

## Graduate Student Seminar

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During the 2- to 5-yr "apprenticeship" phase of their careers, graduate students must absorb and digest an increasingly complex volume of material. At the same time, they must develop an appreciation for the scientific method and develop the ability to conduct original research. Research data, once generated, must be disseminated in oral and written forms to the scientific community and the general public. The development of speaking and writing skills that facilitate effective information transfer is an important, and sometimes neglected, phase of the graduate training process. In the short term, these skills help earn degrees; in the long term, they help earn jobs, grants, and academic promotions. Traditionally, the student seminar has been utilized as the forum for measuring and augmenting a student's ability to critically evaluate, integrate, and present scientific data.

Over the course of several semesters prior to the fall of 1986, there was a gradual decline in seminar attendance by faculty and students in our department. The students complained that they were presenting seminars to sparse audiences, and the faculty complained that the quality of student seminars was poor. In the fall of 1986, the faculty appointed a committee to study the problem and suggest methods for improvement. Our first step was to investigate the "hows and whys" of seminars conducted in other plant science (primarily plant pathology) departments across the country.

Current seminar or department chairmen at 18 universities were canvassed (Table 1), and we acknowledge and thank each of these individuals for their assistance and candor. We asked 10 questions: 1) How often is seminar offered? 2) Is seminar run by an individual or a committee? 3) How are seminar topics selected? 4) How frequently are students required to present a seminar? 5) Are students permitted to present seminars on their own research? 6) Is a seminar abstract required? 7) What type of grading system is used? 8) Is an evaluation form used? If so, is the form filled out by faculty only or by all who attend? 9) On a 1-10 scale (1 = unimportant, 10 = very important), how important is seminar training to students? 10) What other comments do you have about seminar?

The survey results, summarized in Table 1, are interesting from the standpoint of the lack of consensus on what is the best seminar system. At all of the institutions surveyed, seminar is offered each semester or quarter. In about one-half of the cases, a faculty member is in charge of seminar; in the remainder, a committee composed of both faculty and students officiates. Topics are usually selected by the person or group officiating. Permitting students to fulfill the seminar requirement by presenting their own research data has been debated in most departments. Advocates usually feel that the time and effort required to prepare a quality seminar on an unfamiliar topic are excessive. Many opponents contend that time thus spent is beneficial because it sharpens the students' ability to review, assimilate, and evaluate data and also exposes

them to investigations outside their specific research project area. Distribution of a pre-seminar abstract is required of students at most institutions, the rationale almost always being that preparing an abstract helps students to develop the important skill of scientific writing. Grading systems vary, with one-half of the institutions employing an A, B, C system and the rest using either pass/fail or satisfactory/unsatisfactory systems. All respondents agreed that the evaluation of and feedback to speakers were key elements of a useful seminar series. Herein lies the real importance of faculty attendance and participation. In a majority of the institutions, written evaluation forms are used. Additionally, in most cases, all who attend participate in the evaluation process, although in most seminars only faculty evaluations are used for grading purposes. At both the M.S. and Ph.D. levels, all respondents highly rated the importance of seminar in the training of students.

Utilizing the survey data as a guide, our committee recommended, and the faculty approved, a seminar policy that incorporates four guidelines of operation: 1) All full-time graduate students will present one seminar per year. 2) Except for "exit" seminars, students may not present seminars on their own research. 3) An A, B, C grading system will be employed

### SEMINAR EVALUATION FORM

(Check appropriate boxes and make notes when necessary)

SPEAKER: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_  
DATE: \_\_\_\_\_

#### ABSTRACT (10%)

- SUPERIOR  
 ACCEPTABLE  
 UNACCEPTABLE

NOTE: \_\_\_\_\_

#### DEVELOPMENT OF TOPIC (50%)

- SUPERIOR, GOOD DEPTH, TOPIC CRITICALLY ANALYZED  
 ACCEPTABLE  
 TOO SUPERFICIAL  
 "BOOK REPORT"  
 LACK OF UNDERSTANDING OF SUBJECT  
 UNACCEPTABLE

NOTE: \_\_\_\_\_

#### TECHNIQUE (30%)

- SUPERIOR, NOT OVERLY NERVOUS, VISUAL AIDS GOOD, NO DISTRACTING HABITS.  
 ACCEPTABLE  
 RATE OF DELIVERY PROBLEM  
 VOICE VOLUME PROBLEM  
 EYE CONTACT PROBLEM  
 VISUAL AIDS PROBLEM  
 UNACCEPTABLE

NOTE: \_\_\_\_\_

#### RESPONSE TO QUESTIONS (10%)

- SUPERIOR  
 GAVE INCOMPLETE ANSWERS  
 DID NOT ANSWER QUESTIONS

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**Table 1.** Summary of results of survey on graduate student seminars

