Classical engineering disciplines have emerged from craft practice and commercialization through the infusion of codified knowledge and science. Using this emergence pattern as a point of reference, I will sketch the evolution of software engineering, drawing on civil engineering and software architecture for examples that show the progressive codification of informal knowledge toward rigorous models and tools. This will provide the basis for assessing the maturity of the field and identifying our next challenges.

Mary Shaw is the Alan J. Perlis University Professor of Computer Science in the Institute for Software Research at Carnegie Mellon University. Her research interests lie in the area of software engineering, particularly software architecture and design of systems used by real people.

She has received the United States' National Medal of Technology and Innovation, the ACM SIGSOFT Outstanding Research Award (with David Garlan), the IEEE Computer Society TCSE's Distinguished Educator Award, and CSEE&T's Nancy Mead Award for Excellence in Software Engineering Education. She is a fellow of the ACM, the IEEE, and the AAAS.