

Dave Fitch - Teaching Philosophy and Course Objectives

- **To demonstrate that science is *accessible* to all by engaging and fostering the natural curiosity and creativity from which scientific inquiry begins.**

Self-driven intellectual growth is fundamental to a productive, competitive and healthy society. For this goal, I show enthusiasm for what I teach, I help students identify projects that engage their interests, and I promote discussion and let students know their contributions are valued. I also invite diverse guest lecturers and feature research from scientists of different backgrounds.

- **To *appreciate* the complexity and beauty of living systems and our connectedness to them.**

Learning to value living beings while understanding their interconnectedness is foundational to conserving economically important living resources. I teach this by: including diverse and interesting natural histories; fostering appreciation of the shared biology between humans and other organisms; and supplementing lectures with experiential field trips.

- **To develop skills in *critical-thinking*, problem-solving, data interpretation and the scientific method.**

The ability to evaluate information is more critical now than ever. I model these skills in lectures and provide extensive, individualized commentary on homework and quizzes. I guide in-class problem-solving and try to develop students' metacognitive skills for *self-evaluation* via the Socratic method and by trying to remove their fear of failure. *Using* failure is the basis of the scientific method and a foundation for lifelong learning. (Fear of failure is increasingly prevalent and may be one cause of increased anxiety among students.)

- **To acquire *knowledge* of how living systems work and the techniques derived from and used in biological research.**

In an ideal society, medical, legal, ethical and policy decisions would be based on evidence and critical evaluation of different arguments. I try to distill the essential concepts gleaned from in-depth scientific work and the gaps in our knowledge.

- **To acquire skills in working and communicating with others.**

These are essential to be an effective scientist and a responsible citizen. I therefore mentor group projects, co-authored term papers, collaborative lab activities, oral presentations, and peer review exercises in my courses.

I constantly try to improve my teaching. I have participated in – and initiated – teaching workshops. I take student course evaluations to heart, read about teaching methods and technologies, and – yes – I experiment, often fail, and try again.

Support of Independent Research and Honors Theses

I have mentored scores of undergrads in research during ~30 years at NYU, including ~10 for Honors theses. 12 undergrads have been co-authors on my peer-reviewed publications. I have mentored undergrads from diverse backgrounds and have also

financially supported students via supplements to my NSF and NIH grants. I have also mentored 6 PhD students (3 of whom obtained federal diversity support), 9 MS students and 3 postdocs.

Other

I helped improve curricula via Departmental and CAS curriculum committees and served as Interim Biology DUS twice. I continually revised the introductory *Principles of Biology* course over many years as Instructor-of-Record. I also helped devise and then revise the entire science curriculum at NYUSH while Interim A&S Dean.