ACTION ITEM

SUBJECT

IDAHO TECHNOLOGY INCENTIVE GRANT PROGRAM

BACKGROUND AND DISCUSSION

The Idaho Technology Incentive Grant (ITIG) program was created in 1997, and has since funded 65 projects at a total of over $10 million. The Board requested $1.75 million from the Legislature for FY2003 for continued funding of this competitive program to foster innovative learning approaches using technology.

The evaluation committee, consisting of two Board members (representatives from IRSA and BAHR), an ITRMC representative, the Chief Academic Officer (Executive Director, Gary Stivers, represented this position), and the Chief Technology Officer, met on March 27, 2002 to review the proposals and to formulate a recommendation to the Board.

FISCAL IMPACT

In light of the college and universities appropriation base being reduced by 10%, it was the recommendation of the Presidents' Council at their meeting on March 5, 2002, that the $1.75 million for the Idaho Technology Incentive Grant Program monies be reduced by 10%. For planning purposes, the institutions were asked to use the following figures:

Universities =
$523,500
- 52,350 (10% adjustment)
$471,150

LCSC =
$174,500
- 17,450 (10% adjustment)
$157,050

RECOMMENDATION

The Evaluation Committee recommends funding the grant projects as exhibited in the FY2003 Idaho Technology Incentive Grant Program Proposals document.

MOTION

A motion to approve the funding of the projects as exhibited on the FY2003 Idaho Technology Incentive Grant Program Proposals document.

Moved by_____ Seconded by_____ Carried Yes_____ No_____

ATTACHMENTS

ITIG Program Proposals
ITIG Program Funded Project Summaries
ITIG Program Project Results Summary FY97-01

IDAHO TECHNOLOGY INCENTIVE GRANT PROGRAM
FY2003 PROPOSALS

Proposal Number	Institution	Principal Investigators	Collaborating Departments	Proposal Title	Amount Requested
T03-001 Continuation	BSU	Ben Hambelton Joyce-Harvey-Morgan Janet Atkinson	Extended Studies Distance Education	CoreOnline@Boisestate: The Graduated Development Model for Faculty Training and Technology-Enhanced	$471,150
				BSU Total (Sub Grand Total):	**$471,150**
T03-002	ISU	Jonathan Lawson Terry Lay	Instructional Technology Resource Center Center for Teaching & Learning English Math Geology Speech Communications Health & Nutrition Sciences	ISU's Gateway Initiative	$261,451
T03-003 Continuation	ISU	Lenore Hoyt McAlexander Lyle W. Castle Lisa M. Goss E. John Sutter	Chemistry	Innovative Use of Technology to Enhance Inquiry-Based Learning in Lower Division Chemistry Courses	$46,738
T03-004 Continuation	ISU	Dennis Stowe Robert J. Fisher	Mathematics	Restructuring Math 107 at ISU (Year 2)	$162,961
				ISU Total (Sub Grand Total):	**$471,150**

Proposal Number	Institution	Principal Investigators	Collaborating	Proposal Title	Amount Requested
T03-005	LCSC	Rita Rice Morris	Divisions of Nursing Social Science Education Workforce Training Educational Technology Multi-Media Lab	Alternative Pathways to Degrees	$157,050
				LCSC Total (Sub Grand Total):	**$157,050**
T03-006	UI	Erik T. Anderson Charles L. Peterson	Agricultural Communications Dept. of Biological & Agricultural Engineering	The Virtual Laboratory Project: Using Online Instruction to Increase the Capacity and Efficiency of a Computer Applications in Biological Systems Course	$15,000
T03-007	UI	Monte Boisen Mark Nielson	Mathematics	Enhancing Calculus Education Through Technology	$100,000
T03-008	UI	Maxine Dakins	Environmental Science	Incorporating Technnology and Distance Delivery Methodologies Into Teaching Pollution Prevention in Idaho	$14,977
T03-009	UI	Janice W. Fletcher Julie Fodor	Family and Consumer Sciences	A Model Format for Offering Articulated, Collaborative Distance Courses for Early Childhood Education Among Idaho Universities and Colleges: Development of "Introduction to Early Childhood Education	$12,103

