The Papanicolaou Corps this past year focused its philanthropy on Sylvester’s multidisciplinary research programs; clinical research services; tissue bank; oncogenomics core; Pap Corps Developmental Grants; faculty recruitment; and other initiatives.

May 2008

As a result of the NCI Core Grant application feedback received in April 2008, Sylvester embarked on a thorough review of its scientific research programs to position itself to resubmit the application in September 2011.

This review has resulted in the reorganization of the research programs from four to seven; including the development of two new, site-specific programs in Breast Cancer and Genitourinary Malignancies. In developing this program structure, the Center leaders considered scientific and clinical strengths as well as patient/community needs.

The new Scientific Research Program (in alphabetical order):

1. Biobehavioral Oncology
2. Breast Cancer
3. Cancer Epidemiology and Prevention
4. Genitourinary (GU) Malignancies
5. Molecular Therapeutics
6. Tumor Immunobiology
7. Viral Oncology

Pap Corps support provides seed money for physicians and scientists to develop preliminary experimental data needed to apply for research grants, primarily from the National Institutes of Health (NIH) and the National Cancer Institute (NCI). Currently, there are 70 NCI-funded and pending award projects at Sylvester, totaling more than $15.9 million*.

*This amount may vary pending final award negotiations for 7 grants.

The Pap Corps’ dynamic effort has enabled Sylvester to achieve the following:

**MULTIDISCIPLINARY RESEARCH PROGRAMS**

1. Bio-Behavioral Oncology - 12 Faculty Members
   **Allocation of Pap Corps Gift: $200,000**
   **Program Leaders:** Michael H. Antoni, Ph.D.; Daniel Armstrong, Ph.D.
   **Calendar Year 2008 Research Portfolio:** 42 publications; 25 Grants & Contracts - $5.2 million

   The BBO Program seeks to improve quality of life and health outcomes in Sylvester’s diverse cancer patient population by identifying specific biobehavioral processes and intervening on them.

   The funds provided by the Pap Corps have supported the following investigators in the program:

   **Michael Antoni, Ph.D.**
   Professor of Psychology, and Psychiatry and Behavioral Sciences
   Program Co-Leader

   Dr. Antoni’s cancer research interests focus on examining the effects of stressors and stress management interventions on the adjustment to, and physical course of, diseases such as breast cancer, cervical neoplasia and prostate cancer. He also has examined some of the psychobiological mechanisms that might explain ways in which stressful events and psychosocial interventions contribute to the adjustment to, and course of, these diseases.

   *Dr. Antoni’s research is partially funded by a NCI Research Project Grant (R01)*
F. Daniel Armstrong, Ph.D.
Professor of Pediatrics, Associate Chair of Pediatrics
Director of Mailman Center for Child Development.
Program Co-Leader

Dr. Armstrong's major interests in cancer research are neurocognitive late effects in children treated for brain tumors and acute lymphocytic leukemia (ALL), quality of life assessment in childhood cancer, interventions for cognitive late effects in childhood cancer survivors, and health behavior outcomes in long-term survivors of childhood cancer.

The University of Miami Miller School of Medicine was selected in October 2008 by the National Institutes of Health as the study center in Florida for the wide-reaching National Children's Study, an unprecedented look at the health of children in the U.S. that examines both environmental and genetic factors. Dr. Armstrong is one of the co-investigator in this $39.9 million contract from the National Institute of Child Health and Human Development. In addition, Dr. Armstrong’s research is partially funded by a NCI subcontract and the National Childhood cancer Foundation.

Youngmee Kim, Ph.D.
Associate Professor of Psychology
(Recruited in 2008)

Dr. Kim's research focuses on various aspects of quality of life of cancer survivors and their family members and close friends, such as psychological and spiritual adjustment; coping with caregiving stress, gender, relationship quality; and cancer preventive behaviors. Her program of research aims to (a) examine the psychosocial, physical, spiritual, and biobehavioral impact of cancer on the family at a national as well as community level, and (b) develop programs and services to assist them in meeting their needs and to promote healthy lifestyle behaviors among cancer survivors as well as their family and friends.

Suzanne C. Lechner, Ph.D.
Assistant Professor of Psychiatry & Behavioral Sciences

Dr. Lechner’s research in psycho-oncology focuses on two different themes: positive adaptation to breast cancer and the causes of late stage presentation to clinic following the detection of a breast cancer symptom.

In 2008 Dr. Lechner was awarded her first NCI independent Research Project Grant (R01) entitled “Facilitating Adjustment in Low-Income Black Women with Breast Cancer.” This grant is a result of a Developmental Grant supported by the Pap Corps gift.
Monica Webb, Ph.D.
Assistant Professor of Psychology
(Recruited in 2008)

Dr. Webb’s research deals with changing health-related behaviors, cancer risk behaviors; tobacco, smoking cessation and relapse prevention, obesity and weight management, development of tailored and culturally specific interventions, health disparities and minority health.

