General Lab Policies: Larson Research Group

To maintain a professional, smoothly running lab please adhere to the following guidelines for the main lab and animal rooms. As always, comments and suggestions are welcome.

Personnel issues, work, and work hours

- Lab members are strongly encouraged to consult with Tracy regarding the lab's research, its organization, and all work-related issues. Tracy is the final arbitrator of any lab disagreement and so should be consulted as soon as possible.
- All lab members are expected to maintain a professional attitude towards the lab and their work, to show up at a reasonable time, and to spend an appropriate amount of time in the lab doing their work. If you are not sure what is appropriate, first consider what is necessary to achieve your goals, be them self-motivated or agreed upon with lab members. If you are still unsure, check with Tracy.
- Scheduled animal care and other laboratory duties must be performed on time. This is very important as all research activities and lab members' success depends on the health of the animals.
    - If unexpected circumstances require you to be late or absent, call Tracy as soon as possible to let her know, and so that arrangements can be made to cover for you if necessary.
- If you are planning a vacation or other extended time away, consult with Tracy as soon as possible. This is very important to ensure continuity of research as well as care for the animals.
- If you are on an academic calendar, please let Tracy know in advance if you will not be in the lab during breaks and holidays. Also be sure to provide Tracy updates to your academic course schedule and exams weeks so you and her can plan for optimal performance in the lab and classroom.
- Extra days, odd hours, etc. are often required, and sometimes unexpectedly. This is the nature of biological research. For hourly employees, schedule adjustments can be made subsequently in consultation with Tracy.
- It is not permissible to be employed or to volunteer at other research organizations or businesses, or to conduct research in other labs, unless such arrangements have been approved explicitly by Tracy.
- Lab members must stay focused on the science. Ultimately, the only reason to be in the lab is to perform careful, well-designed and executed experiments, make new and interesting discoveries, and generate top quality data for publication. Only by producing a steady stream of such results and the papers that convey them can we hope to maintain our grant support, and only with our grants can we continue to purchase materials and pay salaries. It is good to socialize, and it is necessary to help with general lab upkeep, but lab members should carefully evaluate their time management to ensure that such other activities are not so distracting as to waste time and energy that could be put towards the research itself.

Shared lab responsibilities and resource stewardship

- The lab does not have a lab manager charged with 'looking after' the researchers. Instead, everyone is expected to be proactive in assisting with general lab upkeep to maintain the smooth functioning of the lab in terms of both research and morale.
- To enable current and future research, and to meet federal requirements and community expectations for the distribution of published material, the lab maintains a variety of precious and specialized resources, including living strains of birds, isolated genomic and plasmid DNA, glycerol stocks of bacteria, and archives of raw and processed data (images, spreadsheets, notes, etc.). Such resources are often not replaceable, and their loss or

mismanagement can do great damage to the lab's current productivity, future potential, and reputation. All lab members are expected to ensure that lab resources are preserved and maintained according to accepted standards in the field; it is the responsibility of every lab member to learn and adhere to such standards, as specified by lab Standard Operating Procedures (SOPs), other protocols written or approved by Tracy, or explicit directions provided by her or designated personnel. Failures to maintain laboratory resources can result in loss of privileges (space, financial support, access to reagents) or dismissal from the lab.

