

## **Fiscal Year 2015 (April 1, 2014 – March 31, 2015) Accomplishments**

### **Awards**

- A survey conducted by experts from Roswell Park Cancer Institute (RPCI) and the State University of New York at Cortland revealed that college students would follow their doctor's recommendations concerning the human papillomavirus (HPV) vaccine, a currently underutilized opportunity for cancer prevention. The survey provided the basis for a study, "Sex differences among college students in awareness of the human papillomavirus vaccine and vaccine options," published in the *Journal of American College Health*. Roswell Park authors were **Martin Mahoney, MD, PhD**, Professor of Oncology, Departments of Medicine and Health Behavior, and **Brian V. Fix, MA**, Department of Health Behavior.
- Donations to the **Roswell Park Alliance Foundation** funded the nine most promising preliminary research projects as identified in a peer-reviewed competition. Nine clinicians and researchers received a total of \$718,506 in grant funding:
  - **Pamela Hershberger, PhD**, Department of Pharmacology and Therapeutics, received \$99,000 for "Impact of dietary vitamin D on the chemopreventive efficacy of erlotinib."
  - **Michael Higgins, PhD**, Department of Molecular and Cellular Biology, received a grant of \$67,220 for "Development of a cell-based reporter system to identify small molecules that inhibit Lin28 function."
  - **Eric Kauffman, MD**, Departments of Urology and Cancer Genetics, received \$99,916 for "The prognostic role of circulating tumor cells in clinically localized clear cell carcinoma patients."
  - **Elena Komarova, PhD**, Department of Cell Stress Biology, received \$75,000 for "Novel anticancer immunotherapy based on TLR-5 expressing and PDL1-inhibiting adenovirus."
  - **Boris Kuvshinoff, MD**, Department of Surgical Oncology, received \$63,935 for "Liver surgery preplanning using simulation system with risk assessment."
  - **Yingyu Ma, PhD**, Department of Pharmacology and Therapeutics, received \$52,738 for "Role of miR-101-3p in 1,25D3 regulation of bladder cancer cell migration and invasion."
  - **Sara Pokharel, MD**, Department of Pathology, received \$60,697 for "Protective effects of a novel peptide Ac-SDKP for cancer radiotherapy-induced cardiac damage."
  - **Elizabeth Repasky, PhD**, Department of Immunology, received \$100,000 for "Overcoming stress hormone signaling to improve immunotherapy for cancer."
  - **Thomas Schwaab, MD, PhD**, Department of Urology, received a grant of \$100,000 for "Status of circulating monocyte subsets determines quality and efficacy of dendritic cell vaccines."
- Two promising studies were funded by the Cancer Center Support Grant Developmental Funds, based on the recommendation of the Institute's Scientific Advisory Committee:
  - **Maciej Goniewicz, PharmD, PhD**, Department of Health Behavior, received \$98,656 for "Effect of novel electronic nicotine delivery devices on respiratory cells."
  - **Rodney Haring, PhD**, Department of Cancer Prevention, received \$86,550 for "Developing an obesity cancer module for use in the workplace with a high-risk population, Native Americans."
- RPCI was nominated for two Emmy Awards from the New York State National Academy of Television Arts & Sciences for "**Cancer Can't Win**," a series of videos featuring cancer patients' journeys. The **Office of Creative Services** was subsequently honored with a prestigious **New York Emmy®** for the video "Cancer Can't Win - Strong." Additionally, the series won a **New York State Telly Award** and two gold awards from the Association of Marketing and Communication Professionals.

- The Better Business Bureau Foundation of Upstate New York selected the Roswell Park Alliance Foundation as the inaugural winner of the **Torch Award for Philanthropic Excellence**. An independent judging committee reviewed applications from the 48 counties of Upstate New York.
- Twenty-four physicians were named to Castle Connolly Medical Ltd.'s 2015 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; Amy P. Early, MD, FACP; Robert A. Fenstermaker, MD; Khurshid A. Guru, MD; Wesley L. Hicks, Jr., MD, 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, Laszlo L. Mechtler, 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; and Meir Wetzler, MD, FACP.**
- RPCI researchers received a grant of nearly \$12 million from the **New York State Stem Cell Science Program** to develop new therapies for advanced ovarian cancer. The four-year, \$11.9 million grant to RPCI was one of three new state awards totaling \$36 million to support innovative approaches for developing stem-cell based therapies for diseases that are notoriously hard to treat. Using an approach known as adoptive T-cell therapy, the Roswell Park team, led by **Kunle Odunsi, MD, PhD, FRCOG, FACOG**, Chair of the Department of Gynecologic Oncology, the M. Steven Piver Professor of Gynecologic Oncology and Executive Director of the Center for Immunotherapy, will take stem cells from patients' blood, re-engineer them and infuse the reprogrammed cells back into those patients. The project will encompass both preclinical work and an early-phase clinical research study in patients with ovarian cancer, and will take advantage of three resources housed within the RPCI Center for Immunotherapy: the Vector Development and Production Facility, directed by **Richard Koya, MD, PhD**, the Therapeutic Cell Production Facility, directed by **Christopher Choi, PhD** and the Immune Analysis Facility, directed by **Junko Matsuzaki, PhD**. Roswell Park faculty members, **Thinle Chodon, MD, PhD**, and **Takemasa Tsuji, PhD**, are also among Dr. Odunsi's co-investigators, as are Dr. Richard Bankert, VMD, PhD, from the Department of Microbiology and Immunology at the **University at Buffalo** and Leonard Shultz, PhD, from **The Jackson Laboratory**, Bar Harbor, Maine.
- The **Lung Cancer Screening Program** earned the commendation of a major national advocacy group when the **Lung Cancer Alliance** named RPCI a **Screening Center of Excellence**, recognizing the comprehensive cancer center's ongoing commitment to responsible lung cancer screening within an experienced and multidisciplinary clinical setting.
- **Lyudmila Burdelya, PhD**, Assistant Professor of Oncology, Department of Cell Stress Biology, received a six-month, \$24,263 subcontract from Buffalo BioLabs, part of a larger National Cancer Institute's (NCI) award to develop a new, structurally modified non-immunogenic version of Entolimod (CBLB502) with immune-stimulating and radioprotective properties to be used to enhance the anticancer effect of radiotherapy and reduce unwanted side effects.
- **Matthew Barth, MD**, Assistant Professor of Oncology, Department of Pediatrics, and **Martin Brecher, MD**, the Waldemar J. Kaminski Chair in Pediatrics, Department of Pediatrics, received a two-year, \$30,000 grant subcontract from New York Medical College in Valhalla, NY, as part of a larger parent grant from Janssen Pharmaceuticals Inc., to investigate the novel targeted therapy ibutinib (Imbruvica) in an effort improve treatment of the most common non-Hodgkin lymphoma types in children, adolescents and young adults.
- **Eric Kauffman, MD**, Assistant Professor of Oncology, departments of Urology and Cancer Genetics, received a two-year, \$30,000 Young Investigator Grant from the American Urological Association to improve risk stratification for patients with renal-cell carcinoma, identifying those who would benefit most from early systemic therapy.
- **Willie Underwood, MD, MPH, MSci**, Associate Professor of Oncology, Department of Urology and the Office of Cancer Health Disparities Research (OCHDR), and **Deborah Erwin, PhD**, OCHDR Director, received a one-year, \$52,027 administrative supplement from the NCI's Center to Reduce Cancer Health Disparities to create a Patient Action Team comprised of minority patients from RPCI, to assess and enhance community-outreach materials and programming.
- Roswell Park researchers attracted \$1.76 million in outside investment to Western New York with grants from federal agencies and private funders. Awardees and their projects included:

- **Richard Hershberger, PhD, MBA**, Chief Academic Officer, won renewal of special funding through the NCI's Continuing Umbrella of Research Experiences (CURE) program, which supplements the Cancer Center Support Grant RPCI received along with renewal of its designation as an NCI Comprehensive Cancer Center in 2014. The five-year, \$642,000 grant supports annual summer cancer research internships at RPCI for six college students and eight high-school students from demographic groups underrepresented in science and medicine.
  - **Yue Wu, PhD**, Assistant Professor of Oncology, Department of Urology, received a two-year, \$419,884 NCI grant to investigate whether dehydroepiandrosterone-sulfate deprivation is an effective strategy for preventing the progression of prostate cancer. Dr. Wu will also explore how prostate cancer recurs after the treatment approach referred to as "chemical castration" and work to identify new targets for treatment.
  - **Chukwumere Nwogu, MD, PhD, FACS**, Associate Professor of Oncology, Department of Thoracic Surgery, received a two-year, \$406,247 award from the NCI to study the ability of a new compound to simultaneously detect small lung cancer deposits using a positron emission tomography (PET) scan and treat them with laser energy.
  - **Carl Morrison, MD, DVM**, Executive Director of the Center for Personalized Medicine, received a two-year, \$160,000 subcontract award from the University of Pittsburgh — part of a larger project from the Centers for Disease Control and Prevention — to contribute to the National Mesothelioma Virtual Bank (NMVB). He and RPCI colleagues will help expand the NMVB, providing archival mesothelioma biospecimens and constructing tissue microarrays to be used by researchers to gain a better understanding of mesothelioma.
- Master's-degree student **Dirkje W. Hanekamp, MS**, received an Achievement Award at the **56<sup>th</sup> American Society of Hematology (ASH) Annual Meeting and Exposition**, held Dec. 6-9, 2014, in San Francisco, for research done in the laboratory of **Eunice Wang, MD**, Department of Medicine. He was first author of a poster presentation based on that research, "Autophagy Promotes the Survival and Therapy Resistance of Human Acute Myeloid Leukemia Cells Under Hypoxia."
- **Becker's Hospital Review** once again named RPCI to their "100 Hospitals and Health Systems With Great Oncology Programs," an annual list of centers that are national leaders in patient care, cancer outcomes and research.
- **Alex Adjei, MD, PhD, FACP**, Professor of Oncology and Chair, Department of Medicine, Senior Vice President of Clinical Research and the Katherine Anne Gioia Chair in Cancer Medicine; **Patrick Boland, MD**, Assistant Professor of Oncology, Department of Medicine, GI Center; and **Renuka Iyer, MD**, Associate Professor of Oncology, Co-Director, Liver and Pancreas Center, and Section Chief for Gastrointestinal Oncology, garnered three of four grants awarded by the National Comprehensive Cancer Network (NCCN) Oncology Research Program (ORP) to evaluate and define the clinical effectiveness of the investigational compound nintedanib\*, (BIBF 1120). The three collectively receive more than \$1.3 million, made possible through general research funding provided to NCCN from Boehringer Ingelheim Pharmaceuticals Inc., to conduct studies of the agent's effectiveness in treating non-small-cell lung cancer, metastatic colorectal cancer, and gastrointestinal carcinoid tumors, respectively.
- **Maciej Goniewicz, PhD, PharmD**, Assistant Member, Department of Health Behavior, has been awarded a three-year, \$1.38 million grant from the National Institute on Drug Abuse to lead a multisite clinical research study, collaborating with the University at Buffalo and University of California–San Francisco, to analyze nicotine delivery from novel nontobacco electronic systems, or e-cigarettes, and propose a standardized testing protocol.
- **Richard Koya, MD, PhD**, Associate Professor of Oncology, Center for Immunotherapy and Director of the Vector Development and Production Facility, received a four-year, \$1.35 million award from the NCI for a clinical study that aims to generate a potent "army" of immune cells from a patient's own blood to fight cancer by utilizing innovative gene-therapy techniques, such as

TGF-beta blockade in T-cell-receptor-engineered immunotherapy, an approach developed in his lab.

