

## PI Phase 2 COVID-19 Research Plan

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## Chemistry Research Group Information

This form has been created to compile your plan to perform research while adhering to the safety health practices during the COVID-19 pandemic. An electronic copy will be generated for review by the Chemistry Department and to share with the Dean. While these guidelines are extensive to maximize safety for all departmental researchers, this document is not exhaustive. More informations can be found on the COVID-19 resource pages for the **County** (<https://mailchi.mp/ochca/healthofficersorder>), the **State** (<https://covid19.ca.gov/industry-guidance/>), the **Office of Research** (<https://news.research.uci.edu/research-continuity/research-ramp-up/points-of-consideration/>) and **EH&S** (<https://www.ehs.uci.edu/PublicHealth/covid-19/>).

**This form does not have to be completed at one sitting. Twenty resubmissions are allowed. Please answer the last question correctly when you have completed the form.** If you make a revision after this point, please email Kim Edwards ([kdmullen@uci.edu](mailto:kdmullen@uci.edu)).

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### PI NAME(s)

\* required

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Dmitry Fishman

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**RESEARCH IS VOLUNTARY:** In-person research is completely voluntary. Researchers should speak with their advisor and then the department office or graduate advisor if they need accommodations. Please see CDC's People Who Are At Higher Risk webpage (<https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html>)

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Members of my laboratory and I understand this and are aware of the actions they need to take.

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**ESSENTIAL UNDERGRADUATES ONLY:** Undergraduates are not permitted in lab unless exceptional circumstances exist.

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Undergraduates will be working in my laboratory during phase 2, please see description below.

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**DESCRIPTION OF ESSENTIAL UNDERGRADUATE DUTIES.** If you have undergraduate(s) in your laboratory who perform essential duties, please describe those duties and why they are essential.

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Approved, trained and certified undergraduate researcher will be able to conduct experiments based on Safety protocol of Laser Spectroscopy Labs and approved measures by School of Physical Sciences. Main logistics are: 1. One person will conduct all experiments. 2. Only one researcher will have an opportunity to be in lab at a time, though parallel research can be conducted in separate rooms, in particular Linear Lab, Microscopy Lab. 3. No undergraduate researchers will be allowed in Ultrafast Lab.

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**SAFETY LEADS:** A safety lead is the point of contact for outside interactions and responsible for verifying cleaning tasks are done at the end of each shift. One should be present during each shift. The position can rotate, but it should be clear to surrounding labs and the Facilities who the safety lead is during each shift. Please describe the activities for which these individuals will be responsible.

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Safety Lead will be responsible for: 1. Maintaining on-line reservation schedule. 2. Provide necessary maintenance of experimental setups and equipment. 3. Provide remote help for experimental routine and troubleshoot experiments as necessary. Such help is done through remote access to computer, video communication system installed in lab and personal cell phones. 3. Provide necessary help in case of emergency.

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**GROUP COMMUNICATION:** In person communication must be kept to an absolute minimum. It should only occur at times when it is necessary for conducting research or for safety reasons with both people wearing face coverings and remaining physically distant (*except for safety reasons and emergencies*). Group meetings must be held remotely. Office space should only be occupied by one individual at a time.

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Members of my laboratory and I will comply with these guidelines.

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**Suggestions:** Select any of the following communication methods you will use and/or add any other types you plan to use in the "Other" field.

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Use Zoom for group meetings or prolonged conversations.

Use a message board for all group members (i.e., Slack, Google Chat, etc).

Use whiteboards to leave messages.

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**COVID-19 PERSONNEL TRAINING** As the PI, the following directions must be given to the members of your research group. Please **check all** selections to indicate this information will be given to your group members.

Please see the following webpages: - CDC's COVID-19 Symptoms ([https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html?CDC\\_AA\\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fsymptoms-testing%2Findex.html](https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fsymptoms-testing%2Findex.html)) - EH&S COVID-19 Learning Resources (<https://www.ehs.uci.edu/PublicHealth/covid-19/resources.html>)

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Researchers must follow proper sanitization and personal hygiene procedure including frequent hand washing.

Researchers will be directed to prioritize group member safety and health above all else.

