How to write a successful agriculture proposal to the Canadian Light Source (CLS)

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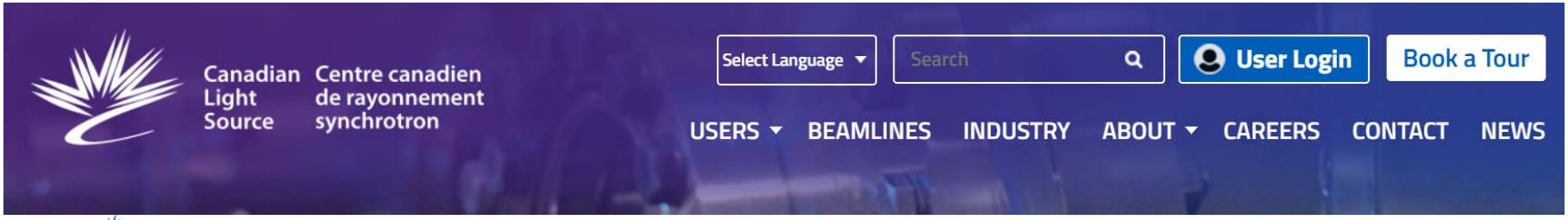
January 31, 2020

https://www.lightsource.ca/



Outline

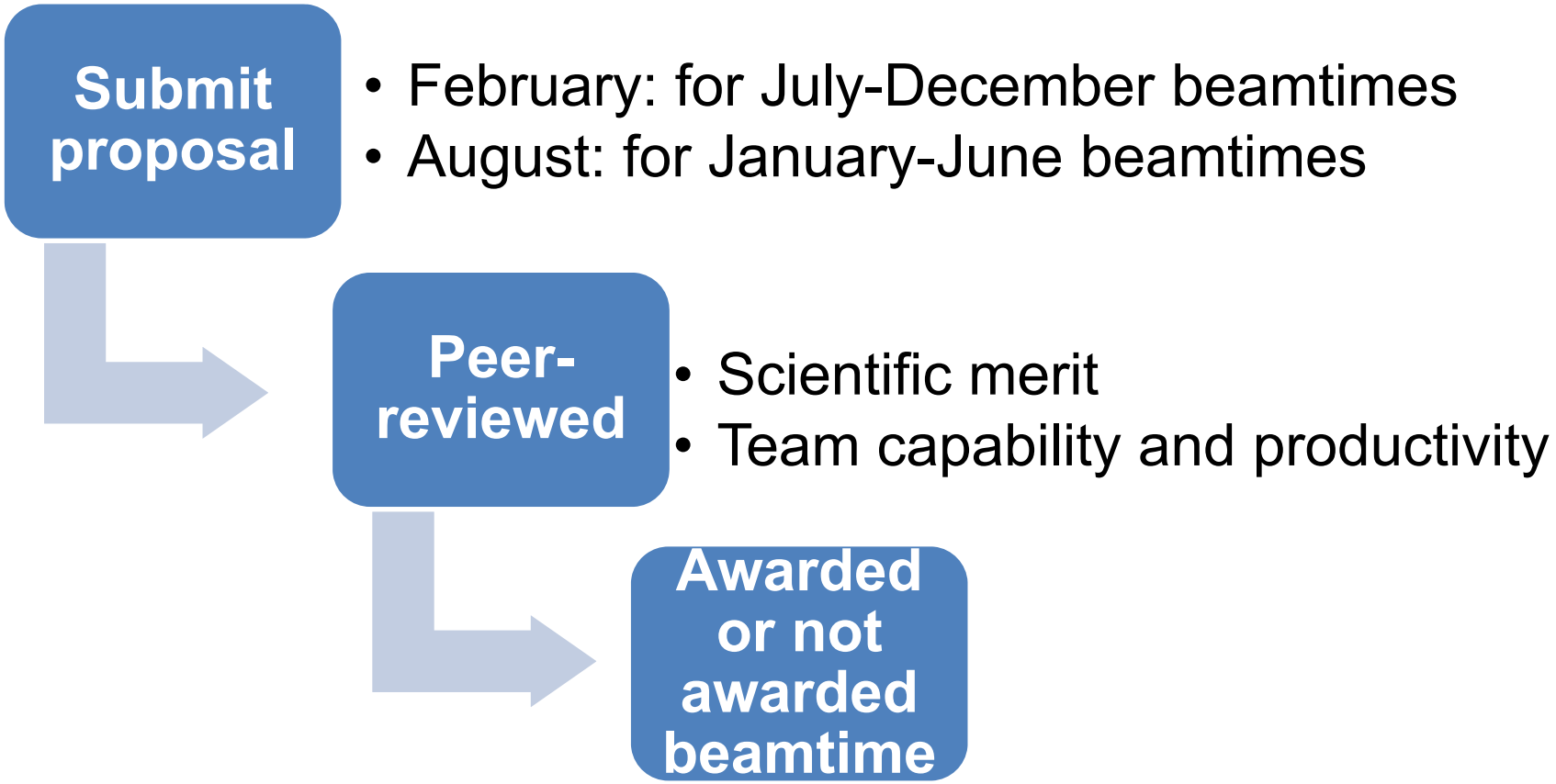
- Beamtime access mechanisms
- General user access
  - Peer review process
  - Writing successful proposals
  - Selecting beamlines
- Agriculture website
- Before and after beamtime
- Questions?
  - What other things we can do for you?

