

Lyndsay Vanhoy Rhodes, PhD

Education

Tulane University School of Medicine – New Orleans, LA

Ph.D. in Molecular and Cellular Biology/Biomedical Sciences, 2010

Pfeiffer University – Misenheimer, NC

B.S. in Biology, 2004; B.A. in Psychology, 2004

Appointments

Assistant Professor, Department of Biological Sciences, Florida Gulf Coast University, Fort Myers, Florida; 2014 – Present

Associate Member of the Graduate Faculty, College of Arts and Sciences, Florida Gulf Coast University, Fort Myers, Florida; 2017 - Present

Postdoctoral Fellowship, Department of Medicine, Section of Hematology & Medical Oncology, Tulane University School of Medicine, New Orleans, Louisiana; 2010 - 2014

Adjunct Faculty, Department of Math and Science, Delgado Community College, New Orleans, LA; 2010 – 2011

RESEARCH EXPERIENCE

Assistant Professor, Department of Biological Sciences, Florida Gulf Coast University, Fort Myers, FL; 2014 – Present

Independent Projects

Understanding the role of the estrogen receptor in anti-cancer activity of stilbene compounds in human breast cancer

Identifying natural essential oils with anti-cancer activity against human breast cancer

Determining the effects of stilbene compounds on embryonic development and viability of zebrafish

Understanding the role of the lncRNA HOTAIR in breast cancer signaling networks

Collaborative Projects

Identifying stilbene compounds with anticancer properties across human breast cancer subtypes – *Lead investigator in collaboration with Dr. Daniel Paull (Chemistry)*

Utilizing novel compounds in the differentiation of human mesenchymal stem cells – *Lead investigator in collaboration with Dr. Daniel Paull (Chemistry)*

Determining the role of tumor microenvironment stiffness and architecture on pancreatic cancer progression and metastasis – *Lead investigator in collaboration with Drs. Jiehong Liao (Bioengineering), Chris Gieger (Bioengineering), and Mark Bloomston (21st Oncology)*

Assessing noble metal nanoparticles for anticancer properties across human breast cancer subtypes - *In collaboration with Drs. Kerry Lee (Biology) and Ju Chou (Chemistry)*

Use of low-level laser light for induction of osteogenesis in adult mesenchymal stem cells – *Lead investigator in collaboration with Drs. Jiehong Liao (Bioengineering) and Kevin Davies (Chemistry)*

Postdoctoral Fellowship Research, Department of Medicine, Tulane University School of Medicine, New Orleans, LA; 2010 – 2014

Characterized novel anticancer therapeutics targeting triple-negative breast cancer, with emphasis on altered microRNA expression, the HDAC inhibitor Panobinostat, and natural products.

Graduate Student Research, Interdisciplinary Program in Molecular and Cellular Biology, Tulane University School of Medicine, New Orleans, LA; 2005 – 2009

Examined the effects of human mesenchymal stem cells on estrogen receptor-positive breast cancer cell biology, using both *in vitro* and *in vivo* techniques.

TEACHING EXPERIENCE

Assistant Professor, Department of Biological Sciences, Florida Gulf Coast University, Fort Myers, Florida; 2014 – Present

Primary teaching responsibilities in Cell Biology (PCB 3023C), Cell Membrane Physiology (PCB 4783C), Scientific Process (ISC 3120C), and Senior Project I and II (BSC 4910C, BSC 4911), with additional courses taught as needed.

Adjunct Faculty, Department of Math and Science, Delgado Community College, New Orleans, LA; 2010 – 2011

General Biology for non-majors, Anatomy and Physiology for Pre-nursing students

POGIL FLC

Flipped Classroom FLC

Innovative Course Design Showcase

Professional Development Activities

Textbook and Academic Author's Association Writing Workshop, Facilitated by Dr. Dannelle Stevens of Portland State University, Florida Gulf Coast University, *Spring 2015*

Intensive one-day workshop focused on increasing academic writing productivity and success in publishing.

Southeast Regional Partnership for Undergraduate Life Science Education (PULSE) conference, Wofford College, Spartanburg, SC, June 1-4, 2016

National Science Foundation (NSF) and Howard Hughes Medical Institute (HHMI) funded conference for strategic planning to align biology programs with the "Vision and Change in Undergraduate Biology Education" report from the American Association for the Advancement of Science.

SERVICE EXPERIENCE

Affiliations

- American Society for Cell Biology, Member
- American Association of Cancer Researchers, Associate Member
- Textbook and Academic Author's Association

Professional Service

Ad hoc Reviewer

Cancer Research

Clinical Cancer Research

Epigenomics

Molecular Pharmaceutics

Cancer Treatment Reviews

Current Molecular Pharmacology

Recent Patents on Anti-Cancer Drug

Discovery

Gene

Genomics

Cancer Microenvironment

Histology and Histopathology

NCUR Proceedings

Reproductive Biology

Contemporary Oncology

La Prensa Medica

The Scientific World Journal

Judge for the 11th Annual Undergraduate Student Caucus and Poster Competition, AACR, New Orleans, LA, April 2016

University Service

FGCU Research Roadshow, Cancer Presenter, Florida Gulf Coast University, 2018 - present

Faculty Senate, Alternative Senator, College of Arts and Sciences, Florida Gulf Coast University, 2017 - present

Faculty Mentor/Founder, Student Cancer Research Initiative for Southwest Florida, Student Registered Organization, Florida Gulf Coast University, 2017 – present

2015 – 2020 General Education Assessment, Critical Thinking Assessor, Florida Gulf Coast University, 2017-2018

Institutional Safety Committee, member, Florida Gulf Coast University, 2018 - present

Grants and Research Team, College of Arts and Sciences Representative, Florida Gulf Coast University, 2018 – present

STEM and Health Sciences Faculty Panel Member, Showcase of Undergraduate Research Experiences (SURE), Florida Gulf Coast University, Spring 2018

