GREENHOUSE CROP PRODUCTION & ENGINEERING DESIGN SHORT COURSE

MARCH 11, MORNING
8:15 – 8:30 am  Welcome and Introductions by Dr. Murat Kacira
10:00 am  Exhibitor Gallery Opens for Attendees

FUNDAMENTALS OF HYDROPONICS & CONTROLLED ENVIRONMENT AGRICULTURE (CEA)
8:30 – 9:15 am  Greenhouse Design - Structures, Glazing & Cooling
  Dr. Gene Giacomelli – Professor, Biosystems Engineering, The University of Arizona

9:15 – 10:00 am  Hydroponics, Medium Composition & Delivery Systems
  Myles Lewis – Owner, Arizona Vegetable Company & Instructor, CEAC Intensive Workshop

10:00 – 10:45 am  Managing Plant Nutrition for Crop Production Optimization
  Dr. Stacy Tollefson – Professor of Practice, Biosystems Engineering, The Univ. of Arizona

10:45 – 11:30 pm  What Happened to my Plant?
  Karin Tifft – Consultant, Greenhouse Vegetable Consultants, LLC.

11:30 – 11:45 am  5 Minute Presentations from this year’s Sponsors

11:45 – 12:45 pm  Lunch Provided & Networking Opportunity in Exhibit

MARCH 11, AFTERNOON
ESSENTIALS OF CROP PRODUCTION IN COMMERCIAL SETTINGS
12:45 – 1:30 pm  Integrated Pest Management (IPM) – Common Insects & Mites
  Dr. Stacy Tollefson – Professor of Practice, Biosystems Engineering, The Univ. of Arizona

1:30 – 2:15 pm  Integrated Pest Management (IPM) – Best Use Practices with Biopesticides
  Debbie Palumbo-Sanders – Technical Services Specialist, BioWorks

2:15 – 3:00 pm  Discussion of Previous Lectures, Q&A

3:00 – 3:15 pm  3, 5 Minute Exhibitor Presentations

3:15 – 3:45 pm  Coffee Break, Visit Exhibit

3:45 – 4:15 pm  Biotech: Tissue Culture Procedures & its Value added to the CEA Market
  Dr. Hope Jones – Founder & CEO, Emergent Cannabis Sciences

4:15 – 4:45 pm  Developments in Seed Varieties
  Gretchen Raymond – Managing Director, Rijk Zwaan USA & Canada
  Harry Burman – M.Sc., Lettuce/Leafy Crop Specialist – Rijk Zwaan USA & Canada

4:45 – 5:15 pm  Discussion of Previous Lectures

6:00 – 7:30 pm  Welcome Reception – Fueled by appetizers & cash bar
6:30 pm  CEAC Mission Award
MARCH 12, MORNING

7am Breakfast provided

ENGINEERING CONSIDERATIONS & OPTIMAL SYSTEMS DESIGN AND MANAGEMENT

7:55 – 8:00 am Welcome & Announcements

8:00 – 8:45 am Monitoring Your Greenhouse Environment: Simple Tools to Technology Trends
Dr. Murat Kacira – Professor, Biosystems Engineering, The University of Arizona

8:45 – 9:30 am Control Systems Design for Decision Support Management
Dr. David Story – Management Systems Consultant, Ridder HortiMax – North America

9:30 – 9:50 am Discussion of Previous Lectures – Q&A

9:50 – 10:05 am 3, 5-minute Exhibitor presentations

10:05 – 10:30 am Coffee Break, Visit Exhibit

10:30 – 11:15 am Open the pod bay doors, HAL
Darryn Keillor – CEO, AutoGrow

11:15 – 12:00 pm Engineering Your Greenhouse Structure for Energy Optimization
Dr. Gene Giacomelli – Professor, Biosystems Engineering, The University of Arizona

12:00 – 12:20 pm Discussion of Previous Lectures – Q&A

12:20 – 1:20 pm Lunch Provided

MARCH 12, AFTERNOON

INNOVATIVE CEA SYSTEMS & VALUE-ADDED CROPS

1:20 – 2:05 pm Completing the Circle: The Compelling Concept of Connecting Mushroom Farms with Plant Factories
Chris Bailey – Vice President, Gourmet Mushrooms, Inc., Sebastopol, CA, USA

