Montana State University Green Lab Certification

Principal Investigator: **Date:**

Department: _____

Building: _____ **Room(s):** _____

Overview & Instructions:

The Montana State University Green Lab Certification addresses sustainable behaviors, conservation efforts, and environmentally friendly infrastructure applicable to laboratory settings. Through the Research Integrity and Compliance (RIC) evaluation check list, labs can achieve graded levels of green lab certification:

- **Green**: Awarded to labs that achieve ≥90% lab assessment scores
- **Gold**: Awarded to labs that achieve ≥80% lab assessment scores
- **Silver**: Awarded to labs that achieve ≥70% lab assessment scores

To be recognized as a certified green lab, laboratories will be assessed in accordance with a green lab certification check list. The certification check list is first completed by lab staff as self-assessment. Thereafter, the check list is passed along to the RIC (mark.dewald@montana.edu or mary.gauvin@montana.edu) to schedule an onsite sustainability survey. Upon RIC evaluation, labs will receive a final score. Labs will receive a certification based on the lab assessment scores.

Unless otherwise specified, the scoring will adhere to the following:
Complete = 1 pt; Partial = 0.5 pt; No = 0 pt; N/A = excluded from total score

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Equipment:

Turn off energy consuming appliances/equipment when not in use (implement "turn me off" labeling). Notable laboratory equipment includes:

☐ Complete ☐ Partial ☐ No ☐ N/A Thermocyclers

☐ Complete ☐ Partial ☐ No ☐ N/A Refrigerated centrifuges

☐ Complete ☐ Partial ☐ No ☐ N/A Biosafety cabinets

☐ Complete ☐ Partial ☐ No ☐ N/A Incubators/environmental chambers/ovens

☐ Complete ☐ Partial ☐ No ☐ N/A Refrigerators/freezers

☐ Complete ☐ Partial ☐ No ☐ N/A Computers

☐ Complete ☐ Partial ☐ No ☐ N/A Other, please describe: _____

Ultra-Low Temperature Freezers (ULTs):

☐ Complete ☐ Partial ☐ No ☐ N/A Units are staged in centralized location/room, maintaining 6-8" free perimeter, near an exhaust duct.

☐ Complete ☐ Partial ☐ No ☐ N/A Temperature setpoint increased from -80°C to -70°C.

☐ Complete ☐ Partial ☐ No ☐ N/A An accurate inventory of contents in maintained.

☐ Complete ☐ Partial ☐ No ☐ N/A Minimize the duration in which the door is kept open.

☐ Complete ☐ Partial ☐ No ☐ N/A Keep the unit well-stocked.

☐ Complete ☐ Partial ☐ No ☐ N/A Share/consolidate cold storage space.

☐ Complete ☐ Partial ☐ No ☐ N/A Door/gasket ice build-up is regularly removed. Units are defrosted, as needed.

☐ Complete ☐ Partial ☐ No ☐ N/A Filters are routinely cleaned/replaced.

☐ Complete ☐ Partial ☐ No ☐ N/A Coils are routinely cleaned.

☐ Complete ☐ Partial ☐ No ☐ N/A Regular preventative maintenance.

Biosafety Cabinets (BSCs):

☐ Complete ☐ Partial ☐ No ☐ N/A The use of UV light in biosafety cabinets is discouraged.

☐ Complete ☐ Partial ☐ No ☐ N/A Biosafety cabinets are regularly (annually) professionally certified.

☐ Complete ☐ Partial ☐ No ☐ N/A The BSC catch basin is regularly cleaned and is void of any debris.

Fume Hoods:

☐ Complete ☐ Partial ☐ No ☐ N/A Lower fume hood sash when not in use.

☐ Complete ☐ Partial ☐ No ☐ N/A The sash level is appropriate when work is ongoing (i.e. not raised all the way up).

☐ Complete ☐ Partial ☐ No ☐ N/A Minimize the storage of erroneous items/equipment in the fume hood.

☐ Complete ☐ Partial ☐ No ☐ N/A The fume hood is not utilized to evaporate chemicals or reagents to circumvent appropriate waste disposal methods.

Incubators:

☐ Complete ☐ Partial ☐ No ☐ N/A Incubators are not utilized as refrigerators.

Computers/Printers:

☐ Complete ☐ Partial ☐ No ☐ N/A Share printers as opposed to personal units.

☐ Complete ☐ Partial ☐ No ☐ N/A Only print when necessary.

☐ Complete ☐ Partial ☐ No ☐ N/A Double-sided printing.

☐ Complete ☐ Partial ☐ No ☐ N/A Black and white as opposed to color printing.

☐ Complete ☐ Partial ☐ No ☐ N/A Utilize recycled paper.

Autoclaves/Dishwashers:

☐ Complete ☐ Partial ☐ No ☐ N/A Regular preventative maintenance and calibration.

☐ Complete ☐ Partial ☐ No ☐ N/A Autoclaves operated efficiently (refer to autoclave use guidance poster).

☐ Complete ☐ Partial ☐ No ☐ N/A The unit is loaded at optimal (maximal) capacity.

Green Chemistry:

☐ Complete ☐ Partial ☐ No ☐ N/A Maintain an accurate chemical inventory (reducing erroneous purchases, expired chemicals, etc.).

☐ Complete ☐ Partial ☐ No ☐ N/A Alternative chemicals.

☐ Complete ☐ Partial ☐ No ☐ N/A Minimize generation of waste.

