MELLON COLLEGE OF SCIENCE

MCS UNDERGRADS ARE BREAKING THE BOUNDARIES OF SCIENCE.

MCS undergrads are integral parts of faculty research teams — they don't just repeat experiments that have been done before. They discover something new, publish their results in top journals and present their work at local and national conferences. They explore real-world problems that go beyond the categories simply labeled biology, chemistry, math or physics.

PROGRAMS

Biological Sciences
Biological Sciences (BA or BS)
Biological Sciences and Psychology (BS)
Biological Sciences/Neuroscience Track (BS)
Computational Biology (BS)
Neuroscience (BS)

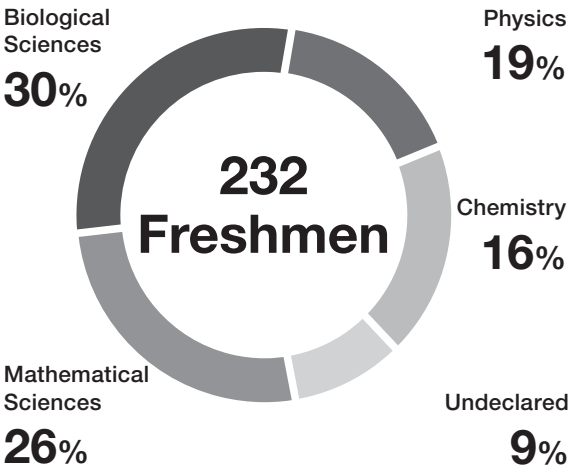
Chemistry
Chemistry (BA or BS)
Chemistry/Biological Chemistry (BS)

Mathematical Sciences
Computational Finance (BS)
Mathematical Sciences (BS)
Mathematical Sciences (Computational and Applied Mathematics) (BS)
Mathematical Sciences (Discrete Mathematics and Logic) (BS)
Mathematical Sciences (Operations Research and Statistics) (BS)
Mathematical Sciences (Statistics) (BS)
Mathematical Sciences and Economics (BS)

Physics
Physics (BA or BS)
Physics/Applied Physics Track (BS)
Physics/Astrophysics Track (BS)
Physics/Biological Physics Track (BS)
Physics/Chemical Physics Track (BS)
Physics/Computational Physics Track (BS)

Intercollege
Bachelor of Science and Arts (BSA)
Science and Humanities Scholars Program (SHS, joint with DC)

FIRST-YEAR STUDENTS



Favorite First-Year Courses

- ☐ Kitchen Chemistry
- ☐ Fermat's Last Theorem
- ☐ Science & Science Fiction
- ☐ Phage Genomics Research
- ☐ Matter & Interactions

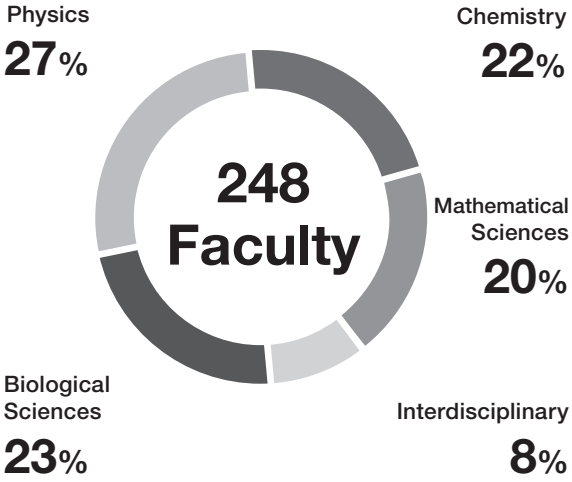
MCS Admitted Student Statistics

SATCR	SATM	SATWR	ACTE	ACTM	ACTC
680-770	740-800	700-780	33	34	33

Rank 3% **GPA** 3.86

More than 70% of undergrads conduct cutting-edge research. Create new knowledge. Advance their fields. Publish results.