- **Shahriar Koochekpour, MD, PhD**, Professor of Oncology in the departments of Cancer Genetics, Medicine and Urology, received a two-year, \$406,247 grant from the NCI for an investigation into the potential for treating prostate cancer with a drug that's prescribed for amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease. Dr. Koochekpour will evaluate the therapeutic efficacy of the U.S. Food and Drug Administration-approved oral drug riluzole and its association with fatty-acid synthase, a key enzyme that's overexpressed in prostate cancer cells.
- **Fengzhi Li, PhD**, Associate Professor of Oncology, Department of Pharmacology and Therapeutics, received a two-year, \$406,247 grant from the NCI for his study of a new anticancer agent, FL118, against pancreatic cancer. Survival rates for pancreatic cancer remain poor due to the cancer's inherent resistance to existing chemotherapy and radiation treatments.
- **Jianmin Zhang, PhD**, Assistant Professor, Department of Genetics, received a two-year, \$406,247 grant from the NCI to compare how Hippo signaling pathway components are expressed in African-American and European-American breast cancer patients to help identify women at high risk for aggressive breast cancer toward the goal of eliminating breast cancer racial disparities.
- **Hans Minderman, PhD**, Assistant Professor of Oncology, Department of Experimental Therapeutics and Assistant Director of the Flow and Image Cytometry Facility, received a one-year, \$399,500 shared-instrument grant from the NIH for the purchase of an imaging flow cytometer. RPCI's Flow and Image Facility is recognized as a leader in applications of imaging flow cytometry, and the implementation of this technology at RPCI has increased demand by RPCI teams and researchers for this cutting-edge analysis.
- **Scott Abrams, PhD**, Professor of Oncology, Department of Immunology, received a two-year, \$125,935 research supplement to promote diversity in health-related research from the NCI. This grant supplements his ongoing R01 project, which explores IRF-8 as a negative regulator of CD11b+Gr-1+ myeloid production function.
- **Yasmin Thanavala, PhD**, Professor and Member, Department of Immunology, received a one-year, \$108,500 award from the Flight Attendant Medical Research Institute Inc. (FAMRI) to explore how secondhand tobacco smoke contributes to immune suppression and chronic inflammation, both of which lead to bacterial and viral respiratory infections.
- **Sergei Kurenov, MS**, Director of Surgical Simulation, Department of Surgical Oncology, received a four-year, \$69,010 subcontract award from the University of Florida (UF), part of a larger R01 award to UF from the National Institute of Biomedical Imaging and Bioengineering. Dr. Kurenov will help develop software for simulation-based virtual-reality modules used to train physicians in laparoscopic surgery and assess their expertise.
- **Denise Rokitka, MD**, Assistant Professor, Department of Pediatric Oncology, received a Hyundai Hope Grant, a two-year, \$250,000 award from the Kaleida/Hyundai Hope Foundation, to explore executive functioning—reasoning, problem-solving, organization, planning and behavior control—among young adult survivors of childhood and adolescent cancer and how these factors relate to quality of life and depression.
- **Mikhail Nikiforov, PhD**, Professor of Oncology, Department of Cell Stress Biology, received a one-year, \$50,000 grant from the Roswell Park Alliance Foundation for an investigation that targets proteins important for cancer cell metabolism (guanylate metabolism) as a way to suppress melanoma metastases, ultimately resulting in the generation of novel anti-melanoma agents.
- **Nuo Yang, PhD**, Post-doctoral Research Affiliate, Department of Cancer Genetics, received a three-month, \$3,000 grant from the American Brain Tumor Association for an investigation that aims to identify the specific T-cell receptor that plays a key role in killing glioma tumor cells, and to compare important marker changes following treatment with survivin vaccine therapy, contributing to the successful application of this cancer vaccine in glioma patients.
- **Theresa Hahn, PhD**, Associate Professor of Oncology in the departments of Medicine and Epidemiology, received a one-year, \$27,329 subcontract award from Dana-Farber Cancer Institute in Boston, Mass., part of a larger grant to Dana-Farber from the NCI to assess the

financial impact, including employment, benefits and direct costs, to patients undergoing a blood or marrow transplant.

- Led by **Martin C. Mahoney, MD, PhD**, Professor of Oncology, Department of Medicine and Director, Cancer Prevention & Detection Center and Employee Health Clinic, RPCI is one of just 18 centers across the country to receive special funding, in the form of a \$150,000 grant from the NCI to increase the number of adolescents—both girls and boys—receiving the vaccine against human papillomavirus (HPV), the virus responsible for most cases of cervical and anal cancers as well as many genital and head/neck cancers.
- **Chi-Chen Hong, PhD**, Associate Professor of Oncology, Department of Cancer Prevention and Control, Division of Cancer Prevention and Population Sciences, along with investigators at Rutgers Cancer Institute of New Jersey and Rutgers School of Public Health, received a \$5.7 million grant from the National Institutes of Health to explore the impact of obesity and other health factors on survival and quality of life in African-American women with breast cancer.
- RPCI was awarded three contracts from the **New York State Department of Health's Bureau of Tobacco Control** for regional tobacco control programs. Funding for the first year of the five-year contracts totals \$1.05 million, supporting efforts to engage community stakeholders and area youth in changing policies and norms about tobacco and tobacco use throughout Western New York.
- RPCI faculty members have been awarded research grants totaling more than \$3.5 million, from the United States Army Medical Research and Materiel Command (USAMRMC), an agency within the U.S. Department of Defense. The awardees include:
  - **David Goodrich, PhD**, Professor of Oncology, and **James Mohler, MD**, Associate Director, Senior Vice President for Translational Research and Chair of the Department of Urology, received a three-year, \$1.19 million grant to evaluate the utility of a new biomarker, Thoc1, for predicting whether newly diagnosed prostate cancers will progress to life-threatening disease.
  - **Yue Wu, PhD**, Assistant Professor of Oncology, Department of Urology, and **Li Tang, PhD**, Associate Professor of Oncology, Department of Epidemiology and Prevention, received a three-year, \$764,100 grant to address the biological perspective of racial differences in prostate cancer between African-Americans and European Americans. The project aims to determine which genetic variations in androgen transporter genes are associated with higher prostate cancer aggressiveness and whether these variations differ between the two population groups.
  - **Moray Campbell, PhD**, Associate Professor of Oncology, Department of Pharmacology and Therapeutics, and **Dominic Smiraglia, PhD**, Associate Professor of Oncology, Department of Cancer Genetics, received a three-year, \$636,370 grant to investigate how the most aggressive and lethal form of prostate cancer arises following anti-hormonal therapies, and to develop blood markers to predict the risk of this progression.
  - **John Ebos, PhD**, Assistant Professor of Oncology, Genitourinary Section, Department of Medicine, received a two-year, \$602,966 career-development award for his study of antiangiogenic therapy resistance in kidney metastasis, looking to determine whether tumor and nontumor cell reactions to treatment coordinate to produce tumor rebounds when therapy is halted.
  - **Wendy Huss, PhD**, Associate Professor of Oncology, Department of Pharmacology and Therapeutics, and **Richard Hershberger, PhD, MBA**, Chief Academic Officer, received a three-year, \$189,766 grant for a project that matches Howard University honors biology students with RPCI research faculty for mentoring in a comprehensive research experience on a topic related to prostate cancer.
  - **Irwin Gelman, PhD**, Professor of Oncology and John & Santa Palisano Chair in Cancer Genetics, received a one-year, \$127,350 grant for an investigation that will use a genetic screening method to identify the genomic mechanisms that lead to resistance to the newest generation of drugs being used against advanced prostate cancer.
- The **NCI** renewed the coveted and prestigious **Cancer Center Support Grant (CCSG)** to RPCI following an in-depth peer review by cancer experts from around the United States. The NCI rated Roswell Park's application as "Outstanding," and the designation extends Roswell Park's

status as an NCI-Designated Comprehensive Cancer Center — the only one in Upstate New York, and one of only 41 in the entire United States. Roswell Park has held this distinction continuously for 40 years and the award includes a federal grant allocation of \$19 million over the next five years. The NCI reviewers' assessment noted the "significant institutional commitment" that has placed the 116-year-old cancer center "on an upward trajectory" and that continued growth in jobs and research is expected following the recent recruitment of several "outstanding cancer investigators." The expert panel of peer reviewers from other NCI-designated centers wrote: "Under the exemplary leadership of the Center Director and with the continued involvement of the outstanding and productive Senior Leaders and commitment of the Institution... this established Cancer Center is well positioned" to continue its contributions to the national mission to understand and eliminate cancer. Former RPCI President & CEO, Donald Trump, MD, FACP noted that this accomplishment was made possible by the Institute's outstanding faculty and staff, the support of the community and the long-standing partnership with leaders in New York State, notably Governor Andrew Cuomo and Congressman Brian Higgins. The CCSG recognizes that RPCI's research programs meet the rigorous criteria for world-class, state-of-the-art, multidisciplinary research. Renewal of the CCSG is a multi-step competitive process that involved submission in May 2013 of a 1,273-page grant application detailing the accomplishments of six key Roswell Park research programs: Cell Stress and Biophysical Therapies, Experimental Therapeutics, Genetics, Genitourinary Cancers, Population Sciences and Tumor Immunology and Immunotherapy.

- BlueCross BlueShield of Western New York redesignated RPCI as a **Blue Distinction Center**<sup>®</sup> for delivering quality transplant care as part of the Blue Distinction Centers for Specialty Care<sup>®</sup> program. Approximately 100 Blue Distinction Centers for Transplants have been designated in the United States, with only four located in New York State. To receive a Blue Distinction Centers for Transplants<sup>®</sup> designation, medical facilities must demonstrate success in meeting patient safety criteria as well as transplant-specific quality measures (including survival metrics). **Philip McCarthy, MD**, is the Director of RPCI's Blood & Marrow Transplant Program.
- RPCI research into new ways to harness the immune system in the treatment of ovarian cancer cumulatively received **\$275,000** in **Specialized Program of Research Excellence (SPORE)** funding to jump-start investigations aimed at prolonging survival. In September 2013, RPCI and the University of Pittsburgh Cancer Institute (UPCI) were awarded an \$11 million SPORE grant from the **NCI** to fund innovative and multidisciplinary research in ovarian cancer. As part of this grant, investigators from RPCI, UPCI and the University at Buffalo were eligible to apply for **Career Development Program (CDP)** and **Developmental Research Program (DRP)** funding. **Kunle Odunsi, MD, PhD**, The M. Steven Piver Professor of Gynecologic Oncology and Executive Director of the Center for Immunotherapy, noted that the scientific projects supported by these developmental awards will compliment and expand the overall theme of the SPORE: finding novel immunotherapeutic treatment options for women with ovarian cancer. This first cycle of grants provided funding for two career development projects and four developmental research projects. Grant recipients and their funded projects:
  - **Junko Matsuzaki, PhD**, Director of the Immune Analysis Facility, received \$50,000 for a career development project titled "Development of a novel immunotherapeutic strategy for ovarian cancer patients using tumor-recognizing CD4+ T cells."
  - **Danuta Kozbor, PhD**, Associate Professor of Immunology and Microbiology, received \$50,000 for a developmental research project titled "Invasive ovarian cancer models for treatment with oncolytic virotherapy."
  - **Brahm Segal, MD**, Chief of Infectious Diseases; Professor of Oncology, Department of Medicine; and Associate Member, Department of Immunology, received \$50,000 for his

developmental research project, “Evaluation of novel immune biomarkers for ovarian cancer.”