- To ensure equitable sharing of responsibilities for overall lab upkeep, suites of related tasks are divided amongst lab members on a rotating basis. Each lab member in charge of a particular suite of tasks is responsible for seeing that they are performed in a professional manner so as to adequately serve the lab as a whole. This doesn't mean the person in charge has to actually do everything; some things may be best done oneself, but others may be best done with the assistance of other lab members, either by organizing people, asking for help from specific individuals, or by asking Tracy to delegate specific tasks. How this is done will be up to the person overseeing each task. This approach provides a 'point person' that Tracy or other lab members can go to for addressing specific issues as they arise. Lab members are to respect the leadership roles taken by those in charge of their set of tasks and should support decisions once they are made.
- Tasks include:
    1. Resupply: ordering and inventory of essential disposables, reagents, etc., and obtaining necessary quotes and price comparisons
    2. Organization, molecular: responsible for ensuring adherence to professional standards of organization, cleanliness and functionality throughout the molecular portions of the laboratory; making sure supplies are restocked in drawers and workstations, glassware and plasticware are adequately distributed among rooms; dishes and recycling aren't piled up; electrophoresis area is clean and functional; bacteriological and molecular waste is autoclaved and removed; and binders, catalogs and shared desk spaces are organized; etc.
    3. Organization, animals: cleanliness and organization of animal rooms; management of routine upkeep of recording chambers; organization, monitoring, and replenishment of all bird related supplies; testing and calibration of bird monitoring systems, light cycle timers, recording devices, etc..
    4. Instrumentation and major equipment: cleanliness and functionality of all microscopes, gas tanks, bulbs, etc.; management of any service required for major equipment items including thermal cyclers, histology equipment, computers, imaging systems, refrigerators, incubators, etc.
    5. Refrigeration and incubators: organization of materials kept in freezers and refrigerators; routine defrosting, cleaning and maintenance of freezers, refrigerators, incubators, and water baths; policing of stray boxes and tubes, gaskets, lamps, and thermometers; maintenance and updating of freezer and refrigerator maps.
    6. Solutions and reagents: oversight and preparation of common stock solutions, bacteriological plates and stocks, in situ solutions, buffers, competent cells, etc.; ensuring that solutions are present across rooms; refilling carboys of RO, nano water, TBE etc.. This does NOT include re-supply of personal solutions and reagents.
    7. Administration and compliance: writing, organizing, and storing protocols; maintaining log books; scanning of fish records; IACUC reporting of bird numbers and mortality; storing and culling product sheets and equipment manuals; oversight of lab safety

matters, including sharps and chemical disposal, updating EH&S lab safety manual, testing of eye-wash stations, and stocking of lab first aid and chemical spill kits.

Lab organization

- Common work areas must be kept organized and sanitary. Please be sure to clean up after yourself. This is very important to maintain lab functionality and morale.
- Some lab members are assigned personal space for their research. For this privilege, lab members should clean and organize their space each day before leaving the lab. This helps to safeguard experiments from mold and bacterial contamination and contributes to an overall atmosphere of professionalism in the lab.
- Boxes of pipette tips, bags of tubes, and other supplies must be kept closed when not in use to prevent contamination. Laboratory stocks of these items should not be touched with bare hands.
- Supplies, instruments, common pipettors, etc. need to be returned to their proper locations. This is critical for overall efficiency and helps to avoid unnecessary financial costs in ordering and opportunity costs of time.
- Personnel from other laboratories may occasionally seek reagents, equipment, or other items from our lab. Typically, these requests should be granted provided they do not interrupt our own research. If you are not sure whether something can be loaned or given away, check with Tracy. Also be sure to consult with Tracy before loaning, or removing, any equipment from the lab, and log the transfer on the lab sign out sheet.

Data collection, storage and preservation

- Each investigator is responsible for backing up their own data to guard against fires, natural disasters, and theft. In general, two back ups of computer files should be made, with one stored in the lab provided Dropbox and the other stored on a lab provided hard drive. If you are unsure how to do this, or require additional storage media or software, check with Tracy.
- The lab subscribes to a DropBox account to enable long term storage and sharing of data. All digital data must be stored in an assigned location within this account and must not be left on personal computers or hard drives where they are not linked to this account; storage in DropBox fulfills requirements for backing up in a remote location.
- Data may not be stored on imaging computers or song recording computers because it is not adequately safeguarded and can also interfere with acquisition of new data by other users. Therefore all newly acquired images, audio recordings, or related files must be transferred to a new storage location where they will be backed-up. For images, the transfer of files should occur immediately after the user's imaging session. For audio recordings, the transfer should occur when the bird is removed from the recording booth.
- All data relevant to DNA constructs or stocks of cells (e.g., expected and observed sequence files, construction and usage details, storage locations) must be entered into the lab Clones database for permanent archiving.
- All researchers in the lab are expected to keep notebooks and these notebooks must be kept current and organized. This is important to ensure that experiments can be repeated and results can be verified. Clear and detailed notes are especially important for some projects that can take months or years to complete, and may involve multiple investigators. Notebooks should document what worked, and, just as importantly, what didn't work, so we can learn from our mistakes.
- All notes should be taken in such a way that they are not susceptible to loss from water damage (i.e., permanent ink, or in some instances pencil may be acceptable; check with Tracy if you are not sure).

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- Mistakes in written notes or data should never be erased, covered over with liquid paper, etc. Instead, draw a line through the material to indicate the error; describe the error and initial and date the change if appropriate.
- Notebooks and data (including computer files) must remain in the lab and must be properly stored (e.g., on shelves, not long-term on benches or the floor). All notebooks and data are property of the funding agency and must be accessible to Tracy and agency representatives at all times. More specifically, notebooks should NEVER leave the lab.

