## Laboratory Operations Checklist

Labs: SSMB 329, 329A, and 331

Date Training Initiated: _____________________

Student: _______________________  Student ID#: ____________

<table>
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<tr>
<th>Activity</th>
<th>Description</th>
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<td><strong>Mandatory Training</strong></td>
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| **Safety and Chemical Hygiene**| Location of safety shower, eyewash, fire extinguisher, spill kit, first aid kit, respirators, safety glasses  
General departmental research training completion  
Incident reporting guidelines and procedures  
Monthly lab review and audit procedure  
Knowledge of training records and guidelines location, and auditing |                  |      |             |
| **Environmental**              | Waste disposal guidelines for organic, halogenated, aqueous, and solids including location and record keeping  
Spill remediation and disposal  
Incident reporting guidelines and procedures |                  |      |             |
| **Securing lab for night and weekend operation** | Notifications, precautions, and reporting  
Review of lab staffing requirements for different operations  
Proper equipment shutdown procedures  
Reaction control and security |                  |      |             |
| **Housekeeping**               | Glassware assembly and cleaning  
Lab organization, equipment location, and cleanup protocols |                  |      |             |
| **Student and technique training on specific operations - not all mandatory** | Proper operation of vacuum manifold/Schlenk line  
Operation of LN2 cold trap, including draining of the trap, set up of lines to reactors, and refilling cooling medium  
Operation of recirculating chiller units and leak checking  
Operation of rotovaps  
Use of solvent drying column system for THF, Et₂O, toluene, hexane and CH₂Cl₂  
Verification of gas flow in bubbler systems  
Change out of gas cylinders including use of Teflon tape, appropriate torque, and setting pressures on single and double stage regulators  
Determination of thread type on gas cylinders and regulator choice  
Use of hot oil bath and heating mantels  
Proper operation of Soxhlet extraction column  
Proper freeze-pump-thaw procedure  
Proper selection of solvent drying agents and drying protocols  
Operation, care, and maintenance of autopipettes  
Operation, care, and maintenance of vacuum pumps  
Cleaning procedures for glass slides, coverslips, and Si substrates  
Proper operation of vacuum oven  
Procedure for use of glovebags  
Procedure for use of vacuum dessicator |                  |      |             |
| **Lab techniques**             | IR/ATR operation and maintenance  
NMR training completed and verified  
Confocal microscope training completed  
Spin-caster training completed  
UV/VIS spectrophotometer training completed  
DLS training completed  
AFM training completed  
Fluorimeter training completed |                  |      |             |
| **Instrumental**               |                                                                                                                                                                                                            |                  |      |             |