Biomedical Research Advisory Council
Bankhead-Coley Cancer Research Program
James and Esther King Biomedical Research Program

Annual Report 2013-2014

Rick Scott
Governor

John H. Armstrong, MD, FACS
Surgeon General and Secretary of Health
# 2013-2014 Annual Report - Table of Contents

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Florida Biomedical Research Program Overview

Since 2001, the Florida legislature has recognized the need to support vital research conducted in both academic and private institutions throughout the state through the James and Esther King Biomedical Research Program (Section 381.922, Florida Statutes) and the Bankhead-Coley Cancer Research Program (Section 215.5602, Florida Statutes). In 2013-2014 this funding continued to improve the health of Florida’s families, expanded the research infrastructure of the state, and advanced efforts to bring external research funding to the state. Research grants are issued based on a competitive peer-review process. Awards from the King and Bankhead-Coley Programs are based on scientific merit, as determined by independent peer review involving experts located outside Florida who are free from conflicts of interest. Researchers at any university or established research institute in the state are eligible to apply for state funding. In 2013-2014 the Legislature appropriated $20 million, which funded a total of 42 grants.

Annually the Department submits a fiscal-year progress report, including the following information as required by statute:

- A list of recipients of program grants or fellowships.
- A list of publications in peer reviewed journals involving research supported by grants or fellowships awarded under the program.
- The state ranking and total amount of biomedical research funding currently flowing into the state from the National Institutes of Health.
- New grants for biomedical research which were funded based on research supported by grants or fellowships awarded under the program.
- Progress towards programmatic goals, particularly in the prevention, diagnosis, treatment, and cure of diseases related to tobacco use, including cancer, cardiovascular disease, stroke, and pulmonary disease.
- Recommendations to further the mission of the programs.

William G. "Bill" Bankhead, Jr., and David Coley Cancer Research Program

The Bankhead-Coley Cancer Research Program advances progress toward cures for cancer. Cancer is now the leading cause of death for Floridians, surpassing heart disease. Florida continues to have the second highest cancer burden in the nation. Funding through the Bankhead-Coley program significantly improves cancer research and treatment in the state by:

- Attracting new research talent and grant-producing researchers;
- Funding proposals that demonstrate the greatest ability to attract federal research grants;
- Encouraging the development of bioinformatics to allow researchers to exchange information;
- Facilitating technical collaboration, business development and support for intellectual property related to research; and
- Aiding multi-disciplinary research through greater participation in clinical trials networks and reducing the disparate impact of cancer on certain groups.

The James and Esther King Biomedical Research Program

The purpose of the James and Esther King Biomedical Research Program is to advance cures in tobacco-related diseases. The King program funds research initiatives that seek new insights and innovative solutions in the prevention, diagnosis, treatment, and cure of Floridians afflicted by tobacco-related diseases including cardiovascular disease, stroke, lung disease and tobacco-related cancers, leading causes of death in Florida and nationally.
Florida funds research that impacts the health of Floridians

As of 2012-2013, over 3300 Floridians were enrolled in ongoing research studies funded by these two biomedical research programs. People throughout the state volunteered their time to improve the lives of all Floridians, and received health benefits from participation in the research. Benefits to the current participants included screening and genetic counseling for breast cancer; screening for colon cancer; improved diagnosis of cancer of the throat and esophagus; and improved management of the side effects of bladder cancer treatment. A study involving healthy weight and breast cancer provided dietary counseling. A small number of patients were enrolled in the initial phase of a clinical study testing new drugs to cure cancer, including an innovative cancer vaccine study. More than 800 participants were enrolled in studies of heart disease. These participants received direct benefits such as smoking cessation counseling, which included counseling and education for pregnant women who smoke. In 2013-2014, the Biomedical Research Advisory Council developed a strategic research plan with specific milestones and results to focus grant funding on health impacts and issues that matter most to Florida’s families.

Florida funds research infrastructure

Studies funded by these programs improved the research infrastructure of the state. Peer-reviewed research expanded the Florida Cancer Registry Data System, the largest cancer registry in the nation, to begin to create a nationally representative cancer research database. State funding for the Florida Translational Research Program Collaborative Drug Discovery Initiative at the Sanford-Burnham Medical Research Institute supported researchers funded through the King and Bankhead-Coley programs working to discover new drugs to cure cancer and tobacco-related diseases.