Researchers will be directed to conduct symptom self-checks (see CDC website above) each day before work and report symptoms. Researchers should not come to campus if they feel ill and should seek medical advice.

Researchers will be directed to take the UCI training(s) on how to limit the spread of COVID-19 when it becomes available on UCLC.

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**POSITIVE OR SUSPECTED COVID-19 INFECTION.** If a researcher tests positive for COVID-19, feels ill, or has a fever, loses of sense of taste or smell the following steps must be taken. Please **check all** selections to indicate your agreement to the guidelines.

\* required

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Researcher must not come to campus and should seek medical advice.

Researcher must report symptoms/illness to PI.

PI must report the illness to the department and UCI's HR: <https://hr.uci.edu/disaster-relief/report-known-cases.php> and follow their direction.

Self quarantine of other individuals may be required.

Researchers returning from air travel must quarantine for 14 days.

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**RESEARCH AGREEMENT TO POLICIES:** All researchers need to abide by the School of Physical Sciences safety protocol. Researchers should review and sign the agreement posted <https://ps.uci.edu/node/50134>. Have all of your researchers filled out this form?

\* required

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yes

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## Research Space Density & Scheduling

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**MAXIMUM OCCUPANCY:** What is the maximum occupancy for researchers in your lab at any one point in time? How many additional individuals are permitted in your lab for short term purposes (i.e. EHS waste pick up; another group to use instrumentation, pick up chemicals, etc.)

**Guidelines:** Maximum occupancy = 1 person per 250 square feet of *useable* space.

\* required

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1. One person will conduct all experiments.
  2. The laboratory layout is included at the end of the document. Only one researcher will have an opportunity to be in lab at a time, though parallel research can be conducted in separate rooms, i.e. Linear Lab, Microscopy Lab, Ultrafast Lab.

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**PHYSICAL DISTANCING WITHIN LAB (Diagram):** Please upload a diagram of the laboratory and indicate where people will work. Lab diagrams can be found here: <https://www.chem.uci.edu/lab%20research%20during%20pandemic>.

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**Upload attached as:** LSL layout.pdf

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**SCHEDULE:** Please provide a link where your researchers' schedules can be found online.  
**Guidelines:** Only first names should be visible on these schedules. Priority should be given to researchers close to completing their degree or term of employment.

\* required

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<https://www.chem.uci.edu/~dmitryf/booked>

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Please select the scheduling scheme(s) your group will follow or use the "Other" field.

\* required

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Other: The access is per reservation system per lab

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**BUILDING/SPACE ISSUES:** Please provide an analysis of adjacent occupied spaces near your laboratory and inside the building in general. *Do you have any concerns you would like addressed?*

\* required

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It is important to establish fixed protocol for the use of common spaces, hall ways, corridors, restrooms. These spaces are very confined and some indicators may be required to control human traffic. Especially for spaces, like restrooms, where flag or note system on the door may be of use.

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**Guidelines:** Please **check all** selections as an agreement to these guidelines.

\* required

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Water fountains should not be used.

Only one person at a time should be in an elevator, restroom, kitchen or in narrow hallways (such as the main hallways in FRH and RH).

Avoid using office space, as the air make-up is recirculated.

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**Suggestions:** Please select the suggestions your group will follow or use the "Other" field.

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Drinks should be brought from home if possible.

Reusable water bottles are encouraged.

Eating and drinking should be done outside whenever possible.

Coffeemakers, refrigerators and microwaves should only be used after washing hands or sanitizing surfaces.

Post signage on lab doors instructing non-lab members to knock loudly and wait to be invited in.

Install a doorbell at your lab door for non-lab members to use.

Encourage the use of outdoor stairwells.

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**COMPLIANCE:** EH&S and Chemistry personnel will also perform spot checks to insure physical distancing and low research lab density. *If a researcher is found out of compliance lab privileges may be suspended or revoked.* What measures will you take to make sure your group is in compliance?

