BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Brenda G. Hogue	Associate Professor
eRA COMMONS USER NAME bhogue	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Mississippi State University, Starkville, MS	B.S.	1972	Microbiology/Secondary Science Education
Duke University, Durham, NC	M.Ed.	1976	Microbiology/Secondary Science Education
University of Tennessee, Knoxville, TN	Ph.D.	1986	Molecular Virology
University of California, Los Angeles, CA	Postdoctoral	1986-1991	Molecular Virology/Biology

A. Professional Experience

1971-1972 Teacher, Pearl McLaurin High School, Jackson, MS
1972-1973 Teacher, Southern Council Academy, Durham, NC
1973-1978 Teacher, South Granville High School, Creedmoor, NC
1978-1980 Student, U. of Tennessee, D.V.M. Assistant, Oak Ridge, TN
1980-1986 Predoctoral Trainee, Department of Microbiology, Cell, Molecular and Developmental Biology Program, University of Tennessee, Knoxville, TN, Laboratory of Dr. David A. Brian
1986-1990 Postdoctoral Fellow, Dept. of Microbiology & Immunology, UCLA School of Medicine, UCLA, Laboratory of Dr. Debi P. Nayak
1990-1991 Assistant Research Virologist, Dept. of Microbiology & Immunology, UCLA School of Medicine
1991-1999 Assistant Professor, Dept. of Microbiology & Immunology, Baylor College Medicine, Houston, TX; Joint Appointment-Division of Molecular Virology
2000-2002 Assistant Professor, Dept. of Molecular Virology & Microbiology, Baylor College of Medicine
1996-2002 Cell and Molecular Biology Program Faculty, Baylor College of Medicine 1996 – 2002.
2002- Associate Professor (tenured), School of Life Sciences; Center Infectious Diseases & Vaccinology, Biodesign Institute, Arizona State University, Tempe, AZ.
2004 - Director, NIH Funded ASU Postbaccalaureate Research Education Program (PREP) for Biomedical Research

Honors

1974-1976 Tuition Fellowship, Department of Education, Duke University
1980-1982 Teaching Assistantship, Department of Microbiology, University of Tennessee, Knoxville
1984-1986 Predoctoral Fellowship, Tennessee Centers of Excellence Program in Livestock Diseases and Human Health, College of Veterinary Medicine
1987-1989 NIH NRSA Postdoctoral Fellowship F32 GM11788
1993 American Society for Virology Travel Award International Congress of Virology, Glasgow, Scotland.
2008 American Society for Virology State-of-the-Art Lecture, Cornell University

Advisory Panel Service *(last 5 years)*

2003-2005 *Member*, NIH Center for Scientific Review Special Emphasis Panels (3 in 2003) (3 in 2004) (3 in 2005)
2005-2007 *Chair*, NIH Center for Scientific Review Special Emphasis Panel ZRG1 IDMG 90 Topics in Virology (10/2005, 2/2006, 6/2006, 10/2006, 2/2007)
2006-2007 *Temporary Member*, NIH VIRA Study Section (6/2006, 6/2007)
2007 *Member*, ZRG1 IDM-M (02) NIH Study Section

2008 *Member*, ZRG1 IDM-Q (02) (9/2008); *Member*, ZRG1 IDM-M (02) NIH Study Section (3/2008, 6/2008); *Member*, F13 Study Section, ZRG1 IDMR 03 Viruses Special Emphasis Panel (3/2008, 8/2008); *Member*, NIH ZRG1 IDM-R (03) Study Section (7/2008)

2009 *Member* NIH ZRG1 F13-C 20 L (03/2009, 10/2009); NIH ZRG1 IDM-T (02) (01/2009) ; NIH ZAI1 BLG-M (S1) (8/2009)

2010 *Member* NIH ZAI1 BLG-M (M1) (1/2010)

Editorial Service

Journal of Virology – Editorial Board 2007-2013, 1997-1999, ad hoc reviewer since 1991

Ad hoc reviewer: *Virology, Virus Res, J. Gen. Virol., J. Clinical Micro., Arch. Virol., J. Inf. Dis., J. Biol. Chem.* 1994 - present

B. Selected Publications (in chronological order).

Hogue, B.G., King, B. and Brian, D.A. 1984. Antigenic relationship between proteins of the bovine coronavirus, human respiratory coronavirus OC43, and mouse hepatitis coronavirus A59. J. Virol 51:384-388.

Hogue, B.G. and Brian, D.A. 1986. Structural proteins of the human coronavirus OC43. Virus Research 5:131-144.

Lapps, W., Hogue, B.G. and Brian, D.A. 1987. Sequence analysis of the bovine coronavirus nucleocapsid and matrix protein genes. Virology 157:47-57.

