"Agriculture Science Hub" and its future at the Canadian Light Source

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Mission

Establish CLS as the centre of excellence in the world to provide advanced imaging and spectroscopic techniques and solutions to agriculture research.

Team

Agriculture research work at the CLS is a joint effort beamline staff and the dedicated "plant imaging" group.

Plant imaging group is responsible for developing capabilities within the CLS and to interface with the agriculture research communities..

Current capabilities

Website: https://agriculture.lightsource.ca

2017: Canola seed, 15 mm FOV and 8.7 microns pixel size, 40 min data collection

2020: Canola seed, 1.8 mm FOV and 720 nm pixel size, 2 min data collection

Agriculture Science Hub

- Team
- Outreach
- Current Capabilities
- Mission & Future Vision
- Collaborations
- Support Facilities
- International Initiatives

Support facilities

Dedicated sample preparation facilities are made available to users to maximize their beamtime efficiency. High throughput sample preparation tools for consistent sample preparation, cryogenic sample sectioning tools, and plant growth chambers are available for agriculture users.

Website: https://www.lightsource.ca/laboratories_and_equipment.html

Outreach

Seminars/webinars at institutions, how to write proposals, proof-of-concept experiments, proposals to data related service

Collaborations

University faculty members and researchers
Global Institute for Food Security (GIFS)
Agriculture and Agri-Food Canada
National Research Council (NRC)

International initiatives

Pan-American Light Sources for Agriculture (PALSA 2019)
LIGHTING THE PATH TO AGRICULTURAL INNOVATION

Coming soon....PALSA2021 in Brazil...

Future vision, CLS 2.0

High resolution imaging capabilities (2D and 3D) for fast and dynamics experiments. High resolution spectroscopy techniques like HERFD in addition to fast XAS.

Canadian Light Source | Centre canadien de rayonnement synchrotron
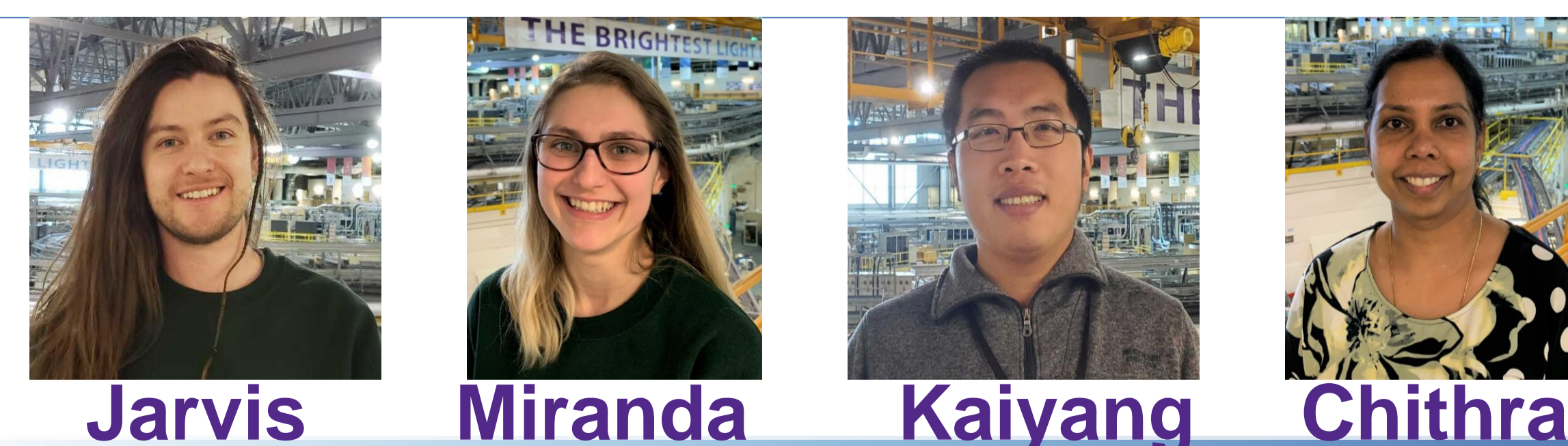
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