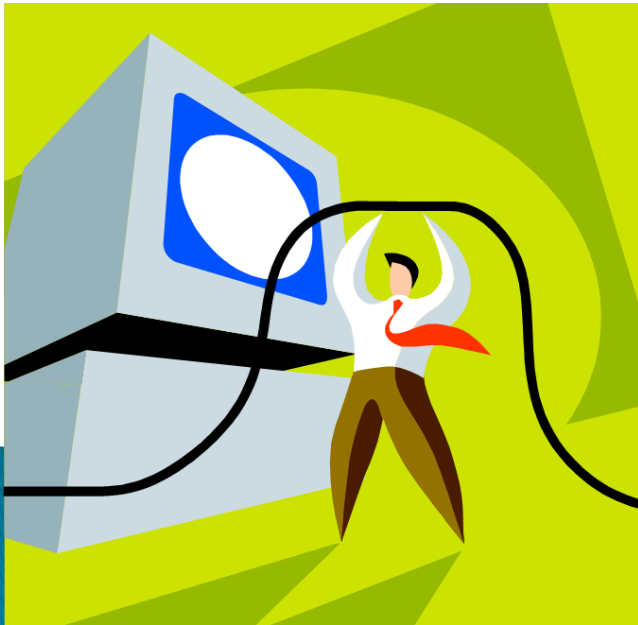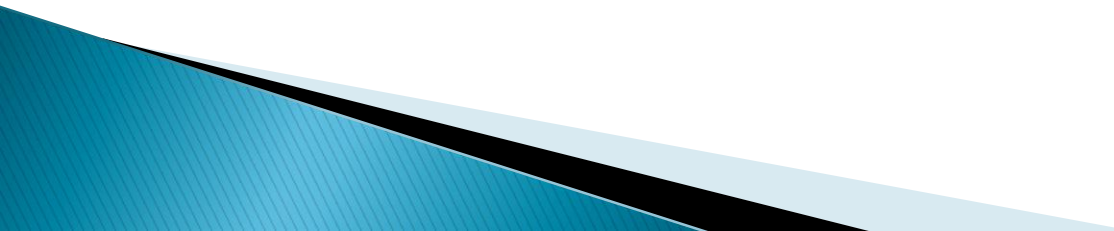# WATTS UP WITH OUR ENERGY USE ON CAMPUS?

Erika Redzinak
and Kelsey Brubaker
ESTU 471
Winter 2011

Outline

▸ Background Information

▸ Process

▸ Software

▸ Research and Contacts

▸ Case Studies

▸ Future Works

Why this Project?

- Savings could reach $20 or $40 or more per computer
- 56 ResTek Residence Hall Computers
  - $1120 per year, for low end
  - $2240 per year, high end estimates

- Administrative Bodies
  - ResTek
    ATUS
    Individual Colleges

Computer Energy Terms

- Sleep Mode
  ◦ EPA Recommendations
- Hibernate Mode
- Screen Savers
- Power Management Software
  ◦ JuicePress

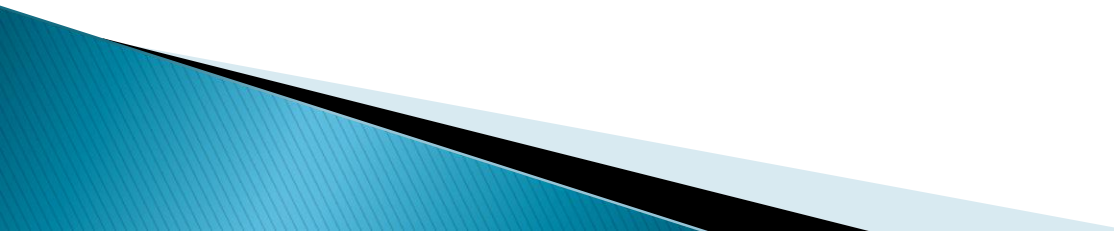JuicePress

3-Stage Process

▶ 1. Record data with no changes

Nash Hall Computer Lab

Process Continued

- 2. Follow EPA guidelines for sleep/ hibernate/ screen saver settings

- 3. Install a third-party software (JuicePress) and monitor changes

JuicePress Software

- Part of LabStats Suite, energy monitoring
- Costs
  - $500 per server to start
  - $9 per computer for program
  - $3 per computer per year maintenance

