

CURRICULUM VITAE
WILLIAM H. JACKSON, JR.

CONTACT INFORMATION:

University of South Carolina Aiken
Department of Biology and Geology
471 University Parkway
Aiken, SC 29801
(803) 641-3601
billj@usca.edu

EDUCATION:

PhD., Immunology, Medical College of Georgia, 1995.
B.S., Biology, University of South Carolina Aiken, 1983.

EMPLOYMENT:

Professor (2015-present), *Interim Dean*, College of Sciences and Engineering (7/2015-6/2016), *Chair*, Department of Biology and Geology (2004-present), *Associate Professor* (2007-2015), *Assistant Professor* (2000-2007), *Administrative Technical Assistant and Teaching Associate* (1997-1999).
University of South Carolina Aiken.

Laboratory Manager, Gene Therapy Program, University of Alabama Birmingham, 1997.

Postdoctoral Fellow in Oncology, University of Alabama Birmingham. 1996-1997.

RESEACH PUBLICATIONS:

Jureka, A, P Simon, and WH Jackson. 2011. siRNA-mediated inhibition of the HIV-1 transactivator of transcription. *J. South Carolina Academy of Science*. 9(2):6-9.

Hendley, AM and WH Jackson. 2009. Downregulation of HIV-1 vif by a hammerhead ribozyme expressed from a retroviral vector. *J. South Carolina Academy of Science*. 7(2):14-17.

Padgett, LE and WH Jackson. 2009. Generation of a retroviral vector that expresses an anti-HIV-1 tat hammerhead ribozyme. *J. South Carolina Academy of Science*. 7(2)18-22.

Anderson, KL and WH. Jackson 2006 Design and Cloning of a Hammerhead Ribozyme Targeted to HIV-1vif mRNA. *J. South Carolina Academy Sciences*. 3(1):24-30.

Jackson, WH, Jr., H. Moscoso, JF Nechtman, DS Galileo, FA Garver, and KD Lanclos. 1998. Inhibition of HIV-1 replication by an anti-tat hammerhead ribozyme. *Biochem Biophys. Res. Commun*. 245: 81-84.

Turner, T, WH Jackson, Jr., GR Pettit, A Wells, and AS Kraft. 1998 Treatment of human prostate cancer with dolastatin 10, a peptide isolated from a marine shell-less mollusk. *The Prostate* 34: 175-181.

Feng, M, WH Jackson, Jr., CK Goldman, C Rancourt, M Wang, SK Dusing, G Segal, and DT Curiel. 1997. Stable in vivo gene transduction via a novel adenoviral/retroviral chimeric vector. *Nature Biotechnology* 15:866-870.

Bilbao, G., M Feng, C Rancourt, WH Jackson, Jr., and DT Curiel. 1997. Adenoviral/retroviral vector chimeras: a novel strategy to achieve high-efficiency stable transduction in vivo. *FASEB J*. 11:624-634.

RESEARCH PRESENTATIONS:

Arthur, N and WH Jackson. HIV-1 dependent bicistronic expression of LucR and eGFP from pLTNG(INS2)R. South Carolina Academy of Science. Rock Hill, SC. April 16, 2016.

Beaudry, B, K Denney, and WH Jackson. Design and cloning anti-HIV-1 vif siRNAs to inhibit APOBEC3G function. South Carolina Academy of Science. Rock Hill, SC. April 16, 2016.

Fay, C, AD Smith, and WH Jackson. Optimization of qPCR variables in the measurement of anti-HIV reagents. South Carolina Academy of Science. Rock Hill, SC. April 16, 2016.

McLaughlin, E and WH Jackson. Bicistronic expression from a HIV-1 dependent lentiviral vector. South Carolina Academy of Science. Rock Hill, SC. April 16, 2016.

Webb, E and WH Jackson. Measuring the effectiveness of anti-HIV tat siRNAs on HIV replication and gene expression. South Carolina Academy of Science. Rock Hill, SC. April 16, 2016.

