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"Visions of the Possible": Collaborative-Interdisciplinary Approaches to Teaching and Learning

ABSTRACT

In this article we explore the challenges and rewards of a multi-year, multidisciplinary, multi-institutional approach to collaborative teaching and learning. What does it mean to teach across disciplines and what might this look like for our students who are emerging professionals from very different fields of study? What are the challenges of adopting a collaborative model for teaching and learning? How might we envision new instructional approaches that positively impact student learning and success while simultaneously addressing the needs of our community partners? What new pedagogical approaches are emerging that might address challenges within higher education? Our inquiry here is focused on what might be if we make the time to explore new ways of teaching both in and out of the classroom. Following Hutchings' (2000) call for "visions of the possible" in higher education, we present three distinct case studies that demonstrate the potential of deeply engaged, collaborative teaching and learning across disciplines. We ask what this experimental approach might mean for future educators and students alike.

KEYWORDS

cross-disciplinary approach, community collaboration, team-based learning

INTRODUCTION

In fall 2024, teachers in higher education traveled from around the world to French Lick, Indiana (U.S.) for the International Society for the Scholarship of Teaching and Learning (ISSOTL) conference. Among many critical and timely questions, the conference organizers, under the theme of "Recognizing Impact and Reinvigorating Practice," challenged us, as educators, to consider the effectiveness of our teaching practices and pedagogical approaches—what works, what is, and what might it look like? Following Hutchings' (2000) "Taxonomy of Questions: A Framework for Categorizing Questions in the Scholarship of Teaching and Learning (SoTL)," there are two questions that are particularly relevant to our discussion here—questions all educators should ask throughout their careers. First, "Is it working?" and second, "What would it look like if I teach this course in a completely different way?" We are not suggesting that educators necessarily restructure or redesign every course that they teach, but we do find that these questions are critical to delivering the best possible instruction, regardless of content or the academic field.

In traditional higher educational settings, students typically receive theory and practice within a particular field and geared toward a specific career path, but what are they learning? Some extend the question, asking whether they are really learning at all (Arum and Roksa 2011). With this critique in mind, can we create new, cross-disciplinary learning opportunities for our students outside their educational programs and fields of study? Service learning, defined as "a high-impact practice that helps students develop professional competencies such as teamwork, communication, critical

thinking, and problem solving" (Andrade and Westover 2020, 19) is not a new practice, but how might we develop deeper, sustained partnerships over time is a question worth exploring. Here we share several case studies highlighting a long-term collaborative teaching and learning partnership between Indiana University Indianapolis's (IUI) Museum Studies program and Purdue University's Occupation and Environmental Health Science (OEHS) program alongside key community partners.

Divergent paths and collaborative teaching

The Museum Studies program in the School of Liberal Arts at Indiana University Indianapolis supports the professional development of undergraduate and graduate students in becoming self-reflective, skilled, and engaged leaders in the museum field via experiences in and outside of the classroom. This IUI program offers three options for study: a Master of Arts in Museum Studies, an MA Museum Studies Graduate Certificate, and an undergraduate Certificate in Museum Studies. The program's curriculum integrates the theory and practice of museology while advancing the scholarship of museums and their missions. The core teaching and learning values of the program are grounded in civic engagement, applied learning, integration, collaboration, inclusion, and leadership. The School of Health Sciences at Purdue University trains the next generation of healthcare providers and leaders to advance research on toxicants that threaten human health. Students receive training that prepares them for challenging and fulfilling careers through the exploration of a broad range of sciences surrounding human health and disease. Undergraduates elect to major in biomedical health sciences, medical laboratory sciences, occupational and environmental health sciences, or radiological health sciences. The graduate programs encompass diverse research that aims to address critical public and biomedical health concerns.

Perhaps, at first blush, these two institutions and distinct programs of study are unlikely partners, given the dramatic differences in curricula. Yet as we will demonstrate, the drastically different content of these two fields of study allows for our students to learn from one another through a meaningful exchange of knowledge and skills where our teach one another. Through these moments of mutual exchange, critical dialogue occurs between our students, making these exchanges key teachable moments. For example, after the OEHS students presented on mold remediation, the museum studies students raised concerns that standard remediation techniques would damage museum objects that require specific handling and storage protocols. The students then brainstormed alternative approaches to these unique problems where their two fields met. This student exchange, where they were learning from one another by sharing their training and knowledge while simultaneously addressing real world problems, was experiential learning at its best. Moving beyond abstract conceptualization where students explore new ideas based on a given situation, the students were actively applying new ideas to real world problems (Kolb 2014). Reciprocity is embedded within our team-based approach to teaching and learning. By fostering these reciprocal learning opportunities, students, community partners, and faculty all contribute to teaching and learning (Tyran and Garcia 2015).

