Cavagnero Lab Chemical Hygiene Plan

**Department**

<table>
<thead>
<tr>
<th>Building and Room Number(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMISTRY BLDG/DANIELS; LABS</td>
</tr>
<tr>
<td>5326 (INSTRUMENT LAB)</td>
</tr>
<tr>
<td>5361 (WET-LAB/FAST-KINETICS LAB)</td>
</tr>
<tr>
<td>5371 (WET-LAB/BIOCHEMISTRY LAB)</td>
</tr>
<tr>
<td>5372 (COLD ROOM)</td>
</tr>
<tr>
<td>5375 (WET-LAB/CELL GROWTH)</td>
</tr>
</tbody>
</table>

**Principal Investigator, Laboratory Manager or other Person in Charge**

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILVIA CAVAGNERO</td>
<td>608-262-5430</td>
</tr>
</tbody>
</table>

**Chemical Hygiene Officer**

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARELYS ROSADO</td>
<td>787-220-3293</td>
</tr>
</tbody>
</table>

**Date of Most Recent Review (at least annually)**

01/21/11

### Safety Personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silvia Cavagnero</td>
<td>Principal Investigator</td>
<td>608-358-9830</td>
</tr>
<tr>
<td>Jeffrey Zebrowski</td>
<td>University Chemical Hygiene Officer</td>
<td>608-890-0993</td>
</tr>
<tr>
<td>UWPD Dispatch</td>
<td>Emergency</td>
<td>911</td>
</tr>
<tr>
<td>UWPD Dispatch</td>
<td>Non-Emergency (UWPD has access to EH&amp;S pager for off-hour situations.)</td>
<td>608-264-2677</td>
</tr>
<tr>
<td>Laboratory Staff/Students (individual subject to the plan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silvia Cavagnero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rayna Addabbo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arelys Rosado</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daria Fedyukina</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HonNam (Ken) Lam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jung Ho Lee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yusuke Okuno</td>
<td></td>
<td></td>
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<tr>
<td>Ryan Fager</td>
<td></td>
<td></td>
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<tr>
<td>Anders Knight</td>
<td></td>
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<tr>
<td>Brian Arnold</td>
<td></td>
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<tr>
<td>Yufan Wu</td>
<td></td>
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<tr>
<td>Jonathan Lang</td>
<td></td>
<td></td>
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<tr>
<td>Ben Luskin</td>
<td></td>
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</tr>
</tbody>
</table>
I. Laboratory Specific Policies

The safety procedures outlined in chapter 4 of the Chemical Safety and Disposal Guide are followed with these basic safety practices highlighted:

- Suitable eye protection must be worn at all times with no exception
- Contact lenses are allowed in the lab—it is the responsibility of the contact-wearing individual to inform coworkers of their choice to wear contacts so that proper actions can be taken in the event of an emergency.
- Shorts and sandals are not allowed in the lab

Routine precautions to minimize exposure to hazardous chemicals include:
- Never mouth pipette.
- Wash hands after using chemicals before eating, using the toilet or using tobacco.
- Keep food and beverages out of the laboratory.

Particularly hazardous Substances (see Section 4.6 and Appendix D) are capable of causing serious and/or permanent injury
- By short-term exposure including accidents (acute).
- By long-term exposure if used under normal laboratory conditions (chronic).

Additional safety precautions are used with particularly hazardous substances. The precautions should be appropriate to the hazards. Precautions to consider include:
- Working in a fume hood (e.g., volatile liquids, fine powders).
- Using extra eye protection (e.g., caustic liquids).
- Using specially selected gloves and/or double gloving to prevent skin absorption (see Chemical Resistance Glove Chart in Chapter 4).
- Chilling volatile liquids.

Appendix D discusses particularly hazardous substances in more detail and presents a process to insure persons working with such substances are aware of both the hazards and the specific precautions for the intended usage.
## II. Laboratory Safety Operation Procedure (SOP)