Proposal Number	Institution	Principal Investigators	Collaborating	Proposal Title	Amount Requested
T03-010	UI	Larry Forney	Biological Sciences	BIONet: A web based tool for introductory biology courses	$100,000
T03-011	UI	Deborah Frincke	Center for Secure & Dependable Software	Computer Security Begins at Home	$15,000
T03-012	UI	Bob Mahler Michael Falter Scott Wood Karen Humes Jan Boll Tim Link Jeff Braatne Patrick Wilson Markus Tuller Barbara Williams	Plant, Soil, & Environmental Science Fish and Wildlife Geology Geography Biological & Agricultural Engineering Forestry Resources Political Science	Use of the Web to Enhance Existing and Develop New Water-Based Courses to Improve Both Campus and Distance-Based Programs Offered by the UI	$95,940
T03-013	UI	Kerry Ellen McKeever	English	Development of an Online Courses: English 258, Literature of the Western Civilization II	$12,160
T03-014	UI	Steven E. Meier	Psychology	Integration of Technology into Undergraduate Psychology Training at the University of Idaho	$91,726

Proposal Number	Institution	Principal Investigators	Collaborating	Proposal Title	Amount Requested
T03-015	UI	Kirk Steinhorst	Statistics	Activating the Beginning Statistics Student with Web-based Instructional Materials and Discussion Groups	$14,244
				UI Total (Sub Grand Total):	**$471,150**
				Grand Total:	**$1,570,500**

FY 2003 IDAHO TECHNOLOGY INCENTIVE GRANT PROGRAM FUNDED PROJECTS

The Idaho Technology Incentive Grant Program focuses on projects that advance the goals and objectives stated in the State Board of Education's 2000-2005 Statewide Strategic Plan. **The purpose of the ITIG is:** To focus on integrating technology into the curriculum; To enhance the rate and quality of student learning; To enhance faculty productivity; and To increase access to educational programs.

CoreOnline@BoiseState: The Graduated Development Model for Faculty Training and Technology-Enhanced Instruction

Ben Hambelton, BSU
Joyce Harvey-Morgan • Janet Atkinson--CoPIs
$471,150
Continuation

This project is a continued effort of a multi-year grant that is systematically increasing the number of faculty with the skills to infuse technology into the curriculum and enhancing access and quality through the collaborative development of online core courses. During the first two years of the grant, 78 faculty have been trained (Goal 1), and the first cohort of teams are offering 11 core courses online during spring semester 2002. An additional 10 new courses are scheduled to be offered in fall 2002, with the final 10 online courses to be offered online in spring 2003. Thus, by the end of the project at least 30 core and general-education courses will be offered online for Boise State students (Goal 2). In addition to the successful course and faculty development experience, significant improvements in the university's ability to support online and web-based instruction have resulted from the project, including the creation of significant student orientation and support resources. As a result of the project, an orientation workshop, Blackboard assistance hotline, and web resources have been created (Goal 3). A web- and CD-based student orientation and an online course for distance education students will be completed in the third and final year. This application seeks funding to continue the process of development and teaching with all three cohorts and work on the student training materials.

ISU's Gateway Initative

Jonathan Lawson, ISU
Terry Lay--CoPI
$261,451

The ISU Gateway Initiative is a three-year effort to use technology to strengthen courses that are critical for student success. These courses are referred to as "gateway courses." Gateway courses may be (but are not necessarily) high-enrollment, major-required, remedial, and/or distance learning curricula. The name "gateway" refers to the door-like impact these courses have on students: success opens a wide range of opportunities, while failure hinders or blocks further advancement. The Initiative prioritizes these courses and provides centralized coordination, assistance and guidance to the individual departments and faculty involved in the redesign projects. The premise and rationale for the Initiative is that the gateway course can be strengthened with the infusion of technology into the curriculum and

Innovative Use of Technology to Enhance Inquiry-Based Learning in Lower Division Chemistry Courses

Lenore Hoyt McAlexander, ISU
Lyle W. Castle • Lisa M. Goss • E. John Sutter--CoPIs
$46,738
Continuation

