

# **Scripps Florida Funding Corporation Seventh Annual Report**

**For the Year Ended September 30, 2010**



## **2010 BOARD OF DIRECTORS**

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**Scripps Florida Funding Corporation**  
**Seventh Annual Report**

**For Year Ended September 30, 2010**

**INTRODUCTION**

Florida Statute 288.955 (the “Enabling Statute”) created Scripps Florida Funding Corporation (“SFFC”) to facilitate the establishment and operation of a biomedical research institution for the purposes of enhancing education and research and promoting economic development and diversity. In addition, the Enabling Statute charged SFFC with the obligation to assure the compliance by The Scripps Research Institute (“TSRI”) with the Enabling Statute and the agreement between SFFC and TSRI (the “Operating and Funding Agreement”). The Enabling Statute provides that SFFC shall prepare or obtain certain reports, audits, and evaluations of TSRI’s compliance with the performance expectations and disbursement conditions contained in the Enabling Statute. As such, SFFC is submitting this Annual Report to the Governor, the President of the Senate, and the Speaker of the House, as required by the Enabling Statute to be submitted by December 1 of each year. This SFFC Annual Report addresses the activities and outcomes of SFFC and Scripps Florida (“Scripps”) for the fiscal year ended September 30, 2010 (“Fiscal 2010”). The Scripps Florida Annual Report addressed the activities and outcomes of Scripps Florida for the year ended June 30, 2010, and SFFC received the Scripps Florida Annual Report on August 28, 2010. The information in the Scripps Florida Annual Report was informally updated for this SFFC Annual Report.

This SFFC Seventh Annual Report is presented in two parts: first, a summary that highlights the substantial events that have occurred during the year ended September 30, 2010; and second, an itemized report that corresponds with the applicable sections of the Enabling Statute.

### **About the Scripps Florida Funding Corporation**

In November 2003, Governor Bush signed into law an historic piece of legislation that laid the framework for The Scripps Research Institute to expand its world-renowned scientific research and endeavors into Florida. The bill, passed by the Florida Legislature during special session, provided a one-time investment of \$310 million from federal economic stimulus monies to create Scripps Florida and pay certain expenses for the first seven years, specifically salaries and equipment purchases. In June 2006, The Scripps Research Institute revised the Scripps Florida business plan and scheduled disbursements from the State, which expanded their grant funding to ten years, or through 2014.

To oversee the investment and spending of the State's investment in Scripps Florida, the Florida Legislature created the Scripps Florida Funding Corporation, hereto referred to as SFFC, a non-profit entity comprised of a nine-member Board of Directors and one ex-officio member. The role of SFFC was enunciated by Governor Bush:

“My vision for this board is that it manages the financial portion of our partnership, but lets Scripps do what it does best – conduct biomedical research.”

This report serves to report on both the requirements and the aspirations as set forth by the State in the Operating and Funding Agreement with Scripps.

### **About the Scripps Research Institute**

The Scripps Research Institute, headquartered in La Jolla, California, in 15 buildings on 22 acres overlooking the Pacific Ocean, is one of the world's largest independent, non-profit biomedical research organizations. It stands at the forefront of basic biomedical science that seeks to comprehend the most fundamental processes of life. Scripps is internationally recognized for its research into immunology, molecular and cellular biology, chemistry, neurosciences, autoimmune, cardiovascular and infectious diseases, and synthetic vaccine development. Established in its current configuration in 1961, it employs approximately 3,000 scientists, postdoctoral fellows, scientific and other technicians, doctoral degree graduate students and administrative and technical support personnel.

### **About Scripps Florida**

Scripps Florida, in the Town of Jupiter in Palm Beach County, Florida, sits on 100 acres adjoining the Florida Atlantic University campus. Over 370 scientists, technicians, and administrative staff work in the 345,000 square-foot, state-of-the-art biomedical research facility which opened in March 2009. Scripps Florida focuses on basic biomedical science, drug discovery and technology development. In addition to the one-time grant from the State of Florida, Palm Beach County provided an economic package that included funding for land and construction of the current permanent facility and related costs.

## **Scripps Florida Funding Corporation Board of Directors and Meetings**

Of the nine-member Board of Directors, three Directors are appointed by each of the Governor, House Speaker and the Senate President. The terms of the directors initially ranged from one to four years and expire on a staggered schedule.

Mr. David Gury of Boca Raton serves as Chair of the Board of Directors and Dr. Pamela Dana of Destin as Vice-Chair. Both were elected to that capacity in November 2008 and subsequently re-elected. Mr. C. Gerald (Gerry) Goldsmith was appointed to the Board by Senate President Jeff Atwater on November 15, 2009 and Mr. Chris Hart, IV, replaced Dr. Dale Brill in an ex-officio capacity upon his appointment as Interim Director of the Office of Tourism, Trade and Economic Development on January 1, 2010.

Other SFFC Directors who served during the fiscal year include: Mr. F. Andy Crawford, Mr. T. Michael Crook, Mr. Ed Sabin, Mr. Chris Sullivan, Dr. Joseph Thomas, and Ms. Anne Chinoda until her resignation on March 10, 2010.

From October 1, 2009 through September 30, 2010, the SFFC Board of Directors (“BOD”) held four meetings, one of which was in-person. At the November 25, 2009 meeting, the Board reviewed and approved the annual report. On January 27, 2010 the Board approved the 2010 SFFC budget and renewed insurance policies for the Board. The Board of Directors met on March 5, 2010 in-person at Scripps Florida and unanimously approved the grant request for Scripps Florida’s funding for Year 7. On August 3, 2010, the Board of Directors heard reports from the Audit and Investment Committees and approved an amendment to the SBA Trust Agreement.

## **Scripps Florida Institutional Milestones**

Over the past year, Scripps Florida continued to progress as a world-class research institute. The scientists worked to discover new technologies, attract significant amounts of funding from sources other than the State of Florida, including Federal stimulus funds, establish educational programs and collaborate with other scientists both within Florida and around the world. As of September 30, 2010, Scripps Florida employed 377 people and had received over \$188 million in research support from non-state sources. Over 100 patent applications have been filed by Scripps Florida, four spin-out businesses have been established and Scripps Florida technology has been licensed 47 times.

- ❖ In October 2009, **Scripps scientists were awarded a \$3.9 Million “Transformative” Federal grant to develop a new compound screening platform.** A pair of scientists from The Scripps Research Institute, one on each coast, were awarded a five-year \$3.9 million grant from the National Institutes of Health (NIH) to develop a new technology to accelerate the search for new protein ligands – compounds that bind to proteins and alter their function. The grant was awarded as part of the NIH’s new Roadmap Transformative R01 Program, which was launched in 2009 to support exceptionally innovative, high risk, original, and/or unconventional research projects that have the potential to create or overturn fundamental scientific paradigms.
- ❖ The National Institutes of Health has **awarded a three-year grant of more than \$1.2 million to The Scripps Research Institute** to develop a series of high-throughput screening tests that will help speed the discovery of potential small molecule therapies for breast cancer and cardiovascular disease. Patrick Griffin, chair of the Scripps Research Department of Molecular Therapeutics and director of the Translational Research Institute at Scripps Florida, will lead the project as principal investigator. The grant began in January 2010.
- ❖ In February 2010, **Scripps Florida celebrated its one year anniversary of the opening of the permanent research facility.** A public celebration was hosted by The Gardens Mall at Palm Beach Gardens, with a series of special events which culminated in a day of public education and interactive science exhibits on February 6, 2010.
- ❖ Scripps Florida announced a collaboration with Moffitt Cancer Center in March 2010 with a grant award. **Moffitt Cancer Center, in collaboration with researchers at Scripps Florida was awarded a five-year, nearly \$2 million grant from the National Cancer Institute** to design lymph nodes for cancer immunotherapy. A patient diagnosed with cancer has a dysfunctional immune system either because of the tumor or the treatment being used to eradicate the tumor. These designer lymph nodes will help rebuild a patient’s immune system in order to help fight disease. Researchers also hope to increase the potency of vaccines. The Moffitt researchers are partnering with John Cleveland, Ph.D., and Juliana Conkright, Ph.D., at Scripps Florida, who will be using high-throughput screening technologies to rapidly select the candidate genes to use in creating the human lymph nodes.

- ❖ In March 2010, Scripps Florida received **three new grants from the Philadelphia-based Margaret Q. Landenberger Research Foundation**, totaling more than \$400,000. The new funds will support scientific research by Professor Donny Strosberg and Assistant Professor Nagi Ayad, as well as a special conference for non-profit organizations hosted by Scripps Florida.
- ❖ In April 2010, The Scripps Research Institute announced it was **awarded a \$1.3 million grant by the NIH to develop a series of tests at its Florida campus** to help explore the potential of a protein that has emerged as a highly attractive target for the treatment of obesity and Type 2 diabetes. Patricia McDonald, an associate scientific director in the Translational Research Institute at Scripps Florida and an assistant professor in the Department of Molecular Therapeutics, is the principal investigator for the three-year project funded by the NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).
- ❖ In May 2010, Scripps Florida announced that it had been **awarded a pair of grants totaling \$6 million by the NIH** to develop new therapeutic approaches to alcohol addiction and Fragile X syndrome, a form of inherited mental retardation that has often been linked to autism. Claes Wahlestedt, M.D., Ph.D., a professor in the Departments of Neuroscience and Molecular Therapeutics at Scripps Florida, is the principal investigator for both projects.

“The majority of the work in our laboratory is about drug discovery,” Wahlestedt said. “So even though we have targeted two completely different disorders, both grants focus on expanding our drug discovery platforms significantly. The NIH has become very attuned to the drug discovery potential of places like Scripps Research. Since the pharmaceutical industry has shown little interest in disorders like alcoholism, even Fragile X syndrome, if we want better drugs to treat these conditions, they will have to come from academic institutes like ours.”

- ❖ Beginning in July 2010, **The Florida Biomedical Research Program awarded \$2 million in biomedical research grants to three scientists from the Florida campus of The Scripps Research Institute**. The multi-year funding will help fuel development of advanced cancer therapies. This year's awards went to Glenn Micalizio, an associate professor in the Scripps Research Department of Chemistry, who will receive \$1,199,600 over five years; Thomas Bannister, assistant professor of medicinal chemistry and associate scientific director of Scripps Florida's Translational Research Institute, who won a grant of \$400,000 over three years; and Douglas Kojetin, an assistant professor in the Molecular Therapeutics Department, who also won \$400,000 over three years.

The highly competitive grants from the Florida Biomedical Research Program support innovative research into the prevention, diagnosis, treatment, and/or cure of cancer and tobacco-related diseases. Funding comes primarily from taxes collected from the sale of tobacco products.

