

VITAL INSTRUCTIONAL MINIGRANT AWARDS: SUMMER 2019 – 2024

CHARLES WIDGER SCHOOL OF LAW

Increasing Engagement and Active Learning in Criminal Procedure: Adjudication – The goal of this project is to move to a more “flipped classroom” using a series of short video lectures, with embedded assessments, aligned to new material. Utilizing this approach will give students a better grasp of the core substantive material while gaining additional experience grappling with the doctrinal and ethical challenges that await them as practitioners of criminal law.

2021 – CHANENSON, Steven, JD, Charles Widger School of Law

Civ Proloton – The purpose of this project is to guide students in their learning through reflection and self-assessment by creating pre- and post-class videos in the model of online workout videos (i.e., Peloton) for each class session of Civil Procedure (Civ Pro + Peloton = Civ Proloton). The pre-class videos will help the students to be in the space to learn and the post-class videos will guide the students to reflect on the material and self-assess their learning.

2021 - JULIANO, Ann, JD, Charles Widger School of Law

COLLEGE OF ENGINEERING

Integrate the Emerging A.I. Techniques in the Course Chemical Process Control – The purpose of this project is to enhance students’ ability to address math-intensive process control problems by using A.I. as a tool for model parameter estimation and process controller tuning. Specifically, three modules will be developed, using Python as the A.I. coding platform, that will equip students with essential competencies in using A.I. in chemical process control. This teaching intervention will help students gain central skills in effectively using A.I. as a tool in chemical and biological engineering and provide them with the experience needed to succeed post-graduate.

2024 – HUANG, Zuyi (Jacky), Ph.D., Chemical & Biological Engineering

Redevelopment of First-Year Engineering Design Course: Integration of Project-Based Learning and Social Justice Instruction – This project outlines the comprehensive re-design of the required common course for all first-year engineering students, partly necessitated by students entering the college with a declared major. The project aims to address several current challenges pertaining to an incohesive course curriculum, inconsistent instructor presence, difficulties in monitoring student performance, and insufficient focus on the engineering design process resulting in students’ learning gaps in the subsequent engineering courses. It will highlight the focus on students’ learning the engineering design process by engaging in team-based and project-based learning activities. The course design will include an equity/human centered framework to introduce students to the integration of social justice and engineering design, an important learning goal for the College.

2024 – JAMISON, David, Ph.D., Mechanical Engineering, WALKUP, Stephanie, Ph.D., Civil & Environmental Engineering, KLEIN, Liesl, Ph.D., Electrical & Computer Engineering

Integration of a Hands-On Project into ME 5206 Aircraft Design – This project aims to enhance undergraduate engineering students’ learning of aircraft design by designing, testing, and flying an airplane. Working in small teams the students will apply and test their conceptual design knowledge as they design a remote-controlled plane. The students will be challenged to be creative and innovative in the design process and experience firsthand what post-graduate studies and/or careers in aerospace engineering might be like.

2024 – NERSESOV, Sergey, Ph.D., Mechanical Engineering

Development of a New Graduate Course: Research Driven Innovation with NSF I-Corps – This project seeks to design and implement a new graduate course in research innovation that bridges the gap between academic research and real-world applications. It will provide the students with experiential learning opportunities to identify market needs, validate ideas through customer feedback, and navigate the complexities of the entrepreneurial ecosystem.

2024- OLIVIER, Lauri, Ph.D., Engineering Entrepreneurship

COLLEGE OF ENGINEERING cont.

Development of Quantitative Physiology for Biomedical Engineering Applications – The purpose of this project is to implement improved instructional methods and refreshed modes of learning (problem-based learning, student-led discussion) to improve students' mastery of the content, better retain knowledge, and prepare them for future learning and problem-solving as they progress in biomedical engineering.

2023 – BRACAGLIA, Laura, Ph.D., and ELMER, Jacob, Ph.D., Chemical & Biological Engineering

Green Stormwater Infrastructure Design Lab - The goal of this semester-long lab project and field experiment added to CEE 4521 is to increase student understanding of green stormwater infrastructure design and engineering design judgement. Students will develop prototypes and test them over the semester, with accompanying work on design calculations and computational models. Students will also learn how to create a lab experiments, identify key problems, and develop an engineering solution. The project will include more project-based and collaborative/team-based learning.

2023 – WADZUK, Bridget, Ph.D., Civil & Environmental Engineering

3D Printing: Design and Assessment of an Additive Manufacturing Lab for Junior Mechanical Engineering Students - The objective of this work is to enrich the 3D printing activity conducted in a junior-level lab and develop relevant formative assessments. This work will provide students with statistically reliable data to make informed design and manufacturing decisions and exposure to method, while practicing good design practices, specifically using simulated prototypes to predict performances, and design parts to meet established criteria.

