

## **Gillmore Research Group Laboratory Working Agreement**

### **Above all else – use common sense!**

Your **SAFETY** comes **FIRST** by a very wide margin! Research productivity (particularly with respect to loss of synthesized compounds or data) comes second; cost (e.g., of your time or commercial chemicals) and convenience (to you or others) come an even more distant third.

Gillmore research group students working anywhere, or other students present in the Gillmore laboratory, must adhere to the following guidelines when Prof. Gillmore is not present or readily available (you know where he is and can interrupt him if necessary) within the Science Center. (Gillmore students working in other research groups' spaces must additionally adhere to that group's working agreement; other students working in the Gillmore laboratory must additionally adhere to their own group's working agreement.)

**Note that in all cases no wet chemistry should be performed without a second person present within the group's overall laboratory area, and many manipulations require even closer oversight.**

A) Any time, even when the student is alone:

- desk space outside the black curtain in 3120 or in classroom / computer lab / common non-lab space is available for reading, writing, record-keeping, studying, personal computer use, etc.; notebooks and binders may be retrieved from within 3120 as well. *Desk space in laboratory spaces may also be used, but only with safety glasses and appropriate attire.*
- all the computers in 3120, 3119, 3123, 3127, and other instrument laboratory spaces may be used for data analysis and processing or to initiate new runs on already prepared/loaded samples, as well as other computer work (lit searching, preparing talks and posters, etc.). *Note that safety glasses are required in these areas.*
- *NOTE: late at night and on weekends it is still advisable that someone be aware of your whereabouts and check in with you if you do not return when you say you will.*

B) Any time, but with a lab buddy (legal adult; preferably but not necessarily chemically trained) present somewhere within the larger Gillmore group "area" of 3120, 3123, 3129, 3127, and 3119 who is aware of what you are doing:

- previously run reaction workups may be repeated (provided that they do not include the use of any highly reactive chemicals, including, but not limited to pyrophoric reagents, strong acids, strong oxidizing agents)
- previously performed purification, such as recrystallization or column chromatography, of known compounds is allowed.
- rotary evaporators may be used.
- dry ice / acetone baths and ice baths may be maintained; reaction temperatures may be monitored and observations of ongoing reactions made.
- individual samples may be added to or removed from vacuum/argon manifold and liquid nitrogen may be dispensed in room 3127 (if you've been trained) and/or added to maintain the trap (*note: vacuum line may NOT be set up or taken down without a trained buddy within sight*).
- hydrogenations may be monitored, hydrogen added to reservoir or bottle, or bottle evacuated/purged with nitrogen at the end of a hydrogenation (if you have been properly trained to do so.) *Note: you may NOT begin a hydrogenation nor open the hydrogenation bottle after a hydrogenation has been completed without an organic faculty member present on the floor.*
- standard cleaning procedures, such as washing glassware (including the base bath but not using "piranha" or other strong acids/oxidizers) or cleaning the laboratory, may be performed.
- instrumentation (NMR, IR, GC/MS, UV-vis, Optical Bench, etc.) may be utilized and appropriate samples may be prepared.
- *NOTE: if the lab buddy is not immediately present in the same laboratory room, doors should be left unlocked (and propped if possible) and you should periodically check in with one another.*

C) Any time, but with a chemically trained lab buddy immediately present within sight of what you are doing:  
 - previously run reaction workups (or cleaning procedures) involving strong acids, strong oxidants, or highly toxic chemicals may be performed.  
 - vacuum line may be set up or taken down if you have previously been properly trained to do so *and so has your buddy*.

D) During normal business hours (8:00am – 5:30pm) with a chemically trained lab buddy present somewhere within the larger Gillmore group area of 3120, 3123, 3129, 3127 and 3119 who is aware of what you are doing AND ALSO an organic faculty member (Gillmore, Johnson, Sanford, Smith) present on the 3<sup>rd</sup> floor who is aware of what you are doing and will remain available throughout the procedure:

- previously run reactions and workups may be repeated (*note*: any reactions or workups involving the use of highly reactive chemicals, including, but not limited to pyrophoric reagents, strong acids, strong oxidizing agents, or highly toxic substances, may only be performed with the approval of both the Professor Gillmore and the organic faculty member serving as a substitute supervisor)
- hydrogenations may be begun and/or terminated if you have previously been properly trained to do so.
- new reactions may only be run or worked up for the first time with explicit approval from Professor Gillmore and may require a lab buddy or other faculty member in sight.

**The bottom line: think, be smart, be safe, and if in doubt ASK for HELP.**

STATEMENT OF AGREEMENT:

*I agree to adhere to this Gillmore Research Group Laboratory Working Agreement and will meet all the safety guidelines provided by the Chemistry Department at Hope College. I will only use instrumentation for which I have received proper training by the appropriate faculty member and will only run experiments using only chemicals that have been approved by Professor Gillmore or a designated substitute supervisor. When appropriate I will consult with a chemistry faculty member before beginning chemical processes and will let them know when I have completed the task. Under no circumstance will I run unauthorized experiments. I promise to seek assistance if ever faced with an unforeseen safety issue, and I will promptly report to Professor Gillmore and any designated substitute supervisor any and all safety incidents, accidents or "near misses" that may occur.*

Signature	Date	Print Name	Initials	Cell Phone #	PI Initials & Date
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