

Integrative Experiences

Student Research, Internships, and Service Learning

Department of Mathematical, Information and Computer Sciences
Point Loma Nazarene University, San Diego, CA

Student Research

Student research involves the methodical formation of a scholarly honors project. The goal of this project and its process is to prepare students for the world of post-baccalaureate scholarship and research. Students work closely with a department faculty mentor to develop a project on a topic of their choosing.

The research culminates in students making a presentation of their findings at a conference during the spring semester. In preparation for the presentation, students are coached through the various stages of conducting a research project and transforming their work into a scholarly presentation and paper.

The Department of Mathematical, Information and Computer Sciences strongly supports its research students. Faculty mentors are involved in the research, editing, and presentation processes, all while offering advice and support for advisees.

Past Research Projects

- *Proving that Internet Cryptography is Not Necessarily Secure*, by Johnathon Smith
- *Service Learning for Math Secondary Education Majors*, by Erin Trine
- *Towards a Computational Model of Consciousness*, by Jonathan Bowman
- *Quantitative Analysis of Alumni Survey Data*, by Tyler Gray
- *Calculus Then and Now*, by Kait Wilcox
- *Analysis of Disease in Sub-Saharan Africa*, by Lauren Nelson
- *The Prevalence of Problematic Computer Gaming at PLNU*, by Anna Hail
- *Elliptic Curve Cryptography*, by Greg Rhodes

Integrative Experiences

An integrative experience is a long-term project or internship that requires students to apply a variety of information and skills learned in their courses to a complex, real-world problem. In the course of this process students refine their professional writing, speaking and interpersonal skills.

Internships

Internships are semester-long paid or unpaid corporate experiences in the fields of Mathematics, Computer Science, and Computer Information Systems.

The goal of internships is threefold. Firstly, to apply skills and knowledge learned in major courses to real business situations. Secondly, to reinforce and expand previous conceptual learning through work experience. Thirdly, to develop social networks in the business and professional community.

Students have participated in internships with several local, national, and international companies. Such companies include:



How Alumni Can Help

Alumni can serve as a connection between current students and top companies in the fields of Mathematics, Computer Science, and Computer Information Systems. Contact Dr. Maria Zack (mzack@pointloma.edu) to connect your company with our professional and eager students.

Service Learning

Service learning is a year-long course in which students provide services for non-profit organizations while receiving real-world experience. The skills gained from Mathematics, Computer Science and Computer Information Systems education are applied to fulfill community needs.

The class is run as a business. There is a company budget to support two to three projects. Students are assigned corporate tasks as well as project tasks.

Students meet collectively for one to two hours a week. This class time is used for technical presentations, team meetings, and giving and listening to progress reports. Students also spend three to five hours a week apart from class time meeting with clients, researching and planning projects, implementing project plans, writing reflections, and completing peer evaluations.

Past Service Learning Projects

- *Trends and Factors of PLNU Giving*, for University Advancement
- *Predictors of Student Success in the Program*, for the School of Nursing
- *Creation and Implementation of Software Training Modules*, for Faith Community School
- *Computer Refurbishment and Network Formation*, for Point Loma High School
- *In-class Tutoring and Exit Exam Preparation*, for Point Loma High School
- *Survey of Internal Faculty, Staff and Student Needs*, for Information Technology Services
- *Analysis of Congregational Demographics and Pastoral Educational Needs*, for the Center for Pastoral Leadership