SUBJECT

i-STEM Presentation

BACKGROUND/DISCUSSION

In recent years, several Science, Technology, Engineering, Mathematics (STEM) initiatives and stakeholder groups have been initiated in Idaho. i-STEM, led by the Idaho National Laboratory (INL) and other key stakeholders, is a coordinated state-wide effort by the State Department of Education, Idaho Professional-Technical Education, educators, businesses, and industry to support STEM education in Kindergarten through 12th grade. This group of stakeholders is working together to create ways to complement each other and to collaborate in advancing STEM education in Idaho. They provide resources that help students develop the understanding and skills needed to participate, contribute, and compete in the workforce of Idaho, the global economy, and as they practice informed decision making in the future that lies ahead.

Objectives include the following:

- Identify Idaho's STEM education needs
- Build the bridge between resources and educators to fill the gaps in STEM education
- Promote the vital role of STEM education for Idaho's future
- Provide accessible statewide STEM education resources through an IT network

Initially iSTEM is focusing on 4th through 8th grades. This summer workshops will be held for teacher development in STEM subjects. Instructors attending the workshops will take part in STEM education activities and learn of resources they can use in their classrooms. It is expected that 200-300 teachers will attend the workshops. They will be held at CSI and NIC with the goal of eventually having six regional STEM Centers.

Representatives from INL recently visited with Board staff and requested that the State Board of Education be represented on the governance committee which is now being formed. The committee will be influential in the activities of i-STEM to ensure they meet the major objectives of i-STEM. Board representation is beneficial in helping i-STEM develop appropriate goals and in maintaining alignment with Idaho State Education policy, standards and requirements, and is important in developing effective partnership to enhance STEM Education across Idaho.

IMPACT

Enhance and develop excellence in STEM education for Idaho's future, thus supporting Idaho's education system to embrace National standard of excellence in Science, Technology, Engineering, and Math.

ATTACHMENTS

STAFF COMMENTS AND RECOMMENDATIONS

The Executive director has appointed Allison McClintick, K–12 & Educator Policy Manager to represent the Board Office on the committee.

BOARD ACTION

This item is for informational purposes only. Any action will be at the Board's discretion.

idaho
Science
Technology
Engineering
Mathematics

Presentation to Idaho State Board of Education

April 22, 2010

What is STEM Education?

Using science, technology, engineering and math (STEM) across disciplines to solve problems, create, innovate and lead.

idaho Science Technology Engineering Mathematics

Why We Need the STEM Focus

U.S. 15-yr olds ranked 24th in math literacy and 26th in problem-solving in 2003 global assessment

60% of all new jobs in the 21st century will require skills possessed by only 20% of the current United States workforce.

Over 70 million baby boomers will retire and be replaced by only 48 million workers

i-STEM Education
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Today's Students in Tomorrow's Workforce

Success in Idaho's earlier days meant access to land, physical labor and abundant raw materials.

In today's global economy, the driving forces are . . .

Talent

Knowledge

Innovation

21st Century Skills

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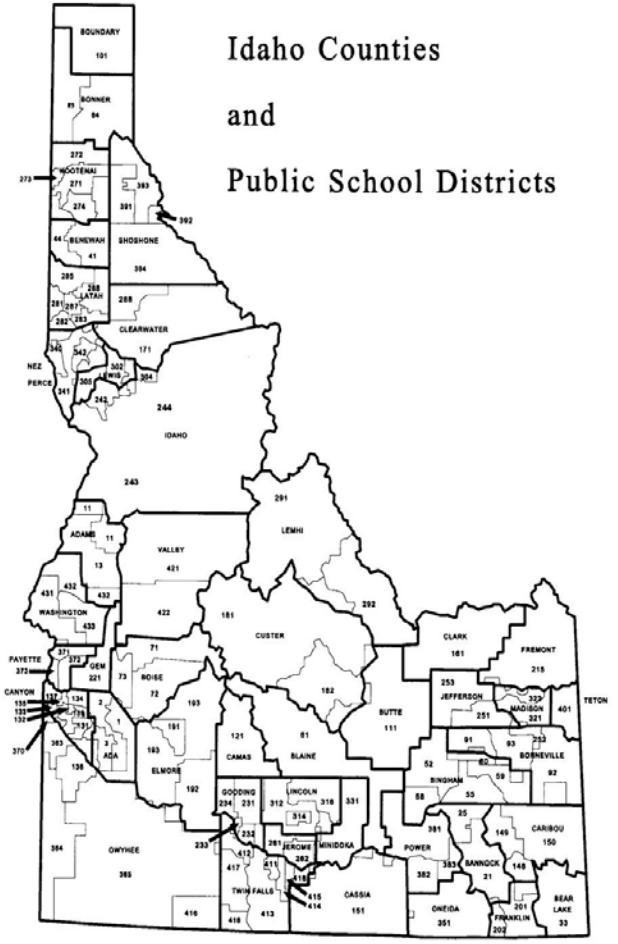
Reaching Rural Communities Poses Unique Challenges

- Multiple school districts across large geographical distances
- Limited resources and funding
- Low teachers' salaries
- Limited state funding focused on professional development
- Limited partnership development
- Difficulty attracting and retaining highly qualified STEM teachers



115 School Districts for a population of >1.5M and area of 82.75 K sq. miles

A Broad Partnership

Boise State University
Center for Advanced Energy Studies
College of Southern Idaho
College of Western Idaho
The Development Company
Discovery Center of Idaho
Eastern Idaho Technical College
Energy Systems & Tech Ed Center
Energy Solutions
Hewlett-Packard
Idaho Council of Teachers of Math
ID Dept. of Education
ID Dept. of Labor
Idaho Div of Prof. Technical Ed
Idaho Education Network
Idaho National Laboratory
Idaho Power Company
Idaho Science Teachers Assoc.
ID State Board of Education
Idaho State University
Jason Project
Lewis-Clark State College
Micron Technology Foundation
NASA
NEED Project
North Idaho College
Office of Governor Otter
Partners for Prosperity
PCS Edventures
University of Idaho

i-STEM Education
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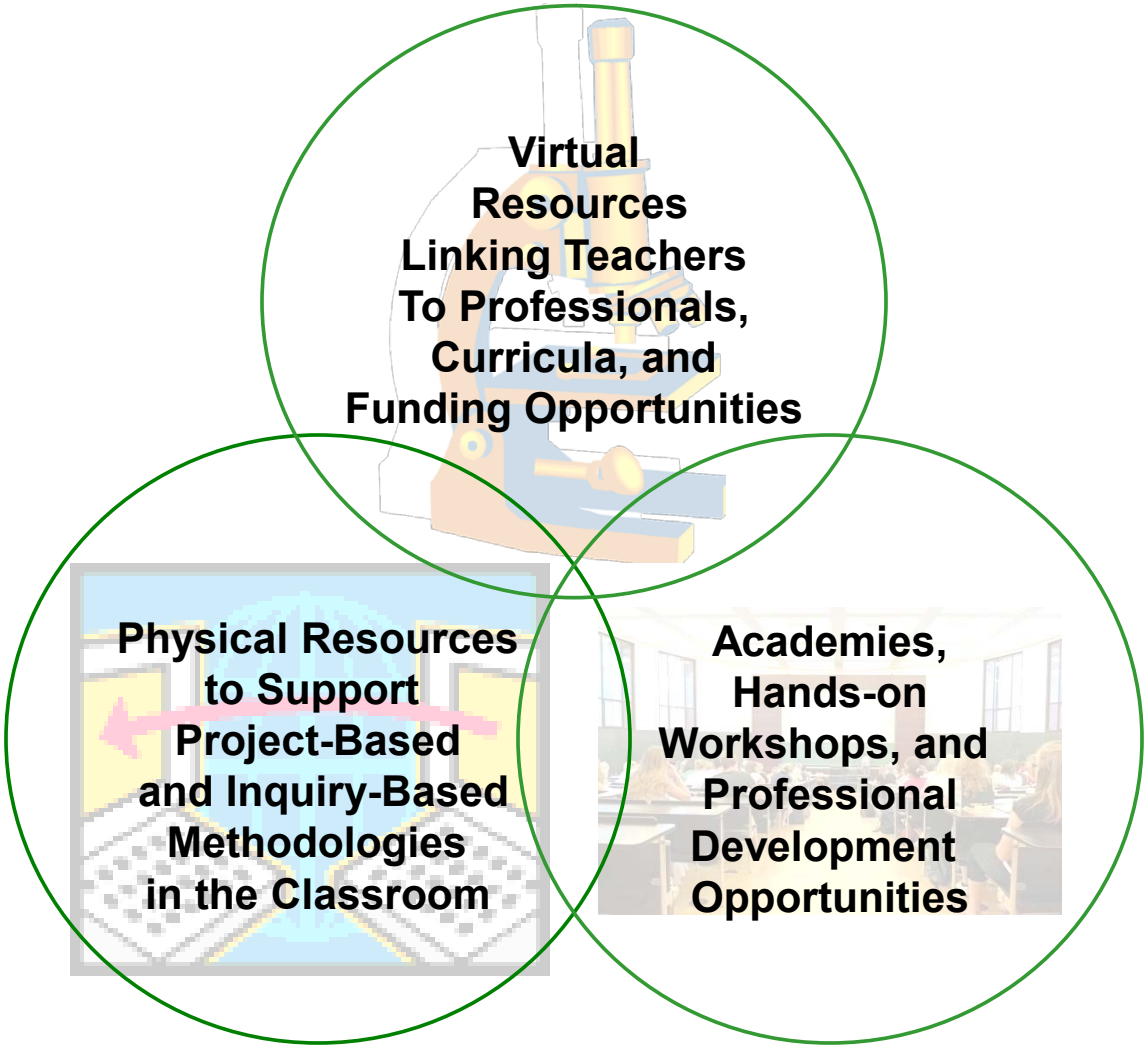
i-STEM Vision

The Idaho education system sets the National standard of excellence in science, technology, engineering, and math (STEM) education.

i-STEM Resource Centers



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i-STEM Strategy

Provide Idaho teachers with professional development and resources for STEM education

- Emphasis on project-based learning integrated across disciplines
- Targeted to grades K-12 with distinct differences in programs for teachers of K-3, 4-8 and 9-12
- Initially focused on grades 4-8, later expanding to other grades
- School-wide team implementation
- Accessible physical, technological and financial resources through regional STEM Centers
- Ongoing teacher support teams including human resources, professional development/training, instructional materials, stipends, and credits for participating teachers

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i-STEM Web Resources

i-STEM

http://www.sde.idaho.gov/site/istem/

Managed and supported by the Idaho State Department of Education. Contact: Scott Smith, State Science Coordinator, SSmith@sde.idaho.gov

The Idaho STEM Pipeline

www.idahostem.org

Currently managed and supported by Idaho Experimental Program to Stimulate Competitive Research in Idaho (EPSCoR) and by the National Science Foundation Contact: (208) 885-2345 or epscor@uidaho.edu.

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2010 i-STEM Teacher Academies

"Navigating the World of i-STEM: Focusing on use of Idaho Resources"

July 19-22, 2010

College of Southern Idaho (Twin Falls)
North Idaho College (Coeur d'Alene)

More Information available at
http://www.sde.idaho.gov/site/istem/

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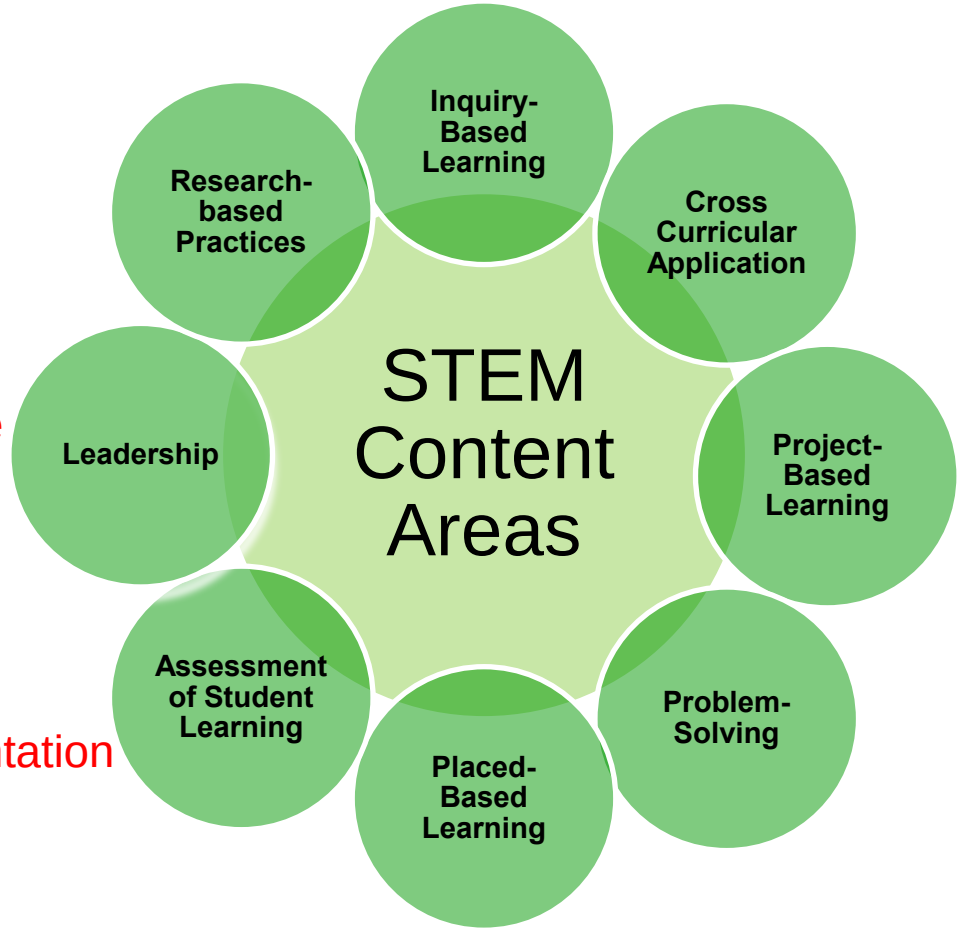
i-STEM Teacher Academies

Content Areas

- Engineering
- Environment
- Energy
- Mathematics
- Hands-on Science
- Robotics
- Space
- Agriculture
- Neuroscience
- Leadership
- Change Implementation



Common Events

- Keynote Address
- Best Practices Presentation
- Common Planning Time
- Business and Industry Gallery Walk
- Showcase of Idaho's Outstanding STEM Education Programs
- STEM Panel Discussion

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Questions ?

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i-STEM Governance Committee Members

Member	Representing	Phone #	E-Mail
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Beck, Jerry College of Southern Idaho	Idaho Community Colleges		Jbeck@csi.edu
Boire, Janine Discovery Center of Idaho	Informal i-STEM Education	208.393.9895 Ext. 230	Janine@scidaho.org
Burns, Leandra Department of Labor	Idaho Department of Labor	208.332.3570	Leandra.Burns@labor.idaho.gov
Cairns, Bill Skyline High School	i-STEM Center Committee Chair Person		CairBill@d91.k12.id.us
Caudle, Trina Skyline High School	School Building Administrators (e.g. Principal)	208.525-7770 208.241.8192	CaudTrin@d91.k12.id.us
Clark, Linda Meridian School District	Superintendent from Idaho Schools		Clark.Linda@meridianschools.org
Gonzalez, Margie Idaho Comm. on Hispanic Affairs	Un- and Under-Represented Populations		Margie.Gonzalez@icha.idaho.gov
Huggins, DaNel Kuna High School	Teachers from Idaho Schools	208.599.5454	Dhuggins@kunaschools.org
McClintick, Allison Teacher Quality and Special Projects Manager State Board of Education	Idaho State Board of Education	208.332.1579	Allison.McClintick@osbe.idaho.gov
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Smith, Scott Department of Education	Idaho Department of Education	208.332.6952	Ssmith@sde.idaho.gov

Warbis, Mark Governor Otter's Office	Idaho Governor's Office		Mark.Warbis@gov.idaho.gov

COLLEGE OF WESTERN IDAHO

SUBJECT

College of Western Idaho (CWI) Request for Approval of General Education Degrees (AA and AS).

APPLICABLE STATUTES, RULE OR POLICY

The College of Western Idaho operates in compliance with Idaho Code Title 33 Education, Chapter 21 (Community) Colleges, the policies of the Idaho State Board of Education, and the policies of the College of Western Idaho Board of Trustees.

BACKGROUND/DISCUSSION

The College of Southern Idaho (CSI) entered into a formal memorandum of understanding with CWI to be its partnering institution for accreditation by the Northwest Commission of Colleges and Universities (NWCCU). The accrediting standards require that CSI approve all curriculum that will be taught by CWI prior to its delivery. The College's general education courses, imported from the College of Southern Idaho, include learning outcomes or course objectives. Based on this information and following a College of Western Idaho syllabus template, faculty members prepare an individualized syllabus for each course which includes the learning outcomes.

The College of Western Idaho (CWI) began offering the AA and AS degrees as detailed in Attachment 1 beginning January 20, 2009. The degrees offered are parallel in content to College of Southern Idaho. All AA and AS degrees have been reviewed and approved by the College of Southern Idaho's Curriculum Committee. Additional existing College of Southern Idaho AA and AS degrees will be added to the CWI catalog for 2010-2011. These additional degrees were reviewed and approved by the College of Southern Idaho's Curriculum Committee on January 27, 2010. Although these academic degrees received proper approvals by this curriculum committee in accordance with CSI procedures through the NWCCU accrediting standards, they also need official approval by the Board. Therefore, CWI was advised to submit a modified Notice of Intent for retroactive approval of the academic degrees.

In accordance with Board Policy III.G.5(a)(2), *Board Approval Procedures*, "Academic requests will be forwarded to the Chief Academic Officer. The Chief Academic Officer shall forward the request to the CAAP for its review and recommendation. If the CAAP recommends approval, the proposal shall be forwarded to the Board for action. Requests that require new state appropriations will be included in the annual budget request of the institution and the State Board of Education." The request was forwarded to the Council on Academic Affairs and Programs for review and recommends approval.

ATTACHMENTS

Attachment 1 Summary of Degrees Page 3

STAFF COMMENTS AND RECOMMENDATIONS

A modified Notice of Intent process was developed specifically to review the degrees slated for approval. This process provided the College of Western Idaho and the State Board of Education the information needed to ensure that the new degrees will meet the approval standards set forth in Board policy III.G.5(a)(2). This process also helped ensure the degrees would be of sufficient scope, quality, and relevance to permit transfer to universities.

Instruction, Research, and Students Affairs Committee, Council on Academic Affairs and Programs, and staff recommend approval of the request from the College of Western Idaho for the academic degrees as shown in Attachment 1.

BOARD ACTION

A motion to retroactively approve the request from the College of Western Idaho to offer the academic degrees as shown in Attachment 1 beginning January 20, 2009, and a motion to approve the request to add additional degrees for the 2010-2011 academic year as shown in Attachment 1.

Moved by _____ Seconded by _____ Carried Yes _____ No

Summary of Degrees

This is a summary of academic degree options being offered at the College of Western Idaho beginning January 20, 2009. This is a support document for the Notice of Intent process as described in SBOE Policy III.G.*Updated 2/22/2010*

Program Name	CIP Code nces.ed.gov		Associate of Arts (AA): A minimum of 64 credit hours, which includes a minimum of 16 general education credits and longer than one academic year.	Associate of Science (AS): A minimum of 64 credit hours, which includes a minimum of 16 general education credits and longer than one academic year.	Additional Degrees to be added for 2010-2011	
Agriculture	01.0000		Yes		XX	
Agriculture Science	01.0104			Yes	XX	
Anthropology	45.0201		Yes		XX	
Art - Commercial	50.0402			Yes	XX	
Art - General	50.0701		Yes		XX	
Biology	24.0101			Yes		
Biology - Health Care	24.0101			Yes		
Biology - Natural Resources	24.0101			Yes		
Business - General	24.0101		Yes			
Chemistry	40.0501			Yes	XX	
Communication	24.0101		Yes			
Criminal Justice	24.0101		Yes			
Economics	45.0601		Yes		XX	
Education - Bilingual Elementary	13.0201		Yes		XX	
Education - Early Childhood	13.1210		Yes		XX	
Education - Elementary	24.0101		Yes			
Education - Physical	13.1314		Yes		XX	
Education - Physical K-12	31.0501		Yes		XX	
Education - Secondary	13.1205		Yes		XX	
Education - Special	13.1001		Yes		XX	
English	24.0101		Yes			
Geography	45.0701		Yes		XX	
Geology	40.0601			Yes	XX	
History	54.0101		Yes		XX	
International Business	52.1101		Yes		XX	
Language - Foreign	13.1306		Yes		XX	
Language - Sign	16.1601		Yes		XX	
Liberal Arts	24.0101		Yes			
Math	27.0101			Yes	XX	
Music	50.0901		Yes		XX	
Nursing - Registered	51.1601			Yes		

Program Name	CIP Code nces.ed.gov		Associate of Arts (AA): A minimum of 64 credit hours, which includes a minimum of 16 general education credits and longer than one academic year.	Associate of Science (AS): A minimum of 64 credit hours, which includes a minimum of 16 general education credits and longer than one academic year.	Additional Degrees to be added for 2010-2011	
Photography	50.0605		Yes		XX	
Physics	40.0801			Yes	XX	
Political Science	24.0101		Yes			
Pre-Law	22.0001		Yes		XX	
Pre-Pharmacy	51.1103			Yes		
Psychology	24.0101		Yes			
Social Work	44.0701		Yes		XX	
Sociology	24.0101		Yes			
Theatre	50.0501		Yes		XX	
TOTALS →			**29**	**11**		

COLLEGE OF WESTERN IDAHO

SUBJECT

College of Western Idaho (CWI) Request for Approval of Termination of designated Professional-Technical Education Programs

REFERENCE

February 28, 2008	The Board approved a request by CWI to be designated as the technical college in Region III upon final recommendation by the Division of Professional-Technical Education.
April 16, 2008	The Board approved closure of the Selland College of Applied Technology at Boise State University and discontinuation of BSU's PTE programs effective July 1, 2009.

APPLICABLE STATUTES, RULE OR POLICY

Idaho State Board of Education Policies and Procedures, III.G. and IDAPA 55.01.02, Section 101.02

BACKGROUND/DISCUSSION

The College of Western Idaho (CWI) is requesting approval to terminate professional-technical education (PTE) programs. The reason for the termination is due to low student enrollment below the acceptable standard in accordance with IDAPA 55.01.02, Section 101.02, "**Inadequate Student Enrollment**. Student enrollment is below an acceptable standard for two (2) consecutive years. (Standard to be predetermined at the local level based on facilities requirements, equipment needs, and an acceptable student/teacher ratio.) Seventy-five percent (75%) of capacity is considered a generally acceptable standard."

The PTE programs listed in Attachment 1 have been inactive for years at the Selland College of Technology. When the Selland College closed and shifted all programs to CWI, the programs were brought intact to CWI as part of the College transfer. It is now the intention of CWI to eliminate the programs. There are no budget savings from these closures due to the inactive nature of programs.

IMPACT

There is no fiscal impact caused by the termination of these programs.

ATTACHMENTS

Attachment 1 - List of Programs to be Terminated Page 3

STAFF COMMENTS AND RECOMMENDATIONS

A modified Notice of Intent process was developed specifically to review the programs slated for termination. This process has provided the College of Western Idaho and the Division of Professional-Technical Education the information needed to ensure that the programs will meet approval per Board policy III.G.5(a)(3). This process also helped ensure the programs would be of sufficient scope, quality, and relevance to provide students with educational opportunities that will enhance the workforce of the region.

The Instruction, Research, and Student Affairs Committee, Council on Academic Affairs and Staff recommend approval of terminating the designated professional-technical education programs as presented due to low student enrollment.

BOARD ACTION

A motion to approve the request from the College of Western Idaho to terminate the designated professional-technical education programs as shown in Attachment 1 effective immediately.

Moved by _____ Seconded by _____ Carried Yes _____ No_____

Summary of Program Changes for CWI Professional-Technical Division

This is a summary of College of Western Idaho professional-technical education program terminations. This is a support document for the Notice of Intent process as described in SBOE Policy III.G. *Updated 3/19/2010*

Program Name	CIP Code nces.ed.gov	SDPTE Program ID Number	Postsecondary Technical Certificate (PTC): Minimum of 8 credit hours.	Technical Certificate (TC): Minimum of 27 credit hours.	Advanced Technical Certificate (ATC): A minimum of 52 credit hours; more than one year.	Associate of Applied Science (AAS): Minimum of 60 credits (16 gen ed); longer than one year
Broadcast Technology	10.0202	47294			Yes	Yes
Electrical Lineworker	46.0303	47256		Yes		
Industrial Electronics Technology	15.0303	47257			Yes	Yes
Industrial Maintenance Technology	47.0303	47255				
Automated Industrial Technician	47.0303				Yes	Yes
Environmental Control Technician	47.0303				Yes	Yes
Manufacturing Systems Technology	15.0613	47287			Yes	Yes
Refrigeration, Heating and Air Cond	47.0201	47250		Yes	Yes	Yes
Semi-Conductor Manufacturing Tech	15.0399	47285		Yes	Yes	Yes
TOTALS →			**0**	**3**	**7**	**7**

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IDAHO STATE UNIVERSITY

SUBJECT

Approval of Full Proposal for Ph.D. in Microbiology

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies & Procedures, Section III.G

BACKGROUND/DISCUSSION

Idaho State University proposes to create a degree program within the Department of Biological Sciences that would enable the University to award a Ph.D. in Microbiology, which is separate from the existing Ph.D. in Biology, reflecting the more specialized nature of the training received by students who choose to focus their coursework in Microbiology.

This program would be administered by the Department of Biological Sciences, which is an academic unit within the College of Arts and Sciences. This degree program has been included in the Idaho State Board of Education's Eight Year plan, with an implementation date of 2008. With appropriate SBOE approvals, it would be possible to start this program as early as the Fall semester of 2010, as all faculty and program components are already in place within the broad discipline of Biology.

Over the past 7 years, Idaho State University has increased its commitment to biomedical research by adding faculty lines in the biomedical sciences. This increased "critical mass" in faculty and resources in the biomedical sciences now enables the Department of Biological Sciences to provide the proposed Ph.D. in Microbiology with minimal reallocation of funds, requiring only a modest increase in funding to the University Library. All courses in the proposed curriculum are already being offered as part of the Ph.D. in Biology. Students who choose to focus their coursework in Microbiology want their degree to reflect this specialization, rather than the more general Ph.D. in Biology which they receive now.

The advantage of this degree program is that it allows those students following the more specialized and rigorous training required by the Microbiology faculty to be awarded a degree that reflects this. The creation of a Ph.D. in Microbiology at Idaho State University will provide additional educational options for students, thereby enhancing their future employment and career options. In addition, it will allow faculty members to increase Idaho State University's research productivity and maintain the teaching standard of excellence that is already established.

