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Our New Additions to Oncology



Kai Bickenbach, MD



Shail Maingi, MD



Ravi Chokshi, MD

office is located on the A level of the Cancer Center and her practice focuses primarily on solid tumors, benign hematology, supportive oncology and palliative medicine with specific interests in gastrointestinal and breast oncology and neuropathic pain syndromes.

In 2011 the NJMS-UH Cancer Center welcomed 3 new full-time attending physicians.

Drs. Kai Bickenbach and Ravi Chokshi are Assistant Professors of Surgery in the Division of Surgical Oncology. Their offices are located on the G-level of the Cancer Center. Their practice focuses primarily on gastrointestinal (GI) oncology and endocrine surgery with special interests in esophageal, gastric, hepatobiliary, pancreatic, peritoneal, and colorectal malignancies.

Dr Shail Maingi is an Assistant Professor of Medicine in the Division of Hematology-Oncology. Her

Dr. Bickenbach's research interests are focused clinical outcomes and biomarkers related to pancreatic and metastatic colorectal cancer while Dr Chokshi's research interests are focused on locally invasive and metastatic colorectal cancer outcomes. Dr Maingi's research interests are focused on cancer symptom management and health disparities.

Together, these 3 physicians along with the Cancer Center Clinical and Translational Research Program will combine to create a vigorous, interdisciplinary, GI tumor translational program.

NJMS-UH Cancer Center Oncology Nursing Journal Club



First row: Carolyn Rogers, RN, BSN, Maria Cuhna RN, APN, Carolyne Sammartine, RN, Second Row: Jose "Kelsey" Perez RN, BSN, OCN, Yvette Alejandro-Bascara, RN, BSN, Perilita Casal, RN, BSN, Eden V. Mendoza, RN BSN, Edward J. Bentlyewski, RN, BSN, OCN, Bernabe Santos, RN

In September 2011 nurses in the NJMS-UH Cancer Center Hematology/Oncology, Radiation Oncology and Clinical Research Units founded an Oncology Nursing Journal Club. The main goal of the journal club is to increase awareness of evidence based

practice and promote positive outcomes. Other goals include, standardizing practice, facilitating continuing education for staff, and building interdisciplinary teamwork. During the meetings a peer reviewed journal article is presented & discussed by the nursing staff. This is an opportunity for staff to "brainstorm" and seek solutions to the many challenges facing health care providers. It is a safe space for staff to share ideas and concerns. Though the core group of participants is nurses, all UMDNJ students and staff with an interest in oncology issues are encouraged to attend.

The Journal Club meets the fourth Friday of each month from 3:30- 4:15 pm in the Hematology/ Oncology practice at the NJMS-UH Cancer Center.

For more information on the Oncology Journal club or to suggest articles for discussion contact: Edward Bentlyewski RN, BSN, OCN at 973-972-3173

Director's Message



I hope everyone had a wonderful holiday season and is looking forward to an exciting new year. Since the last issue of this publication, there have been a number of changes in the Cancer Center. First and foremost is the increased clinical presence in the building. The Clinical Research Office has now relocated from the hospital to "A" level of the Cancer Center. This office represents a partnership between the Medical School, the Hospital, and the Cancer Center, and currently has oversight of 63 cancer clinical trials, 57 of which fall within the Minority-Based Community Clinical Oncology Program (CCOP). Hematology/Oncology Services have also moved from the Hospital to the "A" and "B" levels, Infusion Services have opened on "B" level, and the Breast Imaging Center has been opened on "C" level. These clinics are expected to see over 300 patients per year, more than 60% of which will be minorities. We should all be excited that the Cancer Center has taken such large steps towards achieving its clinical mission of providing high quality oncology services to Newark and its surrounding communities. Finally, I would like to welcome two new Surgical Oncologists, Dr. Kai Bickenbach and Dr. Ravi Chokshi, and a new Clinical Oncologist, Dr. Shail Maingi, to the Cancer Center. Dr. Bickenbach's and Dr. Chokshi's academic offices are located on G level, while Dr. Maingi is located on A level. It is our hope that their presence in the building will enhance opportunities to grow our clinical/translational research mission.

