Immersive Learning provides a framework for Ball State faculty and students to connect with Indiana businesses, nonprofit organizations, communities, and state agencies through mutually beneficial projects.

**Students** benefit by gaining experience and expertise beyond the boundaries of the classroom.

**Faculty** benefit when they adapt traditional teaching into a collaborative applied model, which leads to deeper community connections and possible avenues for scholarly publications.

**Community partners** benefit when students examine their challenges from a fresh perspective.
Analysis of Fluid Viscosities Used to Treat Human Dysphagia

Bryce Bradfield, Samantha Celori, Katie Chandler, Jacquelyn Cox, Hannah Heidorn, Abby Johnson, Kelli Loraine, Jessica Lorenz, Tamia Manning, Emily Pecsi, Sara Ramsey, Maci Sturgeon

In the field of Speech-Language Pathology, there is a lack of standardized recipes for thickened liquids used to treat patients diagnosed with dysphagia. This project focused on the use of physics and objective testing of viscosity, specifically examining the type of thickening agent used, the time required to obtain the appropriate viscosity, and the recipe that is consistent with the liquid utilized during evaluation. Students utilized the scientific means of measuring (viscometers) to conduct testing in addition to 10mL slip syringe test for IDDSI, to compare the viscosity of each liquid mixed. Students conducted interviews with practicing speech-language pathologists and collaborated with the community partners to ensure current recipes were being tested. At the conclusion of the semester, the students disseminated the information during a 1½-hour presentation. The anticipated outcome was a table for practicing clinicians to reference regarding the thickening agent to liquid ratio, temperature and resting times utilized to create clinical recipes for patients’ home use.

Faculty Mentors: Mary Ewing, Department of Speech-Language Pathology and Audiology; Ranjith Wijesinghe, Department of Physics

Community Partners: St. Vincent Health System (Molly Jones, M.A., CCC-SLP); Catherine Seitz, M.A., CCC-SLP, BCS-S
Book Arts Collaborative is a community letterpress and book bindery located in the Madjax Building in downtown Muncie. Each semester, we preserve and teach apprentice-taught skills and run a small business. Students are taught analog design skills, business skills, and professionalization of all majors.

Book Arts Collaborative 2018-19

Jodi Aleshire, Danielle Borst, Jessica Bowles, Lane Cary, Erin Davenport, Marie Drascic, Sarah Fox, Rachel Haywood, Morgan Kaufman, Carolyn Kelley, Whitney Kendall, Rayah O’Rear, Katie Obryan, Carrie Pawlovich, Bonnie Prindle, Aaron Stephens, Simeon Stults, Taylor Townsend, Kelli Turkupolis

Faculty Mentor: Rai Peterson, Department of English
Community Partner: Tribune Community Showprint Posters
According to data from the Indiana Department of Workforce Development in 2016, the poverty rate in Delaware County was 21.6%, and poverty among children under the age of 18 was 25.7% (www.stats.indiana.edu/profiles/). These alarming statistics speak to the need for Open Door Health Services (ODHS) and the services it provides our community. In this two semester project, the immersive learning team will help ODHS draw and retain qualified service providers by updating their website, producing new recruitment videos and materials, and updating the onboarding process for both medical and non-medical employees. The team will also assist ODHS in determining current marketing needs through interviews and focus groups, assessing and improving the new patient orientation process, and upgrading its social media presence.
In the Brownfields to Brightfields Project (BBP), 2nd-year urban planning students surveyed, inventoried and mapped 22 brownfields in East Central Indiana to assess their solar installation potentials. Students performed land use analysis and ownership studies, assessed potential solar generation capacity, and determined sites’ potential for economic development. Students created a detailed reproduction guideline for Indiana communities. These results will be shared through detailed web-based sitemaps, replication guide, webinar, and presentations to local officials and stakeholders, state and national conferences, and in print.

