



Laboratory for BioMolecular Structure

(LBMS)



Liguo Wang

June 14th, 2022



@BrookhavenLab

Laboratory *for* BioMolecular Structure

LBMS is a center for life science imaging that offers access to state-of-the-art cryo-electron microscopes and laboratory equipment for studies on the building blocks of all living organisms and their behavior.

- Funded by NY Empire State Development and Brookhaven National Laboratory
- Operations are funded by DOE-BER (Department of Energy's Biological and Environmental Research program)



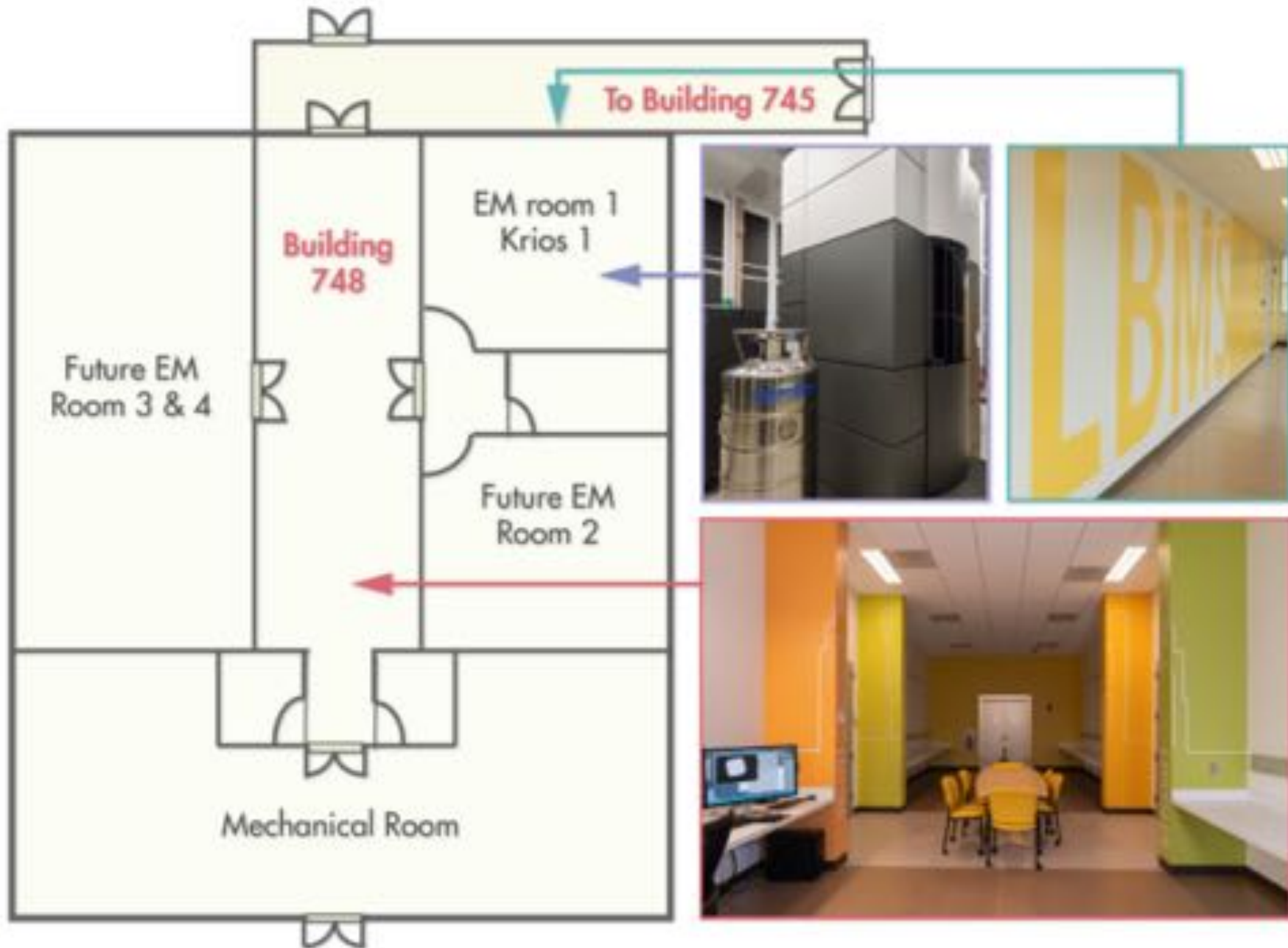
Laboratory *for* BioMolecular Structure

Vision: to be the leading cryo-EM facility for BER research community and the broader scientific community

Mission: to support and enhance BER mission research through the **development, operation and continued improvement** of a state-of-the-art electron microscopy facility **optimized for solving BER-related challenges.**