2022 – SETH, Deeksha, Ph.D., Mechanical Engineering

Agile Classrooms with TopHat: Creating Socratic Gradebooks to Tailor Student Learning - This VITAL minigrant project will address this question by embedding the Socratic method - ask students questions and use their feedback to gauge their understanding - within Top Hat technological platform to create student- driven journeys through different paths of the same learning environment. The result will be a Socratic gradebook that identifies individual learning needs and suggests student-comprehension tailored learning activities.

2020 - CERECEDA, David, Ph.D., Mechanical Engineering

Inclusive Active Learning for Mixed Graduate-Level Engineering Class - The goal of this minigrant proposal is to help both online and in-class graduate students stay focus during the lecture, enhance the understanding of the key concepts and master problem-solving methodologies, through the implementation of Top Hat, an interactive learning tool. This project pioneers the implementation of Top Hat in a graduate course and will help set a guideline for the implementation of an interactive learning tool in other graduate courses.

2020 - LI, Bo, Ph.D., Mechanical Engineering

Development of a new course CEE 2701 – CE Project Development -This proposal is on the development of a new course titled CEE 2701 – CE Project Development. It will be replacing the existing course titled CEE 3705 Engineering Economics in a long run. The new course intends to educate the students with process, scheduling, and management of a project along with the important components from Engineering Economics such as economic analysis, decision making process, time value of money, engineering ethics, etc.

2020 - SHRESTHA, Shweta, Ph.D., Civil and Environmental Engineering

Development of a Project-based GIS Course for Civil Engineers - Geographic information systems (GIS) is a platform for managing, analyzing, and visualizing data associated with developing and managing infrastructure and the environment. The CEE Department is planning a new, project-centric GIS course focused on applications, thus exposing students to a commonly used industry tool while leveraging technology to emphasize connections between civil engineering disciplines. We seek a deeper understanding of teaching computational tools in ways that help students connect the classroom to the real world.

2020 - WATERS, Kevin, Ph.D., and SMITH, Virginia, Ph.D., Civil and Environmental Engineering

COLLEGE OF ENGINEERING cont.

Transforming EGR 9200 to Benefit Engineering Ph.D. Students and Faculty - EGR 9200 Teaching Engineering in Higher Education teaches CoE Ph.D. students engineering pedagogy. The proposed work will restructure the course to increase student engagement and to create a mechanism for CoE faculty to improve their own teaching. This project makes the course more interactive, makes course materials available online, improves the students' ability to improve their own teaching. These goals are accomplished through flipping the course and developing an assessment hierarchy (self/partner, and class-wide).

2020 – WEMHOFF, Aaron, Ph.D., Mechanical Engineering

Incorporating Visual Minteq Software in Water and Wastewater Treatment Course – The motivation of this project is to help students tackle overly abstract chemistry concepts in CEE 3321 by integrating hands-on learning tools in the classroom to complement traditional lecture materials. The overall goal is to advance students' technical excellence, facilitate students' deep conceptual understanding of the rational basis for the design, interpretation, implementation, and control of physiochemical process for water control, and help students' bridge the gap between theory and practice in CEE 3321

2020 – XU, Wenqing, Ph.D., Civil and Environmental Engineering

Foundation Design: Increased Problem Solving through Inverting the Classroom - This proposal will apply the inverted classroom approach to many of the topics in CEE 4801 – Foundation Design, a senior technical elective currently offered each fall semester in the Civil and Environmental Engineering department. The inverted classroom will enable more time in class for students to work on real world example problems allowing students to enhance their problem solving and critical thinking.

2019 – HUBLER, Jonathan, Ph.D., Civil and Environmental Engineering

A Project-Based Learning Approach to Practical Modeling of Dynamic Systems - The modeling and simulation of dynamic systems can be an extremely valuable skillset for engineers. However, students often struggle with developing these skills as they require computational knowledge and often classroom examples are quite different from real-world scenarios. This proposal aims to develop course content to help students build these skills in a project-based learning environment to foster critical thinking and afford students the opportunity to take ownership of how they analyze a system.

2019 – KOLLER, Jeffrey, Ph.D., Mechanical Engineering

Introducing Engineering Design in Freshman Mechanical Engineering Course with Active and Project-Based Learning - The goal of this project is to enhance the Freshman Mechanical engineering course with active and project-based learning, to better equip students with transferrable technical and soft skills. The course will be transformed to teach and apply Engineering Design, SolidWorks and MATLAB. The activities will be curated to foster creative thinking, problem-solving, collaboration, communication and self-regulated learning skills that are critical for students' academic success.

2019 – SETH, Deeksha, Ph.D., Mechanical Engineering

Redesigning the Foundations of College Counseling Course – This project seeks to help students apply business skills to the various counseling contexts by engaging them with unfolding case studies. The course redesign is based on student feedback and faculty observations and addresses the expressed need to create counseling-based learning materials that help illustrate the theoretical business consulting concepts. The revised course design aims to help school counselors and graduate students intentionally utilize and practice business consulting skills to address school counseling contexts.

