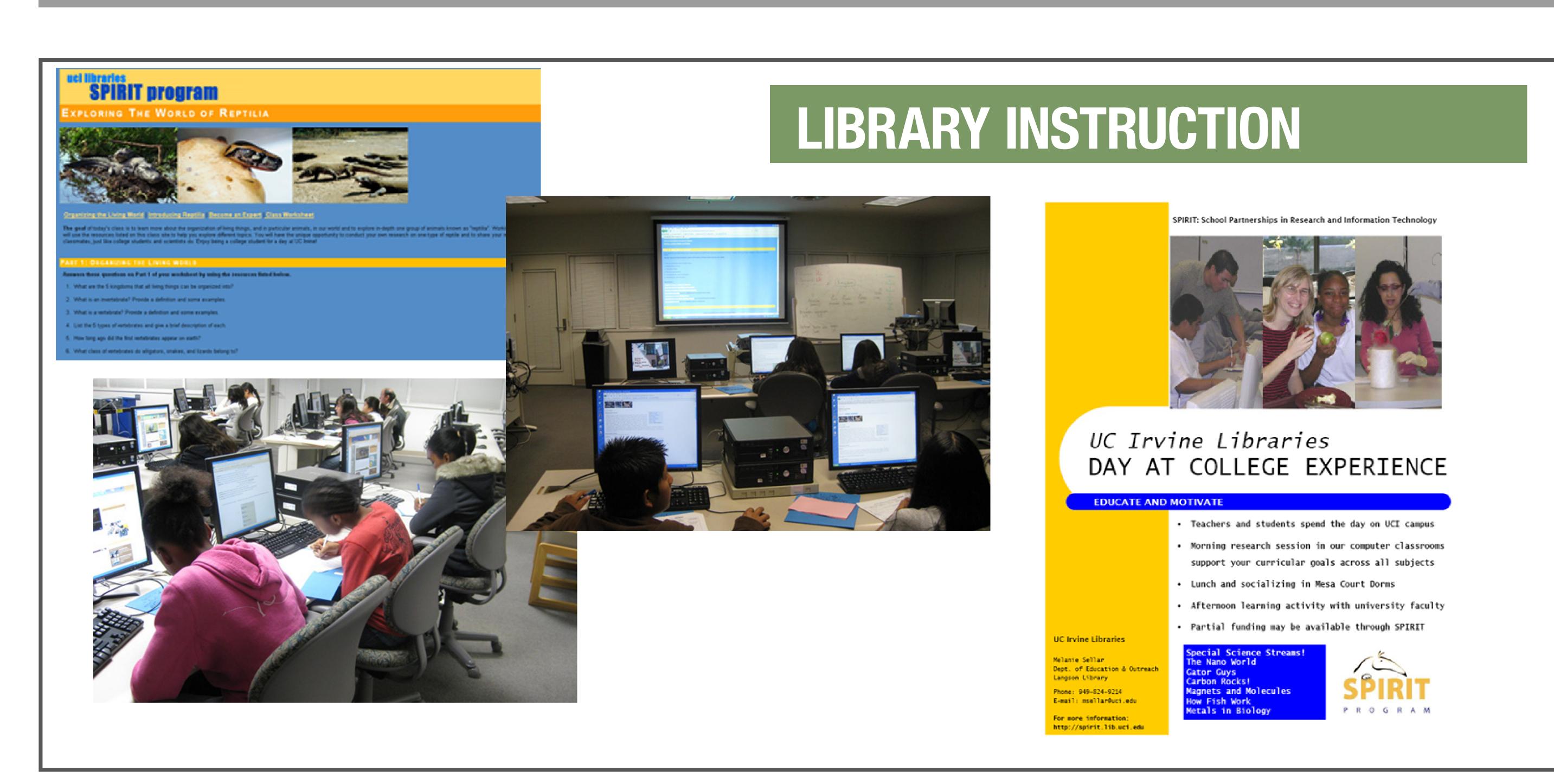
ROCKET SCIENCE CAN BE UNDERSTOOD: LIBRARIANS AS STEM FACULTY OUTREACH PARTNERS

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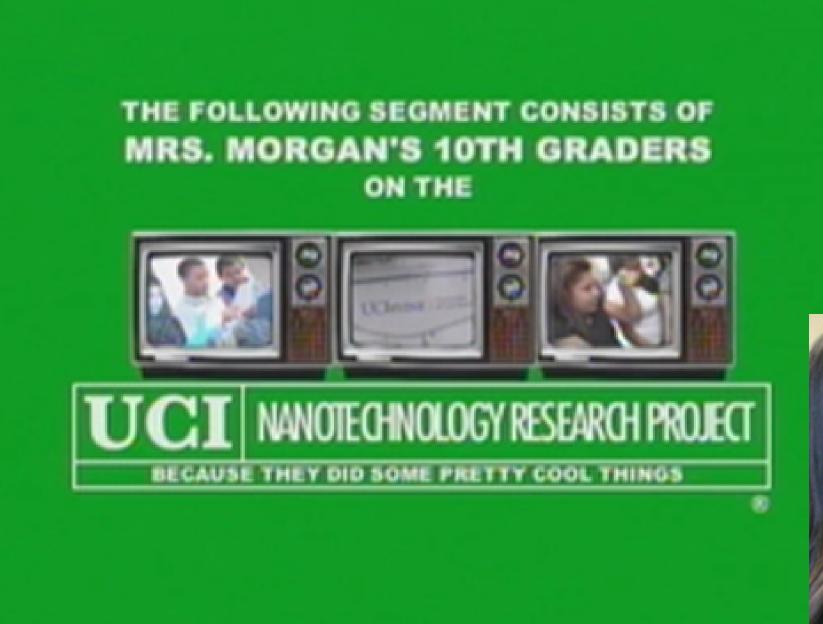
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LABORATORY EXPERIENCE





ABSTRACT

Librarians can play an active role in faculty research and enhancing public understanding of science. Now more than ever before, the nation's scientists are engaging in outreach activities focused on the pre-college pipeline in order to ensure that a continuing supply of students enter college-level science disciplines and education programs, and that schools graduate an informed citizenry appreciative of the sciences. Increased participation in these types of activities can be attributed in large part to funding agencies such as the National Science Foundation (NSF) and other STEM (science, technology, engineering and mathematics) focused grant programs, which now require that their funded scientists articulate both a research program and a "broader impacts" (i.e. outreach) program. These outreach requirements present new opportunities for librarians to support faculty research and to further integrate libraries into the teaching and learning mission of their institutions. We highlight one academic library's successful partnerships with physical and life science faculty on their NSF-funded K-12 education program and present ideas for achieving that success in other academic settings. We will also provide how-to advice and best practices for reaching out to faculty and for creating your own programs.

INTRODUCTION

UCI Libraries partnered with faculty in an effort to support their NSF grant outreach requirements via the SPIRIT (School Partnerships in Research and Information Technology) program. This successful 10-year program is run by the Librararies' Department of Education and Outreach and targets local K-12 communities. Working together, librarians and faculty taught research skills to junior and high school students from underrepresented school districts and exposed them to different fields of scientific research, with the simultaneous goals of promoting college and facilitating entry of students into the UC system.

PROGRAM GOALS

- Excite children about science and college
- Connect/improve K-12 to college pipeline
- Help fulfill K-12 science education standards
- Provide teacher professional development
- Promote the teaching of science information literacy

PROGRAM BENEFITS

This program benefits the faculty because the library:

- provides academic and logistical support
- finds an additional audience for faculty member research
- aids in translating research into appropriate activities for audience