2:05 – 2:50 pm Co-Producing Mushrooms in CEA for Boosted CO₂
Dr. Barry Pryor – Professor, School of Plant Sciences, The University of Arizona

2:50 – 3:10 pm Discussion of Previous Lectures – Q&A

3:10 – 3:25 pm 3, 5-minute Exhibitor presentations

3:25 – 3:45 Coffee Break, Visit Exhibit

3:45 – 4:30 pm Critical Factors in Production of Greenhouse Veggies
Dr. Merle Jensen – Professor Emeritus, School of Plant Sciences, The University of Arizona

4:30 – 5:15 pm Packing & Marketing your Products for Success
Dr. Merle Jensen – Professor Emeritus, School of Plant Sciences, The University of Arizona

5:15 – 5:35 pm Discussion of Previous Lectures – Q&A

Dinner – On Your Own
**MARCH 13, MORNING**

7am  Breakfast provided

**MODERN CEA TECHNOLOGY**

7:55 – 8:00 am  Welcome & Announcements

8:00 – 8:45 am  Sunlight and Supplemental Lighting Applications for CEA  
  Dr. Neil Mattson – Associate Professor, School of Integrative Plant Science, Cornell University

8:45 – 9:30 am  Wholesum Harvest Growing Experience - Mexico and US Grown Tomatoes  
  Jose Edgardo Torres – Head Grower, Wholesum Farms AZ

9:30 – 9:50 am  Discussion of Previous Lectures - Q&A

9:50 – 10:05 am  3, 5-minute Exhibitor presentations

10:05 – 10:30 am  Break, Visit your Exhibitors

10:30 – 11:15 am  Water Quality & Considerations for Recycling Nutrient Solutions  
  Dr. Neil Mattson – Associate Professor, School of Integrative Plant Science, Cornell University

11:15 – 12:00 am  Sole Source Electric Lighting for Controlled Environment Crop Production  
  Dr. Fei Jia – Technical Solutions Manager, Heliospectra

12:00 – 12:20 pm  Discussion of Previous Lectures, Q&A

12:20 – 1:15 pm  Lunch Provided

**MARCH 13, AFTERNOON**

**THE EVOLVING CEA MARKET**

1:15 – 2:00 pm  Food Safety Principles & Government Regulations  
  Dr. Margarethe Cooper – Victor P. Smith Endowed Chair in Food Safety, University of Arizona

2:00 – 2:45 pm  Working with Wholesale Distribution  
  Kristen Osgood – Regenerative Strategy Manager, Stern Produce

2:45 – 3:05 pm  Discussion of Previous Lecture – Q&A

3:05 – 3:20 pm  3, 5 Minute Exhibitor presentation

3:20 – 3:45 pm  Coffee Break, Visit Exhibit

3:45 – 4:15 pm  Locally Grown Market Opportunities  
  Chaz Shelton – Co-Founder, Merchant’s Garden

4:15 – 5:30 pm  Elements for a Successful Urban Ag Start-up  
  Jenn Frymark – Chief Greenhouse Officer, Gotham Greens

5:30 – 5:50 pm  Discussion of Previous Lecture – Q&A

Dinner – On Your Own

4:30 pm - Exhibit break-down begins
MARCH 14, All Day!

7am Breakfast provided

Hands on workshops at CEAC:
8:00 Depart hotel for CEAC [Bus provided or Drive self]
[1951 E. Roger Road Tucson, AZ 85719]
8:30 – 10:00 am ROUND 1
10:00 – 11:30 am ROUND 2
11:30 – 1:00 pm Lunch in the CEAC Classroom & Yard
1:00 – 2:30 pm ROUND 3
2:45 – 4:00 pm ROUND 4
4:00 – 5:00 pm Additional Q&A Round – Return to any stations you’d like for additional Q&A
5:00 Return to Hotel

Titles of Workshops:
High Wire Tomato Maintenance
Building Fertigation Systems
Nutrient Film Technique based Leafy Greens Production
Deep Water Culture based Lettuce Production
Sensors & Controls with Vertical Farm Tour
Specialty Mushroom Production
Strawberry Production

Please see the back of this workbook for workshop offerings.
Mark down your selections if you haven’t yet!

MARCH 15
COMMERCIAL GH TOUR
8am – 2pm Touring Commercial Greenhouse of Southern AZ
Wholesum Harvest – Amado, Arizona
https://wh.farm/