Brownfields to Brightfields Project: Analysis of Solar Potentials for Brownfields in East Central Indiana

Alexis Adams, Batul Ather, Richard Bratton, Elizabeth Crane, Daniel Grinspan, Kenzie Hughes, Alexander Janke, Janee Johnson, Esteban Leguizamo, Madison Lindsay, Jacob McQueen, Alex Pope, Erick Portillo, Jefferson Reece, Carter Solivan, Madison Spangler, Casey Stamm

Faculty Mentor: Sanglim Yoo, Department of Urban Planning
Community Partner: Sierra Club Hoosier Chapter
Diversity is essential for the future success of Computer Science (CS). Further, there is simply a lack of student exposure to CS in elementary and high school. Via the regular school curriculum, students are exposed to the hard sciences and mathematics, but seldom CS. As a result, students are likely to have little idea of what it means to be a Computer Scientist or if they have any interest in being one. With the recent adoption of CS K-8 academic standards in Indiana, this is changing, but most teachers have little, or no experience teaching these new topics. The focus of this immersive learning class was to expose the middle school students, particularly underrepresented minorities and females, to CS and Computational Thinking (CT)--a need expressed by our partner. Our project team accumulated instructional resources, and developed activity templates and modules that will better incorporate CS and CT experiences, with a focus on meeting the Indiana CS academic standards. The school administrators and teachers can utilize the compiled resources, and implement the completed modules during normal school classes, during the summer, after school, or during extended breaks, based on their needs.

Students:
Ryan Ahler, Luke Betts, Austin Bolles, Michael Bratton, Will English, Josh Passey, Alexander Perry, Sarah Phipps, Adam Wessel, Morgan Williams

Faculty Mentor: Dave Largent, Department of Computer Science
Community Partners: Northside Middle School, Daleville Junior/Senior High School, and Burris Laboratory School
This project team examined, both aesthetically and analytically, disability representation in children’s and young adult’s literature. They developed a cultural and literary appreciation for this literature as a theme of study. The team also explored social and equity issues present in it, as a means to stimulate children’s and young adult’s interests in reading and to make sense of their world. They constructed a bridge of varying reading levels to continue to encourage the habits of lifelong reading. The project research was synthesized into a new volume of the digital literary magazine, Rethinking Children’s & YA Lit: Read for Change.

Faculty Mentor: Darolyn Jones, Department of English
Community Partners: Burris Laboratory School Special Education Department, Ball State Emerging Media Design and Development

Disability Representation in Children’s & YA Lit: Rethinking Lit

Audrey Bowers, Kate Fletcher, Vanessa Miracle-Haro, Sydney Jordan, Rebecca Lawrence, Jack Lohrum, Eileen Porzuczek, Megan Santin, Katie Starr, Katelyn Warner, Laurinda Webb
With the Discovery New Works Festival in April 2019, this project team was tasked with retooling the festival based on what was learned from the first iteration in 2017. This semester, the students focused on festival curation by planning, coordinating and implementing all aspects of the festival, such as project selection and guest respondent housing and travel, and working with community partners. They curated a festival of new theatrical works culled from submissions by students across the Ball State campus. By utilizing the talent at Ball State, this project hopes to transform Ball State student-artists into self-producers who can launch their own career, while invigorating the local arts scene and creating the next generation of theater creators.

Faculty Mentor: Thomas Horan, Department of Theatre and Dance
Ball State Students partnered with a teacher and group of students from Muncie Central High School (MCHS) and assisted with creating a debate team. The intent was to create a high-performing Debate Team squad for MCHS, which would participate in the Indiana High School Forensics Association--and also to assist the project team to become familiar with the skills of basic and advanced argumentation, communication mentorship, and independent research in public policy and general problem solving of political and/or social issues.
Since 2013, Fine Focus has been implemented as a product-based course comprised of 12-24 undergraduates from a variety of disciplines. This course manages the first international digital and print journal for undergraduate microbiology research, with the American Society for Microbiology (ASM) as a community partner, along with the University of Detroit Mercy and two universities in Europe. The Fine Focus “review team” learns the process of manuscript management through our double-blind peer review system using experts from the external Editorial Board. Our marketing team is responsible for promoting Fine Focus through our website and social media, creating an Executive Committee, and deciding how to best target Fine Focus to our global audience. This semester the team streamlined manuscript management, entered into a new partnership with Overleaf, established a new Campus Ambassador Program, and piloted a local STEM outreach initiative.

