

Sean B. Ballinger

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EDUCATION

Columbia University

MAY 2016 | NEW YORK, NY

B.S. IN APPLIED PHYSICS

MINOR IN COMPUTER SCIENCE

GPA: 3.72, Dean's List

Major GPA: 3.76

Egleston Scholar: 1% of entering engineering student body

Phillips Academy

JUNE 2012 | ANDOVER, MA

LINKS

Projects: <http://sball.in>

Bio: engineering.columbia.edu/sean-ballinger

github.com/sballin

[linkedin.com/in/seanballinger](https://www.linkedin.com/in/seanballinger)

COURSEWORK

Physics, Mathematics

Quantum Mechanics

Plasma Physics

Partial Differential Equations

Applied Electrodynamics

Thermodynamics

Mechanics

Electrical Engineering

Making, Breaking Codes

Computer Science

Advanced Programming (C, C++)

Data Structures in Java

SKILLS

Programming

C, C++, Python, iOS, Java,

Bash, Matlab, Mathematica,

L^AT_EX, HTML, CSS

Software

Autodesk Inventor, Star-CCM+,

Pointwise, Overflow

Hardware

Arduino, Raspberry Pi, breadboards,
soldering, welding

Foreign Languages

SPEAK, READ, WRITE: French, Italian,
Spanish, German

SPEAK, READ: Turkish, Japanese

RESEARCH

MIT Plasma Science and Fusion Center | EGLESTON SCHOLAR

MAY – AUGUST 2015 | CAMBRIDGE, MA

- Operated a high-speed camera imaging plasma turbulence in the X-point region and created tools in Python to analyze image data
- Presentation at the American Physical Society Division of Plasma Physics (APS-DPP) conference and publication forthcoming

General Atomics DIII-D | NATIONAL UNDERGRADUATE FELLOW

JUNE – AUGUST 2014 | SAN DIEGO, CA

- Characterized plasma control in superconducting tokamaks and helped create a Matlab model to automate plasma control system configuration
- Received the Outstanding Undergraduate Poster Award at the American Physical Society Division of Plasma Physics conference in 2014

NASA Ames Research Center | NEW YORK SPACE GRANT

JUNE – AUGUST 2013 | MOFFETT FIELD, CA

- Created simulations of the D8 “Double Bubble” aircraft concept and used NASA’s Pleiades supercomputer to validate the new LAVA fluid code
- Used Star-CCM+, Pointwise, and Overflow

Columbia Plasma Physics Laboratory | EGLESTON SCHOLAR

JANUARY 2013 – PRESENT | COLUMBIA UNIVERSITY, NY

- Machined and assembled parts for a magnetic coil power supply
- Analyzed spectrometer data to detect impurities in plasma
- Writing Python code to reconstruct plasma and eddy currents on the High-beta Tokamak using magnetic sensor data

Stony Brook MRSEC | HIGH SCHOOL RESEARCHER

JUNE – AUGUST 2011 | STONY BROOK UNIVERSITY, NY

- Performed tests on a gold nanoparticle catalyst for hydrogen fuel cells
- Presented at the International Conference for Sustainable Energy Technologies in Istanbul and became a semifinalist in the **Intel Science Talent Search**

AWARDS

2014 APS-DPP Outstanding Undergraduate Poster Award

2014 Robert Gross Scholarship in Applied Physics

2013 NASA Aeronautics Scholarship Program

2012 Egleston Research Scholar

2012 Intel Science Talent Search Semifinalist

ACTIVITIES

- **Columbia Undergraduate Science Journal:** Editor-in-chief (2015–present), Associate Editor and board member (2012–15)
- **Columbia Engineering Student Council Project:** Leading the development of a platform for distributed collaborative art around Columbia (present)
- **Society of Physics Students:** Member (2012–present)
- **Euler Friends:** Math circle dedicated to solving Project Euler problems (2012–14)
- **Columbia SAE:** Intake and Exhaust Systems Engineer (2012–13)