- The **NCI** chose RPCI to serve as a **Lead Academic Participating Site (LAPS)**, providing scientific leadership for the development and conduct of clinical trials within the NCI’s new **National Clinical Trials Network (NCTN)**. The NCTN was created to speed the late-phase clinical trials that are necessary to establish new therapeutic agents as cancer treatments. As one of 30 LAPS institutions, RPCI will provide scientific leadership in the development and conduct of clinical trials. RPCI receives a five-year, \$3.08 million grant for this work and for increased patient-accrual costs. RPCI’s efforts will be led by four Roswell Park faculty leaders: **Ellis Levine, MD**, Professor of Oncology in the Department of Medicine; **Alex Adjei, MD, PhD**, Senior Vice President of Clinical Research and Katherine Anne Gioia Chair in Cancer Medicine; **Shashikant Lele, MD**, Clinical Chief of Gynecologic Oncology; and **Anurag Singh, MD**, Professor of Oncology and Director of Clinical Radiation Research within the Department of Radiation Medicine.
- RPCI received a grant from the NCI, totaling \$280,332 for funding of RPCI’s 2014 **Summer Research Experience Programs in Cancer Sciences and Oncology**. This federal funding, part of a five-year, \$1.4 million allocation, will be used to engage college and medical school students in research and clinical internships, support lab supplies, attendance at a science retreat, travel to local biotech companies and professional conferences as well as programming costs. The federal grant also supports, in part, a partnership between RPCI and Howard University in which honors students meet online weekly for three semesters with Roswell Park faculty to discuss research in preparation for their summer internships.
- **Alex Adjei, MD, PhD, FACP**, Senior Vice President of Clinical Research and the Katherine Anne Gioia Chair of Medicine, and **Chukwumere Nwogu, MD, PhD, FACS**, Attending Surgeon in the Department of Thoracic Surgery, received \$199,982 from the NCI to build a well-trained group of clinicians and researchers in Ghana and Nigeria to collaborate with basic and population-science investigations in cervical, prostate and breast cancer. West Africans and African-Americans in the United States show similar epidemiological trends with regard to breast and prostate cancers, creating clinical research opportunities to enhance drug development and novel therapeutics. The collaboration aims to improve cancer care through the Noguchi Memorial Institute in Ghana and the Lagos State University in Nigeria, and serve as a paradigm for other developing countries. RPCI was one of only 15 institutions awarded this type of specialized NCI contract, created to stimulate cancer research and expand the reach of cancer centers in low- and mid-income countries.
- **Sarah Holstein, MD, PhD**, Assistant Professor of Oncology, received a four-year, \$985,707 award from the NCI to develop new drugs to use against multiple myeloma, by targeting a key process, Rab geranylgeranylation, within myeloma cells.
- **Carl Morrison, MD, DVM**, Executive Director, Center for Personalized Medicine, and Director, Division of Molecular Pathology, received a five-year subcontract award of approximately \$561,580 from the University of Pittsburgh for an NCI project to establish the TIES Cancer Research Network (TCRN) at RPCI, part of multi-institutional information-technology solution to connect electronic records and tissue banks at four institutions, increase access to tissues at local biorepositories, and foster collaborations across biorepositories.
- **Joseph Spornyak, PhD**, Imaging Research Scientist, received a two-year award of \$182,018 from the NCI to develop next-generation magnetic resonance imaging (MRI) contrast agents to track temperature-sensitive drug carriers engineered to release anticancer drugs locally to tumors.

- **Shahriar Koochekpour, MD, PhD**, Associate Professor of Cancer Genetics, Departments of Urology and Oncology, received a two-year, \$406,247 award from the NCI to investigate how prostate cancer aggressiveness and metastasis in black men may correlate to glutamate (an amino acid) receptor levels in an effort to distinguish between aggressive and nonaggressive prostate cancers, and help guide treatment decisions.
- **Peter Demant, MD, PhD**, Distinguished Member, Department of Molecular and Cellular Biology, received a two-year, \$177,740 award from the NCI for work that seeks to identify the specific genes in individual patients that determine whether they're likely to suffer toxic effects from cisplatin therapy.
- **Gokul M. Das, PhD**, Associate Professor, Department of Pharmacology and Therapeutics, and Co-Director, RPCI Breast Disease Site Research Group, received a one-year \$50,000 grant from the Breast Cancer Coalition of Rochester for a project that focuses on triple-negative breast cancer. His team will investigate the role of tumor-suppressor protein p53 in this highly aggressive and treatment-resistant breast cancer.
- **Jason Eng**, a graduate student in the Department of Immunology, received a one-year, \$2,500 Seed Grant Research Award from the American Medical Association Foundation to explore how physical and emotional stresses might increase the recurrence and spread of pancreatic cancer. The findings from this project may lead to new treatment strategies involving relatively safe and already widely used anti-anxiety or anti-hypertensive medications.
- RPCI was awarded a five-year, **\$1.5 million** contract to operate the **Western New York Tobacco Health System Change Center (WNY-THSCC)**. The Center is funded by the New York State Tobacco Control Program and will promote systems changes supporting expanded tobacco-cessation services throughout Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans and Wyoming counties. The WNY-THSCC is one of eight centers across the state that will collaborate with targeted healthcare providers to assist healthcare organizations in the adoption of policies and programs designed to help patients quit using tobacco products. **Martin Mahoney, MD, PhD**, Professor of Oncology, departments of Health Behavior and Medicine, said that this expansion of tobacco-cessation services allows for an opportunity to refocus efforts and concentrate on collaborations with healthcare organizations, including health-care systems and Federally Qualified Health Centers. **Kimberly Banks, RN**, serves as the Director of the WNY-THSCC.
- **David Scott**, Director of **Diversity and Inclusion**, received the Friend of the EOC award from the Educational Opportunity Center (EOC) at the University at Buffalo (UB) for his outstanding support for the Buffalo EOC, the UB student body, and the community served by the EOC.
- The American Surgical Association, the nation's oldest and most prestigious academic society for surgeons, elected **Steven Hochwald, MD, FACS**, Chief of Gastrointestinal Surgery, as a new Fellow.
- **James Mohler, MD**, Associate Director and Senior Vice President for Translational Research and Chair of the Urology Department, received the 2015 Urology Care Foundation Distinguished Scholar Alumnus Award from the American Urological Association, for significant contributions to the field of urology.
- The **American Society of Health-System Pharmacists (ASHP)** extended its accreditation of RPCI's postgraduate year-two pharmacy, or PGY2, residency in oncology. Established in 2007, RPCI's pharmacy residency program gives participants the opportunity to develop expertise and advanced knowledge in pharmaceutical care for hematology/oncology patients within the context of an interdisciplinary approach that involves health-care providers in both inpatient and outpatient settings. **Mei Ka Fong**, PharmD, BCOP is Program Director for this residency program.
- Thanks to an **American Society of Hematology (ASH)** Visitor Training Program (VTP) grant awarded to RPCI hematopathologist **Vishala Neppalli, MD**, visiting physician Tamunomieibi Wakama, MD, can now perform flow cytometry testing that is essential to accurate diagnosis and treatment of his patients. Only 20 VTP grants are awarded internationally by ASH each year to

enable talented hematologists, scientists and/or laboratory staff from developing countries to receive training on a specific hematology topic or technique under the mentorship of an ASH member at institutions where equipment and manpower are readily available. Dr. Neppalli devised a 12-week curriculum covering specific techniques and knowledge that Dr. Wakama will implement at his home institution to directly improve patient care. In Nigeria, Dr. Wakama serves as both clinician and pathologist to his patients, and integrated diagnostic hematopathology is limited.

- The **Endoscopy Center** at RPCI received national recognition for quality and safety by the **American Society for Gastrointestinal Endoscopy (ASGE)**. The ASGE Endoscopy Unit Recognition Program honors endoscopy units that have demonstrated a commitment to patient safety and quality in endoscopy as evidenced by meeting the program's rigorous criteria, which include following ASGE guidelines in privileging, quality assurance, endoscope reprocessing, CDC infection control guidelines and ensuring endoscopy staff competency. The certificate is granted for a three-year renewable period. **Andrew Bain, MD**, Chief of Endoscopy, noted that RPCI's Endoscopy Center is a unique, regional asset, where physicians who are fellowship-trained in therapeutic endoscopy perform a high volume of such advanced procedures as endoscopic ultrasound and double balloon enteroscopy, which are not performed elsewhere in the area.
- **Andrei V. Gudkov, PhD, DSci**, the Garman Family Chair in Cell Stress Biology, Senior Vice President of Basic Science and Chair of Cell Stress Biology, received the **Lifetime Achievement Award** in Medicine and Research from Medaille College, in Buffalo. The award was presented March 24, 2014 during the 9<sup>th</sup> Annual Media Awards Ceremony.
- **Kunle Odunsi, MD, PhD, FRCOG, FACOG**, the M. Steven Piver Professor of Gynecologic Oncology and Executive Director of the Center for Immunotherapy was inducted into the **Fellowship of The Nigerian Academy of Science** during a ceremony held May 13 in Abuja, Nigeria. The Nigerian Academy of Science was inaugurated in 1977 and is the country's top non-governmental honorific scientific society in Nigeria. Its mission is to promote science and scientific activities.
- **Paul Wallace, PhD**, Professor of Oncology and Director of the Department of Flow Image & Cytometry, began his term as President-Elect of the **International Society for Advancement of Cytometry (ISAC)** in May. Dedicated to leading technological innovation, scholarship and the exchange of knowledge in cell sciences, ISAC aims to advance the impact of cytometry in meeting current and emerging challenges in the sciences. Dr. Wallace will serve as President-Elect for two years, followed by a two-year presidency. Prior to his election, he was the treasurer of ISAC for four years and serves on the council for the **International Clinical Cytometry Society (ICCS)**.
- **Carl Thomas**, Chief of Public Safety, is one of six new appointees to the **City of Buffalo's Emergency Medical Services Board**. The new board members were appointed when Buffalo officials decided to employ the services of Rural/Metro (a provider of ambulance, fire protection and safety services) for another five years. Mayor Byron W. Brown hopes that Mr. Thomas and other members of the existing board will provide additional oversight of services provided by Rural/Metro, while bringing new expertise to the board from the local medical community. The new appointees to the city's Emergency Medical Services Board will review monthly performance reports provided by Rural/Metro.
- **Eunice S. Wang, MD**, Associate Professor of Oncology, Leukemia Service, shared her expertise on the current management of acute myeloid leukemia (AML) with peers at the **National Comprehensive Cancer Network (NCCN) 9th Annual Congress on Hematologic Malignancies** in New York City in September. She discussed the latest advances and current therapeutic strategies for AML and how to apply this knowledge to optimize outcomes for patients with AML.
- **Jeannette Jackson-Rose, RN, BSN**, Ambulatory Center Administrator for the Amherst Center, was honored at the **42nd Annual Black Achievers Awards Gala**, which highlights contributions and achievements by African-Americans in our community. Ms. Jackson-Rose is the Principal Investigator on two research projects: Extravasation-Measurement of a Nursing-Sensitive Quality

Outcome for Ambulatory Oncology Nursing Practice and Drug Exposure Feedback and Education for Nurses Safety (DEFENS). She is also a participant in the Comprehensive Cancer Center Nursing Sensitive Indicator (C3NSI) group.