\* required

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We will follow proposed protocol, general guidelines for School of Physical Science, campus guidelines for safety measures and CDC guidelines:

1. If any in person contacts will be necessary, it will outside lab space, more than 6 feet apart at all times in order to comply with mandatory social distancing.
2. Though only one person is planned to occupy lab, it is expected only one person will have access to the bench, hood, or bay in order to avoid accidental contact.
3. Only one person at a time may occupy any enclosed space, such as a cold room, restroom, stairwell, or elevator.
4. Contact with other labs should be made via phone or electronic means. Transfer of items should be arranged by leaving them in the hallway rather than handing them over in person. Use of other labs' equipment should be pre-arranged in order to avoid accidental contact.
5. Wash hands with soap upon entering and before leaving the labs.
6. Wear gloves and safety glasses at all times when working in the lab and when opening delivered packages.
7. Have my own set of tools that are used very frequently, including pipets, frequently used reagent bottles, laboratory notebooks, and pens.
8. Gloves will be worn to handle common reagent bottles, laboratory equipment, and cabinet handles. Door handles are daily wiped with ethanol after use.
9. All surfaces are daily wiped with at least 70% ethanol or isopropanol before and after use.

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# Research Specific Safety Protocols

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**EH&S CHECKLIST:** Please review the [EH&S checklist for Phase Two Research Activities <https://www.ehs.uci.edu/PublicHealth/covid-19/Labs%20Returning%20to%20Work.pdf>.

\* required

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I have reviewed this checklist.

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**PPE Requirements:** Please **check all** selections as an agreement to the guidelines. If you have other PPE requirements your group will use, please enter those in the "Other" field.

*Note: Chemistry has purchased ~120 drums of isopropanol (40 have been delivered and placed in your laboratory) and face coverings (fire rated surgical masks, ~1800 on order). We also have 400 cases of nitrile gloves.*

For more information, see EH&S Face Covering Guidelines

(<https://www.ehs.uci.edu/PublicHealth/covid-19/Face%20Covering%20Guidance.pdf>)

\* required

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Sufficient stocks of personal protective equipment (PPE) and other safety supplies exist and I have a plan for scheduled/regular ordering to help ensure consistent availability of these essential supplies.

Face coverings are required in all parts of the building. The exceptions are when working with pyrophoric or water reactive chemicals, when eating/drinking alone in a room without people (such as an unshared office).

Researchers must understand a face covering prevents infected individuals from dispersing the virus to others. (The wearing of a face covering is more about keeping your own germs to yourself.)

Face coverings should be flame resistant (100% cotton, surgical, or FR) and not have any dangling parts that might pose a safety hazard (no bandanas, no gators).

In unavoidable & absolutely necessary exceptions to the 6 feet distancing rule, a face shield must be worn in addition to the face mask. (If you need a face shield, please contact Greg Weiss).

All other typical PPE (gloves, eyewear, and lab coats) must still be used in appropriate areas of the laboratory.

Gloves and eyewear should be used when opening incoming packages.

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**SANITIZING:** All surfaces (door knobs, keyboards, instruments, fume sashes and baffles, etc) should be disinfected before and after use. Please details specific to your lab for sanitizing shared equipment and spaces.

**70-75% Isopropanol** should be used to wipe down most surfaces. (Use spray bottle to apply and then allow the alcohol to sit for at least 30 seconds before wiping away.) Other sanitizers such as quaternary ammonium compounds (benzalkonium chloride, benzethonium chloride, tetraethylammonium bromide), bleach (1/3 cup household bleach per gallon), 3% hydrogen peroxide or other appropriate disinfectants may be used if the alcohols are not appropriate or unavailable.

More information can be found at: -

<https://www.ehs.uci.edu/PublicHealth/covid-19/Lab%20Cleaning%20Guidance.pdf> - <https://www.ehs.uci.edu/PublicHealth/covid-19/Chemical%20Disinfectants%20Against%20SARS-CoV-2.pdf>

\* required

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1. Wash hands with soap upon entering and before leaving the labs.
2. Wear gloves and safety glasses at all times when working in the lab and when opening delivered packages.
3. All surfaces are daily wiped with at least 70% ethanol or isopropanol before and after use.
4. All researcher will be encouraged to bring there own sanitizing solutions, but isopropanol, alcohol and kim-wipes will be available as well in each lab.

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**CONFINED AREAS:** Please list areas which can only accommodate one person at a time and describe any special protocols associated with these areas.

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All labs will be accomodating only one person at a time.

