

KATIE HURST

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EDUCATION

- Medical University of South Carolina**, Charleston, SC 08/2016 – 12/2020
Master of Public Health; Health Behavior and Health Promotion.
GPA: 3.94
Advisor: Katie Regan Sterba, Ph.D., MPH
- Clemson University**, Clemson, SC 08/2008 – 5/2012
Bachelor of Arts; Major: Biological Sciences; Minor: Psychology.

RESEARCH EXPERIENCE

- Medical University of South Carolina**, Charleston, SC 11/2020 – present
Research Lab Manager; Departments of Orthopaedics; Microbiology & Immunology
Advisors: Jessica Thaxton, Ph.D., MsCR; Lee Leddy, M.D., MsCR
- Serves as lab manager for an established cancer immunology lab with 6 full-time and 3 part-time employees.
 - Organizes and leads multiple complex research projects to study the role of immuno-metabolism in cancer.
 - Supervises, trains, and mentors all doctoral and undergraduate students in the laboratory, and trains postdoctoral scholars in highly specialized experiments.
 - Oversees and performs all expenditures and maintains budget.
 - Writes, prepares, and reviews internal and federal grant applications including preparation of budget estimates and budget justifications
 - Writes, prepares, and reviews manuscripts for publication in peer-reviewed scientific journals.
 - Serves as primary liaison between clinical and research personnel for bedside-to-bench studies.
 - Serves as lead technical consultant and evaluator for students' and postdocs' experimental designs.
 - Successfully completed biosafety designation for use of pathogenic materials.
 - Collaborates with external companies to carry out complex experiments.
 - Establishes best practices for safety protocols and ensures all regulatory, health, and safety procedures are followed by laboratory members to certify adherence to federal and state mandated scientific practices.
 - Merged public health research and cancer immunology basic science to study the effects of stress-induced biological factors on antitumor immune function in African American women with breast cancer.
- Medical University of South Carolina**, Charleston, SC 01/2019 – 03/2020
Research Assistant; Department of Medicine, Division of Infectious Disease
Advisor: Susan Dorman, M.D.
- Served as a research assistant for the completion of MPH thesis project titled "Cardiovascular Care in Tanzania: Tailoring a Global Health Education and Training Program Using Health Behavior Theory."
 - Developed needs assessment written surveys to determine the most effective cardiovascular education and training strategies as reported by healthcare professionals in Tanzania.
 - Successfully organized and consented participants and collected primary data at multiple healthcare sites in Dar es Salaam, Tanzania using needs assessment and one-on-one interviews.
 - Conducted both quantitative and qualitative data analysis for interpretation of collected data in the context of health behavior theory to form a list of best educational practices to be used in future global health cardiology fellowships in Tanzania.
 - Prepared eIRB application and case report forms to study the needs of a renal transplant program in Tanzania.
 - Effectively communicated study findings to colleagues.
- Medical University of South Carolina**, Charleston, SC 07/2019 – 11/2020
Research Specialist II; Department of Orthopaedics
Advisors: Jessica Thaxton, Ph.D., MsCR; Lee Leddy, M.D., MsCR
- Supervised and trained all graduate students and managed part-time undergraduate students.
 - Developed unique immunological experiments in collaboration with laboratory PI and served as the primary technical consultant and evaluator for students' experimental designs.
 - Performed a high volume of highly specialized experiments and procedures to generate data for high impact manuscripts in collaboration with laboratory PI.

- Established administrative procedures for data preservation.
- Prepared and reviewed manuscripts for publication in scientific journals in collaboration with laboratory PI.
- Oversaw laboratory notebooks of lab members and monitors adherence to protocols.
- Established and maintained quality research standards as given by federal and state mandated safety guidelines and health policies.

Medical University of South Carolina, Charleston, SC

10/2015 – 07/2019

Research Specialist I; Department of Orthopaedics

Advisors: Jessica Thaxton, Ph.D., MsCR; Lee Leddy, M.D., MsCR

- Served as administrative manager for the establishment and expansion of a new cancer immunology laboratory.
- Supervised new laboratory members.
- Developed and implemented safety protocols, experimental procedures, and training of new lab staff.
- Served as primary technical consultant for all experiments.
- Oversaw the creation of a variety of *in vivo* and *in vitro* experimental techniques.
- Performed, evaluated, and reported scientific data for grant applications and manuscript preparations by the PI.

Medical University of South Carolina, Charleston, SC

09/2012 – 10/2015

Research Specialist I; Department of Surgery

Advisor: E. Ramsay Camp, M.D., MsCR

- Developed a patient-derived tumor xenograft model with locally advanced rectal cancer patients.
- Investigated the anti-tumor effects of micro-RNAs in relation to transcription factors with focus on enhancing colorectal cancer chemoradiation through the targeting of the tumor-initiating cell.
- Examined ways in which high fat-induced obese conditions augment fundamental neoplastic processes driving an aggressive pancreatic cancer phenotype.

University of California San Francisco Medical Center, San Francisco, CA

06/2011 – 08/2011

Lab Assistant I; Department of Surgery

Advisor: Kimberly Kirkwood, M.D.