<table>
<thead>
<tr>
<th>Use of any hazardous chemical</th>
<th>[Special Precautions]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flammables, organics, acids/bases</strong></td>
<td>Wear suitable personal protective equipment: sealed splash goggles, appropriate gloves, lab coat is recommended. Read the Material Safety Data Sheet for the chemical before use. Work in the fume hood</td>
</tr>
<tr>
<td><strong>Biohazard (level 1)</strong></td>
<td>Refer to the <em>Biohazard Recognition and Control</em> manual</td>
</tr>
<tr>
<td><strong>Radiation</strong></td>
<td>Take training course from Safety Department and obtain certification for radiation work</td>
</tr>
<tr>
<td><strong>Particularly hazardous chemicals</strong></td>
<td>Refer to the <em>Radiation Safety for Radiation Workers</em> book</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ammonium persulfate</th>
<th>[Safety Instructions]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMED</td>
<td>When dealing with these chemicals**, Read the MSDS carefully and consult with other lab members and Silvia for procedural precautions and recommendations.</td>
</tr>
<tr>
<td>Ethidium Bromide</td>
<td>**This also includes any of the reproductive toxins listed on pg. 240 of the <em>Chemical Safety and Disposal Guide</em> and the carcinogens listed on pgs. 245-250 of the <em>Chemical Safety and Disposal Guide</em></td>
</tr>
<tr>
<td>Cyanogen Bromide</td>
<td>Do not use these substances when working alone in the lab.</td>
</tr>
<tr>
<td>Acrylamide</td>
<td>Wear proper gloves (double gloves suggested), face mask to prevent powder inhalation, safety goggles. Wear Lab coats.</td>
</tr>
<tr>
<td>Sodium Azide</td>
<td>Work in an area with adequate ventilation (under the hood).</td>
</tr>
<tr>
<td>Piperazine</td>
<td></td>
</tr>
<tr>
<td>PMSF</td>
<td></td>
</tr>
<tr>
<td>BME</td>
<td></td>
</tr>
<tr>
<td>HCl</td>
<td></td>
</tr>
<tr>
<td>Glacial acetic acid</td>
<td></td>
</tr>
<tr>
<td>TCA</td>
<td></td>
</tr>
<tr>
<td>TFA</td>
<td></td>
</tr>
<tr>
<td>Formic acid</td>
<td></td>
</tr>
<tr>
<td>Nitric acid</td>
<td></td>
</tr>
<tr>
<td>Potassium cyanide</td>
<td></td>
</tr>
<tr>
<td>NaOH</td>
<td></td>
</tr>
<tr>
<td>KOH</td>
<td></td>
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<tr>
<td>TBAF</td>
<td></td>
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<tr>
<td>DEPC</td>
<td></td>
</tr>
<tr>
<td>Acetyl chloride</td>
<td></td>
</tr>
<tr>
<td>DMF</td>
<td></td>
</tr>
<tr>
<td>1-pentanol</td>
<td></td>
</tr>
<tr>
<td>1,1,1,3,3,3-hexafluoro 2-propanol</td>
<td></td>
</tr>
</tbody>
</table>
### More Information about commonly used hazardous chemicals (All Information given from MSDS)