Research Day Judge, Florida Gulf Coast University, 2015 - present

College Service

Biology Graduate Program Development Committee, **Chair**, College of Arts and Sciences and the Department of Biological Sciences, Florida Gulf Coast University, 2016 – present

Closing Remarks, Whitaker STEM Symposium, Florida Gulf Coast University, Nov 30, 2018

Women in Science Technology Engineering and Math Living Learning Community Involvement

Women in STEM Science Panel, Nov 4, 2015
WiSTEM Luncheon, Nov 11, 2015
Women in STEM Science Panel, April 28, 2017
Faculty Round Table Discussion, Oct 29, 2018

Department Service

Human Biology Faculty Search Committee, member, Department of Biological Sciences, FGCU, 2014 – 2015

Genetics/Cell Biology Faculty Search Committee, **Chair**, Department of Biological Sciences, FGCU, 2016 – 2017

Website Design Committee, **Chair**, Department of Biological Sciences, FGCU, 2015 – present

Program Assessment, Department of Biological Sciences, FGCU, 2015 - present

Community Service

Career speaker for Project GENES: Genetics Education for the Next Era of Science, Pfeiffer University, Misenheimer, NC, June 2016 and June 2017

Girls in Engineering, Math, and Sciences (GEMS): Sensational Cells and Miraculous Membranes activity for middle school girls, developed and implemented, Florida Gulf Coast University, February 27, 2016

Science Fair Judging

Regional Science Fair Grand Judge, Southwest Florida, 2016, 2019
Three Oaks Elementary, Lee County, FL, 2015 - present

STEMinist Movement Workshop, Cloning Encounters of the Good Kind: Stem Cell Biology and Regenerative Medicine, Educational presentation and activity for middle school girls in conjunction with Anabella Galang, Florida Gulf Coast University, October 13, 2018

Gifted Program Presentation and Activity, Superabsorbent Polymers and Osmosis, Lexington Middle School, Lee County, FL, December 18, 2018

AWARDS

Innovative Assignment Design Grant, FGCU, Fall 2018, \$200-\$1000

Outstanding Student Scholarship Support Award, Aquila, FGCU, 2018

Student Organization of the Year Award (Cancer Research Program), Registered Student Organizations, FGCU, 2018

Children Are Our Future Award (Cancer Research Program), Community Engagement Day, FGCU, 2018

Best Overall Registered Student Organization (Cancer Research Program), Community Engagement Day, FGCU, 2018

Professional Development Fund Grant, Florida Gulf Coast University, 2018, \$1000

Professional Development Fund Grant, Florida Gulf Coast University, 2016, \$850

Tulane University Health Sciences Research Days Award for Cancer Research, sponsored by Tulane Cancer Center, 2012

Award for Best Platform Presentation, Biomedical Sciences Annual Retreat, Tulane University, 2008

MENTORSHIP

Tulane University School of Medicine (2006-2014)

Mentored 5 doctoral students, 2 Masters students, 2 Medical fellows, and 3 undergraduate students on their research projects.

Florida Gulf Coast University (2014 – present)

Undergraduate Research Students

Evan Roberts, 2014 – 2016

Alejandra Londono, 2015 – 2016

Ellen Vann, 2015 – 2016

Shane McMahon, 2015 – 2016

Hunter Blackburn, 2016 – 2017

Emily Brannan, 2016 – 2017

Talia Hammer, 2016 – 2017

Sara Lohbauer, 2016 – 2017

Brandon Ashley, 2016 – 2017

Grant Grabarczyk, 2016

Xylia Horgan, 2016 – 2018

Hannah Tatum, 2016 – 2018

Blan Kouablan, 2017 – 2018

Nicole Mamprejew, 2017 – 2018

Domingo Alvarez, 2017 – 2018

Bertin Cenatus, 2016 – 2018

Sierra King, 2017 – 2018

Carlee Rushlow, 2017 – 2018

Sarah Cushion, 2017 – 2018

Jesse Champer, 2017 – 2018

Michelle Felden, 2017 – 2018

Sara Johnson, 2017 – 2018

Hnin Soe, 2017 – present

Megan Kellar, 2017 – present

Brian McMillan, 2017 – present

Heidy Acosta, 2017 – present

Rachel Ranschau, 2017 – present

Analiese Thomas-Larocque, 2018 – present

Majana Vukajlovic, 2018 – present

Gabriel Moran-Deleon, 2018 – present

Aditya Deshpande, 2018 – present

Jared Lehman, 2017 – present

Briana Maierle, 2017 – present

Kaitlin Lindblom, 2017 – present

Hailey Kalamaras, 2018 – present

Kristina Valladares, 2018 – present

High School Research Student:

Anabella Galang, 2017 – present

Honors Contracts: mentored 14 independent honors contracts since 2014

PUBLICATIONS

37 total peer-reviewed articles, 10 first author, 2 senior author (under review)

(* denotes undergraduate author)

Xylia J. Horgan*, Hannah Tatum*, Emily Brannan*, Daniel H. Paull, and **Lyndsay V. Rhodes**, Resveratrol analogues surprisingly effective against triple-negative breast cancer, independent of ER α , *Oncology Reports* 2018: ACCEPTED PENDING MINOR REVISION

Jesse Champer*, Sarah Cushion*, Sierra King*, Carlee Rushlow*, Bertin Cenatus*, and **Lyndsay V. Rhodes**, Effects of Stilbene Compounds on *Danio rerio* Mortality and Embryonic Development, *Eastern Biologist Special Issue Zebrafish as a Model System for Research and Teaching* 2018, UNDER REVIEW

Lyndsay V. Rhodes, Matthew E. Burow, and Bridgette M. Collins-Burow. LKB1 expression alters TNBC metabolic profile through AMPK-dependent and -independent pathways, *Oncoscience* 2018: UNDER REVIEW