- Collected data on the effects of intravenous ketamine on postoperative pain management in abdominal surgery patients. Data was analyzed according to pain levels, morphine consumption, and adverse effects, particularly psychotomimetic effects.
- Served as lead producer for a short film documenting the stories of pancreatic cancer survivors for distribution to cancer patients of UCSF Medical Center (link to video: <https://vimeo.com/31992158>).

Clemson University, Clemson, SC

Lab Assistant; Department of Psychology

06/2010 – 12/2010

Advisor: Scott Mogull, Ph.D.

- Developed a written survey, recruited participants, and conducted a study of the cognitive learning styles of undergraduate students.
- Cognitive style assessments were given to 150 undergraduate biology students to determine the dispersion of auditory, visual, and kinesthetic learners.

KEY SKILLS

Public Health: study coordination, theory-based behavioral research methods, health promotion intervention planning, clinical biostatistics, global health research methods, procurement and budget management, grant writing, risk management, protocol development, U.S. health policy, global health epidemiology and policy, publication of manuscripts, statistical analysis, interpersonal skills, leadership ability, communication, networking, ability to make discoveries at the intersection of public health and basic science utilizing extensive lab skills.

Computer: SPSS Statistics, GraphPad Prism, eProtocol Research Compliance, REDCap, SoftMax Pro, eIRB, FlowJo, CFlow, ImageJ, Seahorse Wave, Microsoft Office.

Laboratory: cell culture, real-time PCR, flow cytometry, western blotting, Seahorse live-cell metabolic assays, isolation and culture of primary human T-cells, immunohistochemistry, fluorescent confocal microscopy, ELISA, microtome sectioning, cell migration assays, tumor coculture assays, grant writing, publication of manuscripts, risk management. *In vivo:* genotyping, adoptive cellular therapy, patient-derived tumor xenograft, I.P., subcutaneous, mammary fat pad, and pancreatic tumor injections, gavage, blood collection, anesthetization, sterile microsurgery, colony maintenance.

PUBLICATIONS

A.K. Mehta, E.M. Cheney, C.A. Hartl, C. Pantelidou, M. Oliwa, J.A. Castrillon, J.R. Lin, **K.E. Hurst**, M. de Oliveira Taveira, N.T. Johnson, W.M. Oldham, M. Kalocsay, M.J. Berberich, S.A. Boswell, A. Kothari, S. Johnson, D.A. Dillon, M. Lipschitz, S. Rodig, S. Santagata, J.E. Garber, N. Tung, J. Yelamos, J.E. Thaxton, E.A. Mittendorf, P.K. Sorger, G.I. Shapiro, J.L. Guerriero. "Targeting immunosuppressive macrophages overcomes PARP inhibitor resistance in BRCA1-associated triple-negative breast cancer." *Nat Cancer*. 2021 Jan; 2(1): 66-82.

D.I. Garcia, **K.E. Hurst**, A. Bradshaw, H. Janakiraman, C. Wang, E.R. Camp. "High-Fat Diet Drives an Aggressive Pancreatic Cancer Phenotype." *J Surg Res*. 2021 Apr 7; 264:163-172.

K.E. Hurst, K.A. Lawrence, R.A. Robino, L.E. Ball, D. Chung, J.E. Thaxton. "Remodeling Translation Primes CD8+ T Cell Antitumor Immunity." *Cancer Immunol Res*. 2020 May; 8(5): 587-595.

K.E. Hurst, K.A. Lawrence, L. Reyes Angeles, Z. Ye, J. Zhang, D.M. Townsend, N. Dolloff, J.E. Thaxton. "Endoplasmic Reticulum Protein Disulfide Isomerase Shapes T Cell Efficacy for Adoptive Cellular Therapy of Tumors." *Cells*. 2019 Nov 26; 8(12).

K.E. Hurst, K.A. Lawrence, M.T. Essman, Z.J. Walton, L.R. Leddy, J.E. Thaxton. "Endoplasmic Reticulum Stress Contributes to Mitochondrial Exhaustion of T Cells." *Cancer Immunol Res*. 2019 Mar; 7(3): 476-486

Y. Zhu, C. Wang, S.A. Becker, **K. Hurst**, L.M. Nogueira, V.J. Findlay, E.R. Camp. "miR-145 Antagonizes SNAI1-Mediated Stemness and Radiation Resistance in Colorectal Cancer." *Mol Ther*. 2018 Mar; 26(3): 744-754.

V.J. Findlay, C. Wang, L.M. Nogueira, **K. Hurst**, D. Quirk, S.P. Ethier, K.F. Staveley-O'Carroll, D.K. Watson, E.R. Camp. "SNAI2 Modulates Colorectal Cancer 5-fluorouracil Sensitivity Through miR-145 Repression." *Mol Cancer Ther*. 2014 Nov; 13(11): 2713-26.

E.R. Camp, **K. Hurst**, C. Wang, D.J. Cole, D.K. Watson. "Optimizing Gene Silencing Strategies for Pancreatic Cancer." *Curr Cancer Ther. Rev*. 2013 May; 9(2): 117-125.

REFERENCES

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