

## Integrating Recirculating Aquaculture with Hydroponic Systems: The First Annual Aquaponics Hands-On Learning Workshop

Where and When: June 3-5, 2019 at the UNH Kingman Farm Aquaponics Greenhouses

Workshop funding support provided by:



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**Contact for more information:**

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## Workshop Agenda

### Day 1: Aquaculture and Aquaponics

#### *Day 1: Morning Session*

- 7:00-8:00 Registration
- 8:00-8:30 Welcome and Introductions
- 8:30-9:15 Critical Considerations and An Entrepreneurial View of Recirculating Aquaculture/Aquaponic Systems  
**Michael Timmons**
- 9:15-9:45 Tank Hydraulics & Settleable Solids Removal Processes  
**Todd Guerdat**
- 9:45-10:00 *Morning Coffee Break*
- 10:00-10:30 Suspended Solids Removal Process & Components  
**Todd Guerdat**
- 10:30-11:00 Aeration and Oxygenation  
**Michael Timmons**
- 11:00-12:00 Biological Filtration and Nitrification Processes and Components  
**Todd Guerdat, Michael Timmons**
- 12:00-1:30 *Lunch and Tour of the UNH Kingman Farm Aquaponic Greenhouses*

#### *Day 1: Afternoon Session*

- 1:30-2:30 Fish Health Management & Biosecurity  
**Mike Pietrak**
- 2:30-2:45 *Afternoon Coffee Break*
- 2:45-3:45 Recirculating Aquaculture System Design and Management Considerations  
**Michael Timmons**
- 4:00-5:00 Hands-On Fish Sampling Activity  
**Todd Guerdat, Alex Sitek, Joe Tetreault, Ashu Rao, Sean Fogarty**
- 5:00-5:30 Questions and Answer Session
- 5:30 *Adjourn Day 1*



## **Day 2: Hydroponics**

### ***Day 2: Morning Session***

- 8:00-8:30 Building a Controlled Environment Agriculture Business  
**Neil Mattson**
- 8:30-9:00 Small steps: Considering engineering, automation, and system design for small growers  
**Peter Konjoian**
- 9:00-9:45 Greenhouse Design – Structures, Glazing, Heating/Cooling  
**Jeff Warschauer**
- 9:45-10:30 Managing Plant Nutrition  
**Neil Mattson**
- 10:30-10:45 Morning Coffee Break*
- 10:45-11:30 Strawberry production in Controlled Environment Agricultural Systems  
**Anna DeVitto**
- 11:30-12:00 “Natural” fertilizers (Soluble organic ferts, other options, etc.)  
**Neil Mattson, input from Todd if needed**
- 12:00-1:30 Lunch and hydroponic/aquaponic lettuce and strawberry tour*

### ***Day 2: Afternoon Session***

- 1:30-2:00 Monitoring and controlling your high tunnel / greenhouse  
**Jonathan Allred**
- 2:00-2:30 Critical factors in greenhouse fruiting crop production  
**Neil Mattson / Johnathan Allred**
- 2:30-2:45 Afternoon Coffee Break*
- 2:45-3:30 Food safety  
**Sean Fogarty**
- 3:30-4:00 Balancing crop needs with nutrient production using aquaponics  
**Peter Konjoian**
- 4:00-5:00 Strawberry runner production and propagation – Hands-on training  
**Anna DeVitto, Johnathan Allred**
- 5:00-5:30 Question and Answer Session

5:30

*Adjourn Day 2*

**Day 3                    Hands-On Farm Work Day at UNH Kingman Farm & Off-Site Farm Tours**

*7:30-8:00                Registration; Meet and debriefing*

8:00-12:00            Water Quality Analysis, Lettuce Harvest, System Cleaning, Transplanting, Board Sanitization, Seed Sowing, Record Keeping  
**Sean Fogarty, Alex Sitek, Joe Tetreault, Ashu Rao**

*12:00-1:00             Bag Lunch Provided; Drive Yourself to Off-Site Farm Tours*

1:00-2:30             **Off-Site Farm Tour #1: Victory Aquaponics (Londonderry, NH )**

3:00-4:30             **Off-Site Farm Tour #2: Location TBA at workshop**