2024 – HALEY, Amber, Ph.D., Education & Counseling

Strengthening Ministerial Competencies for a Synodal Church – This course revision will shift the theoretical course to one that focuses on applied skills grounded in the synodal Spiritual Conversation method that fosters active listening, communal discernment, and collective action. This revised course design aims to help ministry students develop and practice these critical skills and thus prepare them to apply these skills in their various professional and ministerial contexts.

2024 – JOSEPH, Jaisy, Ph.D., Theology & Religious Studies

COLLEGE OF LIBERAL ARTS AND SCIENCES - LIBERAL ARTS

Integrating Artificial Intelligence (A.I.) in Communication Research and Writing – This project aims to enrich the existing required graduate and undergraduate communication research methods courses through the development of a new, free-standing, one-credit module on using A.I. for research and scholarly writing. This course will help students develop proficiency in intentionally using A.I. as an assistive tool in their research practice and writing, and help students practice the ethical use of A.I. in research and writing.

2024 – MANDHANA, Dron, Ph. D., Communication

Augustine and Women Faculty Workshop – This project aims to enrich and diversify the curriculum of ACS 1000, Ancients, a required course for all first-year students, especially the discussion of Augustine's *Confessions* by including a missing perspective to class discussions on the *Confessions*; that is the role of women in ancient society. Grounded in a discussion of the book, *Queen of a Fallen World: The Lost Women of Augustine's Confessions* by K. Cooper (20223), instructors will explore the book's application to teaching ACS 1000 and generate new instructional activities, writing prompts, and in-class exercises. They will learn about women in the life of Augustine and explore the *Confessions* through the lens of gender, oppression, privilege, and power.

2024 – MITCHELL, Colleen, Ph.D., Augustine and Culture Seminar Program

Reviving and Redesigning MAT 4410: Mathematical Modeling – This course redesign will bring math modelling into the curriculum and help students apply math in new contexts thus advancing their postgraduate career preparation. The revised course design emphasizes active, project-based learning and de-emphasizes traditional grading practices to encourage students to revise their work based on feedback, to practice skills, and to present their work in a portfolio format. The student projects are scaffolded in complexity and skill-building thus supporting continuous, deeper learning.

2024 – MULLER, Kathleen, Ph.D. and MULLER, Peter, Ph.D., Mathematics & Statistics

Integrating the Use of Spreadsheets into the General Chemistry Laboratory Courses – The goal of this project is to address a key challenge in students' knowledge and skill to conduct computational data analysis. This lab revision will familiarize students with using spreadsheets to generate graphs and do calculations. As the general chemistry sequence courses serve non-chemistry majors, the students will be able to transfer their data analysis skills to their respective disciplines and acquire enhanced skills in quantitative literacy.

2024- PALENCHAR, Peter, Ph.D. and HEINRICH, Michael, Ph.D., Chemistry

Redesigning SPA 1122 as a Content-Based Course – The purpose of this course redesign is to enrich the mandatory undergraduate language requirement curriculum to increase student motivation to pursue Spanish studies. SPA 1122 will be redesigned from a multi-section, grammar- and vocabulary-based language course, into a proficiency-oriented, content-based course emphasizing cultural fluency. The revised course design will immerse students in language learning with authentic materials and content that is relevant to them. A topic-specific course template (e.g., music) that utilizes authentic, instructor-developed materials, learning activities and assessments to enhance students' communicative competence will deepen their cultural literacy and critical thinking skills, and ultimately engage them in a holistic language learning process.

2024 – PERCOCO, Cristina, Ph.D. and COLÓN-RODRÍGUEZ, Larisa, Ph.D., Spanish

Mitigating Student Hardship by Reimagining Astronomy Labs – The purpose of this project is to re-design and deploy a web-based version of lab simulations, thus alleviating the need to rely on lab computers that use outdated software. This proposed lab revision will help reduce students' stress and anxiety as they will be able to focus their attention on learning science rather than struggling with outdated computer programs. The simulations will be built in house, using open-source software, providing sustainable options for future enhancement of the labs.

2024- Prša, Andrej, Ph.D. and HAMBLETON, Kelly, Ph.D., Astrophysics & Planetary Science

COLLEGE OF LIBERAL ARTS AND SCIENCES - LIBERAL ARTS cont.

Use of Educational Escape Games to Improve Student Critical Thinking and Engagement with Technical Content – This project focuses on using gamification to enhance undergraduate nursing students’ engagement and critical thinking skills while mitigating cognitive load and assessing content comprehension. Working with A.I. the faculty will be able to develop educational games that will be partially digital, thus enabling open access sharing. The digital nature of the games will allow student groups to progress at their own pace, it will provide hints to the students throughout the game, and it will offer automated feedback upon completion. Automated feedback will ensure that all students will receive timely and individualized feedback to help them improve their performance and it will also help diagnose and address learning issues.