Keck, J., **Hogue, B.G.**, Brian, D.A. and Lai, M.M.C. 1988. Temporal regulation of bovine coronavirus RNA synthesis. Virus Research 9:343-356.

Kapke, P., Tung, F.Y.C., **Hogue, B.G.**, Brian, D.A., Woods, R.D. and Wesley, R.D. 1988. The amino terminal signal peptide on the porcine transmissible gastroenteritis coronavirus matrix protein is not an absolute requirement for membrane translocation and glycosylation. Virology 165:367-376.

Brown, D.J., **Hogue, B.G.** and Nayak, D.P. 1988. Redundancy of signal and anchor functions in the NH_2-terminal uncharged region of influenza virus neuraminidase, a class II membrane glycoprotein. J. Virol. 62:3824-3831.

Hogue, B.G., Kienzle, T., and Brian, D.A. 1989. Synthesis and glycosylation of the bovine coronavirus hemagglutinin. J. Gen. Virol. 70:345-352.

Kienzle, T.E., Abraham, S., **Hogue, B. G.**, and Brian, D.A. 1990. Structure and orientation of expressed bovine hemagglutinin-esterase protein. J. Virol. 64:1834-1838.

Tung, F.Y.T., Abraham, S., Hung, S., Sethna, M., Hung, S.-L., Sethna, P., **Hogue, B.G.**, and Brian, D.A. 1992. The 9 kilodalton hydrophobic protein encoded at the 3' end of the porcine transmissible gastroenteritis coronavirus genome is membrane associated. Virology 186:676-683.

Hogue, B.G. and Nayak, D.P. 1992. Synthesis and processing of the influenza virus neuraminidase. Virology 188: 510-517.

Hogue, B.G. and Nayak, D.P. 1994. Deletion mutation in the signal-anchor domain activates cleavage of the influenza virus neuraminidase, a type II transmembrane protein. J. Gen.Virol.75:1015-1022.

Gill, E. P., Dominguez, E. A., Greenberg, S. B., Atmar, R. L., **Hogue, B. G.**, Baxter, B. D., and Couch, R. B. Development and application of a coronavirus OC43 enzyme immunoassay for acute respiratory illness. J. Clin. Micro. **32:**2372-2376.

Oleszak, E. L., Kuzmak, J., **Hogue B.**, Parr, R., Collisson, E. W., Rodkey, L. S., Leibowitz, J. L. 1995. Molecular mimicry between Fc receptor and S peplomer protein of mouse hepatitis virus, bovine coronavirus, and transmissible gastroenteritis virus. Hybridoma 14:1-8.

Nguyen, V.P. and **Hogue, B.G.** 1997. Protein interactions during coronavirus assembly. J.Virol. 71:9278-9284.

Cologna, R. and **Hogue, B.G**. 2000. Identification of a bovine coronavirus packaging signal. J. Virol. 74:580-583.

Spagnolo, J. F. and **Hogue, B.G.** 2000. Host protein interactions with the 3' end of bovine coronavirus RNA: correlation between poly(A) binding protein and requirement of the poly(A) tail for virus replication. J. Virol 74:5053-5065.

Cologna, R., Spagnolo, J.F. and **Hogue, B.G.** 2000. Identification of nucleocapsid binding sites within coronavirus defective genomes. Virology 277:235-249.

Verma, S., Bednar, V., Blount, A., and **Hogue, B.G.** 2006. Role of coronavirus nucleocapsid protein COOH terminal conserved amino acids in virus assembly. J. Virol. 80:4344-4355.

Ye, Y., Hauns, K.D., Langland, J.O., Jacobs, B.L. and **Hogue, B.G.** 2007. Mouse Hepatitis Coronavirus A59 nucleocapsid protein is a type I interferon antagonist. 2007. Epub 2006 Dec 20. J Virol. 81(6):2554-63.

Ye, Y. and **Hogue, B.G.** 2007. Role of the mouse hepatitis coronavirus E viroporin protein transmembrane domain in virus assembly. 2007. Epub Jan 17. J. Virol. 81(7):3597–3607.

Verma, S., Lopez, L.A., Valerie Bednar and **Hogue, B.G.** 2007. Importance of coronavirus membrane protein penultimate charged residue in virus assembly. 2007. Epub Feb 28. J. Virol. 81(8)5339-5348.

White, T.C., Yi, Z. and **Hogue, B.G.** 2007. Identification of mouse hepatitis coronavirus nucleocapsid protein phosphorylation sites. 2007. Epub Mar 23. Virus Res. 126(1-2):139-148.