Worden, A and WH Jackson. Designing and cloning an anti-HIV-1 siRNA into a retroviral vector. South Carolina Academy of Science. Rock Hill, SC. April 16, 2016.

Deily J and WH Jackson. Developing a retroviral vector to express enhanced green fluorescent protein. South Carolina Academy of Science. Greenville, SC. April 2015.

Webb E and WH Jackson. siRNA-mediated downregulation of an essential HIV regulatory protein. South Carolina Academy of Science. Greenville, SC. April 2015

Fulmer CA and WH Jackson. The cellular effects of HIV-1 Tat-dependent expression of pro- apoptotic tBid and Bax. South Carolina Academy of Science. Charleston, SC. April 2014.

Ryan CA and WH Jackson. Cloning a retroviral vector to express anti-HIV RNAs. South Carolina Academy of Science. Charleston, SC. April 2014.

Webb, EM and WH Jackson. Measuring the effect of anti-HIV tat siRNAs on HIV replication. South Carolina Academy of Science. Charleston, SC. April 2014.

Pickens, D, EM Webb, and WH Jackson. Cloning and testing a DNA-transposon bases gene delivery system. South Carolina Academy of Science. Columbia, SC. April 2013.

Simon, PS, CA Fulmer, and WH Jackson. Comparative study of HIV-1 induced apoptosis by expression of pro-apoptotic Bax and tBid. South Carolina Academy of Science. Columbia, SC. April 2013.

Sweet, MT, AS Jureka, and WH Jackson. Anti-HIVvif activity using a hammerhead ribozyme expressed from an RNA Polymerase III promoter. South Carolina Academy of Science. Columbia, SC. April, 2013.

Jureka, A and WH Jackson. Analysis of hammerhead-ribozyme mediated down-regulation of the HIV-1 transactivator of transcription. South Carolina Academy of Science. Aiken, SC. April 2012.

Simon, P and WH Jackson. Comparative study of HIV-1 induced apoptosis by expression of pro-apoptotic Bax and tBid. South Carolina Academy of Science. Aiken, SC. April 2012.

Albano, R and WH Jackson. Cloning of an anti-HIV-1 tat hammerhead ribozyme into a retroviral vector. South Carolina Academy of Science. Orangeburg, SC. April 2011.

Arthur, A and WH Jackson. Inducement of apoptosis through tat-dependent expression of pro- apoptotic bax. South Carolina Academy of Science. Orangeburg, SC. April 2011.

Jureka, A, S Simon, and WH Jackson. Designing and cloning of siRNAs targeted to HIV-1 tat. South Carolina Academy of Science. Orangeburg, SC. April 2011.

Murph, D and WH Jackson. Cloning an anti-HIV-1 tat hammerhead ribozyme into a retroviral vector. South Carolina Academy of Science. Orangeburg, SC. April 2011.

WH Jackson. HIV-1 tat as an antiretroviral target. American Society of Microbiology, South Carolina Branch meeting. Aiken, SC. October 2010.

Arthur, A and WH Jackson. Inducement of apoptosis through HIV-1 tat-dependent expression of pro-apoptotic bax. USC Discovery Day, Columbia, SC. April 2010.

Arthur, A and WH Jackson. Inducement of apoptosis through tat-dependent expression of pro-apoptotic bax. South Carolina Academy of Science. Charleston, SC. April 2010.

Nesbitt, J and WH Jackson. Analysis of hammerhead ribozymes targeted to HIV-1 tat. South Carolina Academy of Science. Charleston, SC. April 2010.

Rate, K and WH Jackson. Inhibition of HIV-1 tat function using a retroviral vector expressing anti-tat siRNA. South Carolina Academy of Science. Charleston, SC. April 2010.

Cooper, M and WH Jackson. Cloning of anti HIV-1 vif hammerhead ribozymes into a retroviral vector. South Carolina Academy of Science. Columbia, SC. April 2009.

Hendley, A and WH Jackson. Anti-vif activity by a hammerhead ribozyme expressed from a retroviral vector. USC Discovery Day. Columbia, SC. April 2009.