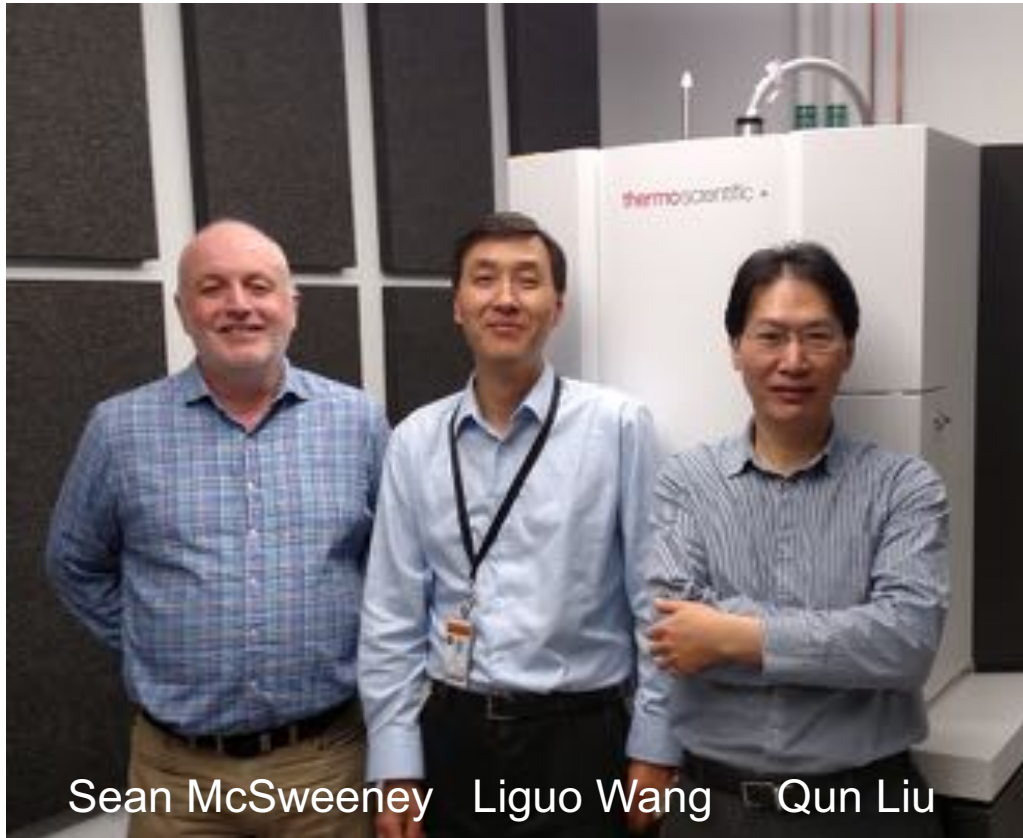
High-end Electron Microscope in building 748



