

what is a green lab anyway?



my green lab.

allison paradise, executive director

learning objectives

- To learn the various ways Green Lab certifications have been used to drive behavior change.
- To understand how organizations and labs use certifications to affect institutional change.
- To learn about a new certification tool that was developed to make certifying labs easier.

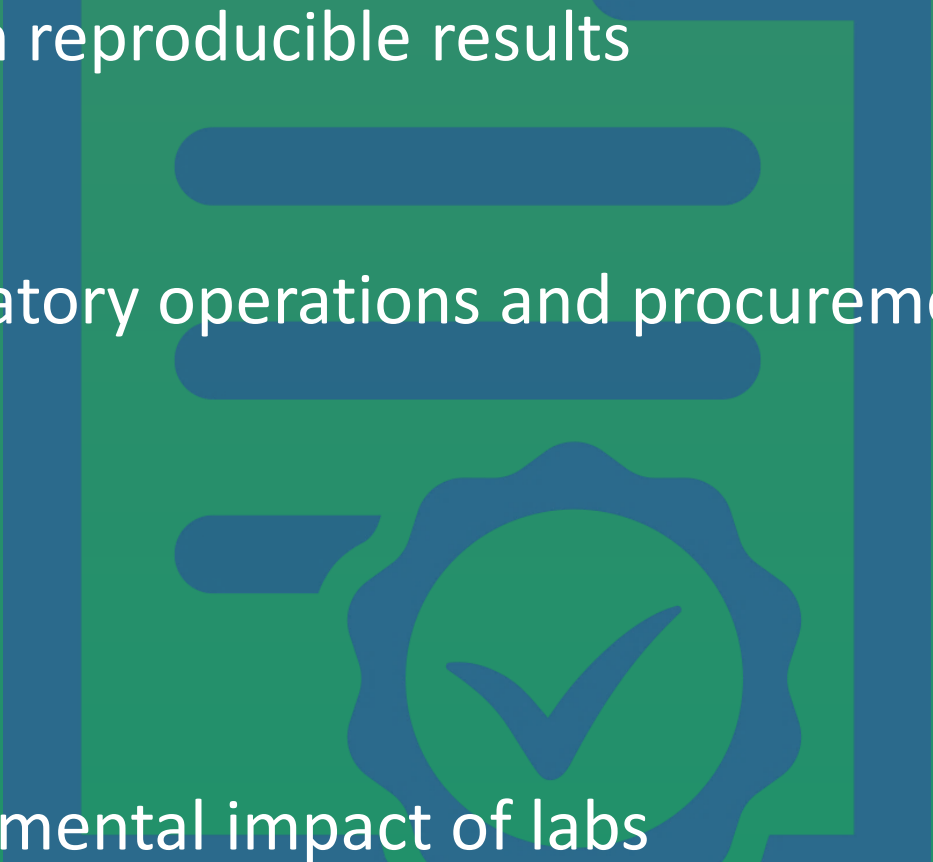
What is a Green Lab?





→ operations/scientists
→ sustainability/conservation



- clear standards with reproducible results
 - guidelines for laboratory operations and procurement
 - incentive
 - reduce the environmental impact of labs
- 



Green Lab
Certification
Program

how should a lab be certified?