This exchange and reciprocity extend to our community partners as well. These collaborations address community partner needs and create numerous teachable moments that often arise spontaneously during the learning experiences (Willingham and Darby 2023). We will also share some of the challenges of incorporating OEHS materials into a museum studies curriculum as well as the equally challenging task of bringing industrial hygiene students into the museum and cultural heritage worlds. We then present a variety of academic templates from single seminars to classes embedded into semester-long undergraduate and graduate courses. We will discuss how we co-teach

with our valued community partners and the important role they play in this collaborative learning experience (Andrade and Westover 2020).

As educators, regardless of our discipline, we strive to prepare our students for productive, meaningful careers, and as Andrade and Westover (2020) point out "Employers and recent college graduates agree that certain cross-cutting skills are essential for success in entry-level positions and in today's global economy" (19). From an industry/business model, these graduates could be referred to as "T" professionals, workers who possess a breadth and depth of knowledge. Further, Gardner and Estry call for "visionary new models of curriculum and learning, coupled with the application of evidenced based practices for teaching and learning" in their discussion of a collaboration between Michigan State University and IBM (2017, 1). As educators, we are charged with providing a curriculum that offers depth and breadth. We achieve this by exposing our students not only to disciplinary knowledge within their chosen field, but to insight from outside their field as well. Here, collaborations of all kinds are key. Collaboration is not a new method of inquiry in academic circles, but as many have pointed out, while it provides a useful framework for our teaching, it takes considerable thought and energy to "walk the walk" (Hyatt 2011; Menzies and Butler 2011). Our multidisciplinary collaboration with community partners was established with a spirit of sharing information, decision-making, and authority. Our key community partners informed all stages of the project, from writing the funding proposals to implementing our approach. In an environment of mutual respect, we were able to address the problems associated with toxic collections and other museum health hazards.

We argue that collaboration is not only a valuable method of teaching in a cross-disciplinary context but can also serve as a strategy for better understanding teaching and learning. Could collaboration, as a teaching method, be expanded to other disciplines? Concerning such teaching methodologies, Hutchings asks us, "How does it emerge as a practice? Why would an already too-busy faculty member want to do it?" (Hutchings 2000, 2). In the field of anthropology, community collaboration is an alternative methodology that pushes back on older, more traditional ("extractive") forms of ethnographic inquiry. We are reminded that "the methodological and theoretical implications of such relationships and partnerships are, in and of themselves, worthy of our consideration and analysis and constitute a rich terrain for exploration" (Hyatt and Quintiliani 2015–2016, vi). But what does this look like when we work across disciplines that have little to nothing in common theoretically or methodologically, and how can we bridge these divides when it comes to teaching and learning?

Our collaborative, team-based teaching began as a result of our membership in the American Industrial Hygiene Association's (AIHA) Museum and Cultural Heritage Industry Working Group. The mission of this inter-disciplinary working group "is to create a forum that brings together occupational health and safety professionals with conservation and collection care professionals in order to effectively address risk management needs by sharing combined knowledge and existing practices" (AIHA 2025). Many institutions benefit from the work of this forum including, but are not limited to, museums, art galleries, archives, historical houses, national parks, local nature centers, botanical gardens, university teaching collections, private industry or governmental agency historical holdings, conservation laboratories, and private conservation studios. This working group is a formal and productive partnership between AIHA, the American Institute for Conservation (AIC), and the OSHA On-Site Consultation Program (via the AIHA-OSHA Alliance). Among the established goals and objectives of the AIHA working group is the aim of providing cultural heritage professionals with evidence-based best practice guidelines and occupational risk management tools for work tasks and

public exhibit spaces. Another is to design core curriculum for museum studies programs and provide learning opportunities for public health undergraduate and graduate students (AIHA 2025).