#### Hazardous Chemicals used for gel procedures

<table>
<thead>
<tr>
<th>Compound</th>
<th>Symptom</th>
<th>PPE</th>
<th>First Aid Advise</th>
</tr>
</thead>
</table>
| **Polyacrylamide**     | **Inhalation** May be harmful if inhaled. May cause respiratory tract irritation. **Ingestion** May be harmful if swallowed. **Skin** May be harmful if absorbed through skin. May cause skin irritation. **Eyes** May cause eye irritation. | Contains no substances with occupational exposure limit values | *If inhaled*  
If breathed in, move person into fresh air.  
If not breathing, give artificial respiration.  
**In case of skin contact**  
Wash off with soap and plenty of water.  
**In case of eye contact**  
Flush eyes with water as a precaution.  
**If swallowed**  
Never give anything by mouth to an unconscious person. Rinse mouth with water. |
| **Ammonium Persulfate**| **Inhalation** May be harmful if inhaled. Causes respiratory tract irritation. **Skin** Harmful if absorbed through skin. Causes skin irritation. **Eyes** Causes eye irritation. **Ingestion** Harmful if swallowed | 0.1 mg/m3 (ACGIH) | *If inhaled*  
If breathed in, move person into fresh air.  
If not breathing, give artificial respiration.  
Consult a physician.  
**In case of skin contact**  
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.  
**In case of eye contact**  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.  
**If swallowed**  
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |
| **Ethidium Bromide**   | **Inhalation** May be fatal if inhaled. May cause respiratory tract irritation. **Skin** Harmful if absorbed through skin. May cause skin irritation. **Eyes** May cause eye irritation. **Ingestion** Harmful if swallowed. | Contains no substances with occupational exposure limit values | *If inhaled*  
If breathed in, move person into fresh air.  
If not breathing, give artificial respiration.  
Consult a physician.  
**In case of skin contact**  
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.  
**In case of eye contact**  
Flush eyes with water as a precaution.  
**If swallowed**  
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |
<table>
<thead>
<tr>
<th>Compound</th>
<th>Symptom</th>
<th>PPE</th>
<th>First Aid Advise</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chlororamphenicol</strong></td>
<td><strong>Inhalation</strong> May be harmful if inhaled. May cause respiratory tract irritation.</td>
<td>0.5 mg/m3 (WEEL)</td>
<td><strong>If inhaled</strong> If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. <strong>In case of skin contact</strong> Wash off with soap and plenty of water. Consult a physician. <strong>In case of eye contact</strong> Flush eyes with water as a precaution. <strong>If swallowed</strong> Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.</td>
</tr>
<tr>
<td></td>
<td><strong>Skin</strong> May be harmful if absorbed through skin. May cause skin irritation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Eyes</strong> May cause eye irritation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Ingestion</strong> May be harmful if swallowed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Phenylmethanesulfonyl fluoride</strong></td>
<td><strong>Inhalation</strong> May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.</td>
<td>Contains no substances with occupational exposure limit values.</td>
<td><strong>If inhaled</strong> If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. <strong>In case of skin contact</strong> Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician. <strong>In case of eye contact</strong> Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital. <strong>If swallowed</strong> Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.</td>
</tr>
<tr>
<td></td>
<td><strong>Skin</strong> May be harmful if absorbed through skin. Causes skin burns.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Eyes</strong> Causes eye burns.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Ingestion</strong> Toxic if swallowed.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Phenol | **Inhalation** Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
**Skin** Toxic if absorbed through skin. Causes skin burns.  
**Eyes** Causes eye burns.  
**Ingestion** Toxic if swallowed. | 5 ppm  
19 mg/m³  
(for central nervous system impairment OSHA) | **If inhaled**  
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.  
**In case of skin contact**  
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.  
**In case of eye contact**  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.  
**If swallowed**  
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |
| Cyanogen Bromide | **Inhalation** May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
**Skin** May be fatal if absorbed through skin. Causes skin burns.  
**Eyes** Causes eye burns.  
**Ingestion** May be fatal if swallowed. | Contains no substances with occupational exposure limit values. | **If inhaled**  
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.  
**In case of skin contact**  
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.  
**In case of eye contact**  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.  
**If swallowed**  
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. |
### Other Hazardous Chemicals

<table>
<thead>
<tr>
<th>Compound</th>
<th>Symptom</th>
<th>PPE</th>
<th>First Aid Advise</th>
</tr>
</thead>
</table>
| Sodium Azide     | **Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.  
                  Skin May be fatal if absorbed through skin. May cause skin irritation.  
                  Eyes May cause eye irritation.  
                  **Ingestion** May be fatal if swallowed. | 0.1ppm (OSHA for air contaminant)  
                  0.3 mg/m3 (NIOSH for dermal absorption) | **If inhaled**  
                  If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.  
                  **In case of skin contact**  
                  Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.  
                  **In case of eye contact**  
                  Flush eyes with water as a precaution.  
                  **If swallowed**  
                  Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |
| Methanol         | **Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.  
                  Skin Toxic if absorbed through skin. Causes skin irritation.  
                  Eyes Causes eye irritation.  
                  **Ingestion** Toxic if swallowed. | 200 ppm,  
                  260 mg/m3 (OSHA)  
                  200 ppm  
                  260 mg/m3 (NIOSH) | **If inhaled**  
                  If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.  
                  **In case of skin contact**  
                  Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.  
                  **In case of eye contact**  
                  Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.  
                  **If swallowed**  
                  Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |

*For more detailed precaution, please obtain MSDS.*
Safety Regarding to Spills

Small and Medium Spills (up to 5 L)
- Absorption and Chemical Treatment
- Warn other personnel in area
- Neutralize
- Absorb and collect

Large Spills
- Call 911

Emergency Eyewash and Safety Shower
- Rinse affected area for 15 minutes!

Procedures for Other Hazards. The laser systems employed by the Cavagnero group poses unique hazards which must be addressed appropriately. The group works with two laser systems:

✓ A class IIIa fluorimeter (1 – 5 mW) with 295 nm and 473 nm lasers, located in room 5375 of the Chemistry building
✓ A class IV laser (6.5 W) with a 488 nm wavelength, located in room 23** of the Chemistry building

Chapter 15 of the UW-Madison Radiation Protection Program Training Manual contains information regarding the safe use of lasers in the laboratory.