- **Maria Rivera**, Diversity Program Assistant, received the “**Trailblazer Award**” at the **5th Annual Woman Making History Gala – Women Who Walk in the Footsteps of Greatness**. The award is given to women who fight to open doors for other women, are dedicated to community service, are not afraid to challenge the status quo. At Roswell Park, Rivera was instrumental in the launch of the Hispanic Employee Network and Resource Group (ENRG), which promotes cancer awareness and prevention in Buffalo’s Hispanic community. She has also named a scholarship fund – the William Acosta Scholarship Fund – at Roswell Park in honor of her late brother.
- **James Mohler, MD**, Associate Director and Senior Vice President for Translational Research, and Chair of the Urology Department, has been selected by the American Urological Association (AUA) as the Association’s **2015 Distinguished Scholar Alumnus**. Given for significant research contributions to the field, the award honors Dr. Mohler’s research, wealth of knowledge, ability to teach impeccable medical standards and professional prestige within the urologic research community. Dr. Mohler’s research focuses on the role of androgen metabolism and the androgen receptor in 1) the failure of androgen deprivation therapy for advanced prostate cancer and 2) racial differences in the aggressiveness of prostate cancer. He serves as chair of the National Comprehensive Cancer Network (NCCN) Prostate Cancer Guidelines Committee.
- **Y. Eugene Yu, PhD**, Professor of Oncology, Department of Cancer Genetics, was appointed an ad hoc member of the **National Institutes of Health (NIH) Developmental Brain Disorders Study Section**. Dr. Yu joins other leading experts in reviewing grant applications that are pivotal to developmental brain disorders, such as Down syndrome.
- RPCI continued as a **DAISY Award Partner** with The Daisy Foundation, allowing patients, caregivers and staff to nominate and reward the extraordinary clinical skill and compassionate care provided by Roswell Park nurses every day. Winners of the award this year include: **Jean Moses Reese, AAS, RN**, Pediatrics Department; **Eda Casiano, BSN, RN**, Intermediate Medical Care Unit; **Heather Wypij, BSN, RN, OCN**, Gynecology Center; **Jennifer Lindemann, MSN, MS, BSN, RN**, Gynecology/Breast In-Patient Unit.

### ***Clinical & Scientific Achievements***

- Following a national search, the **Roswell Park Cancer Institute Board of Directors** named **Candace S. Johnson, PhD**, the Institute’s 15th President and CEO. Dr. Johnson is the first female leader of the 117-year-old comprehensive cancer center.
- **Victor Filadora, MD, MBA**, was appointed Chief of Clinical Services. An anesthesiologist, Dr. Filadora is now responsible for managing the comprehensive cancer center’s Ambulatory Services, Perioperative Services, Sterile Processing, Pharmacy, Patient and Family Experience, Endoscopy Services and Therapeutic Services programs, and providing leadership and guidance to clinical department administrators.
- **Boris Kuvshinoff II, MD, MBA**, was named Chief Medical Quality Officer and interim Chief Medical Officer. A surgical oncologist and longtime clinical and faculty leader at RPCI, in his new role he provides day-to-day leadership and management of quality strategy, encompassing responsibilities in the areas of clinical performance improvement and patient safety, risk management, medical staff affairs and development of Institute policies.
- **Patrick Boland, MD**, Assistant Professor of Oncology, Department of medicine, GI Center, and **Dhyan Chandra, PhD**, Associate Professor of Oncology, Department of Pharmacology & Therapeutics, are collaborating with scientists at the University at Buffalo to identify novel biomarkers in the blood that could provide details about how fast or slow colon cancer may be growing in a patient’s body, and the specific status of a person’s colorectal cancer at any given time.

- Three of RPCI's gynecologic oncologists began providing care to women in the Jamestown, NY, area. **Drs. Peter Frederick, Kunle Odunsi, and Emese Zsiros** now care for patients at **Jamestown Medical Oncology Hematology**, a Roswell Park community cancer practice in Jamestown.
- A survey conducted by researchers from RPCI and the University at Buffalo revealed that college students who use tobacco products or marijuana, and/or binge drink also are more likely to use e-cigarettes. The survey formed the basis of a study titled "Risky Behaviors, E-Cigarette Use and Susceptibility of Use Among College Students." **Maciej Goniewicz, PhD, PharmD**, Department of Health Behavior, and **Martin Mahoney, MD, PhD**, Department of Medicine, were among the authors.
- Understanding the chemokine landscape of papillary serous ovarian cancer, the most common form of the disease, is important for the development of new immunotherapy strategies to increase the presence and function of T cells in the tumor microenvironment. Research examining the molecular environment of ovarian cancer was the first to map the presence of chemokines, immune-system proteins that mobilize T cells in this disease. Published in the journal *Clinical Cancer Research*, the study was conducted at the Perelman School of Medicine at the University of Pennsylvania and led in part by **Emese Zsiros, MD, PhD**, Department of Gynecologic Oncology, who was a Penn fellow at the time the research was conducted.
- Nine RPCI teams presented research at the 68th annual **Cancer Symposium of the Society of Surgical Oncology**, March 25-28 in Houston, Texas:
  - **Moshim Kukar, MD**, and **Steven Hochwald, MD, FACS**, Department of Surgical Oncology, along with Surgical Oncology Fellow **Smit Singla, MD, MRCS (Edinburgh), MSc**, led research on the impact of surgery timing and pathological response on patient outcome. They presented a study titled "Complete Pathologic Response Is Independent of the Timing of Esophagectomy and Is Predictive of Improved Survival Following Neoadjuvant Chemoradiation for Esophageal Cancer."
  - Led by Clinical Fellow **Rebecca Tuttle, MD**, and **Moshim Kukar, MD**, another Roswell Park research team examined what happens to patients who experience a serious complication after cancer surgery. They created a model to identify patient characteristics that predict a worse outcome in the event of a serious complication after major cancer resection. The tool allows for more informed preoperative discussions with patients about their expected outcomes in the event that they experience a serious postoperative complication. Their study was titled "Preoperative Risk Assessment Tool to Predict Worse Outcomes in Patients with Serious Complications after Major Oncologic Surgery."
- Electronic cigarettes produce third-hand exposure to nicotine residue, but the exposure is significantly less than that seen with traditional cigarettes, according to a study by RPCI researchers published in the *International Journal of Drug Policy*. Led by **Maciej Goniewicz, PhD, PharmD**, Assistant Professor of Oncology, Department of Health Behavior, the pilot study is the first to offer data on whether e-cigarette use can cause third-hand exposure to nicotine when used in participants' homes.
- Two members of the Surgical Oncology Department produced a comprehensive guide on minimally invasive surgical approaches for treating cancers of the stomach and esophagus. Published by Springer, the anthology, *Minimally Invasive Foregut Surgery for Malignancy: Principles and Practice*, was edited by **Steven Hochwald, MD, FACS**, Chief of Gastrointestinal Surgery and Professor of Oncology, and **Moshim Kukar, MD**, Assistant Professor of Oncology.
- RPCI researchers discovered what may be a promising, new approach for controlling aggressive, treatment-resistant forms of prostate cancer. **Leigh Ellis, PhD**, Assistant Professor of Oncology, Department of Pharmacology and Therapeutics, and colleagues identified two genes that appear to be simultaneously overexpressed in aggressive prostate cancers resistant to the androgen-targeted treatments enzalutamide and abiraterone acetate. Dr. Ellis hopes this work will pave the way for a clinical trial of prostate cancer patients whose disease is resistant to those drugs.

- Led by RPCI epidemiologists **Zhihong Gong, PhD**, and **Christine Ambrosone, PhD**, a team of researchers representing Rutgers Cancer Institute of New Jersey and the Icahn School of Medicine at Mount Sinai School of Medicine in New York City uncovered new information that may explain why many African-American women are more likely to be diagnosed with aggressive, often deadly forms of breast cancer. Study results strengthened evidence that increased dietary folate intake may be an effective strategy for reducing risk for the disease in African-American women. In the first large study of its kind, the team identified patterns in gene variations associated with breast cancer risk that diverged significantly between African-American women and women of European descent.
  - RPCI researchers presented data on the use of specific agents for multiple myeloma and acute myeloid leukemia at the **56th American Society of Hematology Annual Meeting and Exposition**, held Dec. 6–9, 2014, in San Francisco:
    - **Sarah A. Holstein, MD, PhD**, Assistant Professor of Oncology, Department of Medicine, gave a poster presentation, “A Novel Class of Geranylgeranyl Diphosphate Synthase Inhibitors: Structure-Activity Relationships of Homoisoprenoid Triazoles in Myeloma Cells.”
    - **Elizabeth A. Griffiths, MD**, Assistant Professor of Oncology, Department of Medicine, gave a poster presentation, “A Phase I Study of Lenalidomide and Cytarabine in Relapsed/Refractory Acute Myeloid Leukemia.”
    - **Eunice S. Wang, MD**, Associate Professor of Oncology, Department of Medicine, gave a poster presentation with student and study first author **Dirkje W. Hanekamp, MS**, on “Autophagy Promotes the Survival and Therapy Resistance of Human Acute Myeloid Leukemia Cells Under Hypoxia.”
    - **Dr. Wang** also chaired an education session on “AML in the Elderly Patient,” discussing appropriate treatment options for elderly AML patients.
- A team led by **Fengzhi Li, PhD**, and **Xinjiang Wang, PhD**, Department of Pharmacology & Therapeutics, published a study in the peer-reviewed American Association for Cancer Research journal *Cancer Research* showing that the novel anticancer agent FL118 can activate the p53 tumor-suppressor pathway in cancer cells. FL118 demonstrates potent antitumor efficacy, suggesting it could be used as a personalized, targeted therapy for certain tumors.
- RPCI acquired two Western New York physician practices, increasing convenience and choice for cancer patients and unifying cancer surgical, medical and radiation services under the umbrella of the region’s only NCI-designated Comprehensive Cancer Center. The two physician practices, **Breast Care of Western New York** and **Soniwala Hematology Oncology**, will continue to operate in Williamsville, as Roswell Park community cancer practices.
- **Alex Adjei, MD, PhD, FACP**, Senior Vice President of Clinical Research and the Katherine Anne Gioia Chair in Cancer Medicine, and **Yujie Zhao, MD, PhD**, Assistant Professor of Oncology, Department of Medicine, authored a review article published in *Nature Reviews Clinical Oncology* that provides a comprehensive clinical analysis of currently available and novel MEK inhibitors and highlights strategies for overcoming therapeutic resistance and identifying biomarkers that may lead to the wider use of these agents in cancer therapy.
- Researchers led by **Kunle Odunsi, MD, PhD, FRCOG, FACOG**, the M. Steven Piver Professor of Gynecologic Oncology and Executive Director of the Center for Immunotherapy, found that the expression pattern of a unique class of tumor-associated antigens known as the MAGE cancer-testis antigens (CTAs) correlates with clinical outcome in epithelial ovarian cancer. Based on their findings, the researchers have identified priority targets for immunotherapy approaches to ovarian cancer, the most lethal gynecologic cancer.
- **Christine Ambrosone, PhD**, Chair, Department of Cancer Prevention and Control at RPCI, was one of three co-principal investigators of a large collaborative study with Boston University’s Slone Epidemiology Center and the University of North Carolina Lineberger Cancer Center. The researchers found the most conclusive evidence to date that breastfeeding significantly reduces risk of aggressive forms of breast cancer among African-American women, a group with a disproportionately high incidence of two aggressive forms of the disease: estrogen-receptor-negative (ER-negative) and triple-negative breast cancer.

