17. Update Chemistry and Biology Laboratories including integration of Computer Technologies.

Goal A2

A2. Update and/or redesign science laboratories in the context of the growing use of computer technology in laboratory instruction.

Problem Statement

The College's Physics and Chemistry labs, which were state-of-the-art in 1982 at the time the current campus opened, have deteriorated with twenty years of hard use, and now are in an urgent need of a facelift. In addition, there are specific issues associated with each discipline's labs.

Chemistry instruction has moved to an integrated use of microcomputers. In order to address this issue in a wet lab setting, some form of separation of the handling of chemicals from the use of the computer needs to be provided. An example of a potential solution is the enclosure of the chemical experimentation inside a Plexiglas workstation. In addition, the nature of chemistry instruction makes it highly advantageous to provide "smart" boards for faculty use.

With respect to biology, a more significant renovation of the laboratory is required. The original design for the biology classrooms was to use chemistry laboratory (stand-up) benches. Ideally, these benches should be replaced in all five labs with the more standard low bench used in most biology laboratories. Two biology laboratories used for anatomy and physiology instruction have been outfitted with computers. However, the placement of the computers has created a line of sight problem, making it difficult for students to see the instructor during the didactic portion of the biology laboratory. The internet-based biology classroom is not effective in its current configuration for most biology instruction activities. A redesign of that room into a more traditional smart classroom would make the classroom more useful to the biology discipline. The Biology Department, based upon the success of the Wistar Institute program, is moving to establish a Biology Technology Program. This will require a new laboratory to be created. A plan to do this in W3-26 exists. The development of a Biology Technology laboratory would also solve an additional problem, which is that the Microbiology Laboratory is currently overused and, as a result, setups between laboratory sessions are difficult to accomplish.

The multi-purpose laboratory at the Northwest Regional Center, which was intended to support both biology and chemistry instruction, has failed to work as originally planned.

In the development of the third floor of the Northwest "B" Building, a specific laboratory for biology should be established. If chemistry instruction is to be a significant component of the programmatic offerings at the Northwest Center, then it will also be necessary to construct a chemistry-specific laboratory on the third floor. The current second floor science laboratory should then be converted into another special-purpose classroom ideally in a way that would take advantage of the cabinetry and utility components that are incorporated into the design of the room.

Proposed Solution

Cost Estimate

Update Biology Laboratories

Total Construction Cost	$661,120.00

Update Chemistry Laboratories

Total Construction Cost	$813,750.00

(Note: All estimates are in 2003 dollars. On average, construction costs increase 1% to 2% per year. See detailed cost estimate prepared by Turner Construction in Appendix A)