Dr. Webb’s research is partially funded by an American Cancer Society Career Development Grant.

2. Breast Cancer Program – 23 Faculty Members
Allocation of Pap Corps Gift: $200,000
Program Leader: Joyce Slingerland, M.D., Ph.D.; Mark Pegram, M.D.
Calendar Year 2008 Research Portfolio: 39 publications; 31 Grants & Contracts - $5.2 million

Investigators in the Breast Cancer Program conduct research into the causes of breast cancer and develop new means of prevention, diagnosis, and treatment. In addition to its breast cancer clinical research, the program also fosters collaboration with other research programs for breast cancer-focused projects in biobehavioral oncology, epidemiology, genetics, molecular biology, and experimental therapeutics.

The ultimate goal of the Breast Cancer Program is to improve survival rates and decrease morbidity and mortality for breast cancer patients by improving treatment options and fostering the translation of scientific findings into new therapies.

The funds provided by the Pap Corps have supported the following investigators in the program:

Joyce M. Slingerland, M.D., Ph.D., F.R.C.P. (C)
Professor of Medicine
Director, Braman Family Breast Cancer Institute at Sylvester
Program Co-leader

Dr. Slingerland is a recognized authority on cell cycle regulation in relation to breast cancer, with particular emphasis on the p27 cell cycle regulator. Dr. Slingerland’s research investigates how cancers escape negative growth controls. In September 2008, Dr. Slingerland led the research that found a new rationale for targeting two different growth pathways to more effectively stop cancer growth. This study gives scientists a new rationale for combining anti-cancer drugs that specifically target this pathway.
Dr. Slingerland successfully completed the renewal of her NCI Research Project Grant (R01) entitled “Mechanisms Whereby Src Activates Estrogen Stimulated ER Proteolysis and ER Target”. Also, together with Dr. Mark Pegram program co-leader, were awarded an NCI Exploratory Developmental Grant (R21) entitled “A Neoadjuvant Trial of Anastrozole and A Novel Src Inhibitor, AZD0530, for LABC”. This grant will support a clinical trial that combines for the first time a novel molecular targeted drug, AZD0530 that inhibits the Src oncogene, with the antiestrogen anastrozole for women with breast cancer. In addition to testing the safety and early efficacy of this drug combination, this study will permit molecular tests to help predict which patients are likely to have a good response and which will have resistant disease.

She also holds a Doris Duke Foundation award, a Breast Cancer Research Foundation grant and is the principal investigator of a NCI training grant in breast cancer.

Mark D. Pegram, M.D.
Professor of Medicine
Program Co-Leader
(Recruited in 2007)

Dr. Pegram’s current research focuses on understanding the molecular pathways that regulate how HER-2 signals cell growth. He was a co-investigator on the landmark research and clinical trials that led to the development of Herceptin, the first FDA approved targeted therapy for use in early stage HER-2 positive breast cancers. Nearly 20 per cent of women with breast cancer have these types of tumors with higher tendency for fast growth and higher recurrence rate, as compared to tumors that do not overproduce HER-2. Dr. Pegram’s main research interests are finding new ways to tackle this pathway and the development of new drugs to block it.

In addition to the NCI award obtained in collaboration with Dr. Slingerland, Dr. Pegram was also recently awarded a Department of Defense Breast Cancer Program Grant entitled “Defining Genomic Changes in Triple Negative Breast Cancer in Women of African Descent”. He is also a recipient of an award from the Dana Foundation.
**Dorraya El-Ashry, Ph.D.**  
Associate Professor of Internal Medicine  
(Recruited in 2008)

El-Ashry’s research interests focus on understanding the interaction between estrogen receptor (ER) signaling and growth factor receptor (GFR) signaling in breast cancer progression.

Dr. El-Ashry's laboratory has discovered that the over expression of c-erbB-2 or EGFR (cell surface proteins that control cell growth by transmitting growth signals into the cell) directly induce the ERnegative phenotype by the hyperactivation of mitogen-activated protein kinases (MAPK), which are involved in the action of most nonnuclear oncogenes—the genes that turn normal cells into cancerous tumors.

*Dr. El-Ashry's research is partially funded by a NCI Research Project Grant (R01).*

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**Zafar Nawaz, Ph.D.**  
Associate Professor of Biochemistry & Molecular Biology

Dr. Nawaz's research focuses on mechanisms of steroid hormone receptor and coactivator action in normal and cancerous tissues, with important emphasis on estrogen receptor (ER) regulation in breast cancer and androgen receptor (AR) regulation in prostate cancer.

