

KRISTY YOUNG JOHNSON, Ph.D.

Education

1992 - 1998: Medical University of South Carolina, Charleston, S. C.
Department of Pathology and Laboratory Medicine,
Ph.D. - May 28th, 1998

Research Topics: Characterization of the phosphorylation of the Bcl-2 oncoprotein
Characterization of a protein antigen lost in apoptotic cell death
Development of a novel nick translation protocol
Screening of various human tissues for reactivity to the B3 antibody

Honors and Awards: 1998 Annual Meeting of the American Association for Cancer
Research
- selected to participate in Poster Discussion Session
1997 MUSC Student Research Day,
- 2nd place in "Ph.D. 3rd year +" category

Dissertation: Characterization and Analysis of the Hyperphosphorylation of the Bcl-2
Protein.
Advisor: Mark C. Willingham, M.D.

1988 - 1992: Gardner-Webb University, Boiling Springs, N. C.
B.S. in **Chemistry** with minors in **Biology** and Religious Education

Employment History

August 2002 – present: Biology Department at The Citadel
- Assistant Professor: Fall 2002 - Spring 2008
Associate Professor: Fall 2008 - present
- **General Biology I and II (undergraduate)**
Introduction to Biology I and II (undergraduate)
Microbiology (undergraduate & graduate)
Genetics (undergraduate & graduate)
Descriptive Histology (undergraduate & graduate)
Bioterrorism (undergraduate)
Sophomore Leadership (undergraduate)
Junior Ethics Enrichment Experience (undergraduate)
- Faculty advisor to BioCid and Tri-Beta (2004-2010)
- MUSC Teaching Internship coordinator

August 2001 – May 2002: Adjunct Professor at The Citadel
- **General Biology (undergraduate)**
- **Microbiology (undergraduate)**

June 1998 – June 2001: Post-doctoral fellow at the Medical University of South Carolina
- Research topics:
- Signal transduction pathways involving *ras*
- Mode of *Pseudomonas aeruginosa* exoenzyme S transmission
- Supervisor: Timothy S. Vincent, Ph.D.

January 2001 – May 2001: Adjunct faculty at the Citadel
- **Genetics (undergraduate laboratory)**

August 2000 –December 2000: Adjunct faculty at the College of Charleston
- **General Chemistry (undergraduate laboratory)**

January 2000 – May 2000: Adjunct faculty at the Citadel
- **Descriptive Histology (undergraduate lecture and laboratory)**

Students Mentored in Research

Fernando Gonzalez: 2016

- Extraction and measurement of cortisol from human hair

Ivan Dingle: 2015-2016

- Extraction and measurement of cortisol from human hair

Collins Langley: 2015-2016

- Extraction and measurement of cortisol from human hair

Barrett Bradham: 2015-2016

- Extraction and measurement of cortisol from human hair

Zach Ford: 2013-2016

- Analysis antibacterial effects of citrus extract

- Extraction and measurement of cortisol from human hair

Katelyn Ketchie: 2013

- Literature review of house finch ecology

Chuck Fyfe (cadet): 2012-2014

- Extraction and measurement of corticosterone from feathers
- Extraction and measurement of cortisol from human hair

Eric Benfield (cadet): 2012-2014

- Extraction and measurement of corticosterone from feathers
- Extraction and measurement of cortisol from human hair

Jason Whiteside (graduate student): 2012

- Extraction of corticosterone from feathers

Celia Jackson (graduate student): 2012

- Extraction of corticosterone from feathers

Ron Willis (cadet): 2011-2012

- Extraction and measurement of corticosterone from feathers

Alex Anderson (cadet): 2011-2012

- Extraction and measurement of corticosterone from feathers

Philip Davis (cadet): 2011

- Literature review

Heather Burke (graduate student): 2010

- Literature review

Preston Payne (cadet): 2010

- Detecting Antibodies to the West Nile Virus in serum

Michael Graves (graduate student): 2009-2010

- Detecting Antibodies to the West Nile Virus in serum

Mary Ann Baybo (graduate student): 2009

- Developing protocol for West Nile Virus antibody detection

Cris Musselwhite (cadet): 2008

- Developing protocol for West Nile Virus antibody detection

Amanda Aguirre (graduate student): 2008

- Developing protocol for West Nile Virus antibody detection

Angela Robinson (graduate student): 2008

- Literature review

Will Andersen (cadet): 2007

- Streptomycin resistance in *Pseudomonas aeruginosa*
- Sequential exposure of bacteria to streptomycin
- Bacterial sample collection
- West Nile Virus exposure in local house finches