IMPACT

No new funding is required for this program other than the reallocation of minimal funding to the Library to purchase additional resources in Microbiology (see page

12). The program will attract additional graduate students, which will increase revenue to the University, and increase the number of PhD graduates. The program faculty is likely to attract additional external research funding.

ATTACHMENTS

Attachment 1 – Full Proposal & External Peer Review Page 3

STAFF COMMENTS AND RECOMMENDATIONS

Idaho State University has a mission to provide education in health professions and related biological and physical sciences. Idaho State University's request to offer a Ph.D. in Microbiology is consistent with their Eight-Year Regional Plan for Delivery of Academic programs in the Southeast Region for 2009-2010. This program is in line with their state mission to provide health professions and related biological and physical sciences. The emphasis is in extremophile research, which does not duplicate other state programs. The Council on Academic Affairs and Programs has reviewed the proposal and the recommendation was 7-1 in favor for approval of ISU's proposal.

Idaho State University currently offers a Bachelor of Science and Master of Science in Microbiology. Other Microbiology programs include the University of Idaho's Bachelor of Science in Microbiology; and Master of Science and Ph.D. in Microbiology, Molecular Biology, and Biochemistry.

BOARD ACTION

A motion to approve the request by Idaho State University to implement the Ph.D. in Microbiology.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

Institution Tracking No. 2007-17

IDAHO STATE BOARD OF EDUCATION

RECD ISU / GS
OCT 1 2 2009

ACADEMIC/PROFESSIONAL-TECHNICAL EDUCATION
FULL PROPOSAL
to initiate a
NEW, EXPANDED, COOPERATIVE, DISCONTINUED, PROGRAM COMPONENT OR OFF-CAMPUS INSTRUCTIONAL PROGRAM OR ADMINISTRATIVE/RESEARCH UNIT

Submitted by:

Idaho State University

Institution Submitting Proposal

College of Arts and Sciences

Name of College, School, or Division

Department of Biological Sciences

Name of Department(s) or Area(s)

A New, Expanded, Cooperative, Contract, or Off-Campus Instructional Program Leading to:

Ph. D. in Microbiology

Degree/Certificate & 2000 CIP

Program Change, Off-Campus Component

January 2010

Proposed Starting Date

This proposal has been approved by:

College Dean (Institution)	10/12/09 Date	~~VP Research &~~ Graduate Studies	10-21-09 Date
Chief Fiscal Officer (Institution)	11/2/09 Date	State Administrator, SDPTE	Date
Chief Academic Officer (Institution)	Date	Chief Academic Officer, OSBE	4/10/10 Date
President	11/20/09 Date	SBOE/OSBE Approval	Date
		Pamela L. Crowell VP, Research	11/19/09

Before completing this form, refer to "Board Policy Section III.G. Program Approval and Discontinuance.

1. Describe the **nature of the request**. For example, is this a request for a new on-campus program? Is this request for the expansion or extension of an existing program, or a new cooperative effort with another institution or business/industry or a contracted program costing greater than $150,000 per year? Is this program to be delivered off-campus or at a new branch campus? Attach any formal agreements established for cooperative efforts, including those with contracting party(ies). Is this request a substantive change as defined by the NWASC criteria?

Idaho State University proposes to create a degree program within the Department of Biological Sciences that would enable the University to award a Ph.D. in Microbiology, which is separate from the existing Ph.D. in Biology, reflecting the more specialized nature of the training received by students in this discipline. This program would be administered by the Department of Biological Sciences, which is an academic unit within the College of Arts and Sciences. This degree program has been included in the Idaho State Board of Education's Eight Year plan, with an implementation date of 2008. With appropriate SBOE approvals, it would be possible to start this program as early as the Spring semester of 2010, as all program components are already in place within the broad description of Biology. Over the past 7 years, the Idaho State University has increased its commitment to biomedical research by adding faculty lines at ISU in the biomedical sciences. The increased "critical mass" in faculty and resources at Idaho State University in the biomedical sciences over the last 7 years enables the Department of Biological Sciences at ISU to provide the proposed Ph.D. in Microbiology with minimal expenditure of additional monies by Idaho State University. Minimal additional resources are requested, because the program proposed is already being followed as part of the Ph.D. in Biology offered in the department. The proposed Ph.D. in Microbiology will not require additional courses to be developed, because the faculty in the Department of Biological Sciences at Idaho State University is already providing this program to our graduate students. The advantage of this degree program is that it allows those students following the more specialized and rigorous training required by the Microbiology faculty to be awarded a degree that reflects this. The creation of a Ph.D. in Microbiology at Idaho State University will provide additional educational options for students, thereby enhancing their future employment and career options. In addition, it will allow faculty members to increase Idaho State Universities' research productivity and maintain the teaching standard of excellence that is already established.

2. **Quality** – this section must clearly describe how this institution will ensure a high quality program. It is significant that the accrediting agencies and learned societies which would be concerned with the particular program herein proposed be named. Provide the basic criteria for accreditation and how your program has been developed in accordance with these criteria. Attach a copy of the current accreditation standards published by the accrediting agency.

   Further, if this new program is a doctoral, professional, or research, it must have been reviewed by an external peer-review panel (see page 7, "Guidelines for Program Review and Approval). A copy of their report/recommendations must be attached.

   a. Curriculum – describe the listing of new course(s), current course(s), credit hours per semester, and total credits to be included in the proposed program.

   b. Faculty – include the names of full-time faculty as well as adjunct/affiliate faculty involved in the program. Also, give the names, highest degree, rank and specialty. In addition, indicate what percent of an FTE position each faculty will be assigned to the program. Are new faculty required? If so, explain the rationale including qualifications.

   c. Student – briefly describe the students who would be matriculating into this program.

   d. Infrastructure support – clearly document the staff support, teaching assistance, graduate students, library, equipment and instruments employed to ensure program success.

   e. Future plans – discuss future plans for the expansion or off-campus delivery of the proposed program.

The American Society for Microbiology (ASM) is the preeminent professional society for Microbiologists not only in the USA, but internationally. The Society was founded in 1899 and has over 43,000 members worldwide, representing over 26 sub-disciplines within the field of Microbiology. ASM

contains a separate division within the Society that is concerned with the education of Microbiologists. The Society publishes curriculum guidelines for undergraduate majors in Microbiology, and the Department of Biological Sciences at ISU follows these suggested course offerings. The ASM, however, does not accredit either undergraduate or graduate degree programs. The suggested undergraduate curriculum has been modified for use at the graduate level and is the basis of the current M.S. degree in Microbiology offered at ISU, as well as the proposed Ph.D. in Microbiology. Advanced graduate-level courses in the areas detailed by the ASM curriculum guidelines as well as specialized course offerings in ISU faculty members' areas of expertise will ensure that the Microbiology Ph.D. provides sufficient exposure to Microbiology as recommended by the ASM guidelines. As is standard within the field, a committee of faculty members specific to each student is responsible for maintaining the standard of excellence and rigor of the degrees awarded.

An external review was conducted by Dr. Stanley Maloy, Dean of the College of Sciences, San Diego State University, and Dr. Laurens Smith, Associate Provost, Utah State University. Dr. Maloy is a past president of the American Society for Microbiology and current Associate Director of the Center for Microbial Sciences. He is the lead author of a highly regarded textbook in Microbiology, Microbial Genetics, as well as the laboratory manual Experimental Techniques in Bacterial Genetics. Dr. Smith is a former member of the Department of Biological Sciences at ISU, and founder of the Molecular Research Core Facility. A copy of their review is attached (Attachment 1).

a. Curriculum:

Attachment 2 provides a description of the program.

New course (a separate listing from the existing Graduate seminar in Biology 691)

Graduate seminar in Microbiology BIOL 695 1-3 cr.

Current Courses

See Attachment 3.

Total credits in program

A minimum of 75 credits total--9 per semester and 1 per summer for full-time students--is required.

b. Faculty

Attachment 4 provides a list of current faculty, their research areas and publications, as well as supporting and affiliate faculty. No new faculty are required at this time for the implementation of this program. The faculty listed currently support the undergraduate degrees in Biochemistry and Microbiology, the M.S. degree in Microbiology, and the Ph.D. degree in Biology at Idaho State University.

c. Student

The typical entering student will have completed a Master's degree in Microbiology or a related discipline. Highly motivated Bachelor's degree students also will be considered. Students who have graduated from one of ISU's undergraduate degree programs compose a large fraction of current graduate students; however, we anticipate increased applications from graduates of institutions from across the country with increased awareness of this program through dissemination of results at national meetings.

d. Infrastructure support

As a program within the Department of Biological Sciences, staff support is already in place. Departmental TA lines will continue to be allocated as appropriate to students in this program. Library holdings will be increased at Departmental expense to include the American Society for Microbiology journals (see Budget). Existing Departmental equipment and instruments will continue to be utilized for research and training.

e. Future plans

Ideally, faculty lines in Microbiology would be added in the future, which would provide additional research areas and lab space for expansion of the program. The participation of Dr. Yongsheng Ma already provides for inclusion of the Boise campus in this program. Increased graduate student enrollment should provide sufficient basis for future allocation of specific TA lines to this program.

3. **Duplication** – if this program is unique to the state system of higher education, a statement to that fact is needed. However, if the program is a duplication of an existing program in the system, documentation supporting the initiation of such a program must be clearly stated along with evidence of the reason(s) for the necessary duplication..

Describe the extent to which similar programs are offered in Idaho, the Pacific Northwest and states bordering Idaho. How similar or dissimilar are these programs to the program herein proposed?

The American Society for Microbiology recognizes that the umbrella term of "Microbiology" is incredibly broad; its 43,000 members define 26 separate subdisciplines within the discipline of Microbiology. It is highly unlikely that two Microbiology Ph.D. programs, even with the same programmatic name, would offer research and training emphases in the same subdisciplines. As one example, Idaho State University currently has an active extremophile research group, in which microbial organisms occupying extreme environments are studied. Even within this specialty, there are specific areas that researchers at ISU concentrate on: high salt, temperature extremes, and high radiation. The expertise of the individual faculty at ISU determines the areas of research, as do the unique facilities present on campus, such as the Idaho Accelerator Center. As such, the research conducted by ISU faculty in Microbiology in the area of extremophiles would be unlikely to compete with or overlap any extremophile research conducted by UI faculty members. Such specialized research groups will provide a very different training to the students entering the program than would be obtained at the University of Idaho. Students wishing to study specific areas would choose the program based on the research interests of the faculty members. We see this degree program not as competition with the University of Idaho, but rather as a complementary degree program which makes use of the specific research strengths and facilities found at Idaho State University, while continuing and encouraging collaborative research between the institutions.

There are numerous examples of multiple universities within the same state offering similar-sounding degrees. For example,
Montana State University: Ph.D. in Microbiology
University of Montana Ph.D. in Integrative Microbiology and Biochemistry

Oklahoma State University Ph.D. in Microbiology
University of Oklahoma Ph.D. in Microbiology

Arizona State University Ph.D. in Microbiology
University of Arizona Ph.D. in Microbiology and Pathobiology

As in Idaho, the training received by students in these programs differs significantly, despite the similarity of the name of the program, and as such, do not constitute duplication of programs. The following is a list of the programs offered by state universities in the Pacific Northwest/states bordering Idaho:

Washington:
Washington State University: Ph.D. in Immunology and Infectious Diseases, College of Veterinary Medicine, Veterinary Microbiology and Pathology
University of Washington: Ph.D. in Microbiology

Nevada:
University of Nevada, Reno: Ph.D. in Cell and Molecular Biology
University of Nevada, Las Vegas: Ph.D. in Microbiology

Wyoming:
University of Wyoming: Ph.D. in Molecular Biology, Ph.D. in Molecular and Cellular Life Sciences

Montana:
Montana State University: Ph.D. in Microbiology

University of Montana: Ph.D. in Integrative Microbiology and Biochemistry

Utah:

University of Utah: Ph.D in Biology through the Microbial Biology Program
Utah State University: Ph.D. in Biology

Oregon:

Oregon State University: Ph.D. in Microbiology
Oregon Health and Science University: Ph.D. in Molecular Microbiology and Immunology

These programs share certain core educational components with the program proposed here. The American Society for Microbiology provides guidelines, which many programs across the country follow. Nonetheless, these are guidelines, and the implementation of these guidelines is open to much interpretation, particularly in light of the broadness of the discipline. Those departments associated with Medical or Veterinary schools undoubtedly focus on more clinical Microbiology, whereas those residing within Colleges of Agriculture lean more toward agricultural microbiology. As in Idaho, the individual training provided to students within each department is a function of the research specialties of the faculty involved in the program.

4. **Centrality** – documentation ensuring that program is consistent with the Board's policy on role and mission is required. In addition, describe how the proposed program relates to the Board's current Statewide Plan for Higher Education as well as the institution's long-range plan.

Idaho State University has the "Health Professions" mission in the state of Idaho. This entails providing educational services/coursework associated with the diverse undergraduate and graduate programs at Idaho State University, as well as distance offerings to other academic units within the state. A core component of undergraduate and graduate education is providing opportunities for students to engage in scholarly research. Options for conducting this research at the graduate level in the field of Microbiology are currently limited at Idaho State University due to ability of the university to offer only a Master of Science degree in Microbiology. With a large number of faculty at Idaho State University currently engaged in biomedical research relating to infectious diseases and pathogenic organisms, the lack of a Ph.D.-level program in Microbiology hampers our ability to attract graduate students with biomedically related interests. Furthermore, some of Idaho's "best and brightest" who would prefer to continue their education in Idaho find themselves forced to accept positions in Ph.D. programs in other states to meet their research needs and interests. Approval by the State Board of Education for the initiation of a Ph.D. in Microbiology at Idaho Sate University would support Idaho State University's health professions mission at the undergraduate and graduate levels, and would provide a boost overall to efforts by ISU faculty members to conduct vigorous research programs in biomedical areas and maintain a standard of excellence in all areas of student education.

5. **Demand** – address student, regional and statewide needs.

   a. Summarize the needs assessment that was conducted to justify the proposal. The needs assessment should address the following: statement of the problem/concern; the assessment team/the assessment plan (goals, strategies, timelines); planning data collection; implementing date collection; dissemination of assessment results; program design and on-going assessment. (See the Board's policy on outcome assessment.)

   b. Students – explain the most likely source of students who will be expected to enroll (full-time, part-time, outreach, etc.). Document student demand by providing information you have about student interest in the proposed program from inside and outside the institution.

      Differentiate between the projected enrollment of new students and those expected to shift from other program(s) within the institution.

c. Expansion or extension – if the program is an expansion or extension of an existing program, describe the nature of that expansion or extension. If the program is to be delivered off-campus, summarize the rationale and needs assessment.

a. Needs assessment:

The training of doctoral level scientists in Microbiology is quite distinct from that required for students in other disciplines in the Biological Sciences. The inability to distinguish such specialized training by offering Ph.D. students only a Ph.D. in Biology limits Idaho State University's ability to attract doctoral students interested in Microbiology and Biochemistry. Approximately one quarter of the Ph.D. degrees awarded in Biology over the past 10 years have been from laboratories engaged in Microbiology research. Many of the Department's M.S. graduates in Microbiology leave ISU to pursue doctorates at other institutions offering dedicated Ph.D. programs in Microbiology. The most talented Microbiology B.S. students who are interested in entering a Ph.D. program directly leave ISU to pursue programs with more specialized degrees. Recent initiatives by ISU Department of Biological Sciences faculty in a number of areas related to infectious disease and extremophilic microorganisms have led to increased interest by students in pursuing graduate studies in these research areas (see table in section b). The ability to offer a Ph.D. in Microbiology would enable ISU to attract a greater number of these students on a national and regional level, thus strengthening the Health Professions mission of the Department of Biological Sciences and ISU.

The regional emphasis on health professions-related training demands a greater emphasis on basic research training to provide the basis for those more applied occupations. Existing local biotech industries have supported the M.S. program in the past (e.g. Global Food Technologies, Northwind). Graduates of this program are expected to contribute locally and statewide to the growing Biotechnology corridor, both by joining existing efforts as well as initiating new ones. Ph.D. level basic scientists are also in demand regionally at the nearby Idaho National Laboratory, which has an active Microbiology research unit focusing on energy issues. Many undergraduate students at ISU are place-bound by family constraints (working spouse, children in school) and will sacrifice furthering their careers rather than move. By offering more graduate programs, particularly one such as this program which positions graduates to enter a high tech profession, ISU has the advantage of being able to tap into this "captive" audience that other universities do not have access to.

Using the current Ph.D. program in Biology as a guide, we have crafted a program proposal that incorporates the unique training required of Microbiologists at the Ph.D. level. As the state of Idaho diversifies its economy from agriculture to a more balanced employer-base that includes biotechnology and pharmaceutical industries, the proposed Microbiology Ph.D. program would position Idaho State University to play a key role in helping to train Idaho's workforce for the 21st century. The ability to offer such a program at ISU would also enable Idaho institutions to retain our highly qualified and motivated students in-state for their advanced degree training, making it more likely that Idaho's 21st century workforce would consist of more native Idahoans. Senior scientists at the Idaho National Laboratory (INL) have reviewed the program favorably.

Comments by Dr. William Apel:

> **"...I think offering a Ph.D. in microbiology is an excellent idea. Frankly, with the current almost blinding expansion of biotechnology, and the specialization that is inherent in that expansion, a Ph.D. degree in "Biology" lacks focus, and carries the stigma of a degree from a small school that does not have the resources to offer more specialized and meaningful degrees. With that said, knowing the microbiology and biochemistry faculty at ISU, I am certain ISU can offer a strong and meaningful Ph.D. in Microbiology. Such a degree would enhance your students' employment potential. Bottom line, I strongly endorse ISU offering this degree and wish you the best of luck in working with the State Board of Education to establish a Ph.D. in microbiology degree program."**

Comments by Dr. Francisco Roberto:

> "...I think it's reasonable for the Biological Sciences department to consider offering a specialized PhD in microbiology, and believe that it would have benefits for your graduates primarily by expanding the potential job market available to them. While our history of hiring ISU grads reflects that it's easier to hire a BS/MS level graduate (and we definitely have more opportunities for them), we have had openings recently for PhD scientists that would have been unavailable to your students because of that requirement.
>
> My concern in the past has been the amount of resources it takes to run a good PhD program, but you (Dr. Peter P. Sheridan) and Malcolm (Dr. Malcolm S. Shields) have both raised the bar in terms of the caliber and rigor of the microbiology curriculum at ISU. There also seems to be an increasing flow of research dollars that could support good dissertation projects."

b. Students:

We anticipate that most students will be new, full-time enrollees. As the program becomes established, students will apply directly into this program after finishing either a B.S. or M.S. degree, from ISU or elsewhere. At the outset, however, the program will most likely be populated by students currently enrolled in the Biology Ph.D. program who are pursuing a Microbiology emphasis (there are at least 4 such students at this time). Students pursuing an M.S. degree in Microbiology may also opt to switch into the Ph.D. program once it is offered.

It is expected that some employees of the nearby Idaho National Laboratory will enroll in the program, most likely as part-time students. This model, although unusual nationwide, has been successfully implemented in the recently approved Applied Physics program at ISU. The INL has long supported graduate education for its employees, and many research projects can be funded through internal mechanisms at the INL. The 4-day work week at INL combined with flexible graduate class offerings at ISU has enabled some employees to continue working full-time while classwork is completed. Once the research project is established, more time is required on campus, which generally requires a release from work for some specified amount of time to complete dissertation research. Clearly completion of the degree takes longer than for a full-time student.

Although shifting enrollment from the Biology Ph.D. will account for 100% of the students in the first year, new enrollees (students who would have pursued a Ph.D. in Microbiology elsewhere without this program) are expected to make up the majority of the students by Year 3.

Data presented in the table below show the estimated enrollment if a Ph.D. program in Microbiology was currently being offered at Idaho State University. There would be 13 Microbiology Ph.D. students at ISU, and projected back enrollments for academic years 2007 and 2006 (12 and 11 students, respectively) indicate increasing/steady demand among recruited graduate students for this option. Enrollment numbers for a somewhat similar program at the University of Idaho for academic years 2006, 2005, and 2004 were 24, 27, and 28, respectively.

Enrollment and Graduates (i.e., number of majors or other relevant data) by Institution for the Proposed Program

Last three years beginning with the current year

Institution	Relevant Enrollment Data				Number of Graduates			
	Current	Previous Year (2009)	Previous Year (2008)	Previous Year (2007)	Current	Previous Year (2009)	Previous Year (2008)	Previous Year (2007)
BSU	NA	NA	NA	NA	NA	NA	NA	NA
CSI	NA	NA	NA	NA	NA	NA	NA	NA

	Relevant Enrollment Data				Number of graduates			
	Current	Previous Year 09	Previous Year 08	Previous Year 07	Current	Previous Year 09	08	07
EITC	NA	NA	NA	NA	NA	NA	NA	NA
ISU **Dept. of Biological Sciences**	Estimate if program in existence 4	Estimate if program in existence 3	Estimate if program in existence 1	Estimate if program in existence 7	Estimate if program in existence 0	Estimate if program in existence 0	Estimate if program in existence 0	Estimate if program in existence 6
LCSC	NA	NA	NA	NA	NA	NA	NA	NA
NIC	NA	NA	NA	NA	NA	NA	NA	NA
UI **Dept. of Microbiology, Molecular Biology, and Biochemistry**	22 (Data for 2010)	26 (Data for 2009)	25 (Data for 2008)	21 (Data for 2007)	4 Estimate (Data for 2010)	5 (Data for 2009)	7 (Data for 2008)	5 (Data for 2007)

6. **Resources** – fiscal impact and budget

On this form, indicate the planned FTE enrollment, estimated expenditures, and projected revenues for the first three fiscal years (FY) of the program. Include both the reallocation of existing resources and anticipated or requested new resources. Second and third year estimates should be in constant dollars. Amounts should reflect explanations of subsequent pages. If the program is a contract related, explain the fiscal sources and the year-to-year commitment from the contracting agency(ies) or party(ies).

I. PLANNED STUDENT ENROLLMENT

	FY 09		FY 10		FY 11	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
A. New enrollments			4	4	8	8
B. Shifting enrollments	4	4	1	1		

II. EXPENDITURES

	FY 09		FY 10		FY 11	
	FTE	Cost	FTE	Cost	FTE	Cost
A. Personnel Costs	0	0	0	0	0	0
1. Faculty	0	0	0	0	0	0
2. Administrators	0	0	0	0	0	0
3. Adjunct faculty	0	0	0	0	0	0
4. Graduate/instructional assistants	0	0	0	0	0	0
5. Research personnel	0	0	0	0	0	0
6. Support personnel	0	0	0	0	0	0
7. Fringe benefits	0	0	0	0	0	0
8. Other: _____	0	0	0	0	0	0
Total FTE Personnel And Costs;	0	0	0	0	0	0

	FY 09	FY 10	FY 11
B. Operating expenditures			
1. Travel	0	0	0
2. Professional services	0	0	0
3. Other services	0	0	0
4. Communications	0	0	0
5. Utilities	0	0	0
6. Materials & supplies	0	0	0
7. Rentals	0	0	0
8. Repairs & maintenance	0	0	0
9. Materials & goods for manufacture & resale	0	0	0
10. Miscellaneous	0	0	0
Total Operating Expenditures:	0	0	0

	FY 09	FY 10	FY 11
C. Capital Outlay			
1. Library resources	7500	1500	1500
2. Equipment	0	0	0
Total Capital Outlay:	0	0	0
D. Physical facilities Construction or major Renovation	0	0	0
E. Indirect costs (overhead)	0	0	0
GRAND TOTAL EXPENDITURES:	7500	1500	1500

III. REVENUES

	FY 09	FY 10	FY 11
A. Source of funds			
1. Appropriated funds -- Reallocation – MCO	1500	1500	1500
	0	0	0
2. Appropriated funds -- New – MCO	0	0	0
3. Federal funds	0	0	0
4. Other grants	0	0	0
5. Fees	0	0	0
6. Other: Indirects	6000	0	0
GRANT TOTAL REVENUES:	7500	1500	1500

	FY 09	FY 10	FY 11
B. Nature of Funds			
1. Recurring*	1500	1500	1500
2. Non-recurring**	6000	0	0
GRANT TOTAL REVENUES:	7500	1500	1500

* Recurring is defined as ongoing operating budget for the program which will become part of the base.

** Non-recurring is defined as one-time funding in a fiscal year and not part of the base.

a. Faculty and Staff Expenditures

Project for the first three years of the program, the credit hours to be generated by each faculty member (full-time and part-time), graduate assistant, and other instructional personnel. Also indicate salaries. After total student credit hours, convert to an FTE student basis. Please provide totals for each of the three years presented. Salaries and FTE students should reflect amounts shown on budget schedule.

Name, Position, And Rank	Annual Salary Rate	FTE Assignment to this Program	Program Salary Dollars	Projected Student Credit Hours	FTE Students

Project the need and cost for support personnel and any other personnel expenditures for the first three years of the program.

No additional requested

b. Administrative Expenditures

Describe the proposed administrative structure necessary to ensure program success and the cost of that support. Include a statement concerning the involvement of other departments, colleges, or other institutions and the estimated cost of their involvement in the proposed program

Name, Position, And Rank	Annual Salary Rate	FTE Assignment to this Program	Program Salary Dollars	Percent of Salary Dollars to Program

No additional requested

c. Operating Expenditures (travel, professional services, etc.) Briefly explain the need and cost for operating expenditures.

No additional requested

d. Capital Outlay

(1) Library resources

(a) Evaluate library resources, including personnel and space. Are they adequate for the operation of the present program? If not, explain the action necessary to ensure program success.

University Librarian requests additional books be purchased during the first year, and continuing journal subscriptions for support of this program.

(b) Indicate the costs for the proposed program including personnel, space, equipment, monographs, journals, and materials required for the program.

Funding is required in year 1 ($6000) for purchase of books specific to the discipline, as well as $1500 per year reallocated for journal subscriptions.

(c) For off-campus programs, clearly indicate how the library resources are to be provided.

(2) Equipment/Instruments

Describe he need for any laboratory instruments, computer(s), or other equipment. List equipment, which is presently available and any equipment (and cost) which must be obtained to support the proposed program.

The facilities provided by the Department of Biological Sciences at Idaho State University include walk-in incubators and cold rooms, several departmental autoclaves, three high speed and one ultra centrifuge, and support staff for microbiological research. Computers and other laboratory equipment reside in the laboratories of the individual faculty members, and include standard microbiological and molecular biological equipment (microscopes, PCR machines, incubators, refrigerators, freezers, etc.). This equipment is currently being used to train students in Microbiology.