2024 – RIVARD, Rebecca, Ph.D., Biology

Data Sleuthing in Geospatial Education: Intentionally Integrating Project Organization and File Management into the Introductory Curriculum – The aim of this project is to enrich the undergraduate majors’ academic preparation for other GEV courses and postgraduate opportunities. This course revision will help students develop and practice relevant data management and data sleuthing skills that are critical for students to utilize in their future courses, in research, and in their careers. The proposed course revision has been identified by both students and faculty as a critical student learning need, especially given the recent growth in the department’s undergraduate programs and will significantly impact the students’ learning experiences.

2024 – SANTORO, Jennifer, Ph.D., Geography & the Environment

Enhancing Two Introductory Physics Laboratory Courses – The purpose of this project is to enrich the undergraduate students’ learning experiences in the laboratory through a lab revision that will modernize experiments, build cohesion between lectures and labs, develop new experiments that foster physics-thinking, modeling abilities, problem-solving, and critical data analysis. The proposed lab re-design is grounded in both student feedback and discipline-based pedagogy literature and will significantly impact the learning experiences of many students.

2024 – SIAH, Javad, Ph.D., Physics

Digital Mapping of Animal Flourishing on Villanova’s Campus - This project seeks to rebuild a major assignment for ETH3010: Animal Ethics. The current method of having students create a physical map and academic poster presentation will be replaced by dynamic digital mapping using Arc GIS StoryMaps. StoryMaps eliminate a number of pedagogical and methodological constraints of the previous modality, encouraging experiential learning through multiliteracies in the Digital Humanities.

2023 – COVEY, Allison, Ph.D., Ethics

“Legacies of Revenge” - An interdisciplinary course offered in two sections, graduate and undergraduate, “Legacies of Revenge” will study an influential 16th c. play called The Spanish Tragedy in the context of western culture’s centuries-long fascination with the dynamics of revenge. We will explore its literary background and legacy in contemporary media. Then, collaborating across sections, we will work with and as theatre-makers to contribute to a spring production of the play in the Mullen Center’s Court Theatre.

2023 – DAILEY, Alice, Ph.D., English and PHILLIPS, Chelsea, Ph.D., Theatre

“Shaping a Life” Initiative - Building upon the 2021 VITAL Minigrant, our proposal deepens the curricular architecture of the “Shaping” series by strengthening: learning objectives, course syllabi, and faculty instruction. The 2021 grant created a learning community through co-curricular experiences, alumni mentorship, student facilitator opportunities, and speaker dinner series. The courses’ overwhelming success has meant that students choose to enroll in all 3 courses. Redesigning the courses will enhance student learning, offering undergraduates a sustained 4-year experience.

2023 – MORELAND, Anna, Ph.D., and REYNOLDS, Madeleine, Honors

COLLEGE OF LIBERAL ARTS AND SCIENCES - LIBERAL ARTS cont.

Re-developing the Family Systems Course: Prioritizing Diverse Perspectives, Modern Families, and Experiential Learning – This project entails a complete overhaul/re-development of our graduate counseling course, Family Systems Theory. The course content and approach requires radical reconstruction in order to more effectively meet the needs of our students. Specifically, our students are increasingly working with a variety of “types” of families with a wide array of problems, and they need to effectively work with these clients from an approach that is more practically than theoretically oriented.

2023 – SCHMIDT, Christopher, Ph.D., Education & Counseling

Incorporating Computational Methods in Graduate Quantitative Research Education in Communication - This proposal seeks to redesign a required communication graduate research course by introducing big data and computational methods. Students will: 1) gain familiarity with major computational methods currently available to communication research, 2) develop a conceptual understanding of and make critical assessment of each method, 3) learn how computational approaches could triangulate with other research methods to advance research, and 4) gain practical experience in incorporating computational methods in their research endeavor.

2023 – XU, Jie, Ph.D., Communication

Revamping Students’ Evaluation Forms to Enhance Students’ Learning - Counseling students are required to complete clinical courses at sites outside the campus and they are evaluated based on the Site Supervisor Evaluation Form (SSEF). The purpose of this minigrant is to request for funding to improve the SSEF. Improving the SSEF would ensure our students are learning (and being evaluated on) current best practices, such as evidence-based practice and the infusion of DEI in counseling.

2023 – YEE, Terence, Ph.D., Education & Counseling

Problems with Data: Using Real-world Challenges to Enhance Instruction for Regression Methods - Regression methods are generally taught by introducing and applying modeling strategies to clean, well- defined data sets. In practice, however, data sets are often messy, and standard analysis approaches may not apply. To better prepare students for handling non-routine analysis scenarios, I propose assigning weekly problems with significant data challenges. I propose using a combination of problem-based learning and content-based discussion boards in order to facilitate student learning, foster critical thinking, and encourage effective statistical communication.