Beamtime access mechanisms

- General user access
  - Users submit proposals that are peer-reviewed and ranked
  - $1/1 shift (8 hours) of beamtime
- Purchased access
  - No proposal submission and no peer-review
  - For proprietary work
- Rapid access
  - Proposals submitted, internal review, for proof-of-concept works only

https://www.lightsource.ca/apply_for_beamtime.html

General User Proposals



Present call closes on February 26, 2020

Call for proposals: https://www.lightsource.ca/all_other_beamlines
Deadlines: https://www.lightsource.ca/call_for_proposals

Other than General User Access

Purchased access

- For proprietary work
- For fast access
- Industrial science group

Rapid access

- Proof-of-concept work
- Complete a paper or thesis (only few samples)
- Internally reviewed

Peer-review Process

Technical review

- Beamline responsible, feasibility @ the beamline

Peer-review

- 2 Peer review members scores
- Maximum of 3 external reviewers

Users notified

- Scores 1-5
- 1 is exceptional; 5 is poor

https://www.lightsource.ca/about_the_peer_review

General User Proposals

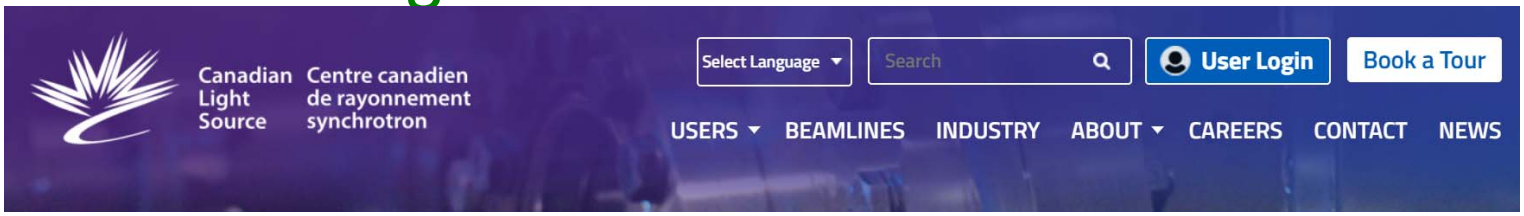
Submit proposals

- New proposal – submit a new proposal
  - Attach (max: 1 page) any relevant or preliminary results
- Existing proposal
  - Good score (~<2.0), request beamtime
  - Score >2.0 – clone and edit the proposal and re-submit through the peer-review process
  - Address peer-reviewers comments
  - Attach (max: 1 page) any relevant or preliminary results