Also available to graduate students in Microbiology is the Molecular Research Core Facility (MRCF), a campus-wide, state-of-the-art facility housed in the Gale Life Sciences building. This facility provides automated DNA sequencing and microsatellite analysis (Genotyping), PCR, quantitative PCR, electrophoresis, and gel documentation and analysis. For DNA and RNA quantification, the MRCF offers a NanoDrop ND-1000 Spectrophotometer as well as an Agilent 2100 Bioanalyzer. Gel documentation and imaging hardware available includes a Bio-Rad VersaDoc 3000 Imager for fluorescence, chemiluminescence, chemifluorescence, densitometry, and gel documentation and a Bio-Rad Personal FX Phosphorimager, with both large and small screen format. Also available for common use are several refrigerated microfuges and centrifuges, and a Synbiosis ProtoCOL HR Automated Colony Counting and Zone Sizing System. Also housed in the MRCF is an Agilent 48-slide microarray scanner, hybridization oven and GeneSpring software. Digital imaging microscopy systems included in the MRCF are a Leica DMRB based system and a Leica DMRA deconvolution and three-dimensional processing scope. Eighteen computers, including 5 MacIntosh, are available for use within the MRCF.

Other campus-wide facilities include the Idaho Accelerator Center, the ILEIA Mass Spectrometry Facility, and a Flow Cytometry Facility located in the College of Pharmacy, adding additional technical and analytical resources to students enrolled in the Microbiology Ph.D. program.

e. Revenue Sources

(1) If funding is to come from the reallocation of existing state appropriated funds, please indicate the sources of the reallocation. What impact will the reallocation of funds in support of the program have on other programs?

Reallocation from Departmental funds. Little/no impact on other programs

(2) If an above Maintenance of Current Operations (MCO) appropriation is required to fund the program, indicate when the institution plans to include the program in the legislative budget request.

(3) Describe the federal grant, other grant(s), special fee arrangements, or contract(s) to fund the program. What does the institution propose to do with the program upon termination of those funds?

The program does not rely on grants, special fee arrangements or contracts. Nevertheless, Microbiology faculty have an excellent track record of obtaining external grants, which funds a variety of individual and collaborative research programs and provides monetary support for Microbiology Ph.D. students. The additional funds for library resources come from departmental indirect accounts.

IDAHO STATE UNIVERSITY

External Reviewers for Notice of Intent

Program: Microbiology PhD Program

College: College of Arts and Sciences

Reviewed by: Smith / Maloy

Please provide comments regarding the following:

National/Regional need for this proposed program:

There is a growing need for students trained in microbiology research. This need is driven in part by the impact of bioterrorism, the threat of emerging infectious diseases, the potential for development of new microbial-based biofuels, and the central role of microbiology in the biotechnology industry. This need is also clearly reflected in funding priorities of federal funding agencies. Although there are microbiology graduate programs at many universities, no single institution can accommodate the diversity of microbiology research areas coupled with the distinct needs and opportunities of regional communities.

Several unique features of the proposed Microbiology PhD program at Idaho State University provide compelling arguments from the perspective of students, the university, the region, and the state. From the student perspective, this is a very attractive program that will provide opportunities for training in a high demand scientific discipline. From the university perspective, this program will increase the ability to attract federal funding that will support scientific research and enhance the reputation of the university. From the regional perspective, this program both serves a large group of highly qualified local students who may not want to leave the region for graduate training, and will provide potential "spin-off" biotechnology companies as well as the workforce needed for the development of a robust biotechnology industry. From the state perspective, this program will expand the expertise in the field of microbiology with distinct interests and skills in different regions of the state, and will help attract clean, high tech, high paying jobs to the state.

An example of the unique expertise within the microbiology program at Idaho State University is the study of extremophiles, microbes that are unusually resistant to extreme environmental or artificial stresses. Idaho State Univeristy microbiology faculty have developed well funded research in this field and have taken advantage of the excellent nuclear accelerator facilities on the campus that are without question among the best in the US. Extremophile research has broad and important applications in both the biomedical and bioenergy fields. Graduate students working in this arena of microbiological research will have the benefit of learning and training with some of the leaders in this area.

Quality of the proposed curriculum:

The proposed curriculum is both rigorous and comprehensive. The faculty have invested serious time and effort in the design of a curriculum that will position graduate students in the program for professional success. In fact, the diversity of courses and the number of units required could be reduced without compromising the quality of the graduate program.

Quality of the program faculty in relation to meeting the needs of the proposed program:

The faculty are productive, externally-funded, active researchers dedicated to the proposed program. Although a faculty with strong publication records is a common hallmark of excellent PhD programs, the faculty at Idaho State University are distinguished from other graduate programs in two ways: (1) the faculty have a long and proven history of dedicating themselves to working closely with students, with the faculty sharing a common interest in the success of all students in the program rather than focusing only on those students in their own research lab; (2) the faculty work closely with their students "at the bench", providing direct mentoring of students in experimental skills, the scientific process, and research ethics. It is clear that graduate students currently working with Idaho State's microbiology faculty recognize the benefit they receive because of the close working relationships they develop with the faculty. These qualities will be attractive to future graduate students as well and will serve as valuable recruitment variables. Scientists at the nearby Idaho National Laboratories have also been serving as science mentors and student advisors in their role as adjunct faculty.

Quality of Graduate School support:

The program will receive administrative support from the Graduate School, providing help with student applications, requirements, etc. However, the program will not rely on the Graduate School for financial support.

Quality and evidence of support for Doctoral candidates:

The faculty are clearly very supportive of the research and education of PhD candidates and have a history of successfully graduating high quality young professionals The level of faculty support for students includes the acquisition of the external funding needed to provide the supplies and equipment needed to conduct research, as well as research assistantships for most students. The program would benefit from additional teaching assistantships to support PhD students.

Level of Institutional support:

The administration – including the Biology Department Chair, the Dean of the College of Arts and Sciences, the Dean of the Graduate College, and the Provost – universally expressed strong support for this program. At all of the administrative levels, it is clearly understood that the Microbiology Ph.D. is absolutely relevant to the health sciences education mission of the university and that faculty in the program must be given wide latitude in their professional roles to make the proposed program a success.

Nevertheless, because the Microbiology PhD program will be a spin-off of the existing doctorate in biology program, the Microbiology PhD program can be developed with relatively low initial cost to the institution. As the benefits of a separate Microbiology PhD program are reaped, additional financial support for this program would be an excellent investment for the university.

Quality of facilities (classrooms, candidate offices, technical support for candidates):

The offices, laboratories, and research facilities are clearly sufficient for the proposed program. Faculty laboratories of many of the program faculty have undergone upgrades and remodeling over the course of the past few years to reflect the increasing needs of active and productive research efforts. Faculty are located in two buildings, with some issues related to the availability of distilled water, autoclave facilities, and natural gas in the auxiliary building. The program might benefit from moving those research labs to the main research building, but this would demand care to co-locate collaborating faculty in adjacent space. Outstanding centralized research facilities and resources exist in the form of the Molecular Research Core Facility and a microscopy and imaging center. These innovative facilities were established with federal agency funding and have seen several upgrades and expansion in recent years (also supported by federal funding) to offer state of the art research measurements to microbiological researchers at Idaho State University. Both faculty and students also remarked on the improvement of information resources in the science field, particularly enhanced interlibrary loan processes and electronic journal access at the university.

The teaching labs are small, limiting class sizes. Larger teaching labs would enhance teaching efficiency and student access.

Interest and support of students:

Both undergraduate and MS students expressed robust support for the program. Most of the students said that they strongly desired a degree in Microbiology vs a related field (e.g. Biology). In addition, many students said that they would be very interested in pursuing a PhD in Microbiology at Idaho State University, and if such a program was not available they would probably go to a program in another state. The importance of students receiving a doctoral degree with a more relevant name — "microbiology"- should not be underestimated; it will be to the advantage of these students as they pursue professional positions.

Students commented favorably on the strength of the microbiology faculty, the personal attention available in a smaller graduate program, the highly collaborative microbiology group, and the rigor of the program. It is likely that the favorable reputation that the current faculty and programs enjoy now will translate into success in student recruitment in the future.

Other criteria specific to this program (optional):

Several comments and suggestions that are not essential for the success of the program, but may enhance the program include:

- Inclusion of a training component (workshop, class, etc) focused on skills and knowledge required for success in the biotechnology industry, possibly including speakers from the biotechnology and pharmaceutical industry
- Inclusion of additional microbiology faculty from Boise State University and the Idaho National Laboratories as adjunct faculty in the Idaho State University Microbiology PhD program
- Streamline the curriculum, eliminating unnecessary courses, and combining courses when possible, and team teaching at both the undergraduate and graduate level; the extensive number of courses currently offered will limit the time faculty have to train students

- Adjusting the workload of research active faculty to ensure adequate time to maintain rigorous research programs and adequate time for mentoring of research students
- Increase the number of outside seminar speakers in the field of microbiology; this will both provide valuable networking opportunities for graduate students and faculty, and will enhance the reputation of the program and the university
- Increase TA support for microbiology courses and thereby provide valuable support for PhD students in the first year of the program and faculty with more time to interact with research students
- Clarify graduate student requirements, clearly specifying deadlines and rationale for requirements and providing written input from the graduate committee at each stage of training
- Clarify the unique and valuable role of the nearby Idaho National Labs (INL), both in providing collaborative opportunities with students and faculty in the program and in serving the needs of students who are also employees of the INL who receive PhD training in a non-traditional model.
- Clarify the potential of the program for catalyzing biotechnology in the Pocatello and southeast Idaho and Intermountain regions.
- The unique highly positive relationship that permeates the faculty-student culture in the department could be leveraged to step-up research training and learning opportunities.

Attachment 2.

Doctor of Philosophy in Microbiology

The degree of Doctor of Philosophy is granted for proven ability, independent investigation, and scholarly attainment in a special field. Although it is primarily a research degree and is not granted solely on the completion of a certain number of credits, there are specific course requirements that must be met. The training of a Ph.D.-level Microbiologist is based on a strong foundation in Mathematics, Chemistry, Genetics, Molecular Biology, and Biochemistry in addition to extensive coursework in the various disciplines within the field of Microbiology. This base is built upon advanced course work in the major sub-disciplines of Microbiology (Molecular Biology, Biochemistry and Physiology, Genetics, Biotechnology, Virology, Industrial and Environmental Microbiology, and Medical Microbiology) as the student focuses his/her area of interest .

Admission

Applicants Who Hold a Master's Degree

Application to the Ph.D. program in Microbiology requires (1) at least a 3.0 grade point average (GPA) for all upper division credits taken in the previous degree program, (2) scores in the 35th percentile or higher on the verbal and quantitative sections of the Graduate Record Exam (GRE), (3) submission of scores for the GRE Biology or Biochemistry subject area exam, and (4) completed application forms for the Graduate School and Department of Biological Sciences, including three letters of recommendation. Scores in the verbal, quantitative, and analytical sections of the GRE must be submitted before entrance can be considered. Foreign students may be accepted without GRE scores, with the requirement that they take the GRE during their first semester in residence. Individuals for whom English is a second language must meet the Graduate School minimal TOEFL score.

Applicants who do not meet the minimum GPA and/or GRE requirements may be admitted under "Classified (w/PR)" status. The conditions of acceptance will be specified on the applicant's Approval for Admission to Graduate School form. In some cases, students may be required to retake the GRE during their first semester in residence. Students admitted under "Classified (w/PR)" status because of low/missing GRE scores will be transferred to "Classified" status if new GRE scores that meet the minimal requirement are submitted. Failure to meet the minimum GRE standards during the first year of residence may result in expulsion from the program. Students under "Classified (w/PR)" status must petition the Graduate Programs Committee for transfer to "Classified" status after a year of graduate work and successful remediation of any deficiencies in coursework or GRE scores. This petition will include a recommendation from the student's Advisory Committee signed by the research advisor. Continuation in the Microbiology Ph.D. program is contingent upon approval of transfer to "Classified" status. In rare cases, the Graduate Programs Committee may grant approval for a student to remain on "Classified (w/PR)" status for a second year. Any student with "Classified (w/PR)" status who has not been approved for transfer to "Classified" status by the end of his/her second year will be dismissed from the program. Acceptance into the Microbiology Ph.D. program must be approved by the Microbiology Graduate Program committee.

Applicants Who Do Not Hold a Master's Degree

For applicants who hold only a Bachelor's degree, acceptance into the Microbiology Ph.D. program requires a minimum of a 3.0 GPA for all undergraduate work, scores in the 50th percentile or higher on the verbal and quantitative sections of the GRE, and submission of scores for the GRE Biology or Biochemistry subject area exam. No waiver of GRE scores is allowed except in the case of students for whom English is a second language who receive a lower verbal GRE score; these individuals must meet the Graduate School minimal TOEFL score. The application must include three letters of recommendation. The application must be approved by the Departmental Microbiology Program Committee.

Students in the Microbiology or Biology M.S. program may be permitted to change to the Microbiology Ph.D. program with approval of the Microbiology Graduate Program Committee. Application for change must include 1) a letter from the student that provides a rationale for the status change and 2) a letter of support from the research advisor.

Prerequisites

The following courses are recommended prerequisites for the Microbiology Ph.D. program. The student's committee may make recommendations for meeting prerequisite requirements, but the Microbiology Graduate Program Committee must approve any substitution to the courses listed below. Any student who has not met these requirements through previous course work must take these courses as part of his/her graduate program. Coursework taken at the undergraduate level to satisfy deficiencies does not count toward the graduate degree; however, they must appear on the student's Planned Program of Study. Coursework taken at the undergraduate level to satisfy deficiencies must be taken for letter grades and the grades earned must be "C" or better. It is expected that applicants to the program will have a broad background in Biology, and will have completed coursework at the undergraduate level in the following areas:

- 1 semester of Calculus (Calculus through Multivariable Calculus recommended)
- 1 year of General Chemistry
- 1 year of Organic Chemistry
- 1 year of Physics
- 1 semester of Quantitative Analysis, Analytical Chemistry, or Inorganic Chemistry
- 1 semester of Statistics or equivalent
- Genetics
- General Microbiology

Coursework deficiencies will be determined by the Microbiology Graduate Program Committee. Deficiencies will be made up in the first year of study. The Microbiology Ph.D. program will be tailored to the requirements of the student's program of study (as determined by the student's Advisory Committee), and will include coursework to rectify any deficiencies as determined by the Microbiology Graduate Program Committee.

Graduate Coursework in the Microbiology Ph.D. program

The intent of the Microbiology Ph.D. program is to produce scientists with a broad background in the major sub-disciplines of Microbiology, while ensuring focused study in their major field of interest. The student's Graduate Advisory Committee will direct the student to specific course offerings within the

Department and University to satisfy coursework guidelines. The three core areas in the Microbiology Ph.D. program are:

- Biochemistry, Genetics, Molecular Biology, and Physiology of Microorganisms
- Immunology, Virology, and Medical Microbiology
- Microbial Ecology and Applied, Industrial, and Environmental Microbiology

18 credits

Students in the Microbiology Ph.D. program will take at least 30 credits of formal graduate coursework (at least 15 credits will be at the 600-level). The following courses are NOT to be considered part of this 30 credits of formal graduate coursework: BIOL 581-582 Independent Problems; BIOL 648 Graduate Problems; BIOL 650 Thesis; BIOL 699 Doctoral Dissertation. Six credits will consist of BIOL 695 Graduate Seminar in Microbiology. Six credits of courses will be taken in **each** of the three Microbiology core areas (18 credits total). The remaining 6 credits will be taken in any one of the three core areas or in subject areas recommended by the student's Advisory Committee. It is expected that students in the Microbiology Ph.D. program will complete the majority of their coursework by the end of their 4th semester (or equivalent) in the program. Students in the Microbiology Ph.D. program may be required to take other courses (as determined by recommendation of the student's Graduate Advisory Committee). The 6 credits of Graduate Seminar in Microbiology may be taken at any time during the student's residence in the Microbiology Ph.D. program, but it is recommended that the student start taking Graduate Seminar no later than their 5th semester (or equivalent) in the program. The specific course list for each student will be determined by the student's Graduate Advisory Committee based on the criteria outlined in this document. Students who have already received an M.S. degree may transfer 9 credits of graduate level work, providing a grade of "B" or higher was earned. Transfer of credits is subject to approval by the Graduate Programs Committee. Specific course requirements include:

BIOL 695 Graduate Seminar in Microbiology	6 credits
Microbiology Core Area Courses	18 credits (6 credits in each area)
Advisory Committee recommended Courses	6 credits minimum

Residency Requirements

The equivalent of at least four years of full-time study (minimum of 75 graduate credits) is required and the research upon which it is based should compose a substantial portion of the program and involve original work. Part of the work may be completed elsewhere with the approval of a student's Advisory Committee, but two consecutive regular semesters of full-time study must be taken in residence at this university.

Advisory Committee

The student's Advisory Committee will consist of the graduate research advisor and (at least) three additional members of the graduate faculty who are chosen by the student in consultation with the research advisor. It is the student's responsibility to contact members of the faculty to ascertain their willingness to serve. The Advisory Committee may include individuals from other departments or persons from outside the University who hold affiliate rank in the Department, with the approval of the Dean of Graduate Studies, but the majority of any committee must consist of regular departmental faculty.

The final member of the student's Advisory Committee is a Graduate Faculty Representative (GFR) from outside the Department who is appointed by the Dean of Graduate Studies. The Dean will automatically

appoint a GFR to participate in the defense of the dissertation if one has not been appointed before that time. However, it has been traditional for the GFR to be an active member of the Advisory Committee who participated in committee meetings and the Comprehensive Examination. In such cases, the student must submit a request in writing to the Dean of Graduate Studies that a particular individual be appointed. The GFR must be a member of the Graduate Faculty of Idaho State University.

Comprehensive Examination and Research Proposal Seminar

Before submission of the final program of study, the student must pass a Comprehensive Examination intended to test his/her knowledge of the relevant sub-disciplines within the field of Microbiology which pertain to their dissertation research project(s). The student will be admitted to this examination when the student is considered by his/her Advisory Committee to be adequately prepared. This is to be interpreted as allowing the student to take the Comprehensive Exam, even though some courses remain to be taken for the completion of the student's program of study. The Comprehensive Examination should be taken following the 2nd semester (or equivalent) of residence in the Microbiology Ph.D. program, and prior to the end of the student's 5th semester (or equivalent) in the program. Several months (3 to 6) prior to the intended date for examination, the student should meet with his/her Advisory Committee to seek approval to schedule the exam. If approval is given, the student may at that time ascertain from the committee which topical areas will be covered and which committee member will be responsible for each. Students should meet individually with committee members to determine more specifically what materials will be pertinent and how to prepare for the exam. The examination will consist of a written and an oral portion, which will be administered during a closed session following the student's public Research Proposal Seminar. Both portions must be passed satisfactorily in order to complete the comprehensive requirements.

The written portion of the Comprehensive Exam should not be less than 25 hours nor more than 40 hours of actual writing time. Normally the written exams will be completed within the span of one week. The written portion of the Comprehensive Examination generally will involve the student applying the knowledge gained through graduate coursework and readings suggested by the Advisory Committee. The examination will consist of five sections, each meant to be answered by a five-hour essay. The specific topic areas covered will be determined by the student's Advisory Committee. Grading on the written portion will be on a Pass/Fail basis with four of the five sections graded satisfactory required for a Pass. If the student fails two or more sections of the written portion of the exam, the student's Advisory Committee will convene to determine if the student will be allowed to remain in the program. The student's Advisory Committee may recommend one of three options: dismissal from the program; transfer from the Microbiology Ph.D. program to the Microbiology M.S. program; or re-examination of the failed sections of the written exam. Failed sections may be repeated once, at a time designated by the student's Advisory Committee, but within a year of the original examination. If a student has not passed all the written sections after repeating the failed sections once, that student will be dismissed from the program. The completed and graded written portion of the Comprehensive Exam is to be deposited in the student's department file.

Students pursuing the Microbiology Ph.D. are required to present a Seminar based on their Research Proposal to the Department of Biological Sciences prior to the end of their 5th semester (or equivalent) in the program. The seminar will be given during a scheduled meeting time of the Graduate Seminar in Microbiology (BIOL 695) and will be considered part of the course requirements for that student. The purposes of Research Proposal Seminar is to assess the student's potential for graduate study at the doctoral level, to determine areas in which the student shows strength or weakness, and to assess the student's ability to assimilate, evaluate, and synthesize subject matter. Immediately after the seminar, the student will meet in closed session with his/her Advisory Committee to review and critique the Research

Proposal Seminar and the written portion of the Comprehensive Exam. This will qualify as the oral portion of the Comprehensive Exam.

The purpose of the oral portion of the examination following the Research Proposal Seminar is to provide an opportunity to clarify and explore further implications of the written examination as well as to present the student with new questions in the same general subject areas as those covered by the written exams, but it can also cover other areas that are relevant to the student's graduate program. The oral portions should not be given until after the written examination has been evaluated by all of the committee members, but no later than four weeks after completion of the written portion. The student must pass the written portion of the Comprehensive Exam prior to taking the oral portion of the Comprehensive Exam. The oral exam must be passed by simple majority vote of the Advisory Committee. Once a student has passed both the written and oral portions of the Comprehensive Exam, the student will be admitted to Candidacy in the Microbiology Ph.D. program. When the student has passed both written and oral portions of the Comprehensive Exam, the Advisory Committee should finalize and approve the student's Final Program of Study. The Advisory Committee may recommend additional coursework to strengthen the student's background in areas in which the student was considered weak. In case of failure, the student may be allowed to retake all or part of the oral examination at the discretion of his/her Advisory Committee. If a student fails the oral exam a second time, that student will be dismissed from the program.

Doctoral Dissertation

Every student working toward the Microbiology Ph.D. degree must submit a dissertation embodying the results of original and creative research. The dissertation must demonstrate the student's ability in independent investigation and must be a contribution to scientific knowledge. It must display mastery of the literature of the subject field and must demonstrate an organized, coherent development of ideas, with a clear exposition of results and a creative discussion of the conclusions. Students may register for dissertation credit only after completion of all formal course work.

After the dissertation, in substantially final form, has been approved for format and content by the research advisor, and not later than two weeks before the date of the final examination, the student must personally deliver a copy of the dissertation to each member of the Advisory Committee.

Final Examination

The final examination of the dissertation will be conducted by the student's Advisory Committee including the GFR. Students are required to give a departmental seminar on the dissertation immediately preceding the final examination. The examination is concerned primarily with the student's research as embodied in the dissertation, but it may be broader and extend over fields of study related to the dissertation. Questions may be asked by committee members and those visitors specifically invited to do so by mutual agreement of the student's Advisory Committee and the Dean of Graduate Studies. A majority of the examining committee must approve the dissertation and the final examination.

Courses qualifying for credit in each Microbiology core area are:

Biochemistry, Genetics, Molecular Biology, and Physiology of Microorganisms

Course #	Course Title	# Credits
BIOL 533	Microbial Physiology and Lab	4 cr
BIOL 534	Microbial Diversity and Lab	4 cr
BIOL 537	Experimental Biochemistry	1 cr
BIOL 544	Molecular Biology and Lab	4 cr
BIOL 545	Biochemistry I	3 cr
BIOL 547	Biochemistry II	3 cr
BIOL 548	Advanced Experimental Biochemistry	2 cr
BIOL 561	Advanced Genetics	3 cr
BIOL 575	General Virology	3 cr
BIOL 577	Bacterial Virology Laboratory	1 cr
BIOL 578	Animal Virology Laboratory	1 cr
BIOL 588	Advanced Radiobiology	3 cr
BIOL 610	Principles of Molecular Biology	3 cr
BIOL 621	Advanced Methods in Microbiology	3 cr
BIOL 633	Advanced Microbial Physiology	3 cr
BIOL 634	Intermediary Metabolism	3 cr
BIOL 636	Experimental Intermediary Metabolism	2 cr
BIOL 659	Advanced Studies in Genetics	2-6 cr
BIOL 660	Selected Topics in Biochemistry	3 cr
BIOL 670	Selected Topics in Microbiology	1-4 cr
BIOL 675	Advanced Bacterial Virology	3 cr
BIOL 676	Advanced Animal Virology	3 cr
BIOL 599	Environmental Biotechnology	3 cr
BIOL 699	Microbial Biochemistry	3 cr
BIOL 599	Directed Evolution	3 cr
BIOL 599	Molecular Biotechnology	3 cr

Immunology, Virology, and Medical Microbiology

Course #	Course Title	# Credits
BIOL 551	Immunology	3 cr
BIOL 551L	Immunology Lab	1 cr
BIOL 554	Advanced Immunology	3 cr
BIOL 555	Pathogenic Microbiology	3 cr
BIOL 555L	Pathogenic Microbiology Lab	2 cr
BIOL 561	Advanced Genetics	3 cr
BIOL 566	Medical Mycology	3 cr
BIOL 575	General Virology	3 cr
BIOL 577	Bacterial Virology Laboratory	1 cr
BIOL 578	Animal Virology Laboratory	1 cr
BIOL 621	Advanced Methods in Microbiology	3 cr
BIOL 641	Advanced Topics in Immunology/Immunohematology	1-4 cr
BIOL 675	Advanced Bacterial Virology	3 cr
BIOL 676	Advanced Animal Virology	3 cr
BIOL 699	Microbial Biochemistry	3 cr
PSCI 621	Biological Actions of Chemicals	3 cr
PSCI 622	Principles of Toxicology	3 cr

PSCI 626	Pharmacology of the Immune System/Infectious Diseases	3 cr

Microbial Ecology and Applied, Industrial, and Environmental Microbiology

Course #	Course Title	# Credits
BIOL 534	Microbial Diversity and Lab	4 cr
BIOL 544	Molecular Biology and Lab	4 cr
BIOL 573	Applied and Environmental Microbiology and Lab	4 cr
BIOL 621	Advanced Methods in Microbiology	3 cr
BIOL 623	Soil and Ground Water Bioremediation	3 cr
BIOL 624	Microbial Ecology	3 cr
BIOL 599	Environmental Biotechnology	3 cr
BIOL 599	Molecular Biotechnology	3 cr
BIOL 699	Microbial Biochemistry	3 cr
CHEM 533	Environmental Chemistry	2 cr
CHEM 537	Environmental Chemistry Laboratory	1 cr
GEOL 520	Principles of Geochemistry	3 cr
GEOL 430	Principles of Hydrogeology	3 cr

Attachment 3.

