#### HIPS IN PRACTICE - IN THE CLASSROOM

#### Summary

This annotated bibliography presents over forty cases of high-impact practices in action, in the classroom. Some of these practices are implemented by a single instructor, while others involve collaboration between a few faculty members. Not every program and activity described below can be implemented as-is at MCC. Rather, these case studies are meant to spark ideas in the HIP Champions and their colleagues. A variety of disciplines are represented, including biology, business, ecology, engineering, English, environmental science, forensic archaeology, geology, German, history, mathematics, microbiology, music, nursing, pharmacology, political science, psychology, radiologic technology, religion, social work, and Spanish. There is truly something for everyone! In addition, HIPs implemented in one discipline can often be adapted for an entirely different discipline. Some of the articles also provide quantitative and qualitative assessment of these activities; others do not.

Analysis of the articles indicates that the practices with the most potential benefit for MCC include the following:

- Course-based Undergraduate Research Experiences (CURES) These experiences are more
  intensive than an individual research paper but less intensive than one-on-one research with a
  faculty member.
- Service learning and community-based learning With over 1,000 non-profit organizations,
   Waco presents a plethora of opportunities.
- Interinstitutional collaboration with four-year institutions MCC could seek out opportunities for collaboration with Baylor University.

Citations are presented in APA Style, and article titles are linked to the item's record page in the MCC Library's electronic collection. Articles are also available via <a href="Google Drive">Google Drive</a>.

Andrade, M., Miller, R. M., & Ogden, M. (2020). Teamwork for business majors - The impact of peer

evaluation. e-Journal of Business Education and Scholarship of Teaching, 14(2), 1-18.

This study stems from the authors' realization that certain skills – especially teamwork – needed by business graduates are not being assessed in university business programs. Therefore, they implemented a peer evaluation of teamwork in an introductory course. Students completed team assignments (a community consulting project and an ePortfolio). They evaluated their teammates at midterm and end of term using the AAC&U VALUE rubric.

No significant differences on the rubric ratings were found between online and face-to-face classes. Final scores were higher than midterm scores, suggesting the peers' formative feedback helped. Students predominantly gave high ratings, but they distinguished between the top two levels, indicating thoughtful evaluations.

In summary, this study found peer evaluation using a validated rubric provided formative feedback to improve undergraduate business students' teamwork skills over a semester in both online and face-to-face classes.

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Baugh, A. J. (2019). Confronting racism and white privilege in courses on religion and the

environment: An inclusive pedagogical approach. Teaching Theology & Religion, 22(4), 269-

279.

The author discusses two activities in her *Religion and Ecology* course at California State University – Northridge. The institution is in suburban Los Angeles and is majority-minority and majority-Pell Grant. The course fulfills a general education requirement, so it draws a variety of students. Specifically, the author describes her use of Ecological Footprint Journals (3-5 each semester) and a community-based research project (focus group interviews at two local churches, investigating parishioners' ideas of how religion affects their relationships with the environment).

Fascinatingly, at the beginning of the course, no students of color self-identify as environmentalists, because they associate environmentalism with wealthy white people. However, by completing Ecological Footprint Journals, the students realize that they leave less of an ecological footprint than their professor, a white, privileged, educated, vegetarian, composting environmentalist. The professor, however, lives in a large house, owns two cars, and flies twice a year, while the students use public transit, live in dense urban housing, have small vegetable gardens, consume little, and have never flown.

For the community-based research project, the author picks two very different congregations, which challenge both her and her students' stereotypes. Overall, these activities encourage much critical thinking.

Blewitt, J. M., Parsons, A., & Shane, J. M. Y. (2018). Service learning as a high-impact practice:

Integrating business communication skills to benefit others. *Journal of Education for Business*, 93(8), 412-419.

The authors describe their process of incorporating a service learning project into a business communications course at a small liberal arts college, with the goal of helping their students develop communication and teamwork skills, global awareness, and social responsibility. The course attracts second- and third-year business students and is limited to 15 students per section. Both sections work together to carry out the service learning project, which is 15% of the final grade. The project usually takes the form of a fundraising or supply-raising campaign to benefit an international recipient.

The project is divided into four parts: 1. Planning and research; 2. Brain-writing, or coming up with actions to fulfill the objectives; 3. Action mode, during which students give presentations about the campaign in two of their other classes; 4. Action stage, during which the actual fundraiser takes place.

Student responses to surveys have been positive; they report that the project improved their communication and teamwork skills, as well as their self-confidence and social skills. They gained insight into their circumstances and those of others and connected class knowledge to the real world.

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Boovy, B. (2016). German beyond the classroom: From local knowledge to critical language

awareness. Unterrichtspraxis/Teaching German, 49(2), 140-146.

As a German professor at a large public university in the Pacific Northwest, the author "struggled to imagine German as a language that engages students in reflecting critically not only on German-speaking Europe, but also – and perhaps more crucially – on the contexts of their own lived experience as monolingual English speakers in the United States" (140). To address this issue, he included an excursion to a well-known German-American heritage site in an upper-level German culture course.

Specifically, the instructor asked students "to interrogate histories of German-speaking communities in the United States; to analyze how German-American identity is continually created through cultural events such as Oktoberfest as well as architecture, food, and the use of German words to mark public spaces; and to uncover the ongoing political tensions that appear in many heritage communities" (141). This trip was incorporated as part of a major curricular shift in both the Department of Modern Languages and the institution as a whole. Rather than examining languages as "marketable skill sets" and "easily defined systems that correspond to one nation, one society, or one race," the department began to emphasize "critical language awareness and multilingualism" (141).

The students visit Mt. Angel, a small town of 3,200 that was the site of a Swiss Catholic abbey and convent. Now, the city is known for its yearly Oktoberfest celebration that draws hundreds of thousands of visitors. The students do a walking tour of the town and attempt to answer questions, which highlight the lesser-known inhabitants of the area: indigenous tribes, Latino groups, German Lutherans, etc.

Bordelon, D. E., Sexton, C. M., & Vendrely, A. M. (2019). Designing for students: Creating a robust

<u>interdisciplinary first-year course.</u> *Journal of the Scholarship of Teaching and Learning, 19*(1), 66-79.

Governors State University (Illinois) designed a new general education curriculum and first year seminar (FYS) course from scratch. The FYS was designed as a required, 3-credit, interdisciplinary humanities course incorporating high impact practices like writing intensity and learning communities. Full-time faculty across disciplines were competitively selected to teach small sections of the FYS.