Thomas Yan, **Lyndsay Rhodes**, David Miller, Aaron Buechlein, Doug Rusch, Kenneth Nephew, Matthew Burow, Bridgette Collins-Burow, and Elizabeth Martin. Panobinostat induced alterations to microRNA biogenesis and strand selection in triple negative breast cancer, *Oncotarget* 2018: UNDER REVIEW

Margarite Matossian; Hope Burks; Steven Elliott; Van T. Hoang; Annie C. Bowles; Rachel A. Sabol; Bahia Wahba; Mohammed E. Abazeed; Bruce A. Bunnell; Krzysztof Moroz; Lucio Miele; **Lyndsay V. Rhodes**; Steven D. Jones; Elizabeth C. Martin; Bridgette M. Collins-Burow; Matthew E. Burow. Drug resistance profiling of a new triple negative breast cancer patient-derived xenograft model, *BMC Cancer* 2018: ACCEPTED PENDING PUBLICATION

Margarite D. Matossian, Hope E Burks, Annie C Bowles, Steven Elliott, Van T. Barnes, Rachel A. Sabol, Nicholas Pashos, Benjamin O'Donnell, Kristin Miller, Bahia Wahba, Bruce A Bunnell, Krzysztof Moroz, Arnold H Zea, Steven D. Jones, Adam I. Riker, **Lyndsay V Rhodes**, Elizabeth Martin, Lucio Miele, Matthew E Burow, and Bridgette M Collins-Burow. A novel patient-derived xenograft model for claudin-low triple-negative breast cancer, *Breast Cancer Research and Treatment* 2018, 169(2):381-390. PMID: 29392581

Adrienne K. Conger, Elizabeth C. Martin, Thomas J. Yan, **Lyndsay V. Rhodes**, Van T. Hoang, Jacqueline La, Muralidharan Anbalagan, Hope E. Burks, Brian G. Rowan, Kenneth P. Nephew, Bridgette M. Collins-Burow, and Matthew E. Burow. Argonaute 2 expression correlates with a luminal B breast cancer subtype and induces estrogen receptor alpha isoform variation. *Non-coding RNA* 2016, 2(3): 8. PMID: 29657266

Lyndsay V. Rhodes[§], Elizabeth C. Martin[§], H. Chris Segar, David F. B. Miller, Aaron Buechlein, Doug Rusch, Kenneth P. Nephew, Matthew E. Burow, Bridgette M. Collins-Burow. Dual regulation by microRNA-200b-3p and microRNA-200b*-5p in the inhibition of epithelial-to-mesenchymal transition in triple-negative breast cancer. *Oncotarget* 2015, 6(18):16638-52. ([§] co-first author) PMID: 26062653

Lyndsay V. Rhodes, Chandra R. Tate, Van T. Hoang, Hope E. Burks, Diari Gilliam*, Elizabeth C. Martin, Steven Elliott, David B. Miller, Aaron Buechlein, Douglas B. Rusch, Haixu Tang, Kenneth P. Nephew, Matthew E. Burow, Bridget M. Collins-Burow. Regulation of triple-negative

breast cancer cell metastasis by the tumor suppressor Liver Kinase B1. *Oncogenesis* 2015, **4**: e168. PMID: 26436950

Amy L. Strong, Jason F. Ohlstein, Brandi A. Biagas, **Lyndsay V. Rhodes**, Dorothy T. Pei, Alan Tucker, Claire Llamas, Annie C. Bowles, Maria F. Dutreil, Shijia Zhang, Jeffrey M. Gimble, Matthew E. Burow, Bruce A. Bunnell. Leptin produced by obese ASCs enhances proliferation and metastasis of estrogen receptor positive breast cancers. *Breast Cancer Research* 2015, **17**:112. PMID: 26286584

Melyssa R. Bratton, Elizabeth C. Martin, Steven Elliott, **Lyndsay V. Rhodes**, Bridgette M. Collins-Burow, John A. McLachlan, Thomas E. Wiese, Stephen M. Boue, and Matthew E. Burow. Glyceollin, a novel regulator of mTOR/p70S6 in estrogen receptor positive breast cancer. *J Steroid Biochem Mol Biol* 2015, **150**: 17-23. PMID: 25771071

Yan Zhuang, Hong T. Nguyen, Matthew E. Burow, Ying Zhuo, Samir S. El - Dahr, Xiao Yao, Subing Cao, Erik K. Flemington, Kenneth P. Nephew, Fang Fang, Bridgette Collins-Burow, **Lyndsay V. Rhodes**, Qiang Yu, Janarthanan Jayawickramarajah, Bin Shan. Elevated expression of long intergenic non - coding RNA HOTAIR in a basal-like variant of MCF-7 breast cancer cells. *Molecular Carcinogenesis* 2015, **54**(12):1656-67. PMID: 25328122

Lyndsay V. Rhodes, Chandra R. Tata, H. Chris Segar, Hope E. Burks, Theresa B. Phamduy, Steven Elliott, Diari Gilliam*, F. Nell Pounder, Muralidharan Anbalagan, Douglas B. Chrisey, Brian G. Rowan, Matthew E. Burow, and Bridgette M. Collins-Burow. Suppression of triple-negative breast cancer metastasis by pan-DAC inhibitor panobinostat via inhibition of ZEB family of EMT master regulators. *Breast Cancer Research and Treatment* 2014, **145**(3): 593-604. PMID: 24810497

Elizabeth C. Martin, **Lyndsay V. Rhodes**, Steven Elliott, Adrienne E. Krebs, Kenneth P. Nephew, Erik K. Flemington, Bridgette M. Collins-Burow, Matthew E. Burow. microRNA regulation of mammalian target of rapamycin expression and activity controls estrogen receptor function and RAD001 sensitivity. *Molecular Cancer* 2014, **13**(1): 229. PMID: 25283550

Elizabeth C. Martin, Steven Elliott, **Lyndsay V. Rhodes**, James W. Antoon, Claire Fewell, Yun Zhu, Jennifer L. Driver, Mona Jodari-Karimi, Christopher W. Taylor, Erik K. Flemington, Barbara S. Beckman, Bridgette M. Collins-Burow, and Matthew E. Burow. Preferential star strand biogenesis of pre-miR-24-2 targets PKC-alpha and suppresses cell survival in MCF-7 breast cancer cells. *Mol Carcinog* 2014, **53**(1): 38-48. PMID: 22911661