Lopez, L.A., Riffle, A.J., Pike, S.L., Gardner, D. and **Hogue, B.G.** 2008. Importance of conserved cysteine residues in the coronavirus envelope protein. 2008. J. Virol. 82:3000-10. **[Editors' Spotlight Paper].**

Burk, D.R., Senechal-Willis, P., Lopez, L.C., **Hogue, B.G.**, Daskalova, S.M. 2009. Suppression of lipopolysaccharide-induced inflammatory responses in RAW 264.7 murine macrophages by aqueous extract of *Clinopodium vulgare* L. (Lamiaceae). J Ethnopharmacol. 126(3):397-405.

Arndt, A.L., Larson, B.J., Altamirano, C.J. and **Hogue, B.G.** 2010. Role of coronavirus membrane (M) protein carboxy tail conserved domain in virus assembly. Manuscript submitted.

Sotomayor-Castro, Y., Yi, Z., Shelhamer, R. and **Hogue, B.G.** 2010. Significance of phosphorylated sites on mouse hepatitis coronavirus A59 nucleocapsid proteins. Manuscript in preparation.

Venkatagopalan, P., and **Hogue, B.G.** 2010. Importance of conserved proline residues in coronavirus assembly. Manuscript in preparation.

Selected Book Chapters

Lopez, L.A., Jones, A., Arndt, W.D., **Hogue, B.G.** 2006. Subcellular localization of SARS-CoV structural proteins. The Nidoviruses : The Control of SARS and other Nidovirus Diseases. Perlman and Holmes (editors) Springer Publishers, Adv. Exp. Med. Bio. 581:297-300.

White, T.C. and **Hogue, B.G.** 2006. Mouse hepatitis coronavirus nucleocapsid phosphorylation. The Nidoviruses : The Control of SARS and other Nidovirus Diseases. Perlman and Holmes (editors) Springer, Adv. Exp. Med. Bio. 581:157-162.

Ye, Y. and **Hogue, B.G.** 2006. Role of mouse hepatitis coronavirus envelope protein transmembrane domain. The Nidoviruses : The Control of SARS and other Nidovirus Diseases. Perlman and Holmes (editors) Springer, Adv. Exp. Med. Bio. 581: 187-192.

Bednar, V., Verma, S., Blount, A. and **Hogue, B.G.** 2006. Importance of MHV-CoV nucleocapsid protein COOH-terminal negative charges. The Nidoviruses : The Control of SARS and other Nidovirus Diseases. Perlman and Holmes (editors) Springer, Adv. Exp. Med. Bio. 581: 127-132.

Hogue, B.G. and Machamer C.M. **[Invited Review]** 2007. Coronavirus Structural Proteins and Assembly. In The Nidoviruses. Perlman, Snijder and Gallagher (editors), American Society of Microbiology Press. pp 179-200.

C. RESEARCH SUPPORT

Ongoing:

R01AI053704 9/15/2003 - 2/29/2010 (No cost extension, renewal pending) No Overlap
NIH NIAID
Molecular Analysis of Coronavirus Assembly
The major goals of this study are directed at understanding the molecular mechanism of coronavirus assembly.
Role: PI

R25GM7179 9/25/2004 - 08/31/2010 (No cost extension, renewal pending)
NIH NIGMS
ASU Post-Baccalaureate Research Education Program (PREP) *(minority access training program)*
The overall goal is to provide 1-2 years of preparation beyond the undergraduate level to prepare underrepresented minority graduates to smoothly transition into highly competitive graduate programs, to successfully complete those programs and go onto pursue careers as strong investigators who address important current and future biomedical problems, including health issues and disparities in minority populations.
Role: PI

1F31AI075538-01A1 12/2007 – 12/2010 No Overlap
NIH NIAID
Role of Coronavirus Membrane Protein Carboxy Tail in Virus Assembly

Predoctoral Fellowship - Ariel L. Jones
Role: Sponsor/Mentor

1R21AI073928 - 01A2

NIH NIAID 4/1/2008-3/31/2011 No Overlap

Development of a Plant-derived Virus-like Particle Vaccine against SARS-Coronavirus

The goal of this study is to develop a plant expression based vaccine platform against SARS-CoV receptor binding domain (RBD) using hepatitis B core and surface antigen virus-like particles.

Role: PI

NSF 7/01/2009 – 6/30/2011 No Overlap

Femtosecond Virus Structure

The goal of the study is to develop a new approach to determine the three dimensional structure of viruses at atomic resolution using high intensity X-ray radiation pulses to produce diffraction patterns from single virions. The X-ray free electron laser facility LCLS at Stanford University is being used to analyze single particles.

Role: Co-PI

PI - Uwe Weierstall

Updated 2/8/2010