In 2000, the Chemistry department was awarded a grant from the National Science Foundation (NSF) for the purchase of a new Varian 300 MHz Nuclear Magnetic Resonance (NMR) spectrometer. ISU has begun to integrate use of this instrument into 100-level undergraduate chemistry courses and increased its use in 300-level courses, in order to enhance student learning, technological literacy, and preparation for careers in health professions and chemistry. Before this acquisition, NMR spectrometry was introduced superficially to 200 students/year in Organic Chemistry (a 300-level course), but only the handful of students who enrolled in undergraduate research had an opportunity to use the instrument itself. During the past year, an upgrade (purchased with funds from the FY2002 ITIG) was purchased for the NMR spectrometer, which allowed more students to use the instrument in the limited time available in laboratory periods. The use of NMR spectrometry was introduced earlier, into General Chemistry (a 100-level course), by allowing students to work on simulated and actual spectra; and Organic Chemistry students were able to use the instrument more efficiently to obtain and process spectra

Student response to this project has been overwhelmingly positive thus far, and indicates that ISU is improving the technological literacy of its students and better preparing them for their future education and careers.

Restructring MATH 107 at ISU

Dennis Stowe, ISU
Robert J. Fisher--CoPI
$162,961
Continuation

This project is a continued effort to restructure the delivery of MATH 108 (previously numbered 107), Intermediate Algebra, at Idaho State University (ISU). The objectives of this project are to:

1. improve student performance in MATH 108 through the integration of technology,
2. reduce average time for attaining MATH 108 competency,
3. reduce MATH 108 staffing demands, and
4. improve the effectiveness of algebra skills assessment, placement, and remediation.

As one of ISU's largest courses, MATH 108 places a large administrative and staffing demand on the university. The traditional lecture/homework/exam format does not serve students well, for many who pass do not retain their knowledge for long and those who fail or withdraw—a substantial number—are slowed in their progress toward a degree. The website will provide comprehensive information for students and advisors that will prepare students for the ISU algebra experience *before* they enroll in MATH 108.

Alternative Pathways To Degrees

Rita Rice Morris, LCSC
$157, 050

LCSC proposes to test three strategies for addressing Alternative Pathways to Degrees. (1) The Social Work Access Project will develop online courses for pre and in-service students by developing web-based resource centers in geriatrics, juvenile justice, use technology to improve clinical/internship experiences, and create a social work skills lab. (2) The Best Practices in Teacher Preparation: Quality of Teaching, Quality of Student Learning, and Accountability to Professional Standards Project will utilize new technologies to develop performance assessment protocols and to create a digital library to support performance assessment activities of faculty and teacher candidates as well as to present best practices. These resources will particularly aid students taking education courses at a distance, but will also benefit on-campus students. (3) The Home Grown Solutions strategy will develop online components for the CNA program and create partnerships to support nurse aides and others in developing the basic skills they need to move up the career ladder.

The Virtual Laboratory Project: Using Online Instruction to Increase the Capacity and Efficiency of a Computer Applications in Biological Systems Course

Erik T. Anderson, UI
Charles L. Peterson, CoPI
$15,000

The proposed ***virtual laboratory project*** is designed to improve the Department of Biological and Agricultural Engineering's efficiency in teaching ASM 240 by converting the course labs from traditional "face-to-face" instruction to web-based delivery. The proposal requests funding in the amount of $15,000 to achieve the objectives outlined for the twelve-month project.

The primary goal of the virtual laboratory project is to convert three labs to entirely web-based instruction. The labs represent approximately one-third of the total laboratory content and exemplify the breadth of the subject matter presented in the course.

The virtual laboratory project will result in enhanced faculty productivity, increased student access to the ASM 240 course, reduced demand for scarce computer classroom resources, and increased student satisfaction with the course. The project will incorporate an instructional design process for development of the web-based modules before they are implemented. The project also will employ several assessment measures including analyses of student achievement, student completion rates, and student satisfaction. The methods outlined in this proposal will result in development of an instructionally effective, sustainable web-based laboratory for the ASM 240 course.