FACULTY

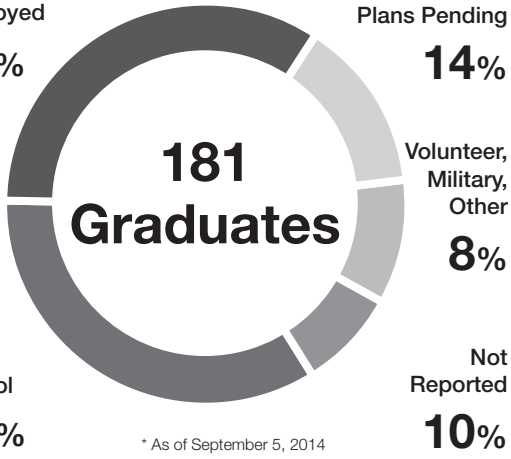


Notable Faculty

- ☐ Krzysztof Matyjaszewski, J.C. Warner University Professor of Natural Sciences and Chemical Engineering, is **the first to discover** atom transfer radical polymerization, a revolutionary method for creating polymers.
- ☐ Nathan Urban, Dr. Frederick A. Schwertz Distinguished Professor of Life Sciences, head of Department of Biological Sciences, is one of *Scientific American's* **Top 50 Innovators.**
- ☐ Irene Fonseca, University Professor of mathematics, is the **second female president of the Society for Industrial and Applied Mathematics.**

Carnegie Mellon

GRADUATE SUCCESS



* As of September 5, 2014

Top Employers

Microsoft

Merrill Lynch

Bank of America

NIH National Institute of Environmental Health Sciences

Alumni Accomplishments

Chemistry 2008 graduate Haifeng Gao, received the **AkzoNobel Award** for Outstanding Graduate Research in Polymer Chemistry.

Biological Sciences alumni Eda Altiok 2009, Sharon Briggs 2010, Kellie Kravarik 2011, Matthew Remillard 2009 and Physics alumna Rebecca Krall 2011, received 2012 **National Science Foundation Graduate Research Fellowships**.

Physics 2004 graduate Kristine Ferrone was **a crew member for the Flashline Mars Arctic Research Station (FMARS) mission**. FMARS is a habitation module in the Arctic run by the Mars Society, a nonprofit organization promoting human exploration of Mars.

Student Startups

Emerald Therapeutics, a three-year old Silicon Valley startup, is looking to revolutionize the biotechnology industry. Co-founded by Biological Sciences 2005 grad D.J. Kleinbaum and Computational Biology 2005 grad Brian Frezza, Emerald Therapeutics is taking an interdisciplinary approach to solving the problem of persistent viral infections that the body cannot clear on its own.

DID YOU KNOW?

1. **MCS students have been learning to be green chemists since 1992** when Professor Terry Collins introduced the Green Chemistry course — the first university course on green chemistry. Students learn how to design safer substitutes for hazardous chemicals and find green ways to reduce their adverse impacts.

2. **The Mellon Institute**, home to the MCS dean's office, labs and classrooms, **has been a backdrop in several movies**, including "Monkey Shines" (1988), "Hoffa" (1992), "Lorenzo's Oil" (1992), "The Mothman Prophecies" (2002) and most recently "The Dark Knight Rises" (2012). Dr. Bunsen Honeydew appeared on the Muppet Show in 1976 as a graduate of "Carnegie Melonhead University."

3. MCS administers **the Health Professions Program (HPP)**, which serves pre-health undergraduates, post-baccalaureates and graduate students across the entire university who are interested in medicine, dentistry or other health professions. The HPP director guides students in their course choices and all aspects of their professional degree program application process.

4. MCS has been **home to 9 of the university's 18 Nobel Laureates**, including John Nash Jr., the subject of "A Beautiful Mind." In 1948 he earned both his bachelor's and master's degrees in mathematics.

RESEARCH PROJECTS

An Investigation of Cluster Galaxies

Models for galaxy formation and evolution predict that the dense environment of galaxy clusters (galaxies bound in orbits through the hot gas of an Intracluster Medium) will physically alter the properties of galaxies in a cluster. This research is investigating these properties in the galaxies in the Sloan Digital Sky Survey, in the redshift range.

Motion Intelligence Surveillance Cameras

This research works with the Pennsylvania Department of Transportation to conduct real-time simulation of traffic data in a virtual world to obtain information about buses around the city. The research solution uses OpenSim and virtual world construction using tools in GUI and implementations in the open source language.

Peptide Nucleic Acid Synthesis (PNA)

PNA are being studied for molecular electronics and nanotechnology applications — molecular switches could make possible molecule-based computation. This research's goal is to synthesize, purify and characterize ligand-modified PNA.

MRI Study of Traumatic Brain Injury (TBI)

TBI is one of the leading causes of U.S. mortality and morbidity and has gained attention due to the conflicts in Iraq and Afghanistan. This research plans to take advantage of the novel perfluorocarbon-based cell tacking agents to look at systemic inflammatory involvement following experimental TBI.

Carnegie Mellon University

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