- ❖ Also in July 2010, Scripps announced that a pair of scientists on the Florida campus had been **awarded a \$2.3 million grant by the National Institutes of Health to conduct research relevant to developing new treatments for drug addiction.** Patricia McDonald, an associate scientific director in the Translational Research Institute at Scripps Florida and an assistant professor in the Department of Molecular Therapeutics, and Theodore Kamenecka, an associate scientific director in the Translational Research Institute, are co-principal investigators for the five-year project funded by the NIH's National Institute on Drug Abuse (NIDA).

The research will focus on identifying compounds that affect the Neurotensin receptor (NTSR1), a receptor that appears to play a significant role in drug addiction because of its ability to alter levels of the neurotransmitter dopamine in the brain.

- ❖ Scripps announced several philanthropic successes throughout the year.

The **Richard and Helen DeVos Foundation donated \$100,000** to The Scripps Research Institute that will be used to jump start a new philanthropic drive to **expand the graduate school program at Scripps Florida**, which is part of Scripps Research's Kellogg School of Science and Technology. The new funding initiative offers donors the chance to name a seat in the Rodney B. Fink Education Pavilion on the Jupiter campus and is spearheaded by a committee made up of Scripps Florida Council members and other friends of Scripps Research and chaired by Jane Halbritter, a well-known New York-Florida businesswoman and philanthropist.

**Phillip Frost, a Miami physician, businessman, and philanthropist, and his wife, Patricia Frost, gave \$1 million to Scripps Florida.** This donation, announced in December 2009, is the second million-dollar gift the Frosts have made to Scripps Florida. The Frosts are long-time supporters of the arts and education.

**Elizabeth M. Fago, a successful Palm Beach Gardens business executive and philanthropist, donated \$1 million to Scripps Florida.** Announced in December 2009, this was the second million-dollar gift by Fago, one of the earliest and strongest supporters of the Institute. In 2004, she was the first to pledge \$1 million to support Alzheimer's disease research at the institute. In recognition of her generous gifts and her longstanding support, Fago was given the title Scripps Florida Founder, and the library in the new biomedical facility will be named The Elizabeth M. Fago Library.

- ❖ **Scripps Florida's Ph.D. program, part of the Kellogg School of Science and Technology, had seven new graduate students entered the program in fall 2010.** Of the seven students who entered the program, one has an undergraduate degree from the University of Miami and a second has an undergraduate degree from Florida State University. Of the 30 students in the Scripps Florida graduate program as of September 2010, eight have a Florida connection, meaning they earned an undergraduate degree from a Florida college or university or are a native Floridian who earned an undergraduate degree out of state.

- ❖ **In June 2010, Scripps finalized an agreement with Florida Atlantic University (FAU) to establish an innovative MD-Ph.D. program.** It is predicted that the first applications for admission into this program will be accepted upon accreditation of the program, anticipated to occur in February 2011. The first students will take classes in fall 2011. Students will spend their first three years as medical students at FAU, then begin the doctorate program at Scripps in the fourth year of the medical program. During the first three years, medical students will take two to three special topics courses with Scripps Florida faculty members to enable the students to identify research mentors and to make a smooth transition into the Ph.D. program.

### **Scripps Florida Research Milestones**

#### **Scripps Research Scientists Identify Novel Hepatitis C Inhibitors**

In December 2009, scientists from Scripps Florida and their colleagues at Boston University announced their discovery of several novel drug-like inhibitors of the hepatitis C virus (HCV). These new inhibitors have the potential to substantially widen the current options to treat HCV infection.

The research, from the laboratory of Professor Donny Strosberg, Ph.D., of Scripps Florida, supported by members of the Scripps Florida Lead Discovery Division directed by Peter Hodder, Ph.D., and colleagues from Boston University, was published in the December 2009 edition of the journal *ASSAY and Drug Development Technologies* and appears in the December 15, 2009 print edition of the journal *Bioorganic & Medicinal Chemistry Letters*.

With more than 130 million people infected worldwide by HCV, new therapeutic strategies are urgently needed for this blood-borne disease, which is the main cause, with hepatitis B, of liver cancer, according to the National Cancer Institute.

Using a new fluorescence-based assay, the scientists were able to identify four small-molecule inhibitors of dimerization of the viral core protein. In this process, which is essential to the survival of the virus, the core protein binds to itself and related proteins to form the viral capsid, the outer lipid-encapsulated protein shell that protects the virus's genetic material like an eggshell protects its yolk sack.

#### **Scientists Show "Lifeless" Prions Capable of Evolutionary Change and Adaptation**

Scientists from The Scripps Research Institute have determined for the first time that prions, bits of infectious protein devoid of DNA or RNA that can cause fatal neurodegenerative disease, are capable of Darwinian evolution.

The study from Scripps Florida in Jupiter shows that prions can develop large numbers of mutations at the protein level and, through natural selection, these mutations can eventually bring about such evolutionary adaptations as drug resistance, a phenomenon previously known to occur only in bacteria and viruses. These breakthrough findings also

suggest that the normal prion protein—which occurs naturally in human cells—may prove to be a more effective therapeutic target than its abnormal toxic relation.

The study was published in the December 31, 2009 issue of the journal *Science Express*, an advance, online edition of the prestigious journal *Science*.

### **LoGrasso Lab Develops the First New Class of Potential Therapies for Neurodegenerative Disease to Pass the Blood-Brain Barrier**

In a new study published in the January 7, 2010 print edition of *Journal of Medicinal Chemistry*, LoGrasso, an associate professor and senior director for drug discovery at Scripps Florida, and his team have developed a number of potent and highly selective small molecules that not only pass the blood-brain barrier but are very good at inhibiting a key kinase that plays an essential role in neurodegenerative disorders.

The blood-brain barrier was first noticed by Paul Ehrlich, a 19<sup>th</sup> century German scientist, who, after injecting dyes into the bloodstream, discovered that they leaked out everywhere except into the brain. He pushed the experiment a bit further, injecting the dye directly into the brain itself. This time, while the brain picked up the dye, nothing else did. Still, it would be well into the 1960s for the existence of the blood-brain barrier to be confirmed.

The blood-brain barrier will, however, let through small soluble molecules, like the kind just produced by Phil LoGrasso and his colleagues in the Translational Research Institute at Scripps Florida, a division of The Scripps Research Institute.

### **Top Scientists Explore the Origin of Life in Annual Lasker Lecture at Scripps Research Institute Florida Campus**

In March 2010, biologist Jack Szostak and chemist Brian Paegel presented at the annual Lasker Foundation Lecture on the Florida campus of the Scripps Research Institute. Recent laboratory experiments which seek to recreate the formation of the first living cells from the basic chemical building blocks of nature are shedding new light on how life may have occurred on earth and on other planets, they said. The presenters offered new insight into answering two fundamental questions: How did living cells first form on earth and could they form the same way on other planets?

The Lasker Lecture is part of a series of forums presented by the Lasker Foundation designed to support and promote a public dialogue over critical issues involving the biological sciences. The lectures were followed by a public discussion moderated by Robert Bazell, chief science and health correspondent of NBC News.

### **Team Shows Therapy-Induced Inflammatory Response Speeds Up Development of Therapy-Resistant Prostate Cancer**

In a study involving an international cast of researchers, including those from the Florida campus of The Scripps Research Institute, a team has solved the mystery of why prostate cancer almost always develops into dangerous hormone-refractory cancer after androgen-deprivation therapy—a standard treatment for advanced prostate cancer. Hormone-refractory prostate cancer is responsible for most deaths from the disease.

The study was published in the March 11, 2010 edition of the journal *Nature*.

The scientists found that the progression of hormone-refractory prostate cancer is associated with an inflammatory response triggered by the death of the hormone-deprived primary cancer, according to Jun-Li Luo, Ph.D., an assistant professor in the Department of Cancer Biology at Scripps Florida who is the co-first author of the study. In addition, other critical elements of this response are tumor-infiltrating B cells, part of the immune system, which help stimulate hormone-independent cancer growth. According to the data collected from animal models, the interruption of this inflammatory response could delay the onset of hormone-refractory prostate cancer by up to three years.

### **Scientists Uncover Previously Unknown Natural Mechanism that Controls Cocaine Use**

Scientists from The Scripps Research Institute have found that a particular type of genetic material plays a key role in determining vulnerability to cocaine addiction and may offer an entirely new direction for the development of anti-addiction therapies. In animal studies, the scientists found that a molecule called microRNA-212 was increased in the brains of test animals that had extended access to cocaine. MicroRNA-212 controlled how much cocaine the animals consumed.

The study was published on July 8, 2010, in an advance, online edition of the prestigious journal *Nature*.

"The key question that the study may answer is why one person is more vulnerable to the effects of cocaine than another," said team leader Paul Kenny, Ph.D., an associate professor in the Department of Molecular Therapeutics at Scripps Florida. "What we found is that a specific microRNA exerts enormous control over the response to the drug. When it is increased in the brain, it protects against addictive behavior, while a reduction raises vulnerability to addictive behaviors. The practical outcome of increased microRNA-212 expression is that it slams the brakes on any desire to take the drug."

### **Scripps Research Institute and Dana-Farber Scientists Uncover Novel Anti-Diabetes Mechanism**

In a joint study, scientists from The Scripps Research Institute and the Dana-Farber Cancer Institute at Harvard University uncovered a novel mechanism that dramatically increases insulin sensitivity and reduces the risk of developing type II diabetes and cardiovascular disease. These findings offer a potent new target in the continuing search for new and improved anti-diabetic treatments. Currently, nearly 24 million children and

adults in the United States have some form of the disease, according to the America Diabetes Association.

The new study, which focuses on controlling a fat-regulating protein known as PPAR $\gamma$ , was published July 22, 2010, in the journal *Nature*.

"The field has become interested in finding drugs that can promote increased insulin sensitization but not activate the classical fat cell generating pathway of PPAR $\gamma$ ," said Patrick R. Griffin, Ph.D., chair of the Department of Molecular Therapeutics at Scripps Florida who headed up the Scripps Research part of the study. "We examined the mechanism of action of compounds that bind to PPAR $\gamma$  that improve insulin sensitivity but have minimal induction of fat. It was clear from the studies that these compounds have a unique but overlapping mechanism with the class of drugs used clinically that target PPAR $\gamma$ ."

Adipose or fat tissue lies at the center of the metabolic syndrome, a cluster of risk factors that increases the possibility of type II diabetes, as well as stroke, coronary artery disease, even certain cancers. Of those risk factors, excessive body fat is considered the most problematic. PPAR $\gamma$  can be considered the master gene of fat cell biology because it drives the conversion of cellular precursors into fat cells.

### **Team Led by Scripps Research Scientist Identifies New Gene for Memory**

Scripps Florida announced in September 2010 that a team led by a Scripps Research Institute scientist has for the first time identified a new gene that is required for memory formation in *Drosophila*, the common fruit fly. The gene may have similar functions in humans, shedding light on neurological disorders such as Alzheimer's disease or human learning disabilities. The study was published in the September 9, 2010 edition of the journal *Neuron*.

