



- Implemented Grid Computing Project within St. Jude on-campus network.
- Administered project Web server and Database.
- Developed Directed Acyclic Graph queue system for BOINC grid system.
- Ported scientific software from Python to C++.
- Debugged and fixed third party software.
- Designed and Implemented software used on computing cluster in the High Performance Computing Facility.
- Wrote API and Manual Pages documentation for software.  
(viewable on St. Jude intranet)

### **Presentations**

D. Coss, "Directed Acyclic Graph Scheduling with User Defined Validation and Assimilation." 8th BOINC Workshop. London, England. September 27, 2012.

D. Coss, "Grid Computing at St Jude Children's Research Hospital." 7th BOINC Workshop. Hannover, Germany. August 18, 2011.

D. Coss, "Effects of Dark Matter Halo Shape Variations on Weak Gravitational Lensing." NASA Missouri Space Grant Consortium. April 23-24, 2010.

D. Coss, "Gravitational Lensing Shear Simulations Using Fast Fourier Transform." NASA Missouri Space Grant Consortium. April 17-18, 2009.

D. Coss, R. Flores, "BRaTS@Home and BOINC Distributed Computing for Parallel Computation." AAS Meeting #212 Poster 24.10. June 2-5, 2008.

D. Coss, "Simulation of Gravitational Lensing." NASA Missouri Space Grant Consortium. April 11-12, 2008.

D. Coss, R. Magruder, "Optical Density of Ge Implanted Type III and Type IV Silica and Si Implanted Type III Silica." Senior Undergraduate Research Symposium, Belmont University 2004.

D. Coss, "Photoluminescence of Oxygen Implanted Silica." Journal of Proceedings of the Belmont Undergraduate Research Symposium, 12(2004), 93-98.

D. Coss, "Symbolic Computation in Java," Journal of Proceedings of the Belmont Undergraduate Research Symposium, 12(2004), 116-119.

## Teaching Experience

*Instructor* UMSL, Department of Physics & Astronomy.

- Physics 1012. Summer 2009  
Physics for Pre-medical Students
- Physics 1011 & 1012. Summer 2008  
Physics for Pre-medical Students
- Physics 1012. Summer 2007  
Physics for Pre-medical Students

*Teaching Assistant* UMSL, Department of Physics & Astronomy. 2005 - 2007, 2009

- Physics 2111  
Calculus Physics for Physical Science and Engineering Majors: Mechanics and Heat
- Physics 2112  
Calculus Physics for Physical Science and Engineering Majors: Electricity, Magnetism and Optics Discussion and Lab

*Educational Assistant* St Louis Community College, Academic Support Center. Summer 2006

- Intermediate Algebra

## Academic Leadership

- Chairperson of Graduate Student Committee, advising Dean of College of Arts & Sciences, 2009.
- Represented the Department of Physics at the university's annual Professional Development Conference for Teaching Assistants & Research Assistants, 2007 and 2008.

## Academic Awards

First Place Graduate Student Poster Contest, *4th UMSL/Missouri S&T Physics Department Meeting*, October 24, 2008.

Outstanding Teaching Assistant Award, *American Association of Physics Teachers*, 2008.

NASA/Missouri Space Consortium Graduate Fellowship, 2010.

NASA/Missouri Space Consortium Graduate Fellowship, 2008 - 2009.

NASA/Missouri Space Consortium Graduate Fellowship, 2007 - 2008.

## Computer Skills

- Proficient in C/C++, Fortran, Java, Perl, Python, PHP, CSS, XML and HTML.
- Experienced in designing, implementing and adapting scientific software, including parallel programs using MPI.
- Daily use of Linux, Mac OSX, Windows XP and Vista operating systems, including cross platform development.
- Five Years practical experience as Systems Administrator of two scientific research projects and *davecoss.com*, including use of Apache Web server and MySQL Databases.
- Primary project administrator of BOINC Distributed Computing project and application development for parallel computing since 2007.
- Experienced in documentation writing using TeX and Microsoft Office.

## Technical Skills

- Federal Communications Commission Amateur Radio License: Technician, KD0KFO, 2010.
- Experienced in Digital and Analog Circuit design.  
(Schematics and software examples available at <http://electronics.davecoss.com>)
- Created 16-bit Real-time Operating System and File System for Embedded Systems

## Professional Memberships

Association for Computing Machinery, Professional Member since 2011.

American Association for the Advancement of Science, Professional Member since 2011.

American Astronomical Society, Junior Member since 2008.

Sigma Xi Scientific Research Society, Associate Member since 2006. American Association of Physics Teachers, Student Member 2008-2011.