo and Computer Simulation
Techniques,” $94,665
  • **Joshua Weinhandl** (PI), Human Movement Sciences; **Matthew Hoch** (Co-PI), Human Movement Sciences; **Sebastian Bawab** (Co-PI), Mechanical & Aerospace Engineering;
  • **Consultant:** Stacie Ringleb, Mechanical & Aerospace Engineering

“Investigating the Feasibility of Exploiting Bluetooth Technology in Locating Vehicles at Intersections,” $61,000
  • **Tamer Nadeem** (PI), Computer Science and **Mecit Cetin** (PI), Civil & Environmental Engineering.

“Localized Electron Cryo-tomography for High Resolution 3-dimensional Imaging of the Cell Membrane Protrusion from the Nanopores Induced by Nanosecond Electric Pulses,” $88,417
  • **Jing He** (PI), Computer Science.
  • **Consultants:** Hani Elsayed-Ali, Applied Research Center/Electrical & Computer Engineering; Olga N. Pakhomov, Frank Reidy Research Center for Bioelectrics; Andrei G. Pakhomov, Frank Reidy Research Center for Bioelectrics; Howard White, Ph.D., Department of Physiology, EVMS.

“Noninvasive Neurostimulation through Focused Subnanosecond Pulsed Radiation,” $48,000
  • **Shu Xiao** (PI), Frank Reidy Research Center for Bioelectrics; **Jiang Li** (Co-PI), Electrical & Computer Engineering; **Gene Hou** (Co-PI), Mechanical & Aerospace Engineering
  • **Consultants:** Xiaoping Li, Neuroengineering Laboratory, National University of Singapore; **Don Lewis**, Department of Pediatrics and Division of Neurology, EVMS.

“Simulation and Education in Evergreen-Agriculture Decision-making (SEED) for Subsistence Farmers,” $64,063
  • **Rick McKenzie** (Co-PI), Modeling, Simulation and Visualization Engineering; **Andrew Collins** (Co-PI), VMASC; **Michael Seiler** (Co-PI), Institute for Behavioral and Experimental Real Estate (College of Business & Public Administration); **Yuzhong Shen** (Co-PI), Modeling, Simulation and Visualization Engineering
“Virginia Legislators’ Knowledge, Awareness and Perceived Risks Concerning Sea Level Rise,” $34,371
- Burton St. John, III (PI), Communication; Ivan Ash (Co-PI), Psychology; Wie Yusuf (Co-PI), Public Administration; Jesse Richman (Consultant), Political Science;
- Consultants: Larry Atkinson, Oceanography and Tancy Vandecar-Burdin, Social Science Research Center

2011 Recipients

"A Multidisciplinary Approach to Nanoscale Measurement and Image Analysis of Patient Cartilage for Predicting Surgical Response." $70,000
- Nikos Chrisochoides (PI), Computer Science.
- Consultants: Ali Beskok, Aerospace and Mechanical Engineering; Andrey Chernikov, Computer Science; Shuiwang Ji, Computer Science; Shizhi Qian, Aerospace and Mechanical Engineering; Mike Stacey, Center for Bioelectricics; Eric Dobratz, EVMS; Joe Han, EVMS.

"Identifying and Archiving Socially Important Conversations in the Social Web," $54,000
- Michael Nelson (PI), Computer Science; Michele Weigle (Co-PI), Computer Science; Kathie Gossett (Co-PI), English; Liza Potts (Co-PI), English.

"Nanoindentation to Determine Turgor Pressure in Escherichia Coli," $85,135
- A.A. Elmustafa (PI), Mechanical Engineering-Applied Research Center and Clarett J. Sullivan, Ph.D., EVMS.
- Consultants: L.D. Britt, M.D., EVMS and David Gauthier, Biological Sciences.

"Robust, Multifunctional, Bio-compatible Nanocapsules for Intraoperative Imaging and Other Biomedical Applications," $56,572
- Balasubramanian Ramjee (PI), Chemistry and Biochemistry and Khaled Sakhel, M.D. (Co-PI), EVMS.
- Consultants: Chris Osgood, Biological Sciences; Shizhi Qian, Aerospace and Mechanical Engineering; R. James Swanson, Biological Sciences; David Gauthier, Biological Sciences; James Lukban, M.D., EVMS.
"Wave Energy Dynamics: Simulation, Experiment and Optimization," $55,500

- Jin Wang (PI), Mathematics and Statistics; Miltiadis Kotinis (Co-PI), Aerospace and Mechanical Engineering; Gene Hou (Co-PI), Aerospace and Mechanical Engineering.
- Consultant: Ravindra Joshi, Electrical and Computer Engineering.

2010 Recipients

"Modeling Eco-Epidemiology of Chronic Disease in Wild Finfish," $74,250.