"This is the first time we have a new memory and learning gene that lies outside what has been considered the most fundamental signaling pathway that underlies learning in the fruit fly," said Ron Davis, chair of Scripps Research Department of Neuroscience who led the study. "Since many of the learning and memory genes originally identified in the fruit fly are clearly involved in human neurological or psychiatric diseases, this discovery may offer significant new insights into multiple neurological disorders. We're definitely in the right ballpark."

## **Scripps Florida Faculty Milestones**

### **Courtney Miller, Nationally Known Memory Researcher, Appointed to Metabolism and Aging Faculty**

In November 2009, Scripps Florida appointed Courtney Miller, Ph.D. as an assistant professor in the Department of Metabolism and Aging and the Department of Neuroscience. Miller is focused on research that seeks to understand the neurobiology of memory disorders, ranging from aberrations closely associated with drug addiction to age-related memory decline, with the goal of developing novel therapeutics. She was a scientific director and instructor in the Department of Neurobiology and McKnight Brain Institute at the University of Alabama before arriving at Scripps Florida.

In addition to her work at Scripps Florida, Miller is a biopharmaceutical consultant, helping companies design studies to test lead compounds in models of memory, addiction, and mental illness. She and her husband, who also joined the Scripps Florida faculty, live in Jupiter.

### **Scripps Research Names Noted Learning and Memory Scientist to Neuroscience Department**

Gavin Rumbaugh, Ph.D. was named as an assistant professor in the Department of Neuroscience at Scripps Florida in February 2010. Rumbaugh, who was an assistant professor at the University of Alabama, Birmingham, is known for his work on the brain mechanisms of information storage, learning, and memory, with a particular emphasis on the plasticity of neural circuits—the ability of neurons to adapt in the face of both developmental and environmental change.

Rumbaugh is the first new faculty member to join the Department of Neuroscience. The department was created less than a year ago with the appointment of Ron Davis as chair. Rumbaugh received a Young Investigator Award in 2009 from National Alliance for Research on Schizophrenia and Depression (NARSAD), the world's leading charity dedicated to mental health research. He is married to Courtney Miller who joined Scripps Florida's faculty in November.

### **Aging and Nutrition Investigator William Ja Joins Scripps Florida**

The Scripps Research Institute has named William Ja, Ph.D., as an assistant professor in the Department of Metabolism and Aging on the institute's Florida campus.

Ja, who was a NIH postdoctoral fellow in biology at the California Institute of Technology in Pasadena before joining Scripps Florida, is focused on researching various longevity-enhancing manipulations and their impact on aging and metabolism in *Drosophila*, the common fruit fly and one of the most widely used laboratory models. Among these manipulations are dietary restriction, and the effects on their hosts of certain types of bacteria that live in the gastrointestinal tract.

Ja, who is 32 and lives in Jupiter, officially joined the Scripps Florida faculty in January 2010.

### **Noted Biochemist Paul Thompson Joins Department of Chemistry**

In May 2010, Paul R. Thompson, Ph.D., joined Scripps Florida as an associate professor in the Department of Chemistry on the Scripps Florida campus. Thompson was previously on faculty at the University of South Carolina.

Thompson's primary area of interest is the phenomenon of gene expression, particularly the study of histones—small, basic proteins that play a vital role in gene regulation. Thompson is noted as a rising star in biochemistry and is known to work through various methodologies—biology, chemistry, pharmacology—to develop the best compounds.

### **Distinguished University of Michigan Chemist Joins Scripps Florida Faculty**

The Scripps Research Institute appointed distinguished chemist Kate Carroll, formerly at the University of Michigan, as associate professor beginning in July 2010.

Carroll's research bridges the fields of chemistry and biology, focusing on what is known as reduction-oxidation reaction or redox – a chemical reaction in the body that results in damage to healthy cells and contributes to diseases ranging from Alzheimer's and heart disease. Much of her work is concentrated on defining the importance of these oxidative changes on major signaling pathways inside the cell, and how that knowledge can be used to identify novel therapeutic targets for the treatment of human disease.

Another aspect of her work is the continued development and improvement of various technologies she has developed, many of which are already in use in labs around the world.

### **Noted Biochemist Appointed to Scripps Research Faculty**

Scripps Florida appointed Katrin Karbstein as an assistant professor in the Department of Cancer Biology. Karbstein was an assistant professor of chemistry and biological chemistry at the University of Michigan before joining the Scripps Florida faculty in July 2010.

Her research uses a number of different approaches – everything from biochemistry to protein engineering – to study ribosome assembly at the molecular level. Ribosomes, large macromolecular machines that are required for cell growth of all organisms, translate RNA into proteins within cells. The ultimate goal of the Karbstein laboratory is to define the mechanisms that direct the assembly of large RNA-protein complexes, with implications not only for the ribosome but also for the signal recognition particle, a protein-RNA complex involved in recognition of proteins as they exit the ribosome.

## **Scripps Research Appoints Douglas Kojetin to Florida Faculty**

The Scripps Research Institute has appointed Douglas J. Kojetin as an assistant professor in the Department of Molecular Therapeutics. Kojetin was a research associate in the laboratory of Thomas Burris, a professor in the Department of Molecular Therapeutics at Scripps Florida, before being named to the faculty in early August 2010.

A major focus of Kojetin's new laboratory will be to understand how the structure and atomic motion (dynamics) of proteins contribute to their biological function. Modulation of a protein's conformation or shape represents a potential avenue for drug discovery. Kojetin will be concentrating on what are known as nuclear receptor transcription factor proteins, important drug discovery targets for a variety of human diseases, including cancer and metabolic conditions such as type II diabetes.

Earlier this year, Kojetin was awarded a \$400,000, three-year grant from the James and Esther King Biomedical Research Program, part of the Florida Biomedical Research Program. The highly competitive grants are for innovative research into the prevention, diagnosis, treatment, and/or cure of cancer and tobacco-related diseases. Funding comes primarily from taxes collected from the sale of tobacco products.

## ***Additional Life Science and Biotechnology Activities***

### BIO 2010

In May 2010, the Biotechnology Industry Organization (BIO) hosted its international convention in Chicago, Illinois. BIO is the international industry association and its statewide affiliate, BioFlorida, organized a display booth. Scripps Florida again participated in partnership with fifteen Florida-based companies, including economic development organizations, research institutions and universities to further promote the growing life science and biotechnology industry in Florida. This four-day conference was attended by over 15,000 industry leaders from 65 different countries and 49 states.

### Innovation Incentive Fund

The research institutes funded by the Innovation Incentive Fund (Max Planck Florida Institute, Burnham Institute for Medical Research, etcetera) continued to progress in establishing Florida campuses. In addition to meeting many of their contract requirements related to jobs and equipment purchases, several institutes celebrated the grand opening or ground breaking of their permanent facilities and significant funding and scientific breakthroughs. The annual report for the Innovation Incentive Fund is due to the Governor's Office on January 5. The Legislature appropriated \$75 million in funding for 2010-2011 to the Innovation Incentive Fund.

In 2010 Session, the Legislature also created a Federal grants matching program and seeded it with \$3 million. The Institute for Commercialization of Public Research will administer the program and allows Phase I and Phase II companies to leverage Federal dollars by leveraging them with State funds.

### Max Planck Florida Institute

The Max Planck Florida Institute celebrated several milestones in 2010. In June, the Institute broke ground on its design for a 100,000 square foot biomedical research center scheduled for completion in early 2012 on the Florida Atlantic University campus in Jupiter, adjacent to Scripps Florida. The design and implementation of the construction of the building are complete and the science laboratories and administrative offices are currently housed on FAU's campus. The Institute also announced key science leaders for its four research areas—Dr. Bert Sakmann for Digital Neuroanatomy; Dr. Jason Christie for Synapse Physiology; Dr. Samuel Young, Jr. for Molecular Neurobiology; and Dr. James Schummers for Cortical Circuits.

*For detailed information about the contributions of individual organizations to Florida's growing biotechnology cluster for this fiscal year, please review Appendix 2.*

### Conclusion

Scripps Florida Funding Corporation is pleased to report another successful year of operations for Scripps Florida. Scripps Florida continues to advance its scientific discoveries, secure grants and awards from outside sources, collaborate with Florida universities and colleges, and interact with businesses and the community through its outreach activities.

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**Itemized Report for the Year Ended September 30, 2010**

**INTRODUCTION**

Florida Statute 288.955, referred to as the Enabling Statute, sets forth certain information that is required to be included in the SFFC Annual Report. The information that follows has been organized to correspond to the sections of the Enabling Statute that address information to be included in the SFFC Annual Report. As not every section of the Enabling Statute relates to the SFFC Annual Report, only the sections of the Enabling Statute that apply are referenced herein. For convenience, the text of the Enabling Statute that describes the information to be reported in the SFFC Annual Report is set forth next to each Enabling Statute section reference.

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**Itemized Report for the Year Ended September 30, 2010**

**Florida Statute 288.955**

**Subsection (14) ANNUAL REPORT**

**By December 1 of each year, the corporation shall prepare a report of the activities and outcomes under this section for the preceding fiscal year. The report, at a minimum, must include:**

**Subsection (14) (a) A description of the activities of the corporation in managing and enforcing the contract with the grantee.**

**Scripps Florida Funding Corporation Board of Directors Meetings**

*Purpose:* To oversee the disbursement of the State's funds invested in Scripps Florida, the Florida Legislature created the Scripps Florida Funding Corporation, hereto referred to as SFFC, a non-profit entity governed by a nine-member Board of Directors and one ex-officio member.

*Membership:* Of the Board of Directors, three members were appointed by each of the Governor, the House Speaker and the Senate President. Former Governor Bush's appointees are: Mr. David Gury, former President and CEO of Nabi Pharmaceuticals, of Boca Raton; Mr. Andy Crawford, retired Chairman and CEO of Advanced Disposal Systems, of Jacksonville; and Dr. Pamella Dana, Senior Strategic Advisor for Institute for Human & Machine Cognition, of Destin. Governor Crist re-appointed Mr. David Gury in March 2008 and Dr. Pamella Dana in February 2009. Former Speaker Byrd's appointees are: Dr. Joseph Thomas, dentist, of Vero Beach; and Mr. Chris Sullivan, Chairman of Outback Steakhouse, Inc. of Tampa. The term of Mr. Chris Sullivan expired on November 17, 2008 and his replacement has not been named; also, the terms of Mr. Andy Crawford and Dr. Joseph Thomas expired in November 2009 and they continue to serve until their replacements are named. Former House Speaker Marco Rubio named Ms. Anne K. Chinoda, former President and CEO of Florida's Blood Centers, of Orlando to the Board of Directors on March 3, 2008. She resigned the position on March 10, 2010 and her seat remains vacant. Former Senate President Ken Pruitt named Mr. T. Michael Crook, a C.P.A. with Proctor, Crook and Crowder, P.A., of Stuart, to the Board on September 5, 2008. Senate President Jeff Atwater named Mr. Ed Sabin, Vice-President Biomet, Inc., of Palm Beach Gardens, to the Board on February 9, 2009 and Mr. Gerry Goldsmith, Chairman of First Bank of the Palm Beaches, of Palm Beach, on November 15, 2009. Dr. Dale Brill, Director of the Governor's Office of Tourism, Trade, and Economic Development ("OTTED"), served as an ex-officio

member until January 1, 2010 when Mr. Chris Hart, IV, assumed his position as the Interim Director of OTTED.

