SwISTEM Early Undergraduate Research Program

Program Description:
The goals of the SwISTEM Early Undergraduate Research Program are in line with our vision of engaging students, promoting a team-oriented approach to teaching and learning, creating a more hands-on nurturing faculty, increasing retention and graduation rates, and producing highly qualified innovative undergraduate STEM majors.

The Early Undergraduate Research Program will engage well-prepared undergraduate STEM majors at ITCC and USI in exciting and innovative scientific research early in their college careers. The Early Undergraduate Research Program is open to students entering their sophomore or junior year. Students will be encouraged to continue research in one of the many REU programs nationwide, with the USI/ITCC research mentor, or with a local STEM business or industry. It should be emphasized that the length of this interaction between faculty and students will also serve to allow the faculty member to closely mentor and nurture the students throughout the study.

In the Early Undergraduate Research Program, STEM majors will work with faculty mentors as research assistants in ongoing research projects. In this process the students will be using the skills and knowledge acquired in the classroom to learn and produce new scientific knowledge. With the guidance and nurturing of their faculty mentor and collaboration with the other student members of the research group, a more collegial and team-oriented approach will ensue.

Each research group will be led by a faculty member(s) and consist of one or more students, depending on the nature of the faculty members’ research. The student involvement with the faculty members’ research will begin May 12th and end June 27th, 2014.

The summer portion of the program will be seven weeks in length. Each faculty-led research group will meet each weekday. Students will be expected to work on research projects outside the formal meeting times. At first, many groups will find the beginning of the summer to be dedicated to discussions about the background and methodology of the research work. However, each group will strive to begin hands-on activity in the first week. In addition, speakers from within the STEM communities (business and industry) will deliver STEM related presentations to the student and faculty participants illustrating the range of STEM career options. Visits to local STEM industries will also be arranged.

Each Friday, students and faculty members involved in the program will meet for a weekly seminar providing updates on research progress. Students will give brief presentations on the work accomplished and next steps in their research experience. Presentations will rotate between students in each research group. At the end of the seven weeks each student will be required to make a more comprehensive presentation to the university community regarding the research completed. Students will prepare final written documents about their research. Students may have completed work to be presented in a wide variety of undergraduate research forums (i.e. NCUR, Butler Undergraduate Research Conference) as well as regional and national meetings in the respective fields.

Students are encouraged to continue the collaboration with their research leader. Each student will be enrolled in a research course specific to their major to earn credit hours. Research undertaken during the academic year will be structured according to faculty mentor and student schedules.

At the end of the Early Undergraduate Research period, each student will complete a final written document describing research accomplishments and skills learned. In addition, students will write about
their experiences in the Early Undergraduate Research Program (benefits, drawbacks, etc.). Prospective students to both the program and the university will be able to see the types of experiences possible in the SwiSTEM program.

Student Application:
• Students must submit a formal application to the Dean’s Office by February 7, 2014.
• Students must include a letter of recommendation from a faculty member
• Students must include a statement of research/academic interests and career goals.
• Invitations to participate will be made to those selected. Positions supported by this program are limited.

Student Eligibility Criteria:
• Students must be a U.S. Citizen or Permanent Resident.
• Students should have a minimum GPA of 2.75 on a 4.0 scale.
• Students must be in good academic and disciplinary standing during the duration of the Undergraduate Research Program.
• Students must be majoring in one of the STEM disciplines at USI or ITCC.
• Students must have completed 12 credit hours of course work during their first semester at USI or ITCC and must be currently enrolled in at least 12 hours of course work during their second semester at USI or ITCC.
• Students must be interested in experiencing meaningful research activity under direct supervision of one or more faculty.
• Students will receive a $3000 stipend for their participation in the Summer Research Program. Students will also be provided room and board at USI during this program.

Student Obligations:
• Students will meet with their faculty research leader formally each weekday during the Summer Research Program.
• Students will participate in a seminar each Friday during the Summer Research Program and give research updates at these seminars.
• Students will give a comprehensive oral and written presentation about their research at the end of the Summer Research Program.
• Students will continue to collaborate with their faculty research leader during the academic year and should enroll in a research course specific to their major.