- helps cultivate appreciation of research/discipline
- leverages their instructional experience working with diverse audiences

This program benefits the library because it provides another means:

- to contribute to the institution's learning mission
- to support the institution's research activities
- to help the institution compete for federal grant money
- by which to position the librarians as educators

PROGRAM DAY FLOW

• Library (2 hours)

Research instruction in the Libraries' technology classrooms. Students learn to use academic resources to locate, synthesize, and interpret information relating to the core concepts of the faculty member's research. Sample morning curriculum: http://tiny.cc/9Yxcz

- Lunch (1 hour)
- Faculty Laboratory (1 hour)

Demonstrations and hands-on activities related to faculty member's research

ADAPTING THIS PROGAM

For example: The Cal Poly library is in discussion with an early career NSF grantee, the manager of a new Department of Energy (DOE) project, and the appropriate College of Science and Mathematics administrators to adopt an outreach program with similar goals, especially the sharing of faculty research:

- Expand current outreach program/undergraduate course "Learn By Doing Lab" (LBDL), where undergraduate students teach middle school students in an on-campus laboratory about life and physical sciences
- Librarians will provide exposure to science resources and help faculty with NSF and DOE grant money translate their work into accessible laboratory experiments
- The proposed program: LDBD (2hrs), short campus tour (1hr), lunch (1hr), a tour of the library and exposure to resources about the research faculty are working on (1hr), and experiments in faculty's laboratory (1hr)

ADVICE/BEST PRACTICES

- Identify and target grant recipients/potential applicants
- Pick faculty you want to work with
- Start small to get department/faculty buy-in
- Time your pitch (with grant cycles)
- Utilize existing campus infrastructure
- Use existing national and international science program materials
- Scale scope of collaboration to suit your library

CONCLUSIONS

There are numerous federal, state and local initiatives regarding STEM educational goals for K-12 students. As educators, librarians need to participate in this movement by sharing our knowledge of research skills instruction/information literacy. We all have to work together: higher education, foundations, STEM educators, disciplinary sciences, state and local governments, business and industry, etc. The information presented above describes one successful outreach deployment plan but this type of program can be scaled to any number of curricula and institutions.

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