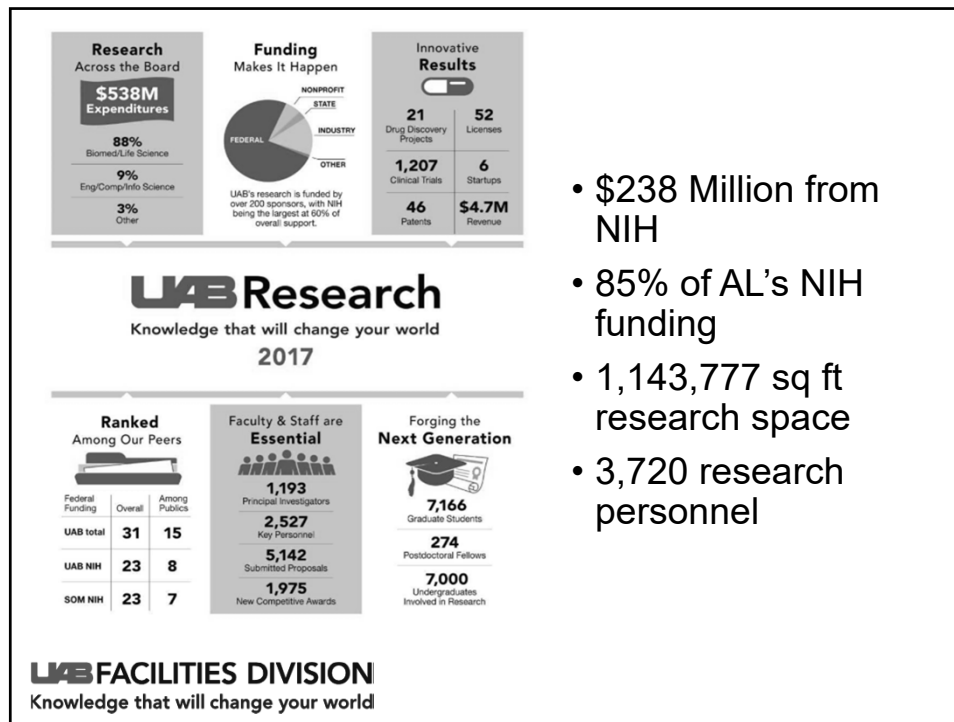


## UAB's Impact on Alabama

- 1 out of 31 Alabamians is either directly or indirectly employed by UAB
- For every \$1 received, UAB generates \$25 to state
- 377,347,356 kWh used FY2016-2017

**THE UNIVERSITY OF ALABAMA AT BIRMINGHAM  
ECONOMIC IMPACTS TO THE STATE, FY16**





- \$238 Million from NIH
- 85% of AL's NIH funding
- 1,143,777 sq ft research space
- 3,720 research personnel



## Building Energy Costs

- Research-intensive buildings can cost 4 times as much:
  - Business & Engineering Complex: \$2.49/sq ft
    - 114,689 sq ft
    - \$285,575/year
  - Biomedical Research Building II: \$9.26/sq ft
    - 435,842 sq ft
    - \$4,035,896/year



## What is a Green Lab?

- Reduces waste production and water/energy consumption
- First priority is safety and research integrity
- UAB Occupational Health & Safety are key partners

## Green Labs Pilot Program



1. Voluntary survey
2. Lab visit
3. Follow-ups and incentives
4. Second survey
5. Rating!

**UAB FACILITIES DIVISION**  
Knowledge that will change your world

## Survey Topics



- |                   |                       |
|-------------------|-----------------------|
| 1. Energy         | 6. Recycling          |
| 2. Water          | 7. Hazardous Waste    |
| 3. Fume & TC Hood | 8. Chemical Reduction |
| 4. Autoclave      | 9. Community          |
| 5. Purchasing     | 10. Cold Storage      |



### 1. Energy

- Lighting
- Equipment
  - Energy Star et al
  - Time management
- Screen savers



### 2. Water

- Equipment
- Right water for the right task
- Efficient washing
- Low-flow aerators
- Reporting leaks!