2022 – BERNHARDT, Paul, Ph.D., Mathematics & Statistics

Engaging Social Justice in Quantitative Research in Communication - This proposal seeks to redesign an advanced, required Communication research course by applying a quantitative data analysis framework to the intersection of Communication and issues of social justice and social change. Students will generate new knowledge about social justice from real- world data sets, while developing skills such as communicating their findings through multimedia formats, learning to do data analysis, creating data visualizations (infographics), effectively collaborating in teams, and using quantitative data to engage in evidence-based advocacy for diversity, equity and inclusion.

2022 – LEVIN, Allyson, Ph.D., and KSIAZEK, Thomas, Ph.D., Communication

Building Discussion Skills in Students Through Student-Led ACS Seminars - The Augustine and Culture Seminar is usually facilitated by the instructor who asks open-ended questions to the students. However, this method routinely fails to engage quieter students, and it can be difficult to effectively assess how successful a discussion has been. This project proposes to research the Spider Web Discussion technique for seminar discussions in order to facilitate more equitable, student-led discussions and build identifiable discussion skills that can be more effectively assessed.

2022 – MCGUIRE, Elizabeth-Jane, Ph.D., Augustine in Culture Seminar Program

COLLEGE OF LIBERAL ARTS AND SCIENCES - LIBERAL ARTS cont.

Creating a Database of Modules for Alignment of Lab and Lecture in General Chemistry - The aim of this project is to revise CHM 1131 and 1134 by restructuring topics, redesigning lectures, and introducing case studies into the curriculum that will support the future development of a 1-semester General, Organic, and Biological Chemistry course in collaboration with the M. Louise Fitzpatrick College of Nursing. These changes are intended to improve accessibility of chemistry to nursing students and illustrate the importance of chemistry in health care through problem-based medical case studies, discussions, and integrated lab components.

2022 – MYERS, Jessica, Ph.D., and MINBIOLE, Kevin, Ph.D., Chemistry

Incorporation of Experiential Learning Method in a New "Air Pollution" Lab Course - This is an upper-level lab course designed to provide in-depth science learning goals of the department. In this course, students will collect and analyze real-world environmental data and it provides advanced levels of learning. The new experiential learning method in this new course will help the students to see the connections and relevancy with the real world and will transform the students to become life-long learners and continue to educate the community about care for the environment.

2022 – SHAKYA, Kabindra, Ph.D., Geography and the Environment

Data Visualization in Political Analysis - With this grant, the goal is to create a public web interface via the "Shiny" application in the open-source software R Studio, which allows students to create their own data visualizations with public data on political and economic variables. This will enhance students' learning experience by giving them (1) agency in creating data visualizations, (2) a tool for exploring their intellectual curiosities, and (3) more confidence in using quantitative data in their research.

2022 – WELDZIUS, Ryan, Ph.D., Political Science

In Depth Instruction of EEG in Cognitive Neuroscience (CBN4100): A Course Revamping – The goal of this project is to enable students to attain a degree of mastery at the end of the course that would be objectively assessed, by focusing on one technique (electroencephalography, EEG) in the laboratory portion of the course, rather than spending a short time on each cognitive neuroscience methodology. Students would take a hands-on approach to the research process, gaining invaluable experience.

2021 – DRUMMEY, Anna, Ph.D., Psychological & Brain Sciences

An Inquiry-based Approach Using Sets, Number Theory and Combinatorics – This proposal aims to apply an inquiry-based approach to teaching Foundation of Math I, a transition course in the curriculum that marks a shift away from the computational to the theoretical, with emphasis on proof writing. The approach will be deployed using a workbook containing definitions and problems from topics in set theory, number theory, and combinatorics. Classes centered on student presentations will rigorously train students in problem-solving, proof writing, and clear communication of mathematical ideas.

2021 – KAMAT, Vikram, Ph.D., Mathematics & Statistics

Creating a Database of Modules for Alignment of Lab and Lecture in General Chemistry – The goal of this project is to create a database of modules that will explicitly correlate the General Chemistry I and General Chemistry I Laboratory courses that are taught to approximately 700 students each Fall semester. The desired impact is to improve student outcomes in both courses.

2021 – KATZ LINKMEYER, Stephanie, Ph.D., Chemistry

Learning Centered Approach in Graduate Instruction of Spatial Techniques – This project aims to redesign portions of the graduate class, GEV 7041 GIS for Environmental Systems in order to align instruction and assessment for different levels of learning – theory, application, and practice. A modified scaffolding approach to learning of theory and practice based on flipped class model and a mastery approach to assessment will be utilized, as will units that are sequenced and that apply an iterative affirmative assessment to the learning of theory.

