James Kress
Curriculum Vitae

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Education

2013–Present	**Ph.D. Candidate in Computer Science**, *University of Oregon*, Eugene, Oregon.
	Expected Graduation Spring 2018; Advisor: Hank Childs
2013–2016	**Master of Science Computer and Information Science**, *University of Oregon*, Eugene Oregon.
2009–2013	**Bachelor of Science Computer Science**, *Boise State University*, Boise Idaho, *Cum Laude*.
	Minor in Political Science

Publications

Peer-Reviewed Journal Publications

2016 **Preparing for In Situ Processing on Upcoming Leading-edge Supercomputers**, *James Kress*, Randy Michael Churchill, Scott Klasky, Mark Kim, Hank Childs, Dave Pugmire, Supercomputing Frontiers and Innovations, December 2016

2016 **VTK-m: Accelerating the Visualization Toolkit for Massively Threaded Architectures**, Ken Moreland, Chris Sewell, William Usher, Li-ta Lo, Jeremy Meredith, Dave Pugmire, *James Kress*, Hendrik Schroots, Kwan-Liu Ma, Matt Larsen, Hank Childs, Chun-Ming Chen, Robert Maynard, and Berk Geveci, Computer Graphics and Applications, May/June 2016

Peer-Reviewed Conference and Symposium Proceedings

2016 **Performance Modeling of In Situ Rendering**, Matthew Larsen, Cyrus Harrison, *James Kress*, David Pugmire, Jeremy S. Meredith, Hank Childs, The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC16), Salt Lake City, UT, November 2016

2016 **Stream processing for near real-time scientific data analysis**, Jong Youl Choi, Tahsin Kurc, Jeremy Logan, Matthew Wolf, Eric Suchyta, *James Kress*, David Pugmire, Norbert Podhorszki, Eun-Kyu Byun, Mark Ainsworthk, Manish Parashar, Scott Klasky, Scientific Data Summit (NYSDS), 2016 New York

2015 **A Visualization Pipeline for Large-Scale Tractography Data**, *James Kress*, Erik Anderson, Hank Childs, Proceedings of IEEE Symposium on Large Data Analysis and Visualization, October 2015, Chicago, IL

2013 **A Novel Graphical User Interface for High-Efficacy Modeling of Human Perceptual Similarity Opinions**, *James Kress*, Songhua Xu, Georgia Tourassi, Proc. SPIE 8673, Medical Imaging 2013: Image Perception, Observer Performance, and Technology Assessment, 867306 (March 28, 2013); doi:10.1117/12.2007992

Peer-Reviewed Workshop Proceedings

2016 **Visualization and Analysis Requirements for In Situ Processing for a Large-Scale Fusion Simulation Code**, *James Kress*, Dave Pugmire, Scott Klasky, Hank Childs, In Proceedings of the Second Workshop on In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization (ISAV2016), Salt Lake City, UT, November 2016

2016 **Visualization and Analysis for Near-Real-Time Decision Making in Distributed Workflows**, David Pugmire, *James Kress*, Jong Choi, Scott Klasky, Tahsin Kurc, Randy Churchill, Matthew Wolf, Greg Eisenhauer, Hank Childs, Kesheng Wu, Alex Sim, Junmin Gu, and Jonathan Low, IPDPS Workshop on High Performance Data Analysis and Visualization (HPDAV), Chicago, IL, May 2016

2015 **Loosely Coupled In Situ Visualization: A Perspective on Why it's Here to Stay**, *James Kress*, Scott Klasky, Norbert Podhorszki, Jong Choi, Hank Childs, Dave Pugmire, In Proceedings of the First Workshop on In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization (ISAV2015). ACM, New York, NY, USA, 1-6. DOI=http://dx.doi.org/10.1145/2828612.2828623

2014 **Towards Scalable Visualization Plugins for Data Staging Workflows**, David Pugmire, *James Kress*, Jeremy Meredith, Norbert Podhorszki, Jong Choi, Scott Klasky, 5th International Workshop on Big Data Analytics: Challenges, and Opportunities (BDAC-14)

Computer skills

Advanced	Java, C, Bash, LaTeX, EAVL, Linux, Microsoft Windows
Intermediate	C++, C#, Objective C, ADIOS, MySQL, KML, OpenMP, MPI, iOS, VTK, VTK-m
Basic	Dataspaces, VisIt, html, R, Cilk Plus, TBB

Employment

Technical Employment

12/16–Present **Research Scientist in Scientific Visualization**, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

6/16–9/16 **Research Intern - ASTRO**, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
Continuing usability studies and research on in situ visualization workflows for SciDAC simulation codes using ADIOS, EAVL, and VTK-m. Mentor: David Pugmire

6/15–9/15 **Research Intern - ASTRO**, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
Conducted usability studies and research on in situ visualization workflows for SciDAC simulation codes. Studies utilized ADIOS and EAVL while also requiring EAVL development. Mentor: David Pugmire

2/13–8/15 **Software Contractor**, Lee Pesky Learning Center, Boise, Idaho.
Designed and implemented two iOS applications, later ported to android, to aid in early childhood learning. The first was targeted towards teachers who need easy access to quick activities in the classroom. The second was a multilingual app targeted towards parents and provided at-you-fingertips teaching opportunities for parents.

6/14–9/14 **Research Intern - HERE**, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
My work focused on using EAVL (the Extreme-scale Analysis and Visualization Library) and ADIOS (the Adaptable IO System) in conjunction with the XGC physics simulation code to create a scalable in-situ analysis and visualization solution of tokamak particle movement. Mentor: David Pugmire

6/13–8/13 **Research Intern - SULI**, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
Designed a visual interface for large scale environmental pollutant data in the United States. Mentor: Georgia Tourassi

6/12–8/12 **Research Intern - SULI**, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
Created and implemented a novel graphical user interface for high-efficacy modeling of human perceptual opinions. In conjunction, I developed and implemented a statistical modeling process to analyze the data that was collected with the new user interface compared to current collection methods. Mentor: Georgia Tourassi

Other Employment

Spring 2013 & Spring 2012 **Grader**, OO Program Development in C, Boise State University, Boise, Idaho.
Graded student programs throughout the semester, developing my Bash, automation, and debugging skills to give quick and helpful feedback to students.

8/12–5/13 **Lab Assistant**, Department of Computer Science, Boise State University, Boise, Idaho.
Assisted students in the Linux Lab who were having trouble with either their operating system or assignment and gave them direction on how to proceed.

12/09–2/13 **Trip Leader**, Outdoor Program, Boise State University, Boise, Idaho.
Organized and lead student trips into the outdoors, including creating trip itinerary, menus, risk management, and experiential education programs.

2000–20012 **Farm Hand**, Kress Farms, Rockland, Idaho, *Summer Position*.

Service

2017	Reviewer, EuroVis
2015	Early Career Program Committee, In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization
2013-2015	Member, University of Oregon Graduate School Student Advisory Board
2014-2015	President, University of Oregon Graduate Student Association
2013-2014	Vice President, University of Oregon Graduate Student Association
2014-2015	Student Member, University of Oregon Tuition and Fee Advisory Board
2012&2013	Volunteer, Boise Code Camp