Gena Jester Nichols, PhD

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EDUCATION

2009	Ph.D. Microbiology and Immunology Wake Forest University School of Medicine Winston-Salem, NC
2004	B.S. Biology McMurry University Abilene, TX

EMPLOYMENT

2017 – current	Assistant Professor Department of Biology Regis University Denver, CO
2015 – 2017	Assistant Professor Department of Biological Sciences Averett University Danville, VA
Jan 2015 – July 2015	Adjunct Instructor of Biology South University-High Point High Point, NC
Jan 2015 – July 2015	Program Manager SRI International Center for Immunology and Infectious Disease Laboratory of Virology Harrisonburg, VA
Jan 2014 – Jan 2015	Postdoctoral Fellow SRI International Center for Immunology and Infectious Disease Laboratory of Virology Harrisonburg, VA

Nov 2009 – Jul 2012	Postdoctoral Fellow Tulane University Department of Microbiology and Immunology New Orleans, LA

TEACHING EXPERIENCE

Instructor
Biomedical Microbiology (BL620, 621); Masters program lecture and laboratory
Microbiology (BL418, BL419); lecture and laboratory
Cell and Molecular biology lab (BL261)
Organismic biology lab (BL263)
Writing Analytically (RCC200)
Microbiology (BIO301); lecture and laboratory
Introduction to Biology (BIO101); lecture and laboratory
Cellular and Molecular biology (BIO360); lecture and laboratory
Averett 101: Freshman success (IDS101); core curriculum

Courses in preparation
Virology lecture course (Spring 2019)

Laboratory Instruction
Undergraduate training:

2018 –	summer work study student researcher, undergraduate research students (5), Regis University Microbiology lab, Regis University
2017 – 2018	Microbiology lab, Organismic biology lab, Cell and molecular biology lab, Regis University
2015 – 2017	Intro biology lab, Microbiology Lab, Cell and Molecular biology lab
2011	Summer research students (2), Tulane University
2010 – 2011	Independent study student, Tulane University
2007 – 2009	Work study student, Wake Forest University
2004 – 2006	Independent study student, Wake Forest University

Graduate student training:

2018	MSBS Microbiology lab, Regis University
2011 – 2012	Masters student thesis, Tulane University School of Tropical Virology and Public Health Masters in Biology, Tulane University
2010 – 2011	PhD students in Biomedical Sciences, Tulane University (2) MD/PhD student, Tulane University
2009	PhD Student in Cancer Biology, Wake Forest University
2007	PhD Student in Microbiology and Immunology, Wake Forest University

PUBLICATIONS

Voss, T., MC Chen, **GJ Nichols**, SK Naveen, BT Bradley, and RW Cross. 2012. Dengue virus-pandemic influenza virus co-infection results in enhanced influenza virus replication through inhibition of apoptosis. *Retrovirology*. 9(Suppl 1):O10.

Nichols, G.J., J. Schaack, and D.A. Ornelles. 2009. Widespread phosphorylation of histone H2AX by species C adenovirus infection requires viral DNA replication. *J Virol*. 83:5987-98.

Waters, B.M., C. Lucena, F.J. Romera, **G.G. Jester**, A.N. Wynn, C.L. Rojas, E. Alcantara, and R. Perez-Vicente. 2007. Ethylene involvement in the regulation of the H(+)-ATPase CsHA1 gene and of the new isolated ferric reductase CsFRO1 and iron transporter CsIRT1 genes in cucumber plants. *Plant Physiol Biochem*. 45:293-301.

Manuscripts in preparation

Nichols, G.J. and T.G. Voss. Roles of ROK and MLCK in Dengue virus induced actin alterations and viral replication. *In preparation.*

PRESENTATIONS

Nichols, G.J. and T.G. Voss. Roles of ROK and MLCK on Dengue virus induced actin alterations and viral replication. (2011) American Society of Tropical Medicine and Hygeine, Philadelphia, PA.