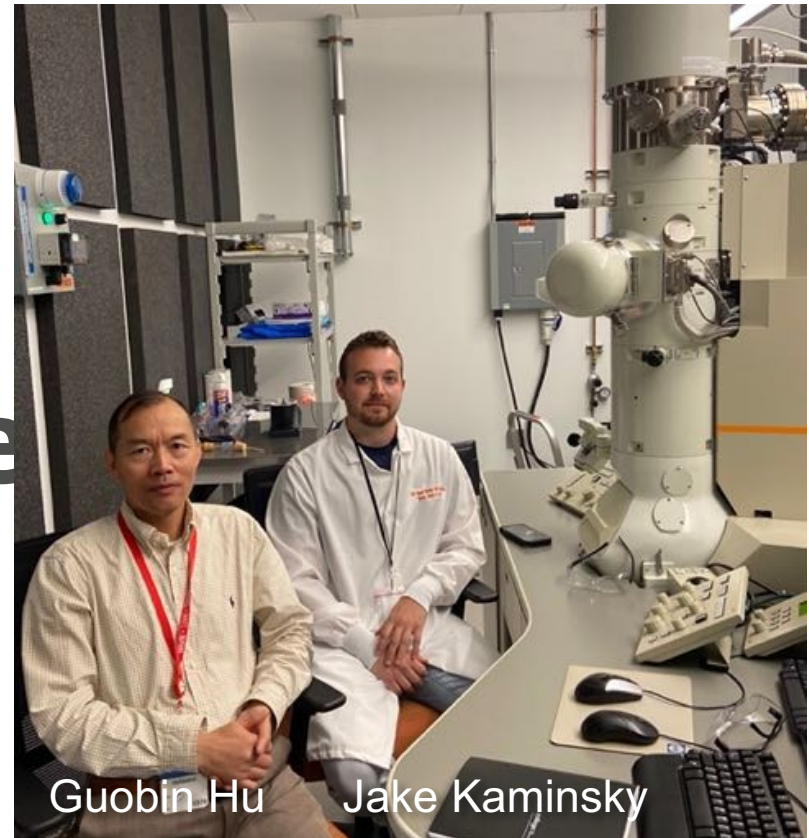
Screening EMs and accessories

'Powell' screening EM: TALOS L120C

'Stonewall' screening EM: JOEL 2100F



Sean McSweeney Ligu Wang Qun Liu



Guobin Hu Jake Kaminsky

Carbon coater



Glow Discharger



Vitrobot



GPU workstation



LBMS open for general research

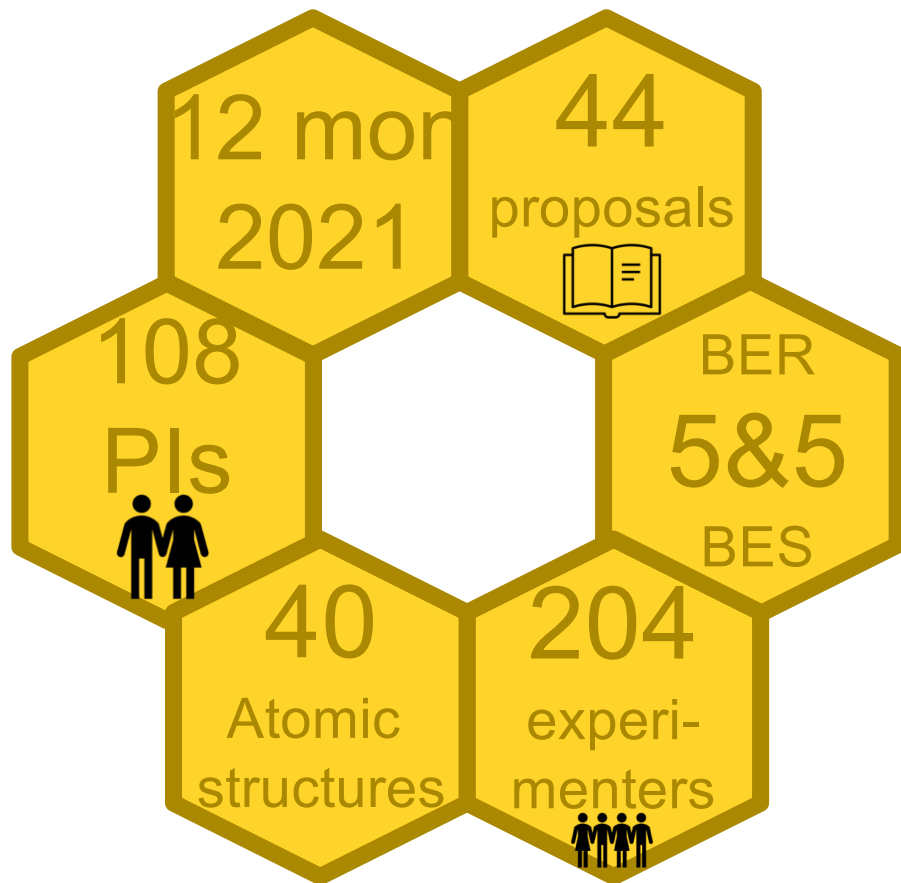
- 2 proposal cycles per year:
 - January – June (proposal deadline September 15)
 - July – December (proposal deadline March 15)
- For each cycle, the total number of shifts (1 shift = 8 hrs) is 300 shifts (100 days) for high-end EM and 100 shifts (100 days) for screening EMs.
- Proposal lifetime is 2 years (or until lifetime shifts are used, whichever comes first)
- For screening EMs, the users need to be onsite and complete the required training for the specified EM.
- Must specify shifts for lifetime of proposal and shifts for upcoming cycle.
- A “time request” must be submitted each cycle that microscope time is requested.
- All details can be found online in the LBMS User Guide at:
<https://www.bnl.gov/cryo-em/userguide/>

Types of Proposals

- **General User** (2 year lifetime) – most common form of user access for routinely-supported experiments
- **Block Allocation Groups (BAGs)** (2 year lifetime) – groups of researchers that want to combine their short microscope time requests into a single proposal to permit greater flexibility in beam time scheduling
- **Rapid Access** (1 cycle lifetime) – rapid access to instrument time for “hot topics” or for straightforward experiments with a fast turnaround time
- **Proprietary** – full cost-recovery instrument time
- DOE outreach activity (no proposal required)

LBMS: operational for one year

LBMS statistics



Krios training: remote
Screen EM training: onsite

4-day cryo-EM course



[Cryo-EM Course at LBMS](#)

6/15-18, 2021

[LBMS cryo-EM Training Workshop Series 2022](#)

2/4, 5/6, 8/5, 11/4/2022

Important websites and contact information

- LBMS website: <https://www.bnl.gov/cryo-em/>
- Online calendar: <https://lbmscalendar.bnl.gov>
- Registration & training: <https://www.bnl.gov/cryo-em/userguide/next-steps.php>
- PASS for proposal management: <https://pass.bnl.gov>
- Forms: <http://www.bnl.gov/cryo-em/forms.php>.
- LBMS mailing list: lbms-em-1@lists.bnl.gov
- **Quarterly cryo-EM workshop:** <https://www.bnl.gov/cryoemspcourse/>

- Nancye Wright, Proposal Coordinator
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