Florida funds research projects that help the state attract external research funding.

Florida’s biomedical research programs have the distinction of being recognized by the National Cancer Institute. When Florida’s funding is awarded through the rigorous peer-review mechanisms in the biomedical research programs, researchers are able to cite those grants when applying for federal funding. The National Cancer Institute accepts Florida’s grant programs as evidence when conducting peer review, which is particularly important for new researchers, who do not yet have a history of federal funding.

Biomedical Research Advisory Council

The Biomedical Research Advisory Council (Section 215.5602, Florida Statutes) advises the State Surgeon General regarding the direction and scope of the biomedical research program. The responsibilities of the council include, but are not limited to:

- Providing advice on program priorities and emphases;
- Providing advice on the overall program budget;
- Participating in periodic program evaluation;
- Assisting in the development of guidelines to ensure fairness, neutrality, and adherence to the principles of merit and quality in the conduct of the program;
- Assisting in the development of appropriate linkages to nonacademic entities, such as voluntary organizations, health care delivery institutions, industry, government agencies, and public officials;
- Developing criteria and standards for the award of research grants;
• Developing guidelines relating to solicitation, review, and award of research grants and fellowships, to ensure an impartial, high-quality peer review system; and
• Reviewing reports of peer review panels and making recommendations for research grants and fellowships.

Biomedical Research Advisory Council Membership as of June 30, 2014

Daniel Armstrong, Ph.D., Chair, Professor and Executive Vice Chair, Pediatrics, Director, Mailman Center for Child Development, and Senior Associate Dean for Faculty Affairs (Interim) University of Miami Miller School of Medicine. Seat: American Cancer Society Representative.

Mark Brantly, M.D., Co-Chair, Chief, Division of Pulmonary and Critical Care Medicine University of Florida, College of Medicine. Seat: American Lung Association Representative.

Charles Wood, Ph.D., Professor and Chair, Department of Physiology and Functional Genomics, University of Florida College of Medicine. Seat: American Heart Association Representative.

Barbara Centeno, M.D., Director of Cytopathology and Anatomic Pathology Quality Assurance/Moffitt Cancer Center, Professor of Oncologic Sciences and Pathology and Cell Biology/University of South Florida. Seat: House of Representatives.

Randal H. Henderson, M.D., MBA, Associate Medical Director, Proton Therapy Institute Professor of Radiation Oncology, University of Florida, Jacksonville. Seat: House of Representatives.

Edith Perez, M.D., Deputy Director at Large, Mayo Clinic Cancer Center; Director, Breast Cancer Translational Genomics Program, Serene M. and Frances C. Durling Professor of Medicine, Mayo Clinic, Jacksonville. Seat: Senate.

Penny Ralston, Ph.D., Director, Dean Emeritus and Professor, Center on Better Health & Life for Underserved Populations, Institute of Science & Public Affairs, Florida State University. Seat: Senate.


David Decker, MD, Executive Director, Florida Hospital Cancer Institute. Seat: Governor.

Paul Jacobsen, Ph.D., Professor, Division of Population Science, H. Lee Moffitt Cancer Center and Research Institute.
## Bankhead-Coley Cancer Research Program Fiscal Year 2013-2014

