Greetings from the Director:

Welcome to the University of Utah's Undergraduate Research Abstracts Journal. I heartily applaud the students who describe in the pages that follow research they conducted under the supervision of their faculty mentors. These students are a small but outstanding subset of a much larger group of remarkable undergraduate students who have conducted research and artistic work across departments and programs at the University.

This publication offers students a forum for presenting abstracts of their scholarly work to other students, to their family and friends, to the University community, and to citizens of Utah. In recognizing and publicizing these efforts, we encourage other students to emulate them.

Included in this issue of the Abstracts are twenty students who received assistantships from the Undergraduate Research Opportunities Program (UROP). UROP's primary purpose is to provide undergraduates with opportunities to collaborate directly with a faculty mentor in research or artistic activities. To find out how to become involved in UROP please visit our web site at: www.ugs.utah.edu/urop/

A growing number of students who conduct research or artistic work under faculty supervision also submit their work for presentation at professional conferences, such as the National Conference on Undergraduate Research (NCUR). The University of Utah will host the 2003 NCUR Conference on our campus on March 13-15, 2003. We anticipate that over 1,800 undergraduate students from across the U.S. will converge on our campus to present their research and artistic work, and we strongly encourage University of Utah students to participate in this conference. For conference information, please consult the UROP web site.

I wish to thank the faculty who mentored the students whose work is described in this journal. Thanks also to Theresa Florence, Undergraduate Research Coordinator in Biology and JoAnn Lighty, Associate Dean for the College of Engineering, for their assistance in recruiting students from their programs to publish abstracts in the journal. In addition, we are fortunate to publish eleven abstracts of student posters that were presented during January 2002 in the Utah State Capital Rotunda in conjunction with the "Posters on the Hill" event. In addition to these students, many individuals contributed to the enormous success of this event, including Robert McDermott, Center for High Performance Computing, who was instrumental in producing the posters and in organizing the session at the Rotunda. Ronald Pugmire, Associate Vice President for Research and JoAnn Murray, his Administrative Assistant, ably assisted in recruiting and preparing students for Posters on the Hill, while coordination and publicity were provided by Kay Clark and Nancy Lyon from the Office of the Vice President for University Relations.

Finally, I am most grateful to Jill Baeuder for her steadfast assistance in preparing this