Kierra Adams, Kelsey Davis, Hannah G. DeWitt, Molly Dolan, Matthew Emrick, Marisa R. Hochstetler, Olivia Smith, Samantha Turk, Samantha Worthington

Faculty Mentors: Rona Robinson-Hill & John McKillip, Department of Biology
Community Partner: American Society for Microbiology
Immersive Heritage: Archaeological Sites with the Ottawa National Forest

Anne Bedwell, John Bell, Shelby Cornett, Lindsey Cron, Emily Demler, Michael Eichstaedt, Olivea Eshelman-Gorby, Sage Hatcher, Jordan Keck, Patrick Macy, Maeve Marino, Ashley Merlin, Miranda Mize, Mina Moussa, Dana Northam, Gabrielle Ritter, Nichole Roberts, Audree Speicher, Tristan Spoor, Kara Tynes

The Ottawa National Forest in Michigan has identified a need for an outside partner to meet their management requirements for both a specific archaeological resource, and a general category of resources in the future. This project has taken place over three semesters beginning in spring 2018. Students began the development of an Historic Property Plan (HPP) for the USDA Forest Service. The plan focused on a unique and important archaeological site located on the Ottawa National Forest identified as 20 ON 209. Students used existing sources to develop a regional archaeological context for the site, and transformed that knowledge into proposed management actions, objectives, and further information needs. Students developed the HPP by applying their new knowledge of federal historic preservation laws and policies, and specifically the requirements of the Forest Service Manual.

Faculty Mentors: Mark Hill, Department of Anthropology; Kevin Nolan, Applied Anthropology Laboratories

Community Partner: Ottawa National Forest
English 409 is an immersive, service learning opportunity where students met with residents of the community to teach creative writing techniques and to collaboratively write a text. Objectives of the project included the enrichment of the creative writing students through engagement in the local community, scholarly study of memoir through relevant essays about creative nonfiction writing pedagogy and community engagement, and through the use of critical and creative examinations of the student’s own work and collaborative work created for the class. The end project was a publish anthology of the writing generated by the students and residents along with several public community readings around Muncie. In the anthology, Muncie area residents shared their experiences, their memories, and their love of what makes Muncie unique.

Claire Bauserman, Audrey Bowers, Charlie Cain, Alyssa Clemento, Pam Fancher, Katharyn Fletcher, Vanessa Haro-Miracle, Nikki Kendall, Janie Obrochta, Eileen Porzuczeck, Kayln Reyer, Aidan Sacks, Matthew Swain

Faculty Mentor: Darolyn Jones, Department of English
Community Partner: Muncie residents
Working with representatives from Ball State’s Facilities Planning and Management department as the actual client, students assessed, evaluated, prioritized, and worked towards certifying the Ball State Jo Ann Gora Student Recreation and Wellness Center as LEED v4 for Building Operations and Maintenance. Ball State currently has fourteen LEED (Leadership in Energy and Environmental Design) certified buildings, with two more anticipating certification. All are (or hopefully, will be) certified under LEED-NC (LEED for New Construction) or LEED-CI (LEED for Commercial Interiors), with the first certifications awarded in 2010. These certifications evaluate the buildings during design and construction, but LEED for Existing Buildings evaluates buildings during occupancy, to see if they are performing up to their potential.

LEED Lab F18

Justin Baker, Joshua Becker, Nicholas Brandon, Brittany Friars, Jacob Gehring, Joshua Hillary, Spencer McKenney, Daniel Parrett, Jared Ripley, Justin Sanford, Hannah Schlegel, Brian Szymanski, Darian Wiley, Morgan Wiley

Faculty Mentors: Janet Fick & James Jones, Department of Construction Management and Interior Design

Community Partners: Ball State Facilities Planning and Management, David Shepherd, Energy Engineer
Let’s Build

The construction industry is facing a severe workforce shortage, and one strategy to deal with that shortage is to introduce students to the construction industry at a young age. Let’s Build is an outreach initiative developed by the Ball State University construction management program in 2015. The project team implemented the Let’s Build initiative by working with elementary school students on a weekly basis at Longfellow Elementary School in Muncie. Through hands-on activities, the students learned about construction, careers in construction, and construction safety.

