

**Preparing the Professoriate and
the Hewlett Initiative Project**

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What are the goals of the Preparing the Professoriate?

- Help doctoral students become more efficient and effective teachers
- Make doctoral students more competitive for a variety of professional positions that require teaching experience and skill
- Enhance the overall quality of instruction at NC State University

Who participates?

- 20 students, faculty mentors (through university-wide competition)
- US Department of Education GAANN Fellows, NSF Graduate Research Trainees (participate as a requirement)

What are the program requirements?

- Observation/preparation & mentored teaching semesters
- Attendance at group discussions of teaching related issues
- Submission of teaching portfolio

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What does the observation/preparation semester entail?

- Observing the mentor and/or other faculty members teach
- Meeting with the mentor on a regular basis to discuss the course to be taught and faculty life in general
- Preparing materials for the course and the teaching portfolio

What does the mentored teaching experience entail?

- Teaching or co-teaching a course under the direction of the mentor
- Evaluation by the mentor both during the course (formative) and at the end of the course (summative)
- Recording reflections on the teaching experience in a teaching journal or log (optional)
- Evaluation by one's students (formative and summative)

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What are the mentor's responsibilities?

- Discuss teaching challenges and strategies with protégé
- Help protégé plan teaching semester and offer advice in maintaining balance between student/teacher/researcher roles
- Observe and provide feedback on protégé's teaching

What are other program features?

- Reference book, *University Teaching: A Guide for Graduate Students*, provided to each student
- Funding for student participants (\$1,000 each semester)
- Transcript notation upon approval of teaching portfolio
- Optional 3-hour course credit for teaching semester (Course title: Doctoral Supervised Teaching)

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Target Course: *ST101H* Statistics by Example, Honors Section

Mentor: Dr. William H. Swallow, Member NC State Academy of Outstanding Teachers

Text: *Statistics: Concepts and Controversies* (5th ed.), David S. Moore

Students: Statistics majors and non-majors (25-30 by invitation)

Goals:

- To explore the ideas of statistics without the level of detail typically seen in other courses
- Provide stat majors with an overview of fundamental ideas
- Provide non-majors with an understanding of why statistics would be an appealing major for others
- Recruitment tool: Entice non-major students to consider statistics as a minor or major

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Approach: Focus on student involvement and critical thinking through an open discussion format (traditional lecturing kept at a minimum)

Course Specifics:

- Regular discussion of the (mis)use of statistics found in current newspapers, magazines, and radio shows.
- Small group projects (design/conduct surveys, develop experimental designs, evaluate use of statistics in popular medical journals)
- Other topics: misleading graphics, medical/research ethics, sample surveys and randomized response, mark-recapture methods
- Guest speaker topics: Clinical Trials, Statistical Genetics

For more information about the Preparing the Professoriate program, please visit: www.fis.ncsu.edu/grad/ptp/

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What are the Hewlett Initiative and Hewlett Continuation Projects?

Hewlett Initiative

Funded by the Hewlett Foundation, the Hewlett Initiative involved a core group of faculty, staff, and graduate students who investigated methods of *inquiry-guided instruction* with the purpose of transforming general education at NC State University.

Hewlett Continuation

As the second phase of the project, the Hewlett Continuation placed these methods into action through individual course transformation, incorporating critical thinking outcomes and practices. The participants involved a multidisciplinary group of 40 faculty and 20 graduate students.

These programs have allowed faculty to improve upon traditional teaching methods that may no longer be effective. For graduate students, it provided excellent preparation for future teaching positions through an exposure to recent trends in pedagogy.

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What is Inquiry-Guided Instruction?

Inquiry-guided instruction refers to an array of classroom practices that promote student learning through guided and, increasingly, independent investigation of problems for which there is often no single answer.

These practices include:

- interactive lecture
- discussion
- case studies
- group work
- problem-based learning
- simulations/fieldwork

While inquiry-guided instruction is appropriate in all classes, it is most effective in small classes (i.e., ~20 students). It is particularly appropriate for first year students who are forming habits of learning that they will exercise throughout their undergraduate years and beyond.

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What does the Hewlett Continuation entail?

- Retreats, working dinners, workshops, invited speakers, and interdisciplinary working groups supported by the NC State University Faculty Center for Teaching and Learning
- Progress monitored through presentations by Hewlett fellows and assessment through videotaping classroom instruction, peer evaluation, and student feedback

What are the principles of the Hewlett projects?

- Inquiry and critical thinking
- Student responsibility for learning
- Intellectual growth and development
- Self-discipline

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What are common difficulties shared by Hewlett fellows?

- Students evaluate innovative teaching less favorably than traditional teaching (very resistant to change).
- Much more time required for courses involving innovative teaching approaches.
- Difficult to incorporate Hewlett principles and meet expectations of content coverage prevalent in many disciplines.
- Often difficult to receive support for such efforts at the department level (both from colleagues and administrators).

For more information about the Hewlett Initiative and Continuation Projects, please visit: www.ncsu.edu/fctl/lecsem.html#hewlett

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Target Course: ST311, Introduction to Statistics

- Introductory service course for non-majors, no prerequisites
- Diverse audience (math abilities and class standing)
- Text: *The Basic Practice of Statistics* (2nd ed.), David S. Moore
- Objective: Provide an overview of basic theory, statistical thinking, and techniques.

Changes Instituted during Hewlett Continuation Project

- Engaged students in guided discussions
- Requested regular student feedback concerning course progress
- Used interactive lectures where students filled in gaps
- Regularly included *Statistical Time Outs*

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Statistical Time Outs

- 10 to 15 minute discussion connecting statistics to issues students are interested in. Examples are based upon represented majors.
- Helps answer the question: "*How is statistics useful for me?*"
- When possible, involved students by using their data.
- Free Lunch!

Statistical Time Out Topics

Biological Sciences	⇒	Comparison of Varieties of Corn
Sociology	⇒	Seeking Correlations in Personal Relationships
Public Health	⇒	Proportion of Illegal Drug Usage Among Class Members
Mathematics	⇒	Probability and the Birthday Problem
Criminology	⇒	DNA Forensics and Statistical Genetics
Ethics	⇒	'Sham' Surgery of Clinical Trials, Research Cover-ups
English/History	⇒	Statistical Analysis of Disputed Authorship

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