

Training Statistics Teachers at Iowa State University*

Amy G. Froelich
Department of Statistics
Iowa State University

*Talk based on paper "Training Statistics Teachers at Iowa State University", The American Statistician, Vol. 59, No. 1 by Amy G. Froelich, William M. Duckworth and W. Robert Stephenson

Courses

- Stat 101 (intro - general)
 - 5 course instructors.
 - 10 laboratory instructors.
- Stat 104 (intro - agricultural and biological)
 - 5 course instructors.
- Stat 226 (intro - business)
 - 5 course instructors.
 - 5 graders.

Courses

- Stat 105, 305 (intro - engineering)
 - 6 course instructors.
- Stat 326 (2nd course - business)
 - 6 laboratory instructors.
- Stat 401 (2nd course - general)
 - 5 laboratory instructors.

Management

- Professor-in-Charge (Stat 101, 104, 226, 326)
 - Chooses text.
 - Sets syllabus and course policies.
 - Develops common HW assignments and labs.
 - Develops teaching materials.
 - Approves exams and grades for TA instructors.
 - Coordinates disability accommodations.
 - Resolves student concerns in all sections.
- Course mentor (Stat 105, 305)
- Course Instructor (Stat 401)

New Graduate Students

- Supported by the Department
 - Teaching Assistants (TA)
 - Research Assistants (RA)
 - Consultants
- Not Supported
 - Students in Other Disciplines (concurrent M.S. or Ph.D. student in Statistics)

Teaching Assistant (TA)

- M.S. Students
 - Year 1 possible assignments
 - Laboratory Instructor (1/4 time)
 - Grader (1/4 time)
 - Year 2 possible assignments
 - Course Instructor (1/2 time)
 - Laboratory Instructor (1/4 time)
 - Grader (1/4 time)

Teaching Assistant (TA)

- Ph.D. Students
 - Same path as M.S. Students
 - At some point, almost all will be either
 - Course Instructor
 - Laboratory Instructor

Training Process - Year 1

- Laboratory TA (Stat 101, 326, 401)
 - Present labs written by course instructor.
 - Facilitate student learning.
 - Weekly meetings with course instructor and/or Professor-in Charge.
- Evaluations
 - Students
 - Course Instructors
 - Good evaluations = “promoted” to course instructor.

Training Process – Year 2

- Course Instructor (Stat 101, 104, 105, 226, 305)
 - Lectures
 - Assessments (Exams, Quizzes)
 - Grades
 - Course Management (students, graders, lab TAs)
- Weekly meetings with Professor-in-Charge
- Evaluations
 - Students
 - Classroom visits by Professor-in-Charge

Rationale

- Lack of Experience in Statistics
 - Many did not take intro course themselves
 - Background more theoretical
 - Learn statistical concepts through teaching
- Teacher training programs
 - Classroom observation experiences
 - Student teaching experience
- Prepare for possible role as future faculty member

Rationale

- Scholarly teaching in Introductory Statistics
- Professors-in-Charge involved in Statistics Education.
 - Current accepted “best” practices
 - Mentoring instructors throughout semester

Possible Concerns

- Evaluation of Laboratory Assistants
- Identification of Good Course Instructors
- Professor-in-Charge
 - Credit on Position Responsibility Statement.
 - Effect on career advancement.

Future Direction

- 1 credit hour Seminar Course?
 - Statistics Content
 - Statistics Pedagogy
 - Course Management
 - Statistical Software Packages