Aaron Albright, Kathy Berryhill, Hayden Castor, Aaron Davis, Michale Delong, Grant Denney, Reid Dettmer, David Dickey, Jordan Harrison, Nathan Heine, Susan Lamermayer, Austin McNally, Danny Nestorovski, Nate Netzhammer, Grant Small, Jacob Swales, Isaiah Swanigan, Zack Taylor, Jacob Wendrickx, Morgan Wiley

Faculty Mentor: Jennifer Warrner, Department of Construction Management and Interior Design
Community Partner: Longfellow Elementary School
Students from the IU School of Medicine complete a “clerkship” by working for 4-6 weeks in a medical establishment in one of several locations in Indiana. The Ball Brothers Foundation would like more medical students to complete their clerkship in the Muncie area, with the ultimate goal that these future doctors will return to Muncie to live and work upon graduation. Maplewood Mansion Learning Lab is a collaborative arrangement between Ball State University, IU School of Medicine - Muncie, and the Ball Brothers Foundation to provide short-term housing for these medical students. Residential Property Management (RPM) students researched ways to improve Maplewood Mansion as housing for these medical students and how to offer an outstanding Muncie experience that will attract and retain these future doctors. RPM students will share their recommendations for improvements to the physical site, management of the site, and ways to connect the residents to the area.

Michael Dickens, Madison Egold, Dustin Geise, Jacob Greer, Colin Harrison, Andreas Hji-Avgoustis, Akeem Hutchinson, Mason Knox, Hayden Olszyk, Jordan Sherman, Rachael Sloan, Paige Snyder, Morgan Truhan, Cihai (Charles) Zhang

Faculty Mentor: Carla Earhart, Department of Management
Community Partners: Maplewood Mansion Learning Lab, Ball Brothers Foundation, IU School of Medicine - Muncie
Local art projects are a way for communities to create dialogue, share cultural experiences, solve problems and build relationships that enhance quality of place and local economic development efforts. Part of the Muncie Art and Culture Council’s (MACC) mission is to serve as an arts alliance that builds community among artists and arts organizations, and is a resource for professional growth and opportunity among Muncie artists. In this project, student teams created video to help MACC document Plyspace, its artist-in-residence program and promote other local art projects.

Muncie Arts and Culture Council Video Project

Oscar Arriaga, Jacob Barajas, Matt Carson, Jason Franchville, Connor Hillestad, Grant Mountcastle, Benjamin Ritter, Melody Smith, Parker Stewart, Mason Whitis

Faculty Mentors: Suzanne Plesha, Office of Immersive Learning; Tim Pollard, Department of Telecommunications
Community Partner: Muncie Arts and Culture Council
Lead (Pb) is a persistent neurotoxin, and over 7% of population tested in Muncie and Delaware County has elevated blood lead levels (BLL), ~3x greater than the national average (2.5%). Through research and analysis, students in this project hoped to find the source(s) of lead that is driving these high BLL in Muncie/Delaware County. The students wrote a final report that summarized their high-impact community research project and recommended the next steps to continue the project, and presented their findings to United Way of Delaware County.
This immersive project involved a partnership with Kidz Korner Child Care Center in downtown Muncie, IN. The project team organized and implemented three family nights that involved several community agencies (Ball State University Student Theater and Dance Organization, Hillcroft Services “Music Together”, Muncie Symphony Orchestra “Together in Music”, and Muncie BY5). The team promoted and fostered collaborative partnerships between the center and these local agencies. The ultimate goal of this project was to establish and maintain community connections while strengthening parent and family relationships between the school and daycare center and homes.
Research affirms the power of culturally relevant literature and practice (Clark 2017), yet, the International Literacy Association (2018) reports that equity in literacy, diversity, and access to diverse content are the most pressing issues in K-12 schools, acknowledging that teachers are unprepared to address these challenges. This project addressed this preparation gap. Pre-service teacher candidates worked with classroom teachers, students, and community members to design classroom libraries containing a robust collection of culturally relevant texts.