Analysis over four years found improved student performance and persistence in the FYS course. Faculty reported greater connections with colleagues and a renewed interest in teaching freshmen. Students reported more positive interactions with faculty than other universities via the National Survey of Student Engagement (NSSE).

Challenges included sustaining faculty interest over time and clarifying the value of learning communities. Overall, the intentional FYS design, incorporation of high impact practices, and role of dedicated faculty contributed to student and faculty benefits.

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Brigati, J. R., & Swann, J. M. (2015). Facilitating improvements in laboratory report writing skills with

less grading: A laboratory report peer-review process. Journal of Microbiology & Biology

Education, 16(1), 61-68.

The authors state that grading traditional laboratory reports for each student is incredibly time-consuming; they also argue that traditional lab reports do not actually prepare students to write a scientific paper. To address these issues, they implemented a peer-review process that involves grading only one report from peer-pair or group (two to four students). Students in self-selected pairs or groups each write a lab report and then review one another's work.

Although every student produces a lab report, the instructor only grades *one* of the reports from a pair or group, selected at random. The instructor assigns one grade to all members of a group based on the one report. The students whose papers were *not* selected for grading can schedule a conference with the instructor and earn any points the original author lost for not implementing their peers' suggestions. This new process was implemented in a genetics course and an introductory cellular biology course.

The authors collected data on course sections that implemented this peer-review process and sections that did not. They found no difference in participation or performance: grades were the same for students who did peer-review in groups as for students who completed lab reports individually. Therefore, the only effect was reduced time spent grading for the instructor.

## Camfield, E. K., & Land, K. M. (2017). The evolution of student engagement: Writing improves teaching

# in introductory biology courses. Bioscene, 43(1), 20-26.

This article illustrates one biology professor's (Land) journey through incorporating more writing into his introductory biology courses. This journey was prompted by his participation in a faculty learning community, *Writing in the Disciplines*. Land was initially hesitant to incorporate writing and was skeptical of its benefits. However, he decided to try – not to improve students' writing skills, but rather to improve their understanding of biology concepts.

Overall several years, Land tried different writing elements. One successful activity is "writing wraps" at the end of each class. Students summarize two main points of the lecture and write thesis statements on the topic; writing wraps are peer-reviewed. In addition, Land added essay questions to each midterm and final exam, and gave students the option to revise their essays to earn more points. Finally, students were required to compile their exam essays into a writing portfolio and compose a reflective statement.

Land measured the effects of these writing elements through surveys, portfolio reflections, and a focus group interview. All found very positive attitudes about the course and writing. Students felt more engaged, empowered, and able to demonstrate understanding; they did not perceive the extra work of writing as a burden. Rather, they recognized its importance in their personal and professional lives.

The instructor benefitted, too: "Ironically, while he feared the grading load associated with added writing, he underestimated that the corresponding exhilaration would offset the extra labor. [ . . . ] As Land became more inspired, his students became more engaged, which in turn triggered his creativity and commitment – a beneficent cycle."

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#### Clark, K. M., Davis, R., Holcomb, K., & Morgan, G. (2021). Undergraduate research across the

#### psychology curriculum. Journal of the Scholarship of Teaching and Learning, 21(1).

Psychology faculty at Indiana University – Kokomo redesigned several courses to incorporate more undergraduate research opportunities. Before the redesign, students took a lower-level research methods course before they took statistics, which limited their ability to apply statistics knowledge. Furthermore, only seniors could do independent research.

As part of the redesign, faculty eliminated the lower-level research methods course. Instead, they provided an early introduction to research concepts through a new course called *Introduction to Psychological Inquiry*, which focuses on critical thinking and APA-style writing. They also added an upper-level research methods course, *Experimental Psychology* (with statistics as a prerequisite), made *Supervised Research I* and *II* required for the BS degree, and facilitated student travel to conferences. These changes allow students to scaffold their knowledge as they progress through the six courses.

To measure the effectiveness of the program redesign, faculty surveyed students. Overall, most students perceived the courses as effective for building research skills and confidence, especially *Introduction to Psychological Inquiry* and *Supervised Research I* and *II*. Attending conferences also increased research confidence.

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Collins, M. J., & McLain, N. (2021). <u>Pharmacology course redesign using high-impact practices.</u> *Journal of Nursing Education, 60*(9), 529-533.

Faculty at a nurse anesthesia program redesigned their advanced pharmacology courses to transition from lecture-based instruction to active learning techniques. These courses "transition students from an introduction of basic pharmacology principles to a mastery of the functions of individual drug classes of pharmacological agents used in the practice of nurse anesthesia" (530). After completing these courses, students enter their clinical rotations.

Prior to the redesign, the courses were delivered asynchronously via video lectures. Both students and clinical supervisors were dissatisfied, as students showed "inadequacy related to pharmacology recall and application" (530). Specifically, students desired "synchronous discussion, clarification of questions raised from the video lectures, increased focus on anesthesia application, and in-depth discussion of dosage calculations" (530).

Without changing course objectives, instructors employed a flipped classroom format, with virtual and in-person meetings each week. In-person class time was focused on experiential learning techniques, and instructors instituted collaborative tasks and assignments, learning communities, and intensive writing practices. Specifically, students created cognitive aids, used those cognitive aids during case-based learning, did active simulations with debriefings, and completed reflective writing assignments.

The faculty surveyed 20 students and 12 clinical supervisors eight months after the course redesign. Both grading and informal feedback from clinical supervisors indicated that students' ability to recall and apply pharmacological knowledge had improved. Ninety-five percent of students agreed that the courses adequately prepared them for their clinicals and that the flipped course format provided adequate knowledge. Students reported that they continued to use the cognitive aids created for the course during their clinical rotations. Finally, students expressed a desire for an increased focus on dosages and case-based scenarios, as well as synchronous lectures.

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Cotten, C., & Thompson, C. (2017). High-impact practices in social work education: A short-term study-

abroad service-learning trip to Guatemala. Journal of Social Work Education, 53(4), 622-636.

The article describes a social work program's 10-day study abroad service-learning course in Guatemala. The course included the following elements of HIPs: 1. They are purposeful and require effort; 2. They require substantive interaction with faculty and peers; 3. They help students engage with people who are different than themselves; 4. They provide frequent feedback; 5. They help students integrate, synthesize, and apply what they learn; 6. They provide opportunities for students to refine their values or beliefs; 7. They provide opportunities for students to apply their knowledge and skills in the real world; 8. They include public demonstrations of competence.

