

Fiscal Year 14 (April 1, 2013 – March 31, 2014) Accomplishments

Awards

- **The New York Genome Center (NYGC) and Roswell Park Cancer Institute (RPCI)** announced that RPCI, a nationally-designated Comprehensive Cancer Center in Buffalo, NY, is joining the organization as an Associate Member. This unique collaboration is designed to accelerate the clinical applications for genome sequencing in oncology.
- **Yuesheng Zhang, MD, PhD**, Professor of Oncology in the Department of Chemoprevention, received a five-year, \$1.7 million grant award from the National Institutes of Health (NIH) to study the molecular basis for men's higher risk of bladder cancer — four times higher than women's risk. The research will also assess intervention strategies.
- **John Blessing, MD, PhD**, Executive Director of the Gynecology Oncology Group (GOG) Statistical and Data Center, received a one-year subcontract award of \$300,552 from the GOG and the National Cancer Institute (NCI) for a long-term follow-up study of patients at high genetic risk for breast and ovarian cancer.
- **Kenneth Gross, PhD**, Chairman of the Department of Molecular and Cellular Biology, **Dominic Smiraglia, PhD**, Associate Professor of Oncology in the Department of Cancer Genetics, and **Norma Nowak, PhD**, Associate Professor of Oncology in the Department of Cancer Genetics, received a two-year, \$290,839 grant from the NCI to identify genetic mutations and other abnormalities that lead to the genesis and spread of pancreatic islet-cell cancer. Dr. Smiraglia also received a two-year, \$165,000 grant from the American Institute for Cancer Research to explore how dietary folate interventions depletion and supplementation affect progression to recurrent prostate cancer.
- **Santosh Patnaik, MD, PhD**, Assistant Professor in the Department of Thoracic Surgery, received a two-year year grant of \$241,931 from the NCI as co-principal investigator, with a collaborator from Memorial Sloan Kettering Cancer Center, of a project to develop microRNA methods to predict prognosis in early-stage lung cancer.
- **Michael Higgins, PhD**, Associate Professor of Oncology in the Department of Molecular and Cellular Biology, received a two-year subcontract award of \$209,235, from the U.S. Department of Defense and the University of Nebraska Medical Center to determine whether abnormal expression of a specific gene, called the BORIS gene, contributes to cancer formation in the ovary.
- **Vijay Jayaprakash, MBBS, PhD**, Assistant Professor in the Department of Dentistry & Maxillofacial Prosthetics, received a two-year grant of \$206,066 from Merck Sharp & Dohme Corp. to evaluate the prevalence of human papillomavirus (HPV) 16 and 18 in oral precancerous lesions and study whether persistent HPV infection is related to the progression of these viruses to invasive cancer.
- **Robert Plunkett, MD**, Associate Professor of Neurosurgery, received a two-year subcontract amount of \$146,716 from Buffalo BioLabs LLC and the NCI for work on his project to test a novel anticancer agent, which uses a pathway found in many cancers, against glioblastoma multiforme, the most aggressive type of primary brain tumor.
- **Katerina Gurova, MD, PhD**, Assistant Professor in the Department of Cell Stress Biology, received a one-year grant of \$125,000 from the NCI to test novel anticancer compounds called curaxins against pancreatic cancer.

- **Elizabeth Repasky, PhD**, Professor in the Department of Immunology, received a six-month grant of \$23,767 from Cleveland BioLabs Inc. to evaluate the effect of a new anticancer agent from the curaxins family in combination with the FDA-approved drug Tarceva against non-small-cell lung cancer.
- **Nathalie Zeitouni, MD**, Chief of Dermatologic Surgery, received a one-year grant for \$7,641 from the American Society for Dermatologic Surgery for a project that aims to confirm that non-invasive imaging can accurately measure the depth and thickness of skin tumors.
- **RPCI and Jasco Pharmaceuticals LLC** announced a new partnership to advance development of an investigational pharmacological therapy that shows promise for treating both solid-tumor cancers and hematologic malignancies. The affiliation will see RPCI providing preclinical research infrastructure and services to fast-track development of Jasco's lead agent and speed its progression to the clinical-trial phase. **Kelvin Lee, MD**, Jacobs Family Chair in Immunology and Co-Leader of the Tumor Immunology and Immunotherapy Program at Roswell Park, will lead a study into a survival mechanism that is a major cause of resistance to frontline multiple myeloma treatments.
- **The University of Rochester Medical Center and RPCI** received accreditation from the Accreditation Council for Graduate Medical Education (ACGME) for a **joint two-year fellowship program in complex general surgical oncology**. Surgeons who are accepted into the program will ultimately train at both institutions and, upon completion of the program, will be eligible for board certification in surgical oncology. Last year, the American Board of Surgery approved a plan to make surgical oncology a board-certified subspecialty, akin to plastic surgery or vascular surgery. The plan requires surgeons to complete a five-year residency in general surgery and a two-year ACGME-accredited fellowship in complex general surgical oncology, and to pass written and oral board examinations.
- **Deborah Erwin, PhD**, Director of the Office of Cancer Health Disparities Research, Department of Cancer Prevention and Population Sciences, received a four-year, \$2.6 million grant award from the National Institutes of Health (NIH) and NCI to study factors influencing why African-Americans are less likely to receive referrals for colorectal cancer screenings, despite having the highest incidence and mortality rates of any ethnic or racial group. Dr. Erwin's research will involve African-Americans age 50 and older in the Buffalo/Niagara region and New York City.
- **Dhyan Chandra, PhD**, Assistant Professor of Oncology, Department of Pharmacology & Therapeutics, received a four-year, \$984,285 award from the NCI to study how metastatic prostate cancer cells eventually become resistant to known chemotherapy agents. Dr. Chandra hopes to determine new strategies to target these cells and improve treatment.
- **Kelvin Lee, MD**, Jacobs Family Chair in Immunology, received a five-year, \$900,000 grant from the Department of Health and Human Services to study and define the molecular components that lead to chemotherapy resistance and determine novel strategies for targeting multiple myeloma.
- **James Mohler, MD**, Associate Director, Senior Vice President for Translational Research and Chair of the Department of Urology, received a three-year subcontract award of \$298,191 for a Department of Defense-sponsored project. Dr. Mohler will explore genetic variations in mitochondria and prostate cancer progression in Caucasian-American and African-American men.
- **Santosh Patnaik, MD, PhD**, Assistant Professor in the Department of Thoracic Surgery, received a two-year, \$275,000 grant from the NCI to be shared with Memorial Sloan Kettering Cancer Center to develop a test to identify patients with early lung cancer who are at higher risk for

post-treatment recurrence — information that may help guide decisions regarding aggressive surveillance or intervention.

