

A Review of the Idaho EPSCoR Committee

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Introduction

Congress created the National Science Foundation (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR) in 1978 to “strengthen research and education in the sciences and engineering, including independent research by individuals, throughout the United States, and to avoid undue concentration of such research and education.”¹ The EPSCoR program was created to address concerns that federal R&D dollars were heavily concentrated in a small number of states. The program seeks to improve the research capacity in underrepresented states so that they can become more competitive while at the same time continuing to award research funding based on merit and technical excellence.

Participation in EPSCoR is limited to those states that have historically received a small percentage of federal R&D funding. Twenty-one states and the Commonwealth of Puerto Rico are currently eligible to receive EPSCoR funding. Idaho has participated in the NSF EPSCoR program since 1989. In FY 1991, Congress created EPSCoR type programs in seven other federal agencies: US Department of Agriculture (USDA), Department of Commerce (DoC), Department of Defense, (DoD), Department of Energy (DOE), Environmental Protection Agency (EPA), National Institutes of Health (NIH) and National Aeronautics and Space Administration (NASA). Idaho received more than \$601,000 in NIH Institutional Development Awards (IDeAs), NIH’s program designed to broaden geographic distribution of NIH funding for health research, between FY 1993 and FY 1999. In FY 2000, the University of Idaho was awarded \$9.2 million by NIH to establish a Center for Biomedical Research Excellence and in FY 2001 Idaho EPSCoR was awarded a \$5.9 million Biomedical Research Infrastructure Network grant to help strengthen the research infrastructure at Idaho’s three universities. Idaho has also participated in the DoD, DOE, EPA and USDA EPSCoR programs. .

The NSF EPSCoR program is structured as a partnership between individual states and NSF. NSF requires that a statewide EPSCoR committee comprised of leading scientists,

Mission of EPSCoR

“EPSCoR acts on the premise that universities and their science and engineering faculty and students are valuable resources that can potentially influence a state's development in the twenty-first century much the same way that agricultural, industrial, and natural resources did in the twentieth century. EPSCoR's goal, therefore, is to identify, develop, and utilize a state's academic science and technology resources in a way that will support wealth creation and a more productive and fulfilling way of life for its citizens. To achieve this goal the NSF actively cooperates with state leaders in government, higher education, and business to establish productive long-term partnerships capable of effecting lasting improvements to the state's academic research infrastructure and increased national R&D competitiveness.”

Source: EPSCoR Program Solicitation, NSF

¹ Section 3(2) of the National Science Foundation (NSF) Act of 1950, as amended.

university administrators, political leaders, and representatives of the private sector be appointed to oversee the program. The statewide committee is expected to:

- Identify policies and initiatives that will benefit the overall research infrastructure of the state;
- Ensure that proposals undergo a rigorous merit review process;
- Identify proposals for submission;
- Encourage and facilitate high levels of collaboration among the state's research institutions;
- Ensure that EPSCoR is responsive to state and regional needs; and
- Cultivate broad-based support for science and technology.

NIH's IDeA program requires that a statewide coordinating committee be established representing all eligible state institutions of higher education. The IDeA Coordinating Committee (ICC) is responsible for determining priorities for state proposal submissions as well as providing advice relating to the planning and preparation of proposals. States with NSF EPSCoR committees may choose to use them as the ICC provided that the committee includes representation from the biomedical community. Many states use their existing statewide EPSCoR committees to provide policy guidance and oversight for the EPSCoR programs of the other federal agencies.

In 2000, Idaho's Governor appointed a Governor's Council on Science and Technology and charged them with developing a strategy to grow Idaho's technology base and economy. The Council developed the following vision for Idaho:

Idaho will have, and be recognized as having, a vibrant technology-based economy that provides employment opportunities and high wage jobs for Idaho citizens. Increased emphasis on the application and use of science and technology in Idaho will continue to spawn new companies and industries, while contributing to the global competitiveness of its traditional industry.

The Council realized that this vision would not be achieved unless Idaho invests in creating research and development excellence. Idaho's research universities have a small, although rapidly growing, research base. In FY 2000, the University of Idaho received approximately \$61 million in R&D funding², Boise State University received about \$3.5 million and Idaho State University received approximately \$9 million for a total of \$73.5 million.³ To put this in perspective, the University of Utah and Utah State University received approximately \$300 million in R&D funding in FY 2000. However, between FY91 and FY98, R&D funding at Idaho's three universities increased by a healthy 57 percent.⁴

² The University of Idaho reports that FY 2001 R&D awards totaling \$86.4 million; FY 2001 data are