Although most of the papers selected for this collection are not specific to a particular discipline, the four articles in this section are fairly specific to chemical engineering. In the first two articles (#19 and #20), Jason Keith, David Silverstein, and Don Visco (and in #20, Lisa Bullard) explore methods for teaching required chemical engineering courses, several of which are also taught in mechanical engineering (fluid mechanics, heat transfer, and thermodynamics) and civil engineering (fluid mechanics). The main portions of both articles discuss pedagogical content knowledge, difficult concepts, and the best approaches to helping students understand material. The authors also discuss applications of active learning.

John Falconer, Garret Nicodemus, Janet DeGrazia, and J. Will Medlin discuss chemical engineering screencasts (computer notebook-based lectures with voice-over narration) available at <www.learncheme.com> in paper #21. Screencasts are very similar to the Khan Academy offerings, except screencasts are at the level of chemical engineering undergraduates. Screencasts can be used as lectures in flipped classes, to prepare students for laboratories, to provide students with tutoring on demand, and to help students review for tests. Student feedback shows that students view these screencasts often and report finding them useful. Although the data in this article is for chemical engineering students and the screencasts mentioned are all in chemical engineering, similar screencasts would be useful in other engineering disciplines.

The final paper (#22) in Part V by Phil Wankat is a brief history of chemical engineering and chemical engineering pedagogy. Although ABET is considered by some as an external hurdle that others have imposed, many professors are probably unaware that professional accreditation of engineering education was actually started by AIChE in 1925. When the precursor of ABET—the Engineers’ Council for Professional Development (ECPD)—was formed in 1932, AIChE was the only engineering professional society accrediting programs. And professors who think ABET is too strict now should contemplate that in 1925, only 14 of 78 schools that applied for accreditation had programs that were considered to be acceptable. The paper also considers curriculum changes, textbooks and other teaching materials, and pedagogical innovations in chemical engineering, and introduces readers to engineering education research.