

## SUSTAINABILITY COUNCIL MEETING

### AGENDA

**Thursday – December 7, 2017**

**NSRC – Room # 358**

**9:00am – 10:30am**

**Refreshments will be served**

1. Previous - iCAP Working Group (iWG) recommendations – Status Update
  - ❖ EGen005\_Rooftop\_Solar\_Standard
  - ❖ EGen003\_Power\_Purchase\_Agreement\_Timelines
  - ❖ eCons003\_Conservation\_Budget
2. New Recommendation
  - ❖ Solar Farm 2.0
3. Progress on Climate Commitments
4. STARS evaluation - Living Lab Seed Grant

# Sustainability Council

Professor Evan DeLucia  
 Director of the Institute for Sustainability, Energy, and Environment  
 University of Illinois at Urbana-Champaign  
 December 7, 2017



## 2017-18 SUSTAINABILITY COUNCIL MEMBERS

- **Chair:** Robert J. Jones, Chancellor, University of Illinois at Urbana-Champaign
- **Vice Chair:** Evan DeLucia, Director of iSEE
- John Wilkin, Interim Vice Chancellor for Academic Affairs and Provost
- Ed Ewald, Senior Vice President for Development
- Danita Brown, Vice Chancellor for Student Affairs
- Susan Martinis, Interim Vice Chancellor for Research
- Jeffrey Brown, Dean, College of Business; Director of Center for Business & Public Policy
- Andreas Cangellaris, Dean, College of Engineering
- Feng Sheng Hu, Dean, College of Liberal Arts & Sciences
- Kim Kidwell, Dean, College of Agricultural, Consumer, and Environmental Sciences
- Helen Coleman, Interim Executive Director, Facilities & Services
- Betina Francis, Chair, Senate Executive Committee
- Raneem Shamseldin, President, Illinois Student Senate
- Nick Hayek, Chair, Student Sustainability Committee
- **Ex-officio:** Ximing Cai, iSEE Associate Director for Campus Sustainability; Chair of iWG
- **Secretary:** Jenny Kokini, iSEE Managing Director
- **Guest Speakers:** Scott Willenbrock, Provost Fellow for Sustainability, and Morgan White, F&S Associate Director for Sustainability

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## AGENDA

1. Review 3 recommendations from Mar. 2017
2. Solar Farm 2.0 - presentation and discussion
3. Progress on Climate Commitments
4. Living Lab - Seed Grant Program



INSTITUTE FOR SUSTAINABILITY, ENERGY, AND ENVIRONMENT



### Review 3 recommendations from Mar. 2017

1. EGen005: Rooftop Solar Standard
2. EGen003: PPA Timeline
3. ECons003: Conservation Budget

# Solar Farm 2.0

Scott Willenbrock

Professor of Physics  
Provost Fellow for Sustainability  
University of Illinois at Urbana-Champaign

Sustainability Council

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## Why Solar Farm 2.0?

- 1. Meet iCAP objective:** 25,000 MWh/yr solar energy (5% of campus usage)
- 2. A solar farm is cost-effective.**
  - Comparable to purchased electricity.
- 3. Solar on buildings, carports are more expensive.**
  - Also, limited in size.
- 4. Solar on campus avoids delivery costs**
  - Delivery is 40% of purchased electricity cost.

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## Why Now?

### Investment Tax Credit (30%) thru 2019.

- 26% thru 2020
- 22% thru 2021
- 10% thereafter

### Prices have declined since Solar Farm 1.0

- 25-35 year payback (depending on electricity inflation)
- Solar panel warranty 25 years; expect to last much longer

## University Solar Farms

### On campus:

- |                  |                |
|------------------|----------------|
| • UC Davis       | 16.3 MW        |
| • UIUC           | 5.9 MW → 16-18 |
| • Colorado State | 5.3 MW         |

### Off campus:

- |                     |       |
|---------------------|-------|
| • UC System         | 80 MW |
| • Stanford          | 69 MW |
| • MIT               | 60 MW |
| • George Washington | 53 MW |
| • Georgetown        | 32 MW |