*Meetings and activities:* From October 1, 2009 through September 30, 2010, the SFFC Board of Directors (“BOD”) held three teleconference meetings and one in-person meeting. At the November 25, 2009 meeting, Chairman Gury introduced the newest director, Mr. Gerry Goldsmith and heard a report from the Audit Committee. The Board reviewed and approved the SFFC Sixth Annual Report, authorizing the transmission of the report to the Governor, Speaker of the House and the President of the Senate on December 1, 2009. At the January 27, 2010 meeting, the Audit Committee reported the SFFC had a clean audit in 2009. The Board reviewed committee assignments, approved the 2010 SFFC operating budget in the amount of \$197,000 and agreed to purchase Directors & Officers and Crime Liability insurance policies for the Board. On March 5, 2010, the BOD held its in-person annual grant request meeting at Scripps Florida in Jupiter. This meeting involved the annual grant request and SFFC Board members were joined by representatives from TSRI – Ms. Donna Weston, Mr. Tom Northrup, Mr. Jared Machado and Ms. Carol Licko - and Scripps Florida – Dr. Harry Orf and Ms. Barbara Noble. The agenda included an update from the Audit Committee, a presentation by Dr. Harry Orf on Scripps Florida’s progress over the year, and the annual grant request. In order to prepare the Board for the annual grant request, SFFC counsel reviewed the six requirements that Scripps had to meet for the grant request. Those requirements are: a completed grant request letter, receipt of TSRI and Scripps Florida annual audited financial statements, the Scripps Florida scientific report, an update to the Scripps Florida annual report, the legal opinion and the satisfaction of disbursement conditions. All items were properly received with a minor exception which was waived and after discussion, the 2010 annual grant request for \$22.3 million was approved unanimously. The Board met again on August 3, 2010 to hear reports from the Investment and Audit Committees and to approve an amendment to the SBA Trust Agreement.

### **SFFC Committee Meetings**

#### **Investment Committee**

*Purpose:* The Investment Committee receives and reviews monthly investment reports from the State Board of Administration (SBA) to ensure that SFFC’s investments are consistent with the objectives established in the Trust Agreement and that the SFFC is able to make the disbursements anticipated in the Operating and Funding Agreement between SFFC and TSRI.

*Membership:* Dr. Thomas became Chairman of the Investment Committee in November 2008 and was re-elected chair in January 2010. Mr. Ed Sabin remained a member of the Committee through the fiscal year. Mr. Gerry Goldsmith was appointed to the Board in November 2009 and joined the Investment Committee in January 2010. Mr. Rob Smith, Mr. Ben Latham and occasionally Mr. Mike McCauley from the SBA participate in the Committee meetings.

*Meetings and activities:* During the 2010 fiscal year, the Investment Committee held two meetings at which they reviewed the monthly reports from the SBA and closely monitored the investments of the SFFC. On February 24, 2010, the Investment Committee reviewed the monthly investment reports from the SBA. The Committee also considered restructuring the interest earned on prior investments to match the laddered portfolio and quarterly disbursements to TSRI. At the request of TSRI, the Investment Committee discussed with the SBA a move into Treasury Inflation Protected Securities (TIPS) to ensure the preservation of earnings. It was determined further information would be gathered and the Committee requested a revised portfolio projection from the SBA. The Committee met again on July 20, 2010 to review the monthly SBA statements and further explore laddering the interest to match the maturity dates of the principal payments. The Committee then voted to recommend to the full SFFC Board that the SFFC ladder the interest in TIPS to align all maturity and disbursement dates.

#### Audit Committee

*Purpose:* The Audit Committee reviews financial information and monitors the financial condition of TSRI and Scripps Florida. The Audit Committee also engages the SFFC auditor, provides oversight for the annual audit of SFFC and compliance monitoring of TSRI and Scripps Florida with the terms of the Operating and Funding Agreement. The Audit Committee provides direction on the scope of the audit engagements and reviews any finding or recommendations related to the audits. The Audit Committee, in turn, reports its recommendations on the reports to the full Board.

The Scripps Florida Funding Corporation receives and the Audit Committee reviews the following reports:

- TSRI and Scripps Florida unaudited quarterly financial statements
- TSRI and Scripps Florida audited annual financial reports
- TSRI and Scripps Florida annual budgets
- Scripps Florida Annual Report
- Scripps Florida Annual Scientific Report

There are three types of annual audit reports that are received and reviewed by the Audit Committee as follows:

1. Scripps Florida and TSRI provide three annual audit reports to SFFC:
  - a) Audited financial statements of TSRI, including the operations of Scripps Florida.
  - b) Audited financial statements of Scripps Florida as a separate division, including a report on internal control and compliance in accordance with *Government Auditing Standards*.
  - c) A Federal Single Audit of TSRI in accordance with OMB Circular A-133.

The audits are prepared by Deloitte and Touche (“D&T”), the independent auditors for TSRI. SFFC’s independent auditor has been granted access to the D&T workpapers in order to assess the application of generally accepted

accounting principles and the significant assumptions made by TSRI management in the preparation of its financial statements.

2. SFFC receives two annual audit reports completed by an independent auditor contracted by the SFFC:
  - a) Audited financial statements of SFFC, including a report on internal controls and compliance in accordance with *Government Auditing Standards*.
  - b) A Federal Single Audit of SFFC in accordance with OMB Circular A-133.
  
3. A contractual monitoring and compliance audit of the Operating and Funding Agreement between TSRI and SFFC (“contractual monitoring and compliance audit”) to address the *Monitoring Checklist* (Exhibit A-1 to the Funding and Program Agreement between OTTED and SFFC). The contractual monitoring and compliance audit is completed by an independent auditor contracted by the SFFC who verifies many of the items covered in this Annual Report, including, but not limited to:
  - a) the number of jobs created
  - b) the salaries and their consistency with the approved Business Plan
  - c) designation of a person to assist in collaborative efforts with OTTED and compliance with OTTED’s requests for cooperation
  - d) purchase of equipment consistent with the approved budget
  - e) achievement of collaborative efforts with Florida universities

The independent auditor contracted by the SFFC also prepares the annual not-for-profit organization tax return (Form 990) for SFFC, which is reviewed by the Audit Committee prior to submission to the Internal Revenue Service.

*Membership:* Mr. Mike Crook has served as Chairman of the Audit Committee since January 2009. Mr. Crawford, a former Committee Chairman, remained on the Committee, as did Dr. Pamella Dana, for the entire fiscal year. Other participants in the Audit Committee meetings include SFFC’s auditor, Mr. Scott Porter from Caler, Donten, Levine, Druker, Porter & Veil, P.A.; Scripps Florida’s outside legal counsel, Ms. Carol Licko; and TSRI’s Chief Financial Officer, Ms. Donna Weston.

*Meetings and activities:* From October 1, 2009 through September 30, 2010, the Audit Committee held five meetings to review, discuss and approve several financial reports provided by TSRI and the auditing and compliance matters of SFFC. At the October 16, 2009 meeting, the Audit Committee accepted the Scripps Florida 2010 Budget and agreed to engage Caler, Donten, Levine et al to conduct the 2009 SFFC financial audit and the compliance audit of Scripps Florida. The Committee also reviewed the June 30, 2009 unaudited financial statements of TSRI and Scripps Florida. At the January 6, 2010 meeting, Mr. Porter presented the SFFC financial audit to the committee. The audit was clean and Mr. Porter stated the Management Letter had no significant control or compliance matters to address. At the February 19, 2010 meeting, the Committee reviewed a draft of the SFFC tax return and agreed to update the Audit Committee

Charter. The Committee also adopted a task matrix which will be used throughout the year to ensure required committee tasks are completed on a timely basis. On March 4, 2010, the Committee heard a presentation from Ms. Weston on the 2009 TSRI Audit Report, as well as to review the report of the contractual Monitoring and Compliance Audit presented by Mr. Porter. He also presented the 2009 SFFC complete single audit. The committee approved the compliance report and the single audit. On July 19, 2010, the Committee reviewed the TSRI and Scripps Florida unaudited financials for the quarter ended March 31, 2010, and agreed to engage Caler, Donten, Levine for the 2010 SFFC financial and compliance audits.

#### Reports Committee

*Purpose:* The predominant purpose of the Reports Committee is to review, edit and approve the Annual Report before it is reviewed and approved by the SFFC Board of Directors.

*Membership:* Ms. Anne Chinoda, Mr. David Gury, Dr. Brill and his replacement, Mr. Chris Hart, IV, were Committee Members during fiscal year 2010.

*Meetings and Activities:* The Reports Committee received drafts of the annual report during November 2009. The Committee met on November 23, 2009 to review the content of the annual report before it was submitted to the full Board of Directors.

**Subsection (14) (b) An accounting of the amount of funds disbursed during the preceding fiscal year to the grantee.**

<b>Disbursement Date</b>	<b>Principal</b>	<b>Interest</b>	<b>TOTAL</b>
December 15, 2009	\$8,169,750	\$ 1,694,979.68	\$ 9,864,729.68
March 15, 2010	\$5,591,250	\$ 1,296,894.66	\$ 6,888,144.66
June 15, 2010	\$5,591,250	\$ 1,296,894.66	\$ 6,888,144.66
September 15, 2010	\$5,591,250	\$ 1,296,894.66	\$ 6,888,144.66
<b>TOTAL</b>	<b>\$24,943,500</b>	<b>\$ 5,585,663.66</b>	<b>\$ 30,529,163.66</b>

This disbursement schedule became effective in November 2006 when the SFFC accepted the revised business plan of Scripps Florida.

Since inception, the total amount of interest which has been disbursed to Scripps Florida is \$ 27,257,950.

**Subsection (14) (c) An accounting of the expenditures by the grantee during the fiscal year of funds disbursed under this section.**

Report of SFFC Grant Disbursements from October 1, 2009 to September 30, 2010

<b>Category</b>	<b>Amount</b>
Scientific Salaries & Benefits	\$ 6,907,498
Supplies	\$ 2,677,568
Scientific Equipment	\$ 5,748,559
External Affairs & Other Program Support	\$ 1,351,032
Project Commencement, Facilities, Administration and Capital Expenditures	\$ 8,158,237
<b>Total</b>	<b>\$ 24,842,894</b>

This schedule reflects cash expenditures charged to the grant from the State of Florida from October 1, 2009 through September 30, 2010. The expense categories set forth above reflect those used by Scripps to report grant activity to grantors. This schedule excludes: unpaid commitments; unspent grant funds received of approximately \$92 million (including interest income) and expenditures funded by other sources.