All Graduate Courses Applicable to the Microbiology Ph.D. and M.S. Degree Programs

BIOL 533	Microbial Physiology and Lab	4 cr
BIOL 534	Microbial Diversity and Lab	4 cr
BIOL 537	Experimental Biochemistry	1 cr
BIOL 544	Molecular Biology and Lab	4 cr
BIOL 545	Biochemistry I	3 cr
BIOL 547	Biochemistry II	3 cr
BIOL 548	Advanced Experimental Biochemistry	2 cr
BIOL 551	Immunology	3 cr
BIOL 551L	Immunology Lab	3 cr
BIOL 554	Advanced Immunology	3 cr
BIOL 555	Pathogenic Microbiology	3 cr
BIOL 555L	Pathogenic Microbiology Lab	2 cr
BIOL 561	Advanced Genetics	3 cr
BIOL 566	Medical Mycology	3 cr
BIOL 569	Special Topics in Microbiology	1-4 cr
BIOL 573	Applied and Environmental Microbiology and Lab	4 cr
BIOL 575	General Virology	3 cr
BIOL 577	Bacterial Virology Laboratory	1 cr
BIOL 578	Animal Virology Laboratory	1 cr
BIOL 581	Independent Problems	1-4 cr/semester
BIOL 582	Independent Problems	1-4 cr/semester
BIOL 588	Advanced Radiobiology	3 cr
BIOL 605	Biometry	4 cr
BIOL 606	Scientific Writing	3 cr
BIOL 610	Principles of Molecular Biology	3 cr
BIOL 621	Advanced Methods in Microbiology	3 cr
BIOL 623	Soil and Ground Water Bioremediation	3 cr
BIOL 624	Microbial Ecology	3 cr
BIOL 633	Advanced Microbial Physiology	3 cr
BIOL 634	Intermediary Metabolism	3 cr
BIOL 636	Experimental Intermediary Metabolism	2 cr
BIOL 641	Advanced Topics in Immunology/Immunohematology	1-4 cr
BIOL 648	Graduate Problems	1-9 cr/semester
BIOL 650	Thesis	1-6 cr/semester
BIOL 659	Advanced Studies in Genetics	2-6 cr
BIOL 660	Selected Topics in Biochemistry	3 cr
BIOL 670	Selected Topics in Microbiology	1-4 cr
BIOL 675	Advanced Bacterial Virology	3 cr
BIOL 676	Advanced Animal Virology	3 cr
BIOL 695	Graduate Seminar in Microbiology	1-3 cr
BIOL 699	Doctoral Dissertation	1-9 cr/semester
BIOL 599	Environmental Biotechnology	3 cr
BIOL 599	Directed Evolution	3 cr
BIOL 599	Molecular Biotechnology	3 cr
BIOL 599	Advanced Molecular Biology Lab Techniques	3 cr
BIOL 699	Microbial Biochemistry	3 cr

PSCI 621	Biological Actions of Chemicals	3 cr
PSCI 622	Principles of Toxicology	3 cr
PSCI 626	Pharmacology of the Immune System/Infectious Diseases	3 cr
CHEM 533	Environmental Chemistry	2 cr
CHEM 537	Environmental Chemistry Laboratory	1 cr
GEOL 520	Principles of Geochemistry	3 cr
GEOL 430	Principles of Hydrogeology	3 cr

Attachment 4.

Faculty Members in Microbiology, Research Areas and Recent Publications

Microbiology Faculty:

Linda C. DeVeaux, Ph.D.
Associate Professor, Department of Biological Sciences
Responses of microorganisms to extremely high doses of ionizing radiation. General stress response mechanisms in bacteria and archaea. Adaptation to extreme conditions.
(19-23, 34, 56, 59)

Caryn M. Evilia, Ph.D.
Assistant Professor, Departments of Chemistry and Biological Sciences
Protein Structure and Function, Nucleic Acid Structure and Function, Protein Adaptation to Extreme Environments, Nucleic acid adaptation to Extreme Environments.
(13-15, 25, 26, 44, 48)

Yongsheng Ma, Ph.D.
Assistant Professor, Department of Biological Sciences
Gene regulation in both eukaryotic and prokaryotic systems; specifically, localization of gene promoters, identification of requisite transcription factors, and elucidation of the mechanisms through which gene expression is regulated.
(3, 4, 10, 35, 36, 42, 43, 49-51, 78-80)

Timothy S. Magnuson, Ph.D.
Associate Professor, Department of Biological Sciences
Biochemistry, Physiology, and Genomics of Metal- and Mineral-Transforming Microbes; Bioenergy and Biofuels; Microbial Ecophysiology of Extreme Environments; Development of New Methods in Microbial Ecology
(9, 17, 18, 27, 41, 45, 47, 52, 53)

Gene M. Scalarone, Ph.D.
Professor, Department of Biological Sciences
Studies on fungal immunology: Production and evaluation of antigenic reagents, including purification and characterization of the immunoreactive components of the systemic fungal organisms. Development of improved immunoassays for the clinical diagnosis of blastomycosis (ELISA methods plus studies on delayed dermal hypersensitivity). Comparative studies on isolates of *Blastomyces dermatitidis* from various geographical regions of the United States and other countries.
(1, 2, 5-8, 11, 12, 24, 28, 37, 38, 40, 54, 55, 58, 61, 63, 65-67, 73-75, 77)

Peter P. Sheridan, Ph.D.
Associate Professor, Department of Biological Sciences
Evolution of Protein Structure and Function, Molecular Biology of Adaptation to Extreme Environments, Biogeochemistry of Novel Prokaryotic Isolates, Microbial Molecular Biology, Microbial Diversity and Evolution of Prokaryotes, Detection of Microorganisms in the Environment, Emerging Infectious Diseases.
(16, 29-32, 39, 46, 57, 60, 62, 68-72, 76)

Malcolm S. Shields, Ph.D.
Associate Professor, Department of Biological Sciences
The evolution, diversity and environmental role of bacterial toxins; bacterial generation of electricity in Microbial Fuel Cells; ultrasonic and ultraviolet treatment methods for water disinfection systems; construction and delivery systems for fish genetic-vaccine vectors; the role of gene products in the developmental cycle of *Dictyostelium* using RNAi and genetic knockout, monitoring methods for DNA from environmental and low concentration samples
(30, 33, 46, 64, 76)

Vern D. Winston, Ph.D.
Professor, Department of Biological Sciences
Evolution of fish viruses
(44)

Supporting Faculty (within ISU):

Dring Crowell, Ph.D.
Professor, Department of Biological Sciences
Plant Biochemistry

Affiliate Faculty (outside of ISU):
Dr. William Apel, Idaho National Laboratory
Dr. Yoshiko Fujita, Idaho National Laboratory
Dr. Hope Lee, Idaho National Laboratory
Dr. Deborah Newby, Idaho National Laboratory
Dr. David Reed, Idaho National Laboratory
Dr. Francisco Roberto, Idaho National Laboratory
Dr. Thomas Schwan, Rocky Mountain Laboratories
Dr. Dennis Stevens, Veterans Affairs Medical Center, Boise
Dr. Maribeth Watwood, Northern Arizona University

Publications of ISU Microbiology Faculty, 2000-Present

1. **Abuodeh, R. O., E. M. Chester, and G. M. Scalarone.** 2004. Comparative serological evaluation of 10 *Blastomyces dermatitidis* yeast phase lysate antigens from different sources. Mycoses **47:**143-9.
2. **Abuodeh, R. O., J. N. Galgiani, and G. M. Scalarone.** 2002. Molecular approaches to the study of *Coccidioides immitis*. Int J Med Microbiol **292:**373-80.
3. **Aldape, M. J., A. E. Bryant, E. J. Katahira, A. M. Hajjar, S. M. Finegold, Y. Ma, and D. L. Stevens.** 2009. Innate immune recognition of, and response to, *Clostridium sordellii*. Anaerobe.
4. **Aldape, M. J., A. E. Bryant, Y. Ma, and D. L. Stevens.** 2007. The leukemoid reaction in *Clostridium sordellii* infection: neuraminidase induction of promyelocytic cell proliferation. J Infect Dis **195:**1838-45.
5. **Axtell, R. C., and G. M. Scalarone.** 2002. Serological differences in three *Blastomyces dermatitidis* strains. Mycoses **45:**437-42.
6. **Axtell, R. C., and G. M. Scalarone.** 2002. Serological differences in two *Blastomyces dermatitidis* isolates from different geographical regions of North America. Mycopathologia **153:**141-4.
7. **Bell, J., J. T. Ellis, and G. M. Scalarone.** 2008. Determination of optimal parameters for the preparation of *Blastomyces dermatitidis* yeast phase lysate antigens. Proceedings of the 50th Annual Meeting of the Idaho Academy of Science **43**.
8. **Bono, J. L., B. Jaber, M. A. Fisher, R. O. Abuodeh, E. O'Leary-Jepson, G. M. Scalarone, and L. H. Smith, Jr.** 2001. Genetic diversity and transcriptional analysis of the *bys*1 gene from *Blastomyces dermatitidis*. Mycopathologia **152:**113-23.
9. **Briggs, B., T. Mitton, R. Smith, and T. S. Magnuson.** 2009. Teaching Cellular Respiration & Alternate Energy Sources with a Laboratory Exercise Developed by a Scientist-Teacher Partnership. Amer. Biol. Teacher **71:**164-167.
10. **Bryant, A. E., Y. Ma, S. M. Hayes-Schroer, C. R. Bayer, and D. L. Stevens.** Group A streptococcus elicits C-C chemokine gene expression in human skeletal muscle cells. Infect. Immun. **Submitted**.
11. **Bybee, M. L., K. A. Jenson, J. J. Hayden, S. D. Clark, S. J. Stadelman, and G. M. Scalarone.** 2007. A comparative evluation of two enzyme-lined immunosorbent assays (ELISA) for the detection of *Blastomyces dematitidis* and *Histoplasma capsulatum* antibodies. Proceedings of the 49th Annual Meeting of the Idaho Academy of Science **42**.
12. **Chester, E. M., R. C. Axtell, and G. M. Scalarone.** 2003. *Blastomyces dermatitidis* lysate antigens: antibody detection in serial serum specimens from dogs with blastomycosis. Mycopathologia **156:**289-94.
13. **Christian, T., C. Evilia, and Y. M. Hou.** 2006. Catalysis by the second class of tRNA(m1G37) methyl transferase requires a conserved proline. Biochemistry **45:**7463-73.
14. **Christian, T., C. Evilia, S. Williams, and Y. M. Hou.** 2004. Distinct origins of tRNA(m1G37) methyltransferase. J Mol Biol **339:**707-19.
15. **Christian, T., R. S. Lipman, C. Evilia, and Y. M. Hou.** 2000. Alternative design of a tRNA core for aminoacylation. J Mol Biol **303:**503-14.
16. **Coker, J. A., P. P. Sheridan, J. Loveland-Curtze, K. R. Gutshall, A. J. Auman, and J. E. Brenchley.** 2003. Biochemical characterization of a beta-galactosidase with a low temperature optimum obtained from an Antarctic arthrobacter isolate. J Bacteriol **185:**5473-82.
17. **Connon, S. A., A. K. Koski, A. L. Neal, S. A. Wood, and T. S. Magnuson.** 2008. Ecophysiology and geochemistry of microbial arsenic oxidation within a high arsenic, circumneutral hot spring system of the Alvord Desert. FEMS Microbiol Ecol **64:**117-28.

18. **Cummings, D. E., S. Fendorf, N. Singh, R. K. Sani, B. M. Peyton, and T. S. Magnuson.** 2007. Reduction of Cr(VI) under acidic conditions by the facultative Fe(lll)-reducing bacterium Acidiphilium cryptum. Environ Sci Technol **41:**146-52.
19. **DeVeaux, L. C.** 2008. Radiation-Induced Bystander Effects, p. 323-344. *In* W.-Y. Tan and L. Hanin (ed.), Handbook of Cancer Models with Applications, vol. 9. World Scientific Publishing Co., Singapore.
20. **DeVeaux, L. C., L. S. Durtschi, J. G. Case, and D. P. Wells.** 2006. Bystander effects in unicellular organisms. Mutat Res **597:**78-86.
21. **DeVeaux, L. C., J. A. Muller, J. Smith, J. Petrisko, D. P. Wells, and S. DasSarma.** 2007. Extremely Radiation-Resistant Mutants of a Halophilic Archaeon with Increased Single-Stranded DNA-Binding Protein (RPA) Gene Expression. Radiat Res **168:**507-14.
22. **DeVeaux, L. C., J. R. Smith, S. Hobdey, E. C. Spindler, D. P. Wells, C. Frandsen, T. Webb, M. A. Mestari, and W. Beezhold.** 2007. Effect of Electron Beam Dose Rate on Microbial Survival. Proceedings of the Eighth International Topical Meeting on Nuclear Applications and Utilization of Accelerators:388-393.
23. **DeVeaux, L. C., D. P. Wells, A. Hunt, T. Webb, W. Beezhold, and J. F. Harmon.** 2006. Accelerator-based radiation sources for next-generation radiobiological research. Nuclear Instruments & Methods in Physics Research section A **562:**981-984.
24. **Ellis, J. T., J. F. Shurley, and G. M. Scalarone.** 2007. The use of *Blastomyces dematitidis* yeast lysate antigens to stimulate primary and secondary antibody responses in immunized rabbits. Proceedings of the 49th Annual Meeting of the Idaho Academy of Science **42**.
25. **Evilia, C., and Y. M. Hou.** 2006. Acquisition of an insertion peptide for efficient aminoacylation by a halophile tRNA synthetase. Biochemistry **45:**6835-45.
26. **Evilia, C., X. Ming, S. DasSarma, and Y. M. Hou.** 2003. Aminoacylation of an unusual tRNA(Cys) from an extreme halophile. Rna **9:**794-801.
27. **Ferris, M. J., T. S. Magnuson, J. A. Fagg, R. Thar, M. Kuhl, K. B. Sheehan, and J. M. Henson.** 2003. Microbially mediated sulphide production in a thermal, acidic algal mat community in Yellowstone National Park. Environ Microbiol **5:**954-60.
28. **Garn, J., and G. M. Scalarone.** 2009. Presented at the 8th Annual INBRE Conference, Pocatello, ID.
29. **Germino, M. J., N. J. Hasselquist, T. McGonigle, W. K. Smith, and P. P. Sheridan.** 2006. Colonization of conifer seedling roots by fungal mycelium in an alpine-treeline ecotone: Relationships to microsite, developmental stage, and ecophysiology of seedlings. Canadian Journal of Forest Research **36:**901-909.
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IDAHO STATE UNIVERSITY

Provost and Vice President for Academic Affairs
921 South 8th Avenue
Stop 8063
Pocatello, Idaho
83209-8063

November 30, 2009

Dr. Dale Bower
Chief Academic Officer
Idaho State Board of Education
650 West State Street, Suite 307
PO Box 83720
Boise, ID 83720-0037

Dear Dale:

Idaho State University is seeking approval for the following Full Proposal:

- 2007-17 Ph.D. in Microbiology

Please do not hesitate to contact me should you need additional information.

Best regards,

Gary A. Olson, Ph.D.
Provost and Vice President

GAO/sh

Enclosures

CC: Dr. Scott Hughes, Interim Dean, College of Arts and Sciences

Phone: (208) 282-2362
Fax: (208) 282-4487

ISU Is An Equal Opportunity Employer

Patty Sanchez

From: Scott Hamilton [scott.hamilton@my.eitc.edu]
Sent: Wednesday, December 02, 2009 10:48 AM
To: Patty Sanchez
Subject: RE: ISU Full Proposal for Review 12-1-09

EITC supports the new program.

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Tuesday, December 01, 2009 4:05 PM
To: Jim Munger; SheilaWeaver@boisestate.edu; Stacey Haase; Moore, Keri; stoutm@uidaho.edu; Donna Simpson; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Scott Hamilton; Shonna Parsons; Sona Andrews; Tony Fernandez; Victor Watson
Cc: Dale Bower; Heather Champlain
Subject: ISU Full Proposal for Review 12-1-09

The Board office has received a full proposal from Idaho State University to create a Ph.D. in Microbiology. The peer review report is affixed to the full proposal attachment. Please note that the NOI was vetted at CAAP's July meeting.

Reviewers will have until **December 31, 2009** to review. Please let me know if you have any questions.

Thanks,

Patty Sanchez
Academic Affairs Program Manager
Office of the Chief Academic Officer
and CAAP and HERC Committees
Office of the State Board of Education
650 W. State St., P.O. Box 83720
Boise, ID 83720-0037
Phone: 208-332-1562
Fax: 208-334-2632
Email: Patty.Sanchez@osbe.idaho.gov
Web: www.boardofed.idaho.gov

Patty Sanchez

From: Jay Lee [jalee@NIC.EDU]
Sent: Wednesday, December 09, 2009 4:48 PM
To: Patty Sanchez
Subject: RE: ISU Full Proposal for Review 12-1-09

Patty,
NIC has no objections to the ISU proposal.
Jay

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Tuesday, December 01, 2009 3:05 PM
To: Jim Munger; SheilaWeaver@boisestate.edu; Stacey Haase; Moore, Keri; stoutm@uidaho.edu; Donna Simpson; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Scott Hamilton; Shonna Parsons; Sona Andrews; Tony Fernandez; Victor Watson
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Response to University of Idaho—ISU proposal for Ph.D. in Microbiology

Regarding the "Duplication" issue:

- There are at least 26 major areas recognized by the American Society for Microbiology. No single institution can focus doctoral-level education and research on all areas. Each institution has built its program on the strength of its research facilities, critical mass of faculty expertise, and other aspects of education and research infrastructure. According to the external review of the ISU proposed program:

  " Although there are microbiology graduate programs at many universities, no single institution can accommodate the diversity of microbiology research areas coupled with the distinct needs and opportunities of regional communities. Several unique features of the proposed Microbiology PhD program at Idaho State University provide compelling arguments.... From the regional perspective, this program both serves a large group of highly qualified local students who may not want to leave the region for graduate training, and will provide potential "spin-off" biotechnology companies as well as the workforce needed for the development of a robust biotechnology industry. From the state perspective, this program will expand the expertise in the field of microbiology with distinct interests and skills in different regions of the state, and will help attract clean, high tech, high paying jobs to the state. "

- ISU research is unique in the country. From the external review of the ISU program:

  "An example of the unique expertise ...at Idaho State University is the study of extremophiles, microbes that are unusually resistant to extreme environmental or artificial stresses. Idaho State University microbiology faculty have developed well funded research in this field and have taken advantage of the excellent nuclear accelerator facilities on the campus that are without question among the best in the US. Extremophile research has broad and important applications in both the biomedical and bioenergy fields. Graduate students working in this arena of microbiological research will have the benefit of learning and training with some of the leaders in this area. "

  That is, ISU's facilities and expertise in these areas are unmatched within the State of Idaho.

Regarding UI's concern that ISU will be unable to build and sustain this program:

- We appreciate the concern. However, as the external reviewers noted: "...because the Microbiology PhD program will be a spin-off of the existing doctorate in biology program, the Microbiology PhD program can be developed with relatively low initial cost to the institution."
- In the last 10 years, 25% of the PhDs awarded in the Department of Biological Sciences would have been Microbiology PhDs had this program existed. This demonstrates that the infrastructure and resources exist and are already being utilized. The proposed degree program will not require additional coursework or faculty, as these are already in place.

TO: SBOE

From: ISU

RE: Microbiology Ph.D. Proposal questions

In answer to the SBOE questions raised about resources needed for this program, we want to emphasize that this program is already being provided to students under an existing degree program, the Ph.D. in Biology. No additional resources are required. Our request is for a separate degree that reflects the more specialized training that these students are already receiving as part of the Biology Ph.D. when they follow the Microbiology focus within the existing program. As noted by the external reviewers: "... because the Microbiology PhD program will be a spin-off of the existing doctorate in biology program, the Microbiology PhD program can be developed with relatively low initial cost to the institution. As the benefits of a separate Microbiology PhD program are reaped, additional financial support for this program would be an excellent investment for the university. "

Regarding the curricular questions, it is important to note that the primary training of a Ph.D. student, that is the heart and soul of their education, is to learn to conduct creative research. The reason for this is that these students are going to become the next generation's innovative scientific leaders. They can only attain that goal if the emphasis of their education is to teach them how to tap their creative talents and become independent thinkers. This is accomplished by pursuit of an original research problem under the guidance of a mentor. That is why this proposal, and any well thought-out proposal in a scientific discipline, emphasizes research and research training over formal coursework. That is also why many Ph.D. programs in the sciences have no formal coursework required of their students.

In this program, we also propose a secondary component to each student's education that supports the primary research education. A defined number of credits of formal coursework, the composition of which is determined by the individual advisory committees, will be taken by the student. These courses should be completed before the end of the second year in the program, after which all credits will be research and dissertation credits. These courses already exist. They are already part of the Ph.D. in Biology. No new courses are required or proposed for this Ph.D. program.

The descriptions of the courses that make up the secondary part of the curriculum for this degree program are already available in the current ISU graduate catalog (see attachment 1). These courses are meant to provide background for the unique and primary part of each student's education and training, which is the original research project. In the proposed ISU program, courses outside of the Dept. of Biological Sciences may be taken to fulfill the credit requirement, as our research projects are often interdisciplinary. Thus, our students would benefit from courses in related disciplines, to help broaden their knowledge base for applications to their unique research project. The research capabilities and research foci of the faculty at ISU dictate the projects that students will be pursuing and exemplify the unique character of the education and training that is provided to each individual.

We would also like to point out that the ability to offer students a specific degree in Microbiology, rather than a broad degree in Biology, increases their competitive advantage in the job market. Thus, existing

students will benefit from receiving a Ph.D. in Microbiology rather than a Ph.D. in Biology in their job searches. In addition, there is a significant pool of potential students who would choose to enter such a program, with the knowledge that a Microbiology Ph.D. will increase their marketability. Since many of these students intend to stay in the region upon completion of their degrees, the state of Idaho will also benefit by an increased talent pool for development of biotechnology within the state, which will have a positive effect on the state economy. The existence of this proposed Microbiology degree program will also help attract bio-tech companies to the region and the state. These students would otherwise choose to either leave the state for a graduate education, or simply not pursue an education. Either way, this program will increase the numbers of highly trained researchers, which cannot help but benefit the state of Idaho as a whole.

Attachment 1

Microbiology graduate courses offered in the Department of Biological Sciences (from the 2009-2010 online ISU graduate catalog):

g500 courses are cross-listed at the 400 (upper division undergraduate) level, and are offered regularly. Many dual-listed courses are required for the Microbiology B.S. degree, and thus would not be retaken by Ph.D. students entering with an undergraduate degree in Microbiology. 600 level courses are graduate-only courses, and are offered on an as-needed basis, with the following exceptions:
BIOL 610 (Principles of Molecular Biology) is offered every year
BIOL 648/650 (graduate problems and thesis credits) are offered every semester
BIOL 695 (Seminar in Microbiology, not yet in the catalog, but approved by Graduate Council) will be offered every semester.

In addition to the Microbiology courses listed here, specific courses in the following departments may also be included as part of an individual program of study, as decided by a student's advisory committee (see Attachment 2 of the proposal for a complete list of courses outside of Biological Sciences):
Geology
Chemistry
Pharmaceutical Sciences

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BIOL g532 Biochemistry 3 credits. Comprehensive discussion/presentation of structure, function and metabolism of biological macromolecules and their constituents, including energetics, regulation, and molecular biology, with emphasis on critical analysis of biochemical issues.
BIOL g533 Microbial Physiology 3 credits. Comparative physiology of microorganisms, including structure//function, metabolic diversity, enzyme mechanisms of microbial metabolism, and physiology of extreme organisms. Lectures, Class Exercises.
BIOL g534 Microbial Diversity 3 credits. Enrichment, cultivation, and isolation of prokaryotes from various metabolic groups and environments. Microorganisms will be identified using classical microbial techniques and modern molecular methodologies.
***BIOL 544 Molecular Biology 3 credits.** Fundamental principles of molecular biology: DNA replication, repair, and recombination, transcriptional and post-transcriptional regulation of gene expression, RNA metabolism, protein synthesis, targeting and turnover, posttranslational modifications, signal transduction, regulation of the cell division cycle, and molecular genetics of development..
BIOL 544L Molecular Biology Laboratory 1 credit. Laboratory techniques in molecular biology, including cloning, PCR and DNA sequencing..
BIOL g545 Biochemistry I 3 credits. Introduction to basic aspects of biochemical systems, including fundamental chemical and physical properties of biomolecules. Enzymology including allosterism, metabolic regulation, bioenergetics, and carbohydrate metabolism.
BIOL g547 Biochemistry II 3 credits. Functionalcontinuation of g545. Lipid, amino acid and nucleotide metabolism. Emphasis is on metabolic regulation, metabolic dysfunction, biochemical mechanism of hormone action, biochemical genetics, protein synthesis, and metabolic consequences of genetic defects.
BIOL g548 Advanced Experimental Biochemistry 2 credits. Advanced laboratory projects designed to emphasize techniques of qualitative and quantitative biochemical analysis.
BIOL g551 Immunology 3 credits. Fundamental concepts of antibody-mediated and cell-mediated mechanisms of immunity. In-vivo and invitro antigen-antibody interactions are discussed.
BIOL g551L Immunology Laboratory 1 credit. Selected laboratory experiments to accompany BIOL g551 Immunology.

BIOL g55 Advanced Immunology 3 credits. Detailed study of selected areas of immunobiology. Course content will vary with current demand. Students will lead discussions and present current literature. .

BIOL g555 Pathogenic Microbiology 3 credits. How the medically important bacteria, viruses and fungi interact with the host to produce disease, including microbe characteristics, pathogenesis, pathological processes, prevention, and treatment methods.

BIOL g555L Pathogenic Microbiology Laboratory 2 credits. Will emphasize procedures for the isolation and identification of pathogenic bacteria. Clinical specimens will be provided for use in identification of unknowns..

BIOL g561 Advanced Genetics 3 credits. Detailed and critical consideration of selected genetic topics with emphasis of recent advances.

BIOL g566 Medical Mycology 3 credits. Lecture/laboratory course addressing medically important fungi. Taxonomy, clinical disease, pathogenesis, immunological diagnosis and laboratory identification of contaminants, opportunists, superficial, cutaneous, subcutaneous and systemic mycoses.

BIOL g569 Special Topics in Microbiology 1-4 credits. Study of selected topics in microbiology.Course contents will vary with topics selected. May be repeated with departmental approval for non-repetitive course content.

****BIOL g573 Industrial Microbiology 4 credits**. Microbiological and biochemical aspects of fermentative and oxidative processes of industrialimportance such as yeast, mold, and bacterial fermentation.

BIOL g575 General Virology 3 credits. Introduction to the general principles of virology through consideration of structure, genetics, replication and biochemistry of animal and bacterial viruses.

.BIOL g577 Bacterial Virology Laboratory 1 credit. Designed to acquaint students with the techniques and experimental principles used in the study of bacterial viruses. Must be accompanied by BIOL g575.

BIOL g578 Animal Virology Laboratory 1 credit. Introduces tissue culture methods and other techniques employed in the study of animal viruses. Must be accompanied by BIOL g575.

BIOL g588 Advanced Radiobiology 3 credits. An advanced-level class covering aspects of molecular radiobiology, teratogenesis, oncogenesis, and acute radiation illnesses. It also considers nonstochastic radiation effects and the epidemiology of radiation exposures. Cross-listed as PHYS g588.

BIOL 610 Principles of Molecular Biology 3 credits. Introduction to subcellular biology and molecular genetics. DNA replication, cell division, the genetic code, transcription, translation, enzyme function, and control mechanisms in procaryotic and eucaryotic cells..

BIOL 621 Advanced Methods in Microbiology 3 credits.

BIOL 624 Microbial Ecology 3 credits. Ecological principles applied to microorganisms.

BIOL 633 Advanced Microbial Physiology 3credits. Advanced topics in microbial physiology and biochemistry.

BIOL 634 Intermediary Metabolism 3 credits. Theory, reactions, and methods pertinent to research in intermediary metabolism.

