

Chemistry & Physics

- * Best, Aaron A., et al. "**Models of Interdisciplinary Research and Service Learning at Hope College.**" Council on Undergraduate Research Quarterly Vol. 28 Iss. 2 (2007): pp. 18-23.

At Hope College, we are supporting interdisciplinary research and teaching. To give a better sense of these accomplishments and the challenges that interdisciplinary research presents, we present two specific examples of Howard Hughes Medical Institute (HHMI) supported interdisciplinary research teams at Hope College: the Interdisciplinary Research Program in Bioinformatics and Microbial Genomics team and Nursing and Engineering in International Development team.

<http://www.cur.org/Quarterly/dec07/Winter07Hope.pdf>

- * Blauth, James R., and Schrum, David P. "**Service Learning and Field Research at the University of Redlands: Desert Restoration in Joshua Tree National Park.**" Council on Undergraduate Research Quarterly Vol. 26 Iss. 2 (2005): pp. 63-65.

The University of Redlands launched a research project that involves both biological and chemical analyses and that seeks to get students started in research earlier in their college careers. The project has an applied research or service emphasis in that they want to initiate ecological restoration of a disturbed desert wash in Joshua Tree National Park to reverse and limit the effects of ongoing foot traffic. This is a long-term project that offers a number of different ways for students to make contributions to the project while exposing students to field research.

Available From: UROP Office

- * Coppola, Brian P. "**Full Human Presence: A Guidepost to Mentoring Undergraduate Science Students.**" New Directions for Teaching and Learning Vol. 2001 Iss. 85 (2001): pp. 57-73.

Mentoring represents a new mode of professional development for the sciences. Mentoring in the sciences can also assure that the next generation of scholars will help break the cycle of perpetuating a narrow, and increasingly untenable, definition of education. Various examples of mentoring are presented.

<http://www3.interscience.wiley.com.www.library.gatech.edu:2048/journal/89016483/issue>

- * Craig, Norman C. "**The Joys and Trials of Doing Research with Undergraduates.**" Journal of Chemical Education Vol. 76 Iss. 5 (1999): pp. 595-598.

Practical advice is given for doing research with undergraduates based on forty years of experience. This advice is illustrated with examples from the author's work and organized under a number of headings: seize the summers, prefer and enjoy the laboratory, insist on well-written reports, carve out niches, seek first-class instrumentation, welcome professional cooperation, avoid the Nobel Prize syndrome, damn the loose ends- full speed ahead, express enthusiasm, and honor your students. A chemistry professor expresses what he has found to be the benefits and trials of working with undergraduate researchers based on his 41 years of mentoring and guiding undergraduate researchers. Despite being written for a chemistry education journal, his words of wisdom will resonate with all mentors regardless of field. Some of his suggestions that he expounds on are the need for expressing enthusiasm and honoring your student researchers, avoiding the "Nobel Prize Syndrome", insisting upon well-written reports from your undergraduates, and find significant niches that student researchers will be able to contribute significantly.

<http://jchemed.chem.wisc.edu.www.library.gatech.edu:2048/Journal/Issues/1999/May/abs595.html>

* Mabrouk, Patricia Ann, and Peters, Kristen. "**Student Perspectives on Undergraduate Research Experiences in Chemistry and Biology.**" Council on Undergraduate Research Quarterly Vol. 21 Iss. 1 (2000): pp. 25-33.

The authors focus on chemistry and biology students and assess attitudes of students from a variety of colleges and universities across the United States.

Available From: UROP Office

* McIntosh, Gordon. "**Intellectual Development and Undergraduate Research in Physics.**" Journal of College Science Teaching Vol. 30 Iss. 6 (2001): pp. 412-413.

The author discusses why undergraduate research in physics is possible with juniors and seniors who have a good foundation. He also briefly mentions how he uses undergrad students as research assistants.

<http://proquest.umi.com.www.library.gatech.edu:2048/pgdlink?index=8&did=69913016&SrchMode=1&sid=2&Fmt=6&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1248381993&clientId=30287>

* **Enhancing Research in the Chemical Sciences at Predominantly Undergraduate Institutions.** Undergraduate Research Summit. August 2- 4, 2003.

The purpose of the Undergraduate Research Summit initiative was to examine issues involved in undertaking and sustaining chemistry research at predominantly undergraduate institutions (PUIs) and to provide recommendations on how to enhance the amount, quality, productivity, and visibility of chemistry research at PUIs.1 Recommendations in this report are aimed at individuals, departments, administrative offices, academic and other institutions, and funding agencies.

http://abacus.bates.edu/acad/depts/chemistry/twenzel/finalfinal_report.pdf