- RPCI researchers led by **Dhyan Chandra, PhD**, Associate Professor of Oncology, Department of Pharmacology & Therapeutics, collaborated with University at Buffalo researchers to develop a new approach to characterizing and monitoring cellular structure changes. The new single-cell-based assay uses Raman microspectroscopy to detect cancerous cells early and monitor cell-to-cell variations in cancer progression or in response to drugs.
- Research led by **Maciej Goniewicz, PhD, PharmD**, Department of Health Behavior, documented that the use of electronic cigarettes (e-cigarettes) has more than tripled among students in Poland, adding to the evidence that e-cigarette use is increasing not only among adult smokers, but also among adolescents around the world. His study, published in the *Journal of Adolescent Health* (JAH), was conducted in collaboration with researchers at the Medical University of Silesia in Poland.
- In a joint effort with the Sunnybrook Research Institute in Toronto, RPCI researchers led by **John M. L. Ebos, PhD**, Assistant Professor of Oncology, Genitourinary Section, Department of Medicine at RPCI, have developed a novel preclinical methodology for assessing neoadjuvant therapy in animal models, distinguishing which antiangiogenic therapies treatments designed to block blood vessels from assisting tumor growth — are optimal for improving overall survival after treatment has stopped and the tumor has been surgically removed. The study was published in the journal *EMBO Molecular Medicine*.
- In the largest series of its kind to date, RPCI's **Todd Demmy, MD, FACS**, Clinical Chair, and his colleagues in the Department of Thoracic Surgery demonstrated through a retrospective study that Video-Assisted Thoracoscopic Surgery (VATS), a minimally invasive endoscopic approach for performing thoracoscopic pneumonectomy (removal of the entire lung) appears to be safe at a high-volume center, and may provide pain and survival advantages in the long term. The study, "Thoracoscopic Pneumonectomy: An 11-Year Experience," appears in the November 2014 issue of *Chest*, a peer-reviewed journal published by the American College of Chest Physicians.
- RPCI researchers have identified two independent classes of novel candidate prognostic markers for ovarian cancer, advancing efforts to develop targeted therapies for the disease. The findings are from two separate studies, both led by **Kevin Eng, PhD**, Assistant Professor of Oncology, Department of Biostatistics and Bioinformatics, published in the peer-reviewed journal *PLoS ONE* and based on data from The Cancer Genome Atlas (TCGA), the world's largest public database on gene expression in different tumor types. The first study established an association of this often-deadly cancer with the immune system and clarified the role of a class of immunogenic tumor antigens known as cancer testis (CT) antigens, and the second reported new evidence that certain molecular interactions influence ovarian cancer prognosis.
- RPCI unveiled a new **Endoscopy Center**, a multipurpose clinical space that brings together advanced endoscopy and interventional pulmonology services into one state-of-the-art facility. The new center, designed for optimal patient safety and comfort, was built to meet increasing demand for minimally invasive endoscopic procedures used for diagnosis, staging and treatment of malignant and nonmalignant gastrointestinal and pulmonary conditions.
- **Cleveland BioLabs, Inc.** and **RPCI** announced the publication of studies in *Oncotarget* describing the preclinical efficacy of Curaxin CBL0137 as a single agent and in combination with the current standard-of-care therapy, gemcitabine, against different models of pancreatic ductal adenocarcinoma, including models of gemcitabine-resistant tumors. The studies were conducted at Roswell Park, SUNY Downstate Medical Center and Buffalo Biolabs, LLC.
- Lead by **Mateusz Opyrchal, MD, PhD**, Assistant Professor of Oncology, researchers at RPCI have identified a mechanism of breast cancer cells that leads to chemotherapy resistance in inflammatory breast cancer. These preclinical findings, published in the *International Journal of Oncology*, provide evidence for a potential therapeutic approach that will restore sensitivity to chemotherapy and improve treatment of inflammatory breast cancer tumors. This study forms the basis for future research in patients with breast cancer and offers hope for targeted therapy for patients with aggressive triple-negative inflammatory breast cancer.. Dr. Opyrchal's laboratory continues to work on identifying the cancer stem cells and signaling pathways that play a role in growth, metastatic potential and resistance to standard therapies. The study, "Inhibition of Cdk2 kinase activity selectively targets the CD44+/CD24<sup>-low</sup> stem-like subpopulation and restores

chemosensitivity of SUM149PT triple-negative breast cancer cells,” was supported in part by NCI grants.

- Researchers at RPCI and the University at Buffalo (UB) determined that cognitive assessment is an effective complement to traditional methods of assessing the skill level of robotic surgeons at various stages of development and can be used to help tailor training programs to surgeons' individual needs based on level of experience. The study, published in the journal *BJUI*, is the first published report to evaluate surgeons' cognition during robot-assisted surgery. **Khurshid Guru, MD**, the study's first author and Director of Robotic Surgery and the Robert P. Huben Endowed Professor of Oncology at RPCI, who is also Director of the Institute's ATLAS Project, (Applied Technology Laboratory for Advanced Surgery), noted that the real distinctions emerged when the researchers looked at the cognitive differences between intermediate and expert groups. The middle group, those considered competent but not expert, demonstrated greater high-level engagement, higher mental state and more cognitive load to complete each task when performing intermediate and advanced tasks — they had to work harder and devote more mental resources than the expert group. The testing was performed at RPCI in collaboration with UB's Brain Computer Interface Laboratory. The study is titled “Cognitive Skills Assessment During Robot-Assisted Surgery: Separating Wheat from Chaff,” and the research was funded in part by the Roswell Park Alliance Foundation and the John R. Oishei Foundation.
- Looking to target a key pathway in order to interfere with the processes that lead to tumor spread, a research team led by **Irwin H. Gelman, PhD**, Department of Cancer Genetics, identified a new suppressor of cancer metastasis that may point the way toward development of more effective treatments for prostate cancers and other malignant solid tumors. Using a genome-wide genetic screen, Dr. Gelman and colleagues identified a previously unknown metastasis suppressor — the **FOXO4** protein, which belongs to a family of genes that are produced by all human cells. In demonstrating that FOXO4 works to prevent the spread of cancerous tumors by binding to and inhibiting the protein RUNX2, the team identified a circuit that controls metastatic progression in prostate cancer. Dr. Gelman's lab is now working with collaborators at the University of Maryland to test the effectiveness of the experimental agent **CADD522**, an inhibitor of RUNX2 function, in preventing or impeding prostate cancer metastasis. The study, “A Genome-Wide RNAi Screen Identifies FOXO4 as a Metastasis-Suppressor through Counteracting PI3K/AKT Signal Pathway in Prostate Cancer,” was published in the journal *PLOS One*.
- The New York State Department of Health (DOH) granted RPCI approval to begin genomic testing of cancer patients using its **OmniSeq Target™** advanced molecular diagnostic laboratory test. The test, approved through the DOH's Clinical Laboratory Evaluation Program (CLEP), is part of a comprehensive approach developed by the **RPCI Center for Personalized Medicine** for profiling and interpreting the genetic information contained in the tumor tissue. OmniSeq Target™ is one of only three tests approved for use in New York State that use next-generation sequencing, and it is the only assay to exclusively target actionable mutations — those alterations for which targeted therapeutic approaches exist. This focus on actionable mutations is what makes this approach unique and what makes this test such an important tool in therapeutic decision-making, says **Carl Morrison, MD, DVM**, Executive Director of the Center for Personalized Medicine. RPCI also developed a software system that delivers clinically relevant information from OmniSeq Target™ testing into reports that become part of patients' electronic health records, enabling physicians to make more timely and informed treatment decisions. The comprehensive cancer center planned to begin incorporating OmniSeq Target™ testing into the care of patients starting in the third quarter of 2014.
- A team of scientists from RPCI, the Medical University of South Carolina, Yale University School of Medicine and the University at Buffalo (UB) evaluated the smoking quit rates of more than 3,000 daily tobacco users who contacted the New York State Smokers' Quitline. Uninsured smokers who used nicotine replacement therapy (NRT) patches in combination with NRT lozenges nearly doubled their quit rates when using the support of a quitline, according to their study published in the *Journal of Smoking Cessation*. This study offers significant public health implications for the delivery of evidence-based cessation treatment, according to **Andrew Hyland, PhD**, Director of the New York State Smokers' Quitline, Chair of the Department of Health Behavior at RPCI and co-author of the study.

- Dozens of RPCI physicians and scientists gathered in Chicago for the **50<sup>th</sup> Annual Meeting of the American Society of Clinical Oncology (ASCO)**, the world's largest association of oncologists. Highlights of the Roswell Park-led research presented at this prestigious meeting included new findings on a promising targeted therapy for colorectal cancer; the results of two studies assessing novel treatments for leukemia; and a large study on the impact of current smoking on mortality among cancer patients. Details of those selected studies follow:
  - **Alex Adjei, MD, PhD**, the Katherine Anne Gioia Chair in Cancer Medicine, is senior author on "Phase I trial of MM-151, a novel oligoclonal anti-EGFR antibody combination in patients with refractory solid tumors." The study suggests preliminary clinical efficacy of MM-151 in treating colorectal cancer with limited toxicity, warranting further study of this approach.
  - **Elizabeth Griffiths, MD**, Assistant Professor, Department of Medicine, is first author on "First results of a phase 2 study using a 10-day subcutaneous (SC) regimen of the novel hypomethylating agent (HMA) SGI-110 for the treatment of relapsed/refractory acute myeloid leukemia (r/r AML)." While the novel hypomethylating agent SGI-110 has previously been shown to exhibit a 16% complete remission in patients with relapsed/refractory acute myeloid leukemia (r/r AML) on a five-day regimen of this agent, Dr. Griffiths and colleagues have reported the first results of a study using a 10-day regimen. Results appear to compare favorably with previously reported response rates, indicating that further study of this regimen is warranted.
  - **James Marshall, PhD**, Chair, Department of Cancer Prevention and Population Sciences, is senior author on "The effect of current smoking on mortality in cancer patients." Using a Medline search of evidence-based studies from 1990 to 2012, Dr. Marshall and colleagues conducted a meta-analysis of the impact of current smoking at or following a cancer diagnosis, looking specifically at effects on overall mortality. Findings indicate that current smoking poses higher overall mortality risk for cancer patients regardless of treatment modalities, and much greater risk than past smoking.
  - The late **Meir Wetzler, MD**, then Chief of the Leukemia Section and a Professor of Medicine within the Department of Medicine, was first author on "Landmark analysis of overall survival (OS) in patients with chronic (CP) or accelerated (AP) phase chronic myeloid leukemia (CML) treated with omacetaxine mepesuccinate." Dr. Wetzler and colleagues sought to compare overall survival in a subset of chronic and accelerated chronic myeloid leukemia (CML) patients in two small phase II trials in which patients received omacetaxine as single agent and after previous treatment with two or more tyrosine kinase inhibitors. Findings suggest that hematologic response by three months could be a positive predictor of overall survival in CML patients receiving omacetaxine. Further studies will be required to confirm these findings.
- In a review article published in the American Cancer Society journal *Cancer*, RPCI faculty leader **James Mohler, MD**, Associate Director, Senior Vice President of Translational Research and Chair, Department of Urology, shared his expert perspective on the future of androgen-deprivation therapy for men with persistently increasing PSA levels after failed local therapy. He explained that earlier and more complete androgen-deprivation therapy may cure many men with advanced prostate cancer. Dr. Mohler cited three randomized clinical trials demonstrating the benefits of early androgen-deprivation therapy when used as neoadjuvant or adjuvant therapy for patients with high-risk localized disease. Based on these findings, Dr. Mohler recommended using intermittent androgen-deprivation therapy at early stages of the disease. Additionally, newer agents may more effectively deprive prostate cancer of the androgens required for growth. Dr. Mohler also reported that earlier and more complete androgen-deprivation therapy needs to be studied in preclinical models, the pre-prostatectomy setting and phase III clinical trials.
- A retrospective study published in the medical journal *Urology* by a physician team from RPCI found that patients with metastatic kidney cancer — even those with chronic renal insufficiency — can tolerate and benefit from a treatment called high-dose interleukin-2 (HDIL-2) immunotherapy. Lead author **Thomas Schwaab, MD, PhD**, Associate Professor of Oncology in the departments of Urology and Immunology says the data demonstrates that that more patients than previously thought may be good candidates for this complex and aggressive therapy and that in a

specialized setting, clinicians can safely provide this treatment to patients. RPCI's inpatient IL-2 clinic is one of the few high-volume centers for this therapy in the nation.

