



THE CAROL SHEFFELS QUIGG GREENHOUSE

Thanks to the generous support of Carol Sheffels Quigg and other individual donors, retired faculty members, the Murdock Charitable Trust and the Norcliffe Foundation, construction began in February 2015 on a new stand-alone, energy-efficient greenhouse to advance student learning and student-faculty research.

While plant biology is the focus of the new greenhouse, its value is felt across the Biology Department—and beyond—because plants are so useful in modeling all kinds of biological processes.

The state-of-the-art greenhouse offers students opportunities to carry out in-class experiments on genetics, cell processes, gene expression, physiology and

evolutionary adaptations. For example, in the Genetics course required of Biology majors, students will be able to perform their own hybridization experiments.

In addition, the greenhouse provides space for a botanical collection that shows biodiversity and representatives of major taxonomic groups from around the world, illustrating adaptations to diverse habitats and the selective forces of evolution.

The \$880,000, 1,700-square-foot greenhouse uses an innovative, closed-loop geothermal energy system, which means that no greenhouse-gas-producing emissions are used to heat and cool the building. The greenhouse was completed in the fall and dedicated on October 19, 2015.



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A REPORT ON YOUR INVESTMENT



RIEKE SCIENCE CENTER RENOVATIONS

Pacific Lutheran University plays an important role in preparing students for vocations in science, as well as entrance into professional or graduate schools. The home for science education at PLU is Rieke Science Center. In the 30 years since the Center opened, massive strides have been made in science and science education, making renewals and additions to our 88,500-square-foot science facility a top priority. In 2009, PLU invited donors to begin contributing toward the renovation of the Science Center as part of a campaign to upgrade research and teaching space to better serve the needs of PLU students and, by extension, the world.

As we look ahead to future investments in collaborative learning and research space, we offer this recap of the exciting Phase 1 renovations already completed thanks to the generous spirit and extraordinary vision of PLU's supporters.



“The Rieke Science Center is an important part of the education of PLU students going out into the world.”

-Carol Sheffels Quigg

INTRODUCTORY BIOLOGY LAB

The Louis and Lydia Sheffels Biology Laboratory, housed in Room 136 of the Rieke Science Center, was completed in January 2011. The 1,100-square-foot lab is the result of a significant donation from Carol (Sheffels '58) Quigg, Jerry Sheffels '54 and the entire Sheffels family.

This lab has served the faculty and students incredibly well since its renovation. In a given academic year, more than 200 students utilize this space. This technology-rich lab with portable computer stations, a SMART board and an overhead projector allows faculty members to more efficiently and effectively engage students in multiple learning modalities at a deeper level. For example, students are now able to collect and analyze data from the new student-centered, inquiry-based laboratory exercises. In addition, these technological innovations allow our instructors to demonstrate a given task or procedure as the students work on their own computers simultaneously.

SMART CLASSROOM

Room 222 in the Rieke Science Center, used primarily by Computer Science and Computer Engineering faculty and students, has evolved into a “smart” classroom: a computer-enabled space with modern presentation equipment that offers a more interactive, hands-on experience in the classroom and in group activities.

“Computer stations now line the perimeter of the room, with hookups for laptops, a smart-technology podium and projector, a smart monitor and—along the walls—IdeaPaint that students can write on when they work in groups,” Dean of Natural Sciences Matt Smith said.

These pedagogical improvements, which were completed in summer 2011, allow instructors to engage all students in active learning techniques such as pair programming and electronic collaboration.



NUCLEAR MAGNETIC RESONANCE SPECTROMETER (NMR)

Early in the campaign, a nuclear magnetic resonance spectrometer was brought online in the Rieke Science Center. The machine itself was funded by a 2008 National Science Foundation grant to the Chemistry Department, and PLU devoted the first \$1 million raised toward the Rieke renovations to its installation in 2009.

On the north side of Rieke, this unique device is now in full exhibition in a “science on display” glass enclosure, an idea of Professor Dean Waldow.

PLU is the only independent college in Washington to own equipment of this quality and sophistication, which is used to conduct cutting-edge chemistry experiments. Today, faculty and student researchers use the NMR to study the bonding of atoms in a molecule in order to gain a better understanding of chemical compounds.

PLU students are not the only ones using the machine for student-faculty research, as local community and four-year colleges are bringing samples over for analysis. Additionally, Chemistry faculty members have hosted webcasts from the NMR lab to teach local college and high-school students about NMR spectrometry.

Contributors to the NMR project included Jon '63 and Mari Kvinsland, Naomi (Roe '53) and Don '50 Nothstein, and Gene '62 and Carla '64 LeMay.

The NMR is the crown jewel of PLU's Chemistry Department. Undergraduate students usually don't have access to such a powerful instrument, and experience with it gives them a definite edge in their careers.