- Survival rates remain poor for women diagnosed with late-stage ovarian cancer — and more than 75 percent of patients fall into that category, with the disease claiming 14,030 lives each year. Now, with more than \$11 million in funding from the NCI, RPCI, in collaboration with the University of Pittsburgh Cancer Institute (UPCI), will embark on an aggressive, multi-pronged search for ways to prevent and cure it. Distributed over five years, the funds will come through a Specialized Program of Research Excellence (SPORE) grant. The research team, led by **Kunle Odunsi, MD, PhD**, Principal Investigator of the **RPCI/UPCI Ovarian Cancer SPORE grant**, will study novel immunotherapy approaches for the treatment of and risk assessment for ovarian cancer. The research itself will encompass four projects: three clinical trials evaluating newly developed immunotherapies and one epidemiological study looking for ways to reduce risk in women at high risk of developing ovarian cancer.
- The **NCI's** new Provocative Questions research funding program awarded a prestigious \$406,247 two-year award to **David W. Goodrich, PhD**, Professor of Oncology in the Department of Pharmacology and Therapeutics. Dr. Goodrich's investigation aims to answer a question concerning the mechanisms of tumor development or recurrence: How does the order in which mutations or epigenetic changes occur alter cancer phenotypes or affect the efficacy of targeted therapies? The NCI's **Provocative Questions Project** emerged in 2012 in an effort to tackle long-standing questions about our understanding of cancer biology and cancer control, challenging cancer researchers to provide answers to 24 perplexing questions in cancer research.
- **Kelvin P. Lee, MD**, Jacobs Family Chair in Immunology, received three grants totaling more than \$3.9 million. Two grants are from the National Institute of Allergy and Infectious Diseases (NIAID) and will help fund Dr. Lee's work in immunology. One is a four-year award for \$2.02 million that will aid exploration of how immune responses occur and what molecular pathways are involved. These immune responses are similar to those seen after a vaccination, and the studies may lead to ways to heighten vaccine effectiveness. The other NIAID grant is a two-year award of \$377,643 to help Dr. Lee study new treatments for very severe allergic reactions to peanuts. In this work, Dr. Lee will be a co-investigator with Manel Jordana, MD, PhD, Professor of Pathology and Molecular Medicine at McMaster University in Ontario, Canada. The third grant, for \$1.56 million, is a five-year grant from the NCI to learn which specific molecular pathways are essential for multiple myeloma cancer cells to survive. Dr. Lee's research focuses on a specific receptor called CD28.
- **Steven C. Pruitt, PhD**, Associate Member in the Department of Molecular and Cellular Biology, received a five-year, \$1.62 million grant award from the NCI. The grant will support Dr. Pruitt's studies on DNA replication processes and how failures in these processes contribute to genetic damage resulting in cancer.
- **Ravindra K. Pandey, PhD**, Professor and Distinguished Member of Cell Stress Biology, and colleagues received a three-year grant of \$668,598 from the NIH for the a Small Business Technology Transfer phase I/II study investigating the toxicity of a near infrared photosensitizer. The funds are part of a larger grant totaling \$1.5 million that was received by Photolitec LLC — a spinoff company of Roswell Park. Dr. Pandey is the Founder and CSO of this life-sciences company.
- **Joseph Skitzki, MD, FACS**, Assistant Professor in the Department of Surgical Oncology and Associate Member in the Department of Immunology, received a two-year, \$150,000 American Surgical Association Foundation Fellowship. This grant will support Dr. Skitzki's study of an old anti-malarial drug called quinacrine, which has recently been noted to have anti-cancer

properties and appears to be a possible treatment for melanoma when delivered in surgical procedures.

- **Maryann Mikucki, MD, PhD**, a trainee in the lab of Sharon Evans, PhD, in the Department of Immunology, received a three-year, \$117,992 pre-doctoral grant award from the NCI. The project will focus on novel mechanisms by which melanoma cells evade T-cell-mediated eradication by the immune system. The research aims to provide insights into new strategies to improve melanoma patient responses to cancer immunotherapies.
- **Marina P. Antoch, PhD**, Associate Member in the Department of Molecular and Cell Biology, and Andrei V. Gudkov, PhD, DSc, Senior Vice President of Basic Science and Chair of Cell Stress Biology, received a two-year, \$100,000 grant award from the National Institute of General Medical Sciences. This grant is a supplement to a currently funded R01 grant that is furthering study of gender-related differences in immune response.
- **Kenneth W. Gross, PhD**, Chair of the Department of Molecular and Cellular Biology, received a two-year grant of \$50,780 from the NCI to study genes that drive primary and metastatic pancreatic cell tumors. This award is a Diversity Supplement to (Epi) Genomic drivers of primary and metastatic pancreatic islet cell carcinoma, an R21 grant that includes co-principal-investigators **Norma J. Nowak, PhD**, and **Dominic J. Smiraglia, PhD**.
- **Eunice Wang, MD**, Associate Professor in the Department of Medicine and Assistant Member of the Tumor Immunology Program, is among 11 physicians across the country to receive a two-year, up-to-\$50,000 Cancer Clinical Investigator Team Leadership Award from the NCI. This award recognizes exceptional clinical investigators for their contributions to the advancement of clinical research through collaborative team science.
- **Timikia C. "Candy" Craig**, a certified nurse's aide, received the \$1,000 Eva M. Noles Scholarship for 2013. The scholarship is part of an annual program honoring the legacy of Eva M. Noles, RN, Buffalo's first African-American registered nurse and a longtime RPCI employee who served in many leadership roles at the Institute, including Director of Nursing.
- RPCI ranked at no. 41 on **U.S. News and World Report's 2013-14 Best Hospitals for Cancer** list. The Institute was also recognized by *U.S. News* on its overall national Best Hospitals list, and first among hospitals in the Buffalo metro area. RPCI was also recognized by *U.S. News* as "high performing" in three specialty areas: gynecology, nephrology and urology.
- Twenty-four Roswell Park physicians were named to Castle Connolly Medical Ltd.'s 2014 America's Top Doctors list: **Martin L. Brecher, MD, William G. Cance, MD, FACS, Myron S. Czuczman, MD, Oscar A. DeLeon, MD, Todd L. Demmy, MD, FACS, Robert A. Fenstermaker, MD, Khurshid A. Guru, MD, Wesley L. Hicks, Jr., MD, DDS, FACS, Meghan A. Higman, MD, PhD, Steven N. Hochwald, MD, FACS, Michael R. Kuettel, MD, PhD, MBA, Shashikant B. Lele, MD, FACOG, Ellis G. Levine, MD, James L. Mohler, MD, Kunle O. Odunsi, MD, PhD, FRCOG, FACOG, Robert J. Plunkett, MD, Dheerendra Prasad, MD, MCh, FACRO, Ilene L. Rothman, MD, Brahm H. Segal, MD, Anurag K. Singh, MD, Donald L. Trump, MD, FACP, Meir Wetzler, MD, FACP, Neal W. Wilkinson, MD, MPH, FACS, and Nathalie C. Zeitouni, MDCM, FRCPC.**
- For the fourth consecutive year, outcomes for patients receiving allogeneic transplants through **RPCI's Blood and Marrow Transplant Program**, which operates under the direction of **Philip McCarthy, MD**, were significantly better than would be expected among the patient population treated. The data, compiled by the Center for International Blood and Marrow Transplant Research, identify RPCI as one of 13 "over-performing" U.S. centers for allogeneic blood and marrow transplantation.
- In the first quarter of the fiscal year, the Institute announced the receipt of more than \$500,000 in research grants. **Ravindra Pandey, PhD**, received first-year funding of \$37,283 to collaborate

