



# **Cryoelectron Microscopy**

## **November 7 - 20, 2022**

### **Beckman Laboratory, Middle & Top Floor**

#### **INSTRUCTORS:**

Justin Kollman	University of Washington, Seattle, WA
Gabriel Lander	The Scripps Research Institute, La Jolla, CA
Melanie Ohi	University of Michigan, Ann Arbor, MI

#### **CO-INSTRUCTOR:**

Matthijn Vos	Institut Pasteur, Paris, France
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#### **ASSISTANTS:**

Sarah Connolly	University of Michigan, Ann Arbor, MI
Kelli Hvorecny	University of Washington, Seattle, WA
Christopher Zerio	Scripps Research, San Diego, CA

#### **PARTICIPANTS:**

Karolin Berneiser	University of Basel, Basel, Switzerland
Roland Calvert	Monash University, Clayton, Australia
Richard Debus	University of California, Riverside, CA
Ignacio Fernandez	Institut Pasteur, Paris, France
Clara Kielkopf	University of Rochester School of Medicine, Rochester, NY
Christopher Kirchhoff	University of Rochester Medical Center, Rochester, NY
Melissa Leger-Abraham	Harvard Medical School, Boston, MA
George Lountos	National Laboratory for Cancer Research, Frederick, MD
Qianqian Ma	Johns Hopkins University, Baltimore, MD
Brianna Romer	Princeton University, Princeton, NJ
Nadine Samara	National Institutes of Health, Bethesda, MD
Greg Snyder	University of Maryland, Baltimore, MD



**Cryoelectron Microscopy**  
**October 10 - 25, 2022**  
**Beckman Laboratory, Middle Floor**  
Lectures held in Plimpton Conference Room

**Monday, November 07, 2022**

10:30 am	Single Particle Cryo-EM: A Historical Perspective	<b>Bridget Carragher</b> <i>New York Structural Biology Center</i>
1:30 pm	Introduction to Cryo-EM Sample Preparation and Data Collection	<b>Melanie Ohi</b> <i>University of Michigan</i>
3:00 pm	Intro to Cryo-EM Processing	<b>Justin Kollman</b> <i>University of Washington</i>
4:30 pm	Cloud Computing for cryo-EM	<b>Michael Cianfrocco</b> <i>University of Michigan.</i>

**Tuesday, November 08, 2022**

9:00 am	From sample to data collection	<b>Matthijn Vos</b> <i>Institut Pasteur</i>
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**Wednesday, November 09, 2022**

7:00 pm	Cryo-EM Image processing 3: CistEM	<b>Timothy Grant</b> <i>Morgridge Institute / UW-Madison</i>
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**Thursday, November 10, 2022**

9:00 am	Reconstruction principles	<b>Gabriel Lander</b> <i>Scripps</i>
10:30 am	Automated Data Acquisition: Successes & Failures	<b>Melanie Ohi</b> <i>University of Michigan</i>
7:00 pm	Cryo-EM validation	<b>Timothy Grant</b> <i>Morgridge Institute / UW-Madison</i>

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Cold Spring Harbor Laboratory  
MEETINGS & COURSES PROGRAM

Friday, November 11, 2022

7:00 pm

Cryo-EM Image processing 5: RELION

**Elizabeth Kellogg**  
*Cornell University*

Sunday, November 13, 2022

9:00 am

Electron Detectors: History & Breakthroughs

**Christopher Russo**  
*MRC Laboratory of  
Molecular Biology*

7:00 pm

Electron microscopy at lower energies

Monday, November 14, 2022

12:00 pm

How to run an efficient Cryo-EM facility

*New York Structural  
Biology Center,  
New York City*

1:00 pm

Automated Data Acquisition

Tuesday, November 15, 2022

9:00 am

Cryo-EM validation

**Oliver Clarke**  
*Columbia University*

10:30 am

Atomic Model Validation

**Pavel Afonine**  
*Lawrence Berkeley  
National Laboratory*

5:00 pm

Intro to cryoDRGN

**Ellen Zhong**  
*Princeton University*

Wednesday, November 16, 2022

9:00 am

Introduction to refinement in Phenix

**Pavel Afonine**  
*Lawrence Berkeley  
National Laboratory*