Amy L. Strong, Thomas A. Strong, **Lyndsay V. Rhodes**, Julie A. Semon, Xiujuan Zhang, Zhenzhen Shi, Shijia Zhang, Jeffrey M. Gimble, Matthew E. Burow and Bruce A. Bunnell. Obesity associated alterations in the biology of adipose stem cells mediate enhanced tumorigenesis by estrogen dependent pathways. *Breast Cancer Research* 2013, **15**(5): R102. [Highly Accessed](#). PMID: 24176089

James W. Antoon, Elizabeth C. Martin, Rongye Lai, Virgilio A. Salvo, Yan Tang, Ashley M. Nitzchke, Steven Elliott, Seung Yoon Nam, Wei Xiong, **Lyndsay V. Rhodes**, Bridgette Collins-Burow, Odile David, Guangdi Wang, Bin Shan, Barbara S. Beckman, Kenneth P. Nephew, and

Matthew E. Burow. MEK5/ERK5 signaling suppresses estrogen receptor expression and promotes hormone-independent tumorigenesis. *PLoS One* 2013, **8**(8): e69291. PMID: 23950888

David F. B. Miller, Pearly S. Yan, Aaron Buechlein, Benjamin A. Rodriguez, Ayse S. Yilmaz, Shokhi Goel, Hai Lin, Bridgette Collins-Burow, **Lyndsay V. Rhodes**, Chris Braun, Sunila Pradeep, Rajesha Rupaimoole, Mehmet Dalkilic, Anil K. Sood, Matthew E. Burow, Haixu Tang, Tim H. Huang, Yunlong Liu, Douglas B. Rusch, and Kenneth P. Nephew. A new method for stranded whole transcriptome RNA-seq. *Methods* 2013, **63**(2): 126-134. PMID: 23557989

KiTani Parker Johnson, Duane E. Johnson, Diana Stoute, Matthew E. Burow, **Lyndsay V. Rhodes**, Marian Gray, Patrick Carriere, Syreeta L. Tilghman, John A. McLachlan, and Josiah Ochieng. In vitro and in vivo evaluation of novel anticancer agents in triple negative breast cancer models. *J Health Care Poor Underserved* 2013, **24**(1 Suppl): 104-11. PMID: 23395947

Syreeta L. Tilghman, **Lyndsay V. Rhodes**, Melyssa R. Bratton, Patrick Carriere, Lynez C. Preyan, Stephen M. Boue, Tadas Sean Vasaitis, John A. McLachlan, and Matthew E. Burow. Phytoalexins, miRNAs and breast cancer: A review of phytochemical-mediated miRNA regulation in breast cancer. *J Health Care Poor Underserved* 2013, **24**(10): 36-46. PMID: 23395943

James W. Antoon, Ashley M. Nitzchke, Elizabeth C. Martin, **Lyndsay V. Rhodes**, Seungyoon Nam, Scott Wadsworth, Virgilio A. Salvo, Steven Elliott, Bridgette Collins-Burow, Kenneth P. Nephew, and Matthew E. Burow. Inhibition of p38 mitogen-activated protein kinase alters microRNA expression and reverses epithelial-to-mesenchymal transition. *Int J Oncology* 2013, **42**(4): 1139-50. PMID: 23403951

Elizabeth C. Martin, Melyssa R. Bratton, Yun Zhu, **Lyndsay V. Rhodes**, Syreeta L. Tilghman, Bridgette M. Collins-Burow, and Matthew E. Burow. Insulin-like growth factor-1 signaling regulates miRNA expression in MCF-7 breast cancer cell line. *PLoS One* 2012, **7**(11): e49067. PMID: 23226206

James W. Antoon, Rongye Lai, Amanda P. Struckhoff, Ashley M. Nitschke, Steven Elliott, Elizabeth C. Martin, **Lyndsay V. Rhodes**, Nam Seung Yoon, Virgilio A. Salvo, Bin Shan, Barbara S. Beckman, Kenneth P. Nephew, and Matthew E. Burow. Altered death receptor signaling promotes epithelial-to-mesenchymal transition and acquired chemoresistance. *Sci Rep* 2012, **2**: 539. PMID: 22844580

Lyndsay V. Rhodes, Syreeta Tilgman, Stephen M. Boue, Shuchun Wang, Hafez Khalili, Shannon E. Muir, Melyssa R. Bratton, Qiang Zhang, Guangdi Wang, Matthew E. Burow, and Bridgette M. Collins-Burow. Glyceollins as novel targeted therapeutic for the treatment of triple-negative breast cancer. *Oncol Lett* 2012, **3**(1): 163-71. PMID: 22740874

Chandra R. Tate[§], **Lyndsay V. Rhodes**[§], H. Chris Segar, Jennifer L. Driver, F. Nell Pounder, Matthew E. Burow, and Bridgette M. Collins-Burow. Targeting triple-negative breast cancer cells with the HDAC inhibitor Panobinostat. *Breast Cancer Research* 2012, **14**(3): R79. [Highly Accessed](#). ([§] co-first author) PMID: 22613095

C. Zhou, Q. Zhong, **Lyndsay V. Rhodes**, I. Townley, Melyssa R. Bratton, Q. Zhang, Elizabeth C. Martin, Steven Elliotte, Bridgette M. Collins-Burow, Matthew E. Burow, and Guangdi Wang.

