The Professional Science Master’s: How to Catalyze Success: The Internship Component

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Introduction

- Internships common at the undergraduate level; rare at graduate level.
- In PSM programs, “close” relationship between program directors and internship providers.
- Majority of PSM programs have internships.
- Role of Employer Advisory Boards in internships.
- Role of faculty who are connected to the PSM.
Traditional/standard Model

Middle Tennessee State University

- Three PSM programs – biostatistics, biotechnology and health care informatics.
- Three credit course, done at the end of the first semester of the second year.
- Strong commitment for student – 250 hours.
- Strong commitment for employer – each intern has a specialized project and an employer mentor.
- Considered a capstone course.
Traditional/standard Model

Oregon State University

- Four PSM programs – environmental science, applied physics, applied biotechnology and applied systematics.
- Students secure internship; program directors provide guidance. Previous work experience cannot be used for the internship requirement.
- Three-six month internships, usually between first and second year of academic study. A minimum of 6 credits of internship.
- Intern must maintain an internship journal.
- On-site supervisor must provide a written evaluation.
- Intern must write a final report.
Internship Variations

Pennsylvania State University

• Three PSM programs – applied statistics, forensic science, and biotechnology.

• Two internship models
  ▪ Optional internship in applied statistics. Two required practica, but internship can be substituted for one.
  ▪ Standard ones in biotechnology and forensic science.
    • Off-site
    • Two credits given
Internship Variations

North Carolina State University

• Three PSM programs – microbial biotechnology, financial mathematics and geospatial information.
  ▪ Microbial biotechnology has three components of the professional skills development. One component is the internship.
  ▪ Financial math requires internship or pre-approved project.
  ▪ Geospatial information requires internship and/or employer project.
Internship Variations

University of Dayton

• Recommended, not required. Seek Paid Internships.

• Generated through their Employer Advisory Board.

• Designed by the business manager since the internships are “paid jobs.”

• No report required.
Breaking New Ground!

University of Maryland University College

• Virtual internship provided in the capstone class.

• Semester-long group project working with biotechnology company in DC area.

• Key is planning
  ▪ Projects solicited from companies.
  ▪ Projects defined with overall goal and specific objectives.
  ▪ Timeline developed with deliverables.

• Team members all assigned specific role.

• Challenges – logistics, management of team projects and awareness of time constraints.
Breaking New Ground!

California State University System

- “Pipeline” internship model.
- STEM undergraduates placed in rotating industrial assignments over 2-3 summers.
- Semester-long paid internships for PSM students.
- Extended duration internships 6-12 months.
- Still in design stage – shorter duration internships for PSM students coming in as a group/team.
Summary

- PSM internship fuses classroom skills with a guided industry experience at the graduate level.
- Majority of PSM internships are “standard,” but variations exist.
- Four out of five PSM programs require an internship.
- PSM programs without an internship require a capstone project.
Some internships are paid, others are not.

Most PSM programs award academic credit for internships. Amount of credit varies.

Faculty coordinators have primary responsibility for assigning credit.

Successful internships require pre-planning and supervision.

NO ONE INTERNSHIP MODEL FITS ALL PSM PROGRAMS
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