with a colleague from the University at Buffalo to develop a new way to deliver chemotherapy to pancreatic tumors; a patent application for this delivery method has been filed with the U.S. Patent and Trademark Office by UB and RPCI. Also receiving grants were **Li Shen, PhD**, who received a two-year, \$381,807 award from the U.S. Department of Defense (DOD); **Sebastiano Battaglia, PhD**, who received a two-year, \$123,842 grant from the DOD; and **Gissou Azabdaftari, MD**, who received a two-year award of \$18,306 from the University of Connecticut as part of a larger project award from the NCI.

- **Michael Kuettel, MD, PhD, MBA**, the Barbara C. and George H. Hyde Chair in Radiation Medicine, was recognized by the American College of Radiation Oncology as “one of the nation’s leading radiation oncologists.” Dr. Kuettel received the 2014 ACRO gold medal at the organization’s annual meeting in Orlando, Fla.
- RPCI has once again placed highly on ***The Scientist’s Best Places to Work in Academia*** list for 2013, coming in at no. 15. The ranking is based on results of the magazine’s annual survey of full-time life scientists working in academia or noncommercial research institutions. This year’s list factored in responses from more than 1,200 scientists. **Candace Johnson, PhD**, Deputy Director, Chair of the Department of Pharmacology and Therapeutics and the Wallace Family Chair for Translational Research at RPCI, noted that RPCI’s respondents highlighted research resources and high job satisfaction as particular strengths at the Institute. On *The Scientist’s* 2012 “Best Places” lists, RPCI was ranked 16th in the U.S. and 20th in the world.
- RPCI also placed highly on ***The Scientist’s 2013 Best Places to Work – Postdocs*** list, coming in at no. 20. Institutional strengths noted by the survey included quality of communication, quality of training and mentoring. RPCI placed no. 28 in 2012.
- RPCI became a **DAISY Award Partner** with The Daisy Foundation, allowing patients, caregivers and staff to nominate and reward the extraordinary clinical skill and compassionate care given by the Institute’s nurses every day. RPCI has engaged the community via the Roswell Park website and face-to-face interactions. The first two winners of the DAISY Award at RPCI were honored at a ceremony at the end of March. The winners were **Jacob Madonia, BSN, MS, RN** and **Renee Thompson, RN, OCN**.

Clinical & Scientific Achievements

- Researchers at RPCI, led by **Fengzhi Li, PhD**, Associate Professor of Oncology in RPCI’s Department of Pharmacology and Therapeutics, found that a new formulation of a promising anticancer agent, the small chemical molecule FL118, is even more effective in controlling colon and head-and-neck tumors than an earlier version that could be delivered only by intraperitoneal (IP) administration. The new study, published in the *American Journal of Translational Research*, compares the earlier formulation of the agent to a new version that can also be administered intravenously, translating to much wider potential clinical application. The agent may successfully treat other solid tumors as well.
- More than 50 faculty and staff members from RPCI took part in the **AACR Annual Meeting 2013**, held April 6-10 at the Walter E. Washington Convention Center in Washington, D.C., where more than 18,000 attendees shared the latest and most exciting discoveries in cancer research. Among them were more than 30 RPCI researchers and clinicians who updated their colleagues on their latest research advances in presentations at the meeting, in areas ranging from targeted therapies and developmental therapeutics to regulatory science.

