

| <b>Day 1: Tuesday August 1st</b>   |   |   |
|------------------------------------|---|---|
| <b>Time</b>                        | <b>Topic</b>  | <b>Presenter</b>  |
| <b>8:30 AM</b>                     | Breakfast with User Services Introduction and Training (Rm 2068)  | Lavina Carter, CLS User Services Administrator<br>Jordan Hamel, CLS User Services Assistant                   |
| <b>10:00 AM</b>                    | Welcome to the CLS (Rm 2068)  | Dr. Alex Moewes, University of Saskatchewan, Users Advisory Committee Chair                                   |
| <b>10:00 AM</b>                    | Introduction to Synchrotron Radiation and Machines; Accelerators as Advanced Radiation Sources; Ring "Optics" (Rm 2068) | Dr. Les Dallin, Accelerator Physicist, CLS  |
| <b>12:00 PM</b>                    | Lunch   |   |
| <b>1:15 PM</b>                     | Synchrotrons, Insertion Devices and Beamlines (Rm 2068)   | Dr. Emil Hallin, Phase II Beamline Development Leader, CLS  |
| <b>2:00 PM</b>                     | Beamline optical components for Hard and Soft X-rays (Rm 2068)  | Dr. L. Dean Chapman, University of Saskatchewan<br>Dr. Emil Hallin, Phase II Beamline Development Leader, CLS |
| <b>2:50 PM</b>                     | Coffee Break  |   |
| <b>3:10 PM</b>                     | Interaction of Synchrotron Radiation with Matter: Production and Properties (Rm 2068)                                   | Dr. Alex Moewes, University of Saskatchewan   |
| <b>4:00 PM</b>                     | Overview: Current and Future CLS Beamlines: Applications focus (Rm 2068)  | Dr. Emil Hallin, Phase II Beamline Development Leader, CLS  |
| <b>6:00 PM</b>                     | Dinner  | Marquis Private Dining Room, University of Saskatchewan   |
| <b>Day 2: Wednesday August 2nd</b> |   |   |
| <b>Time</b>                        | <b>Topic</b>  | <b>Presenter</b>  |
| <b>9:00 AM</b>                     | Protein Crystallography (Rm 2068)   | Dr. Louis Delbaere, University of Saskatchewan  |
| <b>10:15 AM</b>                    | Coffee Break  | Introduction of students and Lecturers  |
| <b>10:45 PM</b>                    | Synchrotron Infra-red: Techniques and Applications (Rm 2068)  | Dr. Kathy Gough, University of Manitoba   |
| <b>11:45 PM</b>                    | Lunch   |   |
| <b>1:15 PM</b>                     | Soft X-ray Spectroscopy (Rm 2068)   | Dr. Stephen Urquhart, University of Saskatchewan  |
| <b>2:30 PM</b>                     | Hard X-ray Absorption, Spectroscopy, and Spectromicroscopy (Rm 2068)  | Dr. Graham George, University of Saskatchewan   |
| <b>3:45 PM</b>                     | Coffee Break  |   |
| <b>4:00 PM</b>                     | Proposal/Feasibility Session  | Wine & Cheese reception at Marquis Private Dining Room, University of Saskatchewan                            |