BIOL 636 Experimental Intermediary Metabolism 2 credits. Must be accompanied by or preceded by BIOL 634.

BIOL 641 Advanced Topics in Immunology and Immunohematology 1-4 credits. Current research and practice in immunology and immunohematology (transfusion medicine) including molecular approach to diagnosis and treatment. May be repeated for a maximum of 4 credits.

BIOL 648 Graduate Problems 1-9 credits per semester (may be repeated). Thesis related research. Graded S/U.

BIOL 659 Advanced Studies in Genetics 2-6 credits. Flexible use of seminars, lectures, and laboratory work dealing with problems in genetics.

BIOL 660 Selected Topics inBIOL 660 Selected Topics in Biochemistry 3 credits. Detailed study of selected areas of biochemistry. Course content will vary with current demand..

BIOL 670 Selected Topics in Microbiology 1-4 credits. Detailed study of selected areas of microbiology. Course content will vary with current demand.

BIOL 675 Advanced Bacterial Virology 3 credits. Detailed study of selected areas of bacterial virology. Course content will vary with current demand.
BIOL 676 Advanced Animal Virology 3 credits.Detailed study of selected areas of animal virology. Course content will vary with current demand.
BIOL 679 Electron Microscopy 5 credits. Introduction to uses of the electron microscope in biological research. Designed to develop proficiency in use and operation of the electron microscope, specimen preparation for electron microscopy, and photographic skills as applied to electron microscopy. In addition, students will develop a special project for individual study. Enrollment limited to students who have a demonstrated need to learn electron microscopy techniques.
BIOL 850 Doctor's Dissertation variable credit. Graded S/U .

*This course has been renamed "Cell and Molecular Biology", and has increased to 4 credits for the 2010-2011 academic year. BIOL 544L has been renamed "Cell and Molecular Biology Lab".
** This course has been renamed "Applied and Industrial Microbiology" for the 2009-2010 academic year.

ISU Response To SBOE Questions

The next step for this process is to obtain CAAP's recommendation on the Full Proposal. CAAP is slated to meet on February 4, 2010. In preparation for this meeting and in anticipation of questions from the Board, we need some additional information.

We know that there are many specialties in Microbiology, can you distinguish ISU's program focus from other doctorate programs such as from the UI to include distinguishing ISU's curriculum from their program.

The formal course work in the curriculum of the proposed Ph.D. in Microbiology at ISU follows the core areas as defined by the American Society for Microbiology, as does that of the UI and most other Ph.D. programs in Microbiology. Unlike the UI, the ISU degree is only Microbiology, and does not encompass Biochemistry and Molecular Biology, although both of these disciplines figure prominently in any current Microbiology program. This difference is reflected in the course listing comparison provided below (Table 1.). There are several courses in the UI curriculum which do not have a counterpart in the ISU curriculum, as these courses either reflect the more medical/clinical aspect of the UI program (MMBB 521, 522, 563, 571) or are outside of the field of Microbiology (MMBB520, 576, 582, 586, 587). By the same token, the more strictly microbiological focus as well as the research focus in ecology/environments, particularly extreme environments, of the ISU faculty is reflected in the courses for which there is no counterpart at UI (BIOL 534, 566, 573, 588) as well as the expanded offerings in certain Microbiology subdisciplines (Virology, Immunology, Physiology). In addition, the proposed ISU program would allow in a student's program of study certain courses outside of the Biological Sciences, as indicated in the proposal, once again reflecting the unique interdisciplinary research foci of the faculty in Microbiology at ISU. The inclusion of these courses allows more individualization and specialization of each student's education. At both institutions, in addition to the core courses, graduate coursework focusing on the area of research is decided by the student's advisory committee. However, at both institutions, the bulk of the current knowledge that the student is expected to attain is achieved through a specific research project as determined by the faculty advisor. In other words, each student will receive a unique education, which is dependent upon the expertise and research focus of the faculty member in whose lab the student is receiving training. This is the typical situation in Ph.D. programs in Microbiology.

At ISU, the research strengths of Microbiology faculty are in the areas of extreme environments (DeVeaux, Evilia, Magnuson, Sheridan, Shields), Immunology (Scalarone, Pfau), Virology (Winston) and infectious diseases (Ma, Scalarone, Shields). Within these still rather broad areas, each faculty member has developed a unique research program that is not duplicated at any other institution, including the University of Idaho.

This is further illustrated by the numerous collaborative efforts shown in Table 2. These collaborations would not exist if the expertise provided by the ISU faculty members was available elsewhere.

Table 1. Graduate courses offered at University of Idaho and Idaho State University supporting the respective Ph.D. programs

University of Idaho	Idaho State University
MMBB 501 Seminar	BIOL 695 Seminar
MMBB 502 Directed Study	BIOL 582 Independent problems
MMBB 504 Special Topics	BIOL 599 Special topics
MMBB 509 Immunology	BIOL 551 Immunology BIOL 544 Advanced Immunology
MMBB 511 Research and Curriculum Progress	BIOL 648 Graduate problems
MMBB 513 Pathogenic Microbiology	BIOL 555 Pathogenic Microbiology
MMBB 520 Instrumental Analysis	
MMBB 521 Clinical Internship	
MMBB 522 Cellular and Molecular Basis of Disease	
MMBB 525 Microbial Ecology	BIOL 624 Microbial Ecology
MMBB 532 Virology	BIOL 575 Virology BIOL 675 Advanced Bacterial Virology BIOL 676 Advanced Animal Virology
MMBB 541 Biochemistry	BIOL 545 Biochemistry I
MMBB 542 Advanced Biochemistry II	BIOL 547 Biochemistry II BIOL 699 Microbial Biochemistry
MMBB 550 Molecular Mechanisms in Microbiology	BIOL 610 Principles of Molecular Biology
MMBB 555 Microbial Physiology	BIOL 533 Microbial Physiology BIOL 634 Intermediary Metabolism BIOL 636 Experimental Intermediary Metabolism
MMBB 563 Molecular Parasitology	
MMBB 571 Advanced Pathogenesis: Host Pathogen Interactions	
MMBB 575 Cell Biology	BIOL 544 Cell and Molecular Biology
MMBB 576 Biophysical Chemistry	
MMBB 582 Protein Structure and Function	
MMBB 585 Prokaryotic Molecular Genetics	BIOL 561 Advanced Genetics
MMBB 586 Plant Biochemistry	
MMBB 587 Eukaryotic Molecular Genetics	
MMBB 588 Genetic Engineering	BIOL 599 Molecular Biotechnology

UI offers a BS Microbiology
Microbiology Minor

MMBB 589 Advanced Topics in Molecular Biology, Microbiology and Biochemistry	BIOL 660 Selected topics in Biochemistry BIOL 670 Selected topics in Microbiology BIOL 641 Advanced topics in Immunology
MMBB 600 Doctoral Research and Dissertation	BIOL 850 Doctoral dissertation
	BIOL 534 Microbial Diversity
	BIOL 566 Medical Mycology
	BIOL 573 Applied and Environmental Microbiology
	BIOL 588 Advanced Radiobiology
	BIOL 599 Directed Evolution

Could you also clarify the projected enrollment for the program? ISU indicates that most of the students will be new, FT enrollees and that most likely the program will be populated by students currently enrolled in the Biology Ph.D. program pursuing a Microbiology emphasis (there are at least 4 students at this time). This doesn't seem to be consistent w/statement on page 7, which indicates that there would be 13 Microbiology Ph.D. students with projected back enrollments at 12 and 11. The chart on page 7-8 also indicates a smaller number of students.

Student numbers:
The "13", "12" and "11" described in the proposal as projected back-enrollments for 2008, 2007 and 2006 reflect the number of students that we counted who **would** have enrolled in a Ph.D. in Microbiology if it existed, whereas the number (4) presented in the table are students actually enrolled in the Biology Ph.D. who will be shifting to the Microbiology Ph.D. when it is approved. The discrepancy between the current enrollments and what we projected as the enrollment during the years 2007 through the present reflect the loss of students due to our lack of a Ph.D. in Microbiology. These numbers are based on actual students who were in either our B.S. or M.S. programs, or who contacted ISU Microbiology faculty from outside of ISU, regarding the Ph.D. program, but who opted to go elsewhere (out of state) for their degree, or to not pursue graduate school at all and enter the workforce in the region. Those who continued to graduate school opted to attend universities that offer a Microbiology Ph.D., which reflects the difficulty faculty at ISU have in recruiting students and growing our graduate program in Microbiology in the absence of the ability to offer a Ph.D. in Microbiology. The lack of a Ph.D. program at ISU therefore negatively impacts the educational aspirations of not only students from the Idaho and surrounding region, but also affects students throughout the U.S. and beyond who might wish to avail themselves of the unique research opportunities and capabilities, described at length elsewhere, available at ISU. Historically, 1/3-1/2 of the Biology Ph.D. students in the Department of Biological Sciences have been advised by members of the Microbiology group. We anticipate, with the approval of this program, that the fraction of Ph.D. students within the department that are Microbiology students will increase dramatically, without affecting the absolute number of Biology Ph.D. students.

Additionally, could ISU identify areas of collaboration with other institutions such as UI?

Areas of Collaboration: Each faculty member in the Microbiology group is involved in multiple collaborations with researchers at other institutions. As is typical for research collaborations, each partner brings something different to the partnership, to provide a synergistic relationship that benefits all parties. The fact that the collaborations listed in Table 2 exist is testament to the unique expertise and research niche of each of the faculty members in the ISU Microbiology group.

Table 2. Ongoing collaborations between members of the ISU Microbiology group and researchers at other institutions.

ISU partner	Collaborator(s)	Area
Linda C. DeVeaux	Shiladitya DasSarma, University of Maryland Baltimore	Radiation resistance in *Halobacterium*
	John Battista, Louisiana State University	Radiation resistance and persistence in *Deinococcus radiodurans*
	Julie Maupin-Furlow, University of Florida	Radiation resistance in *Haloferax volcanii*
	Nancy Millenbaugh, Brooks City Base	Mechanisms of heat resistance
Caryn Evilia	Ya-Ming Hou, Thomas Jefferson University	Halobacterial tRNA synthetase
	Peter Lund, University of Birmingham, UK	Halobacterial expression vector
	Thu Betteridge, University of Technology, Sydney	Signaling pathways in *Halobacterium*
Yongsheng Ma	Dennis Stevens, VA Medical Center, Boise	
Tim Magnuson	Andrzej Paszczynski, Matt Morra, and Ron Crawford, University of Idaho Kevin Ferris, Boise State University	Bioenergy and hazardous waste remediation
	Carrick Eggleston, Patricia Colberg-University of Wyoming	Bioenergy and hazardous waste remediation
	John Cort, Pacific Northwest National Laboratory	Bioenergy and hazardous waste remediation
	Thomas Borch, Colorado State University	Bioenergy and hazardous waste remediation
Jean Pfau	Curtis Noonan, University of Montana on a funded grant from CDC/ATSDR	CDC/ATSDR-funded project
	Celine Beamer, University of	NIH R15

	Montana	
	Andrii Holian and Melisa Schelvan, University of Montana	
	Rich Bridges and Todd Seib, University of Montana	
Gene Scalarone	Alfred M. Legendre, University of Tennessee College of Veterinary Medicine, Knoxville, TN	Fungal immuno-diagnosis
	Bruce Klein, University of Wisconsin Medical School, Madison, WI	Fungal immuno-diagnosis
	Demo Pappagianis, University of California School of Medicine, Davis, CA	Fungal immuno-diagnosis
	Joseph Wheat, Mira Vista Diagnostic Laboratories, Indianapolis, IN	Fungal immuno-diagnosis
	Meridian Biosciences, Cincinnati, OH	Fungal immuno-diagnosis
Peter Sheridan	Bill Apel, Idaho National Laboratory	Extremophiles in metal contaminated environments; metabolic pathway analysis
	Shiladitya DasSarma, University of Maryland	Extreme radiation resistance mechanisms in novel extremophiles
	Eric Lee, Walter Reed Army Medical Institute	Bacteriophage genomics, Shiga toxin-producing pathogens
Malcolm Shields	Larry Forney, University of Idaho	Metagenomics
	Carolyn Bohach, University of Idaho	Shiga Toxins
	Eva Top	Plasmids
Vern Winston	Scott LaPatra, Clear Springs Food, Buhl, ID	Fish virus evolution

Patty Sanchez

From: Dale Bower
Sent: Sunday, January 24, 2010 7:47 AM
To: Baker, Doug
Cc: Patty Sanchez
Subject: RE: ISU phd in molecular biology

Doug,

I have been out for a few days with knee surgery. I hope to back next week and will review with you then.

Thanks for your patience.
Dale

From: Baker, Doug [dougbaker@uidaho.edu]
Sent: Thursday, January 21, 2010 12:00 AM
To: Dale Bower
Cc: Brenda Helbling
Subject: ISU phd in molecular biology

We posed your questions about the ISU phd program to a representative from our biology and micro-biology programs for a more in-depth answers. They both question the quality of the ISU proposed program as well as its redundancy with the more established UI programs. Some of the comments are not as graceful as they might be, but I wanted to you to see them in their unvarnished form. Based on your reading, how do you suggest I proceed with ISU? Thanks. db

Comments from Larry Forney:
I will let others provide detailed responses to the questions that pertain to coursework. A general observation is that the course options at ISU (as outlined in the attachment) are extensive.
I am not so concerned about the courses offered - and frankly I'm a bit surprised that conversation/debate is focused on this. Instead I have other concerns that relate to the research opportunities that would be available to students in the proposed PhD program. A PhD in microbiology requires extensive original research, and this is an expensive undertaking. ISU is not in a good position to provide the kinds of opportunities that are needed and expected by students.
Here's a prime example:
I doubt that the faculty in the program have the financial resources needed to: (1) provide competitive *research* stipends to students (>$20K per student per year). Failure to do so will have a strong negative effect on student quality, and (2) have the resources needed to fund the actual research (this can range from $10-25K per student per year). In addition to (1) and (2) I have seen nothing that indicates they have a plan for creating and sustaining state-of-the-art research infrastructure. These all require *significant* amounts of funding. The available data suggests that extramural funding to microbiology faculty is very uneven and insufficient overall. How will they obtain the needed funds? We don't know since the ISU proposal did not address the funding issue. [This implies that either they are ignorant of what is required, or know and choose to hide the problem under the rug.] Without a solution to this funding problem they can at best create a third-class program that is unable to compete nationally no matter what wonderful classes they might be able to offer.
I have raised this issue each time I have been asked to comment on the ISU proposal. Apparently ISU has successfully dodged this major problem and the discussion is instead focused on other less significant problems.

funding issue

Comments from Bruce Miller:

3. Using the attached list of ISU courses, these were supplied in the full proposal, please list all that duplicate our curriculum:

It will be helpful if you list the UI course offering next to the ISU listing for the Provost's easy reference

What I see on the attachment is only a listing of courses. We would need course syllabi to correctly determine whether the material covered in an ISU course is similar to one of our courses. Each instructor/faculty would need additional ISU course material to be convinced that the ISU course is being appropriately taught at the graduate level (500, 600), and not equivalent to one of our 400 level classes. It is also unclear what a number of these courses represent from the titles. Are they redudant paddng? It seems to me that they are. Knowing the amount of time required of a faculty member for a 500/600 level graduate course, I doubt that ISU has sufficient faculty numbers to offer this many graduate courses in the fields of biochemistry, molecular biology and microbiology. MMBB could offer this number of courses if each was taught in alternate years and the faculty had largely teaching appointments. However, this would make it difficult to run internationally recognized research programs that are nationally competitive for funding. ISU equivalents based on title only are only guesswork without syllabi. Below is the best equivalent guesstimate that I could arrive at. Current MMBB graduate offerings (which could have been found by looking at the online catalog) are:

UI		ISU
MMBB 500	Masters Research & Thesis	
MMBB 504	Special Topics	Biol 621, 659, 660. 670, 675, 676
MMBB 509	Immunology	Biol 551, 554 ✓
MMBB 511	Research & Curriculum Progress	
MMBB 513	Pathogenic Microbioilogy	Bio 555 ✓
MMBB 520	Instrumental Analysis	Biol 537, 548
MMBB 521	Clinical Internship	
MMBB 522	Cellular & Molecular Basis of Disease	Biol numerous
MMBB 525	Microbial Ecology	Biol 534 not
MMBB 532	Virology	Biol 575 ✓
MMBB 541	Advanced Biochemistry I	Biol 545
MMBB 542	Advanced Biochemistry II	Biol 547 ✓

MMBB 550	Molecular Mechanisms in Microbiology	Biol 621 not
MMBB 555	Microbial Physiology	Biol 553, 633
MMBB 563	Molecular Parasitology	
MMBB 575	Cell Biology	
MMBB 582	Protein Structure & Function	
MMBB 585	Prokaryotic Molecular Biology	Biol 610
MMBB 586	Plant Biochemistry	
MMBB 587	Eukaryotic Molecular Genetics	Biol 561, 610
MMBB 588	Genetic Engineering	Biol 561, 610
MMBB 589	Advanced Topics in Microbiology, Molecular Biology & Biochemistry	Biol 621, 659, 660. 670, 675, 676
MMBB 599	Non-thesis Masters Research	
MMBB 600	Doctoral Research & Dissertation	

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UNIVERSITY OF IDAHO

SUBJECT

Notice of Intent to reorganize the College of Natural Resources.

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies & Procedures, Section III. G. 5. a. 2.

BACKGROUND/DISCUSSION

With the support of the Council on Academic Affairs and Programs the University of Idaho seeks approval to reduce the number of academic departments in the College of Natural Resources from five to three. The reorganization includes tenure reassignment, future departmental name changes, realignment of undergraduate academic programs, and the exploration of the development of two self-sustaining research and outreach programs.

IMPACT

Overall personnel and operating cost savings is approximately $572,857 to meet state holdbacks, fund faculty salaries, and realign administrative services. Goals are to increase synergies within and across units; reduce costs of administration, and realign where appropriate; undergraduate academic programming to reduce duplication and more effectively employ faculty resources in teaching, research and outreach associated with natural resource sciences and management.

ATTACHMENTS

Attachment 1 – Notice of Intent Page 3

STAFF COMMENTS AND RECOMMENDATIONS

The proposed reorganization consolidates five departments into three for greater efficiency and interdisciplinary approaches to education and research. Staff reviewed the request and noted that the fiscal impact will be less than the required threshold for Board approval, however, there are other factors associated with the request such as tenure reassignments that would need the Board's consideration. The Instruction, Research and Student Affairs Committee, the Council on Academic Affairs and Programs, and Board staff recommends Board approval of the University of Idaho's request to reorganize their College of Natural Resources.

BOARD ACTION

A motion to approve the request by the University of Idaho to reorganize the College of Natural Resources as set forth in the attached Notice of Intent.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

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University of Idaho
A LEGACY OF LEADING

Provost and Executive Vice President
Administration Building, Suite 105
PO Box 443152
Moscow ID 83844-3152

Phone: 208-885-6448
Fax: 208-885-6558
www.provost.uidaho.edu

RECEIVED
FEB - 1 2010
OFFICE OF THE IDAHO
STATE BOARD OF EDUCATION

January 28, 2010

Dr. Dale Bower
Chief Academic Officer
Idaho State Board of Education
650 West State Street, Suite #307
P.O. Box 83720
Boise, ID 83720-0037

Dear Dale:

Enclosed please find the Notice of Intent (NOI) from the University of Idaho:

- College of Natural Resources: Administrative reorganization of college departments

If you have questions, please contact me for further information

Sincerely,

Doug Baker

Doug Baker
Provost and Executive Vice President

To enrich education through diversity, the University of Idaho is an equal opportunity/affirmative action employer

Patty Sanchez

From: Patty Sanchez
Sent: Tuesday, February 02, 2010 7:53 AM
To: 'Jim Munger'; Sheila Weaver; 'Stacey Haase'; 'Annalea Bromley'; 'Barbara Adamcik'; 'Billie Tribitt'; 'Connie Tillotson'; Dana Kelly; 'Doug Baker'; 'Gary Olson'; 'Jay Lee'; 'Jeff Fox'; 'Kelli Rooney'; 'Pam Claflin'; 'Richard Ledington'; 'Rick Aman'; 'Scott Hamilton'; 'Shonna Parsons'; 'Sona Andrews'; 'Tony Fernandez'
Cc: Dale Bower; Heather Champlain
Subject: UI NOI for Review 2-2-10
Attachments: UI Reorg College Natural Res.pdf

The Board office has received a Notice of Intent from the University of Idaho proposing to reorganize departments within the college.

Reviewers will have until **March 2, 2010** to review and forward comments before I process further. Please ensure I receive your comments by this date in order for those to be considered part of the review.

Thanks,

Patty Sanchez
Academic Affairs Program Manager
Office of the Chief Academic Officer
and CAAP and HERC Committees
Office of the State Board of Education
650 W. State St., P.O. Box 83720
Boise, ID 83720-0037
Phone: 208-332-1562
Fax: 208-334-2632
Email: Patty.Sanchez@osbe.idaho.gov
Web: www.boardofed.idaho.gov

Institution Tracking No. _____

IDAHO STATE BOARD OF EDUCATION

ACADEMIC/PROFESSIONAL-TECHNICAL EDUCATION

NOTICE OF INTENT

To initiate a

New, Expanded, Cooperative, Discontinued, program component or Off-Campus Instructional Program or Instructional/Research Unit

Institution Submitting Proposal: University of Idaho

Name of College, School, or Division: College of Natural Resources

Name of Department(s) or Area(s): Departments of Forest Resources, Fish and Wildlife Resources, Rangeland Ecology and Management, Forest Products, and Conservation Social Sciences

Indicate if this Notice of Intent (NOI) is for an Academic or Professional Technical Program
Academic X Professional - Technical _____

This is a New, Expanded, Cooperative, Contract, or Off-Campus Instructional Program, or Administrative/Research Unit (circle one) leading to:

A reorganization of the college that reduces the number of academic departments from five to three. The reorganization includes tenure reassignment, departmental name changes, and realignment of undergraduate academic programs with the resulting academic units. It also initiates two university level time-bound processes to explore the development of two self-sustaining research and outreach programs. Goals are to increase synergy within and across units, reduce costs of administration, and realign, where appropriate, undergraduate academic programming to reduce duplication and more effectively employ faculty resources in teaching, research, and outreach associated with natural resource sciences and management.

(Degree or Certificate)

Proposed Starting Date: January 1, 2010

For New Programs:

_____
Program (i.e., degree) Title & CIP 2000

For Other Activity:

- ☐ Program Component (major/minor/option/emphasis)
- ☐ Off-Campus Activity/Resident Center
- ☐ Instructional/Research Unit
- ☐ Addition/Expansion
- ☐ Discontinuance/consolidation
- ☐ Contract Program
- ☒ Other

William L. McLaughlin 1/6/10
College Dean (Institution) Date

VP Research & Graduate Studies Date

Chief Fiscal Officer (Institution)	27 Jan 10 Date	State Administrator, SDPTE	Date
Chief Academic Officer (Institution)	1 28 10 Date	Chief Academic Officer, OSBE	3/10/10 Date
President	1.28.10 Date	SBOE/OSBE Approval	Date

Before completing this form, refer to Board Policy Section III.G., Program Approval and Discontinuance.

1. Briefly describe the nature of the request e.g., is this a new program (degree, program, or certificate) or program component (e.g., new, discontinued, modified, addition to an existing program or option).

Part 1 – Change in Organizational Structure: Consolidation of five existing academic departments into three. The five existing departments will be reorganized/consolidated into three: (1) Department of Conservation Social Sciences; (2) Department of Forest Ecology and Biogeosciences, and (3) Department of Fish and Wildlife Resources. The new organizational structure consolidates two closely allied departments (Forest Resources and Rangeland Ecology and Management) and the Forest Products Department is discontinued as an administrative unit. CNR faculty and the eight undergraduate programs will be consolidated into the three resulting administrative units or associated with a center or institute either inside or outside of CNR.

Part 2 –Faculty tenure reassignment will be aligned with the assignment of academic programs to the resulting departmental units. This reassignment creates three academic departmental units with nine or more tenure track faculty in each. It also enhances the interdisciplinary nature of each group and creates an increased potential for joint appointments across CNR units.

Part 3 – Seven of the eight existing undergraduate academic degree programs (ecology and conservation biology, fire ecology and management, fishery resources, forest resources, rangeland ecology and management, resource recreation and tourism, wildlife resources) will be assigned to the three new academic departments. The remaining unassigned academic program in Forest Products, including its two options, is being redesigned and by August 1, 2010 will be assigned to an academic department, center or institute either inside or outside of CNR. The redesign focus is the area of bio-products/materials, especially those using woody biomass.

Part 4 – The forest operations option in the Forest Products undergraduate degree program is being consolidated into the existing Society of American Foresters accredited Forest Resources academic program.

Part 5 – The College has an opportunity in conjunction with units across campus to better service stakeholders by developing new self-sustaining research and outreach programs in the areas of Sustainable Rangelands and Bio-products/materials. Interested faculty inside and outside the college along with stakeholders will be brought together in two separate Task Forces to explore the viability of creating such units (program, center, institute or other collaborative). Each Task Force would have until August 1, 2010 to refine and develop its ideas as to how these potential opportunities might function and be organized. It is envisioned that the outcomes of these Task Forces would be implemented using the NOI process or whatever university and/or non-university process(es) necessary.

2. Provide a statement of need for program or a program modification. Include student and state need, demand, and employment potential. **Attach a Scope and Sequence, SDPTE Form Attachment B, for professional-technical education requests.** (Use additional sheets if necessary.).

This effort was motivated by changes in university-level guidance on department size and an emphasis on consolidating and increasing our efficiency while retaining and/or enhancing academic program quality. The university and college strategic plans also influenced the planning and decisions used in this process.

The proposed change in organizational structure will consolidate two departments and integrate activities of two under-sized departments (three and six tenure-track, faculty members) into the remaining three departments. After consolidation, all remaining departments will meet the institutional guideline of at least nine full time, tenure track faculty per department. The reorganization also increases the interdisciplinary diversity within the remaining three departments. We see opportunities associated with this change and we expect an increased demand for green, natural resource based jobs such as:

- Restoration ecology
- Watershed management
- Biological assessment
- Fisheries and aquaculture
- Fire science and management
- Conservation leadership and planning
- Bio-based products

This emerging demand includes Idaho, the region and the world. Emerging areas expected to grow include: fisheries, sustainable development, fire management, and the interface of humans and ecosystems in the intermountain West. Continuing to improve our organization and redesign our natural resource education delivery enhances our college's potential to provide organizations like Idaho Department of Fish and Game, Idaho Department of Lands, U.S. Fish & Wildlife Service, the U.S. Forest Service, the Bureau of Land Management, the Idaho Department of Water Resources, Idaho cities and counties, private enterprises, non-governmental organizations such as The Nature Conservancy and others who hire professionals capable of addressing real-world natural resource and environmental problems. In Idaho and the region these include forest and rangeland management, endangered species conservation, watershed restoration, carbon accounting, fish and wildlife population monitoring, bio-product development, and the impacts of land use change on Idaho's growth and development. These are significant issues in the state of Idaho. Continuing to educate graduates with the ability to create solutions to real-world problems is critical to maintaining Idaho's quality of life.