Enhancing Calculus Education Through Technology

Monte Boisen, UI
Mark Nielson, CoPI
$100,000

UI plans to apply some of the successful ideas and resources of the Polya Math Learning Center (currently being used to teach Precalculus at the University of Idaho) to reshape the teaching of Math 170 (the first semester of Calculus) and to enrich other Calculus and Differential Equations courses. The Polya philosophy is to place the student into an active learning environment with substantial one-on-one support. The approach caters to a variety of learning styles and engages students in learning as individuals. UI also plans to build technological learning tools so as to enable them to shift approximately one-fourth of the course material for Math 170 into computer-based lab activities that can be done by students outside of the classroom. Students may work in the Polya Math Learning Center, in other computer labs on campus or even at home. The primary goals for this project are to:

- Improve student learning of the fundamental concepts of Calculus as now covered in Math 170.
- Improve student appreciation for the significance of Calculus by making possible (through well-designed technology-assisted activities) the investigation of examples more true-to-life and meaningful to Idaho students than what is possible in the traditional lecture setting.
- Reduce student seat-time in Math 170 by 25%.
- Enrich our other Calculus and Differential Equations courses by introducing supplementary material using the computer labs.

Incorporating Technology and Distance Delivery Methodologies Into Teaching Pollutions Presentation in Idaho

Maxine Dakins, UI-Idaho Falls
$14,977

This project will involve redesigning a University of Idaho at Idaho Falls Environmental Science course for delivery over the Internet. The course is EnvS 428 Pollution Prevention and is currently only available in Idaho Falls. The project will upgrade the course, using a variety of innovative instructional methods and will make the course available to a broad student base in Moscow, Boise, throughout Idaho, and elsewhere.

The project provides access to education in pollution prevention methods to a broad audience. In addition, it will enhance the quality of the course by incorporating innovative technologies into the teaching and learning environment. Additionally, it will increase access to the University of Idaho's educational programs in environmental science by supporting the completion of the B.S. and M.S. degrees as well as the Certificate in Environmental Contamination Assessment.

The project will be carried out using four complementary strategies. A visually appealing, comprehensive, and easy-to-use website will serve as the portal to the course. Course content will be available for access over the Internet as a structured series of audio and video presentations. Interactive tools will be implemented to maximize engagement in the course material. Finally, a once-a-week session will be held where students and instructor can interact to discuss material, answer questions, and solve problems.

A Model Format for Offering Articulated, Collaborative Distance Courses for Early Childhood Education Among Idaho Universities and Colleges: Development of "Introduction to Early Childhood Education

Janice W. Fletcher, UI
Julie Fodor
$12,103

The purpose of this project is to build a model, distance-delivered course that delivers a required course for the state of Idaho Early Childhood/Special Education Blended Certificate. The coursework will be formatted to include segments that can be accessed as a whole course or in part by early childhood teacher educators in Idaho's institutions of higher education. Students throughout the state will have access to the course that meets required outcomes standards for teacher preparation for the Early Childhood Blended Certificate. Funds will be used to buy time and expertise from faculty and technical staff to develop the course with high quality, web and video technologies.

BIONet: A Web-based Tool for Introductory Biology

Larry Forney, UI
$99,642

This project proposes to incorporate new technology, teaching methods and modalities to improve student learning, faculty efficiency and off-campus access to course materials and information.

A new biology-learning site, Biological Information On-line Network (BIONet), is proposed to help students develop the knowledge and skills crucial in today's rapidly advancing scientific community. In addition, BIONet presents a means to build a foundation of knowledge for students to build upon in more advanced level biology courses. To assist students in securing the understanding necessary for advanced courses, BIONet will provide on-line course lectures, laboratory simulations, graphic images and animations, links, discussion groups, and study tools. BIONet enables students through self-paced learning, self-monitoring of progress, interest exploration, and allows for diverse learning styles. Additional course information will be delivered via face-to-face lectures, hands-on laboratory experiments, and collaboratoriums.

The ability for BIONet to increase student recruitment and retention, along with decreasing costs through space and faculty time savings, will allow BIONet to sustain the technological and educational achievements long after the initial development and implementation of the course.

This project allows for faculty and staff development by enabling them to learn new pedogagies through technology. Faculty and staff will also have the opportunity to share their experiences with others who are learning and creating through technology.

BIONet will open doors to the future through increasing possibilities for dual-credit courses for high school students and distance learning opportunities for students from across the state and nation.