Designed in 2012, Preventive Conservation is an advanced course at Indiana University Indianapolis that explores techniques by which preservation of museum objects and collections is achieved. In the course, emphasis is placed on measures that prevent or reduce the potential for damage and loss to museum collections. Central to Preventive Conservation methodology, topics include handling procedures, proper storage, environmental management, agents of deterioration, risk analysis, emergency preparedness, and planning. The course offers a theoretical and practical investigation of Preventive Conservation, which aims to eliminate or modify conditions that encourage deterioration. But is it working as well as it could in terms of preparing students for professional careers in the museum and cultural heritage industry? Although this course included a unit on health and safety, it didn't fully prepare these emerging museum professionals for the issues they would actually confront in the field. From our joint recognition of the need to redesign the established curriculum, we launched our multidisciplinary teaching collaboration.

CASE STUDY #1: COLLABORATIVE INTERDISCIPLINARY TEACHING WITH MUSEUM PARTNERS

In 2021 we submitted a grant proposal aimed at educating small museums about the potential dangers of toxins in collections, with an emphasis on the human health risks. Through our partnership, a multi-year, multidisciplinary collaboration, our graduate and undergraduate students, as researchers in active leadership roles in this team-based approach, addressed health and safety issues in collections. Our first museum partner was the Indiana Medical History Museum. Located on the former grounds of the Central State Hospital in Indianapolis, a psychiatric institution that was opened in 1848 and closed in 1994, the museum is housed in the hospital's Old Pathology Building. Dating back to 1896, it is said to be the oldest surviving pathology facility in the nation and is listed on the National Register of Historic Places. The pathology department closed in the 1960s but reopened as a museum in 1969. With its scientifically equipped interior still intact, the museum houses and displays a large collection of pharmaceuticals and other historic chemicals once used for lab tests and experiments, film development, and tissue preservation (IMHM 2025).

Real world problems

For centuries, museums have collected the scientific specimens and cultural heritage objects that are central to their institution's mission. These tangible collections tell compelling stories of people and places through time. However, museums often obtain these collections without an understanding of the inherent and acquired dangers these items may present to the health and safety of those charged with their care and display. In the 1800s, for example, museums routinely treated collection items with heavy-metal contaminants (arsenic and mercuric salts). By the 1940s, they also used organic pesticides (DDT). Objects made of feathers, fur, skin, leather, wood, grass, and other natural fibers were particularly affected. Arsenic and mercury have significant human toxicity, and although these toxins leave substantial quantities of residue on treated objects, these hazards are not always observable. Many museums around the world acquired items without an understanding of the inherent and acquired dangers these items may present. These hazardous collections, commonly including items treated with toxins to preserve them or to kill pests, can present short- and long-term health risks to those charged with caring for collections, for those putting them on display, and to museum visitors.

The OEHS program at Purdue University has a long tradition of preparing students for a career in the field of industrial hygiene through the Accreditation Board for Engineering and Technology (ABET). The rigorous curriculum consists of a variety of scientific courses aimed at anticipating, recognizing, evaluating, and controlling workplace hazards; it is carefully designed to provide a broad education. While students are immersed in the technical aspects of the profession, a need exists for developing teamwork and communication skills which are critical to success as a working professional. Students in the Purdue program are also active in a student organization sponsored by the AIHA. The first step of this collaboration occurred when the student organization prepared a lesson for the Indiana University Indianapolis Preventive Conservation course. After consideration of various hazards in the museum field, we decided to address the topic of mold exposure. A team of graduate and undergraduate students, in coordination with the faculty advisor for the student organization, prepared a presentation and delivered it during a live session with the Preventive Conservation course. The presentation led to thoughtful discussion between the students from both programs. This co-teaching experience set the foundation for future collaborations.

"Oh, the Problems You'll Solve!"

In the second year of the multidisciplinary collaboration, we received additional funding support from the Office of the Vice Chancellor for Research (OVCR) at Indiana University Indianapolis (IUI). The IUI university fellows spent an entire academic year working 20 hours a week at the museum, conducting archival research and creating a comprehensive list of the chemical hazards within IMHM's collection. The museum then updated their online collections management database and catalog record with these findings. When possible, the fellows determined what chemicals were in the collection alongside detailed documentation, creating safety sheets, and establishing a safer system for the storage, handling, and maintenance of these potentially hazardous chemicals.