**Subsection (14)(d) Information on the number and salary level of jobs created by the grantee, including the number and salary level of jobs created for residents of this state.**

Report of Scripps Florida Employees Count

<b>Position</b>	<b>Employee Count As of September 30, 2010</b>	<b>Year 7 Target</b>
Faculty	39	≥ 25
Scientific Staff	248	≥ 184
Administration	90	≥ 67
	<b>Current Total 377</b>	<b>Job Creations Target 367</b>

In the above chart, Faculty includes tenure track Professors, Associate Professors and Assistant Professors. Scientific Staff includes non-tenure track scientists (Research Faculty and Staff Scientists), Research Associates/ post-docs, lab technicians, and Scripps paid graduate students. Administration includes all other support personnel.

The job creations target number is to be measured on December 31, 2010, the end of the seventh employee hire year. SFFC may allow a downward deviation of 25% as satisfaction of the job creation deliverable. Scripps Florida management anticipates that the target head count will be met on December 31, 2010.

Scripps Florida hired 119 employees between October 1, 2009 and September 30, 2010. Of those new hires, 43 were Florida residents of which 22 were Palm Beach County residents.

<b>Category (as set forth in Revised Business Plan)</b>	<b>Required Salary Range (using CPI 09.30.10)</b>	<b>Hired in fiscal 2010</b>	<b>Actual Salary in fiscal 2010</b>	<b>Florida Residents</b>	<b>Palm Beach Co. Residents</b>
Professors/ Chairs	\$148,537 - \$355,197	0	N/A	0	0
Associate Professors	\$90,414 - \$190,515	3	\$140,004 - \$160,014	0	0
Assistant Professors	\$77,498 - \$138,850	7	\$102,003 - \$115,003	0	0
Research Faculty	\$77,498 - \$285,234	0	N/A	0	0
Staff Scientists	\$58,123 - \$121,628	2	\$60,008 - \$70,012	0	0
Research Associates	\$36,596 - \$59,199	53	\$37,000 - \$50,003	7	2
Administration*	\$51,988 average	54	\$43,321 average **	36	20
<b>TOTAL</b>		<b>119</b>		<b>43</b>	<b>22</b>

\* Administration is a combination of Scientific Support (non-Ph.D.) and Administrative Support positions. The average expected salary for this employee category is given, rather than the range that would result in combining all Administrative position salaries. An expected average salary, rather than a range, is a better representation because the various job classifications and range of salaries are broad.

\*\* This average salary represents the amount for new hires only, not for all Administration employees. When all Administration employees are counted, the average

is approximately \$58,532, which exceeds the required amount. This amount does not include graduate student stipends.

Breakdown of Administration Category	Hired in fiscal 2010	Average Salary
Administrative Support	23	\$ 51,575
Scientific Support	31	\$ 41,517

The required salary range is adjusted annually from that stated in the revised Business Plan based on increases in the CPI for the annual period. The base salary of all persons employed in a particular category falls within the range for that category, as adjusted by the cumulative change to the CPI. The CPI adjustment to salary ranges for 2010 was 2%. Certain employees of Scripps Florida may receive additional compensation for assuming administrative responsibilities beyond their scientific duties. For example, a faculty member who also serves as an Associate Dean of the Graduate School will receive additional compensation for that service. The ranges set forth above do not incorporate such additional compensation.

**Subsection (14) (e) Information on the amount and nature of economic activity generated through the activities of the grantee.**

See Appendix 1, “The Economic Impact of Scripps Florida on Florida’s Economy,” prepared by The Business Development Board of Palm Beach County in November 2010.

**Subsection (14) (f) An assessment of factors affecting the progress toward achieving the projected biotech industry cluster associated with the grantee’s operations, as projected by economists on behalf of the Executive Office of the Governor.**

See Appendix 2, “An Assessment of Factors Affecting the Progress Toward Achieving the Projected Biotech Industry Cluster,” prepared through information provided by local economic development organizations, community colleges and BioFlorida.

**Subsection (14) (g) A compliance and financial audit of the accounts and records of the corporation at the end of the preceding fiscal year conducted by an independent certified public accountant in accordance with the rules of the Auditor General.**

See Appendix 3, The “Audited Financial Statements and Supplementary Financial Information” for SFFC for the year ended September 30, 2010.

**Subsection (14) (h) A description of the status of performance expectations under subsection (9) and the disbursement conditions under subsection (10).**

**Subsection (9) PERFORMANCE EXPECTATIONS**

**Subsection (9) (a) The number and dollar value of research grants obtained from the Federal Government or sources other than this state.**

Between October 1, 2009 and September 30, 2010, forty (40) research funding grants from non-Florida sources were awarded to Scripps Florida scientists. The total amount of these awards is \$35,921,364. To date, Scripps Florida scientists have received about 182 research grants totaling \$188.2 million from non-Florida sources for support of research.

**Subsection (9) (b) The percentage of total research dollars received by TSRI from sources other than this state which is used to conduct research activities by the grantee in this state.**

For fiscal 2010, the percent of research funding from sources other than SFFC is 54.06% and these amounts were used for this purpose. In 2009, this ratio was 42.96%.

**Subsection (9) (c) The number or value of patents obtained by the grantee.**

Between October 1, 2009 and September 30, 2010, 23 foreign and domestic patent applications were filed. Since inception, 107 foreign and domestic patent applications have been filed on Scripps Florida technology. No value has been assigned to these patents, as the applications are under review by the U.S. Patent and Trademark Office.

**Subsection (9) (d) The number or value of licensing agreements executed by the grantee.**

No license agreements were executed between October 1, 2009 and September 30, 2010 with respect to Scripps Florida technologies. To date, Scripps Florida technology has been licensed in forty-seven (47) licenses agreements. No value has been assigned to those licenses and no revenue has been generated from the licenses. Each licensing agreement defines when and how revenues will arrive. Those financial terms are confidential due to the unpredictability of the industry.

**Subsection (9) (e) The extent to which research conducted by the grantee results in commercial applications.**

Because of the early stage of the technology being developed at Scripps Florida and the time delay attendant to further development, no commercial applications and revenue have emerged to date.

**Subsection (9)(f) The number of collaborative agreements reached and maintained with colleges and universities in this state and with research institutions in this state, including agreements that foster participation in research opportunities by public and private colleges and universities and research institutions in**

**this state with significant minority populations, including historically black colleges and universities.**

The Scripps Research Institute developed a Joint Cooperation Agreement (“JCA”) to encourage and support research collaborations with Florida institutions. Provisions are included to make it easier to collaborate on filing patents for jointly developed technologies and to share revenues from commercialized innovations. By executing these agreements in advance, the scientific collaboration process between Florida organizations and Scripps Florida is streamlined as they work together on biomedical research. To date, nine Florida institutions have executed this formal agreement with TSRI: Florida International University, University of Florida, Florida Atlantic University, University of Central Florida, University of Miami, Florida State University, Nova Southeastern University, University of South Florida and Max Planck Florida Institute. Efforts to reach historically black colleges and universities are ongoing. Florida A&M has an active bioresearch program and Dr. Harry Orf has met with pharmacology researchers from the program to discuss potential collaboration.

In fiscal year 2010, there were 35 scientific meetings between Scripps Florida scientists and their colleagues at colleges and universities within the State of Florida. See Appendix 4, “Scripps Florida Outreach Activities” for a detailed listing of these scientific Meetings with Florida Colleges and Universities.

**Subsection (9) (g) The number of collaborative partnerships established and maintained with businesses in this state.**

During the past year, Scripps Florida has established many partnerships with small businesses throughout the State of Florida. See Appendix 4, “Scripps Florida Outreach Activities” for a detailed listing of business outreach meetings.

Scripps Florida also maintains collaborative relationships with four Florida-based biotechnology companies which license Scripps Florida technology: Envoy Therapeutics, Dyadic International, Inc., cuRNA and Protix. The relationship between Envoy Therapeutics and Scripps Florida was established in July 2010. The existing agreement between Scripps Florida and Dyadic has expired; however, they continue to work in scientific collaboration.

Six Palm Beach County companies have Scripps Florida scientists involved on their scientific advisory boards, thus playing a key role in the company. They are: Dyadic International, Xcovery, cuRNA, Protix, Envoy and OPKO.

Envoy Therapeutics

Envoy Therapeutics is a drug discovery company located in Jupiter. Envoy was founded by scientists from Rockefeller University and investors from 5AM Ventures in Menlo Park, California. Driven in part by the desire to facilitate collaboration with the faculty

of Scripps Florida, Envoy established its laboratories near Scripps Florida in Jupiter. Scripps Florida Professors Patrick Griffin and Philip LoGrasso serve as scientific advisors to Envoy. This interaction has fostered a series of collaborations starting in July 2010, with further expansion in October 2010. These collaborations are focused on identifying new drugs for neurological and psychiatric diseases and employ Scripps Florida's high-throughput screening capabilities to discover compounds that modulate target proteins identified by Envoy.

Envoy Therapeutics' mission is to discover new drugs with superior efficacy and fewer side effects than existing treatments. The company's bacTRAP® technology enables the identification of proteins *in vivo* that are produced by specific cell types without requiring the isolation of those cells. The technology is especially powerful in tissues of the brain, where many hundreds of cell types are intermingled. Because therapeutically modulating the activity of a specific cell type has until now been prevented by the inability to determine which proteins are uniquely expressed by that cell type, Envoy brings a new day in drug discovery.

Envoy has three highly recognized scientific founders, including Nobel Laureate and National Academy of Sciences member Paul Greengard, Ph.D.; Howard Hughes Medical Institute Investigator Nathaniel Heintz, Ph.D; and National Academy of Sciences member, Lasker award winner and Howard Hughes Medical Institute Investigator, Jeffrey Friedman, M.D., Ph.D.. These scientific founders bring great expertise in disciplines vital to Envoy's missions including the biochemical regulation of brain cells and neurotransmitter receptors, the molecular mechanisms involved in obesity, body weight, appetite and fat storage, and the engineering of bacteria artificial chromosomes (BACs) by homologous recombination and transgenic technology.

The company also has a senior management team with extensive experience in the biopharmaceutical industry. CEO Brad Margus, is a seasoned executive with a strong track record in starting and building science based organizations, protecting new discoveries, raising capital, and partnering repeatedly with many of the world's largest pharmaceutical companies. Senior Vice President of Drug Discovery, Stephen Hitchcock, Ph.D., is a leader in medicinal chemistry who previously led drug discovery projects at Eli Lilly and Amgen targeting diseases of the central nervous system.

#### Dyadic International, Inc.

Founded in 1979, Dyadic utilizes its integrated, proprietary fungal expression technology platform for the discovery, development, manufacturing and commercialization of specialty enzymes and chemicals for the textile, animal feed, energy and paper and pulp industries. Since 2006, the company has engaged with scientists at Scripps Florida in a collaboration involving Dyadic's novel technology platform.