- **Samantha Sobus**, a graduate student in the Department of Molecular Pharmacology and Cancer Therapeutics, was first author on “Pharmacologic tobacco-cessation agents and response to radiotherapy.”
- **Anna Woloszynska-Read, PhD**, an Assistant Professor of Oncology in the Department of Pharmacology and Therapeutics, was first author on “Plasma 25-hydroxyvitamin D levels are associated with aggressive prostate cancer among African-Americans in the North Carolina-Louisiana Prostate Cancer Project (PCaP).”
- **Priyanka A. Agharkar**, a pre-doctoral trainee in the Department of Cell Stress Biology, was first author on “Novel small-molecule inhibitors C9 and C10 specifically disrupt the FAK-VEGFR3 signaling axis in cancer cells.”
- **Graham Warren, MD**, an Adjunct Assistant Professor in the Department of Health Behavior at RPCI and an Associate Professor of Medicine at the Medical University of South Carolina (MUSC), was first author on “Smoking, cancer treatment, and design of clinical trials.”
- **Shalana B. O’Brien, MD**, a post-doctoral associate in the Department of Surgical Oncology, was first author on “FAK inhibition with small-molecule inhibitor Y15 decreases viability in thyroid-cancer cell lines.”
- **Allyson Young**, a Pre-Doctoral Trainee in the Department of Molecular & Cellular Biology, was first author on “Genome-wide methylation patterns suggest differences in breast-cancer biology in American women of African and European ancestry.”
- **Christine Ambrosone, PhD**, Chair of the Department of Cancer Prevention and Control at RPCI, took part in a major symposium at the meeting, discussing the implications of evidence that African-American women with breast cancer have poorer outcomes than women of European descent. Even robust genomic studies have not identified clear links that explain these trends
- While many studies have demonstrated the efficacy of nicotine medications for smoking cessation, very few have examined these questions in light smokers. **Martin Mahoney, PhD, MD**, Associate Professor in the departments of Health Behavior and Medicine at RPCI, was senior study author on “Nicotine Replacement Therapy Distribution to Light Daily Smokers Calling a Quitline.” The study concluded that light daily smokers, those who smoke fewer than 10 cigarettes per day, have greater success quitting when provided stop-smoking medications and assisted by counselors.
- Researchers at RPCI have published findings that help explain how a common and particularly resilient form of liver cancer evades the body’s natural antitumor responses. The study, published April 15 in the journal *Cancer Research*, a publication of the American Association for Cancer Research, is the first to examine the combined effect of immunosuppression on immune function in advanced hepatocellular carcinoma (HCC), the fifth-most-common cancer in the world and the third-leading cause of cancer-related mortality globally. The research was led by **Yasmin Thanavala, PhD**, a Professor of Oncology in the Department of Immunology.
- RPCI broke ground on April 18 to begin construction on its new, 11-story **Clinical Sciences Center (CSC)**. The 142,000 square-foot facility will be located at the corner of Michigan and Carlton Streets and will offer enhanced clinical care resources to help RPCI save lives and find cures for cancer. More than 25 major donors, elected officials and special guests participated in the groundbreaking ceremony. When completed, the new state-of-the-art facility will house: a new Breast Center; an Expanded Mammography Center with capacity to conduct 10,000 additional screening mammograms annually; a new Chemo-Infusion Clinic; patient education and survivorship programs benefitting patients, caregivers and family members; and space for clinician-scientists to analyze data from clinical studies.

- **RPCI and Cleveland BioLabs Inc. (CBLI)** announced the publication of studies identifying the liver as a key mediator of entolimod, an anticancer agent that is CBLI's lead compound. The studies, published in *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, were conducted by scientists at RPCI and CBLI in collaboration with researchers at Attogene Inc. and the Gamaleya Research Institute for Epidemiology and Microbiology in Moscow. **Andrei Gudkov, PhD, DSc**, Chief Scientific Officer of Cleveland BioLabs, Senior Vice President of Basic Science at RPCI, was corresponding author on the paper.
- A study led by **Theresa Hahn, PhD**, and **Philip McCarthy, MD**, of RPCI in collaboration with the Center for International Blood and Marrow Transplant Research, the research arm of the National Marrow Donor Program® and Be the Match®, showed that survival rates have increased significantly among patients who received blood stem cell transplants from both related and unrelated donors. The study was published in the *Journal of Clinical Oncology*. The study authors attribute the increase to several factors, including advances in tissue typing, better supportive care and earlier referral for transplantation.
- Researchers at RPCI have determined that cytoreductive surgery combined with hyperthermic intraperitoneal chemotherapy (CS/HIPEC), a complex procedure to treat advanced abdominal cancers, can be done safely, and may be an effective therapy for select patients. Study results were published in the June issue of *Cancer Medicine*. For this study, **Joseph J. Skitzki, MD**, surgical oncologist at RPCI, and colleagues conducted a retrospective analysis of data from 2003-2011 to determine the morbidity, mortality and survival for 112 patients who underwent CS/HIPEC at RPCI.
- America's biopharmaceutical research companies have conducted more than 7,000 clinical trials of new medicines in New York over the last 13 years, working in collaboration with academic institutions, patient advocates, hospitals and clinical research facilities. That was the main finding of "Research in Your Backyard: Pharmaceutical Clinical Trials in New York," a report by the Pharmaceutical Research and Manufacturers of America (PhRMA), which was released at RPCI in June 2013. PhRMA spokesperson Kaelan Hollon was joined by state Assemblyman Robin Schimming, state Senators Mark Grisanti and Tim Kennedy, RPCI clinician-researcher **Dr. Myron S. Czuczman** and a patient of Dr. Czuczman's for a press event announcing the findings. Of those 7,000 industry-sponsored clinical trials, the report notes, more than 750 were conducted in Buffalo, at institutions such as RPCI, the University at Buffalo, the Women's and Children's Hospital of Buffalo and Buffalo General Medical Center.
- RPCI announced a new clinical research study that will assess the safety and efficacy of a novel immunotherapy approach to treating advanced melanoma. Developed at RPCI by Roswell Park researchers, the investigational vaccine shows promise for treating tumors in patients with stage III/stage IV melanoma, and perhaps as a future therapy for other solid-tumor cancers as well. **John M. Kane, III, MD, FACS**, a surgical oncologist who is Chief of the Melanoma/Sarcoma Service at RPCI, is leading the phase I clinical trial, which will enroll between 12 and 20 patients over the course of approximately three years.
- **Cleveland BioLabs Inc. (CBLI), Incuron LLC**, a joint venture between CBLI and Bioprocess Capital Ventures, and **RPCI** announced in July the publication in *Cell Reports* of studies describing the Facilitates Chromatin Transcription (FACT) complex as an accelerator of tumor transformation and a potential marker and target for aggressive cancers. FACT is the molecular target for Curaxins, a class of anti-cancer compounds being developed by Incuron. The reported studies were led by scientists at RPCI. Lead author on the publication was **Katerina Gurova, MD, PhD**.
- Longtime Orchard Park resident **Elyse NeMoyer** joined the **RPCI Board of Directors**. An occupational therapist, she was appointed to a three-year term on the board by state Sen.