During that second year, we brought our outside experts to the IMHM to help us identify and better manage these conundrums. To expand our reach and educational message, we also presented at the AIHA's national conference in 2022. Under the title of "Oh the Problems You'll Solve! (inspired by Dr. Seuss' advice to embrace life's adventures and challenges) Exploring Interdisciplinary Teaching and Community Collaboration with Museum Studies and Occupational and Environmental Health and Safety Campus Programs," we encouraged industrial hygienists and others in the human health and safety fields to seek new partnerships with their local museums and university museum studies programs. Our student team from Indiana University Indianapolis and Purdue University also co-authored a research poster titled "Hidden Health Hazards: A Team-based, Interdisciplinary Approach to the Identification and Mitigation of Toxins in Museum Collections," highlighting not only their research findings but also this collaborative approach to teaching and learning. The student poster won multiple national awards, including Bronze Best in Show from the AIHA, Best Student Research Poster from the AIHA Museum and Cultural Heritage Industry Working Group, Best Student Poster from the Exposure Assessment Strategies Committee, and Best Student Poster from the National Aerosol Technology Committee.

Figure 1. Student research poster awards at American Industrial Hygiene Association Meetings 2022

CASE STUDY #2: COLLABORATIVE TEACHING WITH GOVERNMENT PARTNERS

Our multi-year, cross-disciplinary, team-based teaching at the Indiana Medical History Museum addressed real-world problems while encouraging our students to think more critically. This led to additional partnerships and learning opportunities for students. When we asked potential community partners how we might help them, they voiced diverse and complex concerns. We heard about a number of issues, ranging from the potential presence of heavy metal contaminants, such as arsenic and mercury, to the identification of dangerous mold, to managing mystery chemicals in collections spaces, to off-gassing concerns in collections and exhibition spaces. Our student teams learned to use XRF technology to test for heavy metal contaminants in museum collections. Purdue University's School of Health Sciences had recently purchased a portable XRF[1] instrument as an addition to its environmental testing equipment. The initial collaboration with the Indiana Medical History Museum created opportunities for students to use this advanced technology in the field. Instructors trained students in the proper use of the instrument and, with the multiple testing sessions through this collaboration, students developed the confidence to independently operate the instrument. While the technical aspects of programming the settings and operation of an instrument are important, an understanding of how to conduct a proper exposure assessment is critical to evaluating the hazards present in a location. The collaboration provided the opportunity to learn those skills which are difficult to teach in a classroom setting. As occupational health students conducted an exposure assessment in a working museum along with their museum studies colleagues, they quickly learned how to relate technical information and conduct their assessment in a way which met the needs of our museum partners.

Birds of a feather—extending teaching and learning partnerships

As an integral part of an ongoing partnership with the city of Indianapolis, our student teams then extended testing to ornithology mounts and natural history collections on exhibit at the Eagle Creek Ornithology Center in April of 2022. This learning opportunity was part of a longstanding community service project where students in the Preventive Conservation course assess and clean natural history collections on exhibit. They also engage with the public by providing information on the care of family collections. This ongoing partnership raised public awareness of these health

hazards. Families throughout Indiana hold heirloom collections, but do not know how to safely care for them. Following XRF testing of ornithology specimens, our students helped remove the taxidermy mounts that had been treated with harmful chemicals, making the center a safer place for staff and visitors alike. That same year, our interdisciplinary student team assisted the Federal Bureau of Investigation's (FBI) Art Crime Team in testing for heavy metal contaminants of seized items that were to be repatriated overseas. The FBI established the Art Crime Team in 2004, partly in response to the looting of the Baghdad Museum. The team investigates art theft and cultural property crimes, and their mission is to recover cultural heritage objects and hold subjects responsible. Our students gained invaluable experience in these rather unique collections settings.

Figure 2. Student team uses XRF to test ethnographic artifacts for presence of heavy metals

Beyond repatriation to foreign nations, our students also conducted testing of items that were subject to the United States 1990 federal law known as NAGPRA (the Native American Graves Protection and Repatriation Act). Under the new 2024 NAGPRA regulations and "Duty of Care," museums must, as a first step, "consult with lineal descendants, Indian Tribes, or Native Hawaiian organizations on the appropriate storage, treatment, or handling of human remains or cultural items" (U.S. Department of Interior 1990). The new regulations also stipulate that museums must "obtain free, prior, and informed consent from lineal descendants, Indian Tribes, or Native Hawaiian organizations prior to allowing any exhibition of, access to, or research on human remains or cultural items. Research includes, but is not limited to, any study, analysis, examination, or other means of acquiring or preserving information about human remains or cultural items." We would like to emphasize here that research of any kind on human remains, or cultural items is not required by the Act or these newly approved regulations. The decision to test cultural items must be made in

consultation with the descendant communities. In this case, we consulted with tribes in the Great Plains region before conducting any non-invasive testing on the items we suspected may have been chemically treated years before to prevent pest infestation and permanent damage.