Nick Reece (graduate student): 2007

- West Nile Virus exposure in local house finches

Angela Robinson (graduate student): 2007

- Literature review

Nancy Bright (graduate student): 2006

- Antibiotic Resistance in *Pseudomonas aeruginosa*
- Literature review

Tyson McCormick (graduate student): 2005

- Antibiotic resistance in various bacterial species
- Exposure of bacteria to a panel of antibiotics
- Evaluation of resistance

Beth Bohachic (cadet): 2004-2005

- Sphingosine-Kinase-1 levels in human tissues
- Western blot analysis
- Literature review

Daniel Brown (cadet): 2003

- Assisted in obtaining volunteer placement in MUSC research laboratory

Viann Bolick (cadet): 2002

- Assisted in obtaining volunteer placement in MUSC research laboratory

Grant Funding

Externally Funded Non-Research Grant:

- Medical University of South Carolina. 3rd International Charleston Ceramide Conference Travel Fellowship. 2005. (\$525.00 awarded)

Citadel Foundation Faculty Research Grants:

- "Cortisol Levels in Human Hair." \$2996.00 awarded in 2013.

- "Extraction of Corticosterone from House Finch Feathers." \$2983.28 awarded in 2012.

- "Analysis of West Nile Virus Exposure in Local House Finches." \$2705.00 awarded in 2011.

- "Detection of Antibodies to West Nile Virus in Serum Samples." \$2692.50 awarded in 2010.

- "Analyzing Tetracycline Resistance in *Pseudomonas aeruginosa*." \$2891.00 awarded in 2009.

- "The in vitro Evolution of Antibiotic Resistance in *Pseudomonas aeruginosa*." \$2741.50 awarded in 2008.

- "Analysis of Sphingolipid Profiles in Non-Small Cell Lung Tumors." \$2415.00 awarded in 2007.

- "Immunolocalization of Sphingosine Kinase-1 in Human Lung Tissue." \$2295.45 awarded in 2006.

- "Relative Expression Levels of Sphingosine Kinase-1 in Normal and Tumor Tissues." \$2845.00 awarded in 2005.

External Research Funding

- Analysis of Antibacterial Effects of Citrus Extract. Collaborative Project funded by Dr. Henry Cross.

ABSTRACTS (* indicates student author)

2015 Association of Southeastern Biologists. A Long-Term Study of Cortisol as a Biomarker for Chronic and Acute Stressors. Barrett W. Bradham*, Zachary S. Ford*, Collins T. Langley*, Danny J. Gustafson, Kristy Y. Johnson.

- also presented at the 2015 Citadel Student Research Conference

2015 Southeastern Psychological Association. Cortisol Response to Perceived Stress in College Students. Scherder, E. *, Matthews, D., Johnson, K., & Lassiter, K.

2014 Association of Southeastern Biologists. A Long-Term Study of Cortisol as a Biomarker for Chronic and Acute Stressors. *C. Fyfe, *E. Benfield, *B. Bradham, K.Y. Johnson.

- also presented at the 2014 Citadel Student Research Conference

2013 Citadel Undergraduate Research Conference. Can Corticosterone Reflect Behavior? *E. Benfield, *C. Fyfe, P. Nolan, K.Y. Johnson. (2nd Place CURC Award)

2012 Citadel Undergraduate Research Conference. The Stress of Captivity in Birds. *R. Willis, J. Tyrell, S. Schabel, P.M. Nolan, K.Y. Johnson.