## Recommendation

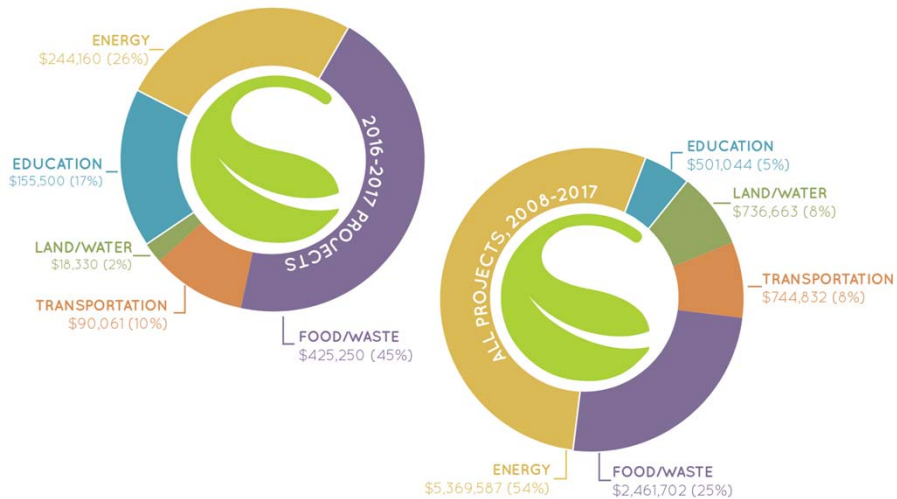
### Issue a Request for Proposals (RFP)

- Determine the cost of project
- Decide whether to move forward

## Progress on Climate Commitments

1. Student Sustainability Committee
2. Resilience Commitment
3. Carbon Commitment
4. Forthcoming Topics



## Student Sustainability Committee





## Carbon Commitment

- 33% reduction in energy per square foot, from FY08 to FY17
- 19,856 Megawatt-hours (MWh) from Wind Power Purchase Agreement and 7,169 MWh from Solar Farm, in FY17
- 25% reduction in total water consumption, from FY08 to FY17
- 11,679 bike parking spaces, in 523 bike parking areas
- iCAP incorporated into Campus Master Plan Update
- Over 75 students enrolled in Sustainability Minor
- Bin It/Recycling video from Ethics Office

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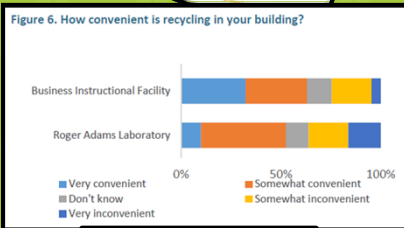