Sincerely,

Ian P. Whitehead, PhD
Director and Professor
NJMS-UH Cancer Center

Cancer Center Faculty Research Interests

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|--------------------------|--|
| Edouard Azzam, PhD | Studies the effects and underlying mechanisms of low-dose ionizing radiation in normal human cells |
| Betsy Barnes, PhD | Characterizes the cellular pathways that are regulated by the IRF family of transcription factors. |
| Christopher Fritton, PhD | Studies how mechanical and hormonal signals affect cellular and tissue repair mechanisms in bone |
| Utz Herbig, PhD | Studies whether telomere induced senescence contributes to tumor suppression & organismal aging |
| Roger Howell, PhD | Focuses on the biological effects of radioactive material as they relate to radiation protection & rad. therapy |
| Sergei Kotenko, PhD | Aims to advance our knowledge of the complex role played by various cytokines |
| Hong Li, PhD | Aims to develop and optimize mass spectrometry technologies |
| Kenneth Maiese, MD | Focuses on the basic and clinical mechanisms that modulate both neuronal & vascular plasticity in the body |
| Elizabeth Moran, PhD | Studies the molecular mechanisms that regulate the different patterns of gene expression in cancer cells |
| Steven Levison, PhD | Aims to better understand the signals that regulate the proliferation & differentiation of stem cells in the CNS |
| Harvey Ozer, MD | Assesses the difference in cDNA libraries between pre-mortal & immortal cells |
| Ian Whitehead, PhD | Studies the molecular mechanisms of chronic myelogenous leukemia |
| Robert Wieder, MD, PhD | Studies the mechanisms of dormancy & resistance to chemotherapy in breast cancer cells |
| Teresa Wood, PhD | Focuses on how growth regulators regulate breast progenitor cell lineage populations & tumor susceptibility |
| Lizhao Wu, PhD | Aims to understand how tumor suppressor/oncogenic pathways control normal development and cancer |

Featured Researchers

Betsy J. Barnes, PhD



Betsy J. Barnes, PhD, moved her laboratory from the Sidney Kimmel Comprehensive Cancer Center at the Johns Hopkins University School of Medicine to NJMS-UH Cancer Center in the summer of 2006. Dr. Barnes' research focuses on understanding how alterations in the expression and/or function of a family of transcription factors, termed the interferon

regulatory factor (IRF) family, leads to autoimmunity and cancer.

IRFs command the entire type I interferon (IFN) system from the induction of IFNs to diverse IFN responses, thereby providing a principal basis for the host immune response to a variety of extracellular stressors. Overexpression and/or overactivation of some of these factors, such as IRF3, IRF5, and IRF7, is thought to contribute to autoimmune diseases such as systemic lupus erythematosus (SLE), which is characterized, in part, by elevated type I IFN expression. Polymorphisms in the *IRF5* gene have been robustly associated with susceptibility to SLE.

Recent data from the Barnes lab has shown that IRF5 is both upregulated and constitutively activated in primary immune cells of SLE patients (Feng *et al. Arthritis & Rheum* 2010; Stone *et al. Arthritis & Rheum* 2011). More recent findings from next-generation sequencing of immune cells from SLE patients support

that *IRF5* transcripts are differentially expressed in SLE patients versus healthy donors and an *IRF5*-SLE risk haplotype defines the most abundant transcripts expressed. These data provide support that genotype may control IRF5 function. Significant funding from the Alliance for Lupus Research has been obtained to explore therapeutic strategies for targeting IRF5 in SLE.

A number of IRF family members have also been shown to regulate cell growth and differentiation, thereby playing a role in cancer development. The majority of work in Dr. Barnes' laboratory has been focused on a single family member, IRF5, which was cloned by her in 2000. Since then, work from her lab and others has shown that IRF5 is a key stress-responsive IRF, critical for a cellular immune response to pathogens, as well as the cellular response to DNA damage. This dual role for IRF5 has recently been expounded on by a Research Fellow in her lab, Xiaohui Bi, PhD, whose data was published in the journal of *Breast Cancer Research* (Bi *et al.* Nov 4, 2011). Their findings show that IRF5 expression is uniquely down-regulated in primary tumor tissue from patients with different stages of ductal carcinoma *in situ* (DCIS) and invasive ductal carcinoma (IDC), while at the same time it's expression is upregulated in infiltrating immune cells in the tumor microenvironment. This suggests a curious role for IRF5 in mammary tumorigenesis where it acts as a tumor suppressor that regulates critical cellular processes (*i.e.* cell growth, response to DNA damage, and invasion/metastasis) important for the inhibition of tumor cell growth, yet also controls immune cell signaling in the tumor microenvironment. Dr. Barnes' work in autoimmunity and cancer is expected to lead to the development of novel cellular triggers that will either inhibit or activate IRF5-mediated cell signaling for disease modulation.