in-depth interviews



online assessments



creating a green lab certification program

combination of online assessment and in-depth interviews

green lab certification process

complete assessment



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Green Lab Assessment

Support My Green Lab

Electricity

Lighting

Cold Storage

Fume Hoods

Water

Inventory Management

Recycling

Waste Reduction

Hazardous Waste

Green Chemistry

Travel

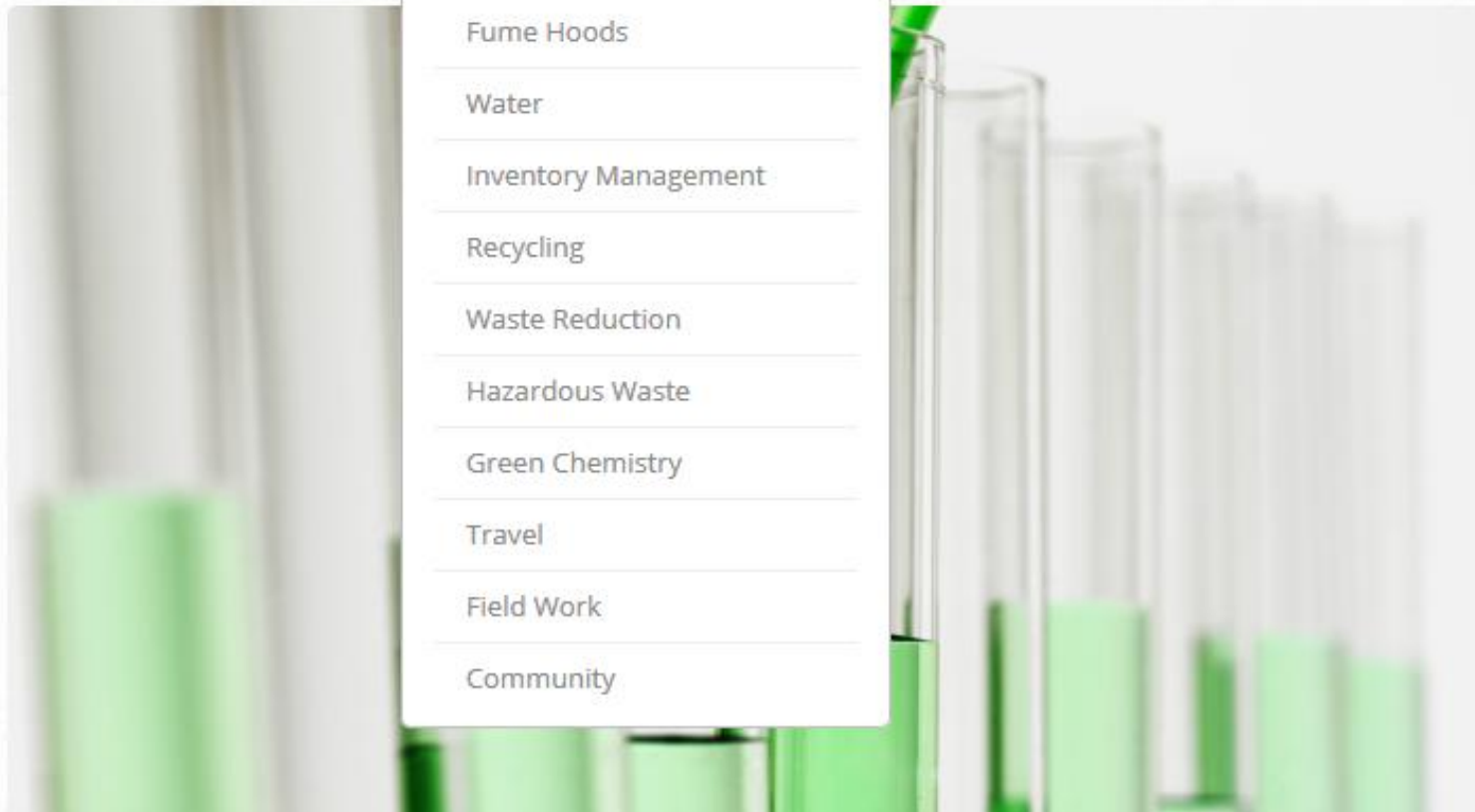
Field Work

Community

Creating Sustainable Labs

My Green Lab is building a culture of sustainability through science.

Learn More



Electricity

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is equipment turned off?

are outlet timers in use?

is equipment right-sized?

are signs posted?

Electricity

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Cold Storage

Fume Hoods

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Inventory Management

Recycling

Waste Reduction

Hazardous Waste

Green Chemistry

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are lights turned off?

have mercury bulbs
been eliminated?

are light switches marked?

Electricity

Lighting

Cold Storage

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Inventory Management

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Hazardous Waste

Green Chemistry

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are ULTs chilled up?

are freezers maintained?

is ENERGY STAR preferred?

does the lab participate in the Freezer Challenge?

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Fume Hoods

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Inventory Management

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Hazardous Waste

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are sashes closed?

are solvents being
evaporated in hoods?

Electricity

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Hazardous Waste

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are faucets turned off?

are aerators installed?

is single-pass cooling
eliminated?

are surplus sales
utilized?

Green Lab Assessment	Support
Electricity	
Lighting	
Cold Storage	
Fume Hoods	
Water	
Inventory Management	
Recycling	
Waste Reduction	
Hazardous Waste	
Green Chemistry	
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is there a lab inventory?

Electricity

Lighting

Cold Storage

Fume Hoods

Water

Inventory Management

Recycling

Waste Reduction

Hazardous Waste

Green Chemistry

Travel

Field Work

Community

does the lab recycle?

does the lab use take-back programs?

are purchases consolidated?