The course included pre-trip classes, development of a service project, cultural immersion in Guatemala, and post-trip reflection. The reflective process was strongly emphasized. Analysis of student surveys,

reflections, and focus groups found perceived increases in cultural competence, transformed worldviews, and learning applied to real situations. Nightly reflective process groups were seen as the most valuable for synthesizing learning. While a small qualitative study, this article suggests HIPs positively influence the transformative learning social work programs aim for. Intentionality is key; HIPs must be purposefully designed with reflection, effort, interaction, and real-world application.

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Dillon, W. T., Skelton, J. B., & Reitenauer, V. L. (2018). "Diversity," anti-racism, and decolonizing

service learning in the capstone experience. The Journal of General Education, 67(3-4), 194-

208.

The article examines service learning pedagogy in the University Studies Capstone program at Portland State University. It explores how the program organizers anticipated issues around "pedagogies of whiteness" in using service learning. It provides a case study of a capstone course focused on Indigenous ways of knowing. The course centers Indigenous practices, such as recognizing plants as elders, observing cultural protocols, and community-based learning projects with Native organizations.

The article describes how capstone faculty are committed to anti-racist, anti-imperialist pedagogies. It discusses how the program has evolved to further emphasize critical approaches, such as revising the diversity learning goal to focus on diversity, equity and social justice. It concludes by illustrating how faculty engage in anti-racist practices through course content, community partnerships, and consciousness-raising. However, work remains in areas like explicitly naming race in course language.

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Esselstein, R. (2013). Finding the right capstone course model. PRIMUS, 23(4), 385-391.

The paper describes the redesign of a capstone course used at California State University – Monterey Bay (CSUMB) for mathematics majors. Students worked with an individual faculty advisor on a 20-30-page paper and 15-minute presentation. There were several problems with this model: growing enrollment leading to high advisor workloads, low passing rates, inconsistent quality between advisors, and lack of compensation for faculty.

CSUMB implemented a new model where one faculty member advises the entire cohort, receives teaching units, and focuses projects around a central mathematical theme. Outcomes improved dramatically with the new model: higher passing rates, more consistent and higher quality work, and manageable workload for the faculty advisor.

The authors recommend consistent documentation to maintain quality across sections/instructors, preparation of students before senior year, and rotating the capstone instructor role to distribute the heavy workload. Overall, the paper demonstrates the importance of choosing the right course model in shaping the quality and consistency of capstone projects.

Flinders, B. A., Dameron, M., & Kava, K. (2016). The development of a high-impact structure:

<u>Collaboration in a service-learning program.</u> New Directions for Teaching and Learning, 148(2016), 39-49.

After several years of unsatisfying service learning experiences, nursing professor Flinders and her colleagues won a five-year grant from the USDHHS to replicate FOCUS, an evidence-based teen pregnancy prevention program. The program has a tiered leadership and collaborative structure, engaging students as undergraduate associates, research assistants, and graduate nurses, which provides continuity and opportunities for mentoring.

The undergraduate associates have a "practice day" to practice delivering the eight-hour curriculum in teams; they then deliver it over four weeks at local high schools. Student teams then participate in a "wrap up" day, during which they reflect on their experiences and suggest improvements.

Research assistants are students who have already served as undergraduate associates. As RAs, they work on IRB applications, complete literature reviews, and help orient students and staff. They also apply for funding, collaborate on abstracts and proposals, and present at conferences. Finally, RAs select, supervise, and mentor the undergraduate associates.

Student outcomes were measured both quantitively and qualitatively. Students reported great gains in the areas of the confidence, public speaking, leadership, collaboration, and research. The authors learned the following about their students: "(1) students gain confidence when involved in HIPs; (2) they benefit from opportunities to take supported risks with 'low-stakes'; (3) students thrive when given an opportunity to lead; (4) students can appreciate team work; and (5) students are 'hungry' to apply what they're learning and see results" (44-45).

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Franzese, J., Pecinka, K., & Schwenk, J. (2020). Alternative clinical experience through academic

service-learning develops into a partnership for mental health rotation. *Teaching and Learning in Nursing, 15*(1), 77-81.

This article describes a service learning project in the ADN program at a community college in New York City. The faculty had become dissatisfied with inpatient psychiatric facilities as clinical sites for students. Therefore, they established a connection with a local community clubhouse. A clubhouse is "a local community center that is organized to support people living with mental illness" (77). For the new clinical, students were required to "create and implement a wellness-based teaching project focused on the needs of clubhouse members" (78). Students created two workshops on stress management and nutrition, which coincided with the clubhouse's wellness week. This partnership flourished, with workshops taking place each semester, and students and faculty dining with clubhouse members.

The program has since expanded from one clinical group to multiple groups, and student activities grew from workshops to hypertension screenings and education. According to the authors, the experience "promoted the use of teaching and learning concepts, built confidence in assessment skills, promoted

social and communication skills, and assisted in achieve course student-learning outcomes" (79). The students also reported decreased stigma regarding people living with mental illness. The community partner benefited by receiving current and evidence-based information on relevant health topics.

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Ganesh, C., & Smith, J. A. (2017). Using multiple high-impact practices to improve student learning in

an undergraduate health science program. Journal of the Scholarship of Teaching and

Learning, 17(2), 74-84.

The authors describe how they improved three sequenced courses in the undergraduate health sciences program at California State University – East Bay. Since the earlier courses are pre-requisites for the later courses, failing one of them can delay a student's graduation. These courses had high and varying failure rates, ranging from 0% to 37%, depending on the instructor. On average, 11% of students had to repeat a course. In addition, 8% of students failed the internship report component of their capstone course, an indication they "were struggling to integrate theory with practice and would be entering the healthcare field with a superficial knowledge of health care topics" (76).

To address the problem, the instructors redesigned the three courses. They replaced quizzes and exams with group projects and writing assignments, and switched from lecture-based instruction to problem-based learning (PBL). In PBL, students are introduced to the content "through the process of problem-solving, instead of first learning the content and then applying it to the problem" (76). However, the authors noticed that students were very anxious about the PBL format. Therefore, they tweaked the courses so that the first two used case-based teaching and the last used PBL.

A research project example from the final course, Health Law, is the following: "Laura is 16 years old. She comes to your office to have her wisdom teeth removed. This procedure requires anesthesia. Laura's mother completes the intake forms and informed consent documents for Laura. She marks "Not pregnant" on the form. Once Laura is in the chair and you are preparing to administer the anesthesia, she says to you, "I think I am pregnant." What are the legal and ethical implications here? What do you do?" Finally, the instructors moved away from points-based grading to specification grading. After the course redesign, the average failure rate across the three courses dropped from 11% to 7%.

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Gertsenzon, G. (2021). Bridging the interval: Teaching global awareness through music and politics.

