About the MS Applied Degree

Students in the Applied MS degree complete an **internship** that can involve a **project**.

From this project, they are required to complete a culminating **report** that is related to an internship experience.

This is generally completed in the Autumn quarter of year 2.

This is done in lieu of a thesis.

What Constitutes a Project?

Type 1 Report:
The project should address a **specific** environmental or occupational health issue or concern and may derive from work with a faculty member or from an internship experience. It may include analysis of novel **data** collected by the student or may rely on summarizing and interpreting previously collected data, literature-based information, or other sources as part of the internship experience

Type 2 Report:
Some internships are more practice-based and provide a **broad** range of experiences rather than a single focused project. In these cases, the student will work with their Faculty Internship Adviser and Project Committee to develop a rigorous report analyzing, discussing, and critiquing a **specific** practice-based aspect of the work they completed during their internship experience

Timeline

In Autumn quarter of year 1, attend an internship **orientation** with the Faculty Internship Advisor (Marty Cohen), Manager of Experiential Learning & Career Services (Dan Poux) and Manager of Student and Academic Services (Trina Sterry).

During Autumn, Winter and Spring quarters of year 1, **research** and **apply** for **internships**.

By the end of Spring quarter of year 1, have the internship approved by the **Faculty Internship Advisor** and identify a **Faculty Project Advisor**.

After accepting an internship, complete and submit the **Graduate Internship Work Plan Form**.

After submitting the Graduate Internship Work Plan, form a **Project Committee**.

In Autumn quarter of year 2, Register for **ENV H 599**. You will complete all related requirements for 599 **prior to** and **during** your internship experience.

During Autumn quarter of year 2, register for **ENV H 598** and complete all related requirements, including the written Project Report, oral presentation of the project at a public meeting, and an oral examination by the Project Committee.

	Applied Degree Activities				
ROLE	**Autumn Year 1**	**Winter Year 1**	**Spring Year 1**	**Summer Year 1**	**Autumn Year 2**
Student	Take classes, meet with potential faculty advisors, begin internship search	Continues meeting with potential faculty advisors and continue internship search (if needed).	Identifty faculty advisor, secure internship.	Complete internship and associated 599 assignments.	Complete and submit project report and all associated 598 assignments.
Experiential Learning Manager	Meet with students and discuss career/internship goals, assist with networking.	Assist student with identifying internship opportunities.	Assist student with identifying internship opportunities.	Provide advising support as needed.	Provide advising support as needed.
Academic Advisor (Trina S.)	Course planning and degree requirement advising.	Course planning and degree requirement advising.	Course planning and degree requirement advising.	Course planning and degree requirement advising.	Course planning and degree requirement advising.
Initial Faculty Mentor	Help student identify potential faculty project advisors provide introductions.	Help student identify potential faculty project advisors provide introductions (as needed).	Help student identify potential faculty project advisors provide introductions (as needed).		
Faculty Internship Advisor (ENVH 599) (Marty C.)		Help student identify potential interhips (as needed).	Prepare students for internships and final projects. Work with student to ensure project plan is adequate.	Give technical/ administrative assistance if needed.	Ensure all 599 requirements are complete and assign credit.
Faculty Project Advisor (ENVH 598)			Work with student to plan project.	Provide advising support as needed.	Oversee completion and submission of the final project report. Ensure all 598 requirements are complete and assign credit.
Internship Site Supervisor		Offer internship	Collaborate with student to develop/plan internship	Supervise internship. Submit evaluation.	Serve on student's committee (optional). Attend student's final presentation (optional).

Applied Project Advising Roles

Initial Faculty Mentor (Varies by student) - Initial Faculty Mentors serve as **connection points** for incoming master's students. They work with the student to help them think through their **project interests**. The Initial Faculty Mentor does not need to have expertise in their student's area of interest, and in many cases the Faculty Mentor will not ultimately become the student's Faculty Project Adviser.

Faculty Internship Adviser (Marty Cohen) -- The Faculty Internship Adviser ensures that student internships are **appropriate** for graduate-level academic credit.

Experiential Learning Manager (Dan Poux) -- The Experiential Learning Manager provides **guidance** to students during their internship search, acts as a **liaison** between the internship site and UW, and maintains records of student internship placements.

Faculty Project Adviser (Varies by student) -- The Faculty Project Adviser provides **guidance** throughout, and ultimately **approves** student project development.