- David Gauthier, Assistant Professor of Biological Sciences; Holly Gaff, Assistant Professor of Community and Environmental Health; R Latour, Instructor of Virginia Institute of Marine Science, William & Mary; K. Reece, Instructor of Virginia Institute of Marine Science, William & Mary; W. Vogelbein, Instructor of Virginia Institute of Marine Science, William & Mary.


- Michael McShane, Assistant Professor of Finance; Rani A. Kady, Assistant Professor of Engineering Management and Systems Engineering; Gnana K. Bharathy, Assistant Professor of Engineering Management and Systems Engineering

"Multiplayer Online Games for Information Quality Management," $59,438.

- Hongwei Zhu, Assistant Professor of Information Systems and Technology; Yuzhong Shen, Assistant Professor of Electrical and Computer Engineering; Amy Adcock, Assistant Professor of STEM Education and Professional Studies.

"Numerical and Experimental Study of Complex Bio-Fluids in Microfluidic Lab-on-a-Chip for Bio-Medical Applications," $70,599.

- Yan Peng, Assistant Professor of Mathematics and Statistics; Li-Shi Luo, Professor of Mathematics and Statistics; Shizhi Qian, Assistant Professor of Aerospace Engineering; Wei Liao, Research Assistant Professor of Mathematics and Statistics.

- **Gon Namkoong**, Assistant Professor of Electrical and Computer Engineering; **Keejoo Lee**, Assistant Professor of Aerospace Engineering; **Helmut Baumgart**, Virginia Microelectronic Consortium Professor of Electrical and Computer Engineering; **Hani Elsayed-Ali**, Director of Applied Research Center and Professor of Electrical and Computer Engineering.

### 2009 Recipients

"Quantifying Cancer-Causing Human Papilloma Virus Strains in Hampton Roads Women," $64,721.

- **Lisa Horth**, Assistant Professor of Biological Sciences; **Mark Dorrepaal**, Chair and Professor of Mathematics and Statistics; **Jim Swanson**, Professor of Biological Sciences; **Dawn Curran**, Instructor of Medical Laboratory and Radiation Science.

"Hybrid Texture Imaging and Molecular Biomarker Classification of Prostate Cancer Tumor Cells," $80,000.

- **Jiang Li**, Assistant Professor of Electrical and Computer Engineering and Researcher, Virginia Modeling, Analysis and Simulation Center (VMASC); **Frederic McKenzie**, Associate Professor of Electrical and Computer Engineering; **Rao Chaganty**, Professor of Mathematics and Statistics; **Julius Nyalwidke**, EVMS.
- **Consultant**: John Semmes.


- **Fred Dobbs**, Professor of Ocean, Earth and Atmospheric Sciences and **Gary Schafran**, Professor of Civil and Environmental Engineering.
- **Consultants**: Holly Gaff, Assistant Professor of Community and Environmental Health; Wayne Hynes, Professor and Acting Chair of Biological Sciences; and Jin Wang, Assistant Professor of Mathematics and Statistics.
"Impaired Insulin Delivery During Continuous Insulin Infusion," $77,650.

- Ayodeji Demuren, Professor of Mechanical Engineering; Dr. Eric Gyuricsko, EVMS; Norou Diawara, Assistant Professor of Mathematics and Statistics.
- Consultant: Shizhi Qian, Assistant Professor of Aerospace Engineering.

"Novel Nanoporous Electro-osmotic Microfluidics: Basic Technology Development and Its Lab-on-a-Chip Applications," $70,000.

- Shizhi Qian, Assistant Professor of Aerospace Engineering and Helmut Baumgart, Virginia Microelectronics Consortium Professor of Electrical and Computer Engineering.
- Consultant: Ali Beskok, Batten Endowed Chair in Computational Engineering.

2008 Recipients


- Holly Gaff, Community Health; Kim Curry-Louren, Nursing; James Marken Instructional Design & Technology; Eli N. Perencevich, VA-Maryland Health Care System, Epidemiology and Preventive Medicine, University of Maryland School of Medicine; Scott Sechrist, Med Lab & Radiation; Ginger Watson, Instructional Design & Technology, VMASC and Lynn L. Wiles, Nursing.

"Disease-specific Trapping of Human Cancer Cells," $70,700.

- Ali Beskok, Aerospace Engineering and Juergen Kolb, Frank Reidy Center for Bioelectronics.

"Elucidation of Protein Structure Networks and Beyond," $80,000.

- Lesley Greene, Chemistry and Biochemistry, and Li-Shi Luo, Mathematics and Statistics.
• **Consultants:** Alex Pothen, Computer Science, Chris Osgood, Biological Sciences, Pat Hatcher, Chemistry & Biochemistry, and Christine Orengo, University of London.

"The Role of Endogenous Retroviruses in Prostate Cancer," $80,000.