This collaborative effort between scientists at Scripps Florida and Dyadic was established to provide a complete annotation of the genome of Dyadic's proprietary fungal organism, *Chrysosporium lucknowense* ("C1"). The knowledge gained from this effort is expected

to facilitate further development of the C1 Host Technology as a robust platform for the discovery, development and production of various materials for medical and industrial applications. Furthermore, this collaboration promotes the development of a successful biotechnology cluster in South Florida.

Over the past several years, Dyadic has continued to accelerate its activities utilizing its proprietary technology platform. The company reports success in the raising of capital, recruitment of a strengthened management team and progress with respect to licensing of its technology for use in various industries. The fact that Dyadic and scientists at Scripps Florida continue to work together four years after initiation of the relationship is testimony itself to the successful role the collaboration has played in the company's development.

### cuRNA

cuRNA is a therapeutics company, located in Jupiter, Florida, that was founded in 2008 by Scripps Florida Professor Claes Wahlestedt and South Florida entrepreneur Joseph Collard as a Scripps Florida spinoff. cuRNA is utilizing novel non-coding RNA technology exclusively licensed from Scripps Florida to develop therapies for many important diseases for which no cure is currently available.

cuRNA has licensed a novel technology from Scripps Florida based on the therapeutic potential of non-coding RNAs that do not produce protein. Dr. Wahlestedt's work at the Scripps Institute has shown that non-coding RNAs play a critical role in the regulation of gene expression. The potential therapeutic applications of these non-coding RNA's may be useful for the treatment of a wide range of diseases including neurologic disease, cancer, cardiovascular disease, diabetes, metabolic diseases and certain rare genetic conditions. The non-coding RNA technology may also be useful as diagnostic markers or tools. Since its inception, cuRNA has been diligently exploring the potential of this novel technology and amassing a significantly expanded intellectual property portfolio.

In addition to the relationship cuRNA has with the Wahlestedt lab at Scripps Florida, cuRNA is currently working with Florida Atlantic University and Palm Beach State College to provide intern training and practical laboratory experience for students.

### Protix

In July 2009, Scripps Florida reached a license agreement with Protix. Protix is a start-up company located in Palm Beach County that has platform technology for the identification of amino-acids sites on protein targets. The company is utilizing this technology to identify sites on proteins that play a role in cellular processes, such as mitotic entry, which can be further exploited as targets for therapeutic and diagnostic applications in a broad range of diseases, including cancer and neurodegenerative disorders. The company was founded by Scripps Florida professors Nagi Ayad and Donny Strosberg and is based on an invention made in the laboratory of Professor Ayad at Scripps Florida.

**Subsection (9) (h) The total amount of funding received by the grantee from sources other than the State of Florida.**

Since inception, Scripps Florida has been awarded approximately \$191 million from non-State funds including Federal agencies such as the NIH, foundations, pharmaceutical companies and other grantors. During fiscal 2010, Scripps Florida received the following grants:

GRANT AWARDS (\$190,877,345 since inception) *	\$ 47,658,365
OTHER REVENUE SOURCES **	\$ 16,450,823
CONTRIBUTIONS AT NET PRESENT VALUE ***	\$ 2,804,048
PALM BEACH COUNTY (\$210,069,431 since inception) ****	\$ 0
<b>TOTAL</b>	<b>\$ 66,913,236</b>

\* This amount includes NIH funding of \$35,488,133 for fiscal 2010. Other sources include \$3.9 million from pharmaceutical and/or biotech companies; \$4 million in private donations, including foundations; and \$4 million passed through other organizations in subcontracts.

**\*\* OTHER REVENUE SOURCES:**

Other	\$ 67,500
Pfizer	\$6,758,085
Investment Income on Florida funds	\$9,625,238
<b>Total</b>	<b>\$16,450,823</b>

\*\*\* Contributions include gifts not dedicated to a specific type of research; grants typically have a dedicated area of research or are awarded to a specific scientist.

**\*\*\*\* COUNTY FUNDS EXPENDED TO DATE BY FISCAL YEAR**

2004	\$ 1,713,494
2005	11,419,527
2006	12,557,455
2007	59,215,156
2008	90,353,050
2009	34,810,750
<b>Total</b>	<b>\$ 210,069,431</b>

Palm Beach County has completed work and payments on the permanent facilities so the total amount of funds expended by the County remains unchanged from prior years.

**Subsection (9) (i) The number or value of spin-off businesses created in this state as a result of commercialization of the research of the grantee.**

The three Florida companies that spun off from Scripps Florida, and the additional Florida company located in Jupiter to access Scripps Florida, are described above in Subsection (9)(g). No attempt has been made by Scripps to assign a value to these spin offs. They are not public companies, thus it is impossible to determine the value of these spin-offs.

**Subsection (9) (j) The number or value of businesses recruited to this state by the grantee.**

According to the Bureau of Labor Statistics, there are 192 companies in the state of Florida conducting research and development related to biotechnology, of which 19 are located in Palm Beach County. This is an increase from 11 companies in Palm Beach County reported in 2007. It is impossible to say with any certainty that this explosion of biotech companies is the direct result of Scripps, but the notoriety of Palm Beach County in biotechnology has been achieved only since the expansion of Scripps to the county.

Anecdotally, in the past year, the Business Development Board announced two biotechnology companies which are expanding or relocating to Palm Beach County directly or indirectly because of the Scripps Florida campus. CHS Pharma is moving its headquarters to Palm Beach County to be closer to Florida Atlantic University's Center for Molecular Biology and Biotechnology in Jupiter. CHS Pharma is committed to the research and development of new treatments for a pre-cancerous skin condition called Actinic Keratosis. The company plans to develop a prescription drug treatment for the pre-cancerous skin condition and an over-the-counter preventative lotion. CHS Pharma's technology is the result of research conducted by renowned scientist, Dr. Herbert Weissbach of FAU and has been licensed to the company by FAU. Weissbach, a member of the National Academy of Science, also recently expanded his own laboratory and research to FAU's MacArthur campus in Jupiter, filling out the growing cluster of research and development concentrated on Scripps Florida and the Max Planck Florida Institute.

GLG Pharma, LLC is expanding its research and development company to Palm Beach County because of its need to be closer to the growing biomedical activity in southeast Florida. The company conducts pharmaceutical research and development, analytical chemistry and drug formulation development in an effort to advance the development of new targeted anti-cancer drugs. GLG intends to begin research collaboration with Scripps Florida scientists as soon as possible. GLG will continue its R & D work in Tampa, Florida and will expand operations to Palm Beach County, hiring 4 people in the short-

term at its new location in the Alexandria Innovation Center in Jupiter. The Town of Jupiter is providing a \$250,000 loan guarantee to the company from its Economic Development Fund and the company is also receiving a \$250,000 equity investment from the Paragon Foundation of Palm Beach County. The company has negotiated a preclinical development collaboration valued at approximately \$500,000 with a leading preclinical CRO.

In June 2010, The Max Planck Florida Institute broke ground on its permanent facility, located on six acres at Florida Atlantic University's (FAU) John D. MacArthur Campus in Jupiter, across the street from Scripps Florida. Dr. Peter Gruss, President of Germany's Max Planck Society, presided at the official groundbreaking ceremony for the new 100,000-square-foot biomedical research facility – the first Max Planck Institute in the United States.

As Scripps Florida and Max Planck progress with their expansions to Florida, Palm Beach County continues to be a global destination for companies in the discovery and advancement of drugs and pharmaceuticals, medical devices and equipment, research and development.

**Subsection (9)(k) The establishment and implementation of policies to promote supplier diversity using the guidelines developed by the Office of Supplier Diversity under s. 287.09451 and to comply with the ordinances, enacted by the County and which are applicable to this biomedical research institution and campus located in this state.**

Scripps Florida has adopted the following Mission and Vision Statements for Supplier Diversity.

Mission: Scripps Florida's Supplier Relations and Diversity Program will integrate small and diverse businesses into the procurement process - creating awareness, ownership, and an understanding of the principals of a competitive supply base. These partnerships will maximize cost savings and efficiencies within Scripps Florida's internal processes and supply chain.

Vision: Scripps Florida recognizes the importance of a diverse supply chain and strives to develop relationships with small and diverse life science and service suppliers who can assist in achieving Scripps Florida's biomedical research goals. Also, Scripps Florida expects its strategic suppliers to establish business opportunities for small and diverse suppliers.

TSRI Procurement and the Supplier Diversity Coordinator at Scripps Florida continue to pursue opportunities to partner with the diverse business community. Scripps Florida maintains a dynamic web-based application for potential vendors and suppliers to register their business to receive announcements for bid opportunities. As in years past, Scripps Florida also participates in local and statewide supplier shows. These shows help Scripps Florida to identify diverse businesses that can provide goods and services to the Institute

at a competitive price. Participation in these shows resulted in partnerships with local companies that provided furniture, pipette calibrations, refrigeration services, temporary staffing, building maintenance services, interior design services, printer supplies, printing services, office supplies, computer supplies, computer peripherals and more.

**Subsection (9) (l) The designation by the grantee of a representative to coordinate with the Office of Supplier Diversity.**

Mr. Francisco Carpio was named as the Scripps Florida Supplier Diversity Coordinator in March 2009 and he continues to represent Scripps Florida in working with small and minority business enterprises in the State of Florida. Mr. Carpio is actively involved in many state and local supplier diversity outreach programs.

**Subsection (9) (m) The establishment and implementation of a program to conduct workforce recruitment activities at public and private colleges and universities and community colleges in this state which request the participation of the grantee.**

Ms. Hollie Alkema, Scripps Florida's Human Resource Analyst and Recruiter, and other Scripps personnel participated in 5 Career Fair and Expositions at institutions throughout the State during fiscal 2010. See Appendix 4, "Scripps Florida Outreach Activities" for a detailed listing of the Workforce Recruitment efforts.

**Subsection (10) DISBURSEMENT CONDITIONS**

**Subsection (10)(a) Demonstrate creation of jobs and report on the average salaries paid.**

See reply to Subsection (14) (d).

**Subsection (10)(b) Beginning 18 months after the grantee's occupancy of its permanent facility, the grantee shall annually obtain \$100,000 of non-state funding for each full-time equivalent tenured-track faculty member employed at the Florida facility.**

Scripps Florida occupied its Permanent Facility on March 31, 2009, thus making this condition relevant beginning September 30, 2010. Scripps Florida met and exceeded the required amount well ahead of the specified time. By September 30, 2010, Scripps Florida reported its total awards from non-SFFC sources were approximately \$188 million. There were 39 tenure-track faculty at that same date. Considering the average grant award is between three and four years, the amount of funding per faculty member is about \$1.2 million per year. This greatly exceeded the required amount of \$100,000 per tenure-track faculty member per year.

**Subsection (10) (c) No later than 3 years after the grantee's occupancy of its permanent facility, the grantee shall apply to the relevant**

**accrediting agency for accreditation of its Florida graduate program.**

Scripps occupied its Permanent Facility on March 31, 2009. Thus, no report is due until the report following March 31, 2012.