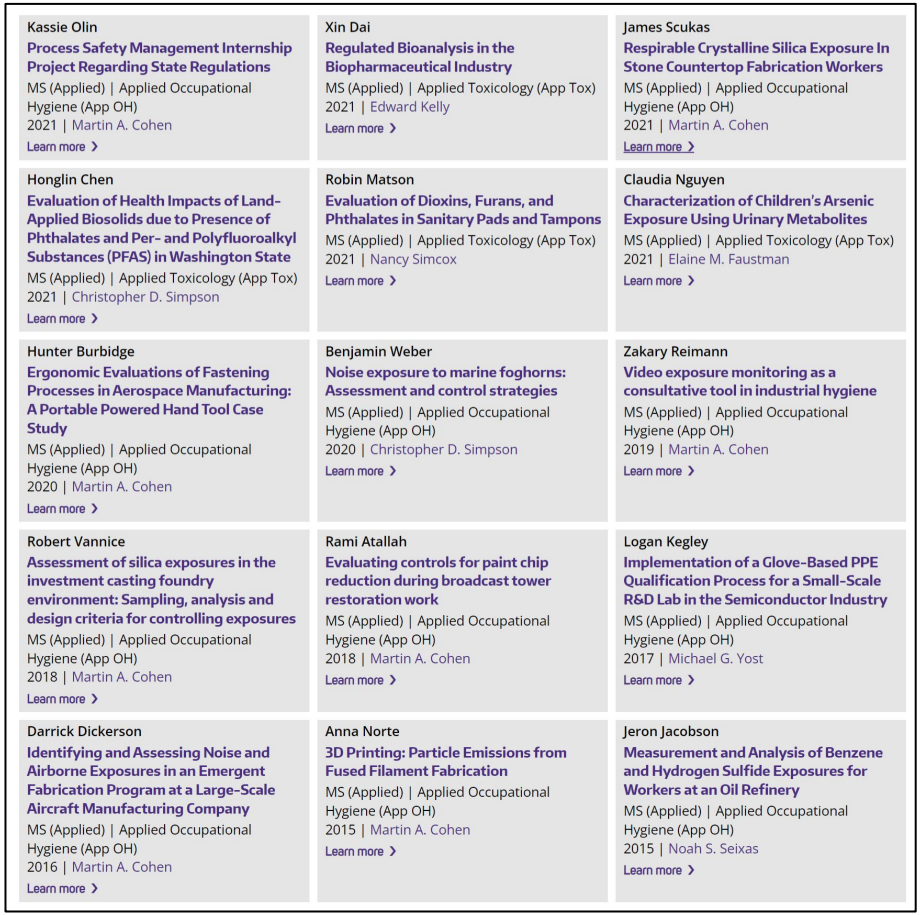
Internship Site Supervisor -- The Internship Site Supervisor is the employer representative/supervisor for the internship. The Internship Site Supervisor (i) provides day-to-day **supervision** of the student during the internship, (ii) works with the student and the Faculty Project Adviser to identify a suitable internship **project**, (iii) works with the student during the internship to ensure **successful execution** of the project.

Project & Report Expectations

The proposed project and resulting written project report should be **rigorous**, demonstrate **original** thought, and examine a current environmental or occupational health issue or problem that is **relevant** to professional practice in the student's area of interest.

The written report (typically ≈ 20 to 30 single spaced pages including figures and works cited) is reviewed and accepted by the Project Committee. Once accepted, the report will be filed with the department's Office of Academic Services.

Examples of Recent MS Applied Projects



Kassie Olin
Process Safety Management Internship Project Regarding State Regulations
MS (Applied) | Applied Occupational Hygiene (App OH)
2021 | Martin A. Cohen
Learn more ›

Xin Dai
Regulated Bioanalysis in the Biopharmaceutical Industry
MS (Applied) | Applied Toxicology (App Tox)
2021 | Edward Kelly
Learn more ›

James Scukas
Respirable Crystalline Silica Exposure In Stone Countertop Fabrication Workers
MS (Applied) | Applied Occupational Hygiene (App OH)
2021 | Martin A. Cohen
Learn more ›

Honglin Chen
Evaluation of Health Impacts of Land-Applied Biosolids due to Presence of Phthalates and Per- and Polyfluoroalkyl Substances (PFAS) in Washington State
MS (Applied) | Applied Toxicology (App Tox)
2021 | Christopher D. Simpson
Learn more ›

Robin Matson
Evaluation of Dioxins, Furans, and Phthalates in Sanitary Pads and Tampons
MS (Applied) | Applied Toxicology (App Tox)
2021 | Nancy Simcox
Learn more ›

Claudia Nguyen
Characterization of Children's Arsenic Exposure Using Urinary Metabolites
MS (Applied) | Applied Toxicology (App Tox)
2021 | Elaine M. Faustman
Learn more ›

Hunter Burbidge
Ergonomic Evaluations of Fastening Processes in Aerospace Manufacturing: A Portable Powered Hand Tool Case Study
MS (Applied) | Applied Occupational Hygiene (App OH)
2020 | Martin A. Cohen
Learn more ›

