“Only 22% of these students had an undergraduate major in neuroscience, behavioral neuroscience, or psychobiology. Other common undergraduate majors were biology (23%), psychology (18%), and chemistry or biochemistry (7%), and an additional 12% had dual majors including one or more of these disciplines.

These numbers are similar to those seen in the previous surveys.”

from the 2009 NDP Survey

**Baccalaureate Field**: No restrictions.

Prior academic work in the following disciplines is strongly recommended:

- **Biology** (8 hours)—introductory biology plus lab
- **Chemistry** (16 hours)—general chemistry and organic chemistry, plus lab or biochemistry (5–4 hours)
- **Physics** (6 hours)—introductory physics

from the Graduate College catalogue

In addition, a real research experience is effectively required

In our programs, students are paid to receive an education, so each represents a substantial investment by the school and by faculty who are expected to pay stipends from their grant funds.
Two Examples of First-Year Curricula

**Required:**
- Cell Biology
- Molecular Biology
- Principles of Neuroscience
- and an elective neuroscience course, often Cell and Molecular Neuroscience.

All subsequent courses are electives including Developmental Neuroscience, Systems Neuroscience, Computational Neuroscience, etc. as well as courses taught in Pharmacology or Anatomy that are relevant.

**Required:**
- Semester 1
  - Cell Biology
  - Foundations of Neuroscience

- Semester 2
  - Neuroanatomy
  - Foundations of Neuroscience II

A third course each semester is an elective reserved for recommended courses like Biochemistry, Molecular Biology or other courses.

“Students without chemistry and math are unlikely to make it through [the first year courses]...we really need a nucleus of biology and chemistry. This would necessarily include calculus. While physics is preferred, it is neither required nor necessary for at least a subset of the students.”

A look at the program of presentations at SfN makes abundantly clear the interdisciplinary nature of contemporary neuroscience.
“How would you get the biology and chemistry and molecular biology for transgenics and neurochemistry; math for computation, physics and imaging for fMRI, and behavioral work for cognitive neuroscience into a curriculum?”

One size does not fit all

Thanks to
Alison Hall - CWRU
Mark Rasenick - UIC
James Unnerstall - UIC
Bruce Johnson - Cornell
Richard Olivo - Smith

ANDP/CNDP