University <sup>a</sup>	Responses to survey questions <sup>b</sup>									
	Times/ year	Run by	Topic selector	Number needed	Research allowed	Abstract required	Grading system <sup>c</sup>	Evalu- ation	Impor- tance <sup>d</sup>	Comments
Arizona	2	F	SC	1/yr	I only	Yes	A,B,C	F&S	10	None
Arkansas	2	C	F	2/MS 3/PhD	Yes	Yes	A,B,C	C	9	None
Auburn	4	F	F&S	2/deg	No	Yes	A,B,C	3-6 F	8-9	Two guest speakers per quarter
California at Davis	4	F	SC	2/yr	I only	No	S/U	Oral	8-9	Faculty also give seminars
Cornell	2	C	S	1/deg	Yes	No	S/U	Yes	8-10	Seminars videotaped
Florida	2	C	V	1/MS 1/PhD	MS/no PhD/yes	Yes	S/U	F&S	10	None
Georgia	3	C	F&S	2/MS 3/PhD	I only	Yes	S/U	F&S	10	Practice required
Illinois	2	C	C	2/MS 3/PhD	Yes	Yes	S/U	C	9	Oral critique after seminar
Iowa State	2	C	F&S	1/MS 2/PhD	Yes	No	S/F	No	8	Two guest speakers per semester
Kentucky	2	F	F&S	2/deg	I only	Yes	A,B,C	F&S	10	Exit seminar before thesis defense
Massachusetts	2	F	C	1/yr	I only	Yes	A,B,C	F&S	10	Guest speakers
Michigan State	3	SC	F&S	2/MS 3/PhD	No	Yes	A,B,C	F	10	Lectures on "how to"
Minnesota	2	F	S	1/MS 2/PhD	No	Yes	A,B,C	F&S	9	Seminars videotaped
North Carolina State	2	F	F&S	1/deg	Yes	Yes	S/U	F&S	9	Videotaping optional
Purdue	2	F	F	1/yr	V	No	S/U	F&S	9-10	Attendance mandatory
Texas A&M	2	F	C	2/deg	Yes	Yes	S/U	SC	10	Two guest speakers
Virginia Polytechnic	2	C	F&S	1/yr	No	Yes	A,B,C	Oral	10	Seminars videotaped
Wisconsin	2	F	F&S	1/yr	I only	Yes	A,B,C	Yes	8-9	First seminar "how to"

<sup>a</sup>Contacts: Arizona, M. R. Nelson; Arkansas, D. Slack; Auburn, R. Rodriguez-Kabana; California at Davis, R. N. Campbell; Cornell, W. E. Fry; Florida, R. Charudattan; Georgia, W. Garrett; Illinois, J. Pataky; Iowa State, C. R. Bronson; Kentucky, L. Shain; Massachusetts, T. Tattar; Michigan State, D. Fulbright; Minnesota, D. MacDonald; North Carolina State, D. Ritchie; Purdue, J. Ferris; Texas A&M, R. W. Toler; Virginia Polytechnic, J. Eisenback; Wisconsin, E. B. Smalley.

<sup>b</sup>F = faculty, S = student(s), C = committee, SC = seminar chairman, V = varies.

<sup>c</sup>S/U = satisfactory/unsatisfactory, S/F = satisfactory/failing.

<sup>d</sup>On a 1-10 scale, where 1 = unimportant and 10 = very important.

because it distinguishes among the classes of performance into which acceptable (passing/satisfactory) presentations usually fall. 4) A seminar committee composed of three faculty members will officiate.

One of the three faculty members is responsible for the solicitation of seminar topics from students and faculty, for the coordination of guest speakers, and for seminar rehearsals, if requested. Submitted topics are pooled and selected by students, along with presentation dates, at the organizational meeting of seminar each semester. The first seminar each semester is presented by a guest speaker. This provides the students with a good example and also permits adequate preparation time for the first student presentation. The second member of the committee is responsible for the distribution, collection, and summarization of evaluation forms, which are distributed at each seminar to all who attend. The summary is presented to and discussed with the student at a postseminar meeting. The third member of the committee is responsible for reviewing and editing (using journal format markings) the abstracts, which are distributed 2 days before seminar.

Another procedure that we adopted during the second semester of operation under these guidelines, and which has been well received, is having the students gain experience as moderators by handling the introduction and question portions

of the seminar preceding the one at which they speak.

Our first 2-yr period of operation under this policy ended in August 1988, and the policy was extended to the fall 1988 and spring 1989 semesters. The number of overly general, nonintegrative presentations by students has decreased and the level of attendance has increased, both markedly so. There is still room for improvement, but considerable progress has been made and it has been worth the effort.

Polished and informative presentations by students elicit faculty attendance and participation in seminar. In exchange for their literature-excitation, slide-making, and rehearsing activities, students receive a professional, candid evaluation of the strong and weak points in their writing, speaking, and analytical abilities. To this end, the topic-selection and evaluation components are of paramount importance. Topics should be narrow enough to pivot on two to four key papers. Evaluation forms should cover all aspects of a good presentation but not be so intricate as to detract from the ability of the audience to concentrate on the speaker. Our evaluation form (Fig. 1) has undergone three revisions.

Training the scientists of tomorrow is a heavy responsibility. Teaching them to do research of high quality is the primary objective. Watching them convey their research results in a polished, professional manner is the lagniappe.