Joseph Geissler, PhD Candidate



Joseph Geissler, a PhD candidate in the laboratory of J. Christopher Fritton, PhD, at the NJMS-UH Cancer Center, is the recipi-

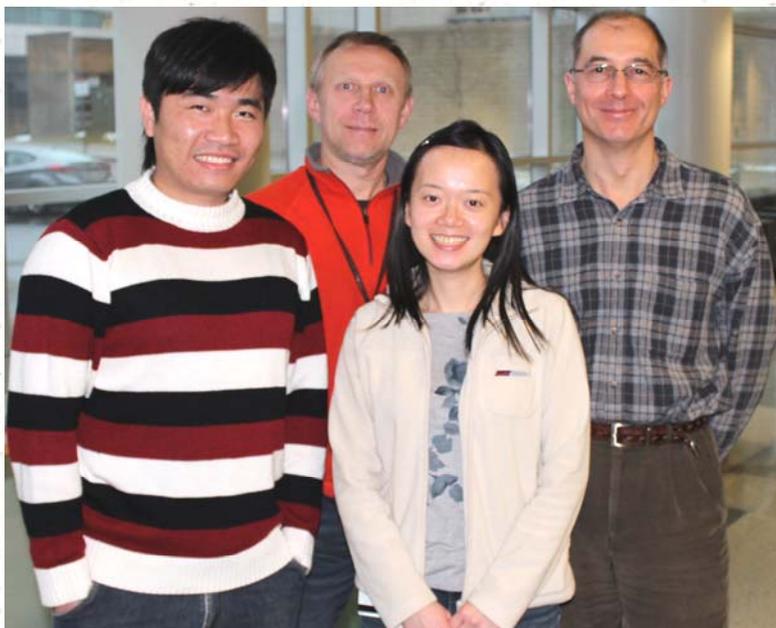
ent of a \$41,000 National Science Foundation (NSF) fellowship. Geissler was accepted into the Joint Doctoral Training Program in Biomedical Engineering with the NJ Institute of Technology (NJIT) and is now a Fellow in the NSF-funded C2PRISM GK12 program. Since a large part of the NSF program is aimed at getting children excited about math and science, last summer he participated in a teaching workshop. This school year he is working with teachers at Newark's Science Park High School to develop engineering and science based activities for classrooms and labs.

Geissler is no stranger to academic success. He recently completed a MS degree in Biomedical Engineering from

NJIT. His thesis examined how bisphosphonate drugs affect the mechanical integrity of bone tissue. This class of drugs is used in high doses to treat breast and bone cancers. Geissler received other accolades for this work. In November, 2011, he was awarded best poster presentation from the Newark College of Engineering at the NJIT Graduate Student Association Research Day. He was also selected to give a presentation in the Osteoporosis Spotlight Session at the Orthopedic Research Society's annual meeting in San Francisco, February 4-7, 2012. Out of approximately 2,500 accepted abstracts, only 40 were chosen to give a podium presentation in one of these spotlight sessions.

Our Research

Role of Interferons in Anti-Tumor Response



From left to right: **Jian-Da Lin**, graduate student, **Sergey Smimov, PhD**, Adjunct Assistant Professor, **Wen-I Tsou**, graduate student and **Sergei V. Kotenko, PhD**, Associate Professor

Development of cancer is a multi-step process. Going through this process, cancer cells acquire self-sufficiency in growth signals, insensitivity to anti-growth and pro-apoptotic signals, limitless replicative potential, and the ability to support sustained angiogenesis, tissue invasion and metastasis. To become so diversified, cancer cells undergo extensive mutagenesis; and even a single tumor represents a pool of cells which have accumulated different multiple mutations, and as a result, therapeutics targeting tumors for destruction are rarely successful. The immune system, on the other hand, is the army of "universal soldiers" which ideally should be able to deal with any type of cancer. In reality, however, the immune system, in the case of cancers, is not able to handle it on its own. The immune system is engaged in all steps of tumor development and progression, and the failure of the immune system to recognize and eliminate cancerous cells is a must for tumor survival and progression. Therefore, the important characteristic of the successful cancer cells is their ability to evade immunosurveillance leading to the development of immunological tolerance to tumor antigens. To achieve this goal, tumors utilize several strategies, including down-regulation of antigen presentation, production of immunosuppressive products, and blocking production and signaling of immunostimulatory cytokines. However, the exact molecular mechanisms utilized by tumors to mediate immunosubversion are not well characterized. The Kotenko laboratory is investigating the complex role of cytokines in tumor development. Cytokines are secreted molecules that regulate a broad array of cellular and immunological functions through the binding to the cell surface receptors and induction of specific signal transduction events. Cytokines are powerful weapons which are utilized by both cancer cells and the immune system for their own advantages. One group of cytokines, designated IFNs, coordinately stimulate a variety of innate and adaptive immune mechanisms that contribute to eliminating viral infections. IFNs are recognized not only for their antiviral role, but also for their potent anti-tumor activities. The Kotenko laboratory is particularly interested in understanding the function of recently identified IFN-lambdas in the regulation of anti-tumor response with the overall aim of developing novel immune-based strategies for cancer therapy.



Programs and Events

The Essex County Cancer Coalition



Stanley H. Weiss, MD founded the Essex County Cancer Coalition (ECCC) in 2004 and has had ongoing financial support from the NJ Department of Health and Senior Services; he remains the principal

investigator and director. The ECCC's mission is to reduce the burden of cancer on all Essex County residents by promoting improved education, screening, access to treatment and follow-up. It is the official omnibus organization to help coordinate and promote activities throughout the county. The ECCC broadly includes representatives from hospitals, health departments, health service organizations, educational institutions, health insurers, and community and faith-based organizations as well as cancer survivors and others.