General User Proposals

New user

- Become a CLS user
  - Create a login credential

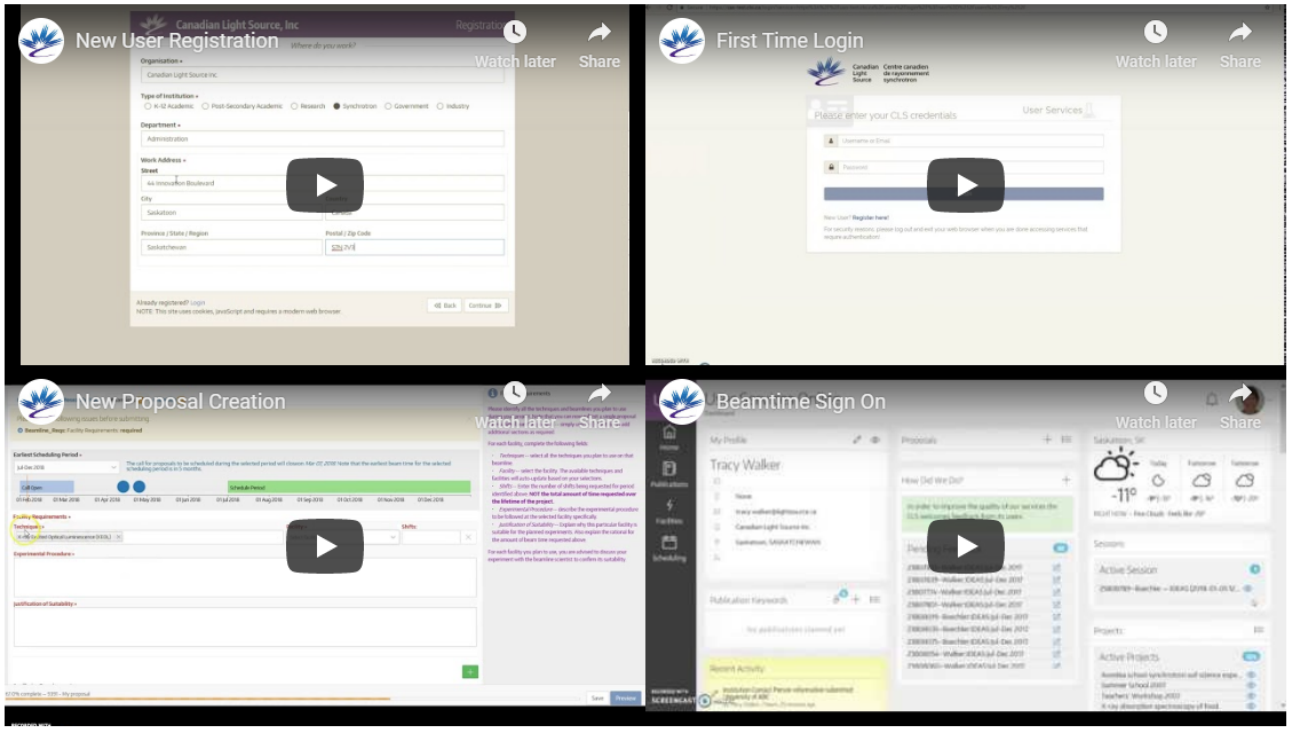


Video on new user registration:
https://www.lightsource.ca/clsi_web_portal__how_to_create_and_manage_your_proposals

General User Proposals

Creating and managing your proposal

Videos:
https://www.lightsource.ca/clsi_web_portal__how_to_create_and_manage_your_proposals