2021 – KREMER, Peleg, Ph.D., Geography & the Environment

COLLEGE OF LIBERAL ARTS AND SCIENCES - LIBERAL ARTS cont.

Compiling and Creating Student-Centered Online Materials and Resources for Heritage Learners of Spanish – The main goal of this project is to create and compile affordable, engaging, and interactive online materials and resources for Heritage Language Learners (HLLs) of Spanish. The materials will serve to enhance HLL student learning of their own language, promote language maintenance, and foster diversity and inclusion in our institution.

2021 – LENARDON, Maria, Ph.D., Romance Languages & Literatures

Honors - Shaping a Life Initiative – The purpose of this project is to take the three distinct “Shaping” courses and develop them into a cohesive learning community. This will be done by linking the courses, creating extracurricular activities, and engaging with program alumni. Students will find further development through peer and alumni mentorship in addition to increased cohesive engagement.

2021 – MORELAND, Anna, Ph.D., and HIDORE, Kimberly, Ph.D., Honors

Flipped Learning in a Clinical Assessment in Counseling Course – The aim of this project is to apply the use of flipped learning in the teaching of clinical assessment knowledge and skills in CHR 8855 Assessment and Appraisal in Counseling using educational videos viewed outside of class. Removing lecture from face-to-face class time will free up time for the use of authentic and experiential learning activities that facilitate student exploration and application of course concepts in real-world clinical practice.

2021 – WAHESH, Edward, Ph.D., Education & Counseling

Design and Implementation of a General Biology Peer Mentoring Program – The goal of this project is to create a peer mentoring program that will complement the gateway General Biology course sequences and provide a space for students to collaborate with peers to review course content and engage in active learning. Peer mentoring will ideally improve course retention, increase student success in the course, and expand the diversity of graduates found within the major. Peer mentors will be trained in leadership and pedagogy.

2021 – WINTERTON, Christina, Ph.D., and CHAPMAN, Samantha, Ph.D., Biology

Increasing Social Presence and Student Engagement in Online Cultural Courses - This project seeks to enhance social presence and student engagement in two online cultural courses. This project will introduce interactive discussion tools that will make asynchronous discussions more engaging and motivate students to support one another in an active learning community. I plan to invite guest speakers to my live Zoom sessions and integrate their presentations into the course curriculum so that students establish connections between the course material and local and global communities.

2020 - GONZALEZ, Jill, Ph.D., - Romance Languages and Literatures

Development of a Chemistry Laboratory Safety Course - Laboratory safety is a fundamental part of the scientific experience. Introducing laboratory safety as a cultural responsibility invokes leadership in students. Safety taught through traditional lectures, case studies, guest speakers and student innovation creates a unique opportunity for students to understand and appreciate why a culture of safety is an important aspect of their scientific training, giving students the tools they need to be successful in future careers in science, medicine or other professions.

2020 – MINBIOLE, Kevin, Ph.D., and KURCHAN, Eydiejo, Ph.D., - Chemistry

Abnormal Psychology: A Flipped Lecture with Case Study Approach - The aim of this project is to develop a flipped lecture plus case study approach to teaching Abnormal Psychology. A set of instructional videos will be developed for out-of-class viewing. Class time will be devoted to applying video content to first- and third-person case studies. This approach seeks to enhance student learning and engagement, emphasize contextual and socio-cultural issues surrounding mental health, reduce mental health stigma, and promote collaborative, team-based work in the classroom.

2020 – PANTESCO, Elizabeth, Ph.D., - Psychological and Brain Sciences

COLLEGE OF LIBERAL ARTS AND SCIENCES - LIBERAL ARTS cont.

Inclusive Teaching for Graduate Courses in Philosophy - This proposal seeks to provide the graduate philosophy community with the opportunity to reflect on issues of diversity through a series of three workshops that focus on nurturing inclusive graduate seminars, curating inclusive graduate course material and effective mentoring. Participants will be able to better understand accessibility in graduate education, identify best practices of content selection and delivery method for our discipline and set the common basis for successful mentoring for philosophy graduate students.

Scholz, S. (2022). Graduate Seminars and the Climate Problem in Philosophy. *Teaching Philosophy*. Advance online publication. <https://doi.org/10.5840/teachphil202256172>.

2020 - SCHOLZ, Sally, Ph.D., and POPA, Delia, Ph.D., - Philosophy

Statistical Genetics: A Primary Literature Approach - This proposal is for the creation of a new graduate-level course at Villanova University, titled Statistical Genetics. This course will be driven by primary research literature in statistical genetics, in which students will be tasked with the responsibility of leading discussions on journal articles and recreating analyses therein. The goals are to equip students with the tools required to perform modern cutting-edge research in statistical genetics, and to increase student interest in research.