*Dr. Nawaz was recently awarded a NIH Research Project Grant (R01) entitle “Roles of Novel Protein Complexes in Estrogen and Progesteron Receptor Signaling.”*

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3. **Cancer Epidemiology and Prevention Program – 18 Faculty Members**  
**Allocation of Pap Corps Gift: $200,000**  
**Program Leader:** Jennifer Hu, Ph.D.  
**Calendar Year 2008 Research Portfolio:** 46 publications; 30 Grants & Contracts - $2.3 million

This new research program is the result of the dividing of the Biobehavioral Oncology and Cancer Epidemiology Programs. This restructuring was undertaken so that each program could build a more robust set of research activities and platform from which to recruit new faculty than was possible previously.

Researchers in Sylvester's Cancer Epidemiology and Prevention Program seek to understand and address social, environmental, and biological reasons for cancer disparities. These researchers clarify molecular and genetic mechanisms of cancer risk and progression, with the aim of developing predictive models for treatment
response. Interaction with community organizations and clinics, including many that serve minority and underserved populations, strengthens this research program. The community acts as a laboratory for participatory research. Data from this research, as well as from national and state databases, helps develop models to improve cancer prevention, early detection, and clinical outcomes.

The funds provided by the Pap Corps have supported the following investigators in the program:

Jennifer J. Hu, Ph.D.
Professor of Epidemiology & Public Health, and Associate Director of Cancer Prevention and Control Program Leader

Dr. Hu’s laboratory conducts molecular genetic epidemiology research, specifically on prevention research in breast cancer, prostate cancer, and head and neck squamous cell cancers (HNSCC). Research in Dr. Hu’s laboratory focuses on identifying markers of genetic regulation of DNA damage/repair for breast cancer susceptibility. This work aims to evaluate the genetic regulation of DNA damage/repair in breast cancer susceptibility; identify high-risk populations by using validated DNA damage/repair markers; and reduce breast cancer risk in genetically susceptible populations or sub-populations through effective intervention.

Dr. Hu’s research is partially funded by a NCI Research Project Grant (R01) and a Department of Defense Grant.

Elizabeth J. Franzmann, M.D.
Assistant Professor of Otolaryngology

Dr. Franzmann research focuses on the understanding of the molecular mechanisms of head and neck cancer progression. She developed a mouthwash test to detect early stages of head and neck cancer that is reporting promising results.

Determined to detect head and neck squamous-cell carcinoma in its earlier, more treatable stages, Dr. Franzmann developed a simple, inexpensive screening tool that requires that patients swish and gargle with saline for several seconds and then spit in a cup, where the results are tested. Franzmann developed the test based on earlier findings that approximately 79 percent of head and neck cancer patients have high levels of CD44 in their saliva compared to those who do
not have the cancer. CD44 is a protein expressed and shed by squamous cell carcinomas, which account for nearly all head and neck cancers.

*Dr. Franzmann obtained this year a supplement to her NCI Research Project Grant (R01) to expand her studies.*

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**Erin N. Kobetz, Ph.D., M.P.H.**
Assistant Professor of Epidemiology & Public Health

Dr. Kobetz’s research interests focus on racial/ethnic and socioeconomic disparities in cancer outcomes. She is particularly interested in examining heterogeneity within Miami’s black population as it relates to cancer risk as well as further understanding why Haitian Americans, the fastest growing ethnic minority in South Florida, contribute to excess morbidity and mortality for most cancers. As a result, Dr. Kobetz has been actively working with leaders in the South Florida Haitian community and has successfully obtained extramural funding to build “Partners in Action,” a campus-community partnership between academic investigators from Sylvester and key individuals and organizations from the South Florida Haitian community.

*Dr. Kobetz’s research is partially funded by an American Cancer Society Career Development Grant and a Susan Komen Foundation award.*

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**Leonidas G. Koniaris, M.D.**
Associate Professor of Surgery, and Cell Biology & Anatomy

Dr. Koniaris is interested in health care delivery as well as the effects of cancer on organ function and repair, research that has been conducted through a long-standing collaboration with Teresa A. Zimmers, Ph.D. Dr. Koniaris also studies system-based approaches to optimize outcomes for patients with cancers requiring surgical therapy.

