

# NATHAN COOPER SHUPE

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## EDUCATION

### **Swarthmore College**, Swarthmore, PA.

Candidate for Bachelor of Arts in the Honors Program, June 2005.

Major in Astrophysics. Minor in Philosophy. National Dean's List Selection, 2001-2002. Sigma Xi Honor Society member. Centennial Conference Fall Academic Honor Roll, 2002, 2003. Selection to 2003 All-Centennial Conference Team (Honorable Mention), 2003 Academic All-America College Division District II Men's Soccer Team (Second Team).

### **Shawnee High School**, Medford, NJ.

Graduated in top 2% of class, June 2001.

Salutatorian. National Honor Society member. National Art Honor Society member. Edward J. Bloustein Distinguished Scholar Award recipient. United States Marine Corps Scholastic Excellence Award recipient. New Jersey Scholar Athlete Award recipient. Selection to New Jersey All State Soccer Team (2<sup>nd</sup> Team), All South Jersey Soccer Team (1<sup>st</sup> Team), and All Olympic Conference Soccer Team. Presidential Classroom. One of two New Jersey state representatives at National Youth Science Camp.

## RESEARCH EXPERIENCE

### **Visiting Student Enrichment Program Internship**, NASA Goddard Space Flight Center. *(June – August, 2003)*

Developed a parallel simulation code from a similar single processor code, and then ran the parallel simulation code on a Beowulf cluster machine. The code studied utilizes a random path model using entwined paths that can be shown to model the quantum mechanical properties of a particle in a box. Prepared scientific report and gave a presentation at NASA GSFC. Presented a research poster at NASA GSFC and Swarthmore College.

Report available at [http://webserv.gsfc.nasa.gov/VSEP/2003/shupe\\_8-15-2003.pdf](http://webserv.gsfc.nasa.gov/VSEP/2003/shupe_8-15-2003.pdf)

### **Research Assistant**, Department of Physics and Astronomy, Swarthmore College. *(January 2003 – present)*

Using the computer programs VisRad, Spect3D, and Helios (Prism Computational Sciences), modeled the photoionized plasmas created in gas cell experiments using the Z machine at Sandia National Laboratory. Also, using the same software, modeled the radiation field in inertial confinement fusion experiments at the Omega Laser Facility of the University of Rochester. Summarized fusion results in a presentation distributed internally to the project collaborators.

Publication available at [http://astro.swarthmore.edu/~cohen/Papers/phys\\_plasmas\\_may\\_2004\\_aps\\_omega.pdf](http://astro.swarthmore.edu/~cohen/Papers/phys_plasmas_may_2004_aps_omega.pdf)

A more thorough summary of my research and additional research materials are available on my research website at <http://www.sccs.swarthmore.edu/users/05/shupe/research.html>

## OTHER WORK EXPERIENCE

### **Soccer Goalkeeper Trainer**, Pinelands Blue Angels Soccer Club. *(June 2000 – July 2001)*

Held training sessions twice a week for the team goalkeeper. Developed drills for building endurance and improving technique and tactical play.

### **Junior Counselor**, Medford Lakes Colony Camp. *(July 1998, 1999, 2000)*

Responsible for groups of fourth and fifth grade boys. Supervised group at all camp activities, and organized additional activities during free periods.

### **Receiving Associate**, Kohl's Department Store. *(June – August, 2002)*

Unloaded and processed merchandise from delivery trucks. Set up product displays and restocked merchandise in the store.

### **Camp Counselor**, Garnet-Haven Soccer Camp. *(July 2004)*

Instructed a group of third and fourth grade boys and girls. Organized drills and games to enhance soccer skills and demonstrated more advanced technical and tactical skills.

## LEADERSHIP EXPERIENCE

### **Captain**, Swarthmore College Men's Varsity Soccer Team. *(Jan. – May, 2003/4, Sept. 2004 - present)*

Served as team leader. Scheduled and led off-season practices and organized team for a local indoor soccer league.

**Steward**, Swarthmore Protestant Community.

*(Sept. 2002 – May 2003)*

Led meetings once a week and organized group activities.

**Executive Board Member**, Swarthmore Student Athletic Advisory Committee (SAAC).

*(January 2003 – May 2004)*

Recorded minutes of each meeting, and participated in all committee sponsored activities.

**Co-President**, Swarthmore Student Athletic Advisory Committee (SAAC).

*(September 2004 – present)*

Led meetings and organized group activities.

## **INTERESTS**

4-year member of varsity soccer team, space travel, oil painting, politics and government.