Safety Regarding to Laser

- Class IIIa Fluorimeter and Class IV Laser
- Operators must be trained by other group members in charge.
- Eye protection!
- Stray beams must be identified and terminated whenever optics are moved
- No unused optics or tools left on table
- No jewelry or watches
- Beam height: waist or below
- Close eyes when stooping down near laser
- Align laser at lowest possible power
III. Additional Protective Equipment and Fume Hood Information

a. Protective Equipment

- Common use face shield, splash goggles, lab coats and VisorGogs are available for use
- Face masks are available and must be worn when weighing out any of the above particularly hazardous chemicals

b. Measures to Ensure Proper Performance of Fume Hoods

As discussed in Chapter 4, the Safety Department inspects laboratory fume hoods annually and places a sticker (see Section 4.5) on the hood that identifies maximum safe sash height and any other performance restrictions. If the date on your fume hood sticker is over one year old, call the Safety Department to have the hood reevaluated. Additional measures that help assure proper fume hood performance include (see also Annex 4-2):

- Close the sash as much as possible, even when working in the hood. Use a horizontal sliding sash or blast shield when working with equipment that is likely to shatter or splash.
- Use a tissue to verify that air is flowing into the hood.
- Maintain air flow pathways front to back. Elevate large items so that air can flow under them. Align items from front to back instead of across the back of the hood.
- Keep all work more than 15 cm (6 inches) behind the sash opening.
- Keep heaters more than 30 cm (12 inches) behind the sash opening.
- Have spill control materials available (i.e., secondary containment [trays], absorbents, spill kits) and plans posted.
- Keep hood clutter free, do not use it as a storage area. Store chemicals and other material in storage cabinets so they will not become involved in a hood accident.
- Keep adjustable baffles at the center position. Do not attempt to use another baffle position unless you have verified that it is better.
- Use personal protective gear (i.e., goggles, apron, shield, gloves) as appropriate for the type of chemical work.
- Use good personal hygiene. A fume hood cannot protect against skin absorption or accidental ingestion of chemicals.
- Understand and obey labels and placards.
IV. Additional Training Notes

All important safety information is collected in a red 3-ring binder labeled Lab Safety, or on the adjacent bookshelves. These materials are located in Office 5373 at all times and include:

- Chemical hygiene plan
- MSDS sheets
- *Biohazard Recognition and Control* manual,
- *Radiation Safety* Manual, and
- *Chemical Safety and Disposal Guide*

Each laboratory worker must be familiar with the contents of the Plan and know:

- Where the plan is available.
- The location of Material Safety Data Sheets (MSDS) and other hazard information in the laboratory. The Safety Department will send any MSDS that you need to complete your reference set. Alternatively, links to MSDS sites are available at the Safety Department's web site, [http://www.fpm.wisc.edu/chemsafety/msds.htm](http://www.fpm.wisc.edu/chemsafety/msds.htm)
- How to detect the presence or accidental release of a hazardous chemical
- The hazards of chemicals in the work area and how to protect against them
- How to manage and dispose of waste or unwanted chemicals

Additional training resources:

- Weekly *Working Safely with Chemicals* training class conducted by the Safety Department.
- Videos are available for loan from the Safety Department.
- Training tools are available from the Howard Hughes Medical Institute. Their web page, [http://www.practicingsafescience.org](http://www.practicingsafescience.org) allows for on-line ordering of videos and provides Laboratory Chemical Safety Summaries (see Section 2.4) and emergency response guidelines.
V. Operations, Procedures or Activities that Require Prior Approval

- Obtain permission before using a lab bench other than your designated space.
- It is the responsibility of each individual to receive proper training on all equipment before use, to read the MSDS sheets for all chemicals used, and to be aware of the potential hazards and appropriate emergency responses before working in the lab.
- Radiation work requires prior approval

VI. Special Information on Medical Consultation/Examinations

A laboratory worker must have an opportunity to receive a medical examination or consultation without loss of pay and at no cost to the worker when:

- The individual develops signs or symptoms associated with a hazardous chemical to which they may have been exposed in the laboratory.
- Measurements show that an OSHA/Wis. Dept. of Commerce action level or Permissible Exposure Limit is routinely exceeded.
- There has been a spill, leak, explosion or other occurrence in the work area resulting in the likelihood of a hazardous exposure.