Hendley, A and WH Jackson. Anti-vif activity by a hammerhead ribozyme expressed from a retroviral vector. South Carolina Academy of Science. Columbia, SC. April 2009.

Padgett, L and WH Jackson. Cloning and initial testing of a retroviral vector expressing an anti-HIV-1 tat hammerhead ribozyme. South Carolina Academy of Science. Columbia, SC. April 2009.

Gerolstein, A and WH Jackson. Expression of an anti-HIV tat ribozyme in a tissue culture model. South Carolina Academy of Science. Clemson University, Clemson, SC. March 2008.

Hendley, A and WH Jackson. Cloning of a hammerhead ribozyme targeted to HIV-1 virion infectivity factor. South Carolina Academy of Science. Clemson University, Clemson, SC. March 2008.

Padgett, L and WH Jackson. Cloning of a hammerhead ribozyme targeted to the HIV-1 LTR. Poster presentation at the South Carolina Academy of Science. Clemson University, Clemson, SC. March 2008.

Ramos, T and WH Jackson. Optimizing titer of a retroviral vector expressing an anti-HIV-1 tat hammerhead ribozyme. South Carolina Academy of Science. Clemson University, Clemson, SC. March 2008.

Fritch-French, C and WH Jackson. Development of a luciferase assay for analysis of anti-HIV ribozyme activity in tissue culture. South Carolina Academy of Science. Midlands Technical College, Columbia, SC. April 2007.

Gerolstein, M and WH Jackson. Design and cloning a hammerhead ribozyme targeted to Vpu6077. Poster presentation at the South Carolina Academy of Science. Midlands Technical College, Columbia, SC. April 2007.

Harrison, E and WH Jackson. Design and cloning of an anti-LTR491 hammerhead ribozyme. South Carolina Academy of Science. Midlands Technical College, Columbia, SC. April 2007.

Hendley, A and WH Jackson. Cloning of a hammerhead ribozyme targeted to the HIV-1 virion infectivity factor. Poster presentation at the South Carolina Academy of Science. Midlands Technical College, Columbia, SC. April 2007.

McDonald, M and WH Jackson. Designing and cloning a hammerhead ribozyme targeted to nucleotide 571 of the HIV-1 genome. South Carolina Academy of Science. Midlands Technical College, Columbia, SC. April 2007.

Arthur, C and WH Jackson. Characterization of HIV-1 vif expression. South Carolina Academy of Science. University of South Carolina, Columbia, SC. March 2006.

Wilson, ZD and WH Jackson. Characterization of the retroviral vector pLNPolIX. South Carolina Academy of Science. University of South Carolina, Columbia, SC. March 2006.

Anderson, KL and WH Jackson. Design and cloning of a hammerhead ribozymes targeted to NL43 HIV-1 vif mRNA. South Carolina Academy of Science. Winthrop University, Rock Hill, SC. March 2005

Arthur, C and WH Jackson. Design and cloning of a hammerhead ribozyme targeted to HIV-1 vpu. South Carolina Academy of Science. Winthrop University, Rock Hill, SC. March 2005

Patel, J and WH Jackson. Design and cloning of an anti HIV-1 rev hammerhead ribozyme. South Carolina Academy of Science. Winthrop University, Rock Hill, SC. March 2005

Davis, JC and WH Jackson, Jr. Construction of HIV-1 tat expression vectors. South Carolina Academy of Science. College of Charleston, Charleston, SC. April 2004.

Guy, V and WH Jackson, Jr. Testing anti-tat ribozymes in an in vitro cleavage assay. South Carolina Academy of Science. College of Charleston, Charleston, SC. April 2004.

Napier, SN and WH Jackson, Jr. Design and synthesis of a hammerhead ribozyme targeted to nucleotide 5127 of HIV-1 nef. South Carolina Academy of Science. College of Charleston, Charleston, SC. April 2004.