**Subsection (10) (d) The grantee shall purchase equipment for its Florida facility as scheduled in its contract with the corporation.**

Scripps Florida reports that approximately \$ 5,748,559 of equipment – acquired with SFFC grant funds – was purchased between October 1, 2009 and September 30, 2010. Additionally, \$1,612,888 of equipment was purchased with non-SFFC funds for the twelve months ending September 30, 2010. Building improvements funded by the State grant funds totaled \$566,782 from October 1, 2009 through September 30, 2010. The Revised Business Plan requires \$10 million in equipment purchases within 18 months of occupancy of the permanent facility. Scripps occupied the permanent facility on March 31, 2009, so the effective date for the \$10 million required equipment purchase is September 30, 2010. The estimated amount of equipment purchased from March 2009 through September 2010 is \$10.7 million, thereby meeting the required amount. The Revised Business Plan also requires that \$6.158 million in equipment be purchased over the last five years of funding.

**Subsection (10)(e) No later than 18 months after occupying its permanent facility, the grantee shall establish a program for qualified graduate students from Florida universities permitting them access to the facility for doctoral, thesis-related research.**

Scripps Florida established a Ph. D. program as part of Scripps' Kellogg School of Science and Technology, well ahead of the September 2010 deadline.

There were 24 students enrolled in the graduate program in 2009-10, one of whom completed his Ph. D. thesis and was awarded his doctorate degree in May 2010. There are five students who have now completed Ph. D. degrees at Scripps Florida. In August 2010, seven new graduate students entered the program. Efforts are made to identify and recruit highly qualified students from Florida colleges and universities to join the Scripps Florida graduate program. The Scripps Florida graduate admissions committee reviews all applications submitted by Florida residents, or students from Florida colleges and universities, who submit applications to TRSI's La Jolla campus, but who did not specifically apply to Scripps Florida. Offers have been made to qualified individuals from this pool each of the past four years. As the faculty ranks at Scripps Florida grow over the next several years, additional efforts will be made to recruit highly qualified Florida students to the Scripps Florida doctorate program. Of the seven students entering the program, one has an undergraduate degree from the University of Miami and a second has an undergraduate degree from Florida State University. Of the 30 students in the Scripps Florida graduate program as of September 2010, eight will have a Florida connection, meaning they earned an undergraduate degree from a Florida college or

university or are a native Floridian who earned an undergraduate degree out of state. Thus, the graduate program is off to a successful start, ahead of scheduled in state requirements.

In June 2010, Scripps finalized an agreement with Florida Atlantic University (FAU) to establish an innovative MD-Ph.D. program. It is predicted that the first applications for admission into this program will be accepted upon accreditation of the program, anticipated to occur in February 2011. The first students will take classes in fall 2011. Students will spend their first three years as medical students at FAU, then begin the doctorate program at Scripps in the fourth year of the medical program. During the first three years, the medical students will take two to three special topics courses with Scripps Florida faculty members to enable the students to identify research mentors and to make a smooth transition into the Ph.D. program. After successful completion of the first year at Scripps Florida, the students will then be awarded their M.D. degrees. The Ph.D. component of this degree program will proceed according to the Kellogg School policies and procedures, but provision will be made to avoid duplication of coursework to minimize the time students spend in the Ph.D. program.

The re-accreditation of the Scripps Doctorate program remains on schedule. The Kellogg School of Science in Technology is a bi-coastal Ph.D. program, reflecting the “one institution/ two campus” makeup of TSRI. The re-accreditation process is facilitated by the Western Association of Schools and Colleges accreditation commission and the final components are expected to be complete in fall 2010.

See Appendix 4, “Scripps Florida Outreach Activities” for a detailed listing of Education Outreach.

**Subsection (10) (f) No later than 18 months after occupancy of the permanent facility, the grantee shall establish a summer internship for high school students.**

Since 2005, seventy high school students, teachers, and university undergraduates have been provided an opportunity to work with world class scientists at Scripps Florida. The program continues to expand each year. Twenty interns were invited to participate in the Scripps Florida 2010 summer program, working in the Departments of Cancer Biology, Infectology, Neuroscience, Metabolism and Aging, Chemistry, Molecular Therapeutics, and the High Throughput Screening laboratories.

In the summer of 2010, thirteen high school juniors and seniors participated in the internship program. The internship exposes students to a variety of contemporary issues in basic biomedical research, providing hands-on laboratory experience, thus motivating and preparing students for continuing education in the sciences. Internships were awarded on a competitive basis to students beginning their junior or senior years in a Palm Beach County high school in the fall of 2010. Interested students must have a minimum grade point average of 3.0 and be at least 16 years of age; the online

application was submitted with letters of recommendation, transcripts, resumes and other ancillary material. Special emphasis was placed on identifying and recruiting students who are underrepresented in the sciences. Students were given a gross compensation of \$8.00 per hour for the six-week summer program. See Appendix 4, “Scripps Florida Outreach Activities” for a detailed listing of High School Student, Teacher and Legacy Interns for summer 2010.

The internship program began in the summer of 2005 with a grant from the William R. Kenan, Jr. Charitable Trust, a North Carolina foundation with a special interest in education. In May 2010, Scripps Florida proudly announced that the Kenan Trust renewed its support for the Education Outreach program by awarding a three year, \$600,000 grant to help Scripps Florida sustain this highly successful program.

#### Scripps Florida Undergraduate Internships

In addition to high school internships, Scripps Florida provides internship opportunities for a variety of undergraduate students. Those who attend school at nearby colleges and universities, as well as out-of-state schools who are looking for research opportunities over the summer months, have been accepted as interns, depending on space available. Four specific examples are listed below.

##### Scripps Florida Undergraduate “Legacy” Summer Internship Program

The undergraduate component of the “Kenan Fellow” summer internship program initiated in 2009 was expanded in 2010. Four students participated in 2010, as compared to two students in 2009. The goal of this component is to provide additional research opportunities for those students who participated in the program as high school students, are now attending college, and are majoring in the sciences. The “legacy” program’s research experience is also intended to be an additional resource for the undergraduates as they look toward acceptance in competitive graduate programs. The undergraduates in the 2010 summer intern program participated as high school students in 2006, 2007, and 2008 and worked in the Scripps Florida Departments of Molecular Therapeutics, Metabolism and Aging, Chemistry, and the High Throughput Screening laboratory.

FAU Wilkes Honors College Program In 2005-06 Scripps Florida established an intern program for FAU Honors College students to perform research in the laboratories of Scripps Florida faculty members. The students can receive FAU academic credit or a stipend (if research funds are available from the Scripps Florida faculty member) for research performed during the school term or summer months. During the period of October 1, 2009 – September 30, 2010, fifteen FAU Wilkes Honors College undergraduate students participated in research internships at Scripps Florida. See Appendix 4, “Scripps Florida Outreach Activities” for a detailed listing of Honors College Student Interns for summer 2010.

Palm Beach State College (PBSC) Program PBSC offers two degree programs in biotechnology in response to the community need for research technicians and associates. Students enrolled in the PBSC program can receive academic credit for additional experience in the laboratory. To help students gain this experience, internships have been made available at the Scripps Florida facility as space has been available. Four students from PBSC participated throughout the 2009-10 school year.

Summer Research Opportunities Numerous undergraduate students from Florida colleges and universities, and students from Florida who are attending college out of state, contact Scripps Florida for research opportunities during the summer months and the campus accommodates as many of these students as possible, depending on the availability of laboratory space and research funding on the part of interested faculty. Summer internships for students attending colleges and universities out of State provide opportunities and incentives for students to return to Florida after graduation for employment or graduate opportunities in biomedical research. This year, sixteen undergraduates from across the country spent part of their summer in the Scripps Florida laboratories. Representative universities range from the University of Florida and Nova Southeastern to Columbia and Cornell.

See Appendix 4, “Scripps Florida Outreach Activities” for a detailed listing of Student Researchers for summer 2010.

**Subsection (10) (g) No later than 3 years after occupancy of the permanent facility, the grantee shall establish a research program for middle and high school teachers.**

Scripps Florida began its teacher intern program in the summer of 2005 through support of the Kenan Trust grant. The research program exposes teachers to current laboratory techniques and procedures, provides information on a variety of contemporary issues in basic biomedical research, creates ties and linkages to working scientists who can assist them in curriculum development and creates opportunities for teachers to share information and knowledge with their peers. As an adjunct to their day-to-day responsibilities, participants are required to attend specially-designed seminars throughout the course of the summer. For the summer 2010 program, the application procedure was similar to the high school summer internship program and teachers were given a gross compensation of \$20.00 per hour for the six-week summer program. To extend information about the summer program to all PBC eligible high school teachers, the Scripps Florida Education Administrator, Ms. Leach-Scampavia, supplied program information flyers to each of the PBC high school principals for display at the schools and gave an information presentation about the summer intern program to a meeting of the high school science supervisors. In addition, working through the PBC school district’s science coordinator, flyers were e-mailed to each of the science teachers in the district.

This year, the Scripps Florida teacher intern program placed three high school science teachers in the Chemistry and Molecular Therapeutic research laboratories. Last year, there was one participant, which prompted Scripps to look for other opportunities to reach classroom teachers. The result was the Secondary School Teacher Institutes, described below.

#### Scripps Florida Secondary School Teacher Institutes

Scripps Florida is directing greater efforts to address the needs of the classroom science teacher by establishing Teacher Institutes in basic science and laboratory skills. The program offers direct interaction with the bioscience researchers at Scripps Florida and provides greater professional development opportunities for pre-service and in-service middle and high school science teachers in a supportive engaging environment. Institutes are designed around curriculum units that integrate lessons, activities and laboratory-based biological and chemical experiments designed by research scientists at Scripps Florida. Portability of the lessons allows teachers to leverage the institute curriculum to their own classrooms during the course of the school year.

The program provides opportunities for teachers from all of the secondary schools within the Palm Beach County school district to attend the Teacher Institutes. Through its partnership with the school district, Scripps Florida emphasizes teacher recruitment from schools with limited resources in rural and urban Palm Beach County, particularly in areas with large underrepresented and disadvantaged student populations.

Ten secondary science teachers in the Palm Beach County school district continue to be involved in the alignment and presentation of the science skills curriculum. Teachers are paid a stipend of \$20.00 per hour. Content review and 60 hours of professional development credit are provided by the Palm Beach County School District.

#### Additional Education Outreach Programs at Scripps Florida

In addition to its required student and teacher internships, Scripps Florida provides outreach to Palm Beach County students through its K-12 education programs. The William R. Kenan, Jr Charitable Trust continues to supply funding for these programs which were developed through the efforts of Scripps Florida faculty and staff.

