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Introduction to Special Theme Issue: Pandemic Pivots, Part 1

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EDITORIAL

Introduction to Special Theme Issue: Pandemic Pivots, Part 1

Brent K. Jesiek, Purdue University (Editor-in-Chief, JIEE)

The COVID-19 pandemic has impacted higher education in manifold and complex ways, not least in the area of international education. Programs built around the physical mobility of students, faculty, and staff were profoundly disrupted beginning in early 2020, necessitating the repatriation of students abroad, cancellation of future travel plans, and rapid development of new options and modalities for global learning. Recognizing this changing landscape, in late 2020 we issued a call for a special issue of *JIEE* focused on “contemporary trends in international engineering education, including in response to the COVID pandemic, rapid changes in political and economic dynamics, and other disruptions.” We received a strong response to our call, and have worked closely with numerous authors to develop manuscripts on a variety of related topics. This editorial introduces the first of two planned special issues exploring pandemic-related change and innovation in the field of global engineering education.

The first contribution to this special issue is a Perspective piece by Mitchell and Hoare which examines how the pandemic has impacted NSF-funded international research projects. Based on survey and interview data collected from principal investigators, the authors document the far-reaching impacts of the pandemic on student research experiences as travel was deferred and alternative activities were created to both engage students and sustain ongoing research efforts. The remaining papers in this special issue describe impacts and adaptations associated with specific programs, each supported by various forms of evidence collected from participating students. To begin, an opening practice paper by Erickson et al. takes a qualitative approach to examine reflection data from undergraduate students in a dual degree program whose international sojourns were interrupted by the pandemic. Using Byram’s five *savoirs* model of intercultural communication competence, the authors document a variety of expected and unexpected intercultural competence development and growth both before and after the pandemic forced students to return home. Next, a practice paper by Davis et al. describes an on-campus seminar course designed to enhance systems thinking among undergraduate engineering students through a series of case study modules. The authors use a scenario-based assessment tool to document evidence of student learning across a variety of systems thinking constructs. Finally, a closing research paper by

Smith et al. compares student learning in both the in-person and virtual offerings of a humanitarian engineering program focused on small-scale gold mining in Colombia. After presenting a robust conceptualization of “global socioetechanical competency,” the authors use this framework to explore evidence of student learning in the program based on both survey and interview data. As this brief overview suggests, there is much for readers to take away from this collection of papers, including a wealth of innovative education and assessment approaches with applicability in a wide range of settings. Further, the papers help to reveal how the pandemic has created impressive new spaces for innovation and learning amidst considerable uncertainty and disruption.

In closing, I offer my gratitude to the authors, reviewers, and editorial team for helping to make this special issue of *JIEE* possible. I would also like to convey my heartfelt appreciation to outgoing co-editor Damon Rarick for his assistance with *JIEE* and our pioneering predecessor publication, the *Online Journal for Global Engineering Education (OJGEE)*. Thank you, Damon, for all of your contributions and hard work over many years!