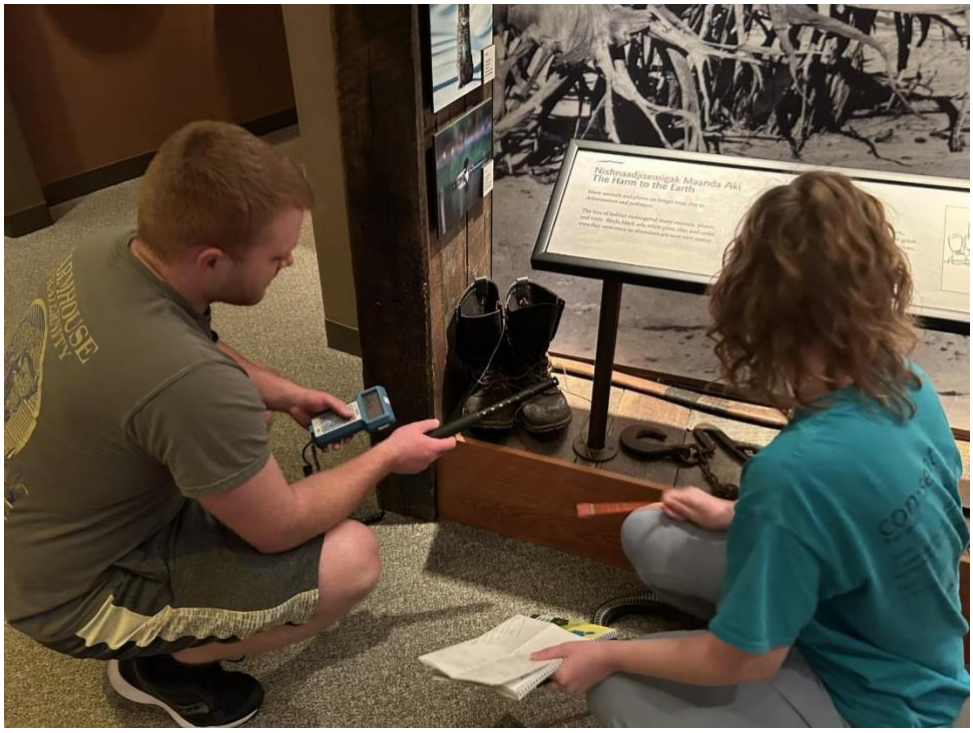
CASE STUDY #3: COLLABORATIVE TEACHING *WITH, BY AND FOR* TRIBAL PARTNERS

When working with Indigenous communities, meaningful collaborations are those cultivated "with, by, and for" community partners (Atalay 2012). In the context of tribal community engagement, this means that students learn to recognize structural power imbalances inextricably tied to a colonial past. The Community Collaboration and Curation course at Indiana University Indianapolis was designed to immerse students in tribal, community-driven projects in partnership with and led by the dynamic staff at the Saginaw Chippewa Indian Tribe's Ziibiwing Center of Anishinaabe Culture & Lifeways. Student teams work with and for the tribal museum staff and community members, participating in a broad range of collections-focused projects that are identified and overseen by the community. Key museum activities include, but are not limited to, rehousing artifacts, cleaning exhibition spaces in the tribe's award-winning, interactive, multi-media "Telling Our Story" permanent exhibit, transcribing oral histories under the direction of the tribal archivist, establishing an integrated pest management monitoring program to better protect the community's irreplaceable collections, creating archival safe storage cases for archival materials, and participating in conversations about the practice of Indigenous museology and tribal sovereignty.

Working under the direction of tribal staff, students learn that genuine collaboration can only happen when we acknowledge and push back on the power imbalances that so often characterize and threaten otherwise well-intentioned partnerships. Power imbalance is not a new subject in our classrooms, but this requires self-awareness on the part of our students. This learning challenges students' pre-conceived notions about knowledge and knowledge production (Fricker 2007). Collaboration, as a pedagogical practice, also encourages students to become better listeners, as learning to listen is a key tenet of collaboration (Cusack-McVeigh 2015–2016, 51). Indiana University Indianapolis alumni who volunteer their time to Ziibiwing also led our student teams and helped oversee student team activities, bringing new collections skills and knowledge to this collaborative, team-based work.