A study by a team of Sylvester researchers led by Dr. Koniaris finds considerable disparities in survival for African Americans and poor patients with head and neck cancer. The study indicates that earlier diagnosis and greater access to treatment could improve outcomes for these cancers among African Americans and the poor. The study was published in the November 2008 issue of Cancer, a peer-reviewed journal of the American Cancer Society.
4. Genitourinary Malignancies Program – 12 Faculty Members
Allocation of Pap Corps Gift: $244,000
Program Leader: Alan Pollack, M.D., Ph.D.; Richard Cote, M.D., Ph.D.
Calendar Year 2008 Research Portfolio: 58 publications; 27 Grants & Contracts - $2.4 million

The Genitourinary Malignancies Program consists of outstanding scientists and physicians who are part of an innovative scientific team focused on studying cancers of the genital and urinary organs. This group of scientists has made it possible for the Cancer Center to develop this research area into a full-fledged program.

The overriding goal of the Genitourinary Malignancies Program is to translate research from the bench to the bedside in the areas of prostate, bladder, and kidney cancers. Specific research goals include:

- Characterize the mechanisms behind novel therapeutic agents in complementary and alternative medicine.
- Explore new targeted therapeutic strategies that kill prostate cancer cells themselves and work in concert with radiation, hormone therapy and/or chemotherapy.
- Develop new markers that may be applied clinically for screening to identify the presence of cancer and for determining how best to treat an individual’s cancer once identified.

The funds provided by the Pap Corps have supported the following investigators in the program:

**Alan Pollack, M.D., Ph.D.**
Chair, Department of Radiation Oncology
Program Co-Leader
(Recruited in 2008)

Alan Pollack, M.D., Ph.D. has taken the helm as the new chair of the Department of Radiation Oncology at the University of Miami Miller School of Medicine. He oversee’s clinical and research teams at the Sylvester Comprehensive Cancer Center and serve as chief of service at Jackson Memorial Hospital. Dr. Pollack comes to UM from Philadelphia’s Fox Chase Cancer Center, where he was a leading physician/scientist. Dr. Pollack, who is a Miller School of Medicine alum, is an internationally renowned expert in prostate and other cancers.

*Dr Pollack is awaiting the award of a NCI Exploratory Developmental Grant (R21) entitle “DNA Repair Genes and Radiotherapy Related Toxicity in Prostate Cancer Patients”.*
Balakrishna L. Lokeshwar, Ph.D.
Professor of Urology

Dr. Lokeshwar’s research is centered on the mechanism of prostate cancer metastasis and its control by novel chemotherapeutic drugs. For the last several years, research in his laboratory has focused on the extracellular matrix degradation and tumor metastasis.

Dr. Lokeshwar team identified a novel, chemically-modified non-antimicrobial tetracycline (COL-3) as an effective anti-metastatic drug with potential to treat prostate cancer metastatic to bone. The NCI has completed the Phase I trial of this drug and is awaiting further trials. Dr. Lokeshwar’s research has brought in one patent to the University of Miami jointly with State University of New York at Stony Brook.

Dr. Lokeshwar's research is partially funded by a NCI Research Project Grant (R01) and a NIH Research Project Grant (R01).

Andrew V. Schally, Ph.D., M.D.h.c., D.Sc.h.c.
Nobel Laureate,
Professor of Pathology

Dr. Schally, a Nobel Laureate in Medicine, continues to work on the development and preclinical evaluation of peptide analogs with antitumor activity.

This past year, Dr. Shally and collaborator Dr. Barabutis, discovered the antioxidant activity of growth hormone-releasing hormone (GHRH) antagonists. This discovery could lead to novel therapies against various cancers as well as neurodegenerative diseases, such as Alzheimer’s. The results of the study were published in the December edition of the Proceedings of the National Academy of Sciences.

Dr. Schally's research is partially funded by a Merit Award from the Veteran Administration.

Rakesh Singal, M.D.
Associate Professor of Medicine

Dr. Singal’s research focuses on the mechanisms that inactivate certain tumor-suppressor genes in prostate cancer. By understanding how genes are silenced, treatments can be developed to activate them and thereby prevent the development and/or progression of prostate cancer.
Dr. Singal uncovered a potential therapeutic target for Prostate Cancer, and a clinical trial based in his discovery is already underway. This new discovery points the way to critically important treatment possibilities for patients with advanced prostate cancer in whom chemotherapy and hormone therapy have failed. Dr. Singal has been studying methylation-mediated transcriptional regulation in prostate and other cancers. In many cancers, malignant cells are able to proliferate by shutting down the body’s natural defenses, which include apoptosis or cell death and DNA repair. Repression of genes involved in ‘apoptotic’ or ‘cell death’ pathway may result from ‘DNA methylation.’ DNA methylation refers to a modification of DNA without a change to the original DNA sequence, resulting in alteration in gene expression.

