

CURRICULUM VITAE

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EDUCATION

- 1983 Bachelor of Science (Biology), the **University of South Carolina Aiken**, South Carolina
- 1995 Ph.D. (Immunology), the **Medical College of Georgia**, Augusta, Georgia (Fred A. Garver, Ph.D.)
- 1995 – 96 Postdoctoral fellowship (Oncology), the **University of Alabama Birmingham** Comprehensive Cancer Center (Andrew S. Kraft, MD)
- 1996 – 97 Postdoctoral fellowship (Oncology), the **University of Alabama Birmingham** Comprehensive Cancer Center (Mansoor N. Saleh, MD).

PROFESSIONAL

- 1999 – Present Associate Professor of Biology, Department of Biology and Geology, **University of South Carolina Aiken**, Aiken, South Carolina. Current Chair of the Department of Biology and Geology, July 2004 – Present.
- 1997 – 1999 Administrative Technical Assistant and Teaching Associate, Administrative responsibility for maintenance and setup of biology labs; departmental ordering and budgeting. Department of Biology and Geology, **University of South Carolina Aiken**, Aiken, South Carolina.
- 1991 – 1995 Graduate Teaching Assistant, Responsible for the Immunology and Parasitology (1992) sections of Introduction to Microbiology. **Medical College of Georgia**, Augusta, Georgia.
- 1985 – 1990 Teacher, Senior Physics and Biology, Physical Science (1990), Teacher Cadet Program Director (1985-1989). **Strom Thurmond High School**, Johnston, South Carolina

RESEARCH

- 1997 - Present **University of South Carolina Aiken**, The use of anti-HIV ribozymes and siRNAs to inhibit viral replication. Additional studies include the use of viral vectors as therapeutic gene delivery vehicles. Department of Biology and Geology, Aiken, South Carolina.
- 1997 Laboratory Manager, Responsible for the day-to-day activities in the laboratory including budgeting, ordering, research oversight, and manuscript preparation. Continuation of research in the development of viral vectors suitable for gene therapy. Gene Therapy Program (David T. Curiel, MD, Director), the Comprehensive Cancer Center, **University of Alabama Birmingham**, Birmingham, Alabama.

- 1996 – 1997 Postdoctoral Fellow, Research in the development of multidimensional cancer therapies (drug, radiation, immunological, and gene therapy) and their effect on cell death. Department of Hematology and Oncology (Mansoor N. Saleh, MD, Associate Director of Clinical Research), the Comprehensive Cancer Center, **University of Alabama Birmingham**, Birmingham, Alabama.
- 1995 - 1996 Postdoctoral Fellow, Research in cell signaling, the cell cycle, and apoptosis as they relate to prostate cancer. Department of Hematology and Oncology (Andrew S. Kraft, MD.), the Comprehensive Cancer Center, University of Alabama Birmingham, Birmingham, Alabama.

OTHER PROFESSIONAL ACTIVITIES

- 2003 Judge for the SC Science Olympiad at Newberry College. Newberry, SC. Topic: Disease Detectives – “Measles outbreak among internationally adopted children arriving in the United States, February – March, 2001”.
- 2002 Judge for the SC Science Olympiad at Newberry College. Newberry, SC. Topic: Disease Detectives – “Coccidiomycosis in workers at an archeologic site – Dinosaur National Monument, Utah, June – July 2001”.
- 2001 Mentor for the SC Governor’s School for Science and Mathematics Summer Program for Research Interns. Topic: “The Phenotypic Determination of Transgenic Mice Carrying the Human β -Globin Sickle Cell Gene To Discern a Successful Breeding Arrangement”. Student – Ryan Prater Hanlin
- 2001 STEP lecturer for the Ruth Patrick Science Education Center, USCA. Topic: Use of the compound light microscope.
- 2000 Summer lecturer at the Governor’s School for Science and Mathematics. Hartsville, SC. Topic: Cell biology
- 2000 STEP lecturer for the Ruth Patrick Science Education Center, USCA. Topic: Detection of biological macromolecules

PRESENTATIONS

- 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-Fench, 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.

ABSTRACTS

Gerolstein, A and **WH Jackson**. Expression of an anti-HIV tat ribozyme in a tissue culture model. Bulletin of the South Carolina Academy of Science. 70:66.

Hendley, A and **WH Jackson**. Cloning of a hammerhead ribozyme targeted to HIV-1 virion infectivity factor. Bulletin of the South Carolina Academy of Science. 70:69.

Padgett, L and **WH Jackson**. Cloning of a hammerhead ribozyme targeted to the HIV-1 LTR. Bulletin of the South Carolina Academy of Science. 70:78.

Ramos, T and **WH Jackson**. Optimizing titer of a retroviral vector expressing an anti-HIV-1 tat hammerhead ribozyme. Bulletin of the South Carolina Academy of Science. 70:82.

Fritch-Fench, C and **WH Jackson**. Development of a luciferase assay for analysis of anti-HIV ribozyme activity in tissue culture. Bulletin of the South Carolina Academy of Science. 69:86.

