Overview of Chemistry Facilities

- 8 support facilities
- Run by staff members
- Hours vary by facility
- Spread over 3 buildings
Science Stores

Science Stores
Science Stores: Where?

- ChB 003
  - basement of Chemistry Building

Exit to Perth Drive

Elevators

Science Stores
Science Stores: What?

Main area – Service Window

- Purchase from stock inventory:
  - basic chemicals & gases
  - solvents
  - lab supplies
  - office supplies
  - dry ice
- Questions concerning orders, suppliers, etc.
- Place orders for non-stock items
- Pick up completed orders
- Shipping samples, equipment, etc. by courier
Science Stores: What?

002
- Loading dock
- Cryogens
- Dry ice

002B
- Liquid N\textsubscript{2} dispensing

003C
- Solvent dispensing

003A
- Gas cylinders
- Gas carts
Science Stores: When & Who?

- Monday – Friday: 9:30 am to noon, 2:00 to 4:00 pm
- E-mail: chemstor@uwo.ca

Monica

- Manager
- Accounts
- ChB 004

Yuhua

- Administrative Consultants
- Purchase stock items
  - need Western ID & signing authority
- Place orders
- Enquiries
- ChB 003

Robin

- Administrative Consultant
- Receiving
- Gases
- ChB 003A

Sherrie

- Manager
- Accounts
- ChB 004

Administrative Consultants

- Purchase stock items
  - need Western ID & signing authority
- Place orders
- Enquiries
- ChB 003
Solvent Dispensing Facility: What?

- 4L solvent bottles are filled from bulk tanks

- Available solvents
  - Acetone
  - Hexanes
  - Isopropanol
  - DCM
  - Ethyl Acetate
  - Methanol
Solvent Dispensing: When & How?

- Fills are completed every Wednesday morning
  - empty solvent bottle must be labelled appropriately
  - empty solvent bottle must be marked with lab name

- Pick up filled bottles whenever
  - must carry filled bottle with solvent carrier or in a cart
Liquid Nitrogen Dispensing: What?

- Facility where users fill their own liquid nitrogen dewars

The Facility

Bulk $\text{N}_2(\ell)$ tank
Liquid Nitrogen Dispensing: What?

- Automated filling system for any size dewar

The Facility

Closed dewars
> 100 L

Open dewars
≤ 100 L

Control Panel

Western Science
Liquid N₂ Dispensing: When & How?

- Must have the following:
  - Western card
  - valid WHMIS
  - valid declaration of signing authority (DoSA)

- Must attend a training session
  - first Wednesday of each month
  - 2:00 pm
  - no sign up necessary

- 24-hour access
  - Western card access only before 8:00 am and after 4:00 pm
Electronics Shop
Electronics Shop: Where?

- ChB 023
  - basement of Chemistry Building
Electronics Shop: Who & What?

- Electronics and machining
  - repair of scientific equipment
  - design and manufacturing of specialized scientific equipment
  - consultation

Melanie
Technician
  - Electronics
  - Machining

Barakat
Technician
  - Electronics
  - Undergrad lab instrumentation
Electronics Shop: When & How?

- Monday – Friday: 10:30 am to noon, 1:00 pm to 4:30 pm

- Electronics and machining
  - discuss your repair/project with Melanie or Barakat
  - fill out electronic work order
Glass Blowing Shop
Glass Blowing Shop: Where?

- PAB 7
  - ground floor of Physics and Astronomy Building
Glass Blowing Shop: What?

- Glassware repair
- Customized glassware
Glass Blowing Shop: How, Who, When?

Todd

- Monday, Tuesday, Thursday, Friday: 8:00 am to 12:00 pm, 1:00 pm to 4:00 pm
- Bring broken glassware to shop
- Discuss custom glassware project with Todd
Mass Spectrometry
Mass Spectrometry: Where?

- ChB 13
  - ground floor of Chemistry Building
Mass Spectrometry: What?

- High-resolution mass spectrometry
  - inorganic, organic, organometallic, small proteins
  - masses up to m/z = 20 000

microOTOF
All samples are analyzed by Chathu

- Go to Mass Spectrometry facility and chat with Chathu
- Fill out sample submission form: (https://www.uwo.ca/chem//resources/facilities/docs/mass_spec_form.pdf)
- Leave sample(s) on table
X-ray Diffraction
X-ray Diffraction: Where?

- ChB 12
  - ground floor of Chemistry Building
Single-crystal X-ray diffraction

- one single-crystal diffractometer
- unit cell determination, data collection
- complete structure determination
- CSD database for data comparison
- computers for structure refinement
**X-ray Diffraction: What?**

*Powder X-ray diffraction*

- one powder X-ray diffractometer
- unit cell determination
- structural database for data comparison
X-ray Diffraction: Who?

**Paul**
Manager
- User training
- Single crystal data collection/refinement
- Equipment maintenance/repair
- Monday – Friday: 9:00 am to 4:30 pm

**Aneta**
Technician
- Powder data collection
- Powder data analysis
- MWF, 8:30 am to 12:00 pm
X-ray Diffraction: How?

- Single-crystal X-ray crystallography
  - submit samples to electronic sample queue
  - trained users can collect and refine their own data (Ph.D. only)
  - untrained users submit crystals to Paul

- Powder X-ray diffraction
  - submit samples to electronic sample queue
  - access to instrument is managed by Aneta
  - trained users can collect and analyze their own data
  - untrained users submit samples to Aneta
JB Stothers NMR Facility
JB Stothers NMR Facility: Where?

- MSA 0216
  - ground floor of Materials Science Addition
  - down the hall from X-ray and Mass spec
JB Stothers NMR Facility: What?

- Liquids NMR spectroscopy
  - mostly user run

- Solids NMR spectroscopy
  - I+400
  - spectra acquired by NMR Facility staff
JB Stothers NMR Facility: Who?

Mat
Manager
- Consultation
- Experiment setup/optimization
- User training
- Monday – Friday: 8:45 am to 4:45 pm

Aneta
Technician
- Calibrations
- Cryogen fills
- User training
- Tuesday: 8:30 am to 3:30 pm
Service work
- discuss sample(s) with staff
- fill out Service Request Form

Acquiring your own data
- attend user training session (early Sept.)
- NMR tubes and deuterated solvents from Science Stores
Questions?