**Re-energize Workshop**

**Texas State University**

**May 16-20**

**Injecting Training Materials Into The Classroom**

Instructions: Using the suggested teaching activities presented at the end of each lecture, identify two activities that most interest you. Fill up the form below to show a plan that integrates these activities into your classroom. Submit the forms at the end of this session.

**Name**  Shaunak Kamat

**Email:** skamat@swtjc.edu

**Institution:** Southwest Texas Junior College

**Title of the Course:** Biology for non-science majors

(Lecture -1309; Lab-1109)

**Expected Number of Students:** 15

**Expected Number of Minority Students:** 12

**Description of Course Activity (i.e. Homework, Example, Quiz, Project, etc.):**

**1309:** Opinion paper – Solar energy is an efficient and sustainable source of energy to power the 21st century US economy.

**1109:** Scientific method – hypothesis-based research.

**Objectives of Activity:**

**1309:**

* Perform literature survey to provide background and rationale for opinion.
* Learn how to make an argument – provide pros and cons, and a clearly defined position which is defended based on facts, not opinions.
* Learn how to write and cite.

**1109:**

* Make a hypothesis and perform a controlled experiment to test the hypothesis
* Work in groups (learn teamwork and cooperation)
* Record and analyze results (basic statistical tools)
* Present research in the form of poster or presentation

**Student Deliverables:**

Students will learn about the scientific method of inquiry – making a hypothesis and then testing the hypothesis using a controlled trial, using basic statistical tools.

Students will also engage in teamwork activity, making a poster to highlight their work.

**Implementation Plan:**

**1309:**

* List effects of fossil fuel use on the environment (CO2 emissions, acid rain etc.)
* Provide background on solar energy production (how does it work, % contribution to total energy production, trends - increasing or decreasing - and its impact on the economy – jobs, cost of energy etc.)
* Defend or dissent: Solar energy use is a sustainable and environmentally friendly alternative to fossil fuel use

**1109:**

* Hypothesis: Photosynthetically active radiation (PAR) has a measurable impact on rate of growth of lettuce
* Students work in 5 groups and are given propagated lettuce plants (2-weeks post-germination).
* LED lights are used as source of illumination – equal wattage and lumens
* Control group is given white light; other groups receive green, red, blue and purple lights
* Students are expected to care for their plants and measure rate of growth of leaves and total mass at the end of the experiment
* Students will compare rate of growth between groups using one-way ANOVA
* Students will present their research as poster or presentation