Proteomic analysis of acquired tamoxifen resistance in MCF-7 cells reveals expression signatures associated with enhanced migration. *Breast Cancer Res* 2012, **14**(2): R45. [Highly Accessed](#). PMID: 22417809

Syreeta L. Tilghman, Melyssa R. Bratton, H. Chris Segar, Elizabeth C. Martin, **Lyndsay V. Rhodes**, Meng Li, John A. McLachlan, Thomas E. Wiese, Kenneth P. Nephew, and Matthew E. Burow. Endocrine disruptor regulation of microRNA expression in breast carcinoma cells. *PLoS One* 2012, **7**(3): e32754. PMID: 22403704

Charles E. Wood, Stephen M. Boue, Bridgette M. Collins-Burow, **Lyndsay V. Rhodes**, Thomas C. Register, J. Mark Cline, Fitriya N. Dewi, and Matthew E. Burow. Glyceollin-elicited soy protein consumption induces distinct transcriptional effects compared to standard soy protein. *J Agric Food Chem* 2012, **60**(1): 81-86. PMID: 22126086

Lyndsay V. Rhodes, Ashley M. Nitschke, H. Chris Segar, Elizabeth C. Martin, Jenifer L. Driver, Steven Elliot, Seung Yoon Nam, Meng Li, Kenneth P. Nephew, Matthew E. Burow, and Bridgette M. Collins-Burow. The histone deacetylase inhibitor trichostatin A alters microRNA expression profiles in apoptosis-resistant breast cancer cells. *Oncology Reports* 2012, **27**: 10-16. PMID: 21971930

Lyndsay V. Rhodes, Melyssa R. Bratton, Yun Zhu, Syreeta L. Tilghman, Shannon E. Muir, Virgilio A. Salvo, Chandra R. Tate, Steven Elliott, Kenneth P. Nephew, Bridgette M. Collins-Burow, Matthew E. Burow. Effects of SDF-1-CXCR4 signaling on microRNA expression and tumorigenesis in estrogen receptor-alpha (ER α)-positive breast cancer cells. *Experimental Cell Research* 2011, **317**(18): 2573-81. [Highly Accessed](#). PMID: 21906588

James W Antoon, William D Meacham, Melyssa R Bratton, Evelyn M Slaughter, **Lyndsay V Rhodes**, Hasina B Ashe, Thomas E Wiese, Matthew E Burow, and Barbara S Beckman. Pharmacological inhibition of sphingosine kinase isoforms alters estrogen receptor signaling in human breast cancer. *J Mol Endocrinol* 2011, **46**(3): 205-16. PMID: 21321095

Lyndsay V. Rhodes, Sarah P. Short, Nicole Neel, Virgilio A. Salvo, Yun Zhu, Steven Elliott, et al. Cytokine receptor CXCR4 mediates estrogen-independent tumorigenesis, metastasis, and resistance to endocrine therapy in human breast cancer. *Cancer Research* 2011, **71**(2): 603-13. PMID: 21123450

Lyndsay V Rhodes, James W Antoon, Shannon E Muir, Steven Elliott, Barbara S Beckman, and Matthew E Burow. Effects of human mesenchymal stem cells on ER-positive human breast carcinoma cells mediated through ER-SDF-1/CXCR4 crosstalk. *Mol Cancer* 2010, **9**: 295. PMID: 21087507

James W. Antoon, Martin D. White, William D. Meacham, Evelyn M. Slaughter, Shannon E. Muir, Steven Elliott, **Lyndsay V. Rhodes**, Hasina B. Ashe, Thomas E. Wiese, Charles D. Smith, Matthew E. Burow, and Barbara S. Beckman. Antiestrogenic effects of the novel sphingosine kinase-2 inhibitor ABC294640. *Endocrinology* 2010, **151**(11): 5124-35. PMID: 20861237

Quan Jiang, Florastina Payton-Stewart, Steven Elliott, Jennifer Driver, **Lyndsay V. Rhodes**, Qiang Zhang, Shilong Zheng, Deepak Bhatnagar, Stephen M. Boue, Bridgette M. Collins-Burow, Jayalakshmi Sridhar, Cheryl Stevens, John A. McLachlan, Thomas E. Wiese, Matthew E. Burow,

and Guangdi Wang. Effects of 7-O substitutions on estrogenic and antiestrogenic activities of daidzein analogues in MCF-7 breast cancer cells. *J Med Chem* 2010, **53**(16): 6153-63. PMID: 20669983

Lyndsay V. Rhodes and Matthew E. Burow. Human mesenchymal stem cells as mediators of breast carcinoma tumorigenesis and progression. *ScientificWorldJournal* 2010, **10**: 1084-87. PMID: 20563531

Lyndsay V. Rhodes, Shannon E. Muir, Steven Elliott, Lori M. Guillot, James W. Antoon, Patrice Penfornis, Syreeta L. Tilghman, Virgilio A. Salvo, Juan P. Fonseca, Michelle R. Lacey, Barbara S. Beckman, John A. McLachlan, Brian G. Rowan, Radhika Pochampally, and Matthew E. Burow. Adult human mesenchymal stem cells enhance breast tumorigenesis and promote hormone independence. *Breast Cancer Res Treat* 2010, **121**(2): 293-300. PMID: 19597705

Amanda P. Struckhoff, Jason R. Vitko, Manish K. Rana, Carter T. Davis, Kamau E. Foderingham, Chi-Hsin Liu, **Lyndsay Vanhoy-Rhodes**, Steven Elliot, Yun Zhu, Matt Burow, and Rebecca A. Worthylake. Dynamic regulation of ROCK in tumor cells controls CXCR4-driven adhesion events. *J Cell Sci* 2010, **123**(3): 401-12. PMID: 20053635

M. Carla Zimmermann, Syreeta L. Tilghman, Stephen M. Boué, Virgilio A. Salvo, Steven Elliott, K. Y. Williams, Elena V. Skripnikova, Hasina Ashe, Florastina Payton-Stewart, **Lyndsay Vanhoy-Rhodes**, Juan Pablo Fonseca, Cynthia Corbitt, Bridgette M. Collins-Burow, Melanie H. Howell, Michelle Lacey, Betty Y. Shih, Carol Carter-Wientjes, Thomas E. Cleveland, John A. McLachlan, Thomas E. Wiese, Barbara S. Beckman, and Matthew E. Burow. Glyceollin I, a Novel Antiestrogenic Phytoalexin Isolated from Activated Soy. *J Pharmacol Exp Ther* 2010, **332**(1): 35-45. PMID: 19797619