<table>
<thead>
<tr>
<th>Grant Recipients</th>
<th>Research Projects</th>
<th>Institution</th>
<th>Award Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chang, Lung-Li</td>
<td>T cell engineering targeting small cell lung cancer</td>
<td>University of Florida</td>
<td>$ 400,000</td>
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<tr>
<td>Chinnaiyan, Prakash</td>
<td>Metabolomic Underpinnings of Malignant Glioma Tumorigenesis</td>
<td>Moffitt Cancer Center</td>
<td>$ 400,000</td>
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<tr>
<td>Copik, Alicja</td>
<td>Establishing Particle-Activated Natural Killer Cell Therapy for Treatment of AML in preclinical NSG Mouse Model</td>
<td>University of Central Florida</td>
<td>$ 400,000</td>
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<tr>
<td>Franzmann, Elizabeth</td>
<td>Early Detection for Smoking-Associated HNSCC</td>
<td>University of Miami</td>
<td>$ 400,000</td>
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<tr>
<td>Hromas, Robert</td>
<td>Targeting histone methylation for triple negative breast cancer</td>
<td>University of Florida</td>
<td>$ 400,000</td>
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<tr>
<td>Ince, Tan</td>
<td>Analysis of Heat Shock Factors in Tumor Stem Cell Regulation</td>
<td>University of Miami</td>
<td>$ 400,000</td>
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<tr>
<td>Komanduri, Krishna</td>
<td>Selective Inhibition of GVHD for Allogeneic Transplantation for Cancer</td>
<td>University of Miami</td>
<td>$ 400,000</td>
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<tr>
<td>Komatsu, Masanobu</td>
<td>Micro-RNA regulation of vascular functions in colorectal cancer</td>
<td>Sanford-Burnham Medical Institute</td>
<td>$ 400,000</td>
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<td>Luesch, Hendrik</td>
<td>Chemistry and Biology of Apratoxins</td>
<td>University of Florida</td>
<td>$ 400,000</td>
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<tr>
<td>Najmunnisa, Nasreen</td>
<td>Micro-RNA Based Novel Targeted Therapy for Malignant Pleural Mesothelioma</td>
<td>University of Florida</td>
<td>$ 400,000</td>
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<td>Pal, Tuya</td>
<td>Investigation of Genetic Risk Assessment for Inherited Breast Cancer (IGRAB)</td>
<td>Moffitt Cancer Center</td>
<td>$ 400,000</td>
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<tr>
<td>Parker, Alexander</td>
<td>Exploration of serum and urine-based bio-markers of benign versus malignant renal masses</td>
<td>Mayo Clinic</td>
<td>$ 400,000</td>
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<tr>
<td>Radisky, Derek</td>
<td>Wnt mediators as breast cancer biomarkers and</td>
<td>Mayo Clinic</td>
<td>$ 400,000</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Institution</td>
<td>Amount</td>
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<tr>
<td>---------------------</td>
<td>------------------------------------------------------------------------</td>
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<tr>
<td>Rakesh Singal</td>
<td>Methylation Profiling in Free Circulating DNA as a Biomarker for Risk Stratification of Prostate Cancer</td>
<td>University of Miami</td>
<td>$ 400,000</td>
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<td>Susan Vadaparampil</td>
<td>Developing Intervention Components to Support Physician Recommendations of HPV Vaccinations in Males</td>
<td>Moffitt Cancer Center</td>
<td>$ 400,000</td>
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<tr>
<td>Jeffrey Weber</td>
<td>Tumor Biomarkers for Outcome with Checkpoint Protein Inhibitors</td>
<td>Moffitt Cancer Center</td>
<td>$ 400,000</td>
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<tr>
<td>Clement Gwede</td>
<td>Latinos CARES (Colorectal cancer awareness, research, education and screening) Project</td>
<td>Moffitt Cancer Center</td>
<td>$ 399,986</td>
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<tr>
<td>Jiandong Chen</td>
<td>Investigation of novel MDM2 and MDMX intra-molecular interactions</td>
<td>Moffitt Cancer Center</td>
<td>$ 399,532</td>
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<tr>
<td>David Meckes</td>
<td>Proteomic Analysis of Cancer Exosomes for Diagnostic and Therapeutic Targets</td>
<td>Florida State University</td>
<td>$ 396,328</td>
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<tr>
<td>Jie Wu</td>
<td>Optimization and Characterization of Shp2 Inhibitors</td>
<td>Moffitt Cancer Center</td>
<td>$ 200,000</td>
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<tr>
<td>Brian Law</td>
<td>Novel Anti-Metastasis Agents Targeting CDCP</td>
<td>University of Florida</td>
<td>$ 100,000</td>
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<tr>
<td>Daiqing Liao</td>
<td>Development of Novel Chemical Inhibitor of p300 for treating triple negative breast cancer</td>
<td>University of Florida</td>
<td>$ 100,000</td>
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<tr>
<td>Barry Rosen</td>
<td>Development of High-throughput Assays to Identify Drugs to Prevent Arsenic Carcinogenesis</td>
<td>Florida International University</td>
<td>$ 100,000</td>
</tr>
<tr>
<td>Grant Recipients</td>
<td>Research Projects</td>
<td>Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Antonia, Scott</td>
<td>Expansion of enduring infrastructure to support lung cancer screening research</td>
<td>Moffitt Cancer Center</td>
<td>$1,600,000</td>
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<tr>
<td>Shenkman, Elizabeth</td>
<td>OneFlorida Cancer Control Network</td>
<td>University of Florida</td>
<td>$1,600,000</td>
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<tr>
<td>Citron, Bruce</td>
<td>Preventing oxidative neurodegeneration after traumatic brain injury</td>
<td>Bay Pines Foundation</td>
<td>$400,000</td>
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<tr>
<td>Cole, Alexander</td>
<td>Utilizing a smoking cessation program to understand how cigarette smoke exacerbates nasal carriage of <em>Staphylococcus aureus</em></td>
<td>University of Central Florida</td>
<td>$400,000</td>
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<tr>
<td>Dong, Chunming</td>
<td>MicroRNA Regulation of Smoking Induced Endothelial Progenitor Senescence</td>
<td>University of Miami</td>
<td>$400,000</td>
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<td>Hayward, Linda</td>
<td>Impact of nicotine exposure on prenatal infection and a lifelong predisposition for cardiovascular disease</td>
<td>University of Florida</td>
<td>$400,000</td>
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<tr>
<td>Kapiloff, Michael</td>
<td>Therapeutic Targeting of RSK3 in Heart Failure</td>
<td>University of Miami</td>
<td>$400,000</td>
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<tr>
<td>Lu, Jianrong</td>
<td>A novel ubiquitin ligase in epithelial maintenance against tobacco smoke and lung cancer progression</td>
<td>University of Florida</td>
<td>$400,000</td>
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<tr>
<td>Ma, Teng</td>
<td>Translation of Human Mesenchymal Stem Cell Therapy for Stroke Treatment: Bioreactor Expansion, Functional Activation, and Intranasal Delivery</td>
<td>Florida State University</td>
<td>$400,000</td>
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<tr>
<td>Palacio, Ana</td>
<td>Improving Adherence to Cholesterol Lowering Medications among Minority Populations in Florida: A Randomized Trial</td>
<td>University of Miami</td>
<td>$400,000</td>
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<tr>
<td>Salihu, Hamisu</td>
<td>Preventing fetal body and brain size reduction in low-income smoking mothers; a randomized clinical trial</td>
<td>University of South Florida</td>
<td>$400,000</td>
</tr>
<tr>
<td>Grant Recipients</td>
<td>Research Projects</td>
<td>Institution</td>
<td>Award Amount</td>
</tr>
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<tr>
<td>Jiandong, Chen</td>
<td>Nucleolar silencing and maintenance of cellular senescence</td>
<td>Moffitt Cancer Center</td>
<td>$ 399,920</td>
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<tr>
<td>Jose-Miguez, Maria</td>
<td>Menthol or NOT Menthol: How Smoking is related to bone mineral density in people with and without HIV</td>
<td>Florida International University</td>
<td>$ 399,659</td>
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<tr>
<td>Brandon, Thomas</td>
<td>Translating Extinction Research to Improve Pharmacotherapy for Tobacco Dependence: Intervention Development and Feasibility Trial</td>
<td>Moffitt Cancer Center</td>
<td>$ 397,834</td>
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<tr>
<td>Brandon, Thomas</td>
<td>Feasibility of recruiting low-income Hispanic women for postpartum smoking intervention</td>
<td>Moffitt Cancer Center</td>
<td>$ 197,412</td>
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<tr>
<td>Willing, Allison</td>
<td>HLA Interactions with human cord blood cells in a humanized mouse model of stroke</td>
<td>University of South Florida</td>
<td>$ 150,000</td>
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<td>Smith, Layton</td>
<td>Optimization of Novel Apelin Receptor Antagonists for the treatment of AMD</td>
<td>Sanford-Burnham Medical Institute</td>
<td>$ 100,000</td>
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<tr>
<td>Stone, Geoffrey</td>
<td>Novel Cancer Therapy Targeting Lung Tumors for Autophagy and Antitumor immunity</td>
<td>University of Miami</td>
<td>$ 100,000</td>
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<tr>
<td>Bolser, Donald</td>
<td>An external device for rehabilitation of airway protective behaviors</td>
<td>University of Florida</td>
<td>$ 98,422</td>
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### Federal Research Funding 2013