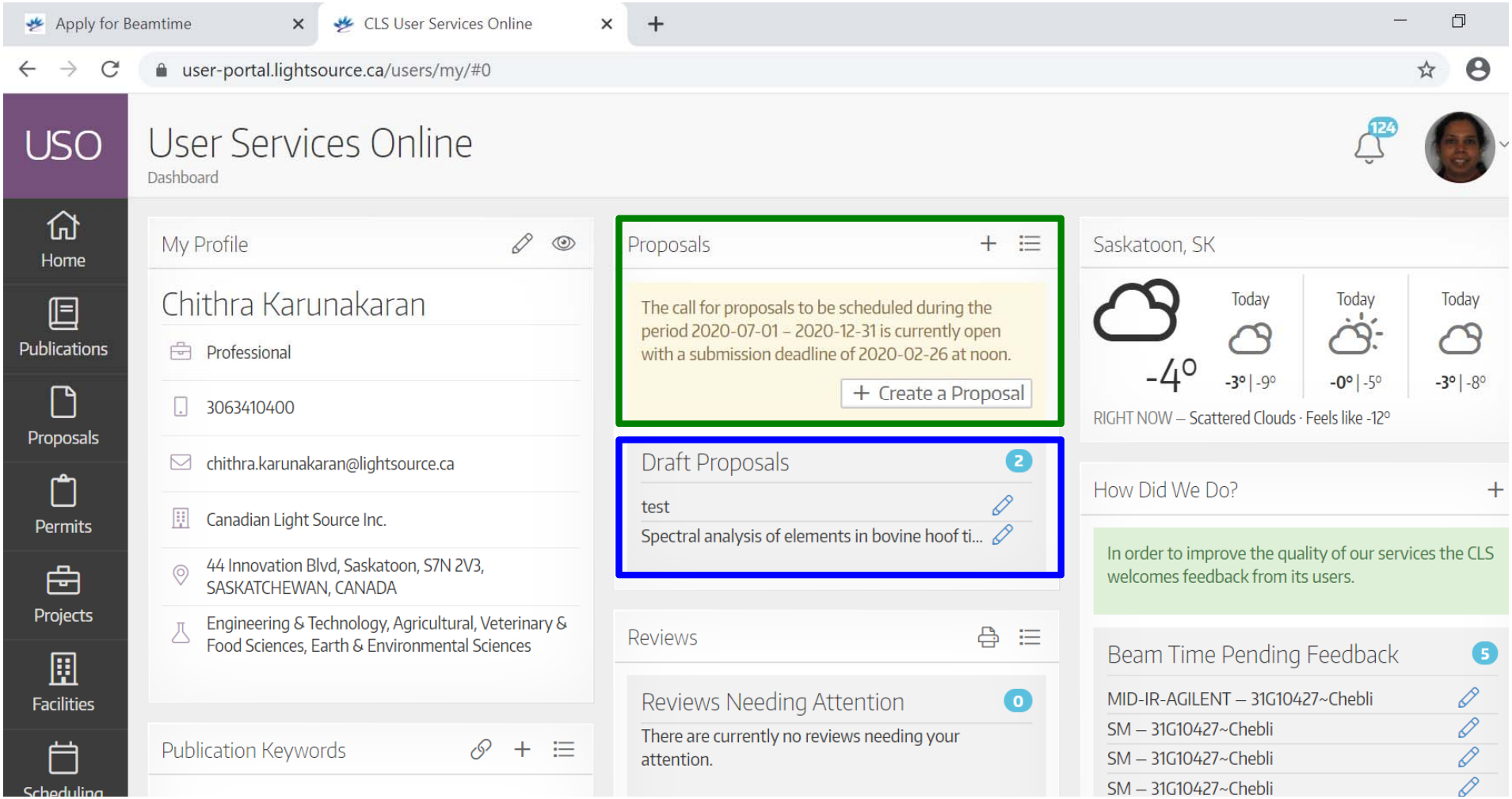


Questions: email: CLS.User-Office@lightsource.ca; phone: 306-657-3700

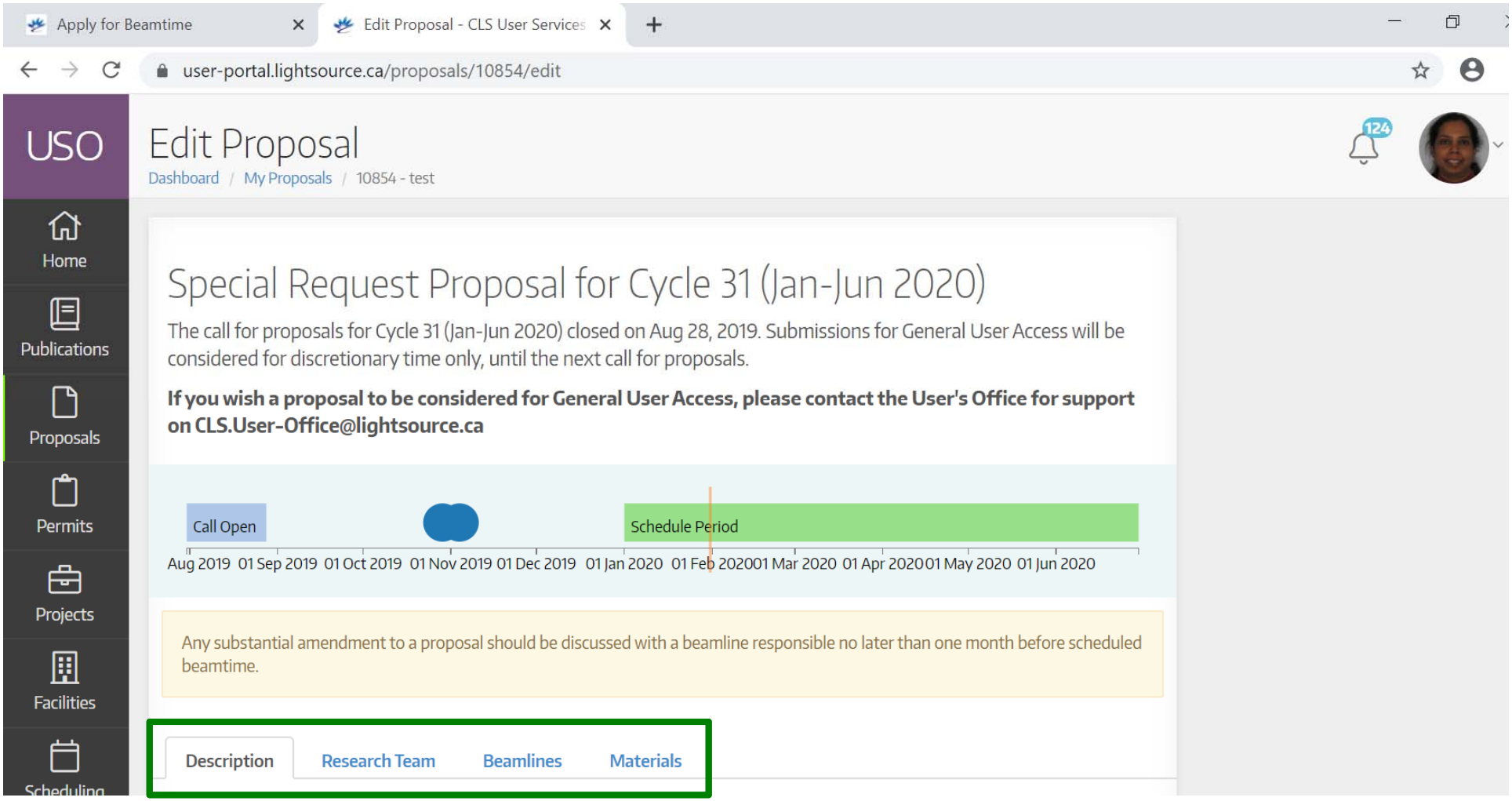
General User Proposals

New proposal

- Start a new proposal or edit a proposal



Proposals


Apply for Beamtime
Edit Proposal - CLS User Services
user-portal.lightsource.ca/proposals/10854/edit
USO
Edit Proposal
Dashboard / My Proposals / 10854 - test
124
Home
Publications
Proposals
Permits
Projects
Facilities
Scheduling
Special Request Proposal for Cycle 31 (Jan-Jun 2020)
The call for proposals for Cycle 31 (Jan-Jun 2020) closed on Aug 28, 2019. Submissions for General User Access will be considered for discretionary time only, until the next call for proposals.
If you wish a proposal to be considered for General User Access, please contact the User's Office for support on CLS.User-Office@lightsource.ca
Call Open
Schedule Period
Aug 2019 01 Sep 2019 01 Oct 2019 01 Nov 2019 01 Dec 2019 01 Jan 2020 01 Feb 2020 01 Mar 2020 01 Apr 2020 01 May 2020 01 Jun 2020
Any substantial amendment to a proposal should be discussed with a beamline responsible no later than one month before scheduled beamtime.
Description
Research Team
Beamlines
Materials