5. Molecular Therapeutics Program – 23 Faculty Members
Allocation of Pap Corps Gift: $200,000 (Tumor Metabolism)
Program Leader: Julio Barredo, M.D.; Anthony Capobianco, Ph.D.
Calendar Year 2008 Research Portfolio: 68 publications; 81 Grants & Contracts - $5.0 million

The principal aim of the Molecular Therapeutics Program is to promote, support, and accelerate translational research to expedite the development of rationally designed emerging cancer therapies based on pre-clinical research conducted in program members’ laboratories. The ultimate goal is to improve cure rates and decrease morbidity and mortality for cancer patients by developing individualized targeted molecular cancer therapies.

The Molecular Therapeutics Program’s specific goals include:

- Delineate signal transduction pathways critical for cancer cell proliferation and survival leading to the identification and validation of novel molecular targets within these pathways.

- Discovery, development and design of biological and drug based therapies targeted for tumor specific individualized therapies.

- Bridge molecular discoveries from the bench to the clinic by translating intra-and inter-programmatic hypotheses-driven strategies into early phase I and II clinical trials.

Julio C. Barredo, M.D.
Professor of Pediatrics, Biochemistry & Molecular Biology, and
Director of Pediatric Hematology-Oncology
Program Co-leader
Dr. Barredo’s research focuses on the molecular mechanisms leading to cancer cell sensitivity and resistance to conventional chemotherapy and molecular targeted agents. Using childhood acute lymphoblastic leukemia as a model, his laboratory has studied the molecular mechanisms that determine the cytotoxicity of methotrexate (MTX), a universal component of childhood acute lymphocytic leukemia (ALL) therapy.

*Dr. Barredo’s research is partially funded by a NCI Research Project Grant (R01) and a Leukemia and Lymphoma Society Grant.*

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**Anthony J. Capobianco, Ph.D.**

Director, Molecular Oncology Research Program  
Division of Surgical Oncology  
Program Co-Leader  
(Recruited in 2008)

Cancer is a disease of cellular growth control gone awry. Cancerous cells arise as a result of the accumulation of genetic mutations that either activate cancer-causing genes or inactivate tumor-suppressing genes. The consequence of these mutations is the disruption of the normal controls that govern proliferation and differentiation. Dr. Capobianco’s laboratory studies the molecular sequences of events set in motion by certain genetic mutations to better understand not only cancer processes but also normal and abnormal development.

At UM, Dr. Capobianco will continue his studies of a gene called Notch. Notch has long been understood to be critical to proper embryonic development in fruit flies and other organisms, but research in recent years has begun to implicate the gene as a possible cancer trigger, or oncogene, when mutated.

*Dr. Capobianco’s research is partially funded by a NCI Research Project Grant (R01) and a American Cancer Society Grant.*
Theodore Lampidis, Ph.D.
Professor of Cell Biology & Anatomy

Dr. Lampidis’ current research efforts focus on the natural selectivity that inhibitors of glycolysis (i.e., turning sugar into energy) should have for poorly oxygenated cancer cells growing slowly inside solid tumors. Moreover, cells in the center of a tumor divide more slowly than outer growing oxygenated cells and consequently are more resistant to standard chemotherapeutic agents which target the more rapidly dividing cells. His background and work on mitochondrial localizing drugs and MDR uniquely positions him to stimulate new initiatives in this promising area of research. As a long-term goal it is envisioned that addition of the appropriate glycolytic inhibitors (which are presently being designed and synthesized) to current clinical protocols may significantly improve the success rate of cancer chemotherapy.

Dr. Lampidis's research is partially funded by a NCI Research Project Grant (R01). In Addition, Drs. Lampidis, Julio Barredo, Larry Boise, Jaime Merchan and Timothy Murray were the recipient of the first awarded Sylvester Pap Corps Development Program Project for their grant application entitled “Targeting Glycolysis and Glycosylation to Improve Treatment Efficacy in Various Tumor Types.” The group is currently completing the first year of the two year award of $400,000. The overall theme of the grant is interfering with glucose metabolism for therapeutic gain in lung cancer, retinoblastoma, acute leukemia, myeloma and renal cell carcinoma.