| <b>Day 3: Thursday August 3</b> |  |  |   |  |
|---------------------------------|--|--|---|--|
|                                 | <b>Hard X-Ray stream</b>   |  | <b>Soft X-Ray and IR streams</b>  |  |
| <b>Time</b>                     | <b>Topic</b>   | <b>Presenter</b>                                 | <b>Topic</b>  | <b>Presenter</b>   |
| <b>9:00 AM</b>                  | Beamline introduction and control software (Rm 2068)                                 | Dr. Ning Chen, Staff Scientist, CLS              | Photo Emission Spectroscopy (Rm 2046)   | Dr. Robert Blyth, Staff Scientist, CLS                                       |
| <b>10:15 AM</b>                 | Coffee Break   |  |   |  |
| <b>10:45 AM</b>                 | Sample preparation techniques (Rm 2068)  | Dr. Jeff Warner, Industry Liaison Scientist, CLS | Beamline introduction and control software (Rm 2046)  | Dr. Robert Blyth, Staff Scientist, CLS                                       |
| <b>12:00 PM</b>                 | Lunch  |  |   |  |
| <b>1:15 PM</b>                  | EXAFS case study (Rm 2068)   | Dr. Ning Chen, Staff Scientist, CLS              | Soft X-Ray Case Studies (Rm 2046)   | Dr. Robert Blyth, Staff Scientist, CLS                                       |
| <b>2:30 PM</b>                  | Beamline specific orientation (HXMA beamline)  | Dr. Ning Chen, Staff Scientist, CLS              | Beamline specific orientation (SGM and Mid IR beamlines)  | Dr. Robert Blyth, Staff Scientist, CLS and Dr. Tim May, Staff Scientist, CLS |
| <b>3:00 PM</b>                  | Supervised Data collection   |  |   |  |
| <b>5:00 PM</b>                  | Pizza delivery!!   |  |   |  |
|                                 |  |  |   |  |
| <b>Day 4: Friday August 4th</b> |  |  |   |  |
|                                 | <b>Hard X-Ray stream</b>   |  | <b>Soft X-Ray and IR streams</b>  |  |
| <b>Time</b>                     | <b>Topic</b>   | <b>Presenter</b>                                 | <b>Topic</b>  | <b>Presenter</b>   |
| <b>9:00 AM</b>                  | Data processing: XANES and EXAFS data reduction (Rm 2068)                            | Dr. Jeff Warner, Industry Liaison Scientist, CLS | Data Processing (Rm 2046)   | Dr. Robert Blyth, Staff Scientist, CLS                                       |
| <b>10:15 AM</b>                 | Coffee Break   |  |   |  |
| <b>10:45 AM</b>                 | Fitting: XANES and EXAFS (Rm 2068)   | Dr. Jeff Warner, Industry Liaison Scientist, CLS | Fitting (Rm 2046)   | Dr. Robert Blyth, Staff Scientist, CLS                                       |
| <b>12:30 PM</b>                 | Lunch - Picnic anyone?   |  |   |  |
| <b>2:00 PM</b>                  | Current IR Research (Rm 2068)  |  | Dr. Kathleen Gough, Professor, Associate Head Department of Chemistry, University of Manitoba   |  |
| <b>3:00 PM</b>                  | The Good, The Bad and The Ugly - the Many Faces of Metals in Living Things (Rm 2068) |  | Dr. Graham George, Canada Research Chair in X-Ray Absorption Spectroscopy, Professor Department of Geological Sciences, University of Saskatchewan          |  |
| <b>4:00 PM</b>                  | Science Talk: Topic TBA (Rm 2068)  |  | Dr. Alex Moewes, Canada Research Chair in Materials Science with Synchrotron Radiation, Professor Physics & Engineering Physics, University of Saskatchewan |  |
| <b>5:00 PM</b>                  | End - Safe travels!!!  |  |   |  |