Benjamin Weber
Noise exposure to marine foghorns: Assessment and control strategies
MS (Applied) | Applied Occupational Hygiene (App OH)
2020 | Christopher D. Simpson
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Zakary Reimann
Video exposure monitoring as a consultative tool in industrial hygiene
MS (Applied) | Applied Occupational Hygiene (App OH)
2019 | Martin A. Cohen
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Robert Vannice
Assessment of silica exposures in the investment casting foundry environment: Sampling, analysis and design criteria for controlling exposures
MS (Applied) | Applied Occupational Hygiene (App OH)
2018 | Martin A. Cohen
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Rami Atallah
Evaluating controls for paint chip reduction during broadcast tower restoration work
MS (Applied) | Applied Occupational Hygiene (App OH)
2018 | Martin A. Cohen
Learn more ›

Logan Kegley
Implementation of a Glove-Based PPE Qualification Process for a Small-Scale R&D Lab in the Semiconductor Industry
MS (Applied) | Applied Occupational Hygiene (App OH)
2017 | Michael G. Yost
Learn more ›

Darrick Dickerson
Identifying and Assessing Noise and Airborne Exposures in an Emergent Fabrication Program at a Large-Scale Aircraft Manufacturing Company
MS (Applied) | Applied Occupational Hygiene (App OH)
2016 | Martin A. Cohen
Learn more ›

Anna Norte
3D Printing: Particle Emissions from Fused Filament Fabrication
MS (Applied) | Applied Occupational Hygiene (App OH)
2015 | Martin A. Cohen
Learn more ›

Jeron Jacobson
Measurement and Analysis of Benzene and Hydrogen Sulfide Exposures for Workers at an Oil Refinery
MS (Applied) | Applied Occupational Hygiene (App OH)
2015 | Noah S. Seixas
Learn more ›

Project title: Respirable Crystalline Silica Exposure In Stone Countertop Fabrication Workers

Degree: MS (Applied) | **Program:** Applied Occupational Hygiene (App OH) | **Project type:** Project
Completed in: 2021 | **Faculty advisor:** Martin A. Cohen

Abstract:

Artificial stone countertops are the centerpiece of countless modern kitchen remodels, but the process of fabricating these surfaces has recently gained attention due to high occupational exposures to fine silica dust, known as respirable crystalline silica (RCS). This report summarizes OSHA State Plan health compliance inspections of stone countertop fabricators in King County, WA. This work was done as part of an internship project for the Washington State Department of Labor and Industries (LNI), Division of Occupational Safety and Health (DOSH). Further, possible improvements to exposure controls and administrative processes are presented as a step towards fully protecting workers in this industry from silicosis and other diseases. Over the 14 inspections reviewed by this report, 39% of workers sampled for airborne RCS had exposures above the permissible exposure limit (PEL) of 50 µg/m3 over an 8-hour time weighted average. Workers employed in the role of fabricator had the largest number and highest average RCS exposures, although those in the role of CNC operator had a higher proportion of samples exposed above the PEL. Out of the 20 total employees exposed above the PEL, only 2 wore respiratory protection that was compliant with DOSH standards. The remaining 18 employees were not fully protected from RCS exposure, as even if these employees wore respirators, the devices may not adequately protect them from inhaling dust unless all components of a DOSH-compliant respiratory protection program were followed. Results presented in this study indicate an urgent need education and elimination of the RCS hazards associated with stone countertop fabrication. To improve current conditions, an emphasis should also be placed on regular exposure assessments, implementing compliant respiratory protection programs, and feasible improvements in ventilation systems and engineering controls.

Project title: Regulated Bioanalysis in the Biopharmaceutical Industry

Degree: MS (Applied) | **Program:** Applied Toxicology (App Tox) | **Project type:** Project
Completed in: 2021 | **Faculty advisor:** Edward Kelly

Abstract:

Regulated bioanalysis plays a critical role in drug development and discovery. Bioanalysis refers to the process of identification and quantification of analytes in biological samples. This is a multistage process that starts with method development, followed by method validation, and ends with data reporting. It is critical to apply a fit-for-purpose approach to the study-specific bioanalysis and comply with FDA guidelines and regulations to generate validated bioanalytical results. As a clinical pharmacology intern at Kartos Therapeutics, I worked with great researchers to understand the key elements of regulated bioanalysis by evaluating different clinical and nonclinical studies. Having a good understanding of the physicochemical properties of analytes and being aware of technical considerations are essential to method development. It is also necessary to evaluate the sample preparation technique so that it can achieve desired sensitivity and specificity for sample analysis. In addition, this summer internship helped me develop a holistic view of the complexities of the biopharmaceutical industry. More importantly, this internship highlighted the significance of collaboration and effective communication to expedite the drug development process. Having reliable and reproducible bioanalytical results can ensure that we properly interpret clinical PK data of the drug and provide insights into dosing decisions in clinical trials. Ultimately, these study results serve as the foundations for the safety and efficacy of the approved medicines.