Chen, M.C., **G.J. Nichols**, S.K. Naveen, V. Yadav, B.S. Kaplan, B.T. Bradley, J. Caskey, R.W. Cross, G. Manukian, and T.G. Voss. Dengue Virus-Pandemic Influenza Virus co-infection in cell culture and in ferrets. (2011) American Society of Tropical Medicine and Hygeine, Philadelphia, PA.

Nichols, G.J., J. Schaack, and D.A. Ornelles. Widespread phosphorylation of histone H2AX by species C adenovirus infection requires viral DNA replication. (2009) Wake Forest University Graduate Research Day.

Nichols, G.J. and D.A. Ornelles. Adenovirus DNA replication elicits phosphorylation of the histone variant H2AX by ATM and ATR. (2008) Molecular Biology of DNA Tumor Viruses Conference, Madison, WI.

Nichols, G.J. and D.A. Ornelles. Adenovirus alteration of cellular double-stranded DNA break signaling. (2008) Wake Forest University Graduate Research Day.

Nichols, G.J. and D.A. Ornelles. Adenovirus alteration of cellular double-stranded DNA break signaling. (2007) Workshop on Mechanisms of Viral Oncogenesis, Lake Tahoe, NV.

RESEARCH

Current

- Protein-protein interactions between Dengue virus and infected cells
    - Identifying cellular proteins involved in trafficking and egress of Dengue particles
- Investigating the efficacy of compounds in disrupting dental plaque biofilm formation

2014 – 2015 **SRI International**
Advisor: Thomas Voss, PhD

- Development of antiviral drugs and vaccines for Influenza virus in cell culture and animal models
- Investigating the cellular and viral proteins involved in exacerbated Influenza infection during co-infection with Dengue virus
- Identifying the role of Dengue viral proteins in cytoskeletal rearrangements and vascular leak

2009 – 2012 **Tulane University**
Advisor: Thomas Voss, PhD

- Development of antiviral drugs for Dengue and Influenza viruses in cell culture and animal models
- Identified cellular signaling pathways involved in Dengue virus replication and cytoskeletal rearrangements
- Developed animal models for Dengue virus infection and pathogenesis
- Investigated the results of co-infection of cells and animals with Dengue and Influenza viruses

2004 – 2009 **Wake Forest University**
Advisor: David Ornelles, PhD

- Studied the effects of Adenovirus genome replication on the activation of cellular DNA repair pathways
- Developed confocal microscopy techniques to visualize viral replication centers in the cell nucleus

2003 – 2004 **McMurry University**
Advisor: Brian Waters, PhD

- Cloned and characterized an iron transporter gene from *Cucumis sativus*

HONORS AND AWARDS

2018 Intitutional Design and technology Mini-grant awardee ($2000)
Microvolume molecular spectroscopy (Nanodrop) in biology laboratory classes
2007 Wake Forest University Alumni Travel Award
2006 Honors awarded for preliminary graduate exam, Wake Forest University
2005 – 2007 NIH predoctoral training grant
2004 – 2009 Wake Forest University Graduate Fellowship

UNIVERSITY SERVICE

- Institutional Care and Use of Animals Committee, 2017 – current
- Academic Standards and Policies Committee, Regis College, current
- Improved Technology and Learning Environment Committee, Averett University, 2016- 2017
    - Evaluation of current classrooms and available technology and determining how they can be updated and improved for student success

TECHNICAL SKILLS

Molecular and cell biology: mammalian and insect cell culture, cloning, transfections, RNAi, Western blot, Immunoprecipitation, PCR, qRT-PCR, DNA purification, Immunofluorescence, luciferase promoter assay, reverse genetics for influenza virus

Virology: infections, plaque assay, TCID50, plaque purification, virus production, hemagglutination and hemagglutination inhibition assays, plaque reduction neutralization assay

Immunology: ELIZA, flow cytometry, intracellular cytokine staining, interferon assay

Animal work: husbandry and care of small animals (mice, hamsters, ferrets), organ and blood processing, tissue sectioning and H&E staining