#### Scripps Florida Science Saturday Program

The hands-on Saturday program for high school classes focuses on providing science education opportunities for Title 1 schools in Palm Beach County. Students participate in a DNA-based lesson and tour the Scripps Florida research laboratories. The program invites 15 to 30 high school sophomores and juniors to learn how to isolate their own DNA and to execute DNA fingerprinting exercises (as performed in forensic and research laboratories).

Through the Science Saturday program in the 2009-10 academic year, Scripps Florida's Education Outreach continued to train and provide a "service learning" experience to college students attending FAU's Honors College in Jupiter, Florida. The participating FAU students are part of the FAU Kenan Scholars Program. Service learning provides opportunities to combine academic classroom curriculum with meaningful service by participating in the Science Saturday program. Trained and supervised by Scripps Florida Education Outreach, the Kenan Scholars helped in the teaching process. Closer in age to high school students, college undergraduates served as role models to the younger students while receiving training in their own efforts of becoming future teachers and scientists. Each Saturday experience was hosted by Scripps Florida scientists and tours of the research laboratories were provided to both visiting high school students and FAU undergraduate scholars.

#### Scripps Florida Introduction to Science Program

This interactive middle school lesson serves to tie together the basics of Math, Chemistry, Biology, and Physics for a student age group found to be at academic risk in math and science. Using inexpensive, everyday objects, Scripps Florida Education Outreach has leveraged its Introduction to Science program to community education partners creating a significant expansion of the middle school lesson in Palm Beach County.

#### The Scripps Florida Biotechnology Tour

An up-close view of the biomedical technologies used in the battle against human diseases at Scripps Florida continues to be presented to Science Saturday high school students. The "Biotechnology Tour" provides students an opportunity to see basic biology and chemistry research laboratories. As students move through the laboratories, they gain an understanding of how genomics based research and the processes of organic synthesis lead contemporary efforts in the therapeutic drug discovery process.

#### The Scripps Florida – Middle School Wow Chemistry

This after-school activity allows middle school classes to visit Scripps Florida for demonstrations in chemistry. Presented by Ph.D. graduate students and post docs, a series of chemistry experiments are demonstrated to the students (i.e. chemical clock reactions, vacuum experiments with eggs, freezing and shattering objects with liquid nitrogen, and exploding hydrogen balloons). Student interaction is encouraged.

#### The Scripps Florida High School Career Panel

This is an after-school interactive panel with Scripps Florida Ph.D. graduate students and post-doc fellows. Scripps scientists share experiences about their

undergraduate and graduate careers and the type of research they are conducting at Scripps. The intent is to demystify the higher education/science process, encourage relationships, and answer student questions. The panel concludes with a tour of the Scripps Florida research laboratories.

**Subsection (10) (h) No later than 18 months after occupancy of the permanent facility, the grantee shall establish a program for adjunct professors.**

Many of the current Scripps Florida faculty have received adjunct faculty appointments with the University of Florida, University of Miami and/ or Florida Atlantic University. Such adjunct appointments are intended to provide a mechanism for graduate students enrolled in Florida research universities to collaborate with, to be co-mentored by and to perform research in the laboratories of a Scripps Florida faculty member.

A mechanism has been established for faculty members at Florida institutions who have established collaborative research programs with Scripps Florida faculty to be appointed to an Adjunct Professor position. The process is initiated by a Scripps Florida faculty member who submits a nomination to his/her department chair. If the chair concurs, the chair submits the nomination to the Office of the President for review and approval.

Current Adjunct Faculty include Dr. Chris Liang of Xcovery in West Palm Beach, Florida and Dr. Andrew Hodge of The BioMotion Institute for Mobility and Longevity in West Palm Beach, Florida.

**Subsection (10) (i) No later than 6 months after commissioning its high throughput technology, the grantee shall establish a program to allow open access for qualified science projects.**

Launched in January 2006, the 'Access to Technologies' program continues to invite scientists from Florida universities and other academic research institutions to use state-of-the-art screening technologies at Scripps Florida facilities in Jupiter. A key purpose of Scripps Florida is to interface cutting-edge high throughput technologies with pioneering research programs. To that end, it is imperative that Scripps scientists develop dynamic relationships with Florida institutions to transcend traditional barriers to moving scientific discoveries into the clinic. Florida scientists who may not have these technologies available at their respective institutions are encouraged to participate in the Access to Technologies program. The technologies are primarily for users within the State of Florida; however, Scripps Florida scientists collaborate with researchers at universities and institutes across the country. The 'cores', or basic technologies, are available for access for qualifying projects. Two years ago, Scripps had four cores available; in 2010, Scripps Florida added its seventh core platform.

The Macromolecular X-ray Crystallography Facility Established in 2010, this core offers state-of-the-art equipment and resources to scientists by providing crystallographic

analysis of their chosen biological macromolecules. The core facility offers and operates as a full-service core by performing protein crystallization, X-ray diffraction data collection (both in-house and at Argonne National Laboratory) and processing, phasing, crystallographic refinement, model building, and visualization. The structural data obtained by the core will provide scientists with a wealth of information, including but not limited to biological functions, 3D-folding, ligand binding or mutational effect of target macromolecules of their interests.

The Flow Cytometry Core Flow cytometry measures and analyzes the characteristics of single particles, normally cells, as they move in a stream and are passed through a laser. Thousands of cells can be analyzed by a flow cytometer in a single second. Among the measurements derived from flow cytometry are the size, relative fluorescence and complexity of the particle. The Flow Cytometry group uses two state-of-the-art multiple laser cell sorting, purification, and cloning flow systems (the Becton-Dickinson FACSAria and LSRII) to perform analyses on up to fourteen fluorescence parameters as well as light scatter discrimination experiments (cell size, organelle composition and density, doublet discrimination). In addition, a Leica LMD laser dissection microscope is available for the precise and contamination-free isolation of specific areas of tissue (e.g. tumor material) from single cells or cell groups according to morphological criteria.

The Nuclear Magnetic Resonance Core Nuclear magnetic resonance, known as NMR, uses the magnetic properties of certain nuclei to study molecular structure. A wide variety of information can be gathered using NMR including protein and nuclei acid structure and function. At present, Scripps Florida has two nuclear magnetic resonance instruments. The two machines run 24 hours a day, 365 days of the year. By connecting one of these highly sensitive instruments to the internet via a proprietary Scripps Florida server, scientists can access the data produced from their office or the laboratory. NMR spectroscopy, one of the most widely used types of nuclear magnetic resonance, is used to study the physical, chemical and biological properties of matter.

Genomics Core The Scripps Florida Genomics Core was established to enable access by Scripps Florida and external investigators to the latest technologies for gene expression analysis and high-throughput genotyping. These technologies allow for interrogation and subsequent comparison of the role genetics play in disease state at the global level, or at specified locations in the genome. Gene expression analysis provides a profile of active and inactive genes in a given tissue sample or cell type. The technologies used in the Genomics Core allow for a wide range of cost-effective options for discovery on multiple platforms.

Cell Based Screening Core Researchers in the Cell-Based Screening (CBS) Core leverage high-throughput technologies towards a systematic description of the function of genes encoded by the human genome and a more comprehensive understanding of the genetic basis for human disease. The CBS group provides Scripps investigators, as well as select outside collaborators, with access to genome-wide collections of cDNAs and siRNAs that can be used to interrogate cellular models of signal transduction pathways and phenotypes.

The Proteomics Core The Proteomics Core at Scripps Florida conducts research in the field that examines the expression and action of proteins and other gene products. Its faculty and staff focus on such questions as how proteins are modified by cells in certain diseases. In particular, the scientists concentrate on developing and applying the techniques of mass spectrometry for proteomic analysis. There are nine users throughout Florida institutes of the Proteomics Core.

High Throughput Screening Core High Throughput Screening (HTS) is a drug-discovery process widely used in the pharmaceutical industry. It leverages automation to quickly assay the biological or biochemical activity of a large number of drug-like compounds. It is useful for discovering ligands for receptors, enzymes, ion-channels or other pharmacological targets, or pharmacologically profiling a cellular or biochemical pathway of interest. Typically, HTS assays are performed in “automation-friendly” microtiter plates with a 96, 384 or 1536 well format.

**Subsection (10) (j) Beginning June 2004, the grantee shall commence collaborative efforts with Florida public and private colleges and universities, and shall continue cooperative collaboration through the term of the agreement.**

See the reply to Subsection (9) (f).

**Subsection (10) (k) Beginning 18 months after the grantee occupies the permanent facility, the grantee shall establish an annual seminar series featuring a review of the science work done by the grantee and its collaborators at the Florida facility.**

Scripps Florida continues to host two seminar series year round and one abbreviated series for the summer interns. Established in 2005, the Scripps Florida Collaborative Seminar Series features prominent Florida-based speakers from the academic, biotechnology or pharmaceutical community. The following year, 2006, Scripps began External Seminars as part of the Institute Series, inviting prominent researchers from national and international institutions. Both seminars serve as a major foundation for creating knowledge and technology-sharing opportunities, team building and collaborations among biomedical researchers at Scripps Florida and other Florida research and academic institutions and companies. The sessions are open to interested professionals within the Scripps Florida and Florida scientific communities.

The weekly summer intern series, an adjunct to summer intern day-to-day responsibilities, features faculty members from Scripps Florida. High school and college undergraduate interns attend specially designed seminars throughout the summer.

See Appendix 4, “Scripps Florida Outreach Activities” for a detailed listing of the Seminar Series.

**Subsection (10) (l) Beginning June 2004, the grantee shall commence collaboration efforts with the Office of Tourism, Trade, and Economic Development (OTTED) by complying with reasonable requests for cooperation in economic development efforts in the biomed/biotech industry. No later than July 2004, the grantee shall designate a person who shall be charged with assisting in these collaborative efforts.**

Scripps Florida has designated Mr. Douglas Bingham as its designee to assist OTTED regarding collaborative economic development efforts between Scripps and OTTED. Scripps has worked, directly and indirectly, with OTTED to foster biotechnology economic development growth in Florida.

Scripps Florida is responsive to requests from OTTED to participate in or assist with meetings, presentations or other activities involving the Governor's Office. Additionally, Scripps is often proactive in recruitment discussions or otherwise related business to which OTTED is eventually party to.

Business outreach efforts include participation in meetings facilitated by local business and government agencies such as the OTTED, the Palm Beach County Business Development Board, Enterprise Florida, Inc. and the Technology, Entrepreneurship & Capital Committee meetings. Additionally, Dr. Harry Orf is active in the Florida Research Consortium, BioFlorida and the South Florida Science Museum. Similarly, local efforts involve presentations to community groups, various cultural organizations, and specialty groups. Numerous educational programs such as the Summer Research Internship, Science Saturday and Introduction to Science series have been ongoing including presentations to elementary, secondary and high schools; selecting high school students as interns and hands-on workshops. Scientific outreach spans a variety of regional, state and international interactions from conferences, seminars and workshops to peer-to-peer discussions. See Appendix 4, "Scripps Florida Outreach Activities" for a detailed listing of the Business, Science and Community Outreach activities by Scripps Florida.