<table>
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<tr>
<th>State</th>
<th>NIH Funding</th>
<th>Rank</th>
<th>Total (NIH, CDC, NSH, AHRQ)*</th>
<th>Rank</th>
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<td>California</td>
<td>3,334,417,000</td>
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<td>4,985,551,000</td>
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<td>Massachusetts</td>
<td>2,384,194,000</td>
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<td>2,991,956,000</td>
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<td>New York</td>
<td>1,946,868,000</td>
<td>3</td>
<td>2,839,882,000</td>
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<td>Maryland</td>
<td>1,590,089,000</td>
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<td>2,050,901,000</td>
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<td>Pennsylvania</td>
<td>1,387,998,000</td>
<td>5</td>
<td>1,863,196,000</td>
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<td>North Carolina</td>
<td>1,037,787,000</td>
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<td>1,386,026,000</td>
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<tr>
<td>Texas</td>
<td>956,595,000</td>
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<td>1,690,571,000</td>
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<tr>
<td>Washington</td>
<td>835,212,000</td>
<td>8</td>
<td>1,126,004,000</td>
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<tr>
<td>Illinois</td>
<td>760,095,000</td>
<td>9</td>
<td>1,322,208,000</td>
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<td>Ohio</td>
<td>685,297,000</td>
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<td>971,411,000</td>
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<td>Michigan</td>
<td>575,889,000</td>
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<td>954,657,000</td>
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<td>Minnesota</td>
<td>493,986,000</td>
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<td>Tennessee</td>
<td>456,096,000</td>
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<td>Georgia</td>
<td>450,949,000</td>
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<td>798,615,000</td>
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<td>Connecticut</td>
<td>444,605,000</td>
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<td>578,344,000</td>
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<td>Florida</td>
<td>435,070,000</td>
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<td>904,179,000</td>
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<tr>
<td>Missouri</td>
<td>409,220,000</td>
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<td>561,028,000</td>
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<td>Wisconsin</td>
<td>371,985,000</td>
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<td>590,213,000</td>
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<tr>
<td>Virginia</td>
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<td>651,724,000</td>
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<tr>
<td>Colorado</td>
<td>316,251,000</td>
<td>20</td>
<td>776,950,000</td>
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</table>