Andrea Stewart-Cousins, Democratic Conference Leader for the New York State Senate, based on the recommendation of state Sen. Timothy Kennedy. A two-time cancer survivor, NeMoyer has been treated at RPCI for both breast cancer, beginning in 1995, and acute myeloid leukemia, beginning in 2007.

- Researchers at **Adaptimmune, RPCI and City of Hope (COH)** announced in July that Adaptimmune opened a phase I/IIa, multiple-site, two-cohort, open-label clinical trial in ovarian cancer at RPCI and at COH, located in Duarte, Calif. Researchers are investigating the safety, bioactivity and effectiveness of treating patients with their own T cells after genetically engineering the cells to enhance their antitumor properties. **Kunle Odunsi, MD, PhD**, Director of RPCI's Center for Immunotherapy, is the study chair.
- Researchers at RPCI began a study on how willing smokers are to try different tobacco products, based on price. The clinical study examines the impact of price and other factors on the substitution of smokeless tobacco products for cigarettes. This behavioral-economics study will help to explain the motivation behind decisions about health and offer new insights on health-behavior change. **Richard O'Connor, PhD**, a researcher in the **Department of Health Behavior** at RPCI, noted that there are few studies that have evaluated the attitudes of smokers who supplement cigarette use or switch to smokeless tobacco products.
- **Anthony L. Picone, MD, PHD, MBA**, cardiothoracic surgeon in the Department of Thoracic Surgery, was named Medical Director of RPCI. Dr. Picone has been employed at Roswell Park since April of 2009, and had previously served as RPCI's interim medical director. In his new role, Dr. Picone is responsible for coordinating and planning strategic and tactical aspects of the Institute's clinical services. He also serves as an adviser to the President and CEO and other key staff on clinical and administrative issues related to medical practice. Additional responsibilities include directing and managing the organization's medical affairs strategy, including clinical quality and risk management, monitoring clinical practice, medical staff policy development, physician recruitment and credentialing.
- Researchers at RPCI uncovered a new pathway by which cancer cells, such as in breast cancer, stimulate the expansion of myeloid-derived suppressor cells (MDSCs), a blood cell population known to interfere with the body's anti-tumor response. The findings, published online on in *The Journal of Clinical Investigation*, shed new light on the pathological events that fuel tumor growth and could lead to the development of new therapies to hinder it. **Scott I. Abrams, PhD**, Associate Professor of Oncology at RPCI, is senior author of this study.
- **Nektar Therapeutics** (NASDAQ:NKTR) and **RPCI** announced in October that the first patients had been dosed in a phase II investigator-sponsored study of the agent etirinotecan pegol in patients with relapsed or refractory small-cell lung cancer. The study is being conducted at Roswell Park under the direction of **Alex Adjei, MD, PhD, FACP**, Senior Vice President for Clinical Research and Chair of the Department of Medicine at RPCI. Etrinotecan pegol is the first long-acting topoisomerase-1 inhibitor that concentrates in tumor tissue and provides sustained tumor suppression throughout the entire chemotherapy cycle.
- In the October issue of *Cell Reports*, researchers from RPCI and the University of Michigan, Ann Arbor, shared their discovery of a previously unrecognized mechanism by which tumor cells regulate activity of G-proteins and invasion. This mechanism is availability of nucleotide guanosine triphosphate, or GTP. Using cells from metastatic melanoma, researchers led by **Mikhail A. Nikiforov, PhD**, Professor of Oncology and Researcher in the Department of Cell Stress Biology at RPCI, discovered a gene, GMPR (guanosine monophosphate reductase) that mildly inhibits production of GTP in the cell. **Joseph Wawrzyniak, a PhD**, a student and Research

Affiliate in the Department of Cell Stress Biology at RPCI, was first author on the study. The GMPR gene also has potential to be developed into a diagnostic or prognostic marker.

- Thanks to a coordinated effort involving many partners, RPCI secured funds for a critical clinical expansion. The Institute will see more than \$6 million in additional funds toward construction of its **Clinical Sciences Center**, a 142,000-square-foot facility to be used for patient care, research and survivor support services, through the New Markets Tax Credit Program, established by Congress to spur investments in low-income and medically underserved communities. Sen. Charles Schumer, Rep. Brian Higgins and City of Buffalo Mayor Byron Brown provided critical advocacy on Roswell Park's behalf, and a number of financial institutions and certified Community Development Entities (CDEs) provided tax credits toward the project: JPMorgan Chase, Dudley Ventures, the National Development Council (NDC) and Building America.
- The Institute appointed three new key executives, naming **Armen Gallucci, FACHE**, as Vice President of Business Development and Outreach; **Kerry L. Kerlin** as Chief Information Officer; and **Harl Tolbert** as Director of Technology Transfer and Commercial Development. Additionally, **Kara Eaton-Weaver** was promoted to Executive Director of RPCI's Patient/Family Experience Department.
- Preclinical research conducted in the lab of **Kelvin Lee, MD**, Jacobs Family Chair in Immunology, was among the data that Jasco Pharmaceuticals, LLC presented at the 2013 American Society of Hematology Annual Meeting and Exposition in December. The collaborative Jasco-RPCI research project was entitled "Overcoming CD28-Mediated Multi-Drug Resistance with a Novel PIM2 Inhibitor."
- The Institute opened three new clinical research studies involving novel immunotherapy approaches for treating genitourinary cancers. One will assess how patients' immune systems respond to targeted radiation treatments for metastatic kidney cancer; another will evaluate how patients' immune systems respond to targeted radiation treatments for metastatic prostate cancer, in combination with immunotherapy; and a third will focus on a new type of immunotherapy for bladder cancer. **Thomas Schwaab, MD, PhD**, of the departments of Urology and Immunology, is principal investigator on the first two and a co-investigator on the third.
- When used indoors, electronic cigarettes may involuntarily expose non-users to nicotine, a research team led by **Maciej Goniewicz, PhD, PharmD**, concluded after comparing emissions from both electronic and conventional tobacco cigarettes. The study, published in the journal *Nicotine and Tobacco Research*, was one of the first to measure and compare the air concentration of nicotine and volatile organic compounds produced by these products.
- **Wen Wee Ma, MD**, and colleagues, published research confirming that proteins known as fibroblast growth factor receptors are implicated in the development of pancreatic cancer. The findings may be key to development of personalized treatments for patients with pancreatic cancer, which remains highly difficult to treat.
- **Kunle Odunsi, MD, PhD**, was principal investigator of a study that found clinical benefit for women with ovarian cancer treated with the drug decitabine in combination with chemotherapy and an "NY-ESO-1" cancer vaccine developed by Dr. Odunsi. The findings, published in the journal *Cancer Immunology Research*, found that this treatment approach may be an attractive new treatment option for women with the disease.
- **Carl Morrison, MD, DVM**, led the team that published the results from the first whole-genome analysis conducted through **RPCI Center for Personalized Medicine**. The team found that invasive bladder cancers demonstrate two distinct patterns of genetic alteration, a discovery that may point the way toward new strategies for preventing or interrupting progression of this

disease. Co-authors included **Donald L. Trump, MD, FACP**, President and CEO, and **Candace Johnson, PhD**, Deputy Director.