Erica N. Nierth-Simpson, Melvenia M. Martin, Tung-Chin Chiang, Lilia I. Melnik, **Lyndsay V. Rhodes**, Shannon E. Muir, Matthew E. Burow, and John A. McLachlan. Human uterine smooth muscle and leiomyoma cells differ in their rapid 17β -estradiol signaling: implications for proliferation. *Endocrinology* 2009, **150**(5): 2436-45. PMID: 19179429

Bich N. Duong, Steven Elliott, Daniel E. Frigo, Lilia I. Melnik, **Lyndsay Vanhoy**, Suzanne Tomchuck, Helena P. Lebeau, Odile David, Barbara S. Beckman, Jawed Alam, Melyssa R. Bratton, John A. McLachlan, Matthew E. Burow. AKT regulation of estrogen receptor β transcriptional activity in breast cancer. *Cancer Research* 2006, **66**(17): 8373-81. PMID: 16951146

Select Presentations

Poster: Defining effects of alternative splicing of long non-coding RNA HOTAIR on RNA networks regulating breast cancer progression. Annual American Society for Cell Biology Research Meeting, San Diego, CA, December 2018.

*Invited Speaker: Identifying essential oils as potential anti-cancer agents in estrogen receptor-positive breast cancer. Essential Oil Symposium for Medical Professionals, Roseman University of Health Sciences, Las Vegas, NV, October 2018.

Presentation: Collaborative Research to Make and Test Resveratrol Analogues for Promotion of Bone Differentiation in Human Mesenchymal Stem Cells. Whitaker Center STEMinar, Florida Gulf Coast University, Fort Myers, FL, March 2017.

Poster: SOARing Eagles: Student Opportunities for Authentic Research. Association of Southeastern Biologist Annual Meeting. Montgomery, AL, March 2017.

Poster: Exploring the utility of natural and synthetic resveratrol derivatives for bone regrowth following loss due to breast cancer therapies. Annual American Association for Cancer Research Meeting. New Orleans, LA, April 2016.

Poster: The tumor suppressor Liver Kinase B1 inhibits triple-negative breast cancer cell metastasis via regulation of AP-1 signaling. Annual American Association for Cancer Research Meeting. San Diego, April 2014. Cancer Research 74(19 Supplement):1571.

Poster: Glyceollin inhibits triple-negative breast cancer cell tumorigenesis and migration through activation of LKB1-AMPK signaling; Tulane University Research Days, Tulane University, New Orleans, LA, April 2012, Awarded best poster presentation by Tulane Cancer Center.

Poster: Epigenetic regulation of microRNA by HDAC inhibitor Panobinostat (LBH589) in the triple-negative breast cancer phenotype; Keystone Symposia - MicroRNAs and Non-Coding RNAs and Cancer, Banff, Alberta, Canada. February 2011.

Poster: Effects of human mesenchymal stem cells on ER-positive human breast carcinoma cells mediated through ER-SDF-1/CXCR4 crosstalk; Joint MRS-AACR Conference: Metastasis and the Tumor Microenvironment, Philadelphia, PA. September 2010.

Poster: Adult human mesenchymal stem cells enhance breast cancer tumorigenesis and promote hormone independence; St. Jude National Graduate Student Symposium, Memphis, TN. April 2009.

Invited Platform Speaker: Adult human mesenchymal stem cells enhance breast cancer tumorigenesis and promote hormone independence; DOD Breast Cancer Research Program Era of Hope Meeting, Baltimore, MD. June 2008.

Poster: Mesenchymal stem cells within tumor stroma promote breast tumor growth and hormone independence. Annual American Association for Cancer Research Meeting. San Diego, CA, April 2008.

Poster: CXCR4 Drives Breast Carcinoma to Hormone-Independent and Metastatic Phenotype; Molecular and Cellular Biology Program Annual Research Days, Tulane University School of Medicine, New Orleans, LA. March 2007.

*Invited Alumnus Speaker: Chemokines in Breast Cancer; George A. Pfeiffer Science Symposium, Pfeiffer University, Misenheimer, NC. October 2006.

Select Abstracts

Megan Keller, Analiese Thomas-Larocque, Rachel Ranschau, and Lyndsay Rhodes. Resveratrol and its Analogs Inhibit Triple-Negative Breast Cancer Motility by Regulation of Epithelial-Mesenchymal Transition. Poster Presentation. Annual American Society for Cell Biology Research Meeting, San Diego, CA, December 2018.

Xylia Horgan, Daniel Paull, and Lyndsay Rhodes. Resveratrol analogues surprisingly effective against triple-negative breast cancer, independent of ER-alpha. Poster Presentation. Annual American Society for Cell Biology Research Meeting, San Diego, CA, December 2018.

Sara Lohbauer, Talia Hammer, Brandon Ashley, and Lyndsay Rhodes. HOTAIR: The Role of long non-coding RNA Regulation in Breast Cancer. Oral Presentation. National Conference for Undergraduate Research, Memphis, TN, April 2017.

Alejandra Londono and Lyndsay Rhodes. Exploring the effects of resveratrol and stilbene derivatives in estrogen receptor positive cancers. 11th Annual Undergraduate Student Caucus and Poster Competition, AACR, New Orleans, LA, April 2016.

Evan Roberts and Lyndsay Rhodes. Comparison of resveratrol derivatives for anti-cancer activity in estrogen receptor-positive versus estrogen receptor-negative breast cancer cells. 11th Annual Undergraduate Student Caucus and Poster Competition, AACR, New Orleans, LA, April 2016. *Cancer Research* 76(14 Supplement):3318.