### 3. Hoods

- SHUT THE SASH
- No chemical storage
- No evaporating solvents
- Turn off the lights

### 4. Autoclaves

- Running a full load
- Using water misers
- Standby mode

### 5. Purchasing

- Surplus shopping before new
- Buy only what you'll use
- Consolidate purchases
- Equipment sharing

### 6. Recycling

- Paper, cardboard, cans, plastic
- Gloves & other non-traditional waste
- Choosing recycled content materials



## 7. Haz Waste

- Materials origin and human toxicity
- Red bag education

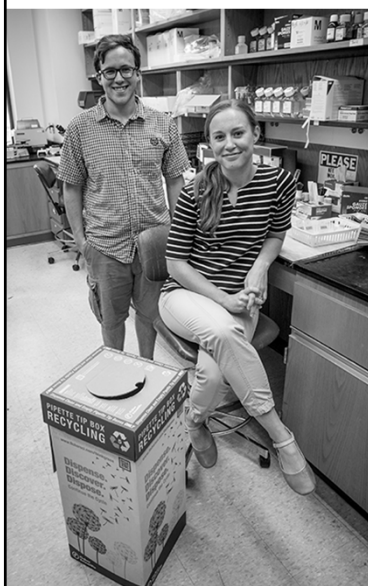
<b>ACT.</b>	
Accountability. Clarity. Transparency.	
The Environmental Impact Factor Label	
Product Name	
Manufacturing Location	
<b>Manufacturing</b>	
Manufacturing Impact Reduction	
Renewable Energy Use	
Responsible Chemical Management	
Shipping Impact	
Product Content	
Packaging Content	
<b>User Impact</b>	
Energy Consumption	
Water Consumption	
Lifetime Rating	
<b>End of Life</b>	
Packaging	
Product	
Environmental Impact Factor	
Label Valid Through	
<small>My Green Labs   mygreenlabs.org</small> <small>Part of the Green Labs Initiative, a project of the National Science Foundation</small>	

## 8. Chemicals

- Chemical alternatives
- 12 principles
- First in, first out
- Chemical inventory



## 9. Community



- Appoint a champion
- Communication at lab meetings
- Advocate to department
- Conduct training
- Include in grant applications
- Relationship with Facilities
- Stewardship of your space

## 10. Cold Storage



- Chilling up -80° to -70°
- Defrosting
- Maintenance (seals, coils, filter)
- Room temperature storage
- Sample inventory

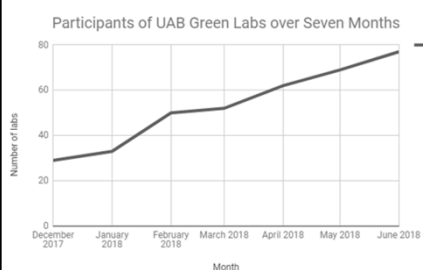
## Example Lab Progress

Action	Number	Savings/Unit		Estimated Savings/Day	per year
Turn off water bath	0	.3 kWh/day	0.3	0	0
Turn off heat blocks	0	.2 kWh/day	0.2	0	0
Turn off centrifuges (cold)	4	.5 kWh/day	0.5	2	730
Turn off centrifuges (rt)	2	.1 kWh/day	0.1	0.2	73
Turn off tissue culture hoods	5	5 kWh/day	5	25	9125
Turn off equipment (general)	0	3 kWh/day	3	0	0
Turn off lights					3686
Adjust ULT freezer set point to -70C	6	8 kWh/day	8	48	17520
Defrost ULT freezer	4	2 kWh/day	2	8	2920
Defrost -20 freezer	2	0.5 kWh/day	0.5	1	365
Close fume hood sash	4	25 kWh/day	25	100	36500
Retiring incubators as freezers	1	10 kWh/day	10	10	3650
					<b>74569 kWh</b>
Install aerator on faucet	9	2 gallon per minute	9	81	29565 gallons
General recycling				500 pounds/year	<b>500 pounds</b>

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## Program Expansion

- 76 labs enrolled across campus
- Whole building Green Labs pilot
- Freezer programs
- New recycling initiatives



## Learning Outcomes

- National best practices
- Each lab is unique
- Small changes lead to big savings
- Collaborative & non-punitive
- Feedback goes both ways



## Questions?

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