Building from this decade-old community partnership, our student teams conducted additional testing and monitoring in the collections and exhibition spaces throughout the tribal museum. It is worth emphasizing again that we created the student learning activities in response to the needs identified by our tribal museum partners. The tribal staff created a list of tasks and testing priorities they wanted the students to achieve during our time in the community. These team-based activities, supported through a service-learning grant from Purdue University, allowed the Purdue student team to conduct testing in consultation with the museum curator and other staff members. We obtained a variety of samples from items in museum storage. We also conducted additional testing in the museum space to monitor environmental conditions including relative humidity (RH) levels. High RH is an unsuitable environment for many types of museum collections and, when not controlled, can lead to preservation challenges and deterioration of museum collections. Students conducted a comprehensive assessment through varied environmental sampling techniques and gave the museum staff guidance on ways they might improve environmental conditions in the museum's collections and in the public exhibition spaces.

Figure 3. Students working at the Ziibiwing Center of Anishinabe Culture and Lifeways



At the Ziibiwing Center, our students learn to explicitly subjugate their own acquired knowledge and skills to the expertise of the community whom they worked with, by, and for. There could be no better lesson than teaching students to understand that what "matters most in the work we do is what matters most to the community, and that you only gain these understandings by spending time in the community and learning how to listen to what people say about what matters" (Cusack-McVeigh 2015–2016, 51). A keynote by Margaret Kovach (2022) at the 2022 conference of the International Society of the Scholarship of Teaching and Learning (ISSOTL) recently addressed collaboration and community engagement as a model and practice for teaching. Like Atalay (2012) and other scholars doing community engaged, collaborative work, Eady and Rifenburg (2023) also call for community-led projects, pointing to the ethical responsibilities we have as scholars and educators. Taking up the need for community-led SoTL research, they draw upon Drew's (2006) metaphor of a seagull, reminding their "colleagues who engage with *Teaching & Learning Inquiry*: be hawks—not seagulls . . . who take what they want and leave a mess as they fly away" (Eady and Rifenburg 2023, 1).

While we are strong proponents for this kind of team-based, community-engaged teaching and learning, we also acknowledge that this approach is not without its challenges. As partner universities, we went into this teaching collaboration agreeing that we would need to be unfailingly flexible if we hoped to be successful. Like Thomas Edison who said "I have not failed. I've just found 10,000 ways that won't work," we needed to acknowledge that these teaching and learning activities may not succeed and that we would need to adjust accordingly. And we faced many obstacles. Our graduate and undergraduate students often had conflicting class and semester schedules, making planning and logistics anything but simple. With more than ninety miles between our respective campuses, we routinely faced transportation issues. More than once, we were forced to plan our combined class activities around approaching snowstorms. Finally, because we came from two divergent fields, we often encountered communication challenges. Our students approached their

tasks through different intellectual lenses, both in terms of theoretical understanding and applied skill sets. One case in point was mold mitigation. Everyone knew what mold was, but the commonalities stopped there. From an OEHS standpoint, human health and safety are achieved through mitigation and complete removal of contaminated items (like the disposal of moldy ceiling panels, for example), but in a museum context one can't "remove" and dispose of valuable artwork or of a one-of-a-kind artifact. Our student teams needed to work together to address these conflicting approaches, leading to an unexpected exchange of fresh ideas and new ways of problem solving. The best part of this teaching discovery was how the students generated and led the dialogue. This did not resolve the cross-disciplinary communication barriers altogether, but it encouraged creative thinking on both sides and this, of course, is where new knowledge is created.

Another ongoing challenge was how to capture quantitative and qualitative student feedback. While the data and student feedback presented here is not information we collected as part of a human subjects research project, we believe that it is best practice to ask permission of the students when sharing their anonymized information for scholarly publication. Moving forward and setting plans for the next academic calendar year, we hope to establish a more systematic way of collecting student feedback on these learning experiences. While we have utilized evaluation tools in the context of our collaborative teaching, we do not discuss those results here. Admittedly, we are still seeking guidance on how to use student results and feedback in a way that complies with legal and ethical frameworks. For example, we used a "ladder safety quiz" that measured student learning outcomes by comparing a simple pre-test and post-test. The results were exciting and clearly demonstrated an increase in student knowledge and practical skills. A more formal evaluation process, directly incorporating students' voices, will help us better understand how these teaching and learning collaborations are experienced by our students. This is an intentional "systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development" (Banta and Paloma 2015, 1–2). This formal collection will likely involve informed consent; and, in the United States, such research is subject to the Family Educational Rights and Privacy Act (FERPA), a federal law that protects the privacy of students' education records. These are among the many questions and ongoing challenges this collaboration entails.