* [www.researchamerica.org](http://www.researchamerica.org)
Total Follow-on Funding Awards Reported by Grantees: $9,390,513

2. Velazquez, Omaida C., King (2013) Role of the Notch Signaling in atherosclerosis & Stem Cell-Mediated Arterial Repair. NIH, $521,269.00
3. Fang, Jia, King (2013) MPP8-Mediated Epigenetic Network and Its Roles in Tumor Progression. NIH/NCI, $1,748,187.00
4. Reisman, David, Bankhead-Coley, (2012) Establishing that BRM polymorphisms are predictive of lung cancer risk. NCI, $141,000.00
5. Reisman, David, Bankhead-Coley, (2012) Determining if BRM polymorphisms are predictive of Cancer Risk in African Americans, NCI, $200,000.00
6. George TJ, Bankhead-Coley (2012) Mucosal Inflammation and Digestive Cancer Correlation Science Biorepository, NIH/NCATS, $20,000.00
8. Borlongan, Cesar V., King (2011) Battlefield-Related Injury Translational Research, Post-traumatic Disease and Disability - Veterans Re-Integration Strategy, DOD, $1,800,000.00

Publications in peer reviewed journals

Researchers reported 74 new publications in peer-reviewed journals between July 1, 2013 and June 30, 2014 based on Florida’s research funding from the King and Bankhead Coley research programs.

7. Blackstock CD1, Higashi Y, Sukhanov S, Shai SY, Stefanovic B, Tabony AM, Yoshida T, Delafontaine P. Insulin-like growth factor-1 increases synthesis of collagen type I via induction of the mRNA-binding protein LARP6 expression and binding to the 5’ stem-loop of COL1a1


*indicates senior authorship.


Background

Since 2001, the Florida legislature has recognized the need to support vital research conducted in both academic and private institutions throughout the state through the James and Esther King Biomedical Research Program (Section 381.922, Florida Statutes) and the Bankhead-Coley Cancer Research Program (Section 215.5602, Florida Statutes). This funding has improved the health of Florida’s families, expanded the research infrastructure of the state, and bolstered efforts to bring external research funding to the state.