6. Tumor Immunobiology Program – 23 Faculty members
Allocation of Pap Corps Gift: $360,000
Program Leaders: Eli Gilboa, Ph.D.; Diana M. Lopez, Ph.D.
Calendar Year 2008 Research Portfolio: 35 Publications; 56 Grants & Contracts - $7.7 million

The main goal of the Tumor Immunobiology and Immunotherapy Program is to analyze the interaction of tumors with the immune system to facilitate the development of new immunotherapeutic approaches to cancer treatment. The program is organized into four major themes:

- Mechanisms of tumor induced immunosuppression and immune evasion
- T and B cell development, immunobiology and pathogenesis
- Cytotoxic mechanisms in the innate and adaptive immune response to cancer
- Novel immunotherapeutic approaches and tumor vaccines
Krishna Komanduri, M.D.
Professor of Medicine, Microbiology and Immunology
(Recruited in 2008)

Dr. Komanduri, a physician and researcher from the University of Texas M.D. Anderson Cancer Center, was recruited to lead the adult stem cell transplant program at the University of Miami Sylvester Comprehensive Cancer Center. He is the director of the Sylvester Stem Cell Transplantation Program and associate director of translational research at the Miami Transplant Institute at Jackson Memorial Hospital.

His research focus is in immune reconstitution after stem cell transplantation and human T-cell immunity to pathogenic viruses and fungi, and in characterizing how subsets of T cells may mediate post-transplant complications. Dr. Komanduri’s lab was among the first to apply novel techniques in functional immune assessment by flow cytometry to study virus-specific T-cells and those capable of recognizing foreign tissues.

Dr. Komanduri’s research is partially funded by a NCI Research Project Grant (R01), a NIH Research Project Grant (R01) and a Leukemia and Lymphoma Society Grant.

Samita S. Andreansky, Ph.D.
Research Assistant Professor of Pediatrics
(Recruited in 2008)

The complexity and heterogeneity of malignancies requires a multidisciplinary approach to study anti-cancer immunotherapy and to develop it as part of treatment. The focus of Dr. Andreansky’s research is to explore synergistic methods in treating preclinical cancer models, such as breast cancer and virally induced cancers. Particular emphasis is being given to the host immunoregulatory mechanisms (checkpoints) that may control the development and maintenance of adaptive immunity.

Dr. Andreansky’s research is partially funded by an American Cancer Society Career Development Grant.

7. Viral Oncology Program – 12 Faculty Members
Allocation of Pap Corps Gift: $300,000

Program Leaders: William J. Harrington Jr., M.D.; Glen N. Barber, Ph.D.
Calendar Year 2008 Research Portfolio: 30 Publications; 33 Grants & Contracts - $7.7 million
The Viral Oncology Program focuses on viral malignancies including Gamma Herpes Virus, HIV, HTLV, HCV and HPV-associated tumors that are prevalent in our community and which present unique therapeutic targets as well as outstanding models for mechanisms of innate immune evasion.

A key objective is to develop novel strategies that exploit these targets. The Program’s clinical research attends to the underserved and generates, rather than consumes, resources for their care. Careful recruitment of talented, funded and collaborative investigators is enhanced by access to primary viral cancers from our unique patient populations. The program is divided into two interactive groups: basic and translational. Viral malignancies are highly prevalent in the Caribbean as well as Latin America. The demographics of these cancers are similar to those of the South Florida community. The Program scientists have expanded on longstanding programs (e.g., Latin American Training Program) at Sylvester to develop international collaborations. Such partnerships are invaluable as these diseases are increasing in the United States.

The goals of the Viral Oncology Program include:

- Investigating the mechanisms of oncogenesis and innate immune subversion in viral associated cancers that are increasing in prevalence in our region.
- Devising novel and targeted therapeutic/prognostic and preventive strategies for viral associated malignancies.
- Implementing basic and clinical international studies in developing nations that have a high incidence of these tumors.

William J. Harrington Jr., M.D.
Professor of Medicine
Program Co-leader

Dr. Harrington’s laboratory efforts center on understanding the mechanisms of antiviral-mediated apoptosis of viral-mediated malignancies.

Dr. Harrington Jr. died suddenly at the age of 54 on January 29, 2009. The HIV/AIDS and medical community lost an energetic and unique physician-scientist; Dr. Harrington, Jr. was a leader in the field of viral oncology, particularly in Epstein-Barr virus associated lymphomas. Dr Harrington was the principal investigator of the National Cancer Institute (NCI) AIDS Malignancy Consortium core site in Miami and also headed the William J. Harrington Medical Training Programs in Latin America at the University of Miami founded by his father, which has trained over 3000 students and physicians from the Caribbean basin, Central America, and South America. Dr. Harrington's untimely death leaves behind a huge loss impossible to attempt to fill.
Dr. Barber's research focuses on understanding the mechanisms of innate immunity to viral infection and malignant disease. Gaining insight into the innate immune process allows investigators to develop translational research comprising the design of novel vaccines and therapeutics to combat disease. Scientists have long been working to uncover the mystery of what sparks the body's immune system. This Past year Dr. Barber's team discovered a key component in that puzzle molecule that triggers immune response. Researchers: a new molecule that recognizes a virus infection and initiates the signal to generate an immune system response. Glen N. Barber, and Hiroki Ishikawa, Ph.D., a post-doctoral fellow, have published their findings in the September issue of the prestigious journal *Nature*.