Computer Security Begins at Home

Deborah Frincke, UI
$15,000

The purpose of this project is to use the grant monies to support the first module in a proposed new series intended to supply Idaho (and other) individuals with the background they need to safely use computer and internet technology in their homes and businesses. This pilot module will emphasize "Home Computer Security", and is intended to support two groups initially: resident University of Idaho faculty, staff and students who use their computers at home in the course of their academic/professional endeavors, and University of Idaho outreach students, who must use their home computers to access their academic materials. If this initial effort is successful, the course will be offered to other Idaho academic institutions. The module and supporting materials will be developed so that it can be taken on a "self-paced" basis or else included as part of a class or laboratory practicum under the supervision of a facilitator.

It is hoped that the success of this course will justify development of related short courses to assist those with home businesses, using technology in small rural communities, etc, in a "Master Computer Safety" program (similar to the "Master Gardener" program offered

through the College of Agriculture). The initial course will be available for enrollment beginning Spring 2003.

Use of the Web to Enhance Existing and Develop New Water-Based Courses to Improve Both Campus and Distance-Based Programs Offered by the UI

Bob Mahler, UI
Michael Falter · Scott Wood · Karen Humes--CoPIs
Jan Boll · Tim Link · Jeff Braatne—CoPIs
Patrick Wilson · Markus Tuller--CoPIs
Barbara Williams--CoPI
$95,940

The University of Idaho through its Strategic Plan has determined that Environmental Science and water-related courses are high priorities in meeting its overall mission.

This project will:

1) provide senior and graduate level web-based courses in water-related areas to place-bound students in Idaho and nationwide pursuing graduate degrees in environmental science and in related fields in the colleges of Agriculture and Life Sciences, Engineering, Letters and Science, Mines and Earth Resources and Natural Resources;
2) provide relevant courses for the 2,000+ professionals working in the region on water-related issues; and,
3) enhance residence education by incorporating appropriate technology into required coursework.

The proposed course development and enhancement activities will build upon the momentum established through three previous SBOE ITIG grants used to strengthen the Environmental Science Program. This project is proposed by an interdisciplinary group of 10 faculty with water expertise from five different UI colleges. The 10 identified courses are considered key to both delivering and increasing enrollments in UI distance education programs. Once these courses are developed it is anticipated that they will become self-sustaining financially, using a funding model for off-campus programs approved by the UI Administration. These courses are central to the development of outstanding programs in the water science area and have the potential to attract students from throughout the western USA to the UI.

Development of an On-line Course: English 258 Literature of Western Civilization II

Kerry McKeever, UI
$12,160

In consultation with a CTI designer, UI will develop a version of English 258, Literature of Western Civilization II, for online delivery. Utilizing a combination of web delivery, face-to-face contact, e-mail, and threaded discussion, this course will provide students with the opportunity to complete three credits of core humanities credit. The course developed will also serve as a template for the development of online delivery for its companion course, English 257, Literature of Western Civilization, I., as well as other courses in the undergraduate and master's degree programs.

The design of the course would allow UI to schedule three sections of students into the time slots normally allotted to one course, reducing seat time by two thirds for each section. The students impacted will be all undergraduate majors interested in registering for 257 and 258 to fulfill a core requirement and all English majors required to take the course for their degree.

Integration of Technology into Undergraduate Psychology Training at the University of Idaho

Steven E. Meier, UI
$91,726

This project proposes to provide psychology faculty with the opportunity to develop and incorporate advanced technology applications in course presentations plus develop an independent web-based course in the faculty member's specialty area. During presentation development, the faculty member will work with the CTI to develop PowerPoint slides, handouts and both voice and video overlays to each slide. After editing, the notes, audio, and video streaming packages from these presentations would be placed into a website specifically associated with the course. Adaptations for visually or hearing impaired individuals will be included as well.

Activating the Beginning Statistics Students with Web-Lease Instruction Materials and Discussion Groups

Kirk Steinhorst, UI
$14,244

The Division of Statistics plans to develop an alternative format for Stat 251 Principles of Statistics. Until recently Stat 251 was taught using two lectures a week to approximately 125 students per section and then students were split into smaller breakout sessions to conduct learning activities and do computer work. The Division of Statistics can no longer handle the volume of students signing up for this course and do not have the TA resources to staff the recitation breakout sessions. The beta tests indicate that technology can help solve the problems in this course if there is proper input from trained faculty and graduate students. The web-based text, CyberStats (see http://www.cyberk.com/), allows students to interact with the concepts via applets and the WebCT product allows students to do activities in small groups.