*Journal of the National Collegiate Honors Council, 22(1), 135-167.* 

This article does not *explicitly* address HIPs, but it offers such intriguing possibilities that it deserves inclusion. The course itself could also be considered an example of the diversity/global learning HIP. The author describes her first-year honors course, *Inquiry in Global Studies: Music and Politics* at Ball State University. The course explores the intersection of music and politics using five examples: *North Korea: Music in service to the government; China: Song and censorship during the Cultural Revolution; Russia: Education and protest from the Soviet Era to Putin; Cuba: Diasporas, drums, and dance;* and *Iran: Preand Post-Revolution.* 

The central questions of the course are "What kind of effect does music have on social and political developments around the world?" and "What kind of power do governments utilize to control their people?" Students create a class presentation and supplemental paper on a topic of their choosing. They choose fascinating topics and research enthusiastically; because most are music majors, presentations usually involve a musical performance, while the paper is the bedrock of the assignment.

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Guenther, M. F., Johnson, J. L., & Sawyer, T. P. (2019). The KEYSTONE Program: A model for STEM

student success and retention at a small liberal arts college. Journal of College Science

Teaching, 58(6), 8-13.

This article describes Elmhurst College's KEYSTONE (KEYs to Success Through year ONE) Program, which was designed to improve first- to second-year retention for STEM students. The program includes a STEM-focused First Year Seminar, peer mentoring, a January Term CURE (course-based undergraduate research), a seminar on STEM careers (called STEMinar), a Summer Research Experience, and a Summer Research Poster Session.

The authors report that the most successful pieces of the program have been the peer mentors, the January Term CURE, and the Summer Research Experience. The authors recommend the following for other faculty who want to implement a similar program: 1. Listeng to the students; 2. Encourage career exploration early; 3. Recruit effective student leaders; 4. Track students and analyze the data; 5. Interventions should be specific and early; and 6. Efforts need to reach as many STEM students as possible. The authors state that the program has reduced attrition, but they do not provide numbers.

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Heinrich, W. F., Louson, E., Blommel, C., & Green, A. R. (2021). Who coaches the coaches? The

development of a coaching model for experiential learning. *Innovative Higher Education*, 46(3), 357-375.

Instructional designers at Michigan State University's Hub for Innovation in Learning and Technology embedded in two courses to coach faculty, who in turn coached their students. Specifically, the coaches helped the instructors apply the conceptual GORP framework (Gravity, Ownership, Relationship, and Place) to guide their course design, implementation and assessment. Gravity "focuses the energy of the course on something bigger than the course itself, contextualizing effort in the course in the service of a greater good" (359). Instructors "decenter outcomes-based assessment and instructional techniques in favor of a flexible project-based experience of learning" (359).

Ownership "refers to the onus of control for learning. [ . . . ] Instead of directing students to outcomes, instructors listen to student plans and respond with expert guidance" (359). Relationships were also very important in these collaborative courses, as was have a flexible place to adapt to the changing needs of the collaborators.

The two courses using this method focused on the challenges of food waste and raising awareness of a campus wildlife sanctuary. The food waste course was co-taught by a professor from the sciences and one from the humanities; it fulfilled both science and humanities gen ed requirements. The sanctuary course was solo taught and was an upper level life sciences course. Each course culminated in final presentations with a public audience.

Qualitative research showed coaching helped create powerful learning experiences for students related to the course topics and student autonomy/ownership. It also facilitated instructor growth and interdisciplinarity. There were some tensions between student autonomy and instructor authority, highlighting the importance of trust and relationships in experiential classrooms.

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Kolpan, K. E., Passalacqua, N. V. (2023). <u>Forensic archaeology as a high-impact practice</u>. *Journal of Forensic Sciences*, 68(1), 233-241.

The authors argue that forensic archaeology fieldwork can function as a high-impact practice, because it combines collaborative projects, diversity/global learning, internships, and service learning. They describe a forensic archaeology project recovering WWII remains in Germany, where students were hired and paid as professional technicians rather than unpaid field school students. The project was initiated by the Defense POW/MIA Accounting Agency, who gave the authors the option of running the operation as a field school or as a contract operation. The authors chose the contract option, because paying students made the opportunity accessible to those who couldn't afford unpaid fieldwork.

The project promoted investment, professionalism, and diversity. Students obtained tangible skills, research opportunities, and career advancement. Furthermore, there was no sexual harassment or excessive partying, which apparently is frequent at unpaid field schools. Paid HIPs increase equity, diversity, and quality in forensic anthropology. Similar contract-based models with external partners could support paid student labor in labs or research, leveling the playing field for low-income students.

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Knoll, B. R. (2016). <u>Learning by doing: Mentoring group-based undergraduate research projects in an</u>

upper-level political science course. PS: Political Science & Politics, 49(1), 128-131.

The author describes how he incorporated a rigorous undergraduate research experience into an upper-level political science course. Specifically, the course was *Parties, Campaigns, and Elections* at a liberal arts college in Kentucky, with 17 students. The instructor had taught this class before and was unsatisfied with the rigor of the out-of-class written assignments. Therefore, he replaced the written assignments with a semester-long research experience. Students worked in teams of 3-4 to answer the question, "Why are there more ticket-splitters in Kentucky than in other states?" Students were told on the first day that they would present their research results at a conference the following spring.

The instructor determined the approaches in advance: a quantitative analysis of local exit-poll survey data, a quantitative analysis of secondary data sources, a quantitative or qualitative analysis of historical

evidence, a qualitative analysis of interviews with political elites, scholars, and journalists, and a qualitative analysis of interviews with Kentucky voters. Most students had previously taken an empirical analysis course.

Groups first produced a literature review on the phenomenon of ticket splitting. The five literature reviews identified 11 distinct explanations for ticket splitting in Kentucky. Together, the instructor and students decided which would be best investigated by quantitative methods and which by qualitative. Each potential explanation was assigned to the most appropriate group. The students then completed the "research-design" and "data-and-analysis" steps of the project. Next, they completed a peer review of three other groups' papers. Finally, each group gave an oral presentation of their project. The following spring, one student from each group presented their paper at a roundtable panel at a political science conference. The project counted for 35% of the final course grade. Student responses to a survey regarding the experience were positive.

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Larracey, C., Strobach, N., Lirot, J., Matthews, T., & Robinson, S. (2023). "A place to be heard and to

hear": The Humanities Collaboratory as a model for cross-college cooperation and

relationship-building in undergraduate research. Innovative Higher Education, 48(2), 291-230.

