Greetings from the Director:

Welcome to the third edition of the University of Utah's Undergraduate Research Abstracts Journal. I heartily applaud the students whose abstracts are published in this journal. They are an 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, under faculty supervision.

This publication offers students a forum for presenting 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 many 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/

I wish to thank the faculty who mentored the students published in this journal. Thanks also to Theresa Florence Nydam, Undergraduate Research Coordinator in Biology for her assistance in recruiting students to publish abstracts in the journal. In addition, we are fortunate to publish twenty abstracts of student posters that were presented during January 2003 in the Utah State Capitol 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 Baeder, UROP Project Coordinator, for her steadfast assistance in preparing this publication.

Slava Lubomudrov
Director
Undergraduate Research Opportunities Program