University employees may receive medical care through their State Group Health Insurance health care plan. Students may receive medical care from the University Health Service. For the physician to provide professional care, provide the following information:

- The identity of the hazardous chemical(s) to which the employee may have been exposed.
- A description of the conditions under which the exposure occurred including quantitative exposure data, if available.
- A description of the signs and symptoms of exposure that the employee is experiencing, if any.
VII. Special Pollution Prevention / Waste Minimization Information

- Follow the recommendations of Chapter 6 of the *Chemical Safety and Disposal Guide* to the extent feasible while minimizing interference with primary laboratory operations.

- Use conservative amounts of chemicals and solvents, and recycle and share solutions when possible.

- Biohazard waste must be collected in biohazard bags and autoclaved before disposal.

VIII. Special Chemical Waste Disposal Information

Follow the procedures of Chapter 7 and Appendix A of the *Chemical Safety and Disposal Guide* to manage chemical waste. For questions or more information about specific waste streams, call the Safety Department at 265-5518.

The Safety Department will recycle, neutralize or dispose of chemicals by methods that have been approved by Federal and State agencies, that are safe for human health and the environment and that comply with local, state and federal regulations.

<table>
<thead>
<tr>
<th>Training Title</th>
<th>Description /Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorimeter</td>
<td>To properly use fluorimeter to minimize risk of using laser</td>
</tr>
<tr>
<td>Class IV Laser (for CIDNP)</td>
<td>To properly use laser to minimize risk of using laser</td>
</tr>
</tbody>
</table>
MSDS and Inventory information

Material Safety Data Sheet
Location of MSDS: Book Shelf in room 5373
Format of MSDS: Hard Copy

Chemical Inventory
Method of Maintaining Inventory: all chemical inventories are listed in excel format.
Location of Inventory Records: Monona computer in Room 5365
**Title of Training:** Fluorimeter

**Training Performed by:** Arellys Rosado

**Description:** How to use the fluorimeter safely

<table>
<thead>
<tr>
<th>Name (print)</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anders Knight</td>
<td>Anders Knight</td>
<td>4/11/12</td>
</tr>
<tr>
<td>Silvia Cavagnero(*)</td>
<td>Silvia Cavagnero</td>
<td>4/11/12</td>
</tr>
<tr>
<td>Arellys Rosado</td>
<td>Arellys Rosado</td>
<td>4/11/12</td>
</tr>
</tbody>
</table>

**Title of Training:** Class IV Laser (for CIDNP)

**Training Performed by:** Jung Ho Lee

**Description:** How to use the class IV laser safely

<table>
<thead>
<tr>
<th>Name (print)</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILVIA CAVAGNERO(**)</td>
<td>Silvia Cavagnero</td>
<td>4/11/12</td>
</tr>
</tbody>
</table>

(*) trained by Nege Kurt

(**) trained by self + Ashoke Sekhan
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

☑ The OSHA Laboratory Standard
☑ The UW-Madison Campus CHP
☑ The UW-Madison Laboratory Safety Guide
☑ The Laboratory CHP
☑ MSDSs for lab chemicals

I have been instructed on:

☑ The chemical hazards in the lab
☑ Laboratory-specific policies
☑ The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
☑ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☑ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

☑ Emergency phone numbers
☑ Procedures for uncontrolled releases
☑ Evacuation routes
☑ Safety equipment failure procedures
☑ Review location and use of chemical spill kits
☑ Laboratory exhaust failure procedure

The location of emergency equipment:

☑ Fire extinguishers
☑ Eye wash stations
☑ Safety showers
☑ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

☑ Lab cleaning and maintenance rules
☑ Waste handling procedures
☑ Proper use of PPE
☑ Chemical procurement practices
☑ Chemical storage policies for the lab
☑ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

☐

☐

☐

☐

☐

I have completed orientation of all the above items

Name: SILVIA CAVAGNERO
Date: 4/11/12

Signature: 

PI (or Lab CHO) Signature: 

CHP 1.10.10.11
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location of):

☐ The OSHA Laboratory Standard
☐ The UW-Madison Laboratory Safety Guide
☐ MSDSs for lab chemicals
☐ The UW-Madison Campus CHP
☐ The Laboratory CHP

I have been instructed on:

☐ The chemical hazards in the lab
☐ Laboratory-specific policies
☐ The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
☐ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☐ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

☐ Emergency phone numbers
☐ Procedures for uncontrolled releases
☐ Evacuation routes
☐ Safety equipment failure procedures
☐ Review location and use of chemical spill kits
☐ Laboratory exhaust failure procedure
The location of emergency equipment:

☐ Fire extinguishers
☐ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

☐ Lab cleaning and maintenance rules
☐ Waste handling procedures
☐ Proper use of PPE
☐ Chemical procurement practices
☐ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