- Costs may be recovered through Puget Sound Energy (PSE) Grants

Internet Research

- EPA Energy Star Website

- Case Studies

Contacts

- **Deborah Frost,** WWU

- **Jonathan Geller,** WWU

- **Spencer Mister,** WWU

- **Susan Brown,** WWU

- **Bill Welch,** Yale University

- **Laura Knaapen,** University of Wisconsin

Case Study

- Saved $20 per computer per year

- 700 Computers Involved

- CO_2 Readout on all computer desktops for all labs

INDIANA UNIVERSITY

Case Study

- Also saved about $20 per computer per year

- In the past 5 years they have saved about $75,000

THE UNIVERSITY OF WISCONSIN OSHKOSH™

Case Study
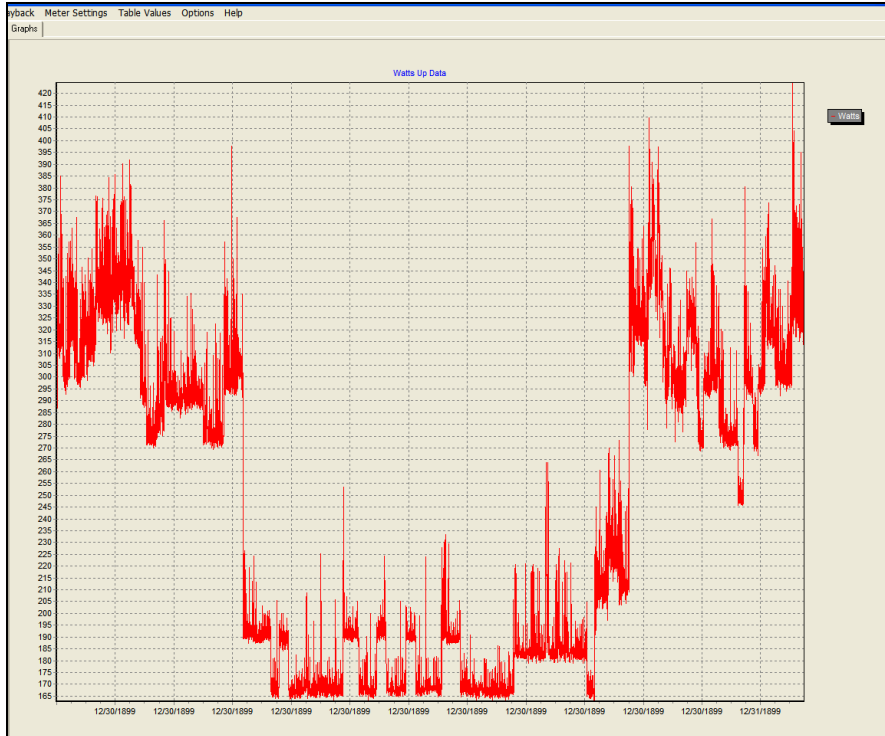
Yale University

- Saved $40 per computer per year

- Could temporarily shut down 105 computers and wake them back up

- Want to reduce greenhouse gas emissions by 43% by 2020
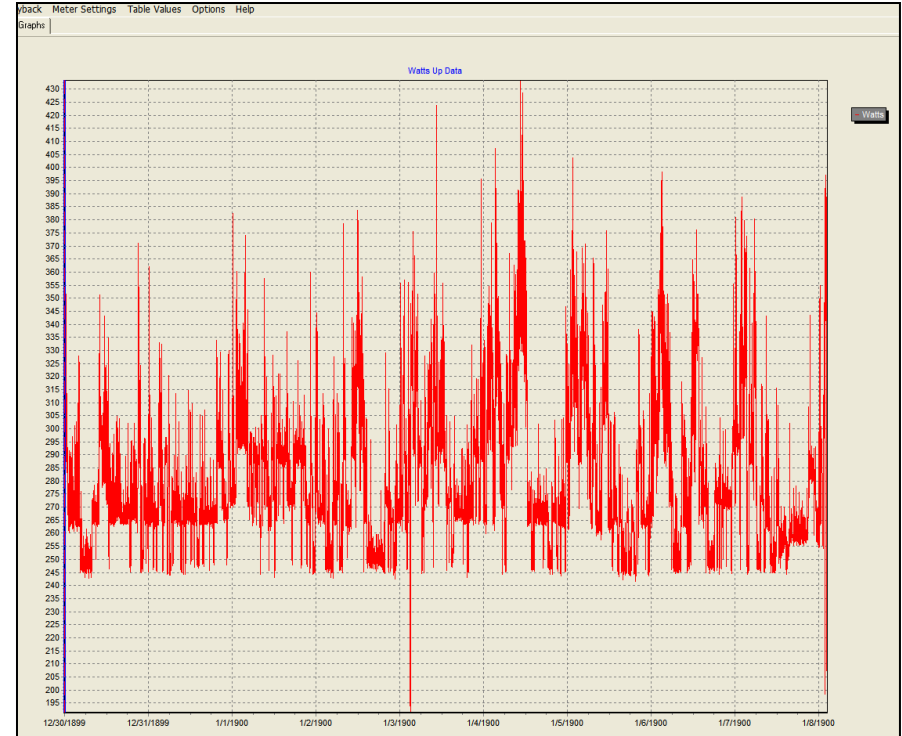
- Sustainability Strategic Plan 2010–2013
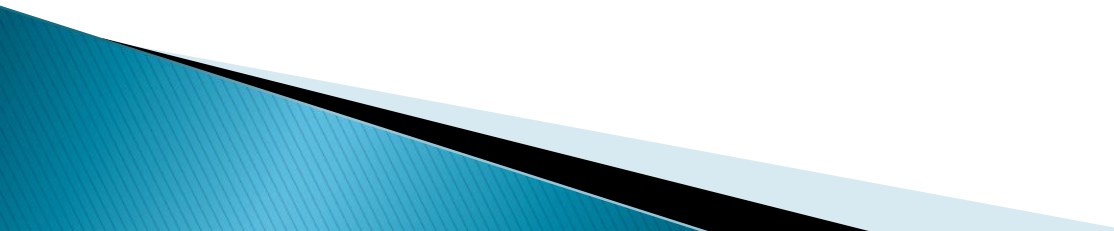
Graph Example

No Changes

Average 283.3767
Watts/hour

With Changes

Average 263.93105
Watts/hour

Future Works

▸ Continue with Phase 2 and Phase 3

▸ Have more raw data

▸ Install JuicePress trial on computers in
  Nash Residence Hall

▸ Continue to work with ResTek

▸ Evaluate user experience with changes

Questions?