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Raman Spectroscopy as a Teaching Tool in the Forensic Science and Chemistry Courses

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Provost's Grants for the *Thinkfinity* Initiative: Innovative Teaching, Technology and Research

Title of Project: Raman spectroscopy as a teaching tool in the Forensic Science and Chemistry courses

Cornerstone III: Interdisciplinary Programs, including Informatics

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Final Report:

A. Outline of original goals.

The main goal for the project is the purchase of a portable Raman spectrometer that will be used in laboratory experiments in some Chemistry and Forensic Science courses and will give students taking these courses the chance to have firsthand experience on how to operate an instrument and to use it in the analysis of real samples.

B and C. Progress made towards original goals and activities completed

The purchase of the portable Raman spectrometer from B&W Tek was completed and the instrument was delivered last March. Accessories were also purchased from International Crystal Laboratories. An experiment has been developed to be included in CHE 221 which is offered every Spring. The co-PI have used the accessories in his research.

D. Activities not completed

All the proposed activities have been completed.

E. Please outline the outcomes you have received as a result.

The number of instruments used in chemistry and forensic sciences was added with the purchase of the portable Raman. In addition, the theoretical concept being discussed in class will now be reinforced with the use of the instrument.

F. Did you create a Class? If so, is the class running?

Use of the instrument will be incorporated in laboratory classes of some Chemistry (CHE331 Instrumental Analysis in the Spring semester) and Forensic Science (FOR620 Analytical Spectroscopy in the Spring) courses.

G. Impact of project on students

It is intended to be use in some Chemistry and Forensic Science course. As of now the experiments are still being develop. Some students will use the instrument in their research studies.

H. Impact on other faculty

Prof. Jaimelee Rizzo and Prof. Rita Upmacis showed interest in the instrument for possible used in their respective studies.

I. Were there any unintended outcomes achieved?

There were no unintended outcomes.

J. Do your outcomes reflect the change or benefit you were hoping to receive?

Yes, with the purchase of the instrument, we expect that the students will have hands-on training on the use of the instrument. They will be more equipped and more updated with the latest technology that are used in real life applications.

K. How has your project furthered the Thinkfinity Cornerstone you selected?

Although Chemistry and Forensic science are the main fields catered by the project, it can be interdisciplinary since the instrument can be applied in other fields like biology and environmental science. In addition, the library software included in the project have relevance in terms of informatics.

L. Describe your future plans for sustaining the program or project.

The portable Raman is already fully paid. It is low maintenance hence no financial investment is needed in the future. We expected it to be a useful tool in the learning experience not only to students but to other faculty as well in the years to come.