Among the ECCC's major initiatives is an annual Health Fair held in the spring since 2007 in combination with free oral cancer screenings by the New Jersey Dental School and, in the last few years, other cancer screenings through the UMDNJ/NJMS-UH/S.A.V.E. program.

ECCC quarterly meetings are held across Essex County, always featuring an educational presentation by prominent speakers. Recent topics have included:

Presentations about prostate cancer – "The Impact of Prostate Cancer in NJ" by

Daniel M. Rosenblum, PhD, and "Prostate Cancer 101: Testing and Treatment" and "Prevention Strategies" by Dr. Weiss, on 9/23/10;

"Investigating Cancer Clusters: New Guidelines and Innovative Approaches" by Daniel Wartenberg, PhD, on 3/10/11;

"Colorectal Cancer: An Update" by Dr. Weiss and Rosenblum, on 5/19/11;

"Can Sex Lead to Cancer? – Sexually Transmitted Viruses & Cancer," moderated by Vinny Smith, MA, on 9/22/11 and presented by Decca Mohammed, MD, Everett W. Schlam, MD and Dr. Weiss, which drew nearly 75 participants including many public school nurses and health educators from Essex County;

"Learn about Cancer Clinical Trials," with Kiameesha Evans, MPH, MCHES, Beverly Brevard, BA, Lois V. Greene, BSN, RN, MBA and the NJMS-UH Cancer Center's

own Yasmeen Barber, BA, on 12/8/11.

Co-sponsors, such as the New Jersey Public Health Training Center, are now making continuing education credits or professional development hours available to public health officers, Certified Health Education Specialists or New Jersey public school personnel.

Minutes and presentations in PowerPoint from these and other past meetings are posted at www.umdj.edu/EssCaWeb, which also hosts the full mission statement, brochures and flyers in several languages (including an overview, county cancer statistics, transportation resources, and tobacco resources), a continually updated calendar of cancer-related educational events and screening opportunities, and an online mechanism for contacting the ECCC. Membership is free – contact us to join. Opportunities are available for volunteers to work with Dr. Weiss and staff. Volunteers should contact Dr. Rosenblum at rosenbdm@umd-nj.edu



From left to right: **Mohamed Al Sindi**, UMDNJ Patient Navigator Assistant and **Daniel M. Rosenblum, PhD**, Assistant Professor of Preventive Medicine and Community Health, NJMS, and Co-coordinator of the Essex County Cancer Coalition at the ECCC's Essex County Health Fair

Pretty in Pink!



The month of October is all about pink! The Physicians of Hematology/Oncology Division, Clinical Research Unit Staff, Hematology/Oncology Practice Staff, Chemotherapy Pharmacists and Infusion Unit Nurses joined together in the B-Level foyer for a group photo to support breast cancer awareness and survivorship. The group wore various shades of pink in honor of their patients and families who have battled breast cancer. Candid shots of the staff were posted throughout the Infusion Unit and Hematology/Oncology Practice.

(From left to right)

Leslie Jusinski, Tywana Williams, Sree Chalasani, MD, Carla DoRosario, Robert Wieder, MD, PhD, Yasmeen Barber, Petra Rodriguez-Salazar, Yvette Alejandro-Bascara, Roslyn Williams-Dance, Benita Dodd, Genoveva Medina, Lorna Cox, Edward Bentyewski, Carolyn Sammartine, Karen Jackson, Geri Ferraro, Lillian Pliner, MD, Anthony Marques, Perlita Casal, Ruby Washington, Bernabe Santos, Saltanat Najmi, Jose Peres



About Us

The NJMS-UH Cancer Center, which opened in October of 2006, provides the opportunity to integrate the delivery of the highest quality clinical care and the application of innovative basic and translational research.

The 9-story, 220,000 square foot building is physically connected to University Hospital on levels A, B and C, which accommodates clinical services, clinical research, screening and education programs and administrative offices. Besides having over 70,000 square feet of laboratory space, the Cancer Center is the home to five NJ Medical School Core Research Facilities which are located on levels F, G and H Level. The Digital Imaging Core houses 2 confocal microscopes, a PALM laser capture scope, tissue processing services and a host of support resources. The Center for Advanced Proteomics Research offers a variety of equipment and services for the design, process, acquisition and analysis of proteomics-based research. The Cancer Center also contains satellite facilities of the Flow Cytometry and Comparative Medicine Cores, and is home to the Clinical Research Group.

I level serves as an NIH funded comparative animal facility and the remaining two levels are shell space for future expansion and a mechanical floor.

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