- Research led by **Maciej Goniewicz, PhD, PharmD**, Assistant Professor of Oncology in the Department of Health Behavior, showed that high-voltage electronic cigarettes (e-cigarettes) expose users to increased levels of carcinogens – levels potentially in excess of those present in traditional cigarette tobacco smoke. **Andrew Hyland, PhD**, Chair of the Department of Health Behaviors said that these findings help provide scientific foundation for product safety and will inform the public health community as it establishes regulations of these devices. The study was conducted in collaboration with scientists from the Medical University of Silesia in Poland and was published by *Nicotine and Tobacco Research*, a peer-reviewed journal.
- RPCI received U.S. Food and Drug Administration (FDA) approval to enroll patients in a phase II clinical trial that will use a unique and highly precise method of delivering interstitial photodynamic therapy (I-PDT) to recurrent tumors of the head and neck. Most patients with recurrent and nonresectable head & neck cancer experience poor quality of life and a projected survival that is measured in months. I-PDT is an additional treatment option that may improve outcomes for patients who respond poorly to standard therapies. Principal Investigator of the study and a member of RPCI's departments of Cell Stress Biology and Head & Neck/Plastic & Reconstructive Surgery is **Gal Shafirstein, DSc**. Initiated by Dr. Shafirstein, the phase II clinical trial will use the photosensitizer Photofrin<sup>®</sup>, manufactured by Pinnacle Biologics, Inc., which is funding the trial. The study will be conducted in collaboration with Thomas Foster, PhD, and Timothy Baran, PhD, both of the Department of Imaging Sciences at the University of Rochester Medical Center. Treating physician **Hassan Arshad, MD**, of RPCI's Department of Head & Neck/Plastic & Reconstructive Surgery, will be responsible for all clinical aspects of the study.
- RPCI researchers in partnership with researchers from **The Medical University of South Carolina** discovered that for the vast majority of current and former smokers willing to undergo spiral CT for lung cancer screening, lack of insurance coverage is a barrier. This finding was published in the journal, *Lung Cancer*. Of the data revealed in the study, **Andrew Hyland, PhD**, Chair of the Department of Health Behavior at RPCI noted that there is a need for insurance companies to pay for this life-saving test.
- More than 30 RPCI Research Teams shared findings at the **American Association for Cancer Research (AACR) Annual Meeting 2014** with more than 18,000 researchers, oncology professionals and patient advocates who attended the prestigious meeting.
  - **Li Tang**, an Associate Member in the Department of Cancer Prevention and Control, is first author on "Racial differences in the association of cruciferous vegetable intake with breast cancer hormone receptor status and tumor subtype." The study was a collaborative effort that involved researchers from **Kaiser Permanente Northern California, Columbia University Medical Center** and the **University of California at San Francisco**.
  - **Mark D. Long**, a pre-doctoral trainee in the Department of Pharmacology and Therapeutics, is first author on "An integrative genomic pipeline to target the NCOR1 cistrome with precision," which was presented by one of the co-authors, **Moray J. Campbell, PhD**, an Associate Member of the Department of Pharmacology and Therapeutics.
  - **Song Yao, PhD**, an Associate Member in the Department of Cancer Prevention and Control, is first author on "The association of serum 25-hydroxyvitamin D with breast cancer characteristics and prognosis in the Pathways Study."
  - **Lara Sucheston-Campbell, PhD**, an Associate Member in the Department of Cancer Prevention and Control, was presenting author on "Adjudicating complex phenotypes for use in GWAS: A study of transplant-related mortality (TRM) after unrelated donor hematopoietic cell transplantation (URD-HCT)." Co-author on the study is **Theresa Hahn, PhD**, Member in the Department of Medicine. The study was a collaborative effort that involved researchers from the **University of Chicago**, the **Center for International Bone Marrow Transplant Research (CIBMTR)**, the **University of Southern California**, the **National Marrow Donor Program** and the **University at Buffalo**.
- **The AACR Annual Meeting 2014** also provided researchers from RPCI and Jasco Pharmaceuticals LLC an opportunity to update colleagues from around the world on their latest

collaborative efforts in the area of drug development. Since spring 2013, Woburn, Mass.-based Jasco has been working with the **Center for Drug Development** at RPCI to advance development of Jasco's lead agent, JP\_11646, to the clinical-trial phase. Researchers from both organizations knew from earlier preclinical work that JP\_11646 had shown great promise for treating a wide variety of cancers, particularly multiple myeloma. RPCI researchers' AACR 2014 abstracts provided further evidence that JP\_11646 may be a promising option for treating pancreatic cancer, bladder cancer and acute leukemias.

- **Yi Ding, PhD**, a post-doctoral affiliate in RPCI's Department of Medicine, is first author on "Preclinical efficacy of the novel PIM inhibitor, JP\_11646, in pancreatic cancer."
- **Wei Luo, MD, PhD**, a Translational Research Scientist in RPCI's Department of Pharmacology and Therapeutics, is first author on "Targeting PIM1 kinase enhances 1,25-dihydroxyvitamin D3-mediated anti-tumor activity in bladder cancer cells."
- **Krista E. Pundt**, a pre-doctoral trainee in RPCI's Department of Molecular Pharmacology and Cancer Therapeutics, is first author on "Preclinical efficacy of the novel PIM2 kinase inhibitor, JP\_11646, in human acute leukemia models."
- In April, fifteen RPCI research teams shared findings at the prestigious **Cancer Symposium of the Society of Surgical Oncology**. **Steven Hochwald, MD, FACS**, Vice Chair of the Department of Surgical Oncology and Chief of Gastrointestinal Surgery shared that the strong showing from Roswell Park surgeons and fellows is a testament to the ingenuity of the Institute's investigators. The teams proposed novel approaches for diagnosing, stratifying, treating and providing follow-up care for cancer patients. Findings from the research are expected to make a significant impact on clinical practice and outcomes.
  - Two researchers from the RPCI Department of Surgical Oncology were invited to give talks on their research.
    - **Moshim Kukar, MD**, a clinical fellow in the department at the time and since appointed as Assistant Professor of Oncology, was first author and presenter on three oral presentations:
      - ✓ "Development of an Index to Predict Single Gland Parathyroid Disease and Selectively Eliminate Intraoperative Parathyroid Hormone Testing,"
      - ✓ "Relative Delta SUV of Less than 45% on F 18- FDG Positron Emission Tomography (PET) Predicts Residual Disease in Patients with Locally Advanced Esophageal Adenocarcinoma Undergoing Neoadjuvant Chemoradiotherapy" and
      - ✓ "Conditional Survival Based 'Abbreviated' Cancer Surveillance for Sentinel Node-Negative Stage IB Melanoma."
    - Additionally, Dr. Kukar presented "Minimally Invasive Esophagectomy with Cervical Anastomosis," a video demonstration of an innovative surgical technique, at the Top Rated Videos session.
      - ✓ **Steven Hochwald, MD, FACS**, Chief of Gastrointestinal Surgery and Vice Chair of the Department of Surgical Oncology, was the senior author on this video, which outlines a minimally invasive technique used in multimodality treatment of esophageal cancer and was the subject of one of three courses taught by Dr. Hochwald and his team during a workshop at the meeting.
    - **Pragatheeshwar Thirunavukarasu, MD**, a clinical fellow, gave one oral presentation, titled "Five-Year Survival after Incorporation of Pre-Treatment CEA Levels into AJCC Staging for Colon Cancer." **Valerie Francescutti, MD**, an Assistant Professor in the department, was principal investigator and senior author on the study.
  - Eight RPCI Department of Surgical Oncology investigators were invited to share their findings in poster presentations:

- **Moshim Kukar, MD**, was first author and presenter for “Significance of Anatomic Site on Prognosis in Gastrointestinal Stromal Tumors (GIST),”
  - ✓ **Tolutope Oyasiji, MD**, a clinical fellow, was first author and presenter for “Malignant Adnexal Tumors of the Skin: A Single-Institution Experience,”
  - ✓ **Melanie Ruszczyk, PhD**, a post-doctoral research affiliate, was first author and presenter for “Invasive breast cancer with and without ductal carcinoma in situ: Do outcomes differ?”
  - ✓ **Rebecca Tuttle, MD**, a clinical fellow, was first author and presenter for “Melanoma and Sarcoidosis: An Unusual and/or Confounding Relationship?”
  - ✓ **Pragatheeshwar Thirunavukarasu, MD**, was first author and presenter for two studies: “Using Mobile App Technology for Point of Care Cancer Surgery Risk Assessment” and “Pretreatment Serum CEA Level may Predict Molecular Profiling of Colorectal Cancer.”
  - ✓ **Smit Singla, MD**, a clinical fellow, was first author and presenter for three studies: “Weight loss and Postoperative Outcomes in Patients with Advanced Cancer”; “Preoperative modified 4D-CT reduces unnecessary opposite side exploration in patients with primary hyperparathyroidism”; and “Bowel obstruction as a predictor of poor survival in patients undergoing cytoreductive surgery (CS) with hyperthermic intraperitoneal chemotherapy (HIPEC)” Dr. Singla also participated as a presenter in the “Case Presentations with Professor and Fellows” session.
  - ✓ **Jacqueline Oxenberg, MD**, a clinical fellow, was first author and presenter for “Multidisciplinary Cancer Conferences for Gastrointestinal Malignancies Result in Measureable Treatment Changes”
  - ✓ **Wesley Papenfuss, MD**, a clinical fellow, was first author and presenter for “Morbidity and mortality associated with gastrectomy for cancer”
- RPCI clinicians and scientists worked with Zenalux Biomedical, Inc., a leader in biophotonic diagnostics, to further enhance the company’s Zenascope™ product by adding a high-resolution camera to the system. Dr. Jesko von Windheim, CEO of Zenalux said that with RPCI clinicians’ and scientists’ input, the company was able to design an enhanced system, designated the Zenascope IM1, that can be used to detect oral cancers at an early stage through basic quantitative spectroscopy, pressure sensing, imaging and illumination. The **IM1** will first be implemented at Roswell Park’s Head & Neck/Plastic & Reconstructive Surgery/Dental Oncology & Maxillofacial Prosthetics Center, under the direction of **Wesley Hicks Jr., MD, FACS**. The IM1’s effectiveness is being tested in a preclinical setting as well as in clinical trials, noted **Gal Shafirstien, DSc**, Professor of Oncology within RPCI’s departments of Cell Stress Biology and Head & Neck/Plastic & Reconstructive Surgery who, along with **Abraham Kuriakose, MD**, Professor of Oncology and Vice Chairman in the Department of Head & Neck/Plastic & Reconstructive Surgery, is helping to develop this new technology.
- **Kunle Odunsi, MD, PhD**, Cancer Center Deputy Director, Executive Director of the Center for Immunotherapy, and Chair of the Department of Gynecologic Oncology at RPCI was a featured presenter during the special consortia of the 2015 annual meeting of the **New York State Stem Cell Science Program (NYSTEM)**, at Rockefeller University in New York City.
- Targeted immunotherapy offers promise for metastatic cervical cancer: That was the focus of an editorial published in the *Journal of Clinical Oncology* written by **Kunle Odunsi, MD, PhD**, Cancer Center Deputy Director, Executive Director of the Center for Immunotherapy, and Chair of the Department of Gynecologic Oncology, and co-authors **Emese Zsiros, MD, PhD**, Department of Gynecologic Oncology, and **Takemasa Tsuji, PhD**, Center for Immunotherapy.
- RPCI faculty member **Maciej Goniewicz, PhD, PharmD**, Assistant Professor of Oncology in the Roswell Park Department of Health Behavior, is co-author of a new policy statement from two major oncology organizations, the **American Association for Cancer Research (AACR)** and the **American Society of Clinical Oncology (ASCO)**, advocating for federal and state regulation of electronic cigarettes. The statement summarizes the findings of research to date on e-cigarettes and other electronic nicotine delivery systems (ENDS), and recommends several steps

to guide their use and regulation. The document was published in both the AACR's *Clinical Cancer Research* and ASCO's *Journal of Clinical Oncology*.

