



## CHAMPION INNOVATION PROJECT: GREENING SWIC LABS



## MEASURABLE ELEMENTS

LED lights use 14 Watts of energy vs. 100 Watts used by conventional lights. There are 16 sections of the course per year and 10 groups per class, each burning a light for 45 minutes. That's 120 hours of light generation. Switching to LED bulbs allows us to reduce the energy used by 86%, with associated cost savings for the college.

“ SWIC is committed to sustainability at all levels of the institution. We review and attempt new ways to become more sustainable each and every semester. Current efforts include replacing exotic species with native or more sustainable flora in campus landscaping; purchasing non-toxic and/or fewer chemicals for overall lab practices; providing more student learning outcomes related to sustainability and environmental stewardship; and Physical Plant's commitment to using less energy and increasing recycling and reducing waste. SWIC is committed to being a sustainability leader in higher education, and the best way to lead is by example.

*Steve Holman | Dean, Math and Science, Southwestern Illinois College*

## QUALITATIVE ELEMENTS

Building on several years' achievements in decreasing use of toxic substances and reducing waste in the labs, faculty and students in 2016 investigated using LED lights to study photosynthesis.

In the process of investigating this important biochemical process, photosynthesis, students are learning a more sustainable "green" method of conducting scientific research.

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# Southwestern Illinois College

## St. Louis Green Business Challenge – 2016 Champion Innovation Project

### Educational Innovation: Greening SWIC Science Labs

#### **Project Description**

SWIC has been "greening" science labs for the past several years by decreasing the use of toxic substances and reducing waste in the labs. In 2016 faculty and students investigated using LED lights to study photosynthesis.

#### **Project Location**

Science labs on SWIC main campus, Belleville, Illinois

#### **Project Time Frame**

The use of LED lights to investigate photosynthesis began during the Fall 2016 semester. Because the experiment concluded that LED lights are an effective, energy saving alternative to teach photosynthesis, the use of LED lights to conduct this exercise will continue in the class Principles of Biology I during subsequent semesters.

#### **Who or what does this project impact?**

Using LED lights to conduct photosynthesis not only reduces the annual energy use for these exercises by 86% (a cost savings for the college), but it also gives our students the experience of a more sustainable "green" method to conduct scientific research.

#### **How does this project advance sustainability within your college's day-to-day operations?**

This project is another SWIC initiative that illustrates our institutional commitment to advancing sustainability in our day-to-day operations.

#### **How does this project advance sustainability within your institutional culture?**

Students, staff and visitors experience visible signs on SWIC campuses that demonstrate our commitment to advancing sustainability. These include recycling bins, water bottle refill stations, EV battery chargers for electric vehicles, solar panels on a LEED certified building, etc. This project is the most recent initiative to keep our focus on sustainable practices within our college culture.

#### **How does this project advance sustainability In the mix of your services to clients/customers?**

Being an institute of higher education, it is important that Southwestern Illinois College take leadership in showing how one can live sustainability, i.e. reducing waste, recycling, using alternative energies, etc. This project is another example of how we take our role seriously and provide this awareness to our students, our colleagues, and our community.

#### **What cost(s) are associated with this project?**

No major additional costs over the previous semesters to conduct the photosynthesis experiment using LED lights.

#### **What kinds of savings are generated?**

By using LED lights instead of incandescent lights to teach photosynthesis, SWIC is reducing energy used by 86%.

#### **What are the next steps for this project?**

SWIC's Biology I classes will continue to conduct photosynthesis experiments using LED lights.