

SPORE in Breast Cancer: Developmental (Pilot) Projects

| 2003 | | | | |
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| Principal Investigator(s) | Department(s) | Title | Grants | Publications |
| Martin Lepage, PhD and Tom Yankeelov, PhD | Radiology | Imaging Therapeutic Response in Human Breast Cancer | R01 CA129961 PI: Tom Yankeelov 'Evolution of MRI Biomarkers of Breast Cancer Response' | Yankeelov TE, Luci JJ, Lepage M, Li R, Debusk L, Lin C, Price RR, Gore JC. Quantitative pharmacokinetic analysis of DCE-MRI data without an arterial input function: a reference region model. <i>Magn. Reson. Imag.</i> 23:519-529, 2005 Yankeelov TE, Lepage M, Chakravarthy A, Nierman KJ, Kelly MC, Herman CR, McManus K, Gore JC. Integration of Quantitative DCE-MRI and ADC Mapping to Monitor Treatment Response in Human Breast Cancer. <i>Magn. Reson. Imag.</i> 25:1-13, 2007 Yankeelov TE, Gore JC. Dynamic contrast enhanced magnetic resonance imaging in oncology. <i>Curr. Med. Imag. Rev.</i> 3:91-107, 2007 |
| Graham Carpenter, PhD | Biochemistry | Association of the EGF receptor with the Sec 61 translocon in mammary tumor cells | R01 CA125649 PI: Graham Carpenter Role of the Sec 61 translocon in EGF receptor trafficking and signaling | Liao H-J, Carpenter G. Role of the Sec 61 Translocon in EGF Receptor Trafficking to the Nucleus and Gene Expression. <i>Mol. Biol. Cell</i> 18:1064-72, 2007 |
| Eric Neilson, MD | Medicine (Nephrology) | Epithelial-Mesenchymal Transition in Breast Cancer Metastasis Using Fibroblast-Specific Protein 1 (S100A4) | | Xue C, Plieth D, Xu C, Venkov C, Neilson EG. The gatekeeper effect of epithelial-mesenchymal transition regulates the frequency of breast cancer metastasis. <i>Cancer Res.</i> 63:3386-3394, 2003 |
| Fen Xia, MD, PhD | Radiation Oncology | BRCA1 Pathway Controls DNA Double-Strand Break Repair | R01 CA118158 PI: Fen Xia 'The Role of BRCA1 in non-homologous repair of chromosomal double strand breaks' | Zhuang J, Zhang J, Willers H, van Gent D, Chung J, Hallahan DE, Powell SN, Xia F. Chk2-mediated phosphorylation of BRCA1 regulates the fidelity of non-homologous end-joining. <i>Cancer Res.</i> 66:1401-1408, 2006 |

| Alex Brown, PhD | Pharmacology | Lipid Profiling of Mammary Carcinomas | | Zheng Y, Garcia A, Shi M, Brown HA , Foster DL, Arbiser JL. Honokiol suppresses phospholipase D survival signals in human cancer cell. Submitted Callender HL, Horn MA, DeCamp DL, Sternweis PC, Brown HA . Modeling species-specific diacylglycerol dynamics in the RAW 264.7 macrophage. Submitted |
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| 2004 | | | | |
| Principal Investigator | Department(s) | Title | Grants | Publications |
| Earl Ruley, PhD | Microbiology & Immunology | Identification of Genes Required for Tamoxifen Sensitivity by Reversible Gene Entrapment of Estrogen Receptor Positive Breast Cancer Cells | | Donahue SL, Lin Q, Cao S, Ruley HE . Carcinogens induce genome-wide loss of heterozygosity in normal stem cells without persistent chromosomal instability. <i>Proc. Natl. Acad. Sci. USA</i> 103:11642-11646, 2006 |
| Lawrence Marnett, PhD | Biochemistry and Chemistry | Screening of a Large Chemical Library for Inhibitors of Phosphatidylinositol-3 Kinase | | |
| Shimian Qu, PhD | Cancer Biology | Role of ErbB3 in Mammary Development and Tumorigenesis | R01 CA122922 PI: Shimian Qu 'Role of ErbB3 in mammary tumorigenesis' | Qu S , Rinehart C, Wu H-H, Wang SE, Carter B, Xin B, Kotlikoff M, Arteaga CL. Gene targeting of ErbB3 using Cre-mediated unidirectional DNA inversion strategy. <i>Genesis</i> 44:477-486, 2006 |
| Joey Barnett, PhD | Pharmacology | Role of the Type III TGF β Receptor in Breast Development and Cancer | | |