- A team led by **Irwin Gelman, PhD**, the John & Santa Palisano Chair in Cancer Genetics, published new evidence that aggressive prostate cancers typically turn off or delete two major regulatory genes. Their findings have promising implications for development of targeted therapies for prostate cancer and perhaps for other solid-tumor cancers.
- Two studies presented at the Society on Research for Nicotine and Tobacco (SRNT) annual meeting, both led by **Maciej Goniewicz, PhD, PharmD**, of the Department of Health Behavior, evaluated the nicotine content in electronic cigarettes and “thirdhand” nicotine exposure from these devices, respectively. He and his colleagues reported that e-cigarettes can leave significant amounts of nicotine on glass, floors, walls, windows, wood and metal, and that misleading messages on packaging of e-cigarette devices or solutions may cause involuntary exposure to high doses of nicotine. **Maansi Bansal-Travers, PhD**, a Research Scientist in RPCI’s Department of Health Behavior, presented findings of a study on marketing of tobacco products at the same meeting. Using mobile eye-tracking equipment to record and analyze the location and duration of where smokers and nonsmokers focused their eyes while inside convenience stores, Dr. Bansal-Travers and colleagues demonstrated that the “power walls” of tobacco marketing and products located behind the counter in many convenience stores are an effective way to attract the gaze of most shoppers.
- A team of **RPCI** and **University at Buffalo** researchers led by **Andrew Hyland, PhD**, Chair of Roswell Park’s Department of Health Behavior, published evidence that secondhand smoking can lead to miscarriage, stillbirth or tubal ectopic pregnancy. The study, published online by the journal *Tobacco Control*, is the largest to date to link secondhand smoke exposure to these adverse impacts on pregnancy, and marks a significant step toward clarifying the risks of secondhand smoke exposure.
- Research by **Mikhail Nikiforov, PhD**, and colleagues, published in the journal *Molecular Cell*, revealed two key mechanisms by which oxidative stress is regulated in normal and cancerous cells. The findings shed light on processes that lead to development of cancer, and suggest that the transcription factor Kruppel-like factor 9, or Klf9, may be an effective tumor suppressor.
- A team led by **Kelvin Lee, MD**, Jacobs Family Chair in Immunology, Professor of Oncology and Co-Leader of the Tumor Immunology and Immunotherapy Program, made a key discovery showing how components of the immune system determine whether to activate or to suppress the immune system. The team’s published findings selected as the “Paper of the Week” by the *Journal of Biological Chemistry*.
- RPCI opened a satellite location in Wheatfield, NY, making comprehensive cancer care available close to home for residents of Niagara County and Grand Island. Services at the **RPCI Niagara** focus on meeting the needs of surgical and dermatological patients. Roswell Park staff, including physicians, nurse practitioners and other clinical team members are now caring for patients at the Niagara site, offering both initial consultations and follow-up care for patients with many types of cancer, including: dermatological, gastrointestinal, gynecologic, neurological, thoracic and urologic.

Community Support & Advocacy

- **RPCI** joined thousands of advocates from across the country in Washington, D.C., for the **Rally for Medical Research**. The crowd in the nation’s capital included some 50 researchers from the

Institute, the only comprehensive cancer center in New York State outside Manhattan. Locally, leaders of three leading medical research institutions in the **Buffalo Niagara region — RPCI, the Hauptman-Woodward Medical Research Institute Inc. and the University at Buffalo —** joined with U.S. Rep. Brian Higgins to raise awareness about the local impact of sequestration and gathered to view live online streaming video of the Rally.

- Local photographers were encouraged to submit photographic works of art for consideration in the Oseroff Memorial Photography Purchase Prize. The winning work of art was purchased and donated to RPCI's permanent art collection. The **Oseroff Memorial Purchase Prize** was founded in honor of Dr. Allan R. Oseroff, RPCI Chief of Dermatology from 1989 until his death in 2008. The prize is designed to enhance the environment for all members of the Roswell Park community.
- **The Ride For Rowell**, RPCI's largest fundraiser, welcomed more than 8,000 riders in 2013. The 18th annual event, supported by 2,000 volunteers, raised more than \$3.8 million. The funds raised support cutting-edge research and patient care programs, and a portion of the funds, \$1 million, will be used to advance pediatric cancer care. In collaboration with Women and Children's Hospital of Buffalo, Roswell Park is enhancing its specialized Pediatric Cancer Care Program to provide the very best care for families whose lives are touched by childhood cancer or blood disease.
- In an effort to increase the number of minority investigators in clinical research, Eli Lilly and Company and **The Center for Drug Development and Clinical Trials** at RPCI announced in August a new collaborative training program specifically tailored to this growing group of investigators. This program is the first of its kind in the industry. The partnership will include a three-day clinical research workshop, **"Reducing Cancer Disparities Through the Training of a Diverse Workforce,"** for minority physicians across the country. Workshops will begin in spring 2014 and will run through 2016.
- RPCI and Men Allied for the Need to Understand Prostate Cancer (MANUP) Buffalo hosted the third annual **Cruisin' for a Cure** car show and prostate-cancer-screening event. 118 men received prostate cancer screenings at the event, and 57% of those participants were African American. Prostate cancer has a disproportional impact on African-American men, who are 1.5 times more likely to develop prostate cancer and two to three times more likely to die of the disease than white men. Prostate cancer is also the most-diagnosed cancer in Hispanic men. Early detection and education can significantly reduce those disparities. This free event was held to draw attention to prostate cancer risk factors and the importance of testing for this disease — particularly among high-risk groups like African-American men and men with a family history of prostate cancer. Prostate cancer education and screening were offered for men 40 years and older. MANUP Buffalo is a prostate cancer awareness volunteer organization that was founded at RPCI in 2008.
- RPCI and the RPCI Hispanic Employee Network & Resource Group marked **Hispanic Heritage Month** in September with a celebration of Hispanic culture and the contributions of community leaders. RPCI's free, public event included discussions from Hispanic community leaders in the Western New York region, as well as singing and dancing performances. David A. Rivera, Niagara District Common Council Member, was honored at the event with an appreciation award for his dedication and close ties to the Hispanic community.
- Western New Yorkers were invited to attend a special screening of the film *Decoding Annie Parker* on Thursday, Sept. 26, with partial proceeds benefitting the **Familial Ovarian Cancer Registry at RPCI**. *Decoding Annie Parker*, starring Helen Hunt, tells the true story of two remarkable women, Berkley-based geneticist Dr. Mary-Claire King and Annie Parker (played by