Ellen Vann and Lyndsay Rhodes. Anti-cancer effects of stilbene analogues in triple-negative breast cancer cell lines. 11th Annual Undergraduate Student Caucus and Poster Competition, AACR, New Orleans, LA, April 2016.

Hope E Burks, Lyndsay V Rhodes, Elizabeth C Martin, Van T Hoang, Steven Elliott, Melody Badoo, Theresa Phamduy, Aaron Buechlein, Douglas Rusch, Douglas Chrisey, Erik Flemington, Kenneth Nephew, Bridgette Collins-Burow, Matthew E Burow. ZEB2 drives cell motility and metastasis in ER+ breast cancer cells through a novel, E-cadherin independent pathway. *Cancer Research* 2016, 76 (14 supp): 4410

Van T Hoang, Steven Elliott, Elizabeth C Martin, Lyndsay V Rhodes, Hope E Burks, Margarite Matossian, Suravi Chakrabarty, Darlene Monlish, Theresa B Phamduy, Lowry Curley, Muralidharan Anbalagan, Brian G Rowan, Doug Chrisey, Jane E Cavanaugh, Patrick T Flaherty, Bridgette M Collins-Burow, Matthew E Burow. Induction of mesenchymal-to-epithelial transition through pan-MEK inhibition in triple-negative breast cancer. *Cancer Research* 2016, 76 (14 supp): 1596.

Hope E Burks, Lyndsay V Rhodes, Elizabeth C Martin, Theresa B T Phamduy, Steven Elliott, Van Hoang, H Chris Segar, Aaron Buechlein, Douglas Rusch, Dave Miller, Melody Badoo, Erik Flemington, Kenneth Nephew, DB Chrisey, Bridgette Collins-Burow, and Matthew E Burow. ZEB2 promotes cell motility and metastasis in ER+ breast cancer cells. *Cancer Research* 74(19 Supplement):1034.

Van T Hoang, Steven Elliott, Elizabeth C Martin, Lyndsay V Rhodes, Henry C Segar, Hope Burks, Suravi Chakrabarty, Darlene Monlish, Theresa B Phamduy, Doug Chrisey, Jane E Cavanaugh, Patrick Flaherty, Bridgette M Collins-Burow, Matthew E Burow. Dual role of MEK1/2 and MEK5 in the reversal of epithelial-to-mesenchymal transition. *Cancer Research* 2014, 74 (19 supp): 1052.

Theresa B Phamduy, Lyndsay V Rhodes, Matthew E Burow, Douglas B Chrisey. Electrical impedance assessment of the effect of LBH589 on the cellular behavior and migratory potential of breast cancer cells. *Mol Cancer Research* 2013, 11 (10 supp): A016.

FUNDING

Current Funding

Holmes Development Grant, “Tumor Architecture Effects on Pancreatic Adenocarcinoma Cell Differentiation.” My role: PI. Co-investigators: Jiehong Liao and Chris Geiger. 8/20/2018 – 5/3/2019, \$5,000.

Cancer Research Program (Registered Student Organization) Foundation and Private Accounts, My role: Advisor. These accounts hold funds from private donations and other fundraising efforts by the CRP organization. These funds are used to support the three arms of our mission: 1. Student Cancer Research at FGCU, 2. Community Education, 3. Patient Advocacy. Funds raised/donated since founding in January 2017: \$11,526

Past Research Support

Seidler Grant, “Identifying stilbenes to inhibit triple-negative breast cancer migration“. My role: PI. 5/14/2018 – 6/22/2018, \$6,740.

Southwest Florida Community Foundation Grant (Cancer Research Program RSO in collaboration with the Whitaker Center for STEM Education), “Demystifying Cancer/CRP-Engage” 12/1/2017-12/1/2018, \$4,183 total (\$2091.50 from SWFL Community Foundation with \$2091.50 match from FGCU Foundation)

Florida Gulf Coast Multidisciplinary Research Initiative Award, “A new leap toward tackling degenerative bone disease: osteogenesis by optimizing the structure of novel analogues of ‘miracle-drug’ resveratrol to chemically direct adult stem cells to take regenerative action.” My role: PI. 7/2015 – 8/2016, \$15,000.

Tulane University Cancer Center Matching Funds Postdoctoral Award, “Identification & exploitation of microRNAs: reversal of the epithelial-to-mesenchymal transition in triple-negative breast carcinoma.” My role: PI. 6/2011 – 5/2012.

DoD Breast Cancer Predoctoral Traineeship Award BC061597 “The SDF1-CXCR4 Axis Functions Through p38-MAPK Signaling to Drive Breast Cancer Progression and Metastasis.” My role: PI. 8/30/2006 – 9/29/2009.

Grant Submissions (Not Funded)

Avon Breast Cancer Crusade (1.7.16), My role: PI, “Extracellular matrix mediated transformation of breast cancer” (requested \$200,000 over 2 years)

Hirshberg Foundation for Pancreatic Cancer Research Seed Grant (8/15/17), My role: PI, “Evaluation of microenvironment and tumor architecture on pancreatic adenocarcinoma progression using tumor decellularization model” (requested \$40,000 for 1 year)

James and Esther King Biomedical Research Program (10/6/17), My role: PI, Co-PIs: Chris Geiger and Jiehong Liao, “Effects of smoking on extracellular architecture and composition in pancreatic ductal adenocarcinoma” (requested \$647,686 over 3 years)

National Pancreas Foundation (1/31/18), My role: PI, “Microenvironment and tumor architecture effects on pancreatic adenocarcinoma progression using decellularization model” (requested \$47,731 for 1 year)

Breast Cancer Alliance Exceptional Project Grant (4/6/18), My role: PI, “Defining the effects of alternative splicing of long non-coding RNA HOTAIR on non-coding RNA networks regulating breast cancer progression” (requested \$100,000 for 1 year)

University Gifts and Donations

Arthrex donation of 60 bottles of cell culture media (May 2015) - estimated value \$2,000

