2021 NSF CYBER-PHYSICAL SYSTEMS PRINCIPAL INVESTIGATORS' MEETING

CPS: Medium: Collaborative Research: Robust and Intelligent Optimization of Controlled-environment Agriculture System for Food Productivity and Nutritional Security

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Challenge:

- CEA must warrant High cost of urban lands.
- Control and optimization of complex systems

Solution:

- Novel algorithms to optimize the operations of CEA
- Integrated data-driven and model-based prediction for plant growth

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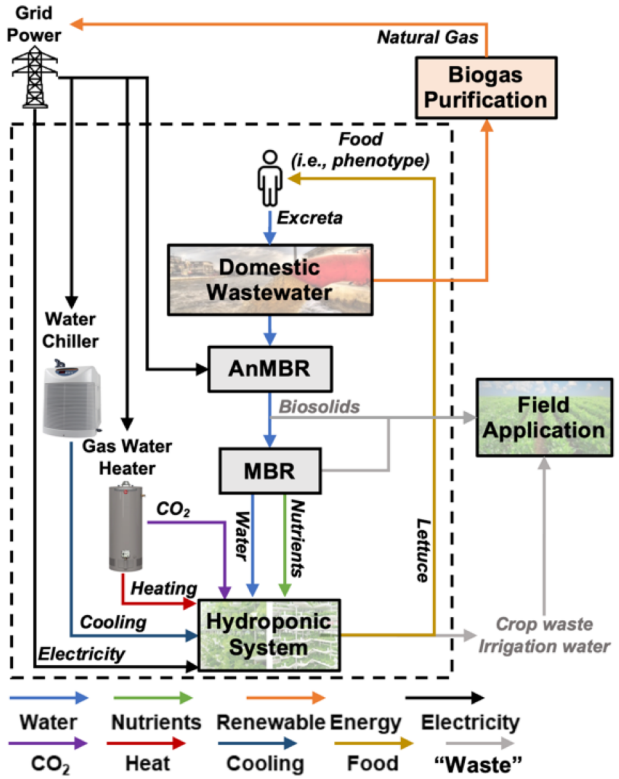

Process diagram of controlled environment agriculture (CEA)

Scientific Impact:

- Innovations integrating machine learning, optimization, control and simulation

Broader Impact:

- Benefit environment control and food security
- Train new generations of scientists and engineers, especially for those under-represented, with interdisciplinary skills