The purpose of the James and Esther King Biomedical Research Program is to seek cures in tobacco-related diseases. Heart disease is the second leading cause of death in Florida. Diseases related to tobacco, such as emphysema, chronic obstructive pulmonary disease, and other chronic lower respiratory diseases, were the third leading cause of death in 2012. The King program funds research initiatives that seek new insights and innovative solutions in the prevention, diagnosis, treatment, and cure of Floridians afflicted by cardiovascular disease, stroke, lung disease and tobacco-related cancers.

The William G. "Bill" Bankhead, Jr., and David Coley Cancer Research Program advances progress toward cures for cancer. Cancer is now the leading cause of death for Floridians, surpassing heart disease. Florida has the second highest cancer burden in the nation. In the three year period from 2009-2011 (the latest time period that national data are available), the total number of cancer deaths was 122,921. On average, 100,000 new cancers are diagnosed in Florida every year. Funding through the Bankhead-Coley program significantly improves cancer research and treatment in the state.

The Biomedical Research Advisory Council (BRAC) (Section 215.5602, Florida Statutes) advises the State Surgeon General as to the direction and scope of the biomedical research program.

**BRAC Membership:**

Daniel Armstrong, Ph.D., Chair, Professor and Executive Vice Chair, Pediatrics, Director, Mailman Center for Child Development, University of Miami Miller School of Medicine. Seat: American Cancer Society Representative.
Mark Brantly, M.D., Co-Chair, Chief, Division of Pulmonary and Critical Care Medicine University of Florida, College of Medicine. Seat: American Lung Association Representative.

Charles Wood, Ph.D., Professor and Chair, Department of Physiology and Functional Genomics, University of Florida College of Medicine. Seat: American Heart Association Representative.

Barbara Centeno, M.D., Director of Cytopathology and Anatomic Pathology Quality Assurance/Moffitt Cancer Center, Professor of Oncologic Sciences and Pathology and Cell Biology/University of South Florida. Seat: House of Representatives.

Randal H. Henderson, M.D., MBA, Associate Medical Director, Proton Therapy Institute Professor of Radiation Oncology, University of Florida, Jacksonville. Seat: House of Representatives.


Edith Perez, M.D., Deputy Director at Large, Mayo Clinic Cancer Center; Director, Breast Cancer Translational Genomics Program, Serene M. and Frances C. Durling Professor of Medicine, Mayo Clinic, Jacksonville. Seat: Senate.

Penny Ralston, Ph.D., Director, Dean Emeritus and Professor, Center on Better Health & Life for Underserved Populations, Institute of Science & Public Affairs, Florida State University. Seat: Senate.

Claes Wahlestedt, M.D., Ph.D., Professor and Vice Chair (Research), Dep. of Psychiatry and Behavioral Sciences, Associate Dean for Therapeutic Innovation, Director, Center for Therapeutic Innovation, Hussman Institute for Human Genomics, University of Miami Miller School of Medicine. Seat: Governor.

Introduction

The purpose of this strategic plan for Florida’s biomedical research funding is to specify defined objectives to be accomplished in specific time frames. This will allow the people of Florida to evaluate the health impacts of the research funded through the James and Esther King Program and the Bankhead-Coley Cancer Research Program.

This strategic plan defines the Biomedical Research Advisory Council’s substantive areas of focus, and specifies timeframes for evaluating success at one year, three years, five years, and
ten years to guide funding opportunities issued by the Department of Health. The strategic plan focuses on the health impact of research and making Florida a destination for cancer care and research. Although this research agenda articulates substantive areas of focus, decisions about fund awards are always made through a competitive, peer-reviewed process. Because cancer and tobacco-related diseases have disparate impacts on Floridians, health equity and opportunity are addressed throughout, including efforts to foster collaborations among institutions, researchers, and community practitioners. This strategic plan demonstrates our commitment to transparency in communicating program priorities. One priority is to increase collaboration by enhancing the ability of Florida researchers to participate in existing alliances and groups, and prevent duplication of studies.

Some substantive goals will take years to realize because the answers we seek require fundamental discoveries in basic science, translation to clinical studies, and then implementation in clinical practice. The time from basic science to implementation in clinical practice can take ten years or more. To achieve the longer-term goals we have identified intermediate goals that can be used to evaluate progress.