Employment opportunities for our graduates are likely to increase due to our ability to better meet the requirements of natural resource program accrediting organizations through increased synergy, larger and more diverse departmental facilities and repositioning our academic programs.

In particular, the proposed re-design of the forest harvesting and operations minor and career track will be better positioned to receive recognition by the Society of American Foresters as part of our already SAF accredited Forest Resources degree program. This will increase the credentials of graduates in this area as well as enhance the likelihood to attract internships with the private, public, and non-profit natural resource sectors. Ultimately our goal is to continue to produce a high quality and diverse natural resource workforce that can anticipate and respond to a broad range of natural resource challenges.

3. Briefly describe how the institution will ensure the quality of the program (e.g., accreditation, professional societies, licensing boards, etc.).

Academic Program quality will be maintained by working to retain presently accredited undergraduate academic programs covered in this NOI. In the case of forest operations, we believe SAF accreditation as a part of the Forest Resources degree will be an enhancement. As a result, the

University of Idaho will remain competitive with other regional and national institutions of higher education. Maintaining accreditation credentials also allows us to continue to obtain competitive research support, and produce graduate and undergraduate students with required competencies necessary to qualify for state and federal rosters. It ensures we will retain a highly visible presence within the ecology and associated applied natural resource professions in forestry, range, wildlife, fisheries, fire, conservation biology and conservation social sciences.

4. Identify similar programs offered within the state of Idaho or in the region by other colleges/universities. If the proposed request is similar to another program, provide a rationale for the duplication. This may not apply to PTE programs if workforce needs within the respective region have been established.

Within the state, these academic program areas are unique to the University of Idaho. In the region, natural resource programs exist in Washington, Oregon, Utah, Nevada, Montana and Wyoming. However, the quality and diversity of Idaho's natural resource programs continue to stand out in the region. This is in part due to our focus on continued improvement and constant dedication to re-design and upgrade our academic programming.

Enrollment and Graduates (i.e., number of majors or other relevant data)
By Institution for the Proposed Program
Last three years beginning with the current year and the 2 previous years

Institution	Relevant Enrollment Data			Number of Graduates		
	Current	Previous Year	Previous Year	Current	Previous Year	Previous Year
BSU	NA	NA	NA	NA	NA	NA
CSI	NA	NA	NA	NA	NA	NA
CWI	NA	NA	NA	NA	NA	NA
EITC	NA	NA	NA	NA	NA	NA
ISU	NA	NA	NA	NA	NA	NA
LCSC	NA	NA	NA	NA	NA	NA
NIC	NA	NA	NA	NA	NA	NA
UI	680	693	722	185	181	191

Our expectation is that reorganization may initially lead to a slight drop in enrollment in selected programs, which will rebound as our repositioned and revitalized academic degree programs become more attractive to potential students.

Degrees offered by school/college or program(s) within disciplinary area under review

Institution and Degree name	Level	Specializations within the discipline (to reflect a national perspective)	Specializations offered within the degree at the institution
BSU		NA	NA
CSI		NA	NA
CWI		NA	NA
EITC		NA	NA
ISU		NA	NA
LCSC		NA	NA
NIC		NA	NA

UI	BS	Natural resource sciences and professional education in a range of areas including: fisheries and aquaculture, wildlife, range, forestry, forest products, conservation biology, resource recreation and tourism, terrestrial and aquatic ecology, forest hydrology and related water resources, conservation education, protected area management, conservation social sciences, restoration ecology, geo-spatial sciences and fire science.	Bachelor of Science in Fire Ecology and Management; Bachelor of Science in Fishery Resources with emphases in management and aquaculture; Bachelor of Science in Forest Products with options in forest products business management, forest operations, and wood construction and design; Bachelor of Science in Forest Resources; Bachelor of Science in Ecology and Conservation Biology with options in natural resources ecology and conservation biology; Bachelor of Science in Rangeland Ecology and Management ; Bachelor of Science in Resource Recreation and Tourism; and Bachelor of Science in Wildlife Resources
	MS	Natural Resources or specialties listed above	Natural Resources with thesis or project focused on a defined discipline or interdisciplinary specialty within natural resources
	MNR	Professional Masters in Natural Resources	Professional Masters in Natural Resources
	PhD	Natural Resources or specialty areas listed above	Natural Resources with dissertation focused on a defined discipline or interdisciplinary specialty within natural resources

5. Describe how this request is consistent with the State Board of Education's policy or role and mission of the institution. (i.e. centrality).

As the state's land grant university, the University of Idaho has been assigned the statewide mission of developing professionals and scientists to sustain natural resources. This proposal retains and strengthens this focus and better positions our programs to develop future generations of natural resource professionals. It also creates an opportunity for focused groups of stakeholders in the bio-

materials and rangeland areas to work with others to develop research and outreach programs that ultimately will better address their needs.

6. Is the proposed program in the 8-year Plan? Indicate below.

Yes ____ No X

If not on 8-year plan, provide a justification for adding the program.

This effort meets University of Idaho central administration's guidance on department size and addresses budgetary concerns presently faced by the University. In addition, the University and college strategic plans were used to develop the logic behind this proposal.

8. Resources--Faculty/Staff/Space Needs/Capital Outlay. (Use additional sheets if necessary.):

Impacts shown below are estimated savings not costs. Savings in personnel are a result of eliminating two department head administrative stipends and summer salaries and by reducing/reorganizing departmental and college administrative staffing. Savings in operating expenses represent reductions in phone service and basic office supplies. These savings will be used to meet state holdbacks, for faculty salaries and in the realignment of administrative services.

Estimated Fiscal Impact	FY 10	FY 11	FY 12	Total
A. Expenditures				
1. Personnel	156,365	211,496	211,496	$570,357
2. Operating	500	1000	1000	$2,500
3. Capital Outlay	0	0	0	0
4. Facilities	0	0	0	0
TOTAL:	$156,865	$212,496	$212,496	$572,857
B. Source of Funds				
1. Appropriated-reallocation	0	0	0	0
2. Appropriated – New	0	0	0	0
3. Federal	0	0	0	0
4. Other:	0	0	0	0
TOTAL:	0	0	0	0
B. Nature of Funds				
1. Recurring *	$156,865	$212,496	$212,496	$572,857
2. Non-recurring **	0	0	0	0
TOTAL:	$156,865	$212,496	$212,496	$572,857

*** Recurring is defined as ongoing operating budget for the program, which will become of the base.**
**** Non-recurring is defined as one-time funding in a fiscal year and not part of the base.**

University of Idaho
A LEGACY OF LEADING

Provost and Executive Vice President
Administration Building, Suite 105
PO Box 443152
Moscow ID 83844-3152

Phone: 208-885-6448
Fax: 208-885-6558
www.provost.uidaho.edu

RECEIVED
FEB - 1 2010
OFFICE OF THE IDAHO
STATE BOARD OF EDUCATION

January 28, 2010

Dr. Dale Bower
Chief Academic Officer
Idaho State Board of Education
650 West State Street, Suite #307
P.O. Box 83720
Boise, ID 83720-0037

Dear Dale:

Enclosed please find the Notice of Intent (NOI) from the University of Idaho:

- College of Natural Resources: Administrative reorganization of college departments

If you have questions, please contact me for further information

Sincerely,

Doug Baker

Doug Baker
Provost and Executive Vice President

Patty Sanchez

From: Scott Hamilton [scott.hamilton@my.eitc.edu]
Sent: Tuesday, February 02, 2010 8:02 AM
To: Patty Sanchez
Subject: RE: UI NOI for Review 2-2-10

EITC supports the proposed reorganization.

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Tuesday, February 02, 2010 7:53 AM
To: Jim Munger; Sheila Weaver; Stacey Haase; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Tony Fernandez
Cc: Dale Bower; Heather Champlain
Subject: UI NOI for Review 2-2-10

The Board office has received a Notice of Intent from the University of Idaho proposing to reorganize departments within the college.

Reviewers will have until **March 2, 2010** to review and forward comments before I process further. Please ensure I receive your comments by this date in order for those to be considered part of the review.

Thanks,

Patty Sanchez
Academic Affairs Program Manager
Office of the Chief Academic Officer
and CAAP and HERC Committees
Office of the State Board of Education
650 W. State St., P.O. Box 83720
Boise, ID 83720-0037
Phone: 208-332-1562
Fax: 208-334-2632
Email: Patty.Sanchez@osbe.idaho.gov
Web: www.boardofed.idaho.gov

Patty Sanchez

From: Gary Olson [golson@isu.edu]
Sent: Tuesday, February 02, 2010 6:13 PM
To: Patty Sanchez
Cc: Baker, Doug; Connie Tillotson; Stacey Haase
Subject: RE: UI NOI for Review 2-2-10

ISU supports this NOI.

Best Regards,

Gary Olson

Gary A. Olson
Provost and Vice President
Idaho State University
921 S. 8th Ave, Stop 8063
Pocatello, ID 83209-8063

(208) 282-2171
Fax: 282-4487

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Tuesday, February 02, 2010 7:53 AM
To: Jim Munger; Sheila Weaver; Stacey Haase; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Tony Fernandez
Cc: Dale Bower; Heather Champlain
Subject: UI NOI for Review 2-2-10

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Thanks,

Patty Sanchez

Academic Affairs Program Manager
Office of the Chief Academic Officer
and CAAP and HERC Committees
Office of the State Board of Education
650 W. State St., P.O. Box 83720
Boise, ID 83720-0037
Phone: 208-332-1562
Fax: 208-334-2632
Email: Patty.Sanchez@osbe.idaho.gov
Web: www.boardofed.idaho.gov

Patty Sanchez

From: Sona Andrews [sonaandrews@boisestate.edu]
Sent: Tuesday, February 02, 2010 10:47 PM
To: Patty Sanchez
Cc: Doug Baker; Munger, Jim
Subject: UI NOI for Review 2-2-10
Attachments: UI Reorg College Natural Res.pdf

Boise State University has no objections to this NOI.

S

---------- Forwarded message ----------
From: **Patty Sanchez** <Patty.Sanchez@osbe.idaho.gov>
Date: Tue, Feb 2, 2010 at 7:53 AM
Subject: UI NOI for Review 2-2-10
To: Jim Munger <jmunger@boisestate.edu>, Sheila Weaver <sheilaweaver@boisestate.edu>, Stacey Haase <haasstac@isu.edu>, Annalea Bromley <annalea.bromley@my.eitc.edu>, Barbara Adamcik <adambarb@isu.edu>, Billie Tribitt <'btribitt@lcsc.edu'>, Connie Tillotson <tillconn@isu.edu>, Dana Kelly <Dana.Kelly@osbe.idaho.gov>, Doug Baker <'dougbaker@uidaho.edu'>, Gary Olson <golson@isu.edu>, Jay Lee <Jay_Lee@nic.edu>, Jeff Fox <jfox@csi.edu>, Kelli Rooney <'krooney@boisestate.edu'>, Pam Claflin <'pam_claflin@nic.edu'>, Richard Ledington <dledingt@pte.idaho.gov>, Rick Aman <rickaman@cwidaho.cc>, Scott Hamilton <scott.hamilton@my.eitc.edu>, Shonna Parsons <'sparsons@csi.edu'>, Sona Andrews <'sonaandrews@boisestate.edu'>, Tony Fernandez <'tfernandez@lcsc.edu'>
Cc: Dale Bower <Dale.Bower@osbe.idaho.gov>, Heather Champlain <Heather.Champlain@osbe.idaho.gov>

The Board office has received a Notice of Intent from the University of Idaho proposing to reorganize departments within the college.

Reviewers will have until **March 2, 2010** to review and forward comments before I process further. Please ensure I receive your comments by this date in order for those to be considered part of the review.

Thanks,

Patty Sanchez

Academic Affairs Program Manager

Office of the Chief Academic Officer

and CAAP and HERC Committees

Office of the State Board of Education

650 W. State St., P.O. Box 83720

Patty Sanchez

From: Jay Lee [jalee@NIC.EDU]
Sent: Wednesday, February 03, 2010 8:14 AM
To: Patty Sanchez
Subject: RE: UI NOI for Review 2-2-10

Patty,

NIC has no objections to the UI reorganization plan.

Jay

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Tuesday, February 02, 2010 6:53 AM
To: Jim Munger; Sheila Weaver; Stacey Haase; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Tony Fernandez
Cc: Dale Bower; Heather Champlain
Subject: UI NOI for Review 2-2-10

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Reviewers will have until **March 2, 2010** to review and forward comments before I process further. Please ensure I receive your comments by this date in order for those to be considered part of the review.

Thanks,

Patty Sanchez
Academic Affairs Program Manager
Office of the Chief Academic Officer
and CAAP and HERC Committees
Office of the State Board of Education
650 W. State St., P.O. Box 83720
Boise, ID 83720-0037
Phone: 208-332-1562
Fax: 208-334-2632
Email: Patty.Sanchez@osbe.idaho.gov
Web: www.boardofed.idaho.gov

Patty Sanchez

From: Gary Olson [golson@isu.edu]
Sent: Thursday, February 18, 2010 10:33 AM
To: Patty Sanchez
Cc: dougbaker; Stacey Haase; Connie Tillotson
Subject: RE: Amended Review Period: RE: UI NOI for Review 2-2-10

ISU supports this.

Best Regards,

Gary Olson

Gary A. Olson
Provost and Vice President
Idaho State University
921 S. 8th Ave, Stop 8063
Pocatello, ID 83209-8063

(208) 282-2171
Fax: 282-4487

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Thursday, February 18, 2010 10:03 AM
To: Patty Sanchez; Jim Munger; Sheila Weaver; Stacey Haase; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Tony Fernandez; stoutm@uidaho.edu
Cc: Dale Bower; Heather Champlain
Subject: Amended Review Period: RE: UI NOI for Review 2-2-10

At CAAP's meeting earlier this month, they agreed to expedite the review of the University of Idaho's NOI for the reorganization of their College of Natural Resources in preparation for the regular April board meeting. To accommodate that request, we are amending the review period to conclude one week earlier. Please ensure I receive your responses to this review **no later than Friday, Feb 26th**. This will give the UI and staff adequate time to process the NOI in preparation for the April Board meeting.

Additionally, the UI will have another NOI (not yet submitted) to reorganize their College of Art & Architecture that will also need an expedited review in preparation for the April Board meeting. Once we receive, we will forward to you and assign a shorter timeframe for review.

Please let me know if you have any questions.
Patty Sanchez

From: Patty Sanchez
Sent: Tuesday, February 02, 2010 7:53 AM
To: 'Jim Munger'; Sheila Weaver; 'Stacey Haase'; 'Annalea Bromley'; 'Barbara Adamcik'; 'Billie Tribitt'; 'Connie Tillotson'; Dana Kelly; 'Doug Baker'; 'Gary Olson'; 'Jay Lee'; 'Jeff Fox'; 'Kelli Rooney'; 'Pam Claflin'; 'Richard Ledington'; 'Rick Aman'; 'Scott Hamilton'; 'Shonna Parsons'; 'Sona Andrews'; 'Tony Fernandez'

Patty Sanchez

From: Jay Lee [jalee@NIC.EDU]
Sent: Friday, February 19, 2010 4:16 PM
To: Patty Sanchez
Subject: RE: Amended Review Period: RE: UI NOI for Review 2-2-10

Patty,
No objections from NIC.
Jay

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Thursday, February 18, 2010 9:03 AM
To: Patty Sanchez; Jim Munger; Sheila Weaver; Stacey Haase; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Tony Fernandez; stoutm@uidaho.edu
Cc: Dale Bower; Heather Champlain
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Please let me know if you have any questions.
Patty Sanchez

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Sent: Tuesday, February 02, 2010 7:53 AM
To: 'Jim Munger'; Sheila Weaver; 'Stacey Haase'; 'Annalea Bromley'; 'Barbara Adamcik'; 'Billie Tribitt'; 'Connie Tillotson'; Dana Kelly; 'Doug Baker'; 'Gary Olson'; 'Jay Lee'; 'Jeff Fox'; 'Kelli Rooney'; 'Pam Claflin'; 'Richard Ledington'; 'Rick Aman'; 'Scott Hamilton'; 'Shonna Parsons'; 'Sona Andrews'; 'Tony Fernandez'
Cc: Dale Bower; Heather Champlain
Subject: UI NOI for Review 2-2-10

The Board office has received a Notice of Intent from the University of Idaho proposing to reorganize departments within the college.

Reviewers will have until **March 2, 2010** to review and forward comments before I process further. Please ensure I receive your comments by this date in order for those to be considered part of the review.

Thanks,
Patty Sanchez
Academic Affairs Program Manager
Office of the Chief Academic Officer
and CAAP and HERC Committees
Office of the State Board of Education
650 W. State St., P.O. Box 83720

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UNIVERSITY OF IDAHO

SUBJECT

Notice of Intent to reconfigure the College of Art and Architecture.

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies & Procedures, Section III. G. 5. a. 2.

BACKGROUND/DISCUSSION

With the support of the Council on Academic Affairs and Programs the University of Idaho seeks approval to reconfigure current departmental units three into one unit within the College. This one unit would encompass all current programs and degrees leading to dynamic interdisciplinary learning opportunities for students and teaching for faculty. There is no intent to modify programs with this Notice of Intent.

IMPACT

Reduced state funding requires a more efficient management structure and to find new revenue streams. Savings will be appreciated when current department chair positions are transformed. An integrated college in which the integrity and strength of each discipline contributes to and reinforces our educational goals allows our college to increase our ability to provide flexible and integrated education to prepare our graduates for rapidly changing professions.

ATTACHMENTS

Attachment 1 – Notice of Intent Page 3

STAFF COMMENTS AND RECOMMENDATIONS

The University of Idaho has been working to streamline their management structure. This request will improve efficiencies and reduce cost over time. The Council on Academic Affairs and Programs has reviewed the proposal and recommends approval. The Instruction, Research and Students Affairs Committee and Board staff also supports the University's proposal to reconfigure their College of Art and Architecture.

BOARD ACTION

A motion to approve the request by the University of Idaho to reconfigure the College of Art and Architecture as set forth in the attached Notice of Intent.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

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University of Idaho
A LEGACY OF LEADING

Provost and Executive Vice President
Administration Building, Suite 105
PO Box 443152
Moscow ID 83844-3152

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www.provost.uidaho.edu

RECEIVED
MAR 08 2010
OFFICE OF THE IDAHO
STATE BOARD OF EDUCATION

March 3, 2010

Dr. Dale Bower
Chief Academic Officer
Idaho State Board of Education
650 West State Street, Suite #307
P.O. Box 83720
Boise, ID 83720-0037

Dear Dale:

Enclosed please find the Notice of Intent (NOI) from the University of Idaho for:

- College of Art and Architecture: Reconfiguration

We would like to request a shortened review period in order to include this NOI on the April meeting agenda. Please let me know if you have any questions.

Sincerely,

Doug Baker

Doug Baker
Provost and Executive Vice President

Institution Tracking No. _____

IDAHO STATE BOARD OF EDUCATION

ACADEMIC/PROFESSIONAL-TECHNICAL EDUCATION

NOTICE OF INTENT

To initiate a

New, Expanded, Cooperative, Discontinued, program component or Off-Campus Instructional Program or Instructional/Research Unit

Institution Submitting Proposal: University of Idaho

Name of College, School, or Division: College of Art & Architecture

Name of Department(s) or Area(s): Department of Architecture & Interior Design, Department of Art & Design, Department of Landscape Architecture, Virtual Technology and Design Program

Indicate if this Notice of Intent (NOI) is for an Academic or Professional Technical Program
Academic X Professional - Technical _____

A New, Expanded, Cooperative, Contract, or Off-Campus Instructional Program or Administrative/Research Unit (circle one) leading to:

College of Art & Architecture Reconfiguration
(Degree or Certificate)

Proposed Starting Date: July 1, 2010

For New Programs:

Program (i.e., degree) Title & CIP 2000

For Other Activity:

- ☐ Program Component (major/minor/option/emphasis)
- ☐ Off-Campus Activity/Resident Center
- ☐ Instructional/Research Unit
- ☐ Addition/Expansion
- ☐ Discontinuance
- ☐ Contract Program
- ☒ Other **Consolidation**

Mark Ellingham 2/24/10
Date

VP Research & Graduate Studies Date

College Dean (Institution) 01 March 10

Chief Fiscal Officer (Institution) Date

State Administrator, SDPTE Date

2/25/10

Chief Academic Officer (Institution) Date

4/10/10

Chief Academic Officer, OSBE Date

M Duane Nellis 3.3.10

President Date SBOE/OSBE Approval Date

Before completing this form, refer to Board Policy Section III.G. Program Approval and Discontinuance.

1. Briefly describe the nature of the request e.g., is this a new program (degree, program, or certificate) or program component (e.g., new, discontinued, modified, addition to an existing program or option).

   The intention of the NOI is to reconfigure current departmental units into one unit within the College, a unit that would encompasses all current programs and degrees. There is no intent to modify programs with this NOI. Currently the College of Art & Architecture has an organizational structure of three departments and one program that is administered through the Dean's Office. Departments are: the Department of Architecture & Interior Design, Department of Art & Design, Department of Landscape Architecture and the Virtual Technology and Design Program. This also meets Provost Doug Baker's Mandate to streamline administrative structures.

2. Provide a statement of need for program or a program modification. Include student and state need, demand, and employment potential. **Attach a Scope and Sequence, SDPTE Form Attachment B, for professional-technical education requests**. (Use additional sheets if necessary.).

   - Reduced state funding requires us to establish larger academic units, develop more efficient management structures, and find new revenue streams.
   - Reactivation of the college in October, 2005 was based on the premise of integrated design in a common studio culture. The College of Art and Architecture's Strategic Plan – *Create, Collaborate, Lead* – articulated these concepts in a bold series of vision statements and strategies.
   - A one-unit structure reflects a continuing commitment to the vision of an integrated college in which the integrity and strength of each discipline contributes to and reinforces our educational goals while reducing or eliminating unnecessary silos between disciplines.
   - Our graduates are entering professions that are increasingly integrated and rapidly changing. We need to increase our ability to provide flexible and integrated education to prepare them for that world.

3. Briefly describe how the institution will ensure the quality of the programs (e.g., accreditation, professional societies, licensing boards, etc.).

   Accreditation:
   - Maintaining accreditation in each discipline is a top priority of the college. Our CAA Teaching and Learning Mission states the following: "Provide accredited degree programs with extraordinarily effective teaching in dynamic learning environments, instilling in graduates the knowledge, skills, values and passion required for success as tomorrow's professionals and leaders." Discussions with all accreditation boards indicate that the reconfiguration proposed should not adversely affect accreditation as long as accreditation criteria are met. The college will work closely with accreditation boards throughout the implementation process to resolve any questions or concerns

Professional societies and constituencies:

- Members of the College's Advisory Council, professional practitioners and other private sector constituencies support this change. They believe this change represents a significant trend in practice and industry.
- Faculty members and academic programs are members of professional societies, and reconfiguration will not impact those relationships.

State Licensing Boards:

- This organizational structure change will not affect the ability of our graduates to become licensed in their professions.
- The College will work closely with licensing boards throughout the implementation process to respond to any unresolved issues.

Students:

- This change provides a dynamic opportunity for our students to be part of an integrated college of art, architecture, graphic design, interior design, landscape architecture, and virtual technology and design. Students will have better access to more flexible and innovative learning opportunities and experiences.
- This model corresponds to innovative private and public practice. As a result, students will find more relevance for their degree in their profession of choice which will prepare them to enter the integrated workforce.
- This underscores our current commitment to trans-disciplinary learning for all students through the "College- wide Foundations Program." This prepares them for the interdisciplinary world in which they will work and achieves efficiencies in our teaching.
- Student contributions will continue to be part of the process of formulating the vision of the new unit.

Faculty:

The new College by-laws will be developed so that:

- Faculty in each discipline will maintain control of curricula and instruction.
- Faculty will continue to be represented on college and university committees and participate in other faculty opportunities.
- Faculty in each discipline will participate in selecting unit leadership and college committee representation.
- Program coordinators, (formerly identified as department chairs in the current FSH) will be responsible for administrative duties including accreditation, course assignments, position descriptions, annual performance evaluations, promotion and tenure, budget management, per Faculty Staff Handbook 1420 e-1.
- In compliance with the Faculty Staff Handbook, a part time position will be established (identified as a Department Chair in FSH) to perform those tasks, not covered by the program coordinators identified above. (Relates to .50 FTE position on budget explanation.)

Process:

- February, 2009: Faculty and staff were involved in workshops that resulted in goals for the reconfiguration of the College. Chief among them was the need to retain existing faculty numbers to continue to teach classes. Concerns and desires were expressed and specific courses of action were tested. These workshops continued in March, 2009. Between workshops, chairs tested options that might be brought forward to the faculty as possible solutions.
- August, 2009: Department chairs developed a number of options including a list of advantages and disadvantages for faculty consideration.

- September, 2009: Eleven options were tested and prioritized again in a joint workshop of faculty and Advisory Council members.
- September – November, 2009: Department chairs worked to further test preferred options with their departments.
- December, 2009: A College workshop identified faculty and staff concerns.
- January, 2010: In response to the December workshop, a Blackboard website was established to encourage informal communication. Four dialogue sessions were held to allow smaller groups to discuss options. An in-depth dialogue identified strengths and weaknesses of all options. A straw poll indicated that 80% of faculty and staff supported the one-unit option.
- February, 2010: Student leaders continue to be informed of organizational changes as the process unfolds.

4. Identify similar programs offered within the state of Idaho or in the region by other colleges/universities. If the proposed request is similar to another program, provide a rationale for the duplication. This may not apply to PTE programs if workforce needs within the respective region have been established.

   N/A: The College of Art and Architecture offers the only integrated college of art, architecture, graphic design, interior design, landscape architecture, and virtual technology and design in the State of Idaho. These programs are segmented into different colleges in regional universities. This proposal strengthens our unique niche in art and design education.