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**INSTRUMENT USE, CLEANING, & REPAIR PLANS *within your lab*:** Please describe these protocols. **Suggestion:** Consider using plastic wrap or keyboard covers that can easily be wiped down with sanitizer after use.

\* required

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1. All equipment will be maintained and overseen by one person.
2. All keyboards and mouse will be wiped with alcohol or isopropanol after each use and once a day.
3. If service is needed for any of the setup, the lab will be not available for access by other researchers.
4. All services will be pushed to night time.

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**INSTRUMENT USE, CLEANING, & REPAIR PLANS *between labs*:** Please describe protocols if an instrument belonging to you or someone else is used by researchers of different groups. **Suggestion:** Consider using plastic wrap or keyboard covers that can easily be wiped down with sanitizer after use.  
**\* required**

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1. All keyboards and mouse will be wiped with alcohol or isopropanol after each use and once a day.
2. If service is needed for any of the setup, the lab will be not available for access by other researchers.
3. All services will be pushed to night time.

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**FACILITIES Protocols:** Please describe how your research lab will interface with each Facility used. The protocols for each Facility can be found here:  
<https://www.chem.uci.edu/lab%20research%20during%20pandemic>. (Facility directors have been asked to fill out this same form and their plan will be reposted.).  
**\* required**

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1. For advanced projects and collaboration experiments, before every research session, approved researcher will meet (via Skype or Zoom) with the corresponding member of a team or collaborator and discuss the plan of the working session. These sessions will include statements and measures of safety and prevention as appropriate.
2. If any in person contacts will be necessary, it will outside lab space, more than 6 feet apart at all times in order to comply with mandatory social distancing.
3. Though only one person is planned to occupy lab, it is expected only one person will have access to the bench, hood, or bay in order to avoid accidental contact.
4. Only one person at a time may occupy any enclosed space, such as a cold room, restroom, stairwell, or elevator.
5. Contact with other labs should be made via phone or electronic means. Transfer of items should be arranged by leaving them in the hallway rather than handing them over in person. Use of other labs' equipment should be pre-arranged in order to avoid accidental contact.

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**PS STORES /COPY CENTER Protocols:** The following statements reflect PS Stores operational procedures during Phase 2. Please check **all** selections and use the other box if necessary to indicate how your research lab will interface with Stores.

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Face coverings are always required in Stores.

Stores staff will limit occupancy levels at the entrance. Maintain a 6 foot separation in front of the entrance.

Packages will be passed through the door to reduce contact between staff and researchers.

Researchers should maintain 6 foot separation at all times in PS Stores

Only 1 computer terminal will be available and distance markings will be indicated with blue tape on the floor. The terminal will be disinfected throughout the day.

Only 3 individuals will be allowed in the solvent or supply room at a time. Only 1 person per aisle.

Designate one person on each shift to interact with PS Stores (unless the item being picked up is too large).

Only 3 individuals are allowed in the copy center at any one time. Only the front, back and side photocopiers will be available to ensure physical distancing.

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**HAZARDOUS ACTIVITIES:** Please describe any hazardous activities requiring procedure modifications due to the current circumstances. Make a special note of any processes requiring a second person present. **Working alone is prohibited when using pyrophorics, acutely toxic gases, and HF.**

Please review EH&S Working Alone Guide:

<https://www.ehs.uci.edu/programs/labres/Working%20Alone%20Reference%20Guide.pdf>

**Suggestion:** Consider using safe operating cards near unattended reactions, contact the GST to obtain these.

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1. No hazardous materials are kept in the lab.
  2. Occasional experiments with hazardous materials are fully controlled and removed from lab upon the completion of experiments.
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**RAMP DOWN PLANS:** Please describe how your group will ensure all equipment and instrument are left in a safe state if research is unexpectedly ramped down.

Please see the following webpages (<https://news.research.uci.edu/vcr/research-ramp-down-and-curtailment/>) (<https://news.research.uci.edu/research-continuity/page/7/>)

\* required

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1. Advanced equipment and beamlines are under full control, with remote access to computers and other control software.
  2. Video surveillance system insure laboratory safety at all time.

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**OTHER.** Please provide any other pertinent details not mentioned in other sections.