This article reports on The Humanities Collaboratory (HLAB), a ten-week summer research program that is a partnership between Johns Hopkins and the Community College of Baltimore County. HLAB offers an intensive humanities research experience to first-generation, low-income, and students of color who have completed one year of college.

The summer research experience consists of morning sessions led by one program instructor on a particular topic, afternoon session where students work in a highly visible environment, and cohort-building and professional development programming in the evenings and weekends.

The authors administered surveys before and after the experience, and then analyzed the data according to a community of practice framework. Three key themes emerged: 1. Students found that HLAB develop their collaborative skills and interdisciplinary knowledge while simultaneously promoting accelerated individual skill development and project expertise; 2. Students formed intimate friendships with their peers across the program, highlighting the importance of social and emotional support to feelings of belonging and confidence in intensive educational experiences; and 3. Students valued the multiple communities of practice engaged in HLAB, including those personal to their race/ethnicity, linguistic culture, and gender, among others.

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Lasley, J. (2021). Using high-impact practices in radiologic technology programs. Radiologic

Technology, 93(2), 232-235.

This professional article provides a brief overview of HIPs and then describes how three specific HIPs – ePortfolios, service learning, and learning communities – can be implemented in rad tech programs. It

may give our rad tech instructors some ideas, or they might already be implementing them. In any case, it's a nice, short article that's worth the read.

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Lidinsky, A. (2014). "Reacting to the Past" to be proactive in the present: Feminist roots of high-impact

practices. Feminist Teacher: A Journal of the Practices, Theories, and Scholarship of Feminist Teaching, 24(3), 208-212.

Lidinsky describes how strategies used in feminist teaching and in women's and gender studies classes align with and even predate the discussion of high-impact practices. Specifically, she details her use of Reacting pedagogy, which uses "complex role-playing games to bring to life important contested moments in history (for example, the trials of Galileo or Anne Hutchinson, the French Revolution, Darwin and the Royal Society, and more contemporary games about topics like the Kansas school board and creationism)" (209). Students engage with primary texts and get in character as period figures, and through persuasive speech, writing, and coalition-building, they try to "win" the game.

Lidinsky teaches a first-year experience course every fall — with full enrollment — called *Sex Wars and Other Social Revolutions*, based on a Reacting game called *Greenwich Village 1913: Suffrage, Labor, and the New Woman*. The course includes a peer mentor. Students work with primary texts for six weeks, and then are assigned a role by the instructor and peer mentor. Students are given comprehensive role sheets about their character. Once the game begins, students follow the guidelines in the game books and "run" the class! Students can earn extra points for both in-class and extracurricular activities. The came ends with a vote on which social changes from 1913 are most significant to the most people. Grades are determined collaboratively.

Lidinsky's course is incredibly popular and has inspired both on-campus and community activism from enrolled students. Students have chosen WGS majors and minors based on the course as well.

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Malotky, M. K. H., Mayes, K. M., Price, K. M., Smith, G., Mann, S. N., Guinyard, M. W., Veale, S., Ksor,
V., Siu, L., Mlo, H., Young, A. J., Nsonwu, M. B., Morrison, S. D., Sudha, S., & Bernot, K. M.
(2020). Fostering inclusion through an interinstitutional, community-engaged, course-based
undergraduate research experience. Journal of Microbiology & Biology Education, 21(1).

Course-based undergraduate research experiences (CUREs) embed scientific practices, novel discovery, collaboration, and iteration into the classroom through a constructivist learning approach. CUREs are also easier to implement and manage than one-on-one undergraduate research, in which one student works with one faculty member.

The authors incorporated community-engaged learning and CUREs into a collaborative, interinstitutional course that required students to engage in community-based participatory research focused on health

disparities in immigrant and refugee communities. The collaboration took place between a large, public, HBCU and a small, private, predominantly white institution. The course met twice a week, once at each institution.

Projects varied each semester, and included assessing potential anthropometric, behavioral, and psychosocial factors contributing to the incidence of hypertension in the local Montagnard (Vietnamese Highlands) immigrant and refugee community; assessing the impact of book clubs on Alzheimer's health literacy; and examining the relationships between health concerns and English language skills within the Congolese refugee community.

Students were assessed on their scientific process skills and their psychosocial skills, showing great gains in both. They also realized that development of cultural competency is a continuum rather than an endpoint. There was no burden on the students of color to teach the white students; rather, both groups learned equally from one another.

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## Meléndez, J. (2019). Teaching microbiology by celebrating traditional foods and cultures from

## Morocco and Perú. Journal of Microbiology & Biology Education, 20(1).

The author wanted to implement global learning into her microbiology courses at Hillsborough Community College in Tampa. She designed two class activities centered on fermented foods from Perú and Morocco. Students researched traditional fermented foods and drinks, and then answered guided questions to help them link the foods to microbiological concepts learned in class. For example, normal flora, fermentation, and pasteurization were learned as students researched the Peruvian drink *chicha de jora*, which is made from chewed corn that becomes fermented as it mixes with oral bacteria from saliva. Students presented a poster or a slideshow at the International Education Week Festival.

The author writes, "Initially, both these assignments were taken with some level of skepticism. Once the purpose and the association with the lesson became clear, students seemed to appreciate the assignment much more. Student feedback indicates that they began to appreciate how other cultures and ancient traditions contributed to the discipline of microbiology, and they expressed an improved ability to apply microbiology concepts" (2).

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Meyer, L. L., Gerard, J. M., Sturm, M. R., & Wooldridge, D. G. (2016). A tiered model for linking

students to the community. Journal of Family and Consumer Sciences, 108(4), 45-50.

The article describes a tiered model used in the Human Development and Family Studies (HDFS) program at Bowling Green State University to facilitate community engagement and develop students' professional identities. The tiered model has three levels: introductory, pre-internship, and internship. Each level has specific objectives, activities, and assignments to help students progress in their professional development. Students shadow professionals, find and complete internships, and ultimately contribute economically through their internship hours.

A key component of the model is an event called "Developing Connections" held each semester (a one-time, four-hour event). It brings together HDFS students, interns, alumni, faculty, and community professionals for networking, workshops, and interviews. The tiered curriculum and Developing Connections event incorporate high-impact and engagement pedagogies like active learning, reflection, networking, and application of knowledge. The model facilitates community engagement, career exploration, professional skills development, and experiential learning for HDFS students as they move through the tiers. It provides reciprocal benefits for students, the program, and community partners.

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Morris, B. (2021). The impact of applied research: Student research as a high impact practice in

freshman environmental science. Journal of the Scholarship of Teaching and Learning, 21(1),

13-16.

