

KATIE HURST

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EDUCATION

Medical University of South Carolina , Charleston, SC	08/2016 - present
Master of Public Health; expected December 2021. Current GPA: 3.94	
Clemson University , Clemson, SC	08/2008 – 5/2012
Bachelor of Arts, Biological Sciences, Minor in Psychology. GPA: 3.37	
University of Strathclyde , Glasgow, Scotland	01/2011 – 05/2011
Study Abroad: Biomedical Sciences.	

RESEARCH EXPERIENCE

Medical University of South Carolina , Charleston, SC	07/2019 – present
Research Specialist II; Department of Orthopaedics	
Advisors: Jessica Thaxton, PhD, MSCR; Lee Leddy, MD, MSCR	
<ul style="list-style-type: none">- Serves as laboratory manager for an established cancer immunology laboratory.- Leads multiple complex research projects in collaboration with laboratory PI to study the role of immuno-metabolism in cancer.- Supervises and mentors all doctoral and medical students working in the laboratory.- Serves as the principal technical consultant and evaluator for students' experimental designs and use of proper controls.- Develops and creates unique, innovative, and high-level experiments in collaboration with laboratory PI.- Works in collaboration with outside companies to carry out complex laboratory tests, ie: ribosome sequencing.- Performs a high volume of highly-specialized experiments and procedures to generate data for high impact manuscripts in collaboration with laboratory PI.- Develops administrative policies for all work pertaining to the laboratory including data preservation, specialized computer software use, and safe storage of confidential documents.- Prepares and reviews manuscripts for publication in scientific journals in collaboration with laboratory PI.- Performs and oversees all experimental techniques pertaining to animal and human subject work to laboratory members including bedside-to-bench clinical procedures.- Operates, maintains, and repairs complex scientific instruments.- Ensures all regulatory, health, and safety procedures are followed by laboratory members, including proper handling and disposal of test samples and adherence to federal and state mandated scientific practices.- Oversees laboratory notebooks and monitors adherence to protocols.- Manages part-time college students working in the laboratory including supervising of work hours.- Oversees all laboratory expenditures and tracks budget with immediate reporting to PI.	
Medical University of South Carolina , Charleston, SC	10/2015 – 07/2019
Research Specialist I; Department of Orthopaedics	
Advisors: Jessica Thaxton, PhD, MSCR; Lee Leddy, MD, MSCR	
<ul style="list-style-type: none">- Served as lab manager during 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 scientific experiments involving mouse and human samples.- Monitored, adhered to, and updated laboratory budgets laid out by laboratory PI.- Oversaw the creation of a variety of <i>in vivo</i> and <i>in vitro</i> experimental techniques.- Performed, evaluated, and reported scientific data for grant applications and manuscript preparations by the laboratory PI.- 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

09/2012 – 10/2015

Research Specialist I; Department of Surgery

Advisor: E. Ramsay Camp, MD, 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, MD

- 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

Student Lab Assistant

08/2010 – 12/2010

Advisor: Scott Mogull, Ph.D.

- Conducted behavioral research analyzing the cognitive learning styles of biology students.
- Cognitive style assessments were given to 150 undergraduate biology students to determine the dispersion of auditory, visual, and kinesthetic learners.

KEY SKILLS / TRAINING

Laboratory: Mammalian cell culture, isolation and culture of primary human T-cells, real-time PCR, flow cytometry, western blotting, Seahorse live-cell metabolic assays, RNA isolation, protein isolation, immunohistochemistry, immunofluorescence, confocal microscopy, fluorescent microscopy, bacterial culture, enzyme-linked immunosorbent assays, OCT tissue embedding, microtome sectioning, genotyping, cytotoxicity assays, cell migration assays, tumor cell coculture assays, agarose gel electrophoresis, complex statistical and mathematical calculations, sterilization techniques.

Animal Care (murine): handling and restraint of mice, breeding, intraperitoneal injections, gavage, adoptive cellular therapy, patient-derived tumor xenograft models, subcutaneous tumor injection, mammary fat pad tumor injection, pancreatic tumor injection, tail vein blood collection, orbital blood collection, sterile surgical preparation, isoflurane inhalation anesthetization, sterile microsurgery, suturing, urine collection, autopsy, maintenance and evaluation of animal records and mouse colony census.

Computer: SPSS Statistics, R, GraphPad Prism, SoftMax Pro, FlowJo, CFlow, ImageJ, Seahorse Wave, Microsoft Office.

PUBLICATIONS

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 Feb 19; Epub ahead of print.

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.

V.J. Findlay, C. Wang, **K. Hurst**, L.M. Nogueira, K.F. Staveley-O'Carroll, E.R. Camp. "Selective loss of miR-145 in Therapeutic Resistant Colorectal Cancer Cells." *Manuscript in preparation.*

PRESENTATIONS

Characterization of T Cell Metabolic Fitness in Tumors	11/2017
Poster, Medical University of South Carolina Student Research Day, Charleston, SC	
SNAI1 Impairs Colorectal Cancer Radiation Sensitivity Through miR-145 Repression	11/2014
Poster, Medical University of South Carolina Student Research Day, Charleston, SC	
High Fat-Induced Obese Conditions Drive an Aggressive Pancreatic Cancer Phenotype	11/2013
Poster, Hollings Cancer Center Research Retreat, Charleston, SC	

ACTIVITIES / SERVICE

Charleston HALOS, Volunteer	10/2016 - Present
Sigma Alpha Lambda National Leadership and Honors Organization, Member	08/2009 - Present
Alpha Chi Omega, Member	09/2009 - Present
Cooper River Bridge Run, Volunteer	05/2016, 04/2019
Medical University of South Carolina Dept. of Surgery Staff Advisory Panel, Representative	10/2014 - 10/2015
Clemson Project Remedy, Member	01/2010 - 05/2012
Cooperative Students Fellowship, Member	09/2009 - 05/2012
Biological Sciences Club, Member	08/2008 - 05/2012
Greenville Memorial Hospital, Volunteer	01/2010 - 05/2010
Clemson Child Development Center, Volunteer	08/2008 - 05/2009

REFERENCES

Jessica Thaxton, Ph.D.
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Medical University of SC
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Lee Leddy, M.D.
Department Chair, Orthopaedics
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