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*No response*

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*Upon approval of your plan by the Dean's Office, a PDF of your entries will be sent to you. This document should be electronically signed by your lab members and then stored on a shared group drive / website and in the lab safety binder.*

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**CERTIFICATION FOR REVIEW:**

\* required

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I have completed all parts of this form and it is ready to be reviewed.

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## Attachment

### Question

\* \*\*PHYSICAL DISTANCING WITHIN LAB (Diagram)\*\*: Please upload a diagram of the laboratory and indicate where people will work. Lab diagrams can be found here: <https://www.chem.uci.edu/lab%20research%20during%20pandemic>.

### File

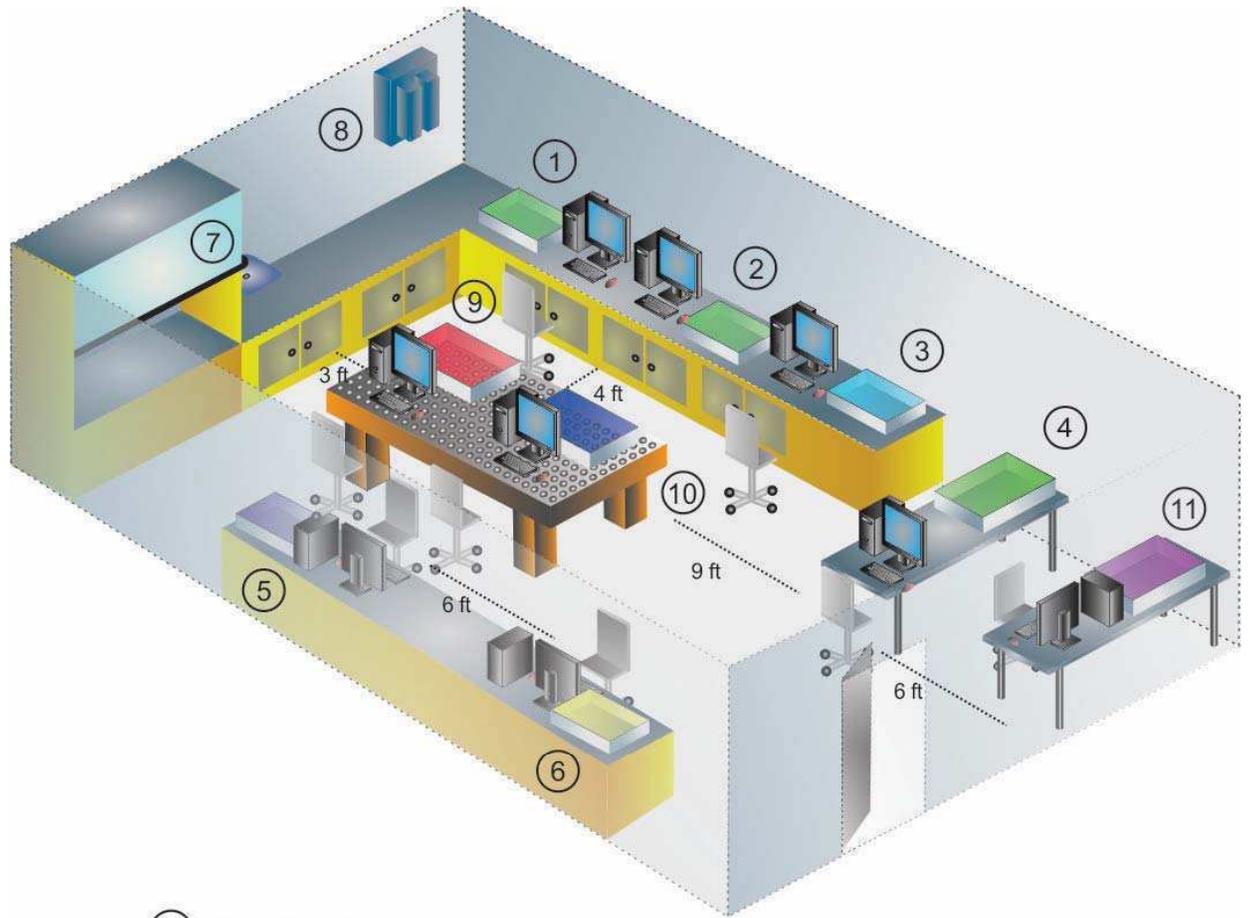
LSL layout.pdf



### **Laboratory layout**

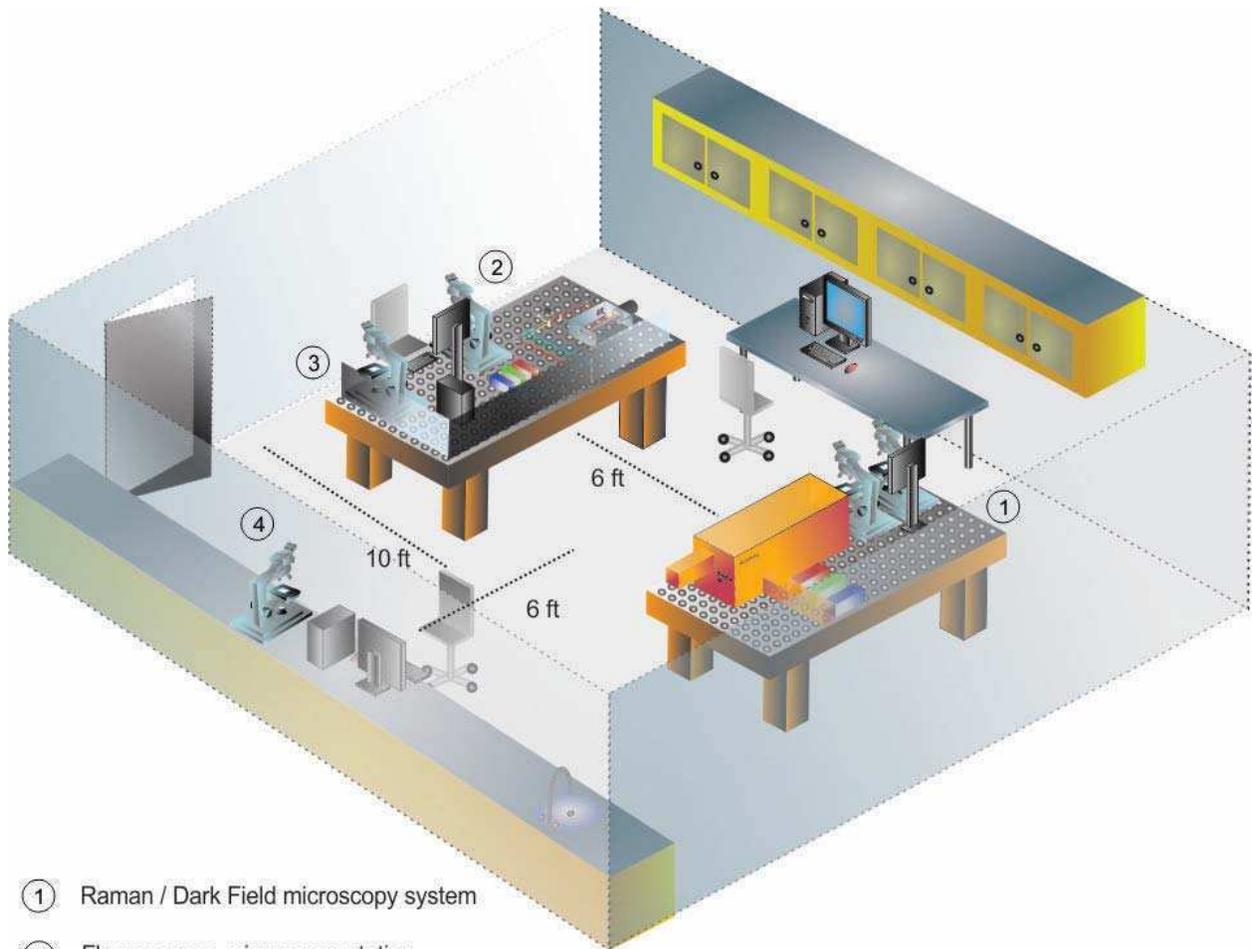
1. Please, notice, each laboratory is closed at all time through automatic lock.
2. Each laboratory equipped with multiple several video cameras, with microphones and speakers to allow easy communications.
3. The premises are monitored 24/7 with feedback system.

