

JOHN J. KIM

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EDUCATION

University of California, Berkeley and University of California, San Francisco

Doctor of Philosophy, Bioengineering
National Science Foundation Graduate Research Fellow
Advisor: Prof. Amy E. Herr

Berkeley, San Francisco, CA
August 2013 - Present

Johns Hopkins University

Bachelor of Science, Biomedical Engineering
Dean's List

Baltimore, MD
August 2009 - December 2012

EXPERIENCE

Herr Laboratory of Bioinstrumentation for Quantitative Biology and Medicine

Department of Bioengineering, University of California, Berkeley
Amy E. Herr, Ph.D.
Ph.D. Student

February 2014 - Present

- Build microfluidic devices for quantitative biology

Cooling Cure: Global Health Neonatal Therapeutic Hypothermia

Department of Neurology and Pediatrics, Kennedy Krieger Institute
Michael V. Johnston, M.D. and Ryan Lee, M.D.
Team Leader/ Inventor

May 2011 - Present

- Led a team of six engineering undergraduates to develop the Cooling Cure, which effectively provides hypothermia treatment to prevent cerebral palsy in newborn babies in developing countries.
- Traveled to India during the summer of 2012 to investigate clinical settings and possible clinical trials with product.
- Filed an international patent (PCT), published in a peer-review journal, and got publicized in Johns Hopkins Newsletter, Gazette, Science Daily, Toronto Star, Qmed, etc.
- Currently develop a opensource website and work with Spark Engineering, LLC to develop a more refined prototype.

Johns Hopkins Brady Urology Research

Brady Urological Institute, Johns Hopkins School of Medicine
Donald S. Coffey, Ph.D., Kenneth J. Pienta, M.D., and Steven M. Mooney, Ph.D.

May 2010 - August 2013

- Worked on a novel cancer testis antigen, Centrin1, as a possible biomarker for prostate and pancreatic cancers.
- Examined epithelial-mesenchymal transition driven by paclitaxel resistance or tumor associated macrophages in prostate cancer.
- Designed a 3D metastatic model for prostate cancer, and studied the role of tumor-associated macrophages in prostate cancer.

Bladder Cancer Diagnostics

Founder/Team Leader

July 2011 - August 2013

- Form a research group that improves current cytology screening for bladder cancer patients.
- Lead eight engineers to build our prototype.
- Currently undergo a clinical trial to test our proof-of-concept under Dr. Trinity Bivalacqua, a urology physician at Johns Hopkins Hospital.

National Cancer Institute Internship

Medical Oncology Branch/National Cancer Institute, National Institute of Health, Bethesda
Giuseppe Giaccone, MD
Research Assistant

May 2012 - December 2012

- Investigated the cancer progression affected by Laminin 4, an extracellular matrix glycoprotein in lung cancer.

PUBLICATIONS

1. Kim JJ, Buchbinder N, Ammanuel S, Kim R, et al. Cost-effective therapeutic hypothermia treatment device for hypoxic -ischemic encephalopathy. *Medical Devices: Research and Evidence*, 2013. 6: p. 1-10; doi: <http://dx.doi.org/10.2147/MDER.S39254>
2. Kim JJ, Yin B, Christudass C, et. al. Acquisition of paclitaxel resistance is associated with a more aggressive and invasive phenotype in prostate cancer. *Journal of Cellular Biochemistry*, 2012; doi: 10.1002/jcb.24464
3. Kim JJ, Rajagopalan K, Hussain B, et. al. CETN1 is a cancer testis antigen with expression in prostate and pancreatic cancers. *Biomarker Research*, 2013, 1:22; doi: 10.1186/2050-7771-1-22
4. Kim JJ, Pienta KJ, Mooney SM. Acquisition of paclitaxel resistance is associated with a more aggressive and invasive phenotype in prostate cancer, "Beyond the Abstract" *UroToday.com*, 2013
5. Kim JJ, Verdone JE, Mooney SM. Chemotherapy increases aggressiveness of prostate cancer via epithelial mesenchymal transition. (Revision submitted in *Cell Biology: Research & Therapy - SciTechnol*)
6. Zeng Y, Gao D, Kim JJ, Shirashi T, et al. Prostate-associated gene 4 (PAGE4) protects cells against stress by elevating p21 and suppressing reactive oxygen species production. *Am J Clin Exp Urol*, 2013. 1(1):39-52.
7. Mooney SM, Qiu R, Kim JJ, et al. Cancer/testis antigen PAGE4, a regulator of c-Jun transactivation, is phosphorylated by homeodomain-interacting protein kinase 1, a component of the stress-response pathway. *Biochemistry*, 2014. 53(10): p. 1670-9.
8. Moon YH, Rao G, Kim JJ, Park KS, et al. LAMC2 enhances the metastatic potential of lung adenocarcinoma. (Submitted in *Nature Communications*)