# Forthcoming Topics

## Green Labs Coordinator



## Food Waste Reduction



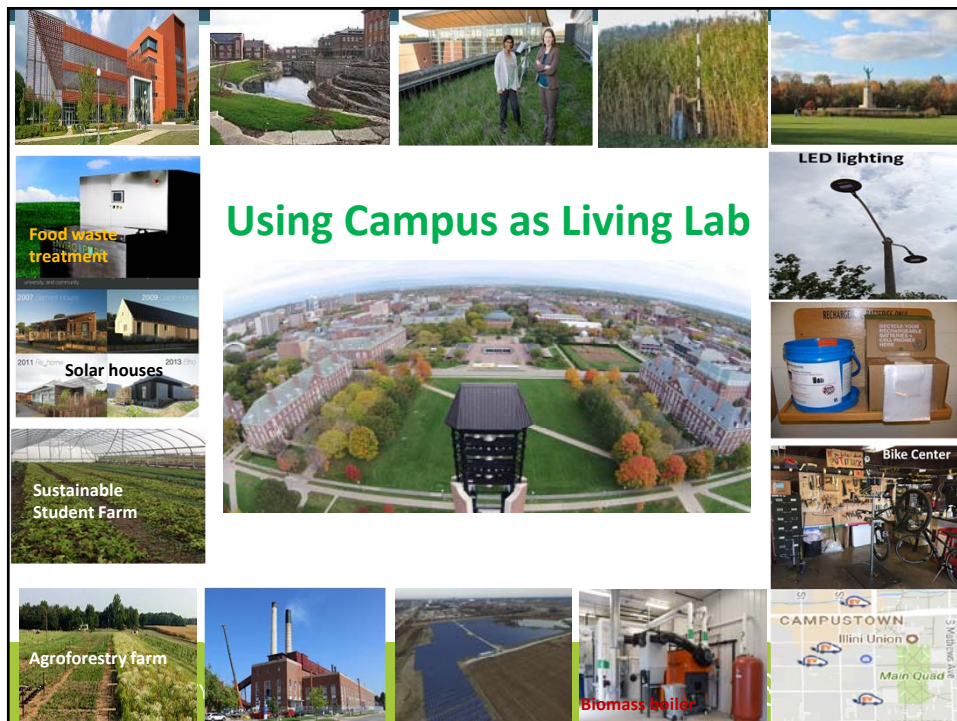
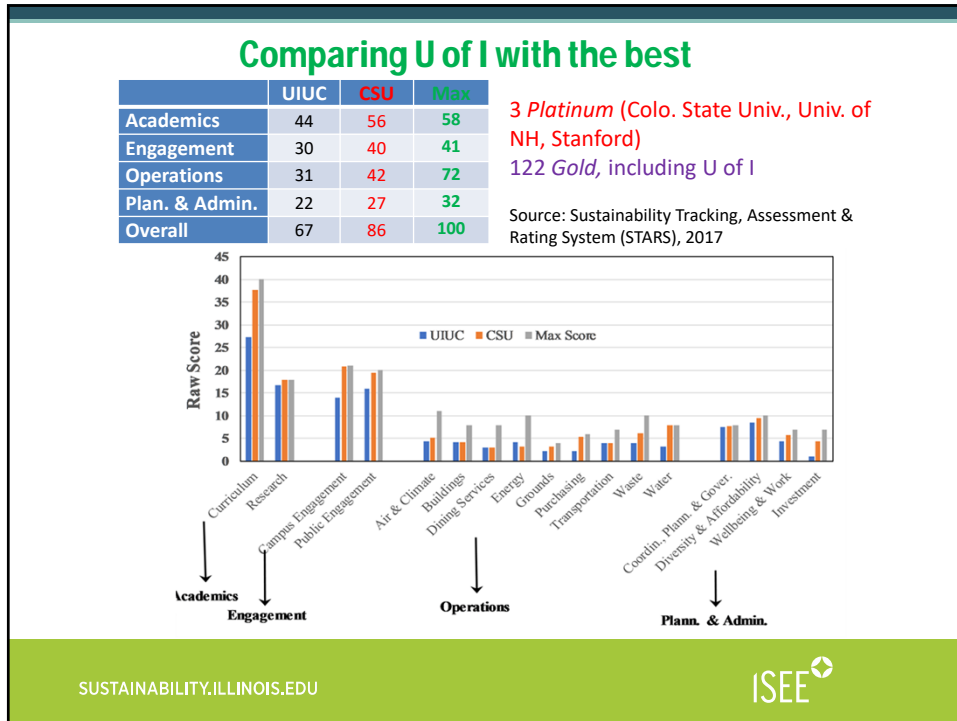
## Recycling Rate



## Stormwater Management

# Living Lab - Seed Grant Program

1. STARS evaluation / comparison
2. Living Lab Workshop
3. Seed Funding Program



## iSEE Workshop: Using Campus as Living Lab (10/11/2017)

- Using the **Gable Home** - An award-winning solar house for research and education into sustainable living, **M. Taylor, Architecture**
- **Abbott Power Plant** serving as a testbed for cutting-edge research on next-generation carbon capture, **K. O'Brien, PRI**
- Biological growth and community structure shifts in **campus tap water** during stagnation in indoor plumbing, **W. Liu, CEE/COE**
- Characterization and mitigation of rapid renewable energy variation for improved electricity grid support, an example of campus **Solar Farm**, **P. Krein, ECE/COE**
- Real-time meter data calibration tool for **campus buildings**, **Y. Yi, Architecture**
- Attacking **Petascale** supercomputers through targeted alteration of environmental control: A data driven case study, **R. Iyer, ECE/COE**
- Behavioral interventions for **campus energy consumption**, Erica Myers, ECE/ACES
- Working with **campus energy** reduction and emission control, **X. Wang, ABE/ACES, COE**
- Building a hydrologic and hydraulic design model for **Boneyard Creek**, Champaign and Urbana, IL, **T. Over, U.S. Geological Survey**
- High resolution temperature profiling and thermal analysis for geothermal energy; Thermal response test unit for a **campus geothermal pilot**, **Y. Lin, PRI**
- Multifunctional woody polycultures at the IL. **Energy Farm**, **S. Lovell, Crop Sci./ACES**
- Partnering with U of I dining services to investigate **campus food waste**, **B. Ellison, ACE/ACES**

## Seeding Funding Program

- Leverage seed money to attract larger external funds relevant to iCAP objectives
- Provide scientific support for campus sustainability development via approved projects
- Develop a win-win solution for R&E and campus sustainability promotion
- Help colleges to develop large projects for sustainability research
- Fund 10-15 projects each year

<http://sustainability.illinois.edu/seed-funding-program-highlights-campus-as-living-lab-workshop>