## Linear lab



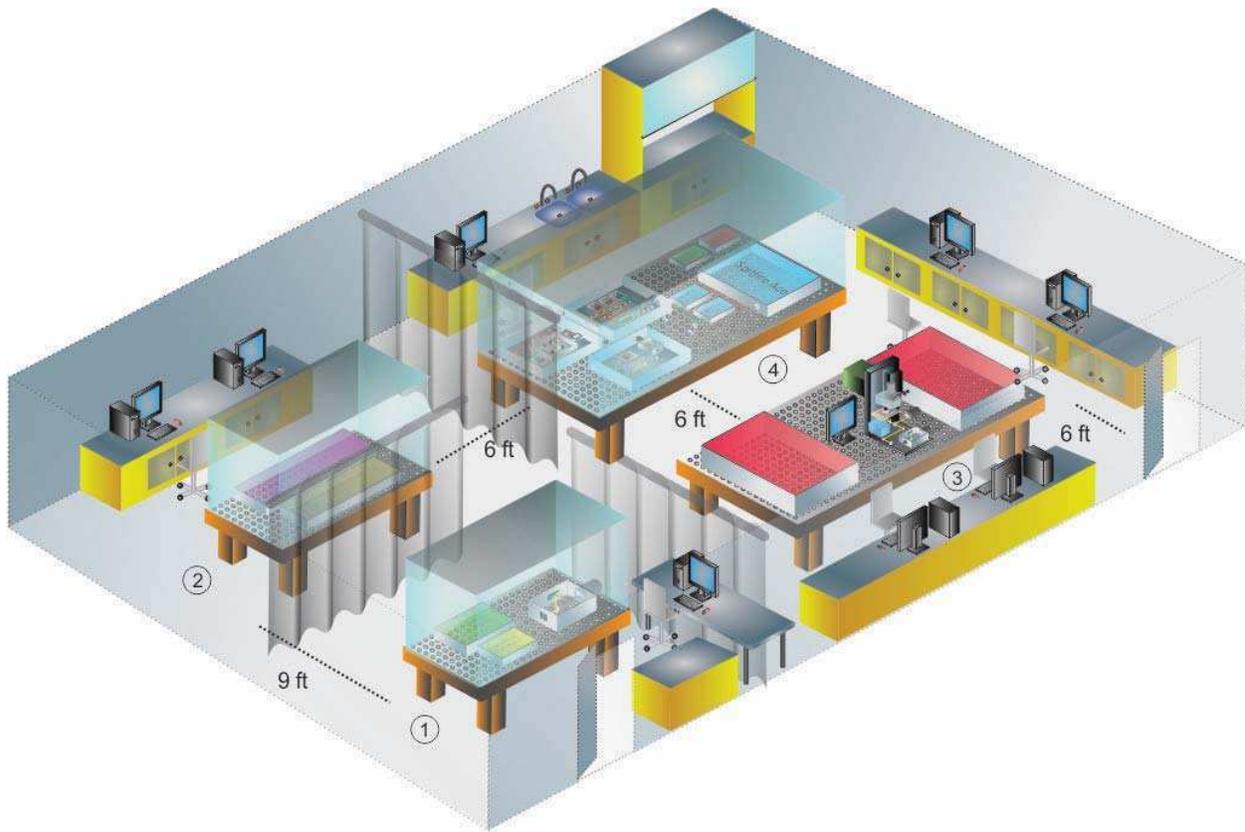
- ① Jasco 4700 FTIR
- ② Malvern Zetasizer DLS
- ③ NanoSight NS300
- ④ Jasco J-810 spectropolarimeter
- ⑤ Jasco-670 absorption spectrometer
- ⑥ Cary-7000 universal measurement spectrometer
- ⑦ Chemical hood
- ⑧ Nanopurifier
- ⑨ Cary Eclipse fluorimeter
- ⑩ Cary-60 absorption spectrometer
- ⑪ Malvern SEC-MALS

## Microscopy Lab



- ① Raman / Dark Field microscopy system
- ② Fluorescence microscopy station
- ③ Phase-contrast microscopy station
- ④ Dark Field microscopy station

## Ultrafast Lab



- ① Nanosecond beamline
- ② Picosecond beamline
- ③ Nonlinear microscopy system
- ④ Femtosecond beamline