*Dr. Barber’s research is partially funded by a NCI Research Project Grant (R01), and two NIH awards: a Research Project Grants (R01) and an Exploratory Developmental Grant (R21). In addition Dr. Barber has receive notification and is expecting awards for two additional Research Project Grants (R01) from the NCI and other NIH Institute, a Cooperative Agreement Grant from the NIH and most noticeable a Program Project Grant from the NCI.*

*The Program Project Grant is the result of the group efforts of the members of the Viral Oncology Program lead by Drs. Harrington and Barber. A program project grant support is an integrated, multi-project research program involving a number of independent investigators who share knowledge and common resources while working towards a unifying overall scientific goal. This is one of the required grants in a mature Research Program. The notification of funding was received a week after Dr, Harrington’s passing. Joseph Rosenblatt, M.D., Professor of Medicine, Division Chief of Hematology-Oncology, and Associate Director of Clinical and Translational Research will team with Dr. Barber to direct the grant.*

**Edward Harhaj, Ph.D.**  
Assistant Professor of Microbiology & Immunology

Dr. Harhaj’s research interests focus on the mechanisms of viral-induced malignancy by the human T-cell leukemia virus type-I (HTLV-I). HTLV-I is a retrovirus that primarily infects CD4+ T lymphocytes and is etiologically linked to adult T-cell leukemia (ATL) and an inflammatory autoimmune-like neurological disorder known as HTLV-I-associated
myelopathy/tropical spastic paraparesis (HAM/TSP).

Dr. Harhaj's research is partially funded by a NCI Research Project Grant (R01), and a NIH Research Project Grants (R01). He is also leaders of one of the projects in the Program Project Grant from the NCI.

### SHARED RESOURCES SUPPORTED

Funds from the Pap Corps have supported the following Cancer Center Shared Resources:

1. **Tissue Bank**
   - **Allocation of Pap Corps Gift:** $125,000

   **Sean Scully, M.D., Ph.D., Director.**

   Professor of Orthopedic Rehabilitation, Cell Biology & Anatomy, and Cellular & Molecular Pharmacology, and Associate Director of Education and Training

   The availability of human tumor tissue, matched with normal tissue from the same patient and clinical history, are a prerequisite for meaningful translational research in identifying molecular targets and therapeutic strategies. The Tissue Banking Core Facility (TBCF) is designed to bank tissue and pair clinical data for Sylvester members. It has approval from the IRB and has an NIH Certificate of Confidentiality. The TBCF is overseen by an oversight committee composed of four Sylvester members.

   **Accomplishments:**
   - The tumor bank is located in PAP 228 and is outfitted with -80°C freezers, computer hardware, and software to permit inventory, reporting, and clinical data tracking.
   - Collection of tissues began in October 2008 at all three hospitals: Sylvester, Jackson memorial and University of Miami Hospital. As of March 2009, 271 patients have been enrolled. The team consists of a resource manager, two data coordinators/consenting staff, two pathology assistants and a research nurse.
2. Clinical Research Services Resource (CRS) 
Allocation of Pap Corps Gift: $125,000

Stefan Gluck, M.D.,
Medical Director
Professor of Medicine

The purpose of Clinical Research Services is to provide centralized support for all cancer-related clinical research conducted at University of Miami, Sylvester Comprehensive Cancer Center and the Jackson Memorial Hospital (JMH) community affiliate. A staff of 53 including 12 research nurses and 18 clinical coordinators facilitate the conduct of clinical trials by Sylvester investigators and provides a centralized resource for protocol processing, tracking and monitoring, research nursing and data management, regulatory oversight, and financial management.

The objectives of the CRS are to:

1. Provide support in the preparation and submission of protocols and reports in accordance with institutional and federal regulatory guidelines including the Protocol Review Committee, University of Miami Institutional Review Board, Western Institutional Review Board, the Food and Drug Administration.
2. Facilitate screening, subject enrollment, and protocol compliance for subjects involved in cancer-related clinical trials.
3. Maintain a centralized clinical trials database for clinical protocols.
4. Ensure cancer clinical trial compliance through monitoring and quality assurance that is consistent with the Sylvester Protocol Review and Monitoring System; Data and Safety Monitoring Plan; and federal, state and institutional regulations.
CRS is designed to facilitate the initiation and conduct of innovative and high-quality clinical research at Sylvester. The CRS office is comprised of specialized research teams in areas that have unique skill sets, and other teams that oversee large numbers of accruals in specific disease settings. Research teams report trial information to the central CRS office, attend CRS organizational and administrative meetings, and adhere to CRS procedures to assure uniform quality in the conduct of trials. CRS also increases the efficiency of personnel management by recruiting, hiring, and training of new staff involved in clinical trial implementation.