☐ Laser safety
☐ Biological safety

☐
☐
☐

I have completed orientation of all the above items

Name: Daria Fedynkina  Date: 2012-04-11

Signature: [Signature]  PI (or Lab CHO) Signature: [Signature]
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

☑️ The OSHA Laboratory Standard
☑️ The UW-Madison Laboratory Safety Guide
☑️ MSDSs for lab chemicals
☑️ The UW-Madison Campus CHP
☑️ The Laboratory CHP

I have been instructed on:

☑️ The chemical hazards in the lab
☑️ Laboratory-specific policies
☑️ The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
☑️ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☑️ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

☑️ Emergency phone numbers
☑️ Evacuation routes
☑️ Review location and use of chemical spill kits
☑️ Laboratory exhaust failure procedure

The location of emergency equipment:

☑️ Fire extinguishers
☑️ Safety showers
☑️ Eye wash stations
☑️ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

☑️ Lab cleaning and maintenance rules
☑️ Proper use of PPE
☑️ Chemical storage policies for the lab
☑️ Waste handling procedures
☑️ Chemical procurement practices
☑️ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

☐ ☐ ☐

I have completed orientation of all the above items

Name: Yufan Wu
Signature: Yufan Wu

Date: 4/11/12

PI (or Lab CHO) Signature: [Signature]
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.
As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location of):

☑ The OSHA Laboratory Standard
☑ The UW-Madison Laboratory Safety Guide
☑ MSDSs for lab chemicals
☑ The UW-Madison Campus CHP
☑ The Laboratory CHP

I have been instructed on:

☑ The chemical hazards in the lab
☑ Laboratory-specific policies
☑ The relevant exposure limits [PELs (OSHA), TLV's (ACGIH), etc.]
☑ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☑ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

☑ Emergency phone numbers
☑ Evacuation routes
☑ Review location and use of chemical spill kits
☑ Laboratory exhaust failure procedure
☑ Procedures for uncontrolled releases
☑ Safety equipment failure procedures

The location of emergency equipment:

☑ Fire extinguishers
☑ Safety showers
☑ Eye wash stations
☑ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

☑ Lab cleaning and maintenance rules
☑ Proper use of PPE
☑ Chemical storage policies for the lab
☑ Waste handling procedures
☑ Chemical procurement practices
☑ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

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I have completed orientation of all the above items

Name: Ben Lustkin
Signature: Ben Lustkin

Date: 04/11/12

PI (or Lab CHO) Signature: [Signature]

CHP 1.10.10.11
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

- [✓] The OSHA Laboratory Standard
- [✓] The UW-Madison Laboratory Safety Guide
- [✓] MSDSs for lab chemicals
- [✓] The UW-Madison Campus CHP
- [✓] The Laboratory CHP

I have been instructed on:

- [✓] The chemical hazards in the lab
- [✓] Laboratory-specific policies
- [✓] The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
- [✓] The signs and symptoms associated with exposures to hazardous chemicals used in the lab
- [✓] The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

- [✓] Emergency phone numbers
- [✓] Evacuation routes
- [✓] Review location and use of chemical spill kits
- [✓] Laboratory exhaust failure procedure
- [✓] Fire extinguishers
- [✓] Safety showers
- [✓] Eye wash stations
- [✓] First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

- [✓] Lab cleaning and maintenance rules
- [✓] Proper use of PPE
- [✓] Chemical storage policies for the lab
- [✓] Procedures for uncontrolled releases
- [✓] Safety equipment failure procedures
- [✓] Waste handling procedures
- [✓] Chemical procurement practices
- [✓] The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

I have completed orientation of all the above items

Name: Anders Knight

Signature: [Signature]

Date: 4/11/12

PI (or Lab CHO) Signature: [Signature]
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

☑ The OSHA Laboratory Standard
☑ The UW-Madison Laboratory Safety Guide
☑ MSDSs for lab chemicals
☑ The UW-Madison Campus CHP
☑ The Laboratory CHP

I have been instructed on:

☑ The chemical hazards in the lab  ☑ Laboratory-specific policies
☑ The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
☑ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☑ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

☑ Emergency phone numbers  ☑ Procedures for uncontrolled releases
☑ Evacuation routes  ☑ Safety equipment failure procedures
☑ Review location and use of chemical spill kits
☑ Laboratory exhaust failure procedure

The location of emergency equipment:

☑ Fire extinguishers  ☑ Eye wash stations
☑ Safety showers  ☑ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