Surzenko, N and WH Jackson, Jr. Creating a retroviral expression vector for ribozyme delivery into eukaryotic cells. South Carolina Academy of Science. College of Charleston, Charleston, SC. April 2004.

Wilson, ZD and WH Jackson, Jr. Design and cloning of an anti-HIV-1 rev hammerhead ribozyme. South Carolina Academy of Science. College of Charleston, Charleston, SC. April 2004.

WH Jackson, Jr. Analysis of hammerhead ribozyme target sites within HIV-1 tat. Microbiology and Biodefense Conference. Medical College of Georgia. Augusta, GA 30912. May 2003.

Shoup, ME and WH Jackson, Jr. The cloning of hammerhead ribozymes for analysis as anti-HIV-1 gene therapy agents. South Carolina Academy of Science. Clemson University, Clemson, SC 29634. April 2003

Stone-Ryan, ML and WH Jackson, Jr. Design and cloning of an anti-HIV-1 tat hammerhead ribozyme. South Carolina Academy of Science. Clemson University, Clemson, SC 29634. April 2003

Wall, PL and WH Jackson, Jr. Analysis of anti-HIV-1 tat hammerhead ribozyme catalytic activity. South Carolina Academy of Science. Clemson University, Clemson, SC 29634. April 2003.

Hollingshead, C and WH Jackson, Jr. Use of site-directed mutagenesis to analyze function of an anti-HIV-1 hammerhead ribozyme. South Carolina Academy of Science. USCA, Aiken, SC. April 2002.

Mixon, A and WH Jackson, Jr. Generation of retroviral particles that express human β -globin and DHFR as a selectable marker. South Carolina Academy of Science. Coastal Carolina University, Conway, SC. April 2001.

Shaw, D, T Felder, S Koli, C Nivens, W Jackson, and T Spencer. Retroviral transfer of Escherichia coli thymidylate synthase and the cDNA of metabolically related genes protect bone marrow cells against antifolate induced toxicity. American Association for Cancer Research. October 2000.

Jackson, Jr., WH, H Moscoso, JF Nechtman, DS Galileo, FA Garver, and KD Lanclos. Inhibition of HIV-1 replication in CD4+ lymphocytes by a retroviral vector containing an anti-tat ribozyme insert. American Society of Hematology, Orlando, Florida, 1996.

Jackson, Jr., WH, KD Lanclos, H Moscoso, J Nechtman, and FA Garver. Construction of a murine retroviral vector expressing an anti-HIV-1 hammerhead ribozyme as part of a lacZ transcript. Poster presentation (Student Award Entry), AAAS Annual Meeting and Science Innovation Exposition, Atlanta, Georgia, 1995.

Jackson, Jr., WH, H Moscoso, JF Nechtman, KD Lanclos, and FA Garver. Generation of a retroviral vector expressing an anti-tat-1 ribozyme and lacZ as a marker for expression. FASEB Annual Meeting, Atlanta, Georgia, April 1995.

GRANTS:

Workforce Opportunities in Regional Careers (WORC). DOE-EM and NNSA. Period: May 8, 2016-May 7, 2021. Amount: \$795,445. M Harmon and Jackson, Co-PIs.

Expansion of biomedical research at the University of South Carolina Aiken. NIH INBRE. Period: August 1, 2015-July 30, 2020. Amount: \$500,000. Jackson, PI, N Hancock and A DeLaurier, Co-PIs.

Inducing expression of a fusion gene in an HIV-1-dependent lentiviral vector. South Carolina Foundation Magellan Award Period: May 1, 2015-April 30, 2016. Amount: \$3000. Jackson, PI, E. McLaughlin, Co-PI

Measuring the effect of anti-siRNA on HIV replication. South Carolina Foundation Magellan Award. Period: January 1, 2015-December 31, 2015. Amount: \$3,000. Jackson, PI, E. Webb, Co-PI.

SREL/USCA Internships in Radioecology. Period May 1, 2014-August 15, 2014. Amount: \$41,164. Jackson, PI.