| <b>Day 1: Tuesday August 1st</b>   |  |
|------------------------------------|--|
| <b>Time</b>                        | <b>Topic</b>   |
| <b>8:30 AM</b>                     | User Services Introduction and Safety Training   |
| <b>10:00 AM</b>                    | Coffee Break - Welcome to the CLS  |
| <b>10:00 AM</b>                    | Overview: Introduction to Synchrotron Radiation and Machines Accelerators as Advanced Radiation Sources; Ring "Optics" |
| <b>12:00 PM</b>                    | Lunch  |
| <b>1:15 PM</b>                     | Synchrotrons, Insertion Devices and Beamlines  |
| <b>2:00 PM</b>                     | Beamline optical components for Hard and Soft X-rays   |
| <b>2:50 PM</b>                     | Coffee Break   |
| <b>3:10 PM</b>                     | Interaction of Synchrotron Radiation with Matter: Production and Properties  |
| <b>4:00 PM</b>                     | Overview: Current and Future CLS Beamlines: Applications focus   |
| <b>6:00 PM</b>                     | Dinner   |
| <b>Day 2: Wednesday August 2nd</b> |  |
| <b>Time</b>                        | <b>Topic</b>   |
| <b>9:00 AM</b>                     | Protein Crystallography  |
| <b>10:15 AM</b>                    | Coffee Break: Introduction of students and Lecturers   |
| <b>10:45 PM</b>                    | Synchrotron Infra-red: Techniques and Applications   |
| <b>11:45 PM</b>                    | Lunch  |
| <b>1:15 PM</b>                     | Soft X-ray Techniques  |
| <b>2:30 PM</b>                     | Hard X-ray Techniques  |
| <b>3:45 PM</b>                     | Coffee Break: Introduction of students and Lecturers   |
| <b>4:00 PM</b>                     | Proposal/Feasibility Session Wine & Cheese   |
| <b>Day 3: Thursday August 3</b>    |  |
| <b>Time</b>                        | <b>Topic (streamed)</b>  |
| <b>9:00 AM</b>                     | Beamline Introductions and Controls software   |
| <b>10:15 AM</b>                    | Coffee Break   |
| <b>10:45 AM</b>                    | Sample preparation   |
| <b>12:00 PM</b>                    | Lunch  |
| <b>1:15 PM</b>                     | Spectral case studies  |
| <b>2:30 PM</b>                     | Beamline Specific Orientation  |
| <b>3:00 PM</b>                     | Data Collection  |
|                                    | Pizza Dinners provided during data collection  |
| <b>Day 4: Friday August 4th</b>    |  |
| <b>Time</b>                        | <b>Topic</b>   |
| <b>9:00 AM</b>                     | Data Analysis (streamed)   |
| <b>10:15 AM</b>                    | Coffee Break   |
| <b>10:45 AM</b>                    | Data Analysis (streamed)   |
| <b>12:30 PM</b>                    | Lunch  |
| <b>1:30 PM</b>                     | Closing activities   |
| <b>2:00 PM</b>                     | Science Talk - Dr. Urquhart  |
| <b>3:00 PM</b>                     | Science Talk - Dr. George  |
| <b>4:00 PM</b>                     | Science Talk - Dr. Gough   |
| <b>5:00 PM</b>                     | End - Safe travels!!   |

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| <b>10:00 AM</b> | Welcome to the CLS   | Dr. Alex Moewes, University of Saskatchewan, Users Advisory Committee Chair                                   |
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| <b>1:15 PM</b>  | Synchrotrons, Insertion Devices and Beamlines  | Dr. Emil Hallin, Phase II Beamline Development Leader, CLS  |
| <b>2:00 PM</b>  | Beamline optical components for Hard and Soft X-rays   | Dr. L. Dean Chapman, University of Saskatchewan<br>Dr. Emil Hallin, Phase II Beamline Development Leader, CLS |
| <b>2:50 PM</b>  | Coffee Break   |   |
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| <b>4:00 PM</b>  | Overview: Current and Future CLS Beamlines: Applications focus   | Dr. Emil Hallin, Phase II Beamline Development Leader, CLS  |
| <b>6:00 PM</b>  | Dinner   | Marquis Private Dining Room, University of Saskatchewan   |

**Day 2: Wednesday August 2nd**

| <b>Time</b>     | <b>Topic</b>  | <b>Presenter</b>   |
|-----------------|---|--|
| <b>9:00 AM</b>  | Protein Crystallography                             | Dr. Louis Delbaere, University of Saskatchewan                                     |
| <b>10:15 AM</b> | Coffee Break  | Introduction of students and Lecturers   |
| <b>10:45 PM</b> | Synchrotron Infra-red: Techniques and Applications  | Dr. Kathy Gough, University of Manitoba  |
| <b>11:45 PM</b> | Lunch   |  |
| <b>1:15 PM</b>  | Soft X-ray Spectroscopy                             | Dr. Stephen Urquhart, University of Saskatchewan                                   |
| <b>2:30 PM</b>  | Hard X-ray Absorption, Spectroscopy, and Microprobe | Dr. Graham George, University of Saskatchewan                                      |
| <b>3:45 PM</b>  | Coffee Break  |  |
| <b>4:00 PM</b>  | Proposal/Feasibility Session                        | Wine & Cheese reception at Marquis Private Dining Room, University of Saskatchewan |