☑ Lab cleaning and maintenance rules  ☑ Waste handling procedures
☐ Proper use of PPE  ☑ Chemical procurement practices
☐ Chemical storage policies for the lab  ☑ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

☐ ☐
☐ ☐
☐ ☐
☐ ☐

I have completed orientation of all the above items

Name: Tho Nam Lam
Date: 4/11/12

Signature: Tho Nam Lam

PI (or Lab CHO) Signature:

CHP 1.10.10.11
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

☐ The OSHA Laboratory Standard
☐ The UW-Madison Laboratory Safety Guide
☐ MSDSs for lab chemicals
☐ The UW-Madison Campus CHP
☐ The Laboratory CHP

I have been instructed on:

☐ The chemical hazards in the lab  ☐ Laboratory-specific policies
☐ The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
☐ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☐ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

☐ Emergency phone numbers  ☐ Procedures for uncontrolled releases
☐ Evacuation routes  ☐ Safety equipment failure procedures
☐ Review location and use of chemical spill kits
☐ Laboratory exhaust failure procedure

The location of emergency equipment:

☐ Fire extinguishers  ☐ Eye wash stations
☐ Safety showers  ☐ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

☐ Lab cleaning and maintenance rules  ☐ Waste handling procedures
☐ Proper use of PPE  ☐ Chemical procurement practices
☐ Chemical storage policies for the lab  ☐ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

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I have completed orientation of all the above items

Name: Arelys Rosado  Date: 04/11/12

Signature: Arelys Rosado

PI (or Lab CHO) Signature:
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

☑ The OSHA Laboratory Standard
☑ The UW-Madison Laboratory Safety Guide
☑ MSDSs for lab chemicals
☑ The UW-Madison Campus CHP
☑ The Laboratory CHP

I have been instructed on:

☑ The chemical hazards in the lab □ Laboratory-specific policies
☑ The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
☑ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☑ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

☑ Emergency phone numbers □ Procedures for uncontrolled releases
☑ Evacuation routes □ Safety equipment failure procedures
☑ Review location and use of chemical spill kits
☑ Laboratory exhaust failure procedure

The location of emergency equipment:

☑ Fire extinguishers □ Eye wash stations
☑ Safety showers □ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

☑ Lab cleaning and maintenance rules □ Waste handling procedures
☑ Proper use of PPE □ Chemical procurement practices
☑ Chemical storage policies for the lab □ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

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I have completed orientation of all the above items

Name: Brian Arnold 
Date: 04/11/12

Signature: Brian Arnold

PI (or Lab CHO) Signature: 

CHP 1.10.10.11
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

- The OSHA Laboratory Standard
- The UW-Madison Laboratory Safety Guide
- MSDSs for lab chemicals
- The UW-Madison Campus CHP
- The Laboratory CHP

I have been instructed on:

- The chemical hazards in the lab
- Laboratory-specific policies
- The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
- The signs and symptoms associated with exposures to hazardous chemicals used in the lab
- The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

- Emergency phone numbers
- Procedures for uncontrolled releases
- Evacuation routes
- Safety equipment failure procedures
- Review location and use of chemical spill kits
- Laboratory exhaust failure procedure
- The location of emergency equipment:
  - Fire extinguishers
  - Safety showers
  - Eye wash stations
  - First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

- Lab cleaning and maintenance rules
- Waste handling procedures
- Proper use of PPE
- Chemical procurement practices
- Chemical storage policies for the lab
- The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

I have completed orientation of all the above items

Name: Ryan Fager

Signature: Ryan Fager

Date: 4/11/12

PI (or Lab CHO) Signature: [Signature]
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

- [x] The OSHA Laboratory Standard
- [x] The UW-Madison Laboratory Safety Guide
- [x] The UW-Madison Campus CHP
- [x] The Laboratory CHP
- [x] MSDSs for lab chemicals

I have been instructed on:
- [x] The chemical hazards in the lab
- [x] Laboratory-specific policies
- [x] The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
- [x] The signs and symptoms associated with exposures to hazardous chemicals used in the lab
- [x] The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

- [x] Emergency phone numbers
- [x] Evacuation routes
- [x] Review location and use of chemical spill kits
- [x] Laboratory exhaust failure procedure

The location of emergency equipment:

- [x] Fire extinguishers
- [x] Safety showers
- [x] Eye wash stations
- [x] First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

- [x] Lab cleaning and maintenance rules
- [x] Proper use of PPE
- [x] Chemical storage policies for the lab