Agriculture research

Hard X-rays

Structural and functional imaging - BMIT

Elements and elemental speciation

- Heavy elements
- Detection limit: ppb for heavy elements

Soft X-rays

Elements and elemental speciation

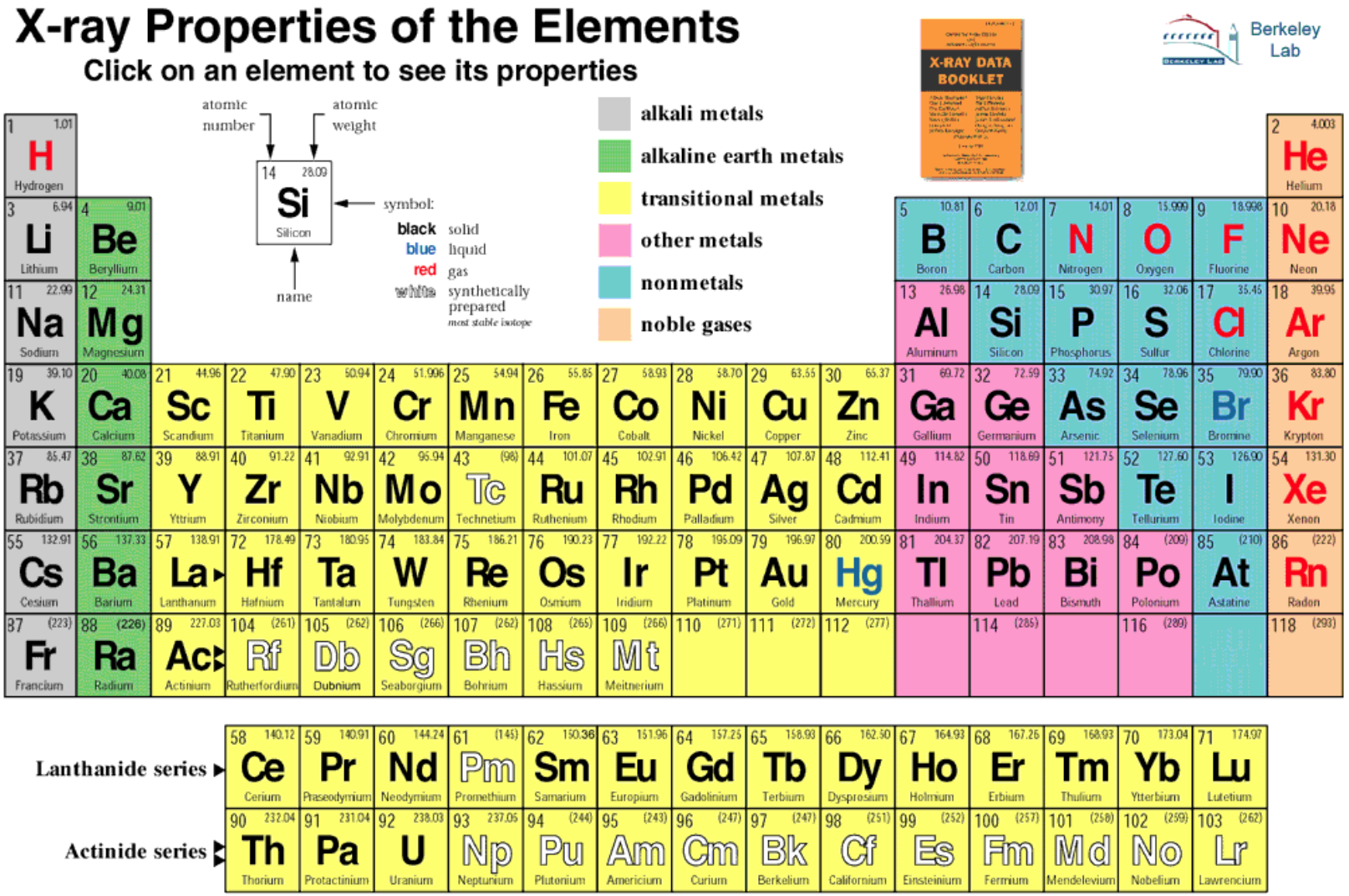
- B, C, N, O, K, Ca, Na, Mg, Fe, Al, Si, S, P
- Detection limit: >2% for organics and ppm for other elements

Infrared

Organic macromolecules

- e.g. total protein, lipids, carbohydrates, lignin, cellulose, hemicellulose, pectin
- Detection limit: >2%

Selecting Beamlines



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https://xdb.lbl.gov/Section1/Periodic_Table/X-ray_Elements.html