2019 - CHI, Peter, Ph.D., Mathematics and Statistics

An Introduction to Linear Algebra through Applications for Science, Technology, Engineering, and Big Data - This new course will explore one of the most widely applicable areas of mathematics: linear algebra and matrix theory. By focusing on modern applications, students in science, technology, engineering, and data science will experience the power of linear algebra as a valuable analytical framework. We will combine lecture, group assignments, and projects. This course represents a new approach to the teaching and learning of linear algebra for my department.

2019 - FEEMAN, Timothy, Ph.D., Mathematics and Statistics

Exploring Student Responsiveness to Pace-Based Learning in Advanced Environmental Science Laboratory Course

The goal of this project is to create a series of place-based learning exercises for a new advanced Environmental Science lab course to be offered in spring 2020, open to upper-level undergraduate and graduate students. Two half-semester long exercises will vary both in the level of student involvement in experimental design and connectivity to community stakeholders. This will mark the first time I have used these exercises to fulfill the laboratory requirements of a course.

2019 - GOLDSMITH, Steven, Ph.D., Geography and the Environment

Object Based Curriculum Laboratory Planning for MSE Polymers - The goal of this project is to commit dedicated time in the laboratory to develop a lab manual and experimental techniques appropriate for non-science major undergraduates to relate to Polymers as a topic relevant to their lives. The desired impact is to ensure that students can clearly see the connection between what they are doing in the laboratory and what they encounter with everyday polymers while becoming connected to the major concepts of Polymer Science.

2019 - GURON, Marta, Ph.D., Chemistry

Linear Algebra Rebooted: A Blended Master's Level Course - By alternating in-person and online meetings throughout the semester, a blended linear algebra course will be designed to be more accessible to working students. The course will also include a pre-assessment to measure student background knowledge, and early self-paced online modules to refresh and reinforce foundational concepts. An emphasis on proof-writing in a linear algebra context will support students to master skills in logic and proofs.

2019 - HAYMAKER, Kathryn, Ph.D., Mathematics and Statistics

English Department Diversity and Inclusion Pedagogy Workshop - The English Department's Diversity Committee proposes a day-long pedagogy workshop on diversity and inclusion in Fall 2019 for faculty, focused on strategies for teaching literature in an inclusive way. The goal will be to acquire new knowledge about best practices and to equip self-selected faculty with new resources to share with colleagues. In a required follow-up session in Spring 2020, faculty will reconvene to assess how they have implemented ideas from the workshop, and data from the workshop will help to guide future instructional development efforts.

2019 - LUTES, Jean, Ph.D., English

Teaching for the Intellectual Virtues in Philosophy of Religion - I propose to develop an existing course which prior to this Spring 2019 has not been taught since Fall 2010. In this seminar, I aim to develop materials, activities, assessments, and a classroom environment that encourages intellectually virtuous engagement with religious claims, broadly construed. The primary aim of the present project is to have students learn how to be intellectually virtuous in their inquiry on philosophically difficult and controversial claims.

2019 – NAPIER, Stephen, Ph.D., Philosophy

College Admissions Counseling: A Graduate Online Certificate Program – There is both a significant need and a desire among current and future school counselors for training in college counseling; many secondary school systems are actively seeking counselors with this training or experience. A College Admissions Counseling Certificate Program will: a) enable professional counselors to heighten their competitive professional edge, and b) allow Villanova to establish itself as a leading innovator in this growing field.

2019 – SCHMIDT, Christopher, Ph.D., Education and Counseling

Engaging Students in the Science of Speech - The project will develop introductory reading materials for the Mendel Science Experience (MSE) course, "The Sounds of Human Language." This will provide students with background knowledge that will allow them to understand research articles and provide opportunities for in-depth discussion of the material in class. In turn, this will improve student's learning of the content in the course, helping achieve the goal of the MSE program to provide students with a foundation in basic science.

2019 – TOSCANO, Joseph, Ph.D., Psychological and Brain Sciences

M. LOUISE FITZPATRICK COLLEGE OF NURSING

Revision of the Nursing PhD Statistics Course Sequence – This course revision will advance a cohesive course plan to foster deep, practice-based learning in two sequential, analytical graduate courses through updated content, interactive, low-stakes, formative assessments, and robust summative assessments. The comprehensive course design aims to help doctoral students develop, practice, and apply current statistical methods and practices in the nursing profession, research, and education contexts using project- and case-based learning.

2024 – KELLY, Michelle, Ph.D., CRNP, CNE, FAANP, FAAN, M. Louise Fitzpatrick College of Nursing

A Thousand Paper Cuts: Using Video Vignettes to Improve Recognition and Response to Microaggressions among Undergraduate Nursing Students – The purpose of this project is to revise the curriculum of Nursing 1105 – Social Justice and Health Equity, a required foundational course that all first-year nursing students take. This course revision will help address students' difficulty in recognizing microaggressions, and great discomfort responding when microaggressions are recognized, by engaging students with video vignettes set in the healthcare setting, guided by debriefing protocols. This proposed revision will help nursing students develop, practice, and receive feedback on two core competencies, that is, inclusive care, and effective communication.