During the first year, we recommend issuing a funding opportunity for incidence/prevalence measurement targets so we can improve our ability to measure the health impact of the Strategic Plan. Within three years we recommend issuing a funding opportunity for descriptive studies of barriers, intervention targets, and treatment/intervention trials. Within five years we recommend funding to conduct interim measurement of strategic outcomes, including:

- 20% of Florida-funded investigator studies (between 2008-2016) leading to follow-on extramural (NCI Comprehensive qualifying grants excluding State of Florida funded grants)
- Improvements in health outcomes based on funded projects
- Progress on collaborative research efforts
- Florida’s progress on becoming a destination site for cancer care and cancer research

**Strategic Goals**

- Conduct research with a focus on prevention and improved treatment or care delivery that contributes to decreased deaths in lung cancer by 15%, breast cancer by 15%, prostate cancer by 20%, colon cancer by 25%, and melanoma by 15% within 10 years.
- Develop research that contributes to reductions in deaths due to lung cancer by 30%, breast cancer by 30%, prostate cancer by 30%, colon cancer by 30%, and melanoma by 30% resulting from health disparities due to race, ethnicity, or income within 10 years.
- Improve screening accuracy, detection of high risk subgroups, and/or improved implementation of cancer screening program that result in a 20% increase in early detection of cancer or preventable cancer within 10 years.
- Establish at least five Investigational New Drug (IND)/Investigational Device Exemption (IDE)s based on Florida investigator drug discovery, biologic, or other therapeutics that result in at least two multi-center collaborative clinical trials within 10 years.
• Develop innovative basic and clinical research studies focused on lower incidence of high mortality/high morbidity cancers (e.g., sarcomas, pancreatic tumors, CNS tumors, myeloma, leukemia/myelodysplastic syndrome) that result in significant improvement in survival/quality of survival in adults and children in at least two of these cancers.

• Design research protocols that lead to academic-industry development of five new biotechnology products/companies that subsequently obtain incremental commercial funding (beyond Florida funding) within 10 years.

• Reduce tobacco use in children and adolescents to less than 4% and adults to less than 15% within 10 years.

• Enhanced understanding of the relationship between obesity, healthy weight, and cancer.

• Expand upon research that improves scientific understanding of causes and subsequent impact of cancer/cancer-treatment related morbidities in other systems (e.g., cardiovascular, pulmonary, endocrine, lymphatic, CNS, reproductive, developmental).

Tactics

• Fund peer-reviewed grants for shared research infrastructure
  o Existing: genetics/genomics, imaging & and imaging bank, radiation oncology, organize existing tissue banks, drug development, pathology cores
  o New: develop statewide genomics bank (full sequencing of cancer patients) with linkages to trial treatment and outcomes- pharmacogenomics and epigenomics (part of clinical trials infrastructure)- also applies to health disparities
  o New: Statewide bioinformatics for cancer
  o Utilize and expand existing clinical trials infrastructure for: Phase I/Phase II, Phase III/IV trials in the state
  o New: develop and expand investigator/community research network infrastructure to support health disparities research with high-risk populations that have multiple barriers to engagement.
  o Integrated planning grants for strategic goals and outcome reporting
  o Common quality indicator data system
  o Improve regulatory process (e.g., State institutional review board or multi-center)

• Fund recruitments in areas that are not existent or inadequate for those goals (shared resource for the state)
  o Program recruitments that target strategic objectives
  o Recruitment/training of research support staff, research for core shared resources: augment currently existing programs, outcome goal for entire program

• Fund investigator initiated projects prioritized by potential impact:
  o Discovery science
  o New drug development
  o Prevention and Cancer Control
  o Screening and Detection
  o Health Services Outcomes and Access To Care
  o Clinical Trials
  o Comparative Effectiveness Research
  o Population Science
- Health Disparities
- Obesity

- Funds for different research model
  - New Investigators
  - Bridge funding
  - Investigator-initiated
  - Team Science
  - Technology Transfer
  - Comparative Effectiveness Research
  - Targeted Request for Applications

- Fund research that optimizes public-private partnerships in discovery science and health services research
  - Tech transfer
  - Health system, insurer

- Funding for conferences, cancer strategic plan summit

- Transdisciplinary interactions