| <b>Day 3: Thursday August 3</b> |  |  |  |  |
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|                                 | <b>Hard X-Ray stream</b>                             |  | <b>Soft X-Ray and IR streams</b>                         |  |
| <b>Time</b>                     | <b>Topic</b>   | <b>Presenter</b>                                 | <b>Topic</b>   | <b>Presenter</b>   |
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| <b>2:30 PM</b>                  | Beamline specific orientation (HXMA beamline)        | Dr. Ning Chen, Staff Scientist, CLS              | Beamline specific orientation (SGM and Mid IR beamlines) | Dr. Robert Blyth, Staff Scientist, CLS and Dr. Tim May, Staff Scientist, CLS |
| <b>3:00 PM</b>                  | Supervised Data collection                           |  |  |  |
| <b>5:00 PM</b>                  | Pizza delivery!!                                     |  |  |  |

| <b>Day 4: Friday August 4th</b> |  |  |   |  |
|---------------------------------|--|--|---|--|
| <b>Hard X-Ray stream</b>        |  |  | <b>Soft X-Ray and IR streams</b>  |  |
| <b>Time</b>                     | <b>Topic</b>   | <b>Presenter</b>                                 | <b>Topic</b>  | <b>Presenter</b>                       |
| <b>9:00 AM</b>                  | Data processing: XANES and EXAFS data reduction (Rm 2068)                            | Dr. Jeff Warner, Industry Liaison Scientist, CLS | Data Processing (Rm 2046)   | Dr. Robert Blyth, Staff Scientist, CLS |
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| <b>10:45 AM</b>                 | Fitting: XANES and EXAFS (Rm 2068)   | Dr. Jeff Warner, Industry Liaison Scientist, CLS | Fitting (Rm 2046)   | Dr. Robert Blyth, Staff Scientist, CLS |
| <b>12:30 PM</b>                 | Lunch - Picnic anyone?   |  |   |  |
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| <b>5:00 PM</b>                  | End - Safe travels!!!  |  |   |  |

|                  |  |                                 | dinner | W&Ch | PPT      |
|------------------|--|---------------------------------|--------|------|----------|
| Robert Blythe    | Staff Scientist  | CLS                             | yes    |      |          |
| Dean Chapman     | Canada Research Chair in X-Ray Imaging, Professor Department of Anatomy and Cell Biology                       | University of Saskatchewan      | no     | yes  |          |
| Ning Chen        | Staff Scientist, Adjunct Professor Department of Geological Sciences   | CLS, University of Saskatchewan | yes    |      |          |
| Les Dallin       | Accelerator Physicist, Adjunct Professor Physics & Engineering Physics   | CLS, University of Saskatchewan | no     | yes  |          |
| Louis Delbaere   | Canada Research Chair in Structural Biochemistry, Professor Department of Biochemistry                         | University of Saskatchewan      | no     | yes  | yes      |
| Graham George    | Canada Research Chair in X-Ray Absorption Spectroscopy, Professor Department of Geological Sciences            | University of Saskatchewan      |        |      |          |
| Kathleen Gough   | Professor, Associate Head Department of Chemistry  | University of Manitoba          | yes    | yes  | yes      |
| Emil Hallin      | Phase II Beamline Development Leader, Adjunct Professor Physics & Engineering Physics                          | CLS, University of Saskatchewan | yes    | yes  |          |
| Tim May          | Staff Scientist  | CLS                             | no     | no   | n/a      |
| Alex Moewes      | Canada Research Chair in Materials Science with Synchrotron Radiation, Professor Physics & Engineering Physics | University of Saskatchewan      | no     | yes  | bringing |
| Stephen Urquhart | Associate Professor of Chemistry   | University of Saskatchewan      | yes    | yes  | yes      |
| Jeff Warner      | Industry Liaison Scientist   | CLS                             | yes    | yes  |          |
| tracy walker     |  |                                 | yes    | yes  |          |
| lavina           |  |                                 | no     | no   |          |
| dan              |  |                                 | yes    | yes  |          |