☐ Complete ☐ Partial ☐ No ☐ N/A Energy-efficient experimental design.

☐ Complete ☐ Partial ☐ No ☐ N/A Implementation of other principles of Green Chemistry.

Water Conservation:

☐ Complete ☐ Partial ☐ No ☐ N/A Turn off the water faucet/tap when it is not in use.

☐ Complete ☐ Partial ☐ No ☐ N/A Do not allow water sources to run longer than necessary.

☐ Complete ☐ Partial ☐ No ☐ N/A Dishwashers used in lieu of handwashing and utilized efficiently.

☐ Complete ☐ Partial ☐ No ☐ N/A Low-flow faucet water aerators.

☐ Complete ☐ Partial ☐ No ☐ N/A Conscious water quality selections are made (ex. Tap vs. RO vs. DI).

☐ Complete ☐ Partial ☐ No ☐ N/A Utilize membrane/diaphragm/oil free pumps or we use the house vacuum system instead of water-vacuum aspirators.

☐ Complete ☐ Partial ☐ No ☐ N/A When possible, glassware is reused to minimize the need for washing.

☐ Complete ☐ Partial ☐ No ☐ N/A Faucets are free of leaks.

☐ Complete ☐ Partial ☐ No ☐ N/A Reusable alternative to ice (e.g. Lab Armor beads).

Recycling:

☐ Complete ☐ Partial ☐ No ☐ N/A Recycle DI water filtration units.

☐ Complete ☐ Partial ☐ No ☐ N/A Recycle empty tip boxes.

☐ Complete ☐ Partial ☐ No ☐ N/A Recycle cardboard/paper.

☐ Complete ☐ Partial ☐ No ☐ N/A Recycle bottles/glassware.

☐ Complete ☐ Partial ☐ No ☐ N/A Recycle ink/toner cartridges.

☐ Complete ☐ Partial ☐ No ☐ N/A Recycle batteries and/or other universal waste.

☐ Complete ☐ Partial ☐ No ☐ N/A Recycle solvents (e.g. acetone)

☐ Complete ☐ Partial ☐ No ☐ N/A Select suppliers who offer product and packaging take-back schemes.

Sustainable Purchasing:

☐ Complete ☐ Partial ☐ No ☐ N/A Whenever possible, share equipment as opposed to making individual purchases.

☐ Complete ☐ Partial ☐ No ☐ N/A Purchase ACT-labeled products which emphasize Accountability, Consistency, and Transparency (ACT) around manufacturing, energy and water use, packaging, and end-of-life.

☐ Complete ☐ Partial ☐ No ☐ N/A Purchase products produced from recycled plastic.

☐ Complete ☐ Partial ☐ No ☐ N/A Purchase products that are readily biodegradable (notably including eco-friendly disposable gloves).

☐ Complete ☐ Partial ☐ No ☐ N/A Purchase bagged conical tubes instead of Styrofoam racked.

☐ Complete ☐ Partial ☐ No ☐ N/A Utilize reusable products in lieu of disposable.

☐ Complete ☐ Partial ☐ No ☐ N/A Use stackable or refillable tip boxes.

Facility Design / Infrastructure:

☐ Complete ☐ Partial ☐ No ☐ N/A Lights are turned off when the lab is vacant (or the room is equipped with occupancy sensors).

☐ Complete ☐ Partial ☐ No ☐ N/A Lab doors are kept closed.

☐ Complete ☐ Partial ☐ No ☐ N/A If capable of being opened, windows are kept closed.

☐ Complete ☐ Partial ☐ No ☐ N/A Window blinds/shades are lowered.

☐ Complete ☐ Partial ☐ No ☐ N/A Lab is free of general maintenance issues (ex. Poorly sealed windows, wall penetrations, missing ceiling tiles, etc.).

☐ Complete ☐ Partial ☐ No ☐ N/A Thermostats are not obstructed or burdened (i.e. in direct sunlight or heat produced by nearby equipment)

☐ Complete ☐ Partial ☐ No ☐ N/A Only essential equipment connected to emergency power.

Engagement:

☐ Complete ☐ Partial ☐ No ☐ N/A Sustainable behaviors incorporated into lab standard operating procedures (SOPs).

☐ Complete ☐ Partial ☐ No ☐ N/A Disseminate green lab initiatives (such as displaying posters/notices, departmental emails, etc.).

☐ Complete ☐ Partial ☐ No ☐ N/A Provide feedback to the RIC (mark.dewald@montana.edu; 406-994-6757or mary.gauvin@montana.edu; 406-994-6821).

Waste Management: [Complete = 1 pt; Partial = 0.5 pt; No = 0 pt; N/A = excluded from total score]

☐ Complete ☐ Partial ☐ No ☐ N/A When possible, minimize single-use items in the laboratory

☐ Complete ☐ Partial ☐ No ☐ N/A Appropriately distinguish between biomedical and biological, but non-biomedical, waste streams.

☐ Complete ☐ Partial ☐ No ☐ N/A Separate halogenated, aqueous, and non-aqueous wastes.

Individual Completing Self-Assessment: _____

Self-Assessment Completion Date: _____

*Upon completion of the self-assessment, please send to mary.dewald@montana.edu or mary.gauvin@montana.edu

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To be completed by

RIC Staff Member Completing Evaluation: _____

Evaluation Date: _____

Evaluation Score: _____