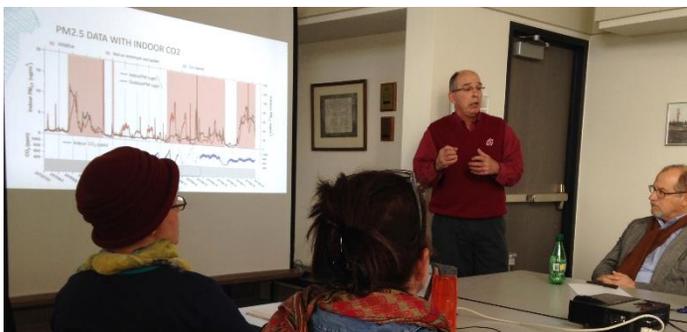


2.2 Research Themes

There are five major SDC “signature” areas that advance the university’s emphasis on graduate education, demonstrate our unwavering dedication to environmental and social justice, and push us further towards an academic model of integrated practice that serves as a template for the professions and industry. Some faculty already have established national and/or international reputations in one or more of these signature areas, but we expect our future hires and doctoral-level graduate students to have research expertise in one or more of the five areas. All five reflect the school’s integrated vision and indicate collaborative research opportunities provided by both VCEA and CAHNRS¹—as well as with other units, centers, and colleges around the university. They also reflect how the school intends to maintain an edge in the contemporary academic marketplace.

Health. This signature research area includes design and construction for a sustainable planet, with its attendant focus on the physical systems, construction, engineering, and preservation that must contribute to a healthy, clean, low impact, and carbon-free society. Investigation in this area focuses on individual and public health, community stakeholder



decision-making to benefit the built environment of the future: from neighborhoods to hospitals, public infrastructure to homes, and stadiums to schools—both old and new. Faculty make valuable connections to the health sciences-focused campus at WSU Spokane, to college-related initiatives with the Eggert Organic Farm and

centers such as the Institute for Sustainable Design (ISD), the Center for Environmental Research, Education, and Outreach (CEREO), and the Composite Materials and Engineering Center (CMEC). Local and regional entities provide potential research opportunities as well, including those with Pullman Regional Hospital, Gritman Medical Center, and the future Elson S. Floyd School of Medicine in Spokane.

Performance. Design and construction projects must adhere to crucial timelines and financial considerations in order to reach fruition in an increasingly competitive global marketplace. But projects must meet more than construction schedules and budgets. Research in this signature area contributes new knowledge for all projects to exceed basic standards for time and budgets, all while improving economic well-being, ecological balance, and social equity—not only during construction, but for the entire life-cycle of the built environment. Performance research could include effective project management and supervision; post-occupancy evaluation; indoor air quality; water resources; mechanical, electrical, and plumbing systems; and facilities maintenance. Investigation and analysis in the performance area will benefit from interdisciplinary connections with Civil and Environmental Engineering as well as with schools and departments in the Carson College

¹ The School of Design and Construction was moved to one college (VCEA) in July 2017.

of Business, including the School of Hospitality Business Management and the Department of Management, Information Systems, and Entrepreneurship.

Technology. This signature research area explores the innovative digital technologies increasingly employed in higher education and professional practice. This includes parametric and computer-generative design; the virtual platforms for the modeling, visualization, analysis, and management of major design and construction projects (Virtual Design and Construction); and the data-driven spatial analysis of Geographic Information Systems (GIS). Investigators in this area may leverage their creativity to apply digital tools and examine how they affect the built environment. They may also capitalize on new equipment, modeling software, and the SDC shops (fabrication laboratories) to build and strengthen cross-disciplinary collaborations related to “making,” especially in the areas of advanced manufacturing, technology transfer, rapid prototyping, and robotics. We envision this area advancing our school’s initiatives with integrated education symposia as well as collaborating with the VCEA’s Integrated Design Experience (IDX) and encouraging use of the Frank Innovation Zone (FIZ). Connections can be made to diverse areas including the Department of Fine Arts, the School of Mechanical and Materials Engineering, and the School of Electrical Engineering and Computer Science.



Place. This signature research area is dedicated to the study and analysis of the ecological and cultural factors that comprise and affect our built environment. Investigation in this area could include studying the biophysical workings of water, soil, and light and their representation and management; best design practices for responding to climate change; watershed investigations, from social, ecological, and/or humanities perspectives; and methods for navigating and exploring a world of diverse cultural backgrounds, depleted resources, and the homogenization of the landscape. This area thus encourages research and scholarship that includes a broad understanding of the structural, material, and historical factors that contribute to regional variations in design and construction. Faculty whose research agenda falls broadly within the area of place may combine hands-on engagement with emerging building practices. They may additionally employ and integrate current fabrication methods, contemporary development strategies, economics, and ethics to develop approaches to further planetary health. Place-based research focuses on the regional built environment as well as the complex web of physical, social, and biological systems that makes places unique: from the rural to the urban; from the local to the global. This research area can make crucial university-related connections



to WSU Extension, the Center for Civic Engagement (CCE), and the Center for Environmental Research, Education & Outreach (CEREO) in addition to ongoing school initiatives including study tours, education abroad programs, and the Rural Communities Design Initiative (RCDI).

Experience. This signature research area focuses on the study and analysis of experiential learning in the built environment. As part of our land grant mission; the School of Design and Construction regularly provides action-based opportunities for students to expand their learning beyond the classroom. This includes domestic and international study tours for undergraduate and graduate students; education abroad programs; professional internships; off-campus studios; presentations to design firms and construction companies; competitions; portfolio reviews; site visits; student clubs; recruiting; and civic and community engagement projects. Our commitment to “hands-on” experience and conjunction with or in addition to classwork gives students an advantage on the job market and boosts their resumes or portfolios for graduate school. Scholars working in this signature area examine data from action-based coursework intertwined into the school curricula, or they could analyze data from other schools, colleges, and universities—as well as that of public sources or private agencies. Potential collaborative opportunities exist with Teaching and Learning through the College of Education; International Research and Agricultural Development through CAHNRS; the Center for Environmental Research, Education, and Outreach (CEREO); the Center for Civic Engagement (CCE); Education Abroad in Global Learning as part of the Office of International Programs; and the School of Hospitality and Business Management.