CONCLUSION: THE CHALLENGES AND POTENTIAL OF COLLABORATIVE TEACHING AND LEARNING

When asked about the challenges of public scholarship and community collaboration, museum educator, Dr. Elee Wood, emphasized that this "synergy requires constantly negotiating interests, facilitating dialogue, asking difficult questions, and fostering continued participation on behalf of all players" (see Wood in Holzman et. al 2008; also see Bridger and Alter 2006). We acknowledge that these cross-disciplinary partnerships require more of us in order to become success stories. Collaborative teaching does take more resources, time, planning, and energy on the part of educators, but these relationships and partnerships—both planned and unexpected—lead to beneficial outcomes for all partners. This kind of collaborative teaching and learning can serve as a replicable model for anyone in higher education, regardless of the discipline. The key, however, is to remember that there is no single recipe for successful collaboration. Educators wanting to reproduce this educational experience will need to identify cross-disciplinary partnerships that address specific community partner-identified needs. From there, collaboration as a teaching method can be expanded to other disciplines.

During an interview for *Synergist Magazine*, one of our students was asked to reflect on this multi-year, multidisciplinary, collaborative learning experience. This museum studies graduate

student stated "I gained a greater, though by no means comprehensive, understanding of the equipment we used, how [data] were measured, what certain [instrument] readings might indicate. In turn, the occupational and environmental health and safety students got a large dose of museum history, as well as a better understanding of what object handling and care—even of hazardous materials—looks like" (Roberts 2022). We hope these case studies and strategies (yes, experiments) that we have shared will help you envision new ways of teaching and learning.

While Hutchings reminds us that "there is no single best method or approach for conducting the scholarship of teaching and learning" (Hutchings 2000, 1), we encourage those teaching in higher education to consider how they might teach collaboratively and across disciplines. Imagine how codesigned, collaborative learning activities by academic and community partners (as a process of co-creation) can reshape the field of SoTL. To do this, we must remember "that genuine collaboration calls upon us to relinquish our attachment to those 'ways of knowing' that are naturalized within the academy" (Hyatt and Quintiliani 2015–2016, xvi). And it is here, born out of our visions of the possible, that our students will move beyond knowledge acquisition and into analysis, synthesis, and evaluation (Anderson and Krathwohl 2001; Bloom 1994). They will not only become better learners, but will become self-reflective, skilled, and engaged leaders in our world. When we allow ourselves to explore different ways of learning and teaching our courses, we can shift the vision to "create synergy, prompt new lines of inquiry," (ISSOTL 2025) and advance the field in new and exciting ways. It just takes courage and a leap of faith, something we regularly ask of our students as part of the learning process.

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To our many valued community partners, thank you for your willingness to allow our students into your museums. In these unique and active "classroom" settings, our students gained invaluable experiences that have profoundly shaped their career trajectories as emerging professionals. We are forever grateful for your trust. A very special thanks to our valued community partner, Sarah Halter, executive director of the Indiana Medical History Museum for her trust and support. We also wish to acknowledge the dynamic team at the Ziibiwing Center of Anishinabe Culture and Lifeways, the staff at the City of Indianapolis's Eagle Creek Ornithology Center, the collections team at the Children's Museum of Indianapolis (TCMI), and the FBI Art Crime Team. These unique opportunities to work with and for you have helped prepare our students for success in their professional careers, but this learning will also foster a lifetime of civically engaged work. We know this will make a difference in local communities and beyond. These team-based projects were supported by a grant from the Indiana University Indianapolis's Office of the Vice Chancellor for Research under a Research Support Funds Grant (RSFG), a student service-learning grant from Purdue University, and external funding received by Purdue University from the United States National Institute of Occupational Safety and Health Grant (T03OH008615).

NOTES

1.) XRF, or X-ray fluorescence, is an important tool because it is non-destructive. This analytical technique determines the elemental composition of a material by measuring the fluorescent X-rays it emits. For our purposes, students were simply testing for the presence or absence of inorganic compounds/heavy metal contaminants (arsenic or mercury salts etc.).

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