Gerolstein, M and **WH Jackson**. Design and cloning a hammerhead ribozyme targeted to Vpu6077. Bulletin of the South Carolina Academy of Science. 69:87.

Harrison, E and **WH Jackson**. Design and cloning of an anti-LTR491 hammerhead ribozyme. Bulletin of the South Carolina Academy of Science. 69:90.

Hendley, A and **WH Jackson**. Cloning of a hammerhead ribozyme targeted to the HIV-1 virion infectivity factor. Bulletin of the South Carolina Academy of Science. 69:91.

McDonald, M and **WH Jackson**. Designing and cloning a hammerhead ribozyme targeted to nucleotide 571 of the HIV-1 genome. Bulletin of the South Carolina Academy of Science. 69:101.

Arthur, C and **WH Jackson**. (2006) Characterization of HIV-1 *vif* expression. Bulletin of the South Carolina Academy of Science. 68:79.

Wilson, ZD and **WH Jackson**. (2006) Characterization of the retroviral vector pLNPoIX. Bulletin of the South Carolina Academy of Science. 68:116.

Anderson, KL and **WH Jackson**. (2005). Design and cloning of a hammerhead ribozymes targeted to NL43 HIV-1 *vif* mRNA. Bulletin of the South Carolina Academy of Science. 67:60.

Arthur, C and **WH Jackson**. (2005). Design and cloning of a hammerhead ribozyme targeted to HIV-1 *vpu*. Bulletin of the South Carolina Academy of Science. 67:61-62.

Patel, J and **WH Jackson**. (2005). Design and cloning of an anti HIV-1 *rev* hammerhead ribozyme. Bulletin of the South Carolina Academy of Science. 67:98.

Davis, JC and **WH Jackson, Jr.** (2004). Construction of HIV-1 *tat* expression vectors. Bulletin of the South Carolina Academy of Science. 66:83.

Guy, V and **WH Jackson, Jr.** (2004). Testing anti-*tat* ribozymes in an *in vitro* cleavage assay. Bulletin of the South Carolina Academy of Science. 66:97.

Napier, SN and **WH Jackson, Jr.** (2004). Design and synthesis of a hammerhead ribozyme targeted to nucleotide 5127 of HIV-1 *nef*. Bulletin of the South Carolina Academy of Science. 66:119-120.

Surzenko, N and **WH Jackson, Jr.** (2004). Creating a retroviral expression vector for ribozyme delivery into eukaryotic cells. Bulletin of the South Carolina Academy of Science. 66:141.

Wilson, ZD and **WH Jackson, Jr.** (2004). Design and cloning of an anti-HIV-1 *rev* hammerhead ribozyme. Bulletin of the South Carolina Academy of Science. 66:147.

Shoup, ME and **WH Jackson, Jr.** (2003). The cloning of hammerhead ribozymes for analysis as anti-HIV-1 gene therapy agents. Bulletin of the South Carolina Academy of Science. 65:119.

Stone-Ryan, ML and **WH Jackson, Jr.** (2003). Design and cloning of an anti-HIV-1 *tat* hammerhead ribozyme. Bulletin of the South Carolina Academy of Science. 65:124.

Wall, PL and **WH Jackson, Jr.** (2003). Analysis of anti-HIV-1 *tat* hammerhead ribozyme catalytic activity. Bulletin of the South Carolina Academy of Science. 65:129.

Hollingshead, C and **WH Jackson, Jr.** (2002). Use of site-directed mutagenesis to analyze function of an anti-HIV-1 hammerhead ribozyme. Bulletin of the South Carolina Academy of Science. 64:74.

Mixon, A and **WH Jackson, Jr.** (2001). Generation of retroviral particles that express human β -globin and DHFR as a selectable marker. Bulletin of the South Carolina Academy of Science. 63:88.

WH Jackson, Jr., H. Moscoso, JF Nechtman, DS Galileo, FA Garver, and KD Lanclos. (1996) Inhibition of HIV-1 replication in CD4⁺ lymphocytes by a retroviral vector containing an anti-*tat* ribozyme insert. Blood 88 (S1):432a.

WH Jackson, Jr., H Moscoso, JF Nechtman, KD Lanclos, and FA Garver. (1994) Construction of a murine retroviral vector expressing an anti-HIV-1 ribozyme as part of a *lacZ* gene with specific packaging using the HIV-1 envelope. Blood 84(S1):741a.

WH Jackson, Jr., H. Moscoso, JF Nechtman, KD Lanclos, and FA Garver. (1995) Generation of a retroviral vector expressing an anti-*tat*-1 ribozyme and *lacZ* as a marker for expression. FASEB J.

9(3):A209.

PUBLICATIONS

Anderson, KL and **WH. Jackson** (2006) Design and Cloning of a Hammerhead Ribozyme Targeted to HIV-1 *vif* 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.

GRANTS RECEIVED

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

2007 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)

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

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.

2002 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.

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

2000 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.

2000 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.

COURSES TAUGHT

Introductory Biology (ABIO 101)

Virology (ABIO 340)

Genetics (ABIO 350)

Senior Seminar (ABIO 490)

Advanced Cell/Molecular Biology (ABIO 502)

Immunology (ABIO 550)