2024 – MACKENZIE-GREENLE, Meredith, Ph.D., RN, ANP-BC, CNE, BRADLEY, Patricia, Ph.D., RN, FAAN, FURMAN, Gail, Ph.D., RN, CHSE-A, M. Louise Fitzpatrick College of Nursing

Global Health Nutrition: Leveraging Food as Medicine – This project aims to enrich the undergraduate, cross-disciplinary Global Health minor curriculum by focusing on global health, nutrition, and experiential learning to deepen students' understanding of the interconnectedness between food, nutrition, and global health. The new course will also help students consider how they might improve health through food in clinical practice, public health programming, working with patients and their families.

2024 – WHITEHOUSE, Christina, Ph.D., AGPCNP-BC, CDCES, FADCES and WEISSINGER, Guy, MPhil, Ph.D., RN, M. Louise Fitzpatrick College of Nursing

A Virtual Quantitative Methods Bootcamp – Ph.D. students' knowledge and application of research methods often decreases from their previous academic degree. This frequently creates challenges for PhD students in quantitative research methods courses and hinders the learning of advanced knowledge. In January 2022, an informal 6-hour "Research Basics Bootcamp" was piloted prior to students enrolling in two research methods courses. This proposed project will formalize objectives, refine the content, and develop an objective evaluation plan of this experiential learning experience.

2022 – CANTRELL, Mary Ann, Ph.D., M. Louise Fitzpatrick College of Nursing

M. LOUISE FITZPATRICK COLLEGE OF NURSING cont.

A Moral Distress Mitigation Program in Undergraduate Nursing Practicum: Development and Evaluation - Moral distress has a direct impact on quality of patient care and desire to leave bedside nursing. It is essential to enhance current nursing curriculum training to educate nursing students on moral distress and coping strategies. The purpose of the project is to develop, implement, and evaluate a learning program to understand, identify and decrease MD, increase perceived ethical confidence and moral competence, and promote resilience among undergraduate students in the clinical setting.

2022- QI, Bing Bing, Ph.D., RN, and PARKINSON, Jaclyn, MSN, RN, PCCN, M. Louise Fitzpatrick College of Nursing

Transforming Learning in Essentials of Nursing Practice to Develop Clinical Judgment Skills - The goal of this project is to foster undergraduate nursing students' clinical judgment and Next Generation NCLEX (NGN) preparation to ensure that Fitzpatrick College of Nursing graduates are adequately prepared to provide safe and effective patient care. This will be accomplished by revising a current unfolding case study into an NGN evolving scenario, embedding the evolving scenario into an electronic medical record format, and developing associated NGN test items.

2022 – ROSS, Jennifer, Ph.D., RN, CNE, and SCHEVE, Ann, MS, RN, M. Louise Fitzpatrick College of Nursing

Bridging the Classroom-Clinical Gap: Using a Structured Clinical Reasoning Model to Develop Clinical Judgment Skills – The aim of this project is to enhance students' critical reasoning and ability to synthesize and apply nursing concepts to clinical situations. The Clinical Judgment Measurement Model will be utilized to help students identify the necessary steps in making a safe clinical judgment and to develop case studies to guide the students through problem-based learning to enhance both understanding and application of the course material.

2021 – MACKENZIE-GREENLE, Meredith, Ph.D., RN, ANP-BC, CNE, M. Louise Fitzpatrick College of Nursing

VILLANOVA SCHOOL OF BUSINESS

Automation of the Paid Search Data Mining Business Simulation – The goal of this project is to strengthen students' data analytical skills via engagement with web-based simulation exercises. This simulation project will be included across the Business Analytics course sections. A Web portal version of the simulation will be developed to give other faculty self-serve access thus ensuring sustainability and ease of access and use.

2024 – COATES, Nathan, Ph.D., Management and Operations

INTERDISCIPLINARY PROJECTS

Bridging Nursing and Biology: A Semester-Long, Cross-Course Unfolding Case-Study to Improve Student Engagement - The goal of this project is to maximize student motivation and engagement with complex course material related to epidemiology, global and public health. Using an unfolding case study design, students will analyze novel data in real time, communicate their findings to other students effectively, make decisions that influence health outcomes, consider the ethical implications of decisions, and gain an understanding of how their work can have widespread public health impact alongside other disciplines.

2019 – BREWER, Christine, MSW, MSN, RN, M. Louise Fitzpatrick College of Nursing and RIVARD, Rebecca, Ph.D., Biology



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