Samantha Morton), each touched by hereditary breast cancer in her own way: Ms. Parker battles the disease and Dr. King's genetic research leads to the discovery of the BRCA1 breast cancer gene. Women who have inherited mutations in the BRCA1 and BRCA2 genes face a much higher risk of developing breast cancer and ovarian cancer compared with the general population. Following the screening, attendees participated in a special Q&A with RPCI cancer experts, moderated by **Ermelinda Bonaccio, MD**, Director of the Mammography Center and Assistant Professor of the Department of Diagnostic Radiology at RPCI.

- In an effort to increase partnerships between women, veteran, minority and local businesses within Western New York, **Catholic Health** and **RPCI** hosted a **Vendor Fair** in October. The event was free and open to area business and purchasing professionals from Catholic Health, Roswell Park and other business organizations in Western New York. The event included guest speakers discussing business industry trends, details on how to become a certified Minority- or Women-Owned Vendor with New York state, networking opportunities with attendees across many industries and vendors showcasing their business, products and service offerings to those who make purchasing decisions.
- For the third consecutive year, **RPCI** and the **Buffalo Bills** hosted the **Prostate Cancer Early Diagnosis Outreach Clinic**, a free prostate cancer education and early detection event, at Ralph Wilson Stadium, encouraging men within the appropriate age and risk groups to learn their status for factors that may raise their prostate cancer risk. RPCI doctors performed 135 free screenings that included prostate-specific antigen (PSA) blood tests and digital rectal exams (DRE) for eligible men. Knowing your statistics and risk factors and getting the recommended screenings help detect these cancers at their earliest stages, when patients have the most options available to them, says **James Mohler, MD**, Associate Director and Senior Vice President for Translational Research and Chair of the Department of Urology at RPCI.
- More than 75 computer programmers, writers and graphic designers from across the country gathered at the national Higher Education Web Conference, held at the Hyatt Regency Buffalo. These skilled web developers helped to create a **new website for The Ride For Roswell** during a "hackathon," or hack marathon. Their efforts made the Ride site mobile-friendly and simpler for users to navigate, which enhanced the Ride experience for participants and supporters, and also increased fundraising capability so that The Ride can continue to support Roswell Park's mission to find cures and save lives.
- RPCI invited all those touched by lung cancer or wishing to learn more about this disease to the fifth annual Breath of Life Celebration on Nov. 9. Hosted by the **Roswell Park Thoracic Cancer Team**, this free event offered lung cancer patients, survivors, families and friends an opportunity to gain information about new approaches to lung cancer surveillance, treatment, research and survivorship. The event kicked off **Lung Cancer Awareness Month** commemorations at RPCI.
- Wegmans Food Markets Inc. and RPCI joined forces to offer the **QuitClub**, a stop-smoking program, to all Wegmans employees and eligible spouses who want to quit smoking. Participants in the QuitClub have access to the specialized services of RPCI's tobacco cessation program. These services include telephone counseling provided by trained quit coaches, stop-smoking medications, a customized website offering interactive and informational quit tools, and in-store support to help smokers quit for good.
- The Erie-Niagara Tobacco-Free Coalition, operated by RPCI under contract to the New York State Health Department, teamed up with health-care professionals and community leaders to spread the word that the **38th Great American Smokeout** is a great day to stop smoking. This day has been commemorated annually since the 1970s as a way to encourage smokers to make a quit attempt and offer resources to help them succeed.

- The Institute held its annual **Tree of Hope** lighting ceremony Dec. 6 in Kaminski Park and Gardens. Highlights of this free, family-friendly event, which is held in honor of all who are touched by cancer, included live music, horse-drawn-carriage rides, live ice sculpting and the lighting of the Tree of Hope by a cancer survivor from Carly's Club for Kids & Cancer Research in WNY.
- A team led by **Fengzhi Li, PhD**, an Associate Professor of Oncology in the Department of Pharmacology and Therapeutics, reported significant new findings regarding the novel anticancer agent FL118. The research, which included comparative analysis of the agent and several similar compounds, confirmed its broad, superior antitumor activity and suggested promising directions for further studies.
- Five Buffalo Sabres — Cody Hodgson, Mark Pysyk, Alexander Sulzer, Brayden McNabb and Mike Weber — raised more than \$16,000 to support the cutting-edge cancer research and patient care programs at RPCI by **Goin' Bald for Bucks**.
- In connection with national observances marking the 50th anniversary of the first U.S. Surgeon General's Report on Smoking and Health, **Anthony Brown** of the Department of Health Behavior worked with collaborators at the Medical University of South Carolina to create an historical display documenting the impact of the report. The exhibit debuted at the headquarters of the U.S. Department of Health and Human Services in Washington, D.C. RPCI research figured largely in the 1964 report.
- In commemoration of **Black History Month 2014**, the Institute hosted the first-ever **Queen City Black Film Festival**, featuring screenings of independently produced short films that star or were written, produced or directed by African-Americans. The series was produced in collaboration with RPCI's employee **African-American Roswell Employee Network (AREN)** and Western New York Media Professionals Inc.
- In celebration of Black History Month, AREN, one of RPCI's Employee Network and Resource Groups, or ENRGs, led **Michigan Street Heritage Tours** and a related evening of live jazz at the Colored Musicians Club. The activities took participants to three historical venues, the Michigan Street Baptist Church, Rev. Jesse Nash House and Colored Musicians Club Museum, and highlighted the Buffalo area's contributions toward major historical and cultural initiatives such as the Underground Railroad and Niagara Movement.
- More than 50 Roswell Park faculty, staff, patient family members and supporters took part in the **Goin' Bald for Bucks Team Roswell** event, shaving their heads or cutting at least 10 inches of their hair to raise funds and show support for cancer patients across Western New York. The event raised more than \$51,000 for the cutting-edge cancer research and patient support programs at Roswell Park. Participants included RPCI President and CEO **Donald L. Trump, MD, FACP**, and **Mukund Seshadri, PhD, DDS**, Associate Member in the Pharmacology & Therapeutics Department.
- RPCI held an informational **Colorectal Cancer Expo** at the Walden Galleria on March 22. The event featured an interactive Giant Inflatable Colon exhibit and offered shoppers an opportunity to learn about colorectal cancer screening, prevention, research and survivorship, as well as an opportunity to talk with experts in surgical, medical and radiation oncology: **Valerie Francescutti, MD**, **Patrick Boland, MD**, **Steven Nurkin, MD, MS**, **David Mattson, MD**, and **Steven Hochwald, MD**.
- RPCI supported various **cancer awareness months** via its website and social media outreach. Observances marked included: National Young Adult Cancer Awareness Week, National Minority Cancer Awareness Week, Melanoma Monday, National Cancer Research Month, National