Reading the Wor(l)d Critical Literacy and Culturally Responsive Classroom Libraries

Keaton Bailey, Miranda Berry, Sarah Black, Sydney Chaney, Kayla DeRemer, Alyssa Flanagan, Olivia Ford, Jordan Fuerstenau, Ashlin Hair, Kaylie Johnston, Hannah Lockington, Hailey Maupin, Sarah Meyer, Alison Schwartz, Bre’Anna Serf, Makenzie Smith, Michaela Strahm, Kortney Thalls

Faculty Mentors: Kristin Cipollone & Susan Tancock, Department of Elementary Education
Community Partners: Whitely Community Council, Longfellow Elementary School
In this immersive learning course, the interdisciplinary team of students (construction management, architecture and interior design) worked on rehabilitating two existing houses for a local non-profit, Urban Light CDC. The class involved the design and preconstruction phases, before construction began. Each project started with creating measured existing drawings, and then determined the scope of work needed, made recommendations for revisions and created plans for the remodeling of the houses. They worked with representatives from Urban Light throughout the process to ensure their designs meet the needs of their clients.

Joey Bastian, Madison Castleman, Megan Draper, Taylor Hindman, Natalie Hopf, Jordan Jones, Drew Keil, Susan Lamermayer, Katie McCauley, Stephen Rosiek, Kayli Sommers, Austin White

Faculty Mentor: Janet Fick, Department of Construction Management and Interior Design
Community Partner: Urban Light CDC
In this project, a diverse group of students partnered with Muncie Civic Theatre to assist in the development of stock scenery. This scenery will be used within their regular production season and will be a significant upgrade in safety and efficiency over their current stock.

Faculty Mentors:  Kerry Chipman & Mickie Marie, Department of Theatre and Dance
Community Partner: Muncie Civic Theatre
The project is three-pronged and involved conducting school security audits, mentoring at-risk students, and the observation of the work of School Resource Officers (SROs). Students generated items for an audit instrument, planned and carried out their mentoring activities, and provided observational analyses of their SRO time. The product for this project was a formal presentation to the community partners.

School Safety, Data-Driven Evidence-Based Findings, and Recommendations

TJ Brown, Elizabeth Cassady, Andrew Chapman, Joel Donovan, Paige Eacret, Daniel Etchison, Samantha Kridler, Lindsey Rainbolt, Mario Rodriguez

Faculty Mentor: Bryan Byers, Department of Criminal Justice and Criminology
Community Partners: Muncie Community Schools, Burris Laboratory School
The students in this semester’s Honors Colloquium on Serious Game Design worked with Minnetrista to create original games that explore regional history, culture, and themes. The students began the semester by studying fundamentals of game design with an emphasis on transformative and educational games. This included a formal analysis of Minnetrista Fairy Trails, a game created by an immersive learning course in Spring 2018. In the second half of the semester, each student identified a particular theme to explore through iterative game design and produced the playable prototypes that are presented at the showcase. Between semesters, faculty and staff from Ball State and Minnetrista will evaluate what was learned this semester to choose a project for production in a Spring game software production studio course.
The Indiana Office of Tourism Development (IOTD) has partnered with Ball State University to use high-definition video technology to highlight local and regional tourism in the state of Indiana. This project is part of a continuing grant from IOTD. The students produced a series of “profile” videos of locations, regions and tourist destinations of key places in the state of Indiana. This semester, the team focused on Huber Winery, Joseph Decuis Restaurant and Farm, Albanese Confectionary, Beasley’s Orchard and the cities of Corydon and Vincennes.

Christopher Anderson, Marissa Anderson, Brooke Braun, Jacob Cannon, Caitlyn Demlein, Samantha Essex, Jocelyn Hall, Maxwell Harp, Kyle Israel, Mackenzie Kuhn, Ashley Mullen, Savonne Pearson, Emily Poe

Faculty Mentor: Chris Flook, Department of Telecommunications
Community Partner: Indiana Office of Tourism and Development
Immersive Learning offers students the opportunity to connect with communities, businesses, and state agencies to collaboratively develop solutions to community challenges.