The Scholarship of College Science Teaching
A Statement from the Society for College Science Teachers

(Adopted by SCST Executive Board--April, 1998)

The following statement is a definition of scholarship in college science teaching. The purpose of the definition is to provide guidance in the important process of promotion and tenure AND to help college science teachers reflect on their own experience through the eyes of others. The statement is intended to be inclusive, i.e. to include as many characteristics of scholarly activity as possible. By no means is it expected that one person could, or should, demonstrate all of these characteristics.

The teaching scholar is one who:

1. Is knowledgeable about current developments in the discipline specialty and in relevant educational research, pedagogical skills and techniques. For example, the teaching scholar:
   - Reads journals in the discipline(s) and in educational practice and research.
   - Is professionally active in organizations, and contributes to best practices in college science teaching beyond the classroom or local institution.
   - Develops peer-reviewed resources for student learning in the discipline.
   - Demonstrates awareness of current science education reforms and issues, and applies these in teaching.

2. Demonstrates creative scholarship that contributes significantly to college science teaching. Reports of activities are published in refereed journals, presented at professional meetings, and in other appropriate venues. These activities include but are not limited to:
   - Significant, appropriately designed, and analyzed research in college science teaching;
   - Active classroom research;
   - Program development;
   - Writing position papers;
   - Organizing and directing teacher institutes;
   - Developing innovative courses and curricula and courses to be offered in non-traditional settings;
   - Securing external funds to improve college science teaching.

3. Sees scientific information in a number of contexts, and can use these insights to stimulate deeper understandings of the discipline in students. For example, the scholar:
   - Is aware of current developments in several science disciplines and of the interrelations among these disciplines.
   - Synthesizes research in the science discipline with teaching by introducing activities that use the scientific research to produce more effective teaching and learning.
   - Merges research from the discipline with that from education, using both to inform teaching practice.
4. Communicates to students the *connections* among science disciplines and the connection of science to other disciplines.
   - Demonstrations of connections among the science disciplines are a regular part of the teaching process.
   - The global significance of science is taught whenever possible.
   - The role of science in the local community setting is emphasized and integrated into the teaching process.
   - Students are encouraged to understand the role of science in their personal lives and in every day decision making.

5. Demonstrates competency in communication and use of presentation techniques. The teaching scholar is aware of the diversity of student backgrounds, and that students have different learning styles. An in-depth knowledge of the disciplines can be fused with the knowledge of how and when to use analogies, metaphors, and images that promote deep student understanding. The teaching scholar:
   - Accommodates diversity and learning styles with different modes of teaching.
   - Uses analogies, metaphors, and images to make science meaningful to *all* students.
   - Understands how to use technology to enhance teaching and learning.

6. Designs activities that require the students to ask questions, make observations, test hypotheses, carry out experiments, seek creative solutions to problems, and to analyze experimental results. For example, the scholar:
   - Shows evidence that learning of science is enhanced.
   - Uses problem-based learning when possible, both in the class and laboratory.
   - Offers opportunities for students to learn to work in teams and to do science with others.
   - Encourages and directs student research in the discipline whenever possible.
   - Promotes critical reflection and analysis about scientific issues.

7. Shows evidence of critical reflection on his or her own teaching, and uses this information to continually improve the process of teaching.