21st Century Report from the Science Committee

Committee Members: Charlie Barman, Natalie Barman, School of Education
Amy Wackerly, Stacy Kelley, IPS
Fritz Kleinhaus, Marvin Kemp, Duane Nickell, Physics
Jeff Swope, Geology; Jayanthi Jacob, Chemistry

The Initial Charge of the Committee was as follows:

- Develop syllabi for two new science courses, a physics/astronomy and a geology/chemistry course. One of these courses will be piloted this fall.
- Design labs and demonstrations that are feasible for the integrator courses.
- Develop a definition of a science portfolio that might accompany the students' application to Teacher Education.
- Make recommendations of courses that might constitute a science concentration.

The committee met during the 2002 spring and summer. Good progress has been made by the committee to meet the above charge. A second draft syllabus has been completed for the physics/astronomy course and the geology/chemistry courses. The geology/chemistry course is being piloted this fall and some of the proposed labs and demonstrations for the physics/astronomy course will be field-tested this semester in the current Physics 200 class. The physics/astronomy course will be piloted spring 2003.

Discussions pertaining to the development of a science portfolio have begun. This portfolio would possibly be used by students seeking admittance into the elementary education program to verify their skills and knowledge of science. In addition, each committee member from the School of Science is working on identifying additional science courses that could constitute a science concentration and that would be compatible with the four core courses making up the general education requirements.

There is no doubt that one of the most productive aspects of this committee has been its discussions related to pedagogy. These were constructive discussions about student learning and its implications for teaching. There was a genuine exchange of ideas from all perspectives.

The following is a list of the committee meetings that have taken place during spring and summer 2002:

- March 20 - This was an organizational meeting convened by Barbara Wilcox from the School of Education. The committee was presented with its initial charge. Each committee member was also informed as to the philosophy and content of Q200 (Introduction of Scientific Inquiry). They were also provided with the Q200 course manual.
• April 25 - The committee met to begin discussions on how to develop two integrated science courses. The main focus of discussion centered on how to shift from the current large lecture/separate lab format course to a course that is more integrated, active, and collaborative. Committee members were provided with several journal articles about the development or revision of introductory science courses (e.g. Bioscience, Journal of College Science Teaching, etc.)

• May 23 - The committee shared ideas they had formulated about the make-up of the integrator courses. The discussion also focused on the Indiana Academic Standards for Science and how to incorporate the overall intent of these standards in each course.

• June 27 - The committee discussed their revised ideas about the integrator courses in relation to the Indiana Academic Standards for Science. The committee also decided to develop two sub-committees. Each sub-committee was composed of members from the appropriate areas of science, one IPS teacher, and one school of education representative. One sub-committee would begin developing the syllabus for the physics/astronomy course and the other would work on the geology/chemistry course.

• July 12 - The committee met and the sub-committees reported on their work in progress.

• July 19 - The committee met and the sub-committees reported on their work in progress. Each sub-committee also identified a block of time to concentrate on refining its syllabi.

• July 22 - 26/ 29-31 - Individual work sessions for the sub-committees.

• August 8 - The committee met and each sub-committee reported their progress. Each sub-committee shared its draft syllabus. The committee critiqued each syllabus and the sub-committees were asked to revise their syllabi based on the comments received at this meeting. Currently, revised drafts have been developed by the physics/astronomy and geology/chemistry sub-committees.