

# DEPARTMENT OF CHEMICAL & PHYSICAL SCIENCES COLLOQUIUM SERIES

Wednesday, February 5, 2020 @ 3:30pm in KN L1220

## PROF. THOMAS HOLME

DEPARTMENT OF CHEMISTRY  
IOWA STATE UNIVERSITY

### Helping foundations flourish: Systems thinking as a means to connect introductory chemistry to broader science studies.

Introductory chemistry (and physics) courses serve an important role in developing foundational knowledge for a wide range of science courses. Partly in response to this central role in the programs of study for science majors, intro courses in the physical sciences have tended towards an exclusive emphasis on core concepts. The intent of this approach is for students to use such knowledge outside of chemistry and physics, but doing so requires the cognitive skill of knowledge transfer. Unfortunately, compartmentalized foundational knowledge is often difficult for students to transfer to other settings. The incorporation of systems thinking approaches using rich contexts provides one way to help students practice connections needed for knowledge transfer within the introductory chemistry courses. This presentation will help enumerate this idea via examples and discussions.

