

## **JAMI M. VALENTINE, Ph.D.**

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### **EDUCATION**

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**Johns Hopkins University (JHU)** **Baltimore, MD**  
Department of Physics and Astronomy  
1999- Present

- Doctoral Candidate, Thesis Advisor: Professor Chia-Ling Chien  
Dissertation Defended May 1, 2006  
Title “Spin Polarization Measurements of *c*-Axis Epitaxial Rare Earth Thin Films.”
- Master of Arts in Physics, 2004

**Brown University** **Providence, RI**  
• Master of Science in Physics, 1998  
1996 – 1999

**Florida A&M University** **Tallahassee FL**  
• Bachelor of Science in Physics, Cum Laude  
1992 - 1996

### **EXPERIENCE**

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**Johns Hopkins University** **Baltimore MD**

Research Experience (Nanostructured Materials Lab) 2001 - Present

- Designed and performed experiments to measure the spin polarization of self fabricated epitaxial rare earth thin films using the point contact with Andreev reflection (PCAR) method.
- Studied the feasibility of using Giant Magnetoresistance (GMR) sensors to detect magnetic nanowires
- Prepared manuscripts, oral presentations, and annual research reports.
- Implemented and taught laboratory safety techniques seminar for new students.
- Supervised summer undergraduate researchers

Teaching Experience (Department of Physics and Astronomy)

- 2006: Collaboratively designed and taught “Magnetoelectronic Materials and Devices” (171.200) to 20 undergraduate and graduate students. Topics included spintronic devices, Giant magnetoresistance (GMR), exchange biased magnetic systems, magnetic tunnel junctions (MTJ), Magnetic Random Access Memory (MRAM), spin polarization measurements, and magnetic recording media.
- 1999 – 2001: Taught laboratory and conference for general physics to classes of 25 students. Prepared lectures and quizzes, graded assignments and demonstrated experiments. Consulted in the department of academic advising, working with students one on one to help them improve their study skills, organization techniques and time management

**Brown University** **Providence, RI**  
Graduate Research Assistant  
1998 - 1999

- Improved the resolution of a Scanning Tunneling Microscope (STM) by an order of magnitude

**Florida A&M Center for Nonlinear & Nonequilibrium Aeroscience** **Tallahassee, FL**  
Research Assistant  
1995 - 1996

- Evaluated the properties of a turbulent plasma interacting with a hypersonic shock wave

**Lawrence Livermore National Laboratory** **Livermore, CA**  
Research Assistant  
Summers 1992 - 1995

- Developed a shock resistant device to determine the chemical composition of flowing liquid, to an accuracy of 10ppM, using x-ray fluorescence.
- Experimentally focused low energy x-rays using diffraction over opaque spheres

## HONORS AND FELLOWSHIPS

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2006	Elected into Sigma Pi Sigma, National Physics Honor Society
2005	Featured in AAAS Science Careers Article "Defending your Graduate Life"
2004	Featured in the JHU Student Technology Services "My First" Series
1998-1999	Received the Graduate Assistance in Areas of National Need (GAANN) Fellowship
1998	Earned the H. W. Sheridan Center for Teaching and Learning, Teaching Certificate
1996-1997	Received the Brown University Graduate Fellowship
1992-1996	Received the 'Life-Gets-Better' Full Academic Scholarship to Florida A&M University
1995	Admitted to the Golden Key National Honor Society

## PUBLICATIONS

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- **J. M. Valentine**, C. L. Chien, "*Determination of the Spin Polarization of Gd and Dy by Point Contact Andreev Reflection*" Journal of Applied Physics **99**, 08P902 (2006).
- T. Chen, **J. M. Valentine**, C. L. Chien, C. Petrovic, "*Determination of spin polarization of the Mn<sub>5</sub>Ge<sub>3</sub> single crystal*" Accepted for publication: Journal of Applied Physics, (2005).
- K. Budil, K. Daniels, T. Daniels-Race, M. Eblen-Zayas, B. K. Hartline, R. Hazeltine, A. K. Hodari, K. R. Horton, R. Ivie, L. Kay, L. J. Martínez-Miranda, A. Michelman-Ribeiro, Maria Ong, J. I. Rudati, **J. Valentine**, B. Whitten, E. Williams, and Y. V. Zastavker, "*Women in Physics in the United States: A Progress Report*" AIP Conference Proceedings from the 2nd IUPAP International Conference on Women in Physics, Volume 795, Issue 1, pp 175-178, (2005).
- K. E. Daniels, M. Eblen-Zayas, A. Michelman-Ribeiro, and **J. M. Valentine**, "*Research Funding and Women in Physics*", AIP Conference Proceedings, Volume 795, Issue 1, pp. 41-44, (2005).
- R. Posey, D. Brown, K. Broadwater, T. Swint, **J. Valentine**, P. J. Ebert, "*Imaging soft X-rays with opaque spheres*", Journal of X-Ray Science and Technology, Vol 8, No 2, pp105, (1998).
- K. Belay, **J. Valentine**, R. L. Williams, and J. Johnson III, "*Interaction of turbulent plasma flow with a hypersonic shock wave*", Journal of Applied Physics, Vol 81, No 3, 1073-1079, (1997).

## SELECTED CONFERENCES AND PRESENTATIONS

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<b>50th Conference on Magnetism and Magnetic Materials</b>	Oct. 2005
Presenter - " <i>Determination of Spin Polarization of Gd and Dy by Point Contact Andreev Reflection</i> "	
<b>2<sup>nd</sup> IUPAP Women in Physics Conference</b>	May 2005
U.S Team Member – Presented a paper and poster on Minority Women in Physics	
<b>2005 Annual Conference of the National Society of Black Physicists</b>	Feb. 2005
Panelist - "Graduate Student Life"	
<b>10th Annual Undergraduate &amp; Graduate Science Research Symposium</b>	Apr. 2003
Morgan State University – Judged the physical science entries in the poster competition	

## ACTIVITIES AND HOBBIES

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Mentor: Inventors of the Future	2005-2006
Election Judge for Baltimore City Board of elections	2004-2005
Volunteer: JHU American Red Cross Corps	2003-2004
Co-Chair of the JHU Black Graduate Student Association	2003-2004
Secretary of the JHU Graduate Representative Organization	2002-2003
Graduate Student Representative to the JHU University Safety Committee	2002-2003
Department Representative to the JHU Graduate Representative Organization	2001-2002
Conversant in basic Spanish and Mandarin	

## COMPUTER SKILLS

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Unix, Mac OS, Windows OS, MS Word, MS Excel, MS PowerPoint, MS FrontPage, Photoshop, LaTeX, LabView, MicroCal Origin, and FORTRAN