The author teaches at Georgia Highlands College, on a 200-acre campus that includes a 50-acre lake, 15 acres of wetlands, and two streams. He decided to omit the lab manual in his Environmental Science course and replaced it with on-campus undergraduate research projects suitable for non-science majors.

The projects occurred in five phases: 1. Identifying the question and proposing an investigation, 2. Identifying lab equipment and analytical methods required, 3. Establishing a sampling plan, 4. Data analysis, and 5. Discussion, conclusion, and campus poster session. Students could work individually or in groups of no more than three. The class had 17 students, who produce 11 projects addressing water quality in campus watersheds, wildlife surveys, tree surveys, soil analysis, and air quality.

Student posters were professional and included an abstract, introduction, methodology, discussion, conclusion, citations, and appropriate graphics. The class peer-reviewed their drafts and then created their final versions. Posters were presented in the Student Center during a two-hour period, during which more than 200 students, faculty, staff, and community members attended.

Fascinatingly, one of the groups chose what they thought would be an "easy" project – comparing pH levels of the lake, wetlands, and stream areas. They ended up discovering contamination from polycyclic aromatic hydrocarbons (PAHs) in stormwater runoff (from parking lot sealcoat), which led to closure of the lake and testing of different areas on campus. This group presented their findings at the National Conference of Undergraduate Research.

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Parys, J. (2015). Service learning and LEAP: Increasing respect for diversity through campus-

community collaboration in advanced Spanish courses. Journal of Community Engagement

and Scholarship, 8(1), 106-114.

The author describes how she incorporated a service-learning project in her fifth-semester Advanced Spanish course. Each student is required to complete a minimum of 15 hours of service learning;

students can choose from several partners, including literacy agencies, the university's children's center, a local health clinic, a food pantry, as well as schools, churches, and other social service agencies.

The instructor meets with each student at the beginning of the semester to discuss the goals of the project, which include 1. Practicing language skills while interacting with Hispanic individuals, 2. Gaining insight into the diversity of Hispanic cultures, 3. Performing a valuable service to the community, 4. Exploring answers to issues discussed in class, such as bilingual education, immigration, etc., and 5. Beginning to conceptualize ways to forge cooperative relationships with Spanish speakers in the community.

To measure the effects of the service-learning requirement, the author analyzed the written and oral reflections of 70 students. The instructor reports that the "dichotomy of 'us-them' showed clear signs of erosion as students grappled with reconciling previously held beliefs (often stereotypical) in the face of cooperative experiences that allied them with individuals with whom they had previously had few interactions" (110). (The author teaches at a rural, predominantly white institution in Wisconsin.)

In addition, the students reported that their confidence in speaking Spanish had increased and they had an increased desire to continue studying Spanish. At first, the instructor was concerned about overwhelming her students with another requirement. However, she found that the project "integrates all of the topics covered in class through practical application, and as a result, students often show increased interest and motivation in the classroom, striving to improve their cultural and linguistic knowledge so that they perform better in the community" (109).

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Perrotta, K. (2019). Bringing history to life: A study on the implementation of an oral history research

project as a high-impact practice in undergraduate history courses. The Social Studies, 110(6),

267-280.

Motivated by the lack of oral history projects in undergraduate survey courses, the author examined her own oral history research assignment to determine whether it could be considered a HIP. The study was conducted in four 3-credit United States History survey courses (1877-present) at a two-year college in the Southwest; it examined 77 students with diverse majors and backgrounds. The oral history assignment followed five steps: 1. Selecting a topic and an interviewee; 2. Ethical issues; 3. Preliminary feedback (on draft of interview questions, abstract, and working bibliography); 4. Synthesizing data (into a four-page paper); 5. In-class presentations.

The instructor offered students an optional field trip to the archives at a local four-year university. She also invited representatives from the oral history organization StoryCorps to be guest speakers. Students reported high levels of learning and engagement, making statements such as "in history textbooks everything seems so fictional, but once you actually talk to someone that's been there, it's a whole new perspective that you see" (Vietnam Conflict) and "what is written in the book really did occur and it affected more people on a personal level than you would think" (Civil Rights Movement) (274). The author concluded that her assignment fit the definition of a community-based learning HIP.

## Rock, A. E. (2022). Bringing geography to the community: Community-based learning and the

geography classroom. GeoJournal, 87(2022), 235-247.

The author describes her experience incorporating community-based learning into three separate geography courses. In the first course, education students took huge maps (1:50,000) of the area to local K-12 schools and taught lessons, including ones on indigenous heritage. In the second course, students worked in pairs with a local non-profit to plan and implement a GIS-project. Projects included working on a bike path extension project in support of a grant application, mapping endangered and threatened species at a plant sanctuary, conducting a spatial assessment of a proposed change to the local bus service, identifying a new site for a farmer's market, assessing broadband connectivity in rural areas, and assessing the spatial patterns of barriers to healthcare access. The last course is designed for students with no prior GIOS knowledge or skills; students still worked with non-profits, but with more of a "map-as-story" project (242). The author reports that "student reflections reported deep satisfaction with the pragmatic methods used during the course and the satisfaction of having gained new skills as well as contributing to their community" (243).

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## Ruffell, S. E., & Mayberry, T. (2019). Promoting science communication with children's literature as a

high-impact practice (HIP) assessment. Journal of Microbiology & Biology Education, 20(2).

The authors describe a science communication project for non-majors called The Science Library Project, for which students create children's books related to one of the STEM concepts discussed in class. They then present the books in high school or elementary school classroom. This project can be considered high-impact because it "has students invest a significant amount of time and effort over an extended period of time, participate in frequent, timely, and constructive feedback, [ . . . ] and discover the relevance of their learning through real-world applications in public demonstrations of their projects" (1). Students are graded on critical and creative thinking, organization of concepts, content/ideas, graphics, text, and design.

First, students must submit an Idea Overview of their project. Common stumbling blocks at this stage are not having enough science content and having little to no plot or narrative to the story. They then contact local schools to see which classroom might be interested in their book. They also work on a rough draft, for which they receive feedback from the college instructor and the local teacher. Next, they finalize their book; students have used programs like Blurb or Canva, printing services like Walmart, or even completely handmade books. Finally, students present their books to the public at a Science Library Project Symposium at a local public library; they also give copies to the local schools and the college's archive.

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Ryu, H., & Zhu, B. (2022). Creating and assessing an academic learning community between biology

and statistics courses. PRIMUS: Problems, Resources, and Issues in Mathematics

Undergraduate Studies, 32(3), 416-431.