2011 COS/AOU/SCO Joint Meeting (Cooper Ornithological Society, American Ornithologists' Union, Society of Canadian Ornithologists). February, 2011. Hormonal Correlates of West Nile Virus Seropositivity in House Finches. A.B. Anderson*, P.M. Nolan, K.Y. Johnson.

2010 Animal Behavior Society Meeting. July, 2010. Ptilochronology Relates to West Nile Virus Seropositivity in House Finches, *Carpodacus mexicanus*. *C. P. Payne, P. M. Nolan, *M. Graves, K. Y. Johnson.

2010 COS/AOU/SCO Joint Meeting (Cooper Ornithological Society, American Ornithologists' Union, Society of Canadian Ornithologists). February 9, 2010. Demographic and Seasonal Patterns of West Nile Virus Seropositivity in House Finches. P.M. Nolan, *M. Graves, K.Y. Johnson.

39th Annual Southeast Lipid Regional Conference. November 4, 2004. Elevated Sphingosine Kinase Expression in Lung Cancer Facilitates Tumorigenesis. Johnson, K.R., Johnson, K.Y., and Obeid, L.M.

American Society for Engineering Education - Southeast Section Annual Conference. Scholarship of Teaching and Learning Across the Disciplines. Kenneth P. Brannan, Suzanne T. Marbrouk, Alix G. Darden, Virginia M. DeRoma, Russell O. Hilleke, Kristy Y. Johnson, and Dennis J. Fallon. Auburn University, Auburn, Alabama, April 4 - 6, 2004

Hollings Cancer Center 1st Annual Research Retreat. August 31, 2001. Mechanisms of Growth Suppression of Cancer Cells by the Monoterperne Perillyl Alcohol. Vincent, T.S., Johnson, K.Y., Re, G., Baker, V., Meier, K.E., and Meier, G.P.

American Association for Cancer Research – National Cancer Institute – European Organization for Research and Treatment of Cancer International Conference. Structural Requirements of Perillyl Alcohol for Growth Suppression of Prostate and Bladder Cancer Cells. Timothy S. Vincent, Kristy Y. Johnson, Gian G. Re, Kathryn E. Meier, and Patrick Meier. Miami Beach, Florida, October 29-November 2, 2001.

89th Annual Meeting of the American Association for Cancer Research. March 28 – April 1, 1998, New Orleans, LA. Bcl-2 Hyperphosphorylation Occurs in G2/M Phase of the Cell Cycle. Young, K.K., Johnson, K.R., Schandl, C.A., Li, S., Fan, W., and Willingham, M.C.

32nd Annual MUSC Student Research Day. November 7, 1997, Charleston, SC.

- a) Phosphorylation of Bcl-2 Coincides with G2/M Phase of the Cell Cycle. Young, K.K., Johnson, K.R., Li, S., Schandl, C.A., Willingham, M.C., and Fan, W.
- b) 5-Fluorouracil Antagonizes Paclitaxel Cytotoxicity Against Human Solid Tumor Cells *in vitro*. Johnson, K.R., Miller, M.C., Young, K.K., and Fan, W.

31st Annual MUSC Student Research Day. November 1, 1996, Charleston, SC. The Isoelectric Point of Bcl-2. Young, K.K., Schandl, C.A., and Willingham, M.C.

PEER-REVIEWED PUBLICATIONS

Scherder, E., Matthews, D., Johnson, K., & Lassiter, K. Cortisol Response to Perceived Stress in College Students. In preparation for publication.

Kristy Y. Johnson and Paul M. Nolan. Biological Weapons: Recognizing, Understanding, and Responding to the Threat. Accepted for publication by John Wiley and Sons Publishing. Expected publication date: April, 2016.

Paul M. Nolan and Kristy Y. Johnson. Effects of the West Nile Virus on the Ecology of the House Finch. In preparation for publication.

Timothy S. Vincent, Kristy Y. Johnson, Joseph J. Benich, Kathryn E. Meier, G. Patrick Meier. Growth Suppression of Prostate and Bladder Cancer Cells by Monoterpenes Correlates with Decreases in Intracellular Glutathione Levels. Currently in revision..

