

**Ball State University**  
**Unit-level Sustainability Planning**

*[as mandated in Goal IV\_F of the 2007-2012 Ball State University Strategic Plan]*

A Sustainability Plan  
for the  
Department of *Physics and Astronomy*

Submitted to  
Dr. Terry King  
Provost and Vice-President for Academic Affairs

15 November, 2010

*[on or before]*

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## Achievements to Date

The following are our short-form question responses within the categories of Governance and Administration, Operations, Curriculum and Research, and Community Service and Outreach. In developing these short-form responses, we are pleased to report significant achievements in these areas and have identified opportunities for further development/transformation.

[Provide brief descriptions for each affirmative or goal response]

### **Governance and Administration**

**Y N Goal**

**X**  **1.** The unit has standing committees to address issues of sustainability.

**Y N Goal**

**X**  **2.** The unit gives assigned load and/or a staff position dedicated to sustainability initiatives.

**Y N Goal**

**X**   **3.** The unit has established policies that encourage sustainability initiatives.

The Department Chair reviews all requests for purchases and expenditures with sustainability in mind.

**Y N Goal**

**X**  **4.** The unit has sustainability integrated into its mission statement.

**Y N Goal**

**X**  **5.** The unit maintains active membership in organizations engaged in promoting sustainability.

**Y N Goal**

**X**  **6.** The unit encourages and rewards research related to sustainability.

**Y N Goal**

**X**  **7.** The unit encourages and rewards the integration of sustainability issues into course material.

## **Operations**

**Y N Goal**

**1.** The unit purchases/uses Energy Star Office and Telecommunications Equipment.

**Y N Goal**

**2.** The unit has policies to restrict paper use.

The department encourages limited paper use. Many instructors provide digital copies of materials on Blackboard or LON-CAPA.

**Y N Goal**

**3.** The unit uses recycled paper.

The department cuts up paper materials unsuitable for distribution and uses these materials for notes and/or other appropriate applications.

**Y N Goal**

**4.** The unit recycles all materials accepted by the university system.

**Y N Goal**

**5.** The unit has appropriate recycling bins throughout its offices.

**Y N Goal**

**6.** The unit has policies that encourage the use of teleconferencing capabilities to limit travel.

**Y N Goal**

**7.** The unit specifies hybrid electric vehicles for travel.

**Y N Goal**

**8.** The unit shows preference for sustainable lodging for professional travel.

**Y N Goal**

**9.** The unit uses washable dinner/service ware for its meetings/receptions.

**Y N Goal**

**10.** The unit purchases/uses remanufactured office furniture.

**Y N Goal**

**X**  **11.** The unit purchases/uses sustainable materials for office furnishings.

**Y N Goal**

**X**   **12.** The unit discourages the use of single-occupant automobile travel.

We have always strongly encouraged car-pooling, when feasible. All travel involving multiple faculty members and/or students is expected to be in multiple person vehicles.

**Y N Goal**

**X**  **13.** Classroom, Office and/or Restroom lighting for the unit is controlled by occupancy sensors.

**Y N Goal**

**X**  **14.** The unit's thermostats are set to minimize energy use for heating and cooling.

## Curriculum

Y N Goal

X  1. The unit has courses dedicated to issues related to sustainability.

Y N Goal

X   2. The unit has courses with sustainability content.

PHYCS 100  
APHYS 420  
APHYS 422

Y N Goal

X   3. The unit has courses in which students are encouraged to address sustainability issues in their assignments.

PHYCS 100  
APHYS 420  
APHYS 422

Y N Goal

X  4. The unit recognizes sustainability courses from other departments as legitimate electives for credit in its programs.

Y N Goal

X   5. The unit has dedicated sustainability courses that can be taken for credit as part of a major or minor outside of the unit.

PHYCS 100 Energy Minor directed elective  
APHYS 420 Solar Thermal Systems - Energy Minor Group 1  
APHYS 422 Photovoltaics – Energy Minor Group 2

## Research

Y N Goal

X   1. Members of the unit have conducted research on issues of sustainability in their discipline.

Dr. Feng Jin is doing research on materials for improving lighting efficiency.

Y N Goal

X   2. Members of the unit have published on issues of sustainability in their discipline.

Feng Jin, Scott Little, and Guaogunag Qian, "Field enhanced thermionic emission barium strontium oxide coated carbon nanotubes," Proc. MRS 1137-EE05-09, (February, 2009).

Feng Jin and Scott Little, "Degradation of Mechanical Strength of Vertically Aligned Carbon Nanotubes at Growth Interface Joints at High Temperatures," Proc. MRS 1142-JJ15-41 (February, 2009).

3. Members of the unit attend conferences that address issues of sustainability.

APS March Meeting in Portland, OR in 2010. (Cancio, Ross)

**Y N Goal**

4. Members of the unit belong to associations dedicated to sustainability issues.

American Institute of Physics:

<http://jrse.aip.org/>

<http://www.aps.org/units/gera/letter.cfm>

**Y N Goal**

5. The unit has hosted workshops on issues of sustainability.

**Y N Goal**

6. The unit has hosted conferences on issues of sustainability.

### **Community Service and Outreach**

**Y N Goal**

1. The unit engages in public and/or outreach activities that address issues of sustainability.

**Y N Goal**

2. The unit is in partnership with others in the community in the pursuit of sustainability.

**Y N Goal**

3. The unit participates in community events that address issues of sustainability.

**Y N Goal**

4. The unit has initiated community endeavors in pursuit of sustainability.