The authors wanted to improve their biology students' analytical and critical thinking skills. To that end, they created a Learning Community, a or a linked course, which combined a new, introductory Biostatistics course and an existing, required Ecology course. Students were enrolled in both courses concurrently, and academic content overlapped by a minimum of 25%. To achieve this, the authors incorporated ecology lab case studies as projects and activities in biostatistics. These case studies included a sampling seed weight lab, a dissolved oxygen lab, and a nitrate concentration in water lab.

The authors assessed their students' statistical knowledge and ecological understanding using a pre- and post-test method, as well as qualitative surveys. There was one Learning Community group and one non-LC group. The LC group significantly improved their scores, by a greater amount than the non-LC group, despite having less beginning knowledge. Qualitative survey feedback was also positive.

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Slade, M. L., Burnham, T. J., Catalana, S. M., & Waters, T. (2019). The impact of reflective practice on teacher candidates' learning. International Journal for the Scholarship of Teaching and Learning, 13(2).

Reflective practice develops critical thinking skills in by having students examine their own perspectives, biases, and actions. The study analyzed written reflections from education students enrolled course on developmental sciences and poverty; it sought answer, "How does reflective practice enhance teacher candidates' understanding of developmental sciences within the context of poverty?" (1). Students were required to spend 22 hours of field-based engagement with a student at a local public school, and then complete a case study on that student, as well as the reflection assignment.

The specific reflective writing practice used was the What? So What? Now What? Model. The first question "helps the participant summarize the real-world experiences, while the 'so what' stage requires reflective thinking about the significance or importance of what has been learned through the experience. Finally, stage three, 'now what, requires one to reflect about how the experience will lead to meaningful actions in the future" (2).

Content analysis looked at levels of reflection, references to teaching standards, and personal connections to evaluate reflective practice efficacy. Results found most reflections were at the basic "understanding" level, not higher-order critical reflection. However, the course is an introductory one, and reflections did reference teaching standards, especially around classroom climate and student rapport. Sixty-four percent contained personal connections and 34% referenced specific course content, indicating reflective practice efficacy. The authors concluded that reflective practice enhances teacher candidates' learning, but scaffolding is needed to develop higher level critical reflection over time.

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Smyth, D. S., Chen, S., Sompanya, G., Metz, M., & Conefrey, T. (2022). How getting friendly with

bacteria can promote student appreciation of microbial diversity and their civic scientific

literacy. Journal of Microbiology & Biology Education, 23(2).

The authors argue that ePortfolios "can be used to promote civic and scientific literacy by tying classroom content to real-world issues of civic importance" (1). They describe their ePortfolio assignment, part of a microbiology course that students take after completing either biology 1 and 2 or anatomy and physiology 1 and 2. Students vary widely in their prior knowledge.

Students chose an organism from a predetermined list and set up their ePortfolios (according to provided instructions but choosing their own layout and design). Taking on the perspective of the organism itself, students answered nine required assignment prompts and two optional, extra-credit prompts, using class notes, their textbook, and other resources. According to the authors, "creating their entries led to a 'dating profile' of sorts, or a biography, like a Facebook page. Like Facebook, students had to send 'friend requests' to microorganisms in their 'family' or their classification tree" (3).

After completing the ePortfolio assignment, students create an educational product for the public to promote awareness about microbes. Educational products have ranged from fermented foods like pickles and relishes to videos, rap songs, comic books, paintings, and crocheted or knitted microbes. Students then display both their products and their ePortfolios in a gallery walk. There is scaffolding built in to all aspects of the projects.

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Snow, H. (2018). High-impact practices, universal design and assessment practices in liberal arts

seminars. ASIANetwork Exchange, 25(2), 117-135.

The author discusses incorporating principles of both Universal Design for Learning (UDL) and high-impact practices into her introductory honor's college seminar in Asian Studies and art history (*Samurai and Geisha: Understanding Japan*). The course is writing-intensive (approximately 30 pages including revisions) and involves peer-review, as well as group assignments.

To make expectations clear for her students, the author titles her assignments based off of the learning outcomes. For example, instead of "research paper" she uses "evidence paper" and "synthesis paper." She also provides clear, detailed rubrics. She scaffolds all the assignments, allowing opportunities for practice and feedback: "All three papers are drawn from course readings rather than research, so students can focus their cognitive load on written analysis rather than research or evaluating new sources. Introductory research skills are practiced through a separate assignment that focuses on content knowledge, rather than analysis" (127). Students have a peer-review opportunity on the first and second papers, but not the third. They are required to rewrite their first paper, have the option to do so for the second paper, and cannot rewrite the third.

Data showed improved student outcomes over a semester when such practices were used for major writing assignments. Students also self-reported growth. This article demonstrates how principles of UDL and high-impact practices can be combined to create enriched learning and assessment experiences in courses that facilitate student growth.

Stofer, K. A., Chandler, J. W., Insalaco, S., Lannon, H. J., Hom, B., & Norton, H. (2021). Two-year college

students report multiple benefits from participation in an integrated geoscience research,

coursework, and outreach internship program. Community College Review, 49(4), 457-482.

Community college students, especially women and members of minority groups, are underrepresented in geoscience. The authors designed a year-long program to recruit and retain these students through high-impact experiences. Then, they surveyed students to gauge the effects of these experiences.

Specifically, the year-long, mostly extracurricular program targeted first-year students at a two-year college, and incorporated mentoring, peer support networks, undergraduate research, and internships. The program is a partnership between a two-year college, a four-year research-intensive university, and an informal science learning institution (ISLI). Participants were recruited, but had to apply, interview, and sign a commitment contract before they could participate.

The program had four components: 1. A traditional university course on physical geography taught at the two-year college; 2. A multi-semester research experience at the university; 3. A 6-week, paid summer education internship at the ISLI to integrate the students' research into programs for public audiences; and 4. A cohort-building experience including two semesters of seminar coursework.

The seminars taught library use, teamwork, geoscience careers, and facilitated transfer applications to four-year institutions. Faculty from the four-year university mentored the two-year students, who completed 5-10 hours of research each week with their mentor. Using the experience gained from their university mentors, students worked with the ISLI staff to translate their research into public programs and professional development materials for K-12 teachers. They either presented the public programs or facilitated the professional development, reaching 53 middle school science teachers from 12 counties.

Participants were surveyed about their experiences in the program. Generally, students reported a broader understanding of the geosciences, gains in career-relevant skills from the research and internship experiences, networking with faculty and staff, and improved confidence and life skills. Participants reported multiple challenges, too, including communication problems, lack of engagement with mentors, time commitment, scheduling conflicts, and lack of a growth mindset.

