

Kristy Y. Johnson, Ph.D.

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RESEARCH INTERESTS

Cortisol Levels in Response to Chronic Stress
Exposure to Phthalates from Personal Care Products
Biological Weapons

EDUCATION

PhD in Pathology and Laboratory Medicine, 1998.
Medical University of South Carolina, Charleston, SC.
Dissertation: *Characterization and Analysis of the Hyperphosphorylation of the Bcl-2 Protein*.
Mark Willingham, Chair

Other Projects: Characterization of a protein antigen lost in apoptotic cell death
Development of a novel nick translation protocol
Screening of human tissue for reactivity to B3 antibody

BS in Chemistry, minors in Biology and Religion, May 1992.
Gardner-Webb University, Boiling Springs, NC.

APPOINTMENTS

Associate Professor: The Citadel, Department of Biology, 2008 to Present.

Assistant Professor: The Citadel, August 2002 to July 2008.

Post-doctoral Fellow: Medical University of South Carolina, 1998-2001.

Adjunct Faculty: The Citadel, Department of Biology, January 2001-May 2001.

Adjunct Faculty: College of Charleston, Department of Chemistry, August 2000-December 2000.

Adjunct Faculty: The Citadel, Department of Biology, January 2000-May 2000.

TEACHING EXPERIENCE

Adjunct/Assistant/Associate Professor, The Citadel

- Introduction to Biology (for science majors), BIOL130, BIOL140
- General Biology (for non-science majors), BIOL101/111, BIOL102/112, BIOL105
- Descriptive Histology, BIOL412, BIOL512
- Pathophysiology, BIOL340, BIOL610
- Genetics, BIOL308
- Microbiology, BIOL310
- Bioterrorism, BIOL207
- Junior Ethics Enrichment Experience, LDRS311

Adjunct Professor, College of Charleston

- General Chemistry Laboratory, CHEM111

GRANTS / HONORS / AWARDS

Externally Funded Non-Research Grants:

- “NSF Robert Noyce Teaching Scholarship Grant.” Assumed role of PI after Year 2. 2016.
“3rd International Charleston Ceramide Conference Travel Fellowship.” 2005.

Citadel Foundation Faculty Research Grants:

- “Correlation of Cortisol Levels with Stress in Citadel Cadets.” 2018.
“Continued Analysis of Cortisol Levels in Bond Volunteer Aspirants.” 2017.
“Cortisol Levels in Bond Volunteer Aspirants.” 2016.
“Cortisol Levels in Athletes.” 2015.
“Cortisol Levels in Citadel and College of Charleston Freshmen.” 2014.
“Cortisol Levels in Human Hair.” 2013.
“Extraction of Corticosterone from House Finch Feathers.” 2012.
“Analysis of West Nile Virus Exposure in Local House Finches.” 2011.
“Detection of Antibodies to West Nile Virus in Serum Samples.” 2010.
“Analyzing Tetracycline Resistance in *Pseudomonas aeruginosa*.” 2009.
“The in vitro Evolution of Antibiotic Resistance in *Pseudomonas aeruginosa*.” 2008.
“Analysis of Sphingolipid Profiles in Non-Small Cell Lung Tumors.” 2007.
“Immunolocalization of Sphingosine Kinase-1 in Human Lung Tissue.” 2006.
“Relative Expression Levels of Sphingosine Kinase-1 in Normal and Tumor Tissues.” 2005.

External Research Funding

- “Analysis of Antibacterial Effects of Citrus Extract.” Collaborative Project funded by Dr. Henry Cross. 2013

SERVICE ACTIVITIES

Chair, Department of Nursing Tenure and Promotion Committee
Chair, Visiting Faculty Search Committee
Chair, Research and Presentation Grants Committee
Chair, Communication Across the Curriculum Committee
Sabbaticals Committee
Leadership Committee
Library Services Committee
Undergraduate Admissions Committee
Graduate Honor Council
Teaching Internship Coordinator
New Faculty Mentor
Graduate Advisor for MA Teaching
Undergraduate Advisor

PUBLICATIONS

Textbook

Johnson, Kristy and Nolan, Paul. *Biological Weapons: Recognizing, Understanding, and Responding to the Threat*. John Wiley and Sons Publishing, 2016

Peer-reviewed Journals

Mason, E., Matthews, D., Lassiter, K. and Johnson, K. "Hair Cortisol Concentrations: Potential Variance Between Age Groups, A Retrospective Analysis." *The North American Journal of Psychology*, 22(4): 619-632; 2020.

Vincent, TS, Johnson, KY, Benich, JJ, Meier, KE, Meier, GP. "Growth Suppression of Prostate and Bladder Cancer Cells by Monoterpenes Correlates with Decreases in Intracellular Glutathione Levels." *Currently in revision*.

Johnson, KR, Johnson, KY, Crellin, HG, Ogretmen, B, Boylan, AM, Harley, RA, and Obeid, LM "Immunohistochemical Distribution of Sphingosine Kinase 1 in Normal and Tumor Lung Tissue." *The Journal of Histochemistry and Cytochemistry*, 53: 1-8; 2005.

Johnson, KR, Johnson, KY, Becker, KP, Bielawski, J, Mao, C, and Obeid, LM. "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, ST, Brannan, KP, Hilleke, RO, & Johnson, KY. "Procrastination and student performance on immediate and delayed quizzes." *Education*, 124, 40-48; 2003.

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

Johnson, KR, Young, KK, and Fan, WF. "Antagonistic Interplay Between Antimitotic and G1/S Arresting Agents Observed in Experimental Combination Therapy." *Clinical Cancer Research*, 5: 2559-2565; 1999.