• **Alex Greenwood,** Biological Sciences; **Timothy Bos,** Microbiology & Cellular Molecular Biology, EVMS; and **Tarek Kandil,** Virginia Prostate Center, EVMS.
• **Consultants:** John Semmes, Virginia Prostate Center, Microbiology & Molecular Cell Biology, EVMS.


• **Gayle McCombs,** Dental Hygiene; **Michele Darby,** Dental Hygiene; **Wayne Hynes,** Biological Sciences; and **Mounir Laroussi,** Laser and Plasma Engineering Institute.

"Dynamic Medical Measures: Creating a Model to Study the Neuropathic Process in Diabetes and Normal Aging," $80,000.

• **Steven Morrison,** Physical Therapy; **Sheri R. Colberg,** Exercise Science, Physical Education and Recreation; **Mira Mariano,** Physical Therapy, and **Henri Parson,** Strelitz Diabetes Center, EVMS.
• **Consultants:** Aaron I. Vinik, Strelitz Diabetes Center, EVMS, and Martha Walker, Physical Therapy.

"Electric Field Implosion in Conjunction with Sensitized Nanoparticles as a Novel Form of Cancer Treatment," $35,697.

• **Mike Stacey,** Bioelectrics; **Chris Osgood,** Biology; **Hani Elsayed-Ali,** Electrical and Computer Engineering; **Tarek Abdel-Fattah,** Biology, Chemistry, and Environmental Science, Christopher Newport University.

### 2007 Recipients

"Biological and Chemical Deployable Nanosensors for Homeland Security Applications based on Silicon-on Insulator (SOI) Technology Platform," $75,000.

• **Shirshak Dhali** (PI) Electrical and Computer Engineering; **Sacharia Albin,** Electrical and Computer Engineering; **Helmut Baumgart,** Electrical and
Computer Engineering; John Cooper, Chemistry, and Zhili Hao, Mechanical Engineering.


- Patricia Hentosh and Dennis M. Peffley (PI’s) Medical Laboratory and Radiation Sciences; Patrick Hatcher, Chemistry; Sophie K. Thompson, Medical Laboratory and Radiation Sciences, and Danail Bonchev, VCU.


- Barbara Hargrave (PI) Biological Sciences; Peter Blackmore, EVMS; Richard Nuccitelli, Electrical and Computer Engineering; Stephen Beebe, EVMS; Ravi Joshi, Electrical and Computer Engineering, and Jue Zhang, Frank Reidy Center for Bioelectronics.


- Brian K. Payne (PI) Sociology and Criminal Justice; Richardean Benjamin, Nursing; Charlie Turner, Economic; Randy Gainey, Sociology and Criminal Justice; Carryl Baldwin, Psychology; Elizabeth Monk-Turner, Sociology and Criminal Justice; Stefan Gravenstein, EVMS, and Ruth Triplett, Sociology and Criminal Justice.

"Virtual Reality in Gait Rehabilitation," $75,000.

- Martha Walker (PI) Physical Therapy; Gianluca De Leo, Medical Laboratory and Radiation Sciences; Jessica Crouch, Computer Science; Stacie Ringleb, VMASC; Bonnie Van Lunen, Exercise Science, Sport, Physical Education and Recreation; George Maihafer, Physical Therapy, and Jean Shelton, EVMS.

2006 Recipients

"A Prototype of the Human Virus Interactome Resource (HVIR)," $95,000.
• Alex Pothen, Computer Science; Muhammad Zubair, Computer Science; Kurt Maly, Computer Science; Chris Osgood, Biology, and Oliver John Semmes, EVMS.

"Effective Sensor Technology and Development for Biodefense," $38,000.

• Ariel Pinto, Engineering Management and Systems Engineering; Gavin Welch, EVMS; R. Drake, EVMS, and Michael Bono, EVMS.

"Establishment of Environmental Public Health Tracking System in Virginia," $80,000.

• Anna Jeng, Community and Environmental Health; Tom Allen, Political Science and Geography; Ling Li, MIS/Decision Sciences; Dayanand Naik, Mathematics and Statistics, and Maria Frontini, EVMS.

"Health matters: Determinants of Health Disparities in Hampton Roads," $92,000.

• Joshua G. Behr, Political Science and Geography; John B. Baccus, Navy; Aaron I. Vinik, EVMS; Margaret Camarena, Arts and Letters; Stacey Plichta, Community and Environmental Health; James Alan Neff, Health Science, and Harry J. Tillman, Nursing.

"Virtual Operating Room," $95,000.

• Mark W. Scerbo, Psychology; Lee A. Belfore, Electrical and Computer Engineering; Hector M. Garcia, Engineering; Michael Jackson, Nursing; Leonard J. Weireter, Jr., EVMS.