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Summers, S. E., Chenette, H. C. S., Ingram, E. L., McCormick, J. P., & Cunningham, P. J. (2016). Cross-

disciplinary exploration and application of reflection as a high impact pedagogy. InSight: A

Journal of Scholarly Teaching, 11(2016), 29-47.

The article describes a learning community (LC) formed at Rose-Hulman Institute of Technology to explore reflection as a HIP. The LC used an operationalized model of reflection from the Consortium to Promote Reflection in Engineering Education (CPREE) to guide their understanding and implementation of reflection activities. LC members created and implemented reflection activities in their courses and assessed them using a four-level rubric (non-reflection, understanding, reflection, critical reflection).

Two case studies are presented: one from a technical writing course where students created reflective writing portfolios, and one from a heat transfer course where students reflected on predictions and observations from in-class experiments. Student work samples were analyzed to show the range of reflective thinking. More guidance and scaffolding generally led to higher quality reflection.

The authors conclude reflection activities can be adapted across disciplines to teach content and thinking skills. Key benefits of the LC model included building community, exploring reflection through a scholarly lens, developing as learners, and applying new techniques in the classroom.

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Taczak, K., & Karas, J. (2019). Disrupting the margins: A case for an intentional reflective framework.

The Journal of Faculty Development, 33(2), 31-36.

The authors argue that pedagogical disruptions, like implementing new practices, can create learning opportunities for faculty by pushing them outside their comfort zones. The authors designed an ePortfolio initiative at the University of Denver incorporating intentional reflection to help students make connections and take agency over their learning.

The initiative was piloted in a subset of First Year Seminar (FYS) courses. FYS faculty attended workshops on ePortfolios and reflection, redesigned their courses, and reflected afterward. Challenges included faculty discomfort with teaching and assessing reflection and giving up course content to incorporate ePortfolios. Benefits included faculty positioning themselves as learners, engaging in a supportive community, and appreciating student growth in reflection over time.

The messy process disrupted normal teaching practices but allowed for faculty development and reflection on their roles. Embracing vulnerability and disruption can renew practices. Overall, incorporating pedagogical disruptions like ePortfolios with intentional reflection provided learning opportunities for both students and faculty.

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Trager, B. (2020). Community-based internships: How a hybridized high-impact practice affects

students, community partners, and the university. Michigan Journal of Community Service

*Learning, 26*(2), 71-94.

This article describes a community-based internship program, which the author defines as a hybridization of a service-learning project and an internship. The program in question has existed for over a decade at a large urban public university. Students are required to enroll in a one-credit course aimed and developing skills in critical thinking, intercultural competence, effective communication, and civic, social, or environmental responsibility. Once the course is completed, students continue at their community partner sites and participate in co-curricular reflective activities.

There are a variety of community partner sites, but most are nonprofit organizations or schools; students work 5-12 hours per week and are paid through federal work-study. Between 40 and 50 students participate in the program every year.

The author interviewed a small group of students, university staff, and community partner staff. Community partners stated that students bring fresh perspectives and fill an actual need for workers. The university staff identified that this program helps the university meet an administrative need related to the federal work-study program, as well as contributing to the university's mission of engaging with the community. Students reported gaining real-world experience and access to professional networks. For some, the experience challenged stereotypes, while for others, it highlighted structural racism.

All the stakeholders identified challenges, including communication and logistic issues, as well as more complicated issues of program transparency and student confrontation of structural power dynamics.

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Turner, C. C. (2014). Civic engagement in the capstone: The "State of the Community" event. PS:

Political Science and Politics, 47(2), 497-501.

The author describes how he incorporated a civic engagement component into his senior capstone course. By collaborating with the mayor and the assistant city manager, the author developed partnerships with seven public agencies in a small city; working in teams, the students served as political and organizational consultants for these agencies.

At the initial "State of the Community" event, the agencies presented the results of a SWOT Analysis they conducted. At the second event near the end of the semester, the capstone students presented an action plan for each agency. Both events were televised locally and the action plans were available to the public online. The students had two intensive writing assignments – a SWOT Analysis Plan of Action and a Community Report – as well as two smaller reflection assignments for each written assignment.

Students gained real-world experience ad practiced timeliness, teamwork, presentation skills, and professionalism. Many of the students were first-generation, so it was especially meaningful to have their families witness their presentations. Finally, the author describes some of the challenges and provides helpful recommendations for those who wish to implement a similar project.

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Werner, B., Anderson, K., Klooster, M., Kirchner, D., & Godlaski, A. (2021). Scaffolding high-impact

practices for Asian Studies and the environment. ASIANetwork Exchange: A Journal for Asian

Studies in the Liberal Arts, 27(2), 53-64.

This article details a grant-funded program at Centre College, a small, selective liberal arts college in Kentucky. The grant was designed to help faculty develop integrated programs connecting the study of Asia to the environment.

The faculty designed a scaffolded program, which begins with the Centre Summer Language Institute, an intensive language and cultural instruction program that takes place on campus. The program continues with the *Asia and the Environment Lab*, a learning community that draws from environmental studies and Asian humanities courses. The lab focuses on experiential learning around Kentucky. Next, students can spend a winter term abroad, exploring and familiarizing themselves with an Asian country. That summer, students return to Asia to complete an internship or conduct research. The final step in the program is dissemination; students present their experiences on campus and at conferees. Students may participate in any part of the program; they are not required to complete all five steps.

The program has been shown to have a major impact on students' future plans, and their feedback is highly positive.

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Zori, S. A., & Heydemann, B. A. (2021). High-impact practices in a care of the older adult nursing

course. Nursing Education Perspectives, 42(6), E123-E124.

This article describes two active learning assignments incorporated into a *Care of the Older Adult* nursing course in a BSN program. The first assignment, *Shark Tank*, is based off the popular TV show. Following an in-class activity called *Day of Innovation*, groups of students collaborate to "develop an [evidence-based] innovation to improve the quality of life of an older adult" (E123). The group presents the innovation to the class and leads a question-and-answer session after the presentation. The class acts like the "sharks" on the show and engage in peer review of the innovation.

The *Brown Bag* assignment is a medication reconciliation project. Students must visit an older adult in their home and conduct a brown bag medication review, which is a comprehensive overview of all the medications the adult is taking. Medications are reviewed for currency, adherence, and interactions. The students must also administer a cognitive impairment screening test, "create a complete medication list, assess the client's knowledge of the medications, identify any knowledge deficits, and asses for dexterity to open bottles and ability to read medication labels" (E124). Finally, students must create an individualized medication teaching plan and complete a written assignment.

This study does not provide any in-depth measurement of outcomes, but indicates that qualitative feedback has been positive.