

PROGRAM PROPOSAL FOR 2004-5 ENHANCEMENTS  
Promoting Academic Success Opportunities

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|------------|---------------------------------|---|--|
| <b>1.</b>  | <b>Name of Proposed Project</b> | <b>Student Developed On-Line Color Evaluation Experimentation</b> |  |
| <b>2.</b>  | <b>Sponsoring Department(s)</b> | Math/CS/Econ, Departments of Physical Sciences                    |  |
| <b>3.</b>  | <b>Primary Contact</b>          | C. Pheatt<br>e-mail address                                       | phone ext 5637<br><a href="mailto:pheattch@emporia.edu">pheattch@emporia.edu</a> |
| <b>3a.</b> | <b>Collaborators</b>            | C. Pheatt<br>R. Keith   | phone ext 5637<br>phone ext 5980   |
| <b>4.</b>  | <b>Description of Project</b>   |   |  |

During the past 3 years, C. Pheatt has worked extensively with Departments of Physical Sciences faculty in developing on-line web-accessible physics experiments. In conversations with R. Keith of Physical Sciences, a need for an experiment to address color assessment was identified. Such an experiment would find wide application in physical science courses as well as be accessible to off-campus students.

Previous on-line projects have been developed using undergraduates students. Funding for developing the apparatus associated with each project has come from the Faculty Research and Creativity Committee, the Simpson Fund, the Innovation Committee and an Enhancement grant received in 2004. In 2004 the Enhancement grant funded two such projects. This project would also utilize undergraduate students to help develop and implement the apparatus.

The project will focus on the perception of color and assessing how colors mix. For this undertaking, multiple filtered light sources will be used. Users of the apparatus will be allowed to vary the light intensity and to mix light sources and assess color. Using objects to cast shadows, users will be able to explore complementary colors. Users will also be able to explore how color changes the appearance of objects.

Previous projects have been implemented for approximately \$2,500. The materials required typically include a process controller, stepper motors and various and sundry electronic components. This project will require a colorimeter that cannot be easily fabricated with basic electronic components. What is required is a device similar to a Konica CL-200 chroma meter. This device measures chromaticity, tristimulus values, color difference, correlated color temperature and the illuminance of light sources. It may also be used for color inspection and illuminance measurement of light sources. The advantage of this device is that it has an RS-232C port for communication to PC. This interface will allow the device to be remotely controlled over the Internet.

We are requesting the following 1-year funding:

- Equipment cost. 1 project \* \$2,000 per project = \$2,000
- Konica CL-200 chroma meter = \$2,000
- Project total = \$4,000

**5. Manner in Which Academic Success Promoted by Project**

This project will encourage undergraduate students to participate in faculty research undertakings. Undergraduate publications may be possible based on the project selected.

**6. Relationship to University Strategic Plan**

This undertaking will address the Strategic Plan item, "Retaining High Quality Students" and addresses those students' needs.

**7. Manner in Which Program Success Would be Assessed**

Assessment will take the form of successful project implementation and student assessment instruments distributed after project completion.

8. Were funds granted for this project during FY 2004? Yes \_\_\_\_\_ No X

9. Status of Project (if funds were received in FY 2004, including what will be done with remaining funds)

No 2004 funds were requested.

10. Amounts unexpended in FY 2004, which will roll forward to FY 2005 \_\_\_\_\_None\_\_\_\_\_

11. Funds Proposed

	FY 2004-5
Student Salaries	
Travel	
Speakers/Lecturers	
Equipment	\$4,000.00
Other O.O.E.	
GRAND TOTAL	\$4,000.00

12. Would continued funding for this project be requested during future years?

Yes \_\_\_\_\_ No X