Green Lab Assessment	Support
Electricity	
Lighting	
Cold Storage	
Fume Hoods	
Water	
Inventory Management	
Recycling	
Waste Reduction	
Hazardous Waste	
Green Chemistry	
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Community	

does the lab share resources?

is hazardous waste properly separated?

Green Lab Assessment	Support
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Cold Storage	
Fume Hoods	
Water	
Inventory Management	
Recycling	
Waste Reduction	
Hazardous Waste	
Green Chemistry	
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are less-hazardous materials used when possible?

are the 12 Principles
of Green Chemistry
posted and discussed?

Green Lab Assessment	Support
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Inventory Management	
Recycling	
Waste Reduction	
Hazardous Waste	
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does the lab follow the
12 Principles?

does the lab use
alternative modes of
transportation?

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Inventory Management	
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does the lab use video
conferencing?

does the lab have a
leave no trace policy?

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are reusable containers
used?

does the lab have a
Green Lab champion?

Green Lab Assessment	Support
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are conservation issues
discussed in lab meetings?

so... how is this new?

Which of the following strategies for energy conservation do you use in your lab? (please check all that apply)

- We have posted green lab procedures including stickers for fume hoods, turning off lights, etc.
- We have labeled instruments with a start-up/shut-down procedure
- We have checked for and are aware of energy saving modes on all pieces of equipment
- We turn off chilled centrifuges, ovens, heating blocks and other equipment when not in use
- We have made durable signs about turning equipment off
- We have power strips that are easily accessible and in use
- We do not use screen savers - all of our computer monitors go into power-saving mode
- We only use LCD flat screens, no CRT computer monitors
- We measure the power consumption of our equipment and we are aware of how to save energy

We use and maintain outlet timers to avoid keeping equipment on all night.

- Always
- Frequently
- Never
- I don't know
- Not Applicable



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We have posted green lab procedures including stickers for fume hoods, turning off lights, etc.

Posted green lab procedures make it clear to everyone how to follow best practices in the lab. For example, fume hood stickers serve as reminders to shut the sash when the fume hood is not in use. In the event of an explosion, a closed sash will prevent chemicals and other materials from entering into the lab. In addition, certain types of fume hoods, called variable air volume hoods, will consume less energy when the sash is closed.

Fume hoods are just one example of how posting green lab procedures can facilitate adherence to best practices.

For more information about how fume hood sash stickers can save energy, please [click here](#).

For more information about how turning off the lights can save energy, please [click here](#).

green lab certification

complete assessment  results presentation/interview

Which of the following strategies for energy conservation do you use in your lab? (please check all that apply)

- | | | | | |
|--------------------------|--|---|-----|---|
| <input type="checkbox"/> | We have posted green lab procedures including stickers for fume hoods | 1 | pts | × |
| <input type="checkbox"/> | We have labeled instruments with a start-up/shut-down procedure | 1 | pts | × |
| <input type="checkbox"/> | We have checked for and are aware of energy saving modes on all pieces of equipment | 1 | pts | × |
| <input type="checkbox"/> | We turn off chilled centrifuges, ovens, heating blocks and other equipment | 1 | pts | × |
| <input type="checkbox"/> | We have made durable signs about turning equipment off | 1 | pts | × |
| <input type="checkbox"/> | We have power strips that are easily accessible and in use | 1 | pts | × |
| <input type="checkbox"/> | We do not use screen savers - all of our computer monitors go into power saving mode | 1 | pts | × |
| <input type="checkbox"/> | We only use LCD flat screens, no CRT computer monitors | 1 | pts | × |
| <input type="checkbox"/> | We measure the power consumption of our equipment and we are aware of our energy usage | 1 | pts | × |
| <input type="checkbox"/> | Add option | | | |

Green Lab Assessment

Thanks for taking the survey!

Total points earned

58.5795

/108

Your score

54%

Average: 66%

Energy

49%

Cold Storage

47%

Fume Hoods/TC Hoods

90%

Water

86%

Which of the following strategies for energy conservation do you use in your lab?
(please check all that apply)

Your answer

- **We have posted green lab procedures including stickers for fume hoods, turning off lights, etc. (1 pt)**

Lab: 24% UCSD: 52% National: 57%

We have labeled instruments with a start-up/shut-down procedure (1 pt)

Lab: 23% UCSD: 51% National: 55%

- **We have checked for and are aware of energy saving modes on all pieces of equipment (1 pt)**

Lab: 25% UCSD: 50.5% National: 52%

We turn off chilled centrifuges, ovens, heating blocks and other equipment when not in use (1 pt)