Publications, presentations and authorship

- Since the goal of scientific research is to gain and disseminate knowledge, all lab members participating in research should be working towards gathering data for eventual publication.
- It is important that any lab members participating on a project understand their roles and whether or not they will receive authorship on resulting papers. In general, authorship is warranted when a lab member has contributed substantially to the collection of data that is being used for the publication in question, regardless of the researcher's position in the laboratory (e.g., grad, postdoc, tech, undergrad). Any questions or concerns about such matters should be brought to Tracy's attention as soon as they arise; Tracy is the final arbiter within the lab of disagreements that may arise in this regard.
- The final phases of completing and publishing research are often the most difficult and it is critically important that all lab members finish their projects in this manner before leaving the lab. A project is defined as completed when any paper describing the work is published or "in press". Failure to complete projects results in substantial burdens on other lab members and jeopardizes the laboratory's continued funding. Therefore lab members may forfeit authorship or authorship position on any resulting manuscripts at Tracy's discretion should they leave the laboratory before finishing their projects (grads, postdocs, technicians), or before their normal time of graduation (undergrads). This policy is not meant to be punitive, but authorship discussed before leaving the lab can not be guaranteed if the lab member does not finish the work before departure and another lab member is required to finish.
- Posters, talks or other presentations of lab data at professional meetings or at other venues (e.g., departmental seminars, retreats, mini-symposia, local group meetings) may be given only when titles, abstracts (if relevant) and final materials have been explicitly approved by Tracy and any additional authors. See additional policy on applications for talks, grants, etc..
- Presentations of data, schematics, plots, etc. for posters, talks and manuscript figures must be composed using professional software (e.g., Adobe Illustrator, Adobe Photoshop; GraphPad Prism; Apple Keynote; MS Powerpoint is typically not acceptable for layouts and figure preparation).
- In writing grants and papers, all references must be inserted using a professional reference management system (e.g., Endnote).

Lab meetings, seminars, journal clubs

- The lab holds a weekly organizational meeting. The goal of this meeting is to keep one another informed about our research endeavors, and—as a group—to prevent problems or solve them as they arise. All lab members are expected to attend. Each researcher is expected to prepare a brief and informal presentation of work from the previous week. Other lab members should strive to provide helpful feedback in return.
- We also discuss various issues related to the bird care and use and a variety of issues relevant to the lab, including: proposed improvements to bird room standard operating procedures (SOPs); suggestions for molecular or histological protocols; problems with equipment or reagents; and debates or disagreements about other matters. If you are not

sure whether something is appropriate to bring up in front of the group, feel free to consult with Tracy ahead of time.
- The lab meeting also may include more formal presentations of research by individual lab members, presentations of research plans and logistics, and discussions of current literature. These presentations are assigned by Tracy on a rotating basis.
- Besides the lab meeting, more focused meetings for individual projects are scheduled on a weekly or biweekly basis. Each project typically has a lead investigator who is responsible for organizing the meeting so that all involved personnel are present. Discussions focus on current research directions, planned experiments, allocation of responsibilities, etc.
- Any lab member may request ad hoc or regularly scheduled one-on-one meetings with Tracy to discuss matters that cannot be addressed in group meetings.
- Senior lab members are expected to attend, and contribute, to departmental seminars, the bi-monthly cell meeting, and lab or departmental reading groups. If you are not sure whether particular events are appropriate or worthwhile, check with Tracy for advice.

Reagent preparation, use, and disposal
- All reagents need to be labeled with the reagent's name, the preparer's initials, and the date of preparation. This is crucial to ensure reagent quality as well as personnel health and safety.
- Any prepared or received reagents that are running low must be replenished or re-ordered. This is critical so that other people's work does not suffer. If you are not sure how to prepare a specific reagent, or what to order, please do not guess; check with Tracy or another senior lab member.
- All reagents prepared for general lab use must be autoclaved (except for concentrated acids, bases, or other solutions for which autoclaving is not possible or necessary).
- Lab stocks of reagents should only be handled with gloves, should be opened as briefly as possible, and should come in contact with only sterile plasticware or glassware. These precautions are critical for avoiding contamination by molds, bacteria, DNases, RNases, etc.
- Aliquots of lab stock reagents should be numbered. Aliquots of stock reagents should be marked with a dot to indicate which aliquot is currently in use. Aliquots should not be "hoarded" in personal reagents, unless otherwise advised by Tracy to do so (e.g., common, regular use antibodies).
- Dry reagent bottles should be kept RNase-free; please do not put spatulas or anything else into them.
- For frequently used and easily contaminated reagents (e.g., MeOH, PBST, phenol-chloroform, LB), you should take individual aliquots from lab stocks for your personal use.
- If an enzyme or other reagent has gone bad, please discard it immediately; replace or re-order it as appropriate. Do NOT put it back. This will ensure that no one else in the lab wastes time and effort unnecessarily. "Replacing" should occur in a sterile bottle or by requesting ordering for a new reagent.