- **Kirsten Moysich, PhD, MS**, Professor of Oncology in the departments of Cancer Prevention and Control and Immunology, is one of four co-authors on a study conducted by a multi-site team of researchers affiliated with the groundbreaking **Ovarian Cancer Association Consortium (OCAC)**. The research team uncovered six new genetic markers linked to the risk of developing ovarian cancer. For this new study, which appears in *Nature Genetics*, the researchers compared genetic markers among more than 15,000 women with ovarian cancer and more than 30,000 healthy women. The six new markers they found may help to improve risk-prediction models used to identify those women who are at greatest risk for developing this often-deadly disease.
- **Pamela Paplham, DNP, AOCNP, FNP-BC**, a BMT Nurse Practitioner with Roswell Park's Blood and Marrow Transplant Program and Clinical Associate Professor of Nursing at the University at Buffalo (UB), is one of the authors of a new Roswell Park/UB study on the unmet physical and emotional needs of patients receiving hematopoietic blood and marrow transplants as treatment for hematologic cancers and other blood diseases. Study findings suggest several opportunities for clinical intervention to improve overall health and quality of life for patients following transplant, the authors concluded. Paplham presented the team's findings during a talk given on February 14 as part of the **2015 BMT Tandem Meetings** in San Diego, Calif. These meetings are the combined annual meetings of the **Center for International Blood and Marrow Transplant Research (CIBMTR)** and **American Society of Blood and Marrow Transplantation (ASBMT)**. Paplham's co-authors are Tammy Austin-Ketch, PhD, FNP-BC, FAANP, of the UB School of Nursing as well as **Yali Zhang, MS**, **Philip McCarthy, MD**, and **Theresa Hahn, PhD**, all of Roswell Park. The research was published in *Biology of Blood and Marrow Transplantation*.
- **Andrew Hyland, PhD**, Chair of the Department of Health Behavior at RPCI, is principal investigator of the first large U.S. study to survey users about a wide variety of tobacco products. The study showed that significant numbers of adults and youths are using multiple forms of tobacco, such as cigarettes, electronic cigarettes, cigars and smokeless tobacco. These first-wave findings of the **Population Assessment of Tobacco and Health (PATH) Study**, were reported in February at the **Society for Research on Nicotine and Tobacco (SRNT)** annual meeting in Philadelphia. The PATH Study is a collaborative effort of the **National Institute on Drug Abuse (NIDA)** and the **U.S. Food and Drug Administration (FDA) Center for Tobacco Products** and will include the largest cohort of tobacco users ever assembled. The team's findings will help to explain how tobacco use affects health, and will guide federal regulatory actions related to tobacco products.
- Three RPCI nurses were honored for their compassionate care, service and academic contributions in oncology by national organizations. All three nurses are members of the multidisciplinary Bone Marrow Transplant (BMT) team at RPCI. Roswell Park offers the most experienced adult blood and marrow transplantation service in Western New York, performing 100-160 transplants annually.
  - **Justine Bertolo, RN, FNP**, a Transplant Nurse Practitioner in the BMT Program, received the **New Practitioner Award** from the **American Society for Blood and Marrow Transplantation Nurse Practitioner and Physician Assistant Special Interest Group**. The award is given to an ASBMT member who, within the first five years of his/her career, has made significant contributions in the field of transplantation. Bertolo has served as a preceptor, conducted online lectures and contributed to an article published in a peer-reviewed journal.
  - **Karen Dubel, RN, BSN, CHTC, CCRC**, Transplant Coordinator for the Institute's BMT Program, was recognized by the **National Marrow Donor Program (NMDP)** for her volunteer contributions to the inaugural **Be The Match Patient Education Advisory Group**.
  - **Pam Paplham, DNP, AOCNP, FNP-BC**, a Nurse Practitioner with the BMT Program, was selected as a **2015 Fellow of the American Association of Nurse Practitioners**. AANP Fellows are chosen for their outstanding contributions to clinical practice, research, education or policy.
- A team of RPCI scientists led by **Bonnie Hylander, PhD**, and MD/PhD student **Jason Eng**, working in the laboratory of **Elizabeth Repasky, PhD**, of the Department of Immunology

completed research published in the journal *Nature Communications*, highlighting the significant influence that housing temperatures can have on drug efficacy in preclinical research involving disease models — and the implications this dynamic may have for clinical research. Findings suggest that the response of tumors to therapy may be more vulnerable to impact from outside factors, than was previously recognized. The team found that preclinical models kept at warmer temperatures had a significantly better response to chemotherapy and targeted therapy than those kept at the standard 22°C, and the team showed that increased levels of the stress hormone norepinephrine for models kept at 22°C protect the tumor cells and lead to therapeutic resistance.

- RPCI faculty and staff were on hand when Erie County Executive Mark Poloncarz signed legislation that includes electronic cigarettes (e-cigarettes) in the county's **Clean Indoor Air Act**. The Erie County Legislature had previously approved the bill, which restricts the use of e-cigarettes in public places where traditional tobacco products are already barred. RPCI experts had previously testified in several public hearings about the harms of secondhand exposure to e-cigarette vapors. **Andrew Hyland, PhD**, Chair of the Department of Health Behavior at Roswell Park, noted that just because e-cigarettes produce less poison than cigarettes do, it doesn't mean secondhand vapor is safe.

### **Community Support & Advocacy**

- RPCI invited all those touched by lung cancer or wishing to learn more about this disease to the sixth annual **Breath of Life Celebration** on Nov. 1. 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.
- RPCI teamed up with Country 106.5 WYRK for the "**Country Music Inspires Cures**" campaign. RPCI raffled off an autographed bicycle, signed by several national country music stars who had visited Western New York throughout the year, with a final stop at the Taste of Country concert on Friday, June 13. Country music fans got their chance at winning the bike by giving \$10 in support of the campaign. The total raised by the bike raffle was more than \$880.
- The **Yroswell Street Team** brought the message of cancer awareness to the community, especially Western New York's young people, at 72 events. 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: various events for The Ride For Roswell (including the Opening Ceremony and Ride Day), Don't Fry Day Skin Cancer Awareness at the Walden Galleria, Kiss the Summer Hello, RPCI's Employee Appreciation Day, the Bosom Buddies Walk, Tree of Hope, the RPCI Junior Robotic Surgeon Challenge Program, Pioneer High School's Wellness Fair and Reality Check International's Week of Action on Smoke-Free Movies Live Ribbon at the Rainbow Bridge.
- RPCI provided sponsorship of the **American Lung Association's Fight for Air Climb** of Buffalo. A group of more than **35 employees** participated in the event, raising more than **\$6,000** 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.
- Led by **Dr. Ermelinda Bonaccio, Director of RPCI's Mammography Center**, and other members of the RPCI Breast Cancer Team, Roswell Park employees joined Team Roswell at breast cancer awareness events throughout the summer and fall of 2014, including the **Susan G. Komen Race for the Cure (41 Team Roswell members)**, **American Cancer Society Making Strides Against Breast Cancer Walk (28 Team Roswell members)** and **Bosom Buddies Walk (31 Team Roswell members)**. Each event raised awareness and funds for breast cancer detection, treatment and research.

- RPCI had its largest presence yet at the **JP Morgan Corporate Challenge** race in Buffalo with a **team of 121 employees**. In addition, Roswell Park was also the winner of the company t-shirt design contest for the first time.
- RPCI'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. Ninety-two blogs were posted, with approximately 162,000 total unique page views and an average 14,800 page views per month in fiscal year 2015.
  - Additionally, the blog brought attention to: National Nutrition Month, National Cancer Control Month, immunotherapy, personalized medicine, the contributions of African Americans to the field of cancer research, adolescent and young adult cancer, and National Volunteer Week, among many other topics.
- The Neuroendocrine Tumor (NET) Patient Regional Meeting was held on October 18 as an afternoon of networking and support for the more than 125 NET patients and their caregivers in attendance. Led by **Renuka Iyer, MD**, Co-Director, Liver and Pancreas Center and Section Chief for Gastrointestinal Oncology, the event also included presentations by **Boris Kuvshinoff, MD, MBA**, Chief Medical Officer and Director, Liver and Pancreas Center, and Hana Choi, PhD, formerly of RPCI, as well as Kari Brendtro, NET survivor and founder of the North American Neuroendocrine Tumor Society (NANETS).
- RPCI's Breast Cancer Team engaged with more than 1,000 women at the Western New York Women's Expo on April 27, 2014. Information and resources were shared on the prevention, detection and treatment of all types of cancer. **Dr. Sara Majewski, Dr. Ermelinda Bonaccio, Dr. Jessica Young, Dr. Tracey O'Connor, Dr. Shicha Kumar** and **Dr. Wong Moon** attended to answer questions from the public.
- RPCI experts made their expertise available to audiences around the world through a series of hour-long live Cancer Talk web chats. Topics included: **Ovarian Cancer** (September 22, 2014), **Lung Cancer** (January 21, 2015), and **Colorectal Cancer** (March 24, 2015). The online audiences were encouraged to send in questions in advance and the panel also accepted questions live during the event through various online platforms. In total, the chats were viewed by nearly 700 people and more than 400 questions were asked.
- As a sponsor of the **Insane Inflatable 5k**, RPCI teamed up with Townsquare Media to bring the cancer message to audiences in Buffalo and Albany with a presence at each of the city's Insane Inflatable events, reaching thousands of people. Roswell Park employees also rallied to form a team of more than 200 at the Buffalo event.
- RPCI partnered with **Live Nation** as a sponsor of the 2014 summer concert series at the Darien Lake Performing Arts Center in Darien Center, NY. Concert goers at each of the 24 concerts were given the opportunity to support the cancer mission with the purchase of **50/50 raffle tickets** and were greeted with Roswell Park messaging at each event.
- RPCI teamed up with **97 Rock** to distribute Roswell Park ponchos to football fans at Buffalo Bills home games.
- RPCI launched a new marketing campaign aimed at helping individuals diagnosed with cancer – and their loved ones – understand how important it is to **not** immediately rush into treatment or surgery. The campaign message: asking loved ones to encourage their friends or relatives diagnosed with cancer to take **just one day** to talk to the doctors at Roswell Park *before* they make any surgery or treatment decisions. As a part of the marketing campaign, several Roswell Park surgeons (including **Dr. Hassan Arshad, Dr. Valerie Francescutti, Dr. Steven Nurkin, Dr. Shicha Kumar** and **Dr. Boris Kuvshinoff**) shared personal stories as to why it's important for everyone to take one day and visit RPCI to make the best treatment decisions for themselves and their families.
- Brain cancer survivor, Janice Trudnowski, donated a **Victory Bell** to RPCI for patients to ring when they finish treatment or receive good news. Unveiled during a ceremony at the hospital in February, the Victory Bell offers cancer patients who face many challenges during their treatment

the opportunity to celebrate positive progress, commented **Kara Eaton-Weaver, Director of Patient and Family Experience**.