   Enrollment and Graduates (i.e., number of majors or other relevant data)
   By Institution for the Proposed Program
   Last three years beginning with the current year and the 2 previous years

Institution	Relevant Enrollment Data			Number of Graduates		
	Current	Previous Year	Previous Year	Current	Previous Year	Previous Year
BSU No newer statistics available.	**Fall, 2006** Art: Ugrads: 623 Grad: 15 Pre-Architecture 59	**Fall, 2005** Art: Ugrads: 603 Grad: 15 Pre-Architecture 62	**Fall, 2004** Art: Ugrads: 479 Grad: 12 Pre-Architecture 55	**AY05-06** Ugrad: 58 Grad: 2	**AY04-05** Ugrad: 73 Grad: 3	**AY03-04** Ugrad: 63 Grad: 6
CSI						
CWI						
EITC						

ISU	**Fall, 2009** Art Ugrads: 95 Assoc:2 Grad: 11	**Fall, 2008** Art Ugrads: 90 Assoc: 1 Grad: 9	**Fall, 2007** Art Ugrads: 88 Assoc: 1 Grad: 9	**AY08-09** Ugrad: 9 Grad: 0	**AY07-08** Ugrad: 6 Grad: 2	**AY06-07** Ugrad: 14 Grad: 3
LCSC						
NIC						
UI	**Fall, 2009** 911	**Fall, 2008** 938	**Fall, 2007** 892	**Total: 2008-2009** 175 Ugrad:124 Grad: 51	**Total: 2007-2008** 198 Ugrad:141 Grad: 57	**Total: 2006-2007** 166 Ugrad:100 Grad: 66

Degrees offered by school/college or program(s) within disciplinary area under review

Institution and Degree name	Level	Specializations within the discipline (to reflect a national perspective)	Specializations offered within the degree at the institution
BSU	Ugrad Grad	BA History of Art & Visual Culture BA Visual Art Assoc. Degree Pre Architecture MFA Visual Arts MA Art Education	Areas offered are art metals, ceramics, drawing and painting, graphic design, history of art and visual culture, illustration, photography, printmaking and sculpture.
CSI	None		
CWI			
EITC			

ISU	Ugrad Grad	BA Art BFA Art Associate of Arts Degree MFA Art	The studio areas offered for concentration are drawing, painting, printmaking, papermaking, sculpture, weaving, ceramics and jewelry/metals.
LCSC	None		
NIC	None		
UI	Ugrad Grad	Bachelor of Interior Design, Bachelor of Science, Architecture Bachelor of Arts and Bachelor of Fine Arts, Bachelor of Science in Art Education Bachelor of Science Landscape Architecture Bachelor of Science in Virtual Technology and Design Master of Architecture, Master of Science in Architecture Master of Fine Arts, Master of Arts in Teaching Master of Landscape Architecture	

5. Describe how this request is consistent with the State Board of Education's policy or role and

mission of the institution. (i.e. centrality). Topic: Centrality to Land Grant Mission and SBOE Directives:

Centrality to Land Grant Mission and SBOE Directives:

- Enacted in 1862, the Morrill Act created a process for every state to establish a college dedicated to the agricultural and mechanical arts. Later Legislation (the Morrill Act of 1890) expanded the disciplines that universities could address in their programming and curricula as land grant institutions.
- In reply to the Morril Act and the establishment of the University of Idaho as a land grant University, the Idaho State Board of Education (ISBOE) has provided policy that directs the University of Idaho to formulate its academic plan and generate programs with primary emphasis on agriculture, natural resources, and metallurgy, engineering, architecture, law, foreign languages, teacher preparation and international programs related to the foregoing.

University of Idaho Strategic Action Plan

- The Vision, Values and Directions portion of the University of Idaho Strategic Action Plan 2005 – 2010 speaks directly to our mission in the State of Idaho. "*Through collaboration across strong academic disciplines, and through the creation of public, private and community partnerships*, we will undertake bold initiatives to promote science, technology and their applications....."
- Our reconfiguration directly addresses the University of Idaho Strategic Action Plan, Scholarly and Creative Activity Goal, under Objective A: "*Establish administrative structures, policies, procedures and incentives for faculty, departments, centers/institutes and colleges to participate in interdisciplinary programs.*" This initial decision will begin a process that will support a transition that integrates our individually strong professional programs.

College of Art & Architecture Strategic Plan:

- *We teach the integrated concepts of art, design and technology with a focus on cultural and environmental stewardship.*
- *Unleash the power of design and creativity in every aspect of our teaching, research, service and administration, boldly using the tools of our professions to overtly impact how we teach, learn and operate as a College.*
- *The University Of Idaho, College of Art & Architecture is the school of choice for transdisciplinary, community influenced education. We teach the integrated concepts of art, design and technology with a focus on cultural and environmental stewardship. We effectively prepare students for successful careers and service in our allied fields, and beyond.*
- *Assume a leadership role in the implementation of the University's Strategic Plan and Strategic Initiatives, seeking out opportunities and funding for interdisciplinary collaboration, expanding classes, which attract students from other colleges, and making classes provided by other colleges an integral part of our students' learning.*
- *Proactively assess the current and forecasted needs of the professional markets to ensure that our programs are providing students with the required knowledge and skills to maintain a competitive advantage in their desired fields.*

- In the document: Overview of the Process to Reestablish the College (Instruction, Research, and Student Affairs, April 20-21, 2006 SBOE), the group charged with re-establishment of the College recommended that the issue at hand for the CAA "was to impart a sense of an integrated and collaborative college umbrella of offerings that brought the college programs into a cohesive whole and reached out to the university community with some suggested ideas."
- The intention of the re-establishment was to close the discussion on past decisions and enter into an era of new beginnings and renewal and establish the groundwork for distinctive top-tier programs that are well positioned to serve the needs of the 21st Century in teaching and learning, scholarly creativity and engagement through outreach.
- The board also stated that the professional fee will be increased to accommodate the increased costs, and to provide equity among students in the college. The board stated, "All on-going costs for restoring the college administration will come from existing resources within Art and Architecture base budgets, existing carryover and reserve funds in Art and Architecture, and from additional professional fees. The professional fee will be increased to accommodate the increased costs."

6. Is the proposed program in the 8-year Plan? Indicate below.

N/A: Organization structural change, not programmatic

Yes ____ No ____

If not on 8-year plan, provide a justification for adding the program.

N/A: Organization structural change, not programmatic.

8. Resources--Faculty/Staff/Space Needs/Capital Outlay. (Use additional sheets if necessary.):

Estimated Fiscal Impact	FY 2011	FY 2012	FY 2013	Total
A. Expenditures				
1. Personnel				
.5 FTE (includes Fringe) (Unit/Dept Head)[1]	55,200	56,900	58,600	170,700
2. Operating[2]	10,000	5,000	5,000	20,000
3. Capital Outlay				
4. Facilities				
TOTAL:	65,200	61,900	63,600	190,700
B. Source of Funds				
1. Appropriated-reallocation				
2. Appropriated – New				

3. Federal				
4. Other:				
Student Professional Fees[3]	127,700	183,300	230,300	541,300
TOTAL:				
B. Nature of Funds				
1. Recurring *	127,700	183,300	230,300	541,300
2. Non-recurring **				
TOTAL: (NET)	62,500	121,400	166,700	350,600

*** Recurring is defined as ongoing operating budget for the program, which will become of the base.**
**** Non-recurring is defined as one-time funding in a fiscal year and not part of the base.**

Footnotes:
1. Savings will be appreciated when current department chairs positions are transformed into Program Coordinators. Once responsibilities are described we will have a clearer definition of amount. Savings not shown, but exists; unknown at this time.

2. Operational Expense categories such as non-capital expenses for technology and office expenses.

3. Student Professional fee revenue is dependent upon extending the fee to all students in the College. For budget consistency, a constant enrollment is considered. (At present students in the Department of Art & Design do not pay the professional fees.)

A formal request for an all inclusive Professional Fee in the College to SBOE is currently in process. The following is a condensed rationale quoted from that request:

- Provides phased in equity for all students in the College of Art & Architecture;
- Provides funding for the higher cost of education provided through the studio model; and
- Recognizes the professional nature of our programs and professional accreditation

Patty Sanchez

From: Patty Sanchez
Sent: Monday, March 08, 2010 7:15 AM
To: 'Jim Munger'; 'Sheila Weaver'; 'Stacey Haase'; stoutm@uidaho.edu; 'Annalea Bromley'; 'Barbara Adamcik'; 'Billie Tribitt'; 'Connie Tillotson'; Dana Kelly; 'Doug Baker'; 'Gary Olson'; 'Jay Lee'; 'Jeff Fox'; 'Kelli Rooney'; 'Pam Claflin'; 'Richard Ledington'; 'Rick Aman'; 'Scott Hamilton'; 'Shonna Parsons'; 'Sona Andrews'; 'Terrah Lanman'; 'Tony Fernandez'
Cc: Dale Bower; Heather Champlain
Subject: UI Special Request - NOI for Review
Attachments: UI CAA Reconfiguration 3-2010.pdf

Importance: High

The Board office has received an NOI from the University of Idaho to reconfigure their College of Art and Architecture. As indicated in a previous email, the UI would like to request an expedited review of this NOI in preparation for the April Board meeting. Therefore, if there are no objections, please forward your comments no later than **March 23, 2010** before I process further.

Thanks,
Patty Sanchez

Patty Sanchez

From: Jeff Fox [jfox@csi.edu]
Sent: Monday, March 08, 2010 7:48 AM
To: Patty Sanchez; Jim Munger; Sheila Weaver; Stacey Haase; stoutm@uidaho.edu; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Terrah Lanman; Tony Fernandez
Cc: Dale Bower; Heather Champlain
Subject: RE: UI Special Request - NOI for Review

CSI supports this proposal.

Regards,
Jeff

Jeff Fox, Ph.D.
Executive Vice-President & Chief Academic Officer
College of Southern Idaho
315 Falls Avenue
Twin Falls, ID 83301
208-732-6220
Fax: 208-736-4785

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Monday, March 08, 2010 7:15 AM
To: Jim Munger; Sheila Weaver; Stacey Haase; stoutm@uidaho.edu; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Terrah Lanman; Tony Fernandez
Cc: Dale Bower; Heather Champlain
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Importance: High

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Thanks,
Patty Sanchez

Patty Sanchez

From: Gary Olson [golson@isu.edu]
Sent: Monday, March 08, 2010 8:24 AM
To: Patty Sanchez; dougbaker@uidaho.edu
Cc: Connie Tillotson; Stacey Haase
Subject: RE: UI Special Request - NOI for Review

ISU supports this.

Best Regards,

Gary Olson

Gary A. Olson
Provost and Vice President
Idaho State University
921 S. 8th Ave, Stop 8063
Pocatello, ID 83209-8063

(208) 282-2171
Fax: 282-4487

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Monday, March 08, 2010 7:15 AM
To: Jim Munger; Sheila Weaver; Stacey Haase; stoutm@uidaho.edu; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Terrah Lanman; Tony Fernandez
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Thanks,
Patty Sanchez

Patty Sanchez

From: Tony Fernandez [tfernandez@lcsc.edu]
Sent: Monday, March 08, 2010 9:18 AM
To: Patty Sanchez
Subject: RE: UI Special Request - NOI for Review

LCSC supports this proposal.

J. Anthony Fernandez
Provost and Vice-President for Academic Affairs
Lewis-Clark State College
500 8th Ave.
Lewiston, ID 83501
(208) 792-2213
tfernandez@lcsc.edu

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Monday, March 08, 2010 6:15 AM
To: Jim Munger; Sheila Weaver; Stacey Haase; stoutm@uidaho.edu; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Terrah Lanman; Tony Fernandez
Cc: Dale Bower; Heather Champlain
Subject: UI Special Request - NOI for Review
Importance: High

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Thanks,
Patty Sanchez

Patty Sanchez

From: Jay Lee [jalee@NIC.EDU]
Sent: Wednesday, March 10, 2010 5:25 PM
To: Patty Sanchez
Subject: RE: UI Special Request - NOI for Review

Patty,
NIC has no objections to this UI request.
Jay

From: Patty Sanchez [mailto:Patty.Sanchez@osbe.idaho.gov]
Sent: Monday, March 08, 2010 6:15 AM
To: Jim Munger; Sheila Weaver; Stacey Haase; stoutm@uidaho.edu; Annalea Bromley; Barbara Adamcik; Billie Tribitt; Connie Tillotson; Dana Kelly; Doug Baker; Gary Olson; Jay Lee; Jeff Fox; Kelli Rooney; Pam Claflin; Richard Ledington; Rick Aman; Scott Hamilton; Shonna Parsons; Sona Andrews; Terrah Lanman; Tony Fernandez
Cc: Dale Bower; Heather Champlain
Subject: UI Special Request - NOI for Review
Importance: High

The Board office has received an NOI from the University of Idaho to reconfigure their College of Art and Architecture. As indicated in a previous email, the UI would like to request an expedited review of this NOI in preparation for the April Board meeting. Therefore, if there are no objections, please forward your comments no later than **March 23, 2010** before I process further.

Thanks,
Patty Sanchez

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SUBJECT

Idaho Rural Physician Incentive Program Awards

APPLICABLE STATUTE, RULE, OR POLICY

Sections, 33-3723 – 33-3725, Idaho Code.
IDAPA 08.01.14, Rules Governing Idaho Rural Physician Incentive Program

BACKGROUND/DISCUSSION

The Idaho Rural Physician Incentive Program was approved by the 2003 Idaho Legislature to encourage primary care physicians to practice in medically underserved areas of Idaho. Title 33, Chapter 37, Idaho Code establishes the Rural Physician Incentive Fund and authorizes the Board to assess and collect a fee to all state-supported medical students preparing to be physicians in the fields of medicine or osteopathic medicine. The fund is then used to incentivize physicians to practice in rural areas through the partial repayment of student loans related to their education. Collection of the funds began in the fall of 2003 with the disbursement of funds to eligible applicants beginning in July 2010.

An Oversight Committee was established consistent with Section 33-3724, to assist the State Board of Education in administering the program. Board staff worked with the committee to develop a formal application and process for reviewing the applications. Twelve (12) applications were submitted to the Office of the State Board of Education. Applications were scored based on the following criteria:

- Idaho medical student assessed rural physician fee and paid into fund; Idaho resident prior to completing medical school and didn't pay into fund; non-Idaho physician
- Primary care specialty (Family Medicine, Internal Medicine, Pediatrics); needed specialty (Psychiatry); other specialty
- Health Professions Shortage Area shortage area; non-Health Professions Shortage Area with demonstrated need
- Documented community need; no community need
- Indebtedness over $200,000; Indebtedness under $200,000

IMPACT

The awards will allow eligible physicians to receive qualified medical education debt repayments. While awards will be for a period of five years, applicants will be required to renew their application each year. An annual review of the rural physician incentive fund balance (including actual and projected revenue and distributions), will be conducted to ensure that the fund carries a minimum balance sufficient to meet awards committed and to fund new awards as recommended by the Oversight Committee.

STAFF COMMENTS AND RECOMMENDATIONS

For this initial award year, four applicants have been selected to receive an award at $10,000 each beginning July 1, 2010. Applicants will be required to renew their application by showing continued eligibility for up to five (5) years.

Applicant	Practice Location	Form of Support	Amount of Award
Austin Gillette	St. Anthony	Upper Valley Community Health Services, Inc.	$10,000
Joshua Kern	Jerome	St. Benedicts Family Medical Center	$10,000
Eddie Rodriguez-Lopez	Emmett	Valley Family Health Care, Inc.	$10,000
J'Dee Ryan Wilson	Blackfoot	Idaho Dept. of Health & Welfare, Idaho State Hospital South	$10,000

BOARD ACTION

This item is for informational purposes only. Any action will be at the Board's discretion.

SUBJECT

Statewide Strategic Plan for Higher Education Research

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies and Procedures, Section III.W., Higher Education Research Council Policy

BACKGROUND/DISCUSSION

Idaho's universities have recognized the need for a statewide, collaborative approach to increase research activity among Idaho's public four-year institutions and the public and private sector and to enhance opportunities for greater external funding. In an effort to accomplish these objectives, the Vice Presidents for Research of the University of Idaho, Boise State University and Idaho State University were charged by the university presidents with developing a Statewide Strategic Plan for Research.

The plan represents the role Idaho's research universities could play in driving innovation, economic development, and enhancing quality of life in Idaho through national and internationally lauded research programs in strategic areas. The plan identifies areas of strength among Idaho's research universities; identifies research challenges and barriers facing universities; includes research opportunities Idaho should capitalize upon to further build its research base, and includes steps for achieving the research vision for Idaho's universities.

IMPACT

Investing in the state's unique research expertise and strengths could lead to new advances and opportunities for economic growth and enhance Idaho's reputation as a national and international leader in excellence and innovation.

ATTACHMENTS

STAFF COMMENTS AND RECOMMENDATIONS

Instruction, Research, and Student Affairs Committee, Higher Education Research Council, and Board staff recommend approval of the strategic plan as presented.

BOARD ACTION

This item is for informational purposes only. Any action will be at the Board's discretion.

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Idaho Higher Education Research Strategic Plan

Summary

March 26, 2010

Pamela L. Crowell, VP for Research, Idaho State University
John K. McIver, VP for Research and Economic Development, University of Idaho
Mark Rudin, VP for Research, Boise State University

Idaho's universities seek to be the driving force in innovation, economic development and enhanced quality of life in the state of Idaho through nationally and internationally lauded research programs in strategic areas. By developing and leveraging the state's unique research expertise and strengths, Idaho's universities will serve as catalyst and engine to spur the creation of new knowledge, technologies, products and industries. This in turn will lead to new advances and opportunities for economic growth and enhance Idaho's reputation as a national and international leader in excellence and innovation.

The areas of strength among Idaho's research universities include 1) Biosciences and Health, 2) Energy Production and Environmental Protection, 3) Novel Materials Development, 4) Natural Resource Utilization and Conservation, and 5) Policy Research. Idaho researchers have unique opportunities in these areas as a result of the Idaho National Laboratory and the Center for Advanced Energy Studies (CAES), the state's vast and diverse natural resources, and existing intrastate networks. At the same time, Idaho research universities are challenged by the economic recession, competition from other universities across the nation, thin and aging research infrastructure, and little high technology industry within the state.

The research vision for Idaho's universities will be achieved by:

1) Developing a sustainable resource base by identifying, recruiting and retaining top faculty with expertise in key research areas;

2) Building infrastructure including facilities, instrumentation, connectivity and database systems to support an expanding statewide and national research platform;

3) Attracting top-tier students to Idaho universities at the undergraduate and graduate levels, and providing outstanding education and research opportunities that will prepare them to excel in future careers;

4) Collaborating with external state, private, educational and national entities to further the shared research agenda for the state, thereby promoting economic development, and

5) Raising awareness among state, national and international constituencies about the research excellence and capabilities of Idaho's universities by developing and implementing targeted outreach, programs and policies

Outline for University Strategic Research Plan

Introduction
- Mission and vision
- Purpose of report
- Importance of research
- Limits of report

Survey of University Research
- BSU
- ISU
- UI
- Other

Research Opportunities/Advantages for Idaho

Research Threats

Research Challenges

Criteria for Research Area Selection
- Number of faculty and qualifications
- Publications and impact
- Infrastructure
- Academic programs
- Student involvement
- Funding
- Benefit to State and region
- Third party support i.e. Commerce report
- Tech transfer metrics

Research Areas
- Biosciences and Health
- Energy Production and Environmental Protection
- New Materials
- Natural and domestic resource utilization and conservation
    - Agriculture
    - Water
    - Forest
    - Recreation

Emerging Research Areas

Next Steps
- University initiatives
- Private sector and state engagement

Conclusion

SUBJECT

Recommendation for FY11 HERC Budget

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies and Procedures, Section III.W., Higher Education Research Council Policy

BACKGROUND/DISCUSSION

The State Board of Education is appropriated funds each year by the Legislature through the colleges and universities appropriation to be used for the mission and goals of the Higher Education Research Council (HERC). The Board allocates these funds for research activities to the four-year public institutions for the following: Infrastructure, Specific Research Funding, Research Center, and State Matching Awards. A line item for Administrative Costs is included to cover the expenses for meetings, office supply needs, and the administration of HERC grant programs and activities such as the Research Center Grant Competition.

Infrastructure funds are allocated annually to the institutions according to percentages approved by HERC. Specific Research Funding has not been funded recently due to budget constraints. Research Centers have been approved by HERC through a competitive process for three-year funding cycles of at least $250,000 per year. State Matching Awards have been dedicated to providing the State's match to the EPSCoR program.

The current funding cycle for the Research Center allocation is ending and the competitive process for the next three-year funding cycle is in progress. The three finalists have been identified and the next step would involve external review and recommendations for the winning proposal.

In an effort to ensure that funds are being used most effectively with the most benefit to the economy of the State, the Vice Presidents for Research (VPRs) developed recommendations to redirect the money that has been allocated to the Research Center funding for Fiscal Year 2011. The VPRs propose that the funds currently budgeted for center development and support within HERC's budget, be reallocated to create a gap fund entitled ***Idaho Technology Incubation Fund***. The development of this fund could enable Idaho's research universities to play a strong role in the State's economic development through their technology development and transfer programs, which could provide returns to the universities with the licensing of technologies. This fund would also help universities retain talented students by creating new opportunities within the private sector.

The award of these funds would be based on a competitive basis. With the Board's support, the VPRs propose that the duration of the reallocation of funds be fixed for a period of two years after which, the program will be evaluated for effectiveness. If approved by the Board, the Idaho Technology Incubation Fund

will be included in HERC's FY11 budget for their review in preparation for the June Board meeting.

Proposed revisions to Board Policy III.W., Higher Education Research is provided under a separate agenda item for the Board's consideration.

ATTACHMENTS

STAFF COMMENTS AND RECOMMENDATIONS

Instruction, Research, and Student Affairs Committee, Higher Education Research Council, and Board staff recommend use of the HERC budget allocation as presented.

BOARD ACTION

This item is for informational purposes only. Any action will be at the Board's discretion.

Idaho State Board of Education
Higher Education Research Council

Proposal to Create a
Idaho Technology Incubation Fund

The Situation

The Higher Education Research Council of the Idaho State Board of Education (HERC) is responsible for allocation of State funding for research. These funds have been used to develop research infrastructure, promote STEM education, foster innovation and technology and enhance the research environment at our institutions. Nationally and within Idaho, it is being recognized that the intellectual property and technology created through university research is not being fully utilized or reaching its economic potential.

HERC believes that to fully realize the potential of the technical advances of the universities, to meet the expectations of stakeholders, and to create opportunities for retaining our students within Idaho, an unrestricted gap fund should be established from which technologies that meet specific criteria will be incubated to allow technology transfer and commercialization. These will be investments in selected technologies with expectations that the licensing of the technologies will provide returns to the universities and stimulate economic development.

Generally, university-developed technologies are very embryonic with a large requirement of additional investment needed to position them for successful licensing and commercialization. Small investments in prototyping or proof-of-concept work for carefully selected technologies would greatly enhance their marketability and value. Market research and business plans further reduces risks and increases value by validating the value of the technologies.

The State's universities can play a strong role in the State's economic development through their technology development and transfer programs. A focus on licensing within Idaho with a particular emphasis on university-based start-up companies creates a demand for critical analysis of the opportunities associated with newly created technology and matching these with commercial partners. Not all university technologies are suitable for start-ups. It should be noted, given the nature of Idaho's industrial base, it will be necessary in some instances to reach out to other regions of the country if the greatest opportunities to create value for the State and the university are found elsewhere.

Idaho loses a large portion of its home grown talent because of the limited employment opportunities for these highly educated individuals. This loss of talent can be overcome in part by involving students in the development of business opportunities during their educational careers. Students involved in entrepreneurial programs often become the founders of companies created from these programs. The universities have an opportunity to create an atmosphere of entrepreneurship within their students' educational programs by incorporating multi-disciplinary student teams and advisors to develop not only the prototypes or provide the proof-of-concepts,

but also to evaluate the business opportunities and business plans. Community advisors with business and start-up experience should be recruited to provide mentoring.

The Proposal

The Vice Presidents for Research at Boise State University, Idaho State University and the University of Idaho propose that the funds previously allocated for research center development and support within the HERC budget be reallocated to create the gap fund. These funds will be awarded on a competitive basis. The duration of this reallocation will be fixed for a period of two years at which time the success of the program will be evaluated for effectiveness.

The Process

A Request for Proposal (RFP) from HERC would go to the entire university community in early fall. The RFP will ask for proposals that identify a university-created technology that has demonstrable commercial potential. The proposal will describe the technology, identify the potential product(s) or service(s) enabled by the technology, explain how the funds will be used to validate the technology and markets, define the amount of funds requested, and identify the members of the interdisciplinary team working on the project. The submitter can work with the appropriate office in each university to develop the market potential information for the proposal.

A review team, overseen by the Idaho Technology Council, will evaluate each proposal. Criteria used in the evaluation and ranking of the proposals may include the following:

1. Technical feasibility
2. Technical maturity
3. Market attractiveness
4. Degree of interdisciplinary collaboration
5. Student involvement
6. Funding adequacy
7. Leveraging of funds through other grants and resources
8. Probability of success

The highest ranking proposals from each university will be funded up to the level of funding available. Most projects will be funded in the range of $10,000-50,000 per project for a period not to exceed 12 months, although larger projects or longer incubation periods may be funded or allowed based on the merits or requirements of the project. Quarterly project meetings will be held to monitor progress and allow for mid-project adjustments as appropriate. Each project team will be debriefed at the completion of the project.

It is anticipated that a working prototype or solid proof-of-concept and business plan will result from the project. Assuming that the technical and business concept is validated, the appropriate technology transfer office will seek to either create a spin-out/start-up company or find an existing company to become the commercialization partner. The universities will follow standard industry practices in licensing the technology and the expertise of the commercialization partner.

SUBJECT

Proposed Amendments to Board Policy III.W. Higher Education Research

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies and Procedures, Section III.W., Higher Education Research Council Policy

BACKGROUND/DISCUSSION

The Higher Education Research Council (HERC) was formed in 1988 as a result of the Idaho State Board of Education's interest in promoting basic and applied research at Idaho's public, four-year institutions. Under current Board policy, HERC is responsible for implementing and administering the Board's Higher Education research policy and the grant programs created by HERC through an appropriation by the Legislature.

Idaho's universities have recognized the need for a statewide, collaborative approach to increase research activity among Idaho's public four-year institutions and the public and private sector and to enhance opportunities for greater external funding. In an effort to accomplish these objectives, the Vice Presidents for Research of the University of Idaho, Boise State University and Idaho State University (VPRs) were charged by the university presidents with developing a Statewide Strategic Plan for Research. As part of this process, the VPRs recognized the need to restructure the composition of HERC and clarify and strengthen the role of HERC in accomplishing a statewide research plan.

HERC's current structure consists of the Presidents from each of the state's four-year public institutions, four non-institutional representatives selected from the general public, a representative from the Governor's Innovation Council, and the Board's Chief Academic officer who serves as an ex-officio, non-voting member. Proposed revisions to Board Policy III.W., Higher Education Research include the following representation on HERC:

- the Vice Presidents of Research from Boise State University, Idaho State University, and the University of Idaho and a representative of Lewis-Clark State College;
- a representative of the Idaho National Laboratory (INL);
- four non-institutional representatives, with consideration of geographic, private industry involvement and other representation characteristics; and
- two ex-officio members consisting of the Chief Academic officer of the Board and a representative of the Idaho Department of Commerce.

Other modifications include revisions to clarify HERC's role and responsibilities.

IMPACT

Approval of the amendments to Board policy will provide HERC with the guidance and structure needed to effectively address policy and programs consistent with the current climate of academic research in the state of Idaho.

ATTACHMENTS

Attachment 1 - Proposed Amendments for Board Policy III.W., Higher Education Research — Page 3

STAFF COMMENTS AND RECOMMENDATIONS

Instruction, Research, and Student Affairs Committee, the Higher Education Research Council and Board staff recommend approval of the strategic plan as presented.