PRESENTATIONS

- Johns Hopkins Engineering Centennial Alumni Event** (06/12/13) New York, NY
- Oral presentation about the Cooling Cure to the Johns Hopkins Engineering alumni
- Biomedical Engineering Society (BMES) 2012 Annual Meeting** (10/26/12-10/27/12) Atlanta, GA
- Attended as a BMES board member for student affairs and chapter development sessions.
 - Had meetings with University of Maryland BMES Chapter and pharmaceutical companies to plan for Johns Hopkins and University of Maryland 1st Annual Research Day in spring.
- Mid-Atlantic Pharmacology Society Conference** (10/25/12) Collegeville, PA
- Presented a poster "Acquisition of paclitaxel resistance is associated with a more aggressive and invasive phenotype in prostate cancer" and received first place in poster presentation.
- Princeton Physical Sciences - Oncology Centers (Workshop on Failures in Clinical Treatment Cancer)** (9/4/12 - 9/5/12) Princeton, NJ
- Poster presentations for "Acquisition of paclitaxel resistance is associated with a more aggressive and invasive phenotype in prostate cancer."
- Johns Hopkins Biomedical Design Day** (5/7/12 - 5/8/12) Baltimore, MD
- Poster presentations for the therapeutic hypothermia device, Cooling Cure, to companies, faculty, students, and the public.
- Johns Hopkins Provost's Undergraduate Research Awards Ceremony** (5/01/12) Baltimore, MD
- Poster presentations for "The centrosome-associated retrogene Centrin-1 is a novel cancer/testis antigen and a potential prostate cancer biomarker."
- 2012 Akron Value - Driven Engineering Conference** (4/23/12-4/24/12) Akron, OH
- Invited as finalists and gave an oral presentation for presenting our neonatal hypothermic device.
- The Third Annual Physical Sciences - Oncology Centers Meeting** (4/16/12-4/18/12) Tampa Bay, FL
- Oral and poster presentations for "Acquisition of paclitaxel resistance is associated with a more aggressive and invasive phenotype in prostate cancer." (Selected as only undergraduate presenter.)
- 2012 North Dakota GIANTS Entrepreneurship Challenge Competition** (4/13/12-4/14/12) Grand Forks, ND
- Invited to give an oral presentation for presenting the neonatal hypothermic device, Cooling Cure.
- The 2012 Johns Hopkins Undergraduate Research Symposium** (4/12/12) Baltimore, MD
- Oral presentation for "Prostate cancer drug resistance is associated with an epithelial-to-mesenchymal transition"
- The 2012 Johns Hopkins Prostate Research Day** (2/25/12) Baltimore, MD
- Poster and oral presentations for "Prostate cancer drug resistance is associated with an epithelial-to-mesenchymal transition"

Society for Basic Urology Research Fall Symposium

(11/10/11 - 11/13/11) Las Vegas, NV

- Poster presentation for “The centrosome-associated retrogene Centrin 1, is a novel cancer/testis antigen up-regulated in prostate cancer”

Johns Hopkins Biomedical Engineering Research Day

(11/3/11) Baltimore, MD

- Poster and oral presentations for “Taxol resistance inactivates cytokeratin family and induces epithelial to mesenchymal transition in PC3 and DU145 cell lines”

PATENTS AND CLINICAL TRIAL**International Patent Application Filed 09/04/13. PCT/US2013/035729**