The effect of pro-apoptotic proteins tBid and Bax on cells expressing HIV-1 tat. SC Research Foundation Magellan Award. Period: May 1, 2013-April 30, 2014. Amount: \$2,500. Jackson, PI, C. Fulmer, Co-PI.

SREL/USCA Internships in Radioecology. Period May 1, 2013-August 15, 2013. Amount: \$21,499. Jackson, PI.

Measuring the comparative effectiveness of anti-HIV-1 tat siRNAs and hammerhead ribozymes. SC Research Foundation Magellan Award. Period: May 1, 2012-April 30, 2013. Amount: \$3,000. Jackson, PI, A Jureka, Co-PI.

Comparing the Ability of siRNA and Hammerhead Ribozymes to Reduce HIV-1 Vif Expression. SC Research Foundation Magellan Mini-grant Program. Period: May 1, 2012-April 30, 2013. Amount: \$1,000. Jackson, PI, M Sweet, Co-PI.

Comparative study of HIV-1 induced apoptosis by expression of pro-apoptotic Bax and tBid. SC Research Foundation Magellan Award. Period: January 1, 2012-December 31, 2013. Amount: \$2,500. Jackson, PI, P Simon, Co-PI.

Development and implementation of an enhanced biology degree in environmental remediation and restoration (ERRP). Department of Energy. Period: April 2011-March 2016. Amount: \$836,181. Jackson and Harmon, Co-PIs.

Comparative antiviral activity of hammerhead ribozymes and siRNAs targeted to HIV-1 tat. USC Office of Research and Graduate Education Promising Investigator Research Award. Period: April 15, 2010-July 15, 2011. Amount: \$10,000. Jackson, PI.

Inducement of apoptosis through tat-dependent expression of pro-apoptotic bax. SC Research Foundation Magellan Award. Period: January 1, 2010-December 31, 2010. Amount: \$3,000. Jackson, PI, A Arthur, Co-PI.

Biology and Geology Program Enhancement. South Carolina Stimulus Funding (American Recovery and Reinvestment Act of 2009). Period: Fiscal year 2009-2011. Amount: \$19,455.

Comparison of anti-Vif ribozyme activity in a tissue culture model with in vitro cleavage assays. SC Research Foundation Magellan award. Period: May 15, 2008-May 14, 2009. Amount: \$3,000. Jackson, PI, A. Hendley, Co-PI.

Development of an environmental science emphasis in the Department of Biology and Geology. Washington Group International Endowment and fund for Science, Technology, Engineering, and Mathematics (STEM). Period: Awarded October 2007. Amount: \$12,500. Jackson, Dyer, Harmon, and Zelmer, Co-PIs

USCA Department of Biology and Geology Student Laptop and Loaner Laptop Program. USCA UBIQUITOUS CAMPUS COMPUTING PROGRAM award. Awarded in Fall 2003.

A systematic analysis of hammerhead ribozyme target sites within HIV-1 tat. SC-BRIN FUTURE (Faculty and Undergraduate Training Using Research Experiences) award. Period: May 15, 2003-May 14, 2004. Amount: \$7,662.

Analysis of ribozyme targets within the HIV-1 genome. NIH AREA. Period: August 15, 2002- August 14, 2005 (No cost extension to August 14, 2006) Amount: \$136,000.

Gene regulation of the bph cluster. NIH AREA. Period: April 1, 2001-March 31, 2004. Amount: \$128,128. (Jackson, Co-PI)

Gene therapy for sickle cell disease utilizing a transgenic mouse model. University of South Carolina Research and Productive Scholarship Grant. Period: January 1, 2000-June 30, 2001. Amount: \$7,500.

Instrumentation upgrade to enhance eukaryotic cellular biology research at USCA. South Carolina Research Institute Research Infrastructure Assistance Grant. Period: January 1, 2000- December 30, 2000. Amount: \$28,500.

TEACHING EXPERIENCE:

Biological Science I
Cellular and Molecular Biology
Genetics
Immunology
Virology