November 2016

**Explain It: Cyber-physical Systems**

News and Communications Services  
*Kansas State University*

Follow this and additional works at: [https://newprairiepress.org/seek](https://newprairiepress.org/seek)

Part of the Higher Education Commons

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License.

**Recommended Citation**


This Article is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in Seek by an authorized administrator of New Prairie Press. For more information, please contact cads@k-state.edu.
Cyber-physical systems

cy-bərfi-zər-ə-l sistəms

Eugene Vasserman, associate professor of computer science, explains, in under 100 words, what cyber-physical systems are and how Kansas State University computer scientists are ensuring they can be used to improve health care without compromising safety.

Cyber-physical systems — as small as light bulbs or as big as power plants — consist of components communicating over networks to coordinate how they sense and act on the physical world. Usually this involves much more software than found in typical physical objects. The Internet of Things is different, frequently used for human interfacing and control, while cyber-physical systems are also used for autonomous “closed-loop” control like self-driving cars. Securing cyber-physical systems is critical because component vulnerabilities may allow attackers to directly affect the physical world. In medical cyber-physical systems, patient safety is the main priority, and often depends on security.

Planted in history

“Women in Greenhouse” is a print made in 1995 from an undated negative in the Kansas State University archives. Although the exact date of this photo’s origin is not known, the university archivist and the director of K-State’s Historic Costume and Textile Museum date it to 1890-1900 based on clues in the photo. The first clue is the angle of the greenhouse roof, which matches that of the university’s original greenhouses used from 1883 to around 1910. The second clue comes from the clothing worn by the women pictured, especially the Mother Hubbard gown worn by the woman on the left. This American garment, with its loose style, was popular everyday apparel for women from around 1880-1920. The photo also illustrates how K-State has long been involved in plant research, including on sorghum as detailed in the story starting on Page 8.

Photo courtesy of the Kansas State University archives