Accomplishments:
As of March 2009, the CRS team is managing 213 Therapeutic and Non-Therapeutic Clinical Trials and has assisted Sylvester members with the accrual of 212 patients to Therapeutic Trials and 426 patients to Non-Therapeutic Trials.

3. Oncogenomics
Allocation of Pap Corps Gift: $125,000

The Oncogenomics Core Facility (OCF) was established in 2007 to provide Sylvester members with access to the latest in technology and expertise for the detection, quantification and characterization of genes and gene products in cancer cells. The OCF has been constructed to support the development of critical research tools as well as support the translation of these technologies to the clinic. Equipment was obtained from a State of Florida equipment grant and Sylvester funds.

Accomplishments:
The facility is established, fully functional. Since genomic facilities are expensive, technological advances are rapid, and require specialized expertise, the OCF has established a cross-functional collaboration with the Center for Genome Technology in the Miami Institute for Human Genetics at the University of Miami, Miller School of Medicine. The core is also expanding data analysis capabilities in collaboration with the UM Center for Computational Sciences.
## Allocation of Pap Corps Gift: $450,000

### Sylvester Pap Corps Summer Research Fellowship 2009

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<th>Grant Title</th>
<th>Award Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chanh, Tanya</td>
<td>Dr. Glen Barber-Medicine</td>
<td>6/1/09-8/31/09</td>
<td>Isolation of Molecules that Facilitate Innate Immune Signaling</td>
<td>$3,000</td>
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<tr>
<td>Rodriguez, Jorge</td>
<td>Dr. Jennifer Hu-Epidemiology &amp; Public Health</td>
<td>6/1/09-8/31/09</td>
<td>Functional Genomics of DNA Damage/Repair Signaling in Breast Cancer Risk and Reoccurrence</td>
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**Total** $6,000

### Sylvester Pap Corps Developmental Cancer Research Grants 2008

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Department</th>
<th>Project Period</th>
<th>Grant Title</th>
<th>Award Amount</th>
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<tbody>
<tr>
<td>Hnatyszyn, James, Ph.D.</td>
<td>Medicine</td>
<td>6/1/09-5/31/10</td>
<td>The Role of SATB1 in Metastatic Breast Cancer</td>
<td>$60,000</td>
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<tr>
<td>Pollack, Alan, M.D., Ph.D.</td>
<td>Radiation</td>
<td>6/1/09-5/31/10</td>
<td>Genetic and Dosimetric Determinants of Toxicity in Men Treated with Radiotherapy for Prostate Cancer</td>
<td>$60,000</td>
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<tr>
<td>Rai, Priyamvada, Ph.D.</td>
<td>Medicine</td>
<td>6/1/09-5/31/10</td>
<td>Defining pro-tumorigenic Mechanisms Associated with Elevated Levels of the Redox Regulatory Protein, Thioredoxin (TRX)</td>
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<tr>
<td>Webster, Keith, Ph.D.</td>
<td>Pharmacology</td>
<td>6/1/09-5/31/09</td>
<td>Targeting Hypoxic Cells in Breast Tumors by Combination Vacuolar ATPase, ERK and Glycolysis Inhibitors</td>
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**Total** $240,000

### Sylvester Pap Corps Cancer Health Disparities Pilot Grants 2008

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<tbody>
<tr>
<td>W. Jarrard Goodwin, M.D., F.A.C.S.</td>
<td>Otolaryngology</td>
<td>11/1/08-10/31/09</td>
<td>Environmental Factors and Epigenetic Aletrations in Head and Neck Cancer</td>
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<td>Luis Raez, M.D., F.A.C.P., F.C.C.P.</td>
<td>Hematology/Oncology</td>
<td>11/1/08-10/31/09</td>
<td>Molecular Genetics of Treatment Response in Lung Cancer Disparities</td>
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**Total** $100,000

### Sylvester Pap Corps International Cancer Research Developmental Grants 2008

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<tr>
<td>Barber, Glen, PhD</td>
<td>Medicine</td>
<td>2/15/09-2/14/10</td>
<td>A Novel Resource for International Research</td>
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<tr>
<td>Erin Kobetz, PhD, MPH</td>
<td>Epidemiology and Public Health</td>
<td>2/15/09-2/14/10</td>
<td>Assessing Women's Knowledge and Risk of Cervical Cancer and Human Papillomavirus (HPV) and Acceptability of the fournier Self-Sampling Device among Women in Thomonde, Haiti</td>
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**Total** $100,000