Johnson, K.R., Johnson, K.Y., Crellin, H.G., Ogretmen, B., Boylan, A.M., Harley, R.A., and Obeid, L.M. Immunohistochemical Distribution of Sphingosine Kinase 1 in Normal and Tumor Lung Tissue. *The Journal of Histochemistry and Cytochemistry*, 53: 1-8; 2005.

Korey R. Johnson, Kristy Y. Johnson, Kevin P. Becker, Jacek Bielawski, Cungui Mao, and Lina M. Obeid. Role of Human Sphingosine-1-phosphate Phosphatase 1 in the Regulation of Intra- and Extracellular Sphingosine-1-phosphate Levels and Cell Viability. *The Journal of Biological Chemistry*, 278: 34541 – 34547; 2003.

DeRoma, V. M., Young, A., Mabrouk, S. T., Brannan, K. P., Hilleke, R. O., & Johnson, K. Y. Procrastination and student performance on immediate and delayed quizzes, *Education*, 124, 40-48; 2003.

Young, K.K. and Vincent, T.S. A Minimal FLAG Sequence Useful in the Functional Epitope Tagging of H-Ras. *Biotechniques* 32: 1270-1280; 2002.

Johnson, K.R., Young, K.K., and Fan, W.F. Antagonistic Interplay Between Antimitotic and G1/S Arresting Agents Observed in Experimental Combination Therapy. *Clinical Cancer Research*, 5: 2559-2565; 1999.

Collins, J.A., Schandl, C.A., Young, K.K., Vesely, J., and Willingham, M.C. Major DNA Fragmentation is a Late Event in Apoptosis. *The Journal of Histochemistry and Cytochemistry*, 45 (7): 923-934; 1997.

INVITED PRESENTATIONS

“Archival Data: The Perspective of a Teacher and Researcher”
24th Annual Charleston Conference – Charleston, SC

“Pseudomonas aeruginosa: A Common Yet Dangerous Species”
Ralph H. Johnson Medical Center – Charleston, SC

“Characterization and Analysis of the Hyperphosphorylation of the Bcl-2 Protein”
Medical University of South Carolina – Charleston, SC

“Examining the Phosphorylation of the Bcl-2 Protein”
Medical University of South Carolina – Charleston, SC

“Characterization & Analysis of the Functional Role of Phosphorylation of the Bcl-2 Protein”
Medical University of South Carolina – Charleston, SC

“Phosphorylation: An Overview”
Medical University of South Carolina – Charleston, SC

“Breast Cancer and BRCA1”
Medical University of South Carolina – Charleston, SC

“Do Some Unique Histones Have a Role in Apoptosis?”

Medical University of South Carolina – Charleston, SC

“Transfecting Genes Into Mammalian Cells”

Medical University of South Carolina – Charleston, SC

SPECIALTY TRAINING

2003-Present – Communication Across the Curriculum committee

2012 – Certified by Institute for Global Ethics to teach Ethics Workshop

Fall 2005 – Attended Life Management Center’s 10th Annual Southeastern Conference
- Russell A. Barkley, Ph.D., and Sandra F. Reif, M.A.: A Day Ahead: Living and Learning with ADHD

Fall 2004 – Attended Life Management Center’s 9th Annual Southeastern Conference
-Patricia Quinn, M.D.: ADHD: Setting the Record Straight

Fall 2003 – Attended Life Management Center’s 8th Annual Southeastern Conference
-Rick Lavoie: Behavior Management, Motivating Students, Strategies for Working with Learning Disabled Kids

Spring 2003 – Attended “Critical Thinking” workshop by Dr. Laura Kaplan

Fall 2002 – Attended “AD/HD: Nature and Management” workshop by Dr. Russell Barkley

Spring 2001 – Completed Teaching Techniques course at Medical University of South Carolina

Spring 2000 – Attended “Communication Across the Curriculum” workshop