Lab: 20% UCSD: 49.25% National: 48%

- **We have made durable signs about turning equipment off (1 pt)**

Lab: 19.5% UCSD: 50% National: 50%

We have power strips that are easily accessible and in use (1 pt)

Lab: 23% UCSD: 48% National: 55.25%

- **We do not use screen savers - all of our computer monitors go into power-saving mode (1 pt)**

Lab: 24% UCSD: 54.5% National: 49.5%

- **We only use LCD flat screens, no CRT computer monitors (1 pt)**

Lab: 22.5% UCSD: 53% National: 58%

We measure the power consumption of our equipment and we are aware of how to save energy (1 pt)

Lab: 25% UCSD: 51% National: 56%

We use and maintain outlet timers to avoid keeping equipment on all night.

Your answer

Always (1 pt)

Lab: 27%	UCSD: 33%	National: 40%
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• **Frequently (1 pt)**

Lab: 33%	UCSD: 33%	National: 40%
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Never (1 pt)

Lab: 20%	UCSD: 33%	National: 17%
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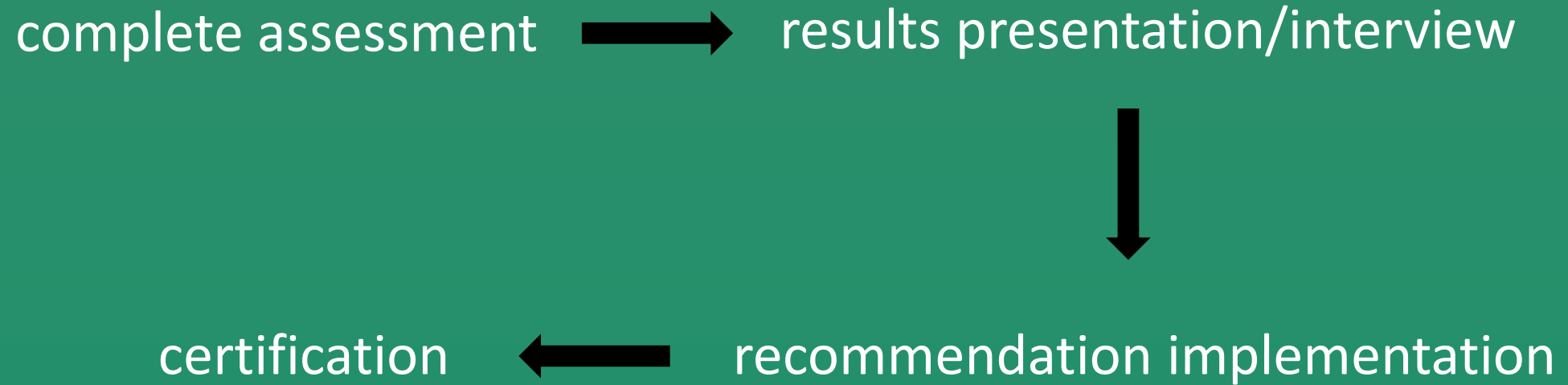
I don't know (1 pt)

Lab: 20%	UCSD: 1%	National: 2%
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Not Applicable (1 pt)

Lab: 0%	UCSD: 0%	National: 1%
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green lab certification



Green Lab Certification Levels

Platinum	80% or more of Green Lab assessment actions implemented
Gold	70-79% of Green Lab assessment actions implemented
Silver	60-69% of Green Lab assessment actions implemented
Bronze	50-59% of Green Lab assessment actions implemented
Green / Certified	40-49% of Green Lab assessment actions implemented

UC San Diego



Certificate of Achievement

The Green Labs Program
proudly presents this certificate to




Stephan Lange Lab
Division of Cardiovascular Medicine
October 11, 2016

Vice Chancellor, Resource Management & Planning

why green lab certification?

- clear standards with reproducible results
- guidelines for laboratory operations and procurement
- incentivize labs
- reduce the environmental impact of labs





does a green lab have a reduced
environmental impact?





yes!



reduced energy: 10,000 kWh/year

reduced water: 5,000 gallons/year

reduced waste: 500 pounds/year

estimated savings: \$1,000/year

Electricity

Lighting

Cold Storage

Fume Hoods

Water

Inventory Management

Recycling

Waste Reduction

Hazardous Waste

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Recycling

Waste Reduction

Hazardous Waste

Green Chemistry

Travel

Field Work

Community

thank you to our sponsors!



thank you to Rheaply!



Thank you!

allison@mygreenlab.org

860.680.3283