

*We need new thinking about “who will do science” and “why,” thinking that may challenge college science teachers to grapple with issues they have not focused on before. These are how to recruit, teach, reward, and cultivate different kinds of students to science....*

—Sheila Tobias

## Preface



This second volume of *Occasional Papers* resumes our faculty's discussion of some of the pedagogical and content issues in higher education today. In particular, these six articles address some challenges and offer teaching suggestions in the fields of mathematics, computer science, and physics. The articles focus on teaching the sciences, but much of what the authors have to say about engaging our students and about the art of teaching is applicable to the practice of most disciplines.

Other than the broad topic of teaching the sciences, there was no special theme assigned to this issue. Faculty were simply encouraged to write about their recent academic projects, interests, and concerns. However, quite independent of each other, our contributors often struck the same chords. Among the common concerns expressed in the articles are (1) our country's urgent need to add to our pool of well trained scientists and mathematicians, (2) the equally urgent need for changing student attitudes toward the study of science and mathematics, and (3) the pressing demand for new approaches and methodologies in teaching these subjects. As Gary Itzkowitz points out—and his colleagues concur—when teaching the sciences, “the traditional lecture approach... is no longer viable.”

Our faculty offer alternatives to enrich the traditional lecture method. Mike Berman discusses the advantages of computer conferencing, Karen Magee-Sauer advocates experiential and communal learning techniques, and Seth Bergmann reports his experiences with increased student participation.

Janet Caldwell provides an overview of changes in mathematics, and Ron Czocho and Gary Itzkowitz discuss two special initiatives on our campus—the introduction of the Contemporary Mathematics course and the BETA Project in Mathematics.

If you enjoy these insights into what our colleagues in other disciplines are doing, please consider contributing to a future issue of *Occasional Papers*. The more we know about our shared problems and goals, the more effective we are as advisors and educators. Exchanging ideas across the disciplines strengthens our collegial bond and our understanding of the College's mission.

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