BOARD ACTION

A motion to approve the first reading of proposed amendments to Board Policy III.W. Higher Education Research to include the restructure of HERC.

Moved by_____ Seconded by_____ Carried Yes_____ No_____

W. Higher Education Research

1. Higher Education Research Council

   a. Purpose and Coverage

   Idaho's universities seek to be a driving force in innovation, economic development and enhanced quality of life in the State of Idaho through nationally and internationally lauded research programs in strategic areas. By developing and leveraging the State's unique research expertise and strengths, Idaho's universities will serve as catalyst and engine to spur the creation of new knowledge, technologies, products and industries. This in turn will lead to new advances and opportunities for economic growth and enhance the State's reputation as a national and international leader in excellence and innovation.

   The Higher Education Research Council of the Idaho State Board of Education (HERC) ~~Policy presents~~ provides guidance ~~guidelines~~ to Boise State University, Idaho State University, Lewis-Clark State College and the University of Idaho for a statewide collaborative effort to accomplish these goals and objectives. In addition, HERC provides direction ~~on~~ for and oversees the ~~most effective~~ use of the limited resources of the State of Idaho~~,~~ provided by the Legislature ~~as a line item~~ for research ~~and overseen by the Higher Education Research Council, in~~by promoting research activities that will have the greatest beneficial effect on the quality of education and the economy of the State. The implementation of ~~this~~ the higher education research policy of the Board will be the duty and responsibility of ~~the Board's Higher Education Research Council (~~HERC~~)~~.

   b. The Role of Research in Higher Education

   Research is the creative search for and application of new knowledge.

      i. Philosophical Statements and Guiding Principles

      ~~Public awareness of t~~The significant role science, technology and other research play ~~in our world~~ in statewide economic development ~~has~~ is also ~~been~~ accompanied by ~~an enhanced~~ a demand for the scrutiny of publicly funded research, accountability, and attention to the management of ethical, legal, and safety issues associated with academic research. ~~A demonstrable return on the state's investment requires t~~To fulfill this role, HERC will direct and oversee the development, implementation, and monitoring of a statewide strategic plan for research. The development of a statewide strategic plan for research ~~science and technology~~ that will assist in the identification of general research areas that will enhance the economy of Idaho via partnering between academia, industry, and/or government. HERC will facilitate this partnering and interaction among business, industry and the public sector with science, engineering and other research faculty. ~~To this end, HERC will be an active participant in the development, implementation and monitoring of the a statewide strategic plan for science and technology.~~

This ~~policy~~ Policy is designed to assist the public baccalaureate and post-baccalaureate institutions in addressing these areas via appropriate research activities through:

(1) individual and multi-disciplinary research projects;

(2) extensive and rapid dissemination of the new knowledge and establishment of knowledge networks which would facilitate public, private, and academic institution interaction; and

(3) collaborative relationships between academia and varied shareholders outside the academy.

The guiding principles are:

(1) to maximize impact on the quality of education and economic development as a consequence of Idaho's investment in quality science, engineering, and other research.

(2) to ensure accountability for the state's investment via demonstrable results.

ii. Support of research activities with public funds is important because:

(1) Research is important in the education of students at all levels.

~~At the graduate level, students master current knowledge and produce new knowledge. The h~~Higher ~~the quality of research and scholarly or creative activity in which the student is involved, the~~ by graduate level students will result in a ~~higher quality of his/her education. In addition, the education of undergraduates is enhanced through their participation in research.~~

(2) Research plays an important role in maintaining and enhancing faculty quality.

~~Active participation in research by faculty prevents obsolescence. The saying that "research informs instruction" is meritorious. Research ensures that faculty stay abreast of current developments in their field. While faculty currency and vitality is important at all three degree levels, it is absolutely essential for those educating graduate students.~~

~~Effective training of future researchers at our universities and colleges requires faculty who are dedicated to teaching. In addition, because of the rapid generation of new knowledge, departments must have active research programs in order to teach students the latest scientific innovations and in order for university investigators to seriously compete for local, industrial, and federally sponsored grants.~~

(3) Academic research contributes to economic development.

~~Economic development interests are most directly served by attention to applied research which itself is based on the results of basic research. Academic institutions traditionally provide assistance in solving problems as well as in developing new knowledge. It is important that all academic institutions, particularly Ph.D. granting institutions, continue to serve these functions.~~

iii. The Board desires to increase the quality and quantity of research and to encourage continued public and private support of research in Idaho through application of the following principles:

(1) The quality and quantity of academic research produced is extremely dependent upon the research infrastructure.

(2) Faculty at Idaho's baccalaureate and post-baccalaureate institutions will be eligible to compete for research funds.

iv. The development and implementation of a statewide strategic plan for research ~~science and technology~~ is a vehicle for identification of research objectives and areas.

c. Specific ~~f~~Funding ~~p~~Programs to ~~s~~Strengthen ~~r~~Research in Idaho

The Board recognizes that talent exists on all of the campuses and the importance of permitting competition for research support and initiation funds. Therefore, the Board will use the following criteria in allocating funds for research activities under this policy at the various institutions.

Additionally, any condition set forth in the legislative appropriation for these research programs must be demonstrably met by the programs and/or projects that are to receive the appropriation.

i. Infrastructure

A portion of the competitive research funding should be distributed to the state's baccalaureate and post-baccalaureate institutions to support their science, engineering, and other research infrastructure. Distribution of these funds will be made according to ~~percentages~~ guidelines approved by ~~the Higher Education Research Council~~ HERC. These funds should be reserved for library support essential to research, graduate research assistantships, post doctoral fellows, technician support, maintenance contracts, research equipment, competitively awarded summer research support, start-up funds for new hires, and incentives to reward faculty for their research achievements.

ii. Targeted ~~Specific~~ Research Funding

Faculty members at the state's baccalaureate and post-baccalaureate institutions will have an opportunity to submit research project proposals for review under this program.

(1) All projects selected for funding under this program ~~must~~ will demonstrate the potential for economic benefit or cost savings for the State.

(2) A major focus under this program should be start-up and seed funds that will assist a principal investigator in promoting basic or applied research; competing for external funding; and enhancing technology transfer or commercialization.

(3) Collaborative research projects are encouraged.

Guidelines for this program will be established by ~~the Higher Education Research Council~~ HERC, will incorporate an ~~out-of-state~~ independent peer review, and will include an evaluation component for commercial applicability for the benefit of the State.

iii. Research Centers

Many important research advances ~~can only be~~ are made through ~~with the establishment of~~ focused research centers. These c~~C~~enters should ~~typically~~ involve ~~at least three~~ several faculty members from multiple institutions in conjunction with the necessary research equipment and support personnel. The funds needed to establish centers of this type should be adequate to create a critical research mass for multiple years leading to research center sustainability. ~~are large and, in all probability, no more than one such center per year should be established in Idaho. Minimal state funding of $250 ,000 per center per year for at least three years is essential to enable centers to become nationally competitive. This~~State funding ~~is clearly a minimal amount, which~~ should be supplemented by non-state matching funds. ~~Multiple year funding is essential for the establishment of these centers.~~

iv. State Matching Awards

Under this program ~~state~~ State funds would be available to match those awarded by non-state sources by using an external peer review process.

Examples of matching entities for the state matching funds would be:

(1) Federal Agencies
(2) EPSCoR projects e.g., National Science Foundation, National Institute of Health, Department of Energy, Department of Defense, National Aeronautics and Space Administration, etc.
(3) Foundations ~~e.g., Murdoc, Northwest Area, Robert Wood Johnson Grants, etc.~~
(4) Business and Industry
(5) Other

v. Post-Award Accountability

Any project receiving funding through any of the previously described Board sponsored programs will be required to report on its productivity with respect to such items as:

(1) number of students involved;
(2) number of faculty involved;
(3) external funding earned as a result;
(4) publications in refereed journals;
(5) presentations at professional meetings and conferences;
(6) patents awarded or pending;
(7) economic benefits; or
(8) problem resolution.

Reporting procedures will be established and administered through ~~the~~ H~~igher~~ E~~ducation~~ R~~esearch~~ C~~ouncil~~.

d. ~~State~~Responsibilities and Membership of the Higher Education Research Council

In order to advise the Idaho State Board of Education on the implementation of the above strategies, HERC ~~an Idaho Higher Education Research Council, which~~ will report~~s~~ to the Board through the Instruction, Research and Student Affairs Committee. ~~, shall be appointed by the Board.~~ The assigned responsibilities of ~~the~~ H~~igher~~ E~~ducation~~ R~~esearch~~ C ~~ouncil~~ will include the following:

(1) ~~(1)~~ direct and oversee the development of a higher education statewide strategic plan for research;

(2) direct and oversee the use of Legislatively appropriated funds for higher education research;

(3) determine and distribute to all interested parties the guidelines for submission of proposals under the competitive programs;

~~(2)~~(4) organize the review procedures for proposals submitted under the guidelines mandated and recommend to the Board which of these proposals should be funded;

~~(3) recommend ways in which cooperative inter-institutional and collaborative graduate and research programs among the educational institutions can be encouraged, developed, and sustained; and~~

~~(4)~~(5) monitor the productivity of each funded project to warrant continued funding and to provide accountability.

The membership of ~~this Council~~ HERC shall consist of:

(1) the Vice Presidents of Research from Boise State University, Idaho State University, and the University of Idaho and a representative of Lewis-Clark State College;

(2) a representative of the Idaho National Laboratory (INL);

(3) four non-institutional representatives, with consideration of geographic, private industry involvement and other representation characteristics; and

(4) two ex-officio members consisting of the Chief Academic officer of the Board and a representative of the Idaho Department of Commerce.

~~Presidents from each of the state's universities and the four-year college (University of Idaho; Idaho State University; Boise State University; Lewis-Clark State College), four non-institutional representatives selected from the general public who are committed to research, and a representative from the Office of Science and Technology.~~ The ~~State~~ Board ~~of Education~~ shall appoint the four non-institutional representatives ~~a~~. The four non-institutional representatives shall be appointed for terms that are initially staggered to provide a rolling renewal of appointments. Thereafter, appointments shall be for three years. The appointments of the representatives of INL and the Department of Commerce shall be subject to approval of the Board. All members of HERC shall have equal voting privileges.

~~nd a representative from the Office of Science and Technology who shall serve as an ex officio member with voting privileges. The chairman of the committee will be elected by the Council annually. Term length for the non-institutional members is three years.~~

2. Experimental Program to Stimulate Competitive Research (EPSCoR)

a. Overview

The Experimental Program to Stimulate Competitive Research (EPSCoR) represents a federal-state partnership to enhance the science and engineering research, education, and technology capabilities of states that traditionally have received smaller amounts of federal research and development funds. As a participating state, Idaho EPSCoR shall be subject to federal program requirements and policy established by the Idaho State Board of Education (Board). The purpose of EPSCoR is to build a high-quality, academic research base to advance science, technology, engineering and mathematics (STEM) to stimulate sustainable improvements in research and development capacity and competitiveness.

b. EPSCoR Mission

Idaho EPSCoR's mission shall be to stimulate systematic and sustainable improvements in Idaho's academic science, technology, engineering and mathematics (STEM) research

capabilities for the purpose of establishing nationally prominent research competitiveness in selected areas eligible for support by the National Science Foundation and other federal and private sponsors. It is expected that EPSCoR investments shall harmonize with the research interests of Idaho's public universities, the State of Idaho, and Idaho's industries. The University of Idaho, Idaho State University, and Boise State University are Idaho EPSCoR partner institutions.

c. Idaho EPSCoR Committee

Idaho EPSCoR shall be guided by a committee appointed by the Board.

i. Duties and Responsibilities

The Idaho EPSCoR Committee shall serve under the direction of the Board and shall oversee the implementation of the Idaho EPSCoR program and office. The Idaho EPSCoR Committee is responsible for the selection and progress of EPSCoR projects funded by various federal agencies, in accordance with agency-specific guidelines. The committee shall establish policies and procedures to ensure that EPSCoR program goals and objectives are met. These policies and procedures shall be brought to the Board for approval. The committee will carry out the following EPSCoR objectives:

(1) To catalyze key research themes and related activities within and among EPSCoR jurisdictions that empower knowledge generation, dissemination and application;
(2) To activate effective jurisdictional and regional collaborations among academic, government and private sector stakeholders that advance scientific research, promote innovation and provide multiple societal benefits;
(3) To broaden participation in science and engineering by institutions, organizations and people within and among EPSCoR jurisdictions; and
(4) To use EPSCoR for development, implementation and evaluation of future programmatic experiments that motivate positive change and progression.

ii. Operating Procedures

The committee will meet in person annually, and more often by teleconference to fulfill its duties. Additional meetings may be called by the chair or by request of three (3) or more committee members. The chair will appoint subcommittees as needed. The appointments are subject to review of the entire committee. On a regular basis, the committee shall monitor the activities of the project director and provide direction as necessary.

The project director, under the direction of the chair, prepares the agenda, schedules each meeting of the committee and maintains a written record of the committee's activities.

iii. Membership

Committee membership shall be constituted to provide for geographic, academic, business and state governmental representation. The committee shall consist of sixteen (16) members with voting privileges, composed of the following:

- The Vice President for Research or Chief Research Officer at the University of Idaho, Idaho State University, and Boise State University;
- One member from each chamber of the Idaho state legislature;
- One representative from Idaho National Laboratory;
- One representative from the Idaho Department of Commerce – such individual shall be focused on economic development;
- The remainder shall be representatives of the private sector who have a stake in developing the state's research infrastructure or who have experience in innovation and entrepreneurial activities, applied research and development, management and finance, or community economic development.

In addition, one representative of the Governor's office and one member of the Board shall serve on the committee as ex officio members without voting rights.

iv. Nominating Process

The Idaho EPSCoR Committee will nominate candidates for committee membership for consideration by the Board. The list of candidates must be forwarded to the Board for consideration not less than 60 days prior to expiration of the term of committee member, or within 30 days after any vacancy.

(1) Incumbent Reappointment

In the event that the incumbent candidate is interested in reappointment and is eligible to continue serving, the nominating committee shall forward a recommendation to the Board, along with a letter of interest and statement of qualifications for the incumbent. The Board may choose to reappoint the incumbent without soliciting other candidates, thus completing the appointment procedures. If there is no incumbent seeking reappointment, or if the Board chooses not to reappoint an incumbent, the procedures are as outlined in item (2).

(2) Open Appointment

(a) The EPSCoR committee on behalf of the Board will advertise the vacancy in appropriate state, regional or local publications. Such advertisements will solicit interested persons to apply for the vacant position on the Idaho EPSCoR Committee.

(b) Each applicant must provide a written statement expressing his or her interest in becoming a member of the committee. Each applicant must also provide evidence of his or her qualifications, and must identify his or her primary residence.

(c) The EPSCoR committee will review all applications for the vacant position and conduct interviews as deemed necessary. The purpose of this review is to identify the most qualified candidates for Board consideration.

(d) The EPSCoR committee will forward the qualified candidates, in order of preference, to the Board for consideration. The Board may provide for interviews of the candidates, if needed.

The Board may, after review of the candidates nominated by the committee pursuant to the process described herein, consider other candidates for committee membership identified by the Board or its staff.

v. Terms of Membership

Committee members shall serve five-year terms. An incumbent member may be nominated by the committee for re-appointment by the Board, but no member may serve more than three (3) consecutive terms. All terms, regardless of length, shall begin on July 1st and end on June 30th of the year(s) beginning or ending said term.

Appointments will be staggered to ensure that no more than one-third (1/3) of the appointments will become vacant in any given year. An appointee who has reached the end of his or her term shall remain in service as a committee member until reappointment, or until the appointment of a new member is named and approved by the Board. Officers will be nominated and elected by a vote of the committee.

d. Reporting

The committee shall prepare an annual report to the Board that details all projects by federal agency source, including reports of project progress from associated external Project Advisory Board (PAB) .

e. Idaho EPSCoR Office

Within guidelines specified by NSF and this policy, the EPSCoR committee shall determine and select an Idaho EPSCoR partner institution to serve as the lead institution which will house the project director for purposes of administering Idaho EPSCoR and providing support and resources to the Idaho EPSCoR Committee.

f. Idaho EPSCoR Project Leadership

The project director and any associate project directors are selected by and serve under the direction of the Idaho EPSCoR Committee.

The project director shall be a tenured faculty member of an Idaho EPSCoR partner institution whose qualifications must include: a successful research track record (grants and professional publications) in science or engineering, experience in research management and academic administration, and a successful record of dealing with various segments of academic institutions, government, industry, and the public.

SUBJECT

First Reading, New Proposed Board Policy III.A.B., Idaho Rural Physician Incentive Program Oversight Committee

APPLICABLE STATUTE, RULE, OR POLICY

Sections, 33-3723 – 33-3725, Idaho Code.

BACKGROUND/DISCUSSION

The Idaho Rural Physician Incentive Program was approved by the 2003 Idaho Legislature to encourage primary care physicians to practice in medically underserved areas of Idaho. Sections 33-3723–33-3725, Idaho Code establishes the authority of the Board, through an oversight committee, to administer the program and assess/collect the rural physician incentive fee.

While the Oversight Committee has been established per Section 33-3724, Idaho Code, a Board policy is necessary to provide guidance to the Oversight Committee. Board staff worked with the Oversight Committee to develop a new policy, which would cover the role and purpose of the committee, operating procedures, committee structure, terms of membership, and reporting requirements.

IMPACT

Approval of the Board policy will provide specific guidance to the Oversight Committee needed for its operation and implementation of the rural physician program.

ATTACHMENTS

Attachment 1 – New Proposed Board Policy III.A.B. Page 3

STAFF COMMENTS AND RECOMMENDATIONS

Staff recommends approval of the new proposed Board Policy as presented.

BOARD ACTION

A motion to approve the First Reading of new proposed Board Policy III.A.B., Idaho Rural Physician Incentive Program Oversight Committee as presented.

Moved by_____ Seconded by_____ Carried Yes_____ No_____

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A.B. Idaho Rural Physician Incentive Program

1. Overview

   The Idaho Rural Physician Incentive Program was developed to encourage primary care physicians to practice in medically underserved areas of Idaho. Sections 33-3723, 33-3724, and 33-3725, Idaho Code establishes the authority for the State Board of Education (Board), through an oversight committee, to administer the Idaho Rural Physician Incentive Program, and to assess and collect the rural physician incentive fee.

   Idaho Code Section 33-3724 authorizes the Rural Physician Incentive Fund and facilitates payment of qualified educational debts of rural physicians who practice in areas of the state that are medically underserved and that demonstrate the need for assistance in physician recruitment. The fund is funded by fees assessed to all Idaho students participating in the WWAMI (Wyoming, Washington, Alaska, Montana and Idaho) and University of Utah state supported medical education programs.

2. Idaho Rural Physician Incentive Program Oversight Committee

   The Idaho Rural Physician Incentive Program Oversight Committee (Oversight Committee) is established per Idaho Code 33-2724 and shall serve under the direction of the Board.

   a. Oversight Committee Membership

      Committee membership shall have a balanced representation of primary constituent groups within health professions. The committee shall be composed of members from the following organizations:

      1. Idaho Hospital Association
      2. Idaho Medical Association
      3. Idaho Osteopathic Association
      4. Office of Rural Health and Primary Care
      5. The Idaho Area Health Education Center
      6. Medical Student Program Administrator
      7. Each Idaho Physician Residency Program receiving State appropriated fund support
      8. Other appropriate organizations

   b. Nominating Process

      The Executive Director shall solicit written nominations of qualified individuals from each of the organizations provided above for committee membership. The Executive Director may select from the nominations or select other qualified individuals to serve on

the committee. All selections by the Executive Director are subject to approval by the Board. The list of candidates must be forwarded to the Board for consideration not less than 60 days prior to expiration of the term of committee member, or within 30 days after any vacancy.

c. Terms of Membership

Committee members shall serve three-year terms. An incumbent member may be nominated by the committee for re-appointment by the Board, but no member may serve more than three (3) consecutive terms. All terms shall begin on July 1 and end on June 30 of the year(s) beginning or ending said term.

Appointments will be staggered to ensure continuity of operations as members of the Committee complete their initial term of appointment and are reappointed or replaced. An appointee who has reached the end of his or her term shall remain in service as a committee member until reappointment, or until the appointment of a new member is named and approved by the Board. Officers will be nominated and elected by a vote of the committee.

d. Elections of Officers

The Committee will elect a Chair, Vice-chair, and Secretary for terms of office of one year. The Chair will call and conduct each meeting of the Committee. In the absence of the Chair, the Vice-chair may call and conduct each meeting. The Chair or Vice-chair will provide a brief oral report after each meeting to the Executive Director. The Committee Secretary will ensure that a brief written summary of each Committee meeting, along with Committee approved actions/recommendations, is forwarded to the Executive Director in a timely manner.

e. Operating Procedures

The Committee will meet at the call of the Chair as often as necessary to fulfill Committee responsibilities but not less than twice each calendar year. Time and location of all meetings is at the discretion of Chair based on availability of Committee members. A meeting agenda will be published prior to each meeting and made available to Committee members along with appropriate meeting materials. All meetings will conform to Section, 67-2340-67-2347, Idaho Code, Open Meeting Law.

f. Duties of the Oversight Committee

The Committee will solicit qualified physician applicants/eligible areas for participation in the Rural Physician Incentive Program; and select and prioritize approved physician candidates/eligible areas consistent with the Board approved criteria (see IDAPA 08.01.14, sections .014 and .016). Awards shall not exceed the amount available in the fund when making award recommendations.

SUBJECT

First Reading – Proposed addition to Board Policy III.P., Students

BACKGROUND/DISCUSSION

This is a new policy section written to guide the consistent handling of student complaints once they have been forwarded to the Office of the State Board of Education. This policy provides guidance for a written process and the time frame for students to appeal to the Office of the State Board in instances where a student may feel they have not had the opportunity for an appropriate review at the campus level.

IMPACT

Student grievances are to be handled at the institutional level. This policy sets forth a process for those instances when a complaint is sent to the Office of the State Board of Education.

ATTACHMENTS

Attachment 1 – Board Policy III.P.18, Students Page 3

STAFF COMMENTS AND RECOMMENDATIONS

Board staff recommends the approval of this policy.

BOARD ACTION

A motion to approve the first reading of the proposed addition to Board Policy III.P., Students.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

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18. Student Complaints/Grievances.

The State Board of Education and Board of Regents of the University of Idaho, as the governing body of the state's postsecondary educational institutions, has established the following procedure for review of institution decisions regarding student complaints/grievances:

a) The Board designates its Executive Director as the Board's representative for reviewing student complaints/grievances, and authorizes the Executive Director, after such review, to issue the decision of the Board based on such review. The Executive Director may, in his/her discretion, refer any matter to the Board for final action/decision.

b) A current or former student at a postsecondary educational institution under the governance of the Board may request that the Executive Director review any final institutional decision relating to a complaint or grievance instituted by such student related to such individual's attendance at the institution. The student must have exhausted the complaint/grievance resolution procedures that have been established at the institution level. The Executive Director will not review complaints/grievances that have not been reported to the institution, or processed in accordance with the institution's complaint/grievance resolution procedures.

c) A request for review must be submitted in writing to the Board office to the attention of the Chief Academic Officer, and must contain a clear and concise statement of the reason(s) for Board review. Such request must be received in the Board office no later than thirty (30) calendar days after the student receives the institution's final decision on such matter. The student has the burden of establishing that the final decision made by the institution on the grievance/complaint was made in error. A request for review must include a copy of the original grievance and all proposed resolutions and recommended decisions issued by the institution, as well as all other documentation necessary to demonstrate that the student has strictly followed the complaint/grievance resolution procedures of the institution. The institution may be asked to provide information to the Board office related to the student complaint/grievance.

d) The Chief Academic Officer will review the materials submitted by all parties and make a determination of recommended action, which will be forwarded to the Executive Director for a full determination. A review of a student complaint/grievance will occur as expeditiously as possible.

e) The Board office may request that the student and/or institution provide additional information in connection with such review. In such event, the student and/or institution must provide such additional information promptly.

f) The Board's Executive Director will issue a written decision as to whether the institution's decision with regard to the student's complaint/grievance was proper or was made in error. The Executive Director may uphold the institution's decision, overturn the institution's

decision, or the Executive Director may remand the matter back to the institution with instructions for additional review. Unless referred by the Executive Director to the Board for final action/decision, the decision of the Executive Director is final.

The Board staff members do not act as negotiators, mediators, or advocates concerning student complaints/grievances.

SUBJECT

Second Reading, Proposed New Board Policy III. AA., Accountability Oversight Committee

BACKGROUND/DISCUSSION

The Accountability Oversight Committee will function as an ad hoc committee of the Idaho State Board of Education and be staffed by the Board's Accountability Program Manager.

The committee will review and make recommendations on the results of the statewide assessments, an annual report of student achievement, and other reports and studies as necessary for oversight of the statewide accountability system.

Changes from the first reading of this draft policy include minor revisions to policy format and additional language for the appointment of the committee chair.

IMPACT

The new policy includes the purpose and role, establishes committee structure, and defines terms of membership and reporting requirements.

ATTACHMENTS

Attachment 1 – Accountability Oversight Committee Policy Page 3

STAFF COMMENTS AND RECOMMENDATIONS

Staff recommends the approval of the accountability oversight committee policy.

BOARD ACTION

A motion to approve the second reading of Board Policy III. AA., Accountability Oversight Committee as submitted.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

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AA. Accountability Oversight Committee

1. Overview

   The Accountability Oversight Committee will function as an ad hoc committee of the Idaho State Board of Education and be staffed by the Board's Accountability Program Manager.

2. Duties and Responsibilities

   i) Provide recommendations to the Board on the effectiveness of the statewide student achievement system and make recommendations on improvements and/or changes as needed.

   ii) Develop and review an annual report of student achievement. This report shall be compiled collaboratively by Board and State Department of Education staff and submitted to the committee for review. The committee will forward the report to the Board with recommendations annually.

3. Meetings and Operating Procedures

   The committee shall meet twice annually, additional meetings may be called by the Chair as needed.

4. Membership

   The committee membership shall consist of:

   - Two members of the Idaho State Board of Education, appointed by the Board president;
   - The Superintendent of Public Instruction; and
   - Four members recommended by the Governor and appointed by the Board, one of which will chair the committee, who shall serve a term of one year.

5. Terms of Membership

   Board members appointed to the committee serve at the pleasure of the president of the Board. Committee members recommended by the Governor and appointed by the Board shall serve two-year terms. An incumbent member may be recommended by the Governor for re-appointment by the Board. All terms shall begin on July 1st and end on June 30th of the year(s) beginning or ending said term.

Appointments will be staggered to ensure that no more than two (2) appointments will become vacant in any given year.

An appointee who has reached the end of his or her term shall remain in service as a committee member until re-appointment, or until the appointment of a new member by the Board. Committee officers will be nominated and elected by a vote of the committee.

The Superintendent of Public Instruction will serve as an ex-officio member of the committee.

6. Reporting

This committee will report directly to the Board.