

## GCE Workshop 2025: Installing Post-translational Modifications Site-Specifically using GCE Monday, July 28- Friday, August 1<sup>st</sup>

**Location:** OSU Corvallis campus, Department of Biochemistry and Biophysics  
Ag and Life Science Building 2750 SW Campus Way Corvallis, OR, USA 97331  
<http://oregonstate.edu/campusmap/>

**Main Office** ALS 2011    **Classroom** ALS 2018    **Lab** ALS 0023 (basement)    **Lunch** 2009A

### Contact phone numbers

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- Kari van Zee cell phone 541-602-5086; office 541-737-1773; [GCE4All-admin@oregonstate.edu](mailto:GCE4All-admin@oregonstate.edu)
- Biochemistry Biophysics Department main office phone 541-737-4511 (8 am-5 pm PST Mon-Fri)

### Day 1                      Monday July 28 ALS 2018 is our home base classroom

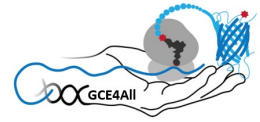
|             |                                                                                                                                                                                                              |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30-9:30   | <b>Breakfast</b> available ALS 2018                                                                                                                                                                          |
| 9:00-9:30   | <b>Check in</b>                                                                                                                                                                                              |
| 9:30-10:30  | <b>GCE Overview and status of the field</b> Ryan Mehl                                                                                                                                                        |
| 10:30-12:00 | <b>Fundamentals of installing post-translational modifications with GCE</b> Rick Cooley                                                                                                                      |
|             |                                                                                                                                                                                                              |
| 12:00-1:30  | <b>Lunch</b> ALS 2009A                                                                                                                                                                                       |
|             |                                                                                                                                                                                                              |
| 1:30-2:30   | <b>Buddy pairing (2018)</b> to select/explain plasmid and strain pairings                                                                                                                                    |
| 2:30- 6:00  | <b>Laboratory (0023):</b> transformation - lab work takes ~3 hours for longer recoveries                                                                                                                     |
|             |                                                                                                                                                                                                              |
| 6:00- 8:30  | <b>LPSC 402 Welcome Dinner</b> sponsored by <b>Vector Labs</b><br>Center and Workshop goals overview<br>Participants' science goals- participants should prepare 1 slide about their science (no animations) |

### Day 2                      Tuesday, July 29<sup>th</sup> Morning location is mostly ALS 2018

|             |                                                                                                                                                  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00-8:30   | <b>Breakfast</b>                                                                                                                                 |
| 8:30-9:30   | <b>Plan for day</b> (NIM, antibiotics, ncAA considerations)                                                                                      |
| 9:30-10:00  | <b>Check transformations</b> (lab)                                                                                                               |
| 10:30-12:00 | <b>Lectures</b><br><b>Adopting GCE for biological proteins</b> Rick Cooley<br><b>Plasmid architecture and cloning</b> Rick Cooley and John Lueck |
|             |                                                                                                                                                  |
| 12:30-1:30  | <b>Lunch</b> ALS 2009A                                                                                                                           |



- 1:30-3:00 Medley of talks**  
*Overview of ncAA classes & categories* Ryan Mehl  
*pSer GCE adaptations for NMR and IDPs* Cat Vesely  
*Delivery of stable phospho-proteins into HEK cells* Moriah Mathis
- 3:00-4:00 Laboratory**  
 Select transformants and grow overnights  
 Organize and label flasks for Wednesday
- 5:00-8:00 Common Fields dinner** with group off campus  
 545 SW 3<sup>rd</sup> Street, Corvallis, OR 97333 (Nice walk or we can organize rides)
- Day 3 Wednesday, July 30<sup>th</sup>**
- 8:00-8:30 Breakfast**  
**8:00-8:30 Plan for day** (Expression media, antibiotics, ncAA considerations)  
**8:30-10:30 Laboratory:** Inoculate media for 24-hour expressions  
**10:30-12:00 Medley of talks**  
*Phospho-threonine development* Sarah Louie  
*Dual encoding* Sarah McGee  
*Phospho-GCE development in eukaryotic cells* Jenna Beyer
- 12:00-1:00 Lunch**
- 1:00-2:00 Laboratory:** induce nhp-Ser cultures with IPTG at OD600 ~1  
**2:00-5:00 Lectures and OD checks/temperature shifts as needed**  
*Acetyl lysine: history and development of tools* Rick Cooley, Ryan Mehl, Ian Noonan  
*MS Database for PTM proteins* Stanis Stanisheuski  
*Library and selection primer* Nathan Alexander
- Dinner on own**
- Day 4 Thursday, July 31<sup>st</sup>**  
**Lab day no lectures;** Could be here until 7 pm.
- 8:00-8:30 Breakfast**  
**8:00-8:30 Overview** and plans for the day  
**8:30-7:00 Laboratory**  
 Harvest 24-hour expressions  
 Purify, Desalt  
 SDS-PAGE  
 Phos-Tag gels  
 If appropriate give Stanis samples evening for mass spec



**11-2**      **Lunch** when you are ready.

**Dinner** on your own

**Day 5**      **Friday, August 1<sup>st</sup>**

8:30-9:00      **Breakfast**

9:00-12:00      **Laboratory and data analysis**

Run gels if needed and  
Mass Spec of PTMs

12:00-1:00      **Lunch**

1:00-2:00      **Conversation about data and results** Rick Cooley

2:00-3:00      **Good, bad and the ugly** Ryan Mehl

3:00-4:00      **The future of GCE, knowledge base** Ryan Mehl, Enzo Birk

Farewell by 5 pm