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

In addition, I have completed orientation of all the above items

Name: Jon Lang

Signature: [Signature]

Date: 4/1/12

PI (or Lab CHO) Signature: [Signature]
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

☐ The OSHA Laboratory Standard  ☐ The UW-Madison Campus CHP
☐ The UW-Madison Laboratory Safety Guide  ☐ The Laboratory CHP
☐ MSDSs for lab chemicals

I have been instructed on:

☐ The chemical hazards in the lab  ☑ Laboratory-specific policies
☐ The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
☐ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☐ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

☐ Emergency phone numbers  ☐ Procedures for uncontrolled releases
☐ Evacuation routes  ☐ Safety equipment failure procedures
☐ Review location and use of chemical spill kits
☐ Laboratory exhaust failure procedure

The location of emergency equipment:

☐ Fire extinguishers
☐ Safety showers
☐ Eye wash stations
☐ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

☐ Lab cleaning and maintenance rules  ☐ Waste handling procedures
☐ Proper use of PPE  ☐ Chemical procurement practices
☐ Chemical storage policies for the lab  ☐ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

☐ ☐

☐ ☐

☐ ☐

☐ ☐

☐ ☐

I have completed orientation of all the above items

Name:  Yusuke Okuno  

Date:  4/11/12

Signature:  

Pl (or Lab CHO) Signature:  

CHP 1.10.10.11
Section 5: Orientation Checklist:

A checklist for all laboratory personnel listed in Section 1 must be filled out.

As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:

- [ ] OSHA Laboratory Standard
- [ ] UW-Madison Laboratory Safety Guide
- [ ] MSDSs for lab chemicals
- [ ] UW-Madison Campus CHP
- [ ] The Laboratory CHP

I have been instructed on:

- [ ] The chemical hazards in the lab
- [ ] Laboratory-specific policies
- [ ] The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
- [ ] The signs and symptoms associated with exposures to hazardous chemicals used in the lab
- [ ] The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:

- [ ] Emergency phone numbers
- [ ] Evacuation routes
- [ ] Review location and use of chemical spill kits
- [ ] Laboratory exhaust failure procedure
- [ ] The location of emergency equipment:
  - [ ] Fire extinguishers
  - [ ] Safety showers
  - [ ] Eye wash stations
  - [ ] First-aid supplies

I have been made familiar with routine operations of the laboratory, including:

- [ ] Lab cleaning and maintenance rules
- [ ] Proper use of PPE
- [ ] Chemical storage policies for the lab
- [ ] Procedures for uncontrolled releases
- [ ] Safety equipment failure procedures
- [ ] Waste handling procedures
- [ ] Chemical procurement practices
- [ ] The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

- [ ] Laser
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

I have completed orientation of all the above items

Name: Jung Ho Lee

Signature:

Date: 2011/04/11

PI (or Lab CHO) Signature:

CHP 1.10.10.11
Section 5: Orientation Checklist:
A checklist for all laboratory personnel listed in Section 1 must be filled out.
As part of my orientation with the laboratory operation I have read and am familiar with the contents (and location) of:
☐ The OSHA Laboratory Standard
☐ The UW-Madison Laboratory Safety Guide
☐ MSDSs for lab chemicals
☐ The UW-Madison Campus CHP
☐ The Laboratory CHP

I have been instructed on:
☐ The chemical hazards in the lab
☐ Laboratory-specific policies
☐ The relevant exposure limits [PELs (OSHA), TLVs (ACGIH), etc.]
☐ The signs and symptoms associated with exposures to hazardous chemicals used in the lab
☐ The physical hazards of the laboratory (heat, electrical, mechanical, etc.)

Reviewed the laboratories emergency procedures, including:
☐ Emergency phone numbers
☐ Evacuation routes
☐ Review location and use of chemical spill kits
☐ Laboratory exhaust failure procedure
The location of emergency equipment:
☐ Fire extinguishers
☐ Safety showers
☐ Eye wash stations
☐ First-aid supplies

I have been made familiar with routine operations of the laboratory, including:
☐ Lab cleaning and maintenance rules
☐ Proper use of PPE
☐ Chemical storage policies for the lab
☐ Waste handling procedures
☐ Chemical procurement practices
☐ The proper use of chemical fume hoods

In addition, I have been made familiar with the following lab-specific health and safety features and safety resources:

I have completed orientation of all the above items

Name: Rayna Adolabbo Date: 4/12/12
Signature: Rayna Adolabbo

PI (or Lab CHO) Signature: