

## What Is CACHE?

CACHE is the acronym for *Computer Aids for Chemical Engineering*. The CACHE Corporation develops and distributes technology-based materials and software, sponsors conferences and projects on computer-related chemical engineering research topics, and provides leadership in chemical engineering education. See <http://cache.org>.

## Who Is CACHE?

CACHE is a not-for-profit organization founded in 1969 as a facilitator of new initiatives in chemical engineering education. CACHE activities are directed by an elected Board of Trustees drawn from industry and academia. We assemble talent from across the community into “task forces” that are charged to grow and advance computation in chemical engineering education. Always evolving, task forces are formed and disbanded according to trends in the field. Our current task forces involve data analytics, process design, membership, creating and disseminating undergraduate teaching modules, and communicating advancements in chemical engineering education.

## What Does CACHE Do?

**Awards.** CACHE fosters advancements in ChE computing by recognizing significant contributors. CACHE sponsors three major awards: the Thomas and Donna Edgar CACHE Award for Excellence in Chemical Engineering Education; the AIChE CAST Division Himmelblau Award for Innovations in Computer-Based Chemical Engineering Education; and the AIChE Evans Award for Chemical Engineering Practice.

**Conferences.** CACHE is a leading sponsor of chemical engineering conferences. Areas of interest include chemical process operations (FOCAPO, since 1987), design (FOCAPD, since 1983), and control (CPC, since 1986); molecular modeling (FOMMS, since 2000); systems biology and engineering (FOSBE, since 2005); and process analytics and machine learning (FOPAM, new in 2019). Although primarily research-oriented,

CACHE conferences ensure that some element of ChE education is addressed. CACHE strives for affordable registration fees enabling participation by graduate students, postdocs, and junior faculty. These popular conferences have a strong international participation and some are now held in Europe and Asia. Proceedings from all of the conferences are distributed free of charge to each CACHE-supporting member.

**Educational materials.** CACHE develops computer-based educational materials to promote innovation in chemical engineering education. Recent products include downloadable modules in fuel-cell technology, biological systems, energy, Aspen Plus and molecular origins of macroscopic behavior. In addition, CACHE has offered workshops on new curriculum teaching aids, *e.g.*, in product design, systems biology, energy and data analytics. We have also funded three small projects for the development of computational-based tools and modules for chemical engineering education; we intend to fund several similar projects each year.

**Software.** CACHE brings process modeling software into the curriculum and ultimately professional ChE practice. For example, CACHE is instrumental in the development and dissemination of software such as POLYMATH for solving equation-based models and ChemSep for separations courses. CACHE-supported software is currently used by more than 100 ChE departments worldwide.

**Dissemination.** CACHE provides reliable routes to communicate advances in chemical engineering education. We publish a semi-annual newsletter describing recent developments and we have established a comprehensive web site for chemical engineering education. The site hosts content solicited from a large number of chemical engineering faculty to share with their colleagues around the world, especially young faculty to help them to utilize and disseminate new educational materials. CACHE also provides a web-based method for advertising faculty openings and identifying faculty candidates called *cachet*.