Title: “Evaporative Therapeutic Hypothermia Device”

Inventors: **John J. Kim**, Robert Kim, Dr. Michael Johnston, Dr. Ryan Lee, et al.**Provisional Patent Filed 05/07/13. Application No. 61820302**

Title: “Automated and Non-mydrriatic Fundus-Perimetry Camera for Irreversible Eye Diseases”

Inventors: Michael Boland, Vikram Rajan, **John J. Kim****Provisional Patent Filed 01/30/13. Application No. 61759135**

Title: “Non-invasive and Regulated Vibrational Device to Improve Diagnostics of Urinary Tract Diseases”

Inventors: **John J. Kim**, David West, James Verdone, Jeffrey Boye, et al.**Clinical Trial Approval by JHU IRB 01/10/13. NA_00067544**

Title: “Non-invasive vibrational method to increase the sensitivity of urine cytology for bladder cancer”

PI: Trinity Bivalacqua, M.D.

HONORS AND AWARDS**National Science Foundation Fellowship**

Spring 2013

- A three-year fellowship awarded for the PhD bioengineering graduate study at UCB/UCSF.

Biomedical Engineering Distinguished Service Award

Spring 2013

- Performed an extensive contributions to Johns Hopkins Biomedical Engineering undergraduate students.

Best Upperclassman Design Team Award

Spring 2013

- Most outstanding upperclassman for Johns Hopkins Biomedical Engineering undergraduate design teams.

Mid-Atlantic Pharmacology Society 1st Place Poster Presentation

Fall 2012

- Received \$300 and an award plaque for the best presenter in undergraduate division.
- Presented “Acquisition of paclitaxel resistance is associated with a more aggressive and invasive phenotype in prostate cancer”

Johns Hopkins Student Initiative Fund

Spring 2012 - Fall 2013

- Received \$3,500 fund to build the noninvasive and vibrational device to improve bladder cancer diagnostics.

National Cancer Institute Cancer Training Award Recipient

Spring 2012

- Received an NIH Summer Internship to work in Dr. Giuseppe Giaccone’s laboratory.

Medical Design Initiative Competition Winner

Spring 2012

- Won and received \$300 for the best engineering prototype for developing countries based on peer and faculty review from the Medical and Educational Perspectives Organization.
- Received a trip to India to closely evaluate our device and medical systems.

Design Day People’s Choice Investment Award

Spring 2012

- Won 1st place award for having the best device chosen by faculty, students, and the public.

Linda Trinh Award

Spring 2012

- Chosen as the design team with the best device for developing countries by biomedical engineering faculty.

Value-Driven Engineering Case Study Finalist

Spring 2012

- Received \$1000 for the most influential and creative device for developing countries by Austen BioInnovation Institute.

Johns Hopkins Bloomberg Scholar

Spring 2012

- Competitive and merit-based scholarship established by Michael Bloomberg.

Johns Hopkins Provost’s Undergraduate Research Awards

Fall 2011 - Spring 2012

- \$2000 award to conduct research for CETN1 as a possible cancer testis biomarker

Johns Hopkins Biomedical Engineering Research Day

Fall 2011

- The best poster award and the 2nd place award for oral presentation to BME faculty.
- Research award at the Twenty-Third Annual Whiting School of Engineering Convocation Awards Ceremony.

EXTRACURRICULAR ACTIVITIES

UCB-UCSF Bioengineering Association of Graduate Students (BEAST) Spring 2014 - Present
Treasurer

UCB Biomedical Engineering Society Mentor Fall 2013 - Present
Graduate Mentor

JHU Biomedical Engineering Society Executive Board Summer 2011- Fall 2013
President

- Supervised undergraduate research and underclassmen program planning, design career days and invite guest speakers, and create social events for BME students.

From Classroom to Community Tutoring Fall 2010 - Spring 2013
President

- Designed and taught classes in order to help young adults obtain GED certificate in Baltimore City.

Innoworks Fall 2010 - Spring 2013
Project Manager

- Managed and designed activities that will be held in Innoworks science program, where middle-school students from disadvantaged backgrounds get an opportunity to explore the real-world links among science and engineering disciplines.