| 2005 | | | | |
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| Principal Investigator | Department(s) | Title | Grants | Publications |
| Charles Matthews, PhD | General Internal Medicine and Public Health | Energy Balance Intervention for Breast Cancer Survivors | Lance Armstrong Foundation Grant PI: Charles Matthews Exercise Intervention for Chemotherapy Related Cognitive Dysfunction | |
| James Goldenring, MD, PhD | Surgical Sciences | Role of Rab25 in Breast Genesis and Metastasis | | Roland JT, Kenworthy AK, Peranen J, Caplan S, Goldenring JR . Myosin Vb interacts with Rab8a on a tubular network containing EHD1 and EHD3. <i>Mol. Biol. Cell</i> (In press), 2007 Ducharme N, Williams JA, Oztan A, Apodaca G, Goldenring JR . Dominant negative Rab11-FIP2 mutants uncover differentiable steps in the apical recycling pathway. <i>Amer. J. Physiol-Cell Physiol</i> . (In press), 2007 |
| Ingrid A. Mayer, MD | Medicine (Oncology) | A phase I/II trial of the mTOR inhibitor (everolimus, RAD001) in combination with the EGFR tyrosine kinase inhibitor (erlotinib) in patients with metastatic breast cancer | | |
| Jeffrey R. Smith, MD, PhD | Medicine (Genetic Medicine) | Whole Genome Amplification from Archived Breast Tissue to Explore Genetic Determinants of Pathology | VA Merit Grant PI: Jeffrey Smith 'Identification of Breast Cancer Genes in Archival Pathology Specimens' | |
| Gautam Chaudhuri, PhD | Cancer Biology (Meharry Medical School) | Desilencing of <i>BRCA2</i> Gene Expression in Dividing Human Breast Cells | Susan J. Komen Breast Cancer for the Cure Grant (BCTR0707627) PI: Gautam Chaudhuri 'Cell cycle-dependent regulation of human <i>BRCA2</i> gene expression by <i>SLUG</i> and <i>PRDX5C</i> ' | Bailey CK, Misra S, Mittal MK, Chaudhuri G . Human <i>SLUG</i> does not directly bind to CtBP1. <i>Biochem. Biophys. Res. Commun.</i> 353, 661-664, 2007 |

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| David Cortez, PhD | Biochemistry | Checkpoint Kinase-Dependent Regulation of Genome Integrity in Breast Cancer | <p>DOD Breast Cancer Predoctoral Award</p> <p>PI: Daniel Mordes (mentor, D. Cortez)</p> <p>'Maintenance of genome stability and breast cancer: Molecular analysis of DNA damage-activated kinases'</p> <p>DOD Breast Cancer Predoctoral Award</p> <p>PI: Courtney Lovejoy (mentor, D. Cortez)</p> <p>'Checkpoint Kinase-Dependent Regulation of DNA Repair and Genome Instability in Breast Cancer'</p> | <p>Lovejoy CA, Lock K, Yenamandra A, Cortez D. DDB1 maintains genome integrity through regulation of Cdt1. <i>Mol. Cell. Biol.</i> 26:7977-7990, 2006</p> <p>Ball HL, Ehrhardt M, Mordes DM, Glick GG, Chazin WJ, Cortez D. Function of a conserved checkpoint recruitment domain in ATRIP proteins. <i>Mol. Cell. Biol.</i> 27:3367-3377, 2007</p> |
| Anita Mahadevan-Jansen, PhD and Mark C. Kelley, MD | Biomedical Engineering (Mahadevan-Jansen), and Surgical Oncology (Kelley) | Intra-operative Breast Tumor Demarcation using Optical Spectroscopy | | Shovan K. Majumder, Matthew D. Keller and Anita Mahadevan-Jansen . Optical detection of breast tumors - a comparison of diagnostic performance of autofluorescence, diffuse reflectance, and Raman spectroscopy. <i>SPIE Photonics West 2007 Proceedings</i> |
| 2006 | | | | |
| Principal Investigator | Department(s) | Title | Grants | Publications |
| Melinda E. Sanders, MD | Pathology | Identification of Novel Biomarkers of Breast Cancer Subtypes and Tumor Invasion by RNA Microarrays | | |
| Douglas Sawyer, MD, PhD | Medicine (Cardiology) | Predicting and preventing cardiovascular effects of anti-HER2 cancer therapies | | |

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| Emily Wang, PhD | Cancer Biology | An RNA Interference-Based Approach to Discover Rational Therapeutic Combinations with TGF β Inhibitors | | |
| H. Charles Manning, PhD | Radiology | Improved Characterization of Angiogenesis Through Multi-Modality Imaging of VEGFR Expression and Tumor Physiology | | Virostko J, Xie J, Shah C, Wyatt SK, Yankeelov T , Brissova M, Miller T, Gore JC, Arteaga CL , Manning HC . Molecular imaging assessment of tumor angiogenesis and treatment response in pre-clinical models of human breast cancer. Joint Conference in Molecular Imaging Society and Academy of Molecular Imaging, Providence, RI, September 2007 |
| Ginger Holt, MD and Conor Lynch, PhD | Orthopedics (Holt), and Cancer Biology (Lynch) | Identifying Novel Molecules that Mediate Breast Tumor-Induced Bone Destruction | | |
| 2007 | | | | |
| Principal Investigator | Department(s) | Title | Grants | Publications |
| H. Charles Manning, PhD | Radiology | Non-invasive imaging metrics as predictors of response to HER2-targeted therapy | | |
| Scott Guelcher, PhD | Biomedical Engineering | The role of extracellular matrix properties in the behavior of osteolytic breast cancer cells | | |
| Alissa Weaver, MD, PhD | Cancer Biology | WAVE2 regulation of breast epithelial cell phenotype | | |
| Zu-Wen Sun, PhD | Biochemistry | Function of MAP kinase Mpk1 in Rad6-dependent DNA damage response | | |
| Wael El-Rifai, PhD | Surgical Oncology and Cancer Biology | t-Darpp: A novel modulator of trastuzumab resistance in breast cancer | | |