NeoGenomics donation of various lab equipment/supplies (Oct 2017) – estimated value \$655

doTERRA, donation of 52 essential oils for research (Aug 2018) – estimated value \$2,235.75

Student Research Funding

Undergraduate Student Scholarship Support Award (USSSA)

- Xylia Horgan, Megan Keller, and Analiese Thomas-Larocque, Travel to American Society for Cell Biology Annual Meeting in San Diego, CA, Fall 2018, \$550 each
- Michelle Felden, Research supplies for Stem Cell and Scaffold project, Spring 2018, \$750
- Megan Keller and Domingo Alvarez, Travel to Florida Undergraduate Research Symposium to present their work on Stilbenes and Epithelial-to-Mesenchymal Transition, Spring 2018, \$500
- Sara Lohbauer, Talia Hammer, Brandon Ashley, National Conference for Undergraduate Research meeting registration fees, Spring 2017, \$190 per person
- Alejandra Londono, Supported travel to Annual American Association for Cancer Research meeting for presentation of research at the Undergraduate Student Caucus, Spring 2016, \$750
- Evan Roberts, Travel to Annual American Association for Cancer Research meeting for presentation of research at the Undergraduate Student Caucus, Spring 2016, \$750
- Ellen Vann, Travel to Annual American Association for Cancer Research meeting for presentation of research at the Undergraduate Student Caucus, Spring 2016, \$750
- Sara Lohbauer and Talia Hammer, Supplied research materials for HOTAIR project, Spring 2016, \$750

Whitaker Center for STEM Education Mini-Grant

- Xylia Horgan, Supplies for research materials for Stilbenes and Breast Cancer Project, Fall 2018, \$487
- Michelle Felden, Supplied research materials for Stem Cell and Scaffold project, Spring 2018, \$458
- Brandon Ashley, Talia Hammer, Sara Lohbauer, Supported travel to National Conference for Undergraduate Research, Spring 2017, \$1,000 per person
- Talia Hammer, Supplied research materials for HOTAIR project, 2016, \$455

Honors Program Development Grant

- Xylia Horgan, Supplies for research materials for cell cycle analysis in triple-negative breast cancer stilbene project, Fall 2018, \$1450
- Xylia Horgan, Supplies for apoptosis assays for triple-negative breast cancer stilbene project, Spring 2018, \$1,500
- Xylia Horgan, Nicole Mamprejew, and Hannah Tatum, Supplies for cellular and molecular research project on stilbenes in triple-negative breast cancer, Fall 2017, \$4,500
- Bertin Cenatus, Inverted Tissue Culture Microscope, Fall 2017, \$1,225
- Hnin Soe and Sara Johnson, Supplies to support general cell culture research, Fall 2017, \$700
- Sara Lohbauer, Supplied research materials for HOTAIR project, Spring 2017, \$1,500
- Brandon Ashley, Supplied research materials for HOTAIR project, Spring 2017, \$1,500
- Sara Lohbauer, Supplied research materials for HOTAIR project, Fall 2016, \$1,500
- Brandon Ashley, Supplied research materials for HOTAIR project, Fall 2016, \$1,500
- Sara Lohbauer, Supplied research materials for HOTAIR project, Spring 2016, \$1,500
- Brandon Ashley, Supplied research materials for HOTAIR project, Spring 2016, \$1,500

Student Government Association Funding

- Xylia Horgan, Megan Keller, and Analiese Thomas-Larocque, Registration costs and travel to American Society for Cell Biology Annual Meeting in San Diego, CA, Fall 2018, \$1,926 total

PATENTS

U.S. Patent 8,962,679: "DAIDZEIN ANALOGS AS TREATMENT FOR CANCER"

Inventors: Guangdi Wang, Matthew E. Burow, Stephen M. Boue, Bridgette M. Collins-Burow, **Lyndsay V Rhodes**, Thomas E. Wiese, Quan Jiang. Filed July 8, 2011, Issued February 24, 2015.

PRESS

Gulf Coast Live, WGPU, Fort Myers, FL. (May 2017) "Curious Gulf Coast Asks: Does SWFL Have More Cases of Pediatric Cancer?" <http://news.wgcu.org/post/curious-gulf-coast-asks-does-swfl-have-more-cases-pediatric-cancer-1>

Gulf Coast Live, WGPU, Fort Myers, FL. (Nov 2017) "FGCU Home to New Cancer Research Program" <http://news.wgcu.org/post/fgcu-home-new-cancer-research-program>

FGCU 360 Magazine (Nov 2017) "A club in search of a cure" <https://fgcu360.com/2017/11/03/collective-club-search-cure/>

Naples Daily News/News-Press, Fort Myers, FL. (Nov 2017) "FGCU students trying to find a treatment for breast cancer" <https://www.news-press.com/story/news/education/2017/11/27/fgcu-students-trying-find-treatment-breast-cancer/830280001/>

ABC-7, Fort Myers, FL. (December 2017) "FGCU students take on cancer in the classroom and beyond" <https://www.abc-7.com/story/36975105/fgcu-student-leading-fight-against-cancer-on-campus-and-beyond>

Eagle News, Florida Gulf Coast University, Fort Myers, FL. (Jan 2018) “Cancer Research Program makes “exciting” discovery in studies on breast cancer cells”

Southwest Florida Community Foundation – Faceclips. (Sept 2018) “Tribe Stories 2018: Cancer Research Program-Engage (CRP-Engage)” <https://www.faceclips.net/video/fSLNy7ymu5E/tribe-stories.html>

News-Press, Fort Myers, FL. (Feb 2019) “FGCY researchers study everything from golf swings to cancer treatments” <https://www.news-press.com/story/news/education/2019/02/04/research-roadshow-fgcu-researchers-study-everything-from-golf-swings-to-cancer-treatments/2712212002/>

Wink News. (Feb 2019) “FGCU ‘Research Roadshow’ showcases innovative endeavors” <https://www.winknews.com/2019/02/06/fgcu-research-roadshow-showcases-innovative-endeavors/>