Collins, JA, Schandl, CA, Young, KK, Vesely, J, and Willingham, MC. "Major DNA Fragmentation is a Late Event in Apoptosis." *The Journal of Histochemistry and Cytochemistry*, 45 (7): 923-934; 1997.

CONFERENCE PRESENTATIONS (*indicates student author)

2019 Student Excellence Day. Analysis of Long-Term Cortisol Levels in Individual Bond Volunteers. Jackson Boyd*, Emily Mason*, Harrison Boorda*, Kerry Lassiter, Darin Matthews, and Kristy Johnson.

2018 Southeastern Psychological Association Meeting. Effects of Perceived Stress on Cortisol Levels in College Students. Darin Matthews, Kerry Lassiter, and Kristy Johnson.

2018 Citadel Undergraduate Research Conference. A Long-Term Study of Cortisol as a Biomarker for Chronic Stressor in College Students. Brooke Everly*, Ahmet Arda*, and Kristy Johnson.

2017 Citadel Research Conference. A Long-Term Study of Cortisol as a Biomarker for Chronic Stressors. Ivan M. Dingle*, Zachary S. Ford*, Fernando U. Gonzalez*, Jackson Boyd*, George D. Graham*, Brooke Everly*, Danny J. Gustafson, and Kristy Y. Johnson.
-also presented at the 2017 National Conference on Undergraduate Research

2016 Associate of Southeastern Biologists. A Long-Term Study of Cortisol as a Biomarker for Chronic Stressors in Bond Volunteer Aspirants. Ivan P. Dingle*, Zachary S. Ford*, Fernando U. Gonzalez*, Dillon Graham*, Danny J. Gustafson, and Kristy Y. Johnson.
- also presented at the 2016 Citadel Student Research Conference (2nd place award in Undergraduate Division)

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.

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

2004. 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.

2001. Hollings Cancer Center 1st Annual Research Retreat. 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.

2001. 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.

1998. 89th Annual Meeting of the American Association for Cancer Research. March 28 – April 1, 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.

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

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

MEMBERSHIPS / AFFILIATIONS

American Association for the Advancement of Science
International Biosecurity and Prevention Forum

STUDENTS MENTORED IN RESEARCH

Kevyn Banda: 2020. Optimization of Cortisol Extraction from Human Hair.

Olivia Hime: 2020. Optimization of Cortisol Extraction from Human Hair.

Gabriel Mueller: 2019-2020. Optimization of Cortisol Extraction from Human Hair.

Alexis Shanok: 2019. Exposure of college students to phthalates.

Lauren Sordo: 2019. Exposure of college students to phthalates.

AJ Beane: 2019. Exposure of college students to phthalates.

Devyn Nyhart: 2020. Exposure of college students to phthalates.

Emily Mason: 2019. Extraction and analysis of cortisol from human hair samples.

Stacey Phillips: 2018. ELISA analysis of cortisol from human hair samples.

Domonique Rivers: 2018. ELISA analysis of cortisol from human hair samples.

Brooke Everly: 2018-2019. Extraction and analysis of cortisol from human hair samples.

Ahmet Arda: 2017-2018. Extraction and analysis of cortisol from human hair samples.

Jackson Boyd: 2016-2019. Extraction and analysis of cortisol from human hair samples.

Harrison Boorda: 2018-2019. Correlation of surveys to cortisol levels from Bond Volunteers.

Fernando Gonzalez: 2016. Extraction and analysis of cortisol from human hair samples.

Ivan Dingle: 2015-2016. Extraction and analysis of cortisol from human hair samples.

Collins Langley: 2015-2016. Extraction and analysis of cortisol from human hair samples.

Barrett Bradham: 2015-2016. Extraction and analysis of cortisol from human hair samples.

Zachary Ford: 2013-2016. Analysis antibacterial effects of citrus extract.

Katelyn Ketchie: 2013. Literature review of house finch ecology.

Chuck Fyfe: 2012-2014. Extraction and measurement of cortisol from human hair.

Eric Benfield: 2012-2014. Extraction and measurement of corticosterone from feathers.

Jason Whiteside: 2012. Extraction of corticosterone from feathers.

Celia Jackson: 2012. Extraction of corticosterone from feathers.

Ron Willis: 2011-2012. Extraction and measurement of corticosterone from feathers.

Alex Anderson: 2011-2012. Extraction and measurement of corticosterone from feathers.

Philip Davis: 2011. Literature review of corticosterone function.

Heather Burke: 2010. Literature review of house finch biology.

Preston Payne: 2010. Detecting Antibodies to the West Nile Virus in serum.

Michael Graves: 2009-2010. Detecting Antibodies to the West Nile Virus in serum.

Mary Ann Baybo: 2009. Developing protocol for West Nile Virus antibody detection.

Cris Musselwhite: 2008. Developing protocol for West Nile Virus antibody detection.

Amanda Aguirre: 2008. Developing protocol for West Nile Virus antibody detection.

Angela Robinson: 2008. Literature review of West Nile Virus prevalence.

Will Andersen: 2007. Streptomycin resistance in *Pseudomonas aeruginosa*.

Nick Reece: 2007. West Nile Virus exposure in local house finches.

Nancy Bright: 2006. Antibiotic Resistance in *Pseudomonas aeruginosa*.

Tyson McCormick: 2005. Antibiotic resistance in various bacterial species.

Beth Bohachic: 2004-2005. Sphingosine-Kinase-1 levels in human tissues.

Daniel Brown: 2003. Mentored in obtaining volunteer placement in MUSC research laboratory.

Viann Bolick: 2002. Mentored in obtaining volunteer placement in MUSC research laboratory