Freezer and refrigerator storage
- Tubes, plates, and reagents must be clearly labeled with their contents, your initials, and the date. The same holds true for freezer boxes. All items must be kept in assigned spaces.
- Stocks of DNA, primers, nucleotides and other perishables should only be kept at –20 °C or below. All tissue samples should be stored at –80 °C unless perfused with 4% PFA.
- Personal stocks of enzymes (including Taq) and purchased reagents (e.g., digoxygenin, fluorochromes, non-commonly used antibodies) are not allowed unless special permission is

obtained from Tracy. Such personal stocks are often lost or not used before they spoil; this becomes very costly and is not an efficient use of our funds.
- The lab has logs for keeping track of clones, long-term primer stocks, frozen cell cultures, antibodies, etc. New additions of such reagents must be properly logged and stored. Check with Tracy or other senior lab members to learn how to do this. As above, our past experience has shown this practice is critical for avoiding lost samples and data.
- All clones generated or received must be logged into the lab Clones database and stored in the designated freezer boxes. Clone information must be recorded completely in the database and all relevant sequence information must be uploaded.
- All riboprobes and Taqman probes must be logged into the on-line riboprobes database and stored in the designated freezer boxes.
- Freezer and refrigerator space is limited. So please be diligent about discarding PCR plates, diluted primers, ligations, etc. If you are not sure whether to save something, please check with Tracy.
- To keep our enzymes and other reagents both in stock and in good shape, please remember to spin down tubes prior to use and discard empty tubes immediately (re-ordering if necessary).

Ordering and receiving
- If a lab supply or reagent needs to be re-ordered, write the product information on the posted 'Order Supply' form.
- The lab orders supplies and reagents through an on-line system. Please check with Tracy or other senior lab members to learn how this is done.
- If you unpack a box, be sure to store the received items in their correct location and at the correct temperature. If you are not sure what to do with something, check with Tracy or other senior lab members. Write location of received items and date on the posted 'Received Packages' form.
- EH&S requires that new reagents be registered with them for storage and disposal.

Sharing of information and materials
- The lab generally shares information and provides materials (reagents, protocols) to other labs at UVa and elsewhere. Nevertheless, requests for information or materials should first be directed to Tracy and subsequent correspondence about such issues must include Tracy (e.g., by cc). This is because some materials are not legally or ethically ours to provide to other groups. Additionally, for NIH reporting purposes we need to keep track of resources that we have shared with other groups, so it is critically important that Tracy be 'in the loop'. If you are not sure what is reasonable to share or discuss, check with Tracy.
- Shipment of living animals requires specific procedures; check with Tracy for details and be sure she is cc'd on all relevant correspondence.

Leaving the lab
- When researchers permanently leave the lab, they must leave behind their original notebooks and all data files including images, spreadsheets, written records, and other materials. These are necessary as long-term documentation for the lab, the University and State of Washington, and the lab's funding sponsors (e.g., NIH, NSF). Researchers leaving the lab are expected to take copies of such documents for their own archives.
- Before leaving, lab members also must:
  - clean their office, bench, and animal space
  - discard or give away any personal reagents

  - remove files from lab computers and archive them on separate drives for permanent storage
  - clean out their freezer and refrigerator space
  - organize and cull fish stocks as appropriate and provide information for genotyping or propagating remaining stocks
  - provide maps or lists of remaining reagents (e.g., DNA, RNA samples)
  - and archive all clones with sequence information in the lab clones database.
- Personnel should complete the “leaving the lab” form and return to Tracy. Completing this form will ensure that all data and reagents are transferred and stored properly.