Beamlines

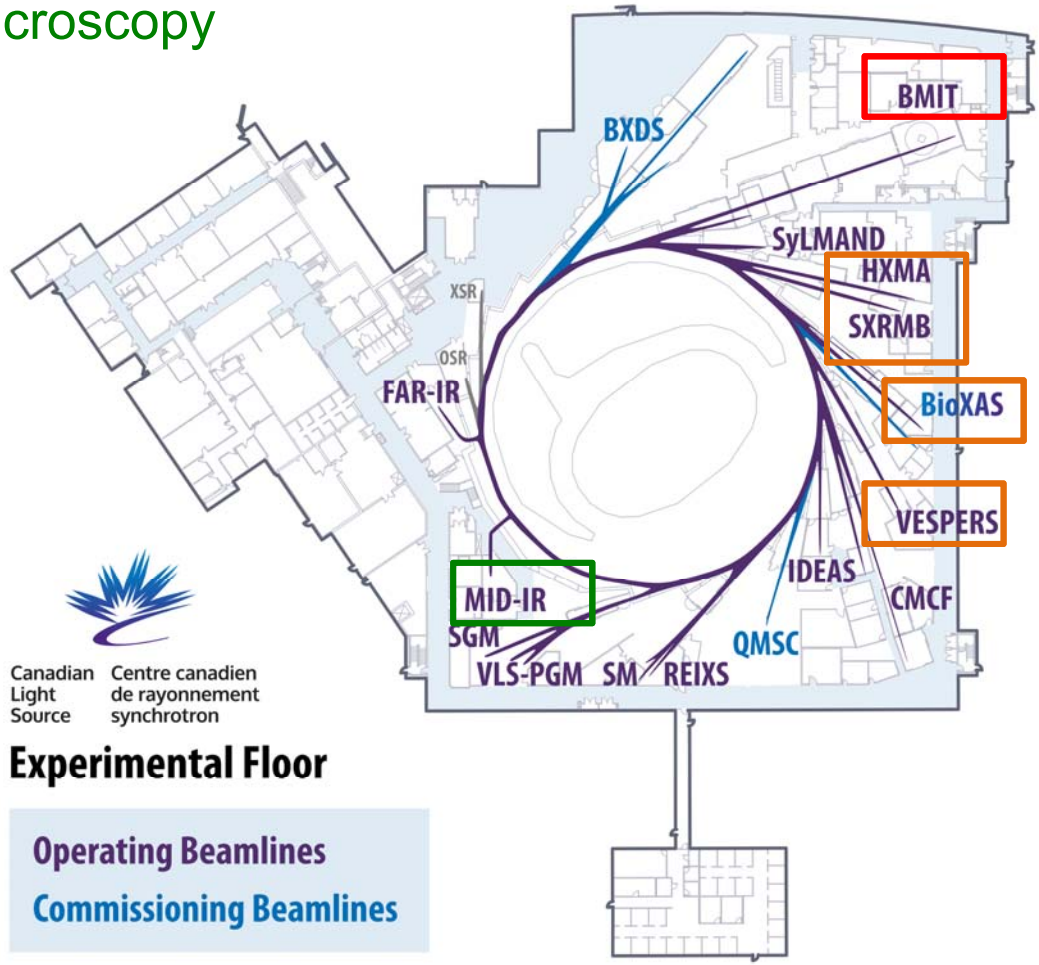
Mid-IR
– organic compounds, bulk and microscopy

X-rays, bulk and microscopy
– Soft X-rays
– SGM, VLS-PGM, SM

Tendor X-rays
– SXRMB

Hard X-rays
– VESPERS, Bio-XAS, HXMA

X-ray Computed tomography
BMIT (BM or ID)



https://www.lightsource.ca/beamlines.html

Agriculture Website

coming online….

- Goal: Growing the CLS agriculture community
  - FAQ
  - Example proposals for different beamlines or techniques
  - Proposal templates for different beamtimes with tips
- Forum?
  - Your input and help in growing the community are appreciated – please give constructive comments

http://agriculture.lightsource.ca

Before and after beamtime

- Before beamtime….
  - Keep your samples ready
  - Plan and prioritize your experiments at the CLS according to the experimental objectives
  - Contact CLS staff well in advance if you have questions
- After beamtime
  - Summarize your results within 3-6 months
  - Any reports or publications let CLS staff know and update in the CLS publication database

Watch for….

- Annual users meeting May 23, 2020
  - BMIT and X-ray absorption spectroscopy workshops

- CLS awards
  - Graduate students travel award
  - G. Michael Bancroft PhD Thesis Award

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Questions?

What other things we can do for you?