

# DAY 1

March 3rd, 2021

UA-CEAC's 2021 Online  
Greenhouse Crop Production &  
Engineering Design  
Short Course

10:00am-10:10am- Welcome and Introductions

10:10am-10:50am- **Controlled Environment Greenhouse and Hydroponics- Limitless Opportunity**

*Merle Jensen, Professor Emeritus, School of Plant Sciences, The University of Arizona,  
Founder of the UA-CEAC in 2000*

10:50am-11:00am- Questions

11:00am-11:40am- **Hydroponics, Medium Composition & Delivery Systems**

*Myles Lewis, MS, Owner, Arizona Vegetable Company & Instructor, CEAC Leafy Greens Intensive  
Workshop*

11:40am-11:50am- Questions

11:50am-12:00pm- 10min Break

12:00pm-12:15pm- Sponsor/Exhibitor Presentations (3)

12:15pm-12:55pm- **Managing Plant Nutrition for Quality Crop Production**

*Stacy Tollefson – Professor of Practice, Biosystems Engineering, The University of Arizona  
Instructor, CEAC Tomato Intensive Workshop*

12:55pm-1:05pm- Questions

1:05pm-1:45pm- **Greenhouse Structures- Glazing and Environmental Control**

*Gene Giacomelli – Professor, Biosystems Engineering, The University of Arizona*

1:45pm-1:55pm- Questions

1:40pm- 1:50pm- 10 min Break

1:50pm-2:00pm- Sponsor/Exhibitor Presentations (2)

2:00pm-2:15pm- Breakout Rooms/ Networking

2:15pm- 2:55pm- **Monitoring Your Greenhouse Environment: Simple Tools to Technology Trends**

*Murat Kacira – Professor, Biosystems Engineering, The University of Arizona  
Director, University of Arizona's Controlled Environment Agriculture Center*

2:55pm- 3:05pm- Questions

# DAY 2

March 10th, 2021

UA-CEAC's 2021 Online  
Greenhouse Crop Production &  
Engineering Design  
Short Course

**10:00am-10:40am- Pest Identification and Control Strategies**

*Stacy Tollefson – Professor of Practice, Biosystems Engineering, The University of Arizona  
Instructor, CEAC Tomato Intensive Workshop*

**10:40am-10:50am- Questions**

**10:50am-11:30am- Fundamentals on Supplemental and Sole Source Lighting for CEA**

*Erik Runkle, Professor, Department of Horticulture, Michigan State University*

**11:30am-11:40am- Questions**

**11:45am-11:55am- 15 min Break**

**11:55am-12:20pm- CEAC Mission Award  
Sponsor/Exhibitor Presentations (3)**

**12:20pm-1:00pm- Fertigation Systems in CEA- Simple to Complex**

*Neil Mattson, Professor, School of Integrative Plant Science Horticulture Section, Cornell  
University*

**1:00pm-1:10pm- Questions**

**1:10pm- 1:25pm- 15 min Break**

**1:25pm-1:40pm- Sponsor/Exhibitor Presentations (3)**

**1:40pm-2:00pm- Breakout Rooms/ Networking**

**2:00pm- 2:40pm- The Indoor Farming Revolution – State of the Art Technology, Food Safety,  
Sustainability and Careers in the Growing Local Food Economy**

*Jenn Frymark, Chief Greenhouse Officer, Gotham Greens*

**2:40pm- 2:50pm- Questions**



# DAY 3

March 17th, 2021

UA-CEAC's 2021 Online  
Greenhouse Crop Production &  
Engineering Design  
Short Course

**10:00am-10:40am- Fundamentals of Hemp- Opportunities and Challenges in the Industry**  
*Hope Jones, Founder & CEO, Emergent Cannabis Sciences*

10:40am-10:50am- Questions

**10:50am-11:30am- Environmental Control in Greenhouses and Vertical Farms Based on Plant Physiology**  
*Leo Marcelis, Professor of Horticulture and Product Physiology, Wageningen University*

11:30am-11:40am- Questions

11:40am-12:00pm- 20 min Break

12:00pm-12:20pm- Sponsor/Exhibitor Presentations (4)

**12:20pm-1:00pm- The Potential of Indoor Propagation: Environmental Optimization for a Better “Start”**  
*Ricardo Hernandez- Asst. Professor, Horticultural Science, NC State University*

1:00pm-1:10pm- Questions

1:10pm- 1:25pm- 15 min Break

1:25pm-1:40pm- Sponsor/Exhibitor Presentations (3)

1:40pm-2:00pm- Breakout Rooms/ Networking

**2:00pm- 2:40pm- Mushrooms in CEA**  
*Barry Pryor, Professor, School of Plant Sciences, The University of Arizona*

2:40pm- 2:50pm- Questions