Childhood Cancer Awareness Month (#GoldForKids social media campaign) Cholangiocarcinoma Awareness Month and many more.

- RPCI partnered with CancerConnect to provide an opportunity for the public to engage with **Sarah Holstein, MD, PhD**, Assistant Professor of Oncology. On March 26 and 27, Dr. Holstein guest moderated an online Q&A session on multiple myeloma. CancerConnect is a safe and private online support community for cancer patients and caregivers.
- RPCI shared cancer information and provided high-risk lung cancer screenings at the **Buffalo Men's Show** held in April.
- RPCI teamed up with Country 106.5 WYRK for the "**Country Music Inspires Cures**" campaign. This effort got the message out to thousands of people at local concerts and over 106.5's radio waves about the "next generation" of cancer care, being researched right now at RPCI's **Center for Personalized Medicine** to figure out why some people are more likely than others to develop certain cancers and which treatments are most likely to be effective for particular people.
- As a part of "Country Music Inspires Cures," RPCI raffled off Toby Keith's Jeans, which were signed by more than 25 country music stars who had visited Western New York throughout the year. Country music fans got their chance at winning the jeans by giving \$10 in support of the campaign. **Toby's Jeans** made their last stop at the **Taste of Country** show on Friday, June 14, where **Dr. Candace Johnson**, Deputy Director, Chair of the Department of Pharmacology and Therapeutics and Wallace Chair in Translational Research; **Dr. Carl Morrison**, Executive Director of the CPM; and **Chris Darlak**, Director of Information Technology for the CPM addressed the audience on stage. The total raised by Toby's Jeans was more than \$1,300
- RPCI's **Yroswell** group, a network of high school and college students, brought the message of "a world without cancer," to thousands of attendees of Kiss 98.5's annual **Kissmas Bash** concert. Blinkin' Sunglasses were sold for \$10 each to support cancer research at Roswell Park.
- RPCI provided sponsorship of the **American Lung Association's Fight for Air Climb** of Buffalo. A group of more than **30 employees** participated in the event, raising nearly **\$10,000** before climbing 40 flights of stairs at the annual event.
- More than 30 Roswell Park employees participated in the **Undy 5000 Buffalo 5K**. In addition, a table of educational information was available to all participants of this event. Organized by the Colon Cancer Alliance, the Undy 5000 raise awareness within the Western New York community about colon cancer screening and prevention.
- Roswell Park's blog – **RPCI Cancer Talk** – features various Roswell Park experts discussing the latest advances in cancer detection, prevention, research and treatment, often in video format. The blog gives viewers an inside perspective on what's new in cancer care, introducing them to Roswell Park's physicians and researchers, and offers inspiring stories of survival, nutrition tips and survivorship resources. The blog currently averages about 14,000 page views each month, with 75,000 unique page views in fiscal year 2014.
 - Additionally, the blog brought attention to: Myeloma Awareness Month, National Nutrition Month, the contributions of African Americans to the field of cancer research, Medical Laboratory Professionals Week and National Volunteer Week
- Educational information was distributed at Roswell Park Alliance Foundation events, including: the **Tops 5K & 10K Run/Family Walk, Carly's Crossing, Bosom Buddies Walk and Goin' Bald for Bucks** events
- The **Yroswell Street Team** brought the message of cancer awareness to the community, especially Western New York's young people. The Institute also encouraged young people throughout the area to find about the resources they need to become the next generation of

cancer professionals and advocates. Events that the Street Team participated in and brought awareness information to, included: Orchard Park High School's "Step to a Cure," Stella's Bedroom (Special Spaces Buffalo) Makeover Reveal, Walden Galleria's Smoke Free Strides Event, various events for The Ride For Roswell (including the Opening Ceremony and Ride Day), Kiss the Summer Hello, RPCI's Employee Appreciation Day, the Teens Living With Cancer Buffalo Chapter Kickoff, Diocese of Buffalo Youth Convention, Breath of Life, Tree of Hope, the Colon Cancer Expo at the Galleria Mall, the RPCI Junior Robotic Surgeon Program and health fairs at South Buffalo Charter School, Casey Middle School, Williamsville South and West Seneca Middle School.

- **RPCI's Office of Diversity & Inclusion** hosted seven **resume workshops** in the community during FY14. These workshops were free to the public and were hosted at community centers and churches, including the Belle Center, Delevan-Grider Community Center, True Bethel Baptist Church, The Fruit Belt Coalition and the Moot Center. 137 people attended these workshops and four people were hired by RPCI after attending the workshops.
- **RPCI increased its spend with Minority and Women owned businesses** from 8.6% in FY13 to 21.2% in FY14, surpassing our Institute goal of 20%.