Lab safety and environmental health

- In an emergency, dial 9-911 for police, fire, or medical assistance.
- Know the locations of lab fire extinguishers, safety showers, eye wash stations, chemical spill kits, first aid kits, and materials safety data sheets (MSDSs).
- When using gloves for your own protection, be careful not to contaminate common equipment with substances that may be on the gloves. Be sure to remove at least one glove before leaving the laboratory so that others in the building know you are not contaminating shared spaces, elevator buttons, doorknobs, etc.
- To prevent theft and vandalism, be sure to close and lock the doors if you are the last to leave a laboratory room.
- It is your responsibility to know how to safely handle and dispose of chemicals that you are using. If you are not sure about something, check the MSDS, check with Tracy, or both.

Computers

- Computers in the lab are for research-related activities. To maintain a focused and professional environment, personal e-mail, web browsing, etc. should be limited, and must not be allowed to distract from other duties. Before settling down to go on Facebook, Twitter etc., ask yourself if there is something you can do for your own research, to help another lab member, or to contribute to the overall upkeep of the lab. (The answer is alway, ‘Yes!’) Also, be aware that acceptable use policies govern University of Virginia e-mail accounts and computers, and all electronic (and other) documents are considered public documents that may be requested by anybody at any time. If you are not sure if something is appropriate for email or a work computer, best to hold off and check with Tracy.
- Computer files, including images and sequences, must be backed-up to guard against theft, fire, etc. At least one backup should be stored away from the lab. (See data back up above.) Check with Tracy if you are not sure how best to go about this.
- All files must be kept in designated lab DropBox folders, not on the desktop or scattered around the hard drive.
- To ensure that data collection is not interrupted by a full hard drive, we do not store files permanently on computers used for imaging, song recording, or gel documentation.
- New software may not be installed on any lab computer without checking first with Tracy. Similarly, lab computers may not be connected to the internet without consulting with Tracy.
- Please be considerate of the next user by quitting applications when you are finished, or logging out if appropriate. This is particularly important because some software copies have limited licenses; if running on one computer, it cannot be running on another, which can interfere with other people’s research.
- Computers may not be used by persons who are not members of the lab.

Animal Rooms

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- All standard operating procedures (SOPs) must be followed at all times without deviation. If you are not sure how to perform a procedure, or what a particular instruction means, please ask Tracy; do not guess, do not proceed without assistance from a knowledgable colleague.
- Suggestions for improvements or modifications to SOPs are always welcome and will be given due consideration by Tracy or the lab at large. Nevertheless, SOPs are developed over long periods of time and represent considerable prior experience. Although efforts are made to explain the rationale for a particular procedure, this isn't possible in every case; assume there is a reason, even if you do not know what it is (and if you don't know why, ask Tracy or other lab members to learn why). Adherence to SOPs is absolutely essential for maintaining the health of the animals and the viability of the lab's research. Even seemingly minor deviations from procedures can have disastrous consequences!
- Only IACUC-approved personnel may work with the animals or enter animal facilities. Allowing friends and family into animal facilities can result in the entire lab being shut down for animal use if observed and reported to CCM.
- People who are not lab members are not permitted in the animal rooms without prior approval from Tracy and approval by CCM with proper documentation.
- Outside animals may be brought into the animal rooms. All requests by CCM or other labs to do so should be immediately reported to Tracy. Even if a room or space appears to not be in use at a given time, the space is not open for use by outside lab members or animals without prior approval.
- Remember to close and lock the animal room doors if no one else is in the room.
- All animals must be labeled with their animal/stock FMID, species name, date and initials at all times and according to standard lab formatting. Please check with Tracy if you are not sure how to do this.
- All breedings must be recorded in the stock books.
- Sick or dying animals must be reported immediately to Tracy or the emergency veterinarian and logged appropriately.
- Problems with environmental conditions should be reported to Tracy immediately, even if this entails calling Tracy's cell at off-hours. No hour is too late or early to report an issue.
- The lab keeps separate supplies of dishes for molecular biology and animals. Please do not mix them.

Equipment

- The lab has several delicate (and expensive) instruments including microscopes, microtomes, plate readers, and PCR machines. Do not use this equipment until trained to do so properly by Tracy or someone she has designated.
- When finished using a piece of equipment, be sure it is clean, settings are in "neutral" positions, and that it is ready for the next user.
- If you are using an instrument and it malfunctions, or you are unsure whether or not something is normal, please let Tracy or another senior lab member know ASAP so the problem can be evaluated, and tag the instrument as malfunctioning. Do NOT leave the malfunctioning instrument for someone else to discover.

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I have read and understood the laboratory policies and I agree to abide by them.

Name	Signature	Date

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