

Ryan Eagan

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Education

In Progress

B.S. - Physics

Pennsylvania State University, University Park, PA

Minor in Mathematics

Overall GPA: 3.53/4.00

Research Interests

- Computational Science, Simulation and Visualization
- Astrodynamics/Astronautics, Gravity and Relativity
- Dynamical Systems, Emergence, Network Science
- Neural Networks, Multi-Agent Systems, Artificial Intelligence

Research Projects

- **Robotics and the Arts, IST Undergraduate Research Project**, Supervisor: Dr. Debra Smarkusky, Penn State Worthington-Scranton, Dunmore, PA. Applied mechanics and JAVA development using LEGO NXT robots to coordinate music/dance routines for future Integrative Arts curriculum. Summer 2011.
- **Physics In Motion, IST Undergraduate Research Project**, Supervisor: Dr. Debra Smarkusky, Penn State Worthington-Scranton, Dunmore, PA. Assisted group in developing custom application for STK 9 based on lab exercise from previous work listed above. Spring 2011.
- **Independent Study (PHYS496)**; Supervisor: Dr. Yvonne Glanville, Penn State Worthington-Scranton, Dunmore, PA. Experimental study of modern physics. Designed, executed and analyzed experiments to explore the following topics: Planck's Constant and quantization of energy, Rydberg's Constant and line spectra analysis, cloud chamber construction and elementary particles, geiger counter construction, radioactive decay and non-traditional detection methods. Spring 2011.
- **Independent Study (PHYS496)**, Supervisor: Dr. Yvonne Glanville, Penn State Worthington-Scranton, Dunmore, PA. Studied advanced orbital mechanics through the use of simulations utilizing Satellite Tool Kit 9, created and authored an introductory lab exercise (PHYS211) to replace existing gravitational lab exercise. Fall 2010.

Publications

1. D.L. Smarkusky, S.J. Stancavage, **R.E. Eagan**, P.E. Probert, R.F. Plociniak, A.M. Nichols, 2011. Physics in Motion: An Interdisciplinary Project. To appear in *Proceedings of the 12th Conference on Information Technology Education* (SIGITE '11), ACM, New York, NY, USA.

Posters & Presentations

- **Spectroscopic Characterization of Nickel(II) Complexes with Trans-4-Hydroxy-L-Proline and Cis-4-Hydroxy-D-Proline**. Ryan Eagan and Geri L. Ellett. 6th Annual Penn State Worthington Scranton Undergraduate Research and Scholarship Fair. Penn State Worthington. April 25th, 2011.
- **Exploring Geometric and Wave Optics with the Wii Remote**. Mike Bonacci, Chris Butler, and Ryan Eagan. 6th Annual Penn State Worthington Scranton Undergraduate Research and Scholarship Fair. Penn State Worthington. April 25th, 2011.
- **Exploring the Interplanetary Transport Network with STK9**. Ryan Eagan. Penn State Eastern Regional Undergraduate Research Symposium. Penn State Lehigh Valley. April 20th, 2011.

Teaching/Academic Experience

- **Tutor**, Penn State Worthington-Scranton Student Learning Center. Approximately 200 hours tutoring mathematics from basic algebra to multi-variable calculus and physics in both individual and group settings. Evaluation ratings were consistently high with many positive comments. 2010-Present.
- **Lab Assistant**, Penn State Worthington, Department of Physics. Configured new physics lab suite and equipment. Setup equipment for lab sessions as required, maintained and repaired older lab equipment. Revised and designed new lab activities and lab manual for PHYS 211 and PHYS 212. Physics 211 recitation. 2010-2011

Work Experience

- Point of Sale Systems Engineer** Digital Control Systems, Inc. 2005-2009
- Sold, programmed, installed and maintained point of sale systems for small retail establishments (MS POS, QuickBooks POS, MICROS).
 - Custom application development for third-party interfaces, reporting in-house applications; SQL and VB .NET.
 - Configure and install site wide networking solutions, wired and wireless.

- Media and Web Development Consultant.** Self employed. 2001-2005
- Developed web and multi-media press/marketing packages for the motor sports industry.
 - Installed, configured and maintained small office networks.

- Applications Developer/Network Engineer** Commonwealth Telephone Enterprises. 1997-2001
- Departmental budget decisions; supervise Y2K transition; provide direct user support in various company systems, including: Hardware, Windows, OS X, Office, Mainframe and other major applications
 - Local Area Network Administration, TCP/IP, Novell IPX/SPX, NT, NORTEL
 - Administer AS400 System; SQL Server
 - Initiated and implemented a knowledge base and training program for our technical support department

Technical Skills

- **Programming:** .NET, VB, C#, SQL, C++, JAVA
- **Software:** STK 9, SciLab, MATLAB, NetLogo, Office, DataStudio, GNU Plot, LaTeX
- **Platforms:** LINUX, Windows, Solaris, OS/400
- **Networking:** TCP/IP, Cisco hardware, CISCO IOS, DHCP, Firewalls, Wireless, Cabling
- **Equipment:** PASCO Science Workshop Interface and Sensors, Spec20, Spectroscope, Basic Electronic Equipment / Skills (Multi-meter, power supplies, soldering, schematic interpretation, etc.)

Society Memberships

- Society of Physics Students. February 2010 - Present

Honors and Awards

- Patrick J. Rose Award for Excellence in Student Leadership and Service. 2011
- Elsbach Trustee Scholarship in Science. 2011
- Elsbach Scholarship in Physics. 2011
- Osher Foundation Reentry Scholarship. 2011
- Penn State Eastern Regional Undergraduate Research Symposium, 3rd Place. Spring 2011.

Service

- Student Speaker, Penn State Worthington Scranton Science Suite Dedication. Oct 2010
- Founder/President. Penn State Worthington Science Club. Sept 2010 - July 2011.
- Student Activities / Facilities Fee Committee, Penn State Worthington. 2010-2011.
- Student Activities Staff Assistance Hiring Committee, Penn State Worthington. September 2010.
- Various Roles, Penn State Worthington Student Government Association. Summer 2010.