- The **Donor Center at Roswell Park** launched its new **online scheduling system**, making it easy to schedule appointments or register to donate online. Throughout the year, the Donor Center facilitated more than 1,000 whole blood donations and more than 4,000 platelet donations.
- More than 50 RPCI employees and supporters shaved their heads or cut their hair to raise funds for cancer research and patient care programs through the **Roswell Park Alliance Foundation's Goin' Bald for Bucks** event.
  - Four Buffalo Sabres — Mike Weber, Cody Hodgson, Chris Stewart, and Marty Biron — shaved their heads to show solidarity with cancer patients as part of **Goin' Bald for Bucks**, which raises funds for cancer research and patient programs at Roswell Park.
- The fourth annual **"Cruisin' for a Cure Buffalo" Car Show and Prostate Cancer Screening** event, presented by West Herr of WNY, was held on the RPCI campus in September. The event was hosted by members of the **Men Allied for the Need to Understand Prostate Cancer (or MAN UP)**, and RPCI. Throughout the event, men were encouraged to receive a free PSA test and digital rectal exam (DRE). By day's end, more than 100 men took advantage of the free screenings. Many men reported receiving their first-ever complete prostate cancer exam that day, some of whom reported family history of the disease.
- A multidisciplinary panel of experts from RPCI discussed screening for those at high risk for colorectal cancer during a live, interactive video Web chat. The panel included **Andrew Bain, MD**, Chief of Endoscopy; **Steven Nurkin, MD, MS, FACS**, Assistant Professor of Oncology, Department of Surgical Oncology; and **Nicoleta Voian, MD, MPH**, Director, Clinical Genetics Service.
- The **Ride For Roswell**, Western New York's largest single-day fundraising event, kicked off its 20th anniversary in January 2015 by announcing two significant changes for the June event — a second starting line and a new 44-mile route that crosses the border into Niagara Falls, Canada. In 2014, more than 10,000 riders and volunteers participated, raising more than \$4.4 million.
- The Theatre Alliance of Buffalo (TAB) launched its **2015 Applause for Hope** program, a collaborative fundraising initiative that supported both RPCI and TAB. From mid-January to mid-March, a majority of TAB member theaters collected donations from patrons. In its first two years alone, Applause for Hope raised \$17,000 for RPCI.
- The annual **Tree of Hope** celebration drew more than 2,300 patients, survivors, and friends to Kaminski Park and Gardens adjacent to the Roswell Park hospital. The event included a musical light show, caroling, holiday treats, rides in horse-drawn carriages, and visits with Santa and Mrs. Claus.
- RPCI **expanded breast imaging services to the general public**, offering routine screening mammography to non-patients in an effort to improve breast cancer screening rates and increase detection of breast cancer at the earliest, most curable stages. Statistics show that as many as half the women who should be receiving an annual mammogram are not getting this important cancer screening.
- RPCI's **Center for Personalized Medicine** conducted a public forum to help families affected by cancer understand how the RPCI-developed molecular diagnostic test, OmniSeq Target™, is changing the face of cancer diagnosis and treatment. **Carl Morrison, MD, DVM**, Executive Director of the Center for Personalized Medicine; **Grace Dy, MD**, Associate Professor of Oncology in the Department of Medicine; and **Pamela Germain, MBA**, then Vice President for Managed Care and Outreach (Germain is now RPCI's Vice President of Strategic Initiatives) explained how OmniSeq Target can uncover key genetic information about certain cancers, quickly informing doctors of the best care options available to target a cancer's unique characteristics.
- The results of the "virtual autopsy" performed on a South American mummy from the collection of the Buffalo Museum of Science (BMS) were shared, providing new insights into the life of the

infant mummy. As part of the groundbreaking *Mummies of the World* exhibition, which premiered in Buffalo on April 12, **Peter Loud, MD**, Vice Chair of Diagnostic Radiology and Director of Body Imaging at RPCI and Dr. Heather Gill-Frerking of American Exhibitions, Inc., along with a team of RPCI radiologists performed a noninvasive 3D computed tomography (CT) scan of the mummy on April 7. Through the cutting-edge medical imaging available at RPCI, the scan helped experts determine gender and age of the individual at the time of death. The BMS subsequently lent the mummy and related items to *Mummies of the World* for the remainder of the exhibition's three-year tour. Dr. Loud said that he is pleased that his work on this project will help enhance the experience and understanding of museum visitors who will learn about the mummy as a result of his efforts and the technology available at RPCI.

- The 19<sup>th</sup> annual **Ride For Roswell** welcomed more than **8,000 cyclists and 2,000 volunteers** in the fight against cancer – while raising **\$4.4 Million**. The event is the single largest annual fundraising event in Western New York and North America's largest single-day cycling event, benefitting research and patient care programs at RPCI. Riders and volunteers, alike, honored loved ones and took action to make a difference and bring hope and healing to those whose lives have been touched by cancer.
- Longtime volunteer and champion of RPCI, **Terry Bourgeois**, took a symbolic bike ride from New York City to Niagara Falls prior to the 19<sup>th</sup> annual **Ride For Roswell**. Supporters tweeted to Bourgeois during his ride using #NY2NF, and Bourgeois shared his experience and photos with supporters via his personal blog at terrybourgeois.com. The long-time Ride volunteer carried honor cards throughout his journey representing donors who supported his ride, benefitting Roswell Park.
- On June 18, more than 400 community members, colleagues and past patients with their families attended a retirement celebration for **Martin Brecher, MD**, Chair, Department of Pediatrics and The Waldemar J. Kaminski Chair in Pediatrics. The celebration was jointly coordinated by RPCI, **Women & Children's Hospital of Buffalo** and **UBMD Pediatrics**. Dr. Brecher came to RPCI in 1975 and since then has cared for thousands of children and adolescents diagnosed with cancer. Dr. Brecher has frequently been recognized throughout our community for his contributions, including receiving the Burt Flickinger Jr. Physician's Award from the Women & Children's Hospital of Buffalo, the Leukemia & Lymphoma Society of WNY Service Award, the Spirit of Teddi Humanitarian Award from Camp Good Days and Special Times, and the New Era Champion for Children Award presented by Brian Moorman's P.U.N.T. Foundation. A dedicated and patient teacher, Dr. Brecher also received many academic awards, including the SUNY at Buffalo Frederick B. Wilkes Teaching Award in Pediatrics, Louis A. & Ruth Siegel Distinguished Teaching Award, and a combined SUNY at Buffalo and Women & Children's Hospital of Buffalo John Paroski House Staff Teaching Award in Pediatrics.
- On June 3, RPCI hosted a **Be the Match Bone Marrow Donor Drive**. Each year, more than 30,000 children and adults will be diagnosed with diseases for which a bone marrow transplant is the only chance for cure. Only 30% will find a matching donor within their family. Over the past 25 years, Be The Match, operated by the National Marrow Donor Program (NMDP), has managed the largest and most diverse marrow registry in the world.
- On Saturday, April 7, **Buffalo Bandits** players shaved the heads of 15 Western New Yorkers at a **Goin' Bald for Bucks** event they hosted at the First Niagara Center. The event raised nearly \$11,000 to benefit pediatric cancer patients at RPCI. Bandits players Mark Steenhuis, Billy Dee Smith and John Tavares were among 15 players who helped shave the heads of their fans following their game against the Calgary Roughnecks. Proceeds from the event are earmarked for the new pediatric unit at RPCI in the name of Tucker Williams and family. Tucker Williams is the seven-year-old son of Bandits forward Shawn Williams who at the time of the event was currently being treated for Stage III Burkitt Lymphoma.
- RPCI hosted the inaugural Greater Buffalo Junior Robotic Surgeon Challenge, which concluded on April 26. Leading up to the final round of the competition, sixty-seven students from nine public and private high schools across Western New York spent three months learning about robot-assisted surgery at RPCI using the same curriculum that is used to train surgeons from around the world. The final round of the **Greater Buffalo Junior Robotic Surgeon Challenge** saw the top two competitors (Taylor Goodman, a sophomore from Hamburg High School and Alex Tryjankowski, a senior from Clarence High School) going head-to-head using the da Vinci

Surgical System in a Roswell Park operating room. The two students performed an actual robot-assisted surgery on a synthetic bladder while the audience watched a telecast. RPCI surgeons rated the finalists' performance and determined a tie for first place. The program was designed by **Khurshid Guru, MD**, Director of the Roswell Park Center for Robotic Surgery, and Eileen O'Brien, PhD, STEM Coordinator for Immaculate Conception School, and organized by **Erinn Field**, program coordinator for RPCI's Applied Technology Laboratory for Advanced Surgery. The event also included a career fair for students in which medical professionals and exhibitors from RPCI, the UB School of Engineering & Applied Sciences and Moog Inc. discussed career pathways and demonstrated medical technologies, including simulation, brain-computer interface and virtual-reality systems.

- The Roswell Park Alliance Foundation raised funds to benefit RPCI. These funds were put to immediate use to increase the pace of translation from research trials to improved clinical care, to ensure state-of-the-art facilities, and to help improve the quality of life for patients and their families. Donors supported these initiatives by participating in special events, designating gifts in honor of loved ones and by offering planned gifts as part of their legacies.
  - Research at Roswell Park that received donor funding led to a new test allowing doctors to provide a more personalized and effective form of treatment based on a patient's own genetic makeup.
  - Roswell Park was awarded a prestigious New York State grant of nearly \$12 million to develop new therapies for ovarian cancer. This research started with "seed" funding provided by donations.
  - Knowing that social and emotional well-being is vital to a patient's prognosis and overall health, quality of life programs supported by the Alliance Foundation provided comfort and support available to more than 31,000 patients currently undergoing treatment.
  - Cumulatively, donations of all levels allowed nearly 30 of the most promising preliminary research projects at Roswell Park to receive funding. These projects received this funding after researchers entered a peer-reviewed competition of initiatives that involve collaboration and translational research.
- **Maciej Goniewicz, PhD, PharmD**, Assistant Professor of Oncology, Department of Health Behavior, was a featured panelist for a briefing titled "Electronic Cigarettes: What You Don't Know Can Hurt You," hosted by the **American Association for Cancer Research (AACR)** at the U.S. Capitol in May.
- **Wesley L. Hicks, Jr., MD**, Chairman, Department of Head & Neck/Plastic & Reconstructive Surgery, and **David Scott**, Director, Office of Diversity & Inclusion, were recognized as innovators, visionaries, and role models by the **Mary B. Talbert Civic and Cultural Club** at the organization's annual Scholarship Gala in May.
- **Candace Johnson, PhD**, President & CEO, was the featured speaker at the **Women in STEM Seminar and Networking Event**, held at Roswell Park in May.
- RPCI's **Esperanza y Vida** program, which means "Hope and Life" in Spanish, enjoyed continued success at improving communication and access to healthcare, key cancer screenings in particular, for Western New York's Hispanic community. During 2014, Esperanza y Vida, which holds health education sessions and facilitates screening services, educated 721 people and helped 318 undergo medical screenings — representing totals that went above and beyond the program's 500-persons-reached and 200-screened goals.
- On April 24, RPCI held a memorial service after the passing of **Meir Wetzler, MD, FACP**, who had sustained fatal injuries in a skiing accident. Dr. Wetzler was Chief of the Leukemia Section at Roswell Park and was nationally prominent in his field, having served on the Chronic Myelogenous Leukemia (CML) Treatment Committee of the National Comprehensive Cancer Network (NCCN), helping set the standard of care for CML patients. More than 400 of Dr. Wetzler's patients and colleagues, as well as close family members, attended the memorial to remember the researcher and clinician. Patients concluded the service with personal stories of how Dr. Wetzler affected their lives in remarkable ways. Dr. Wetzler was a transformational leader who helped build a culture of empathy, compassion, integrity and innovation at Roswell Park.

- Seventh- and eighth-grade students from the Buffalo Public Schools marked **Genome Day** by taking part in several hands-on activities at RPCI and the University at Buffalo (UB) New York State Center of Excellence in Bioinformatics and Life Sciences (CBLS). The event was part of Science Week in the City of Buffalo, designed to stimulate interest in science, technology, engineering, and mathematics (STEM) fields and STEM-related career opportunities. More than 400 Buffalo Public School students participated in the day to learn about genomics and bioinformatics. Students learned about how genomics will revolutionize healthcare and create new companies from Dr. Norma Nowak, executive director of the CBLS and Founder of Empire Genomics, and **Dr. Candace Johnson**, President and CEO of RPCI.