The content of Stat 251 is largely conceptual rather than drill and skill development. The web-based text and WebCT discussion groups provide students with the opportunity to deal with the deeply conceptual material in the beginning course in a way that lets them be successful in the course and retain the material for use in other courses. The current CyberGnostics material replaces the traditional statistics textbook with a web-based text. It is essentially the "boxes" from a standard textbook brought to life using applets.

IDAHO TECHNOLOGY INCENTIVE GRANT PROGRAM
PROJECT RESULTS SUMMARY FISCAL YEARS 1997 - 2001

Proposal Number	Institution	Amount Funded	Faculty Impacted	Student Impacted	No. of Publications	No. of Presentations	Courses Developed/Enhanced
T97-002	UI	$149,696	13	1,125	5	15	9
T97-004	UI	$232,542	56	2,333		7	20
T97-009	UI	$86,523	28	200		2	5
T97-011	UI	$155,490	41	75	1	11	4
T97-013	UI	$207,627	55	1,032		16	3
T97-015	UI	$72,474	33	6,249	2		37
T97-018	UI	$122,197	3	5	4	7	1
T97-021	LCSC	$138,446	6	96			3
T97-035	BSU	$149,813	7	282	2	7	2
T97-042	BSU	$117,440	3	91		1	4
Totals for FY97		**$1,432,248**	**245**	**11,488**	**14**	**66**	**88**
T98-001	LCSC	$197,300	26	551		3	27
T98-003	UI	$173,500	10	950	23	32	22
T98-004	UI	$630,700	44	1,796	2	14	29
T98-006	UI	$198,700	7	121			3
T98-010	UI	$179,400	18	230	4	11	5
T98-017	BSU	$390,900	3,587	24,600		6	600
T98-018	BSU	$143,800	15	150		25	10
T98-023	ISU	$199,800	79	82	10	23	3
T98-024	ISU	$203,700	135	251	4	1	4
T98-027	ISU	$228,700	274	892	4	3	15
Totals for FY98		**$2,546,500**	**4,195**	**29,623**	**47**	**118**	**718**
T99-001	LCSC	$228,000	40	6,100		1	17
T99-004	ISU	$101,600	11	675	5	11	1
T99-005	ISU	$250,500	22	559	4	10	20
T99-007	UI	$75,000	72	450		3	27
T99-011	UI	$200,000	10	306	4	14	10
T99-012	UI	$148,100	3	862	0	0	0
T99-015	BSU	$273,300	12	355	2	2	12
T99-017	BSU	$156,100	7	7	12	28	1
Totals for FY99		**$1,432,600**	**174**	**8,452**	**27**	**69**	**88**

Mulitple year projects **Multiple institution collaboration**

Proposal Number	Institution	Amount Funded	Faculty Impacted	Student Impacted	No. of Publications	No. of Presentations	Courses Developed/Enhanced
T00-004	UI	$99,100	3		1	6	4
T00-005	UI	$311,400	26	328			16
T00-006	LCSC	$196,400	7	350	1	3	1
T00-007	LCSC	$236,000	21	32	2	16	6
T00-008	ISU	$580,900	10	103	2	9	3
T00-009	ISU	$375,500	2	566	1	12	5
Totals for FY00		**$1,799,300**	**69**	**1,379**	**6**	**46**	**35**
T01-001	ISU	$48,950	2	112			2
T01-002	ISU	$69,000	7	14			4
T01-003	ISU	$71,125	14	600	1	6	9
T01-004	ISU	$122,110	4	6			3
T01-006	ISU	$34,484	1	2	0	0	1
T01-007	BSU	$345,240	78	2,700		2	25
T01-008	LCSC	$115,080	63	1,500		1	53
T01-009	UI	$22,296	3	20			2
T01-010	UI	$100,000	8	1,500	1	1	3
T01-011	UI	$50,000	6	13			4
T01-012	UI	$50,000	3	172			2
T01-013	UI	$47,086	4	19			2
T01-014	UI	$47,914	133	131		1	
Totals for FY00		**$1,123,285**	**325**	**6,787**	**2**	**11**	**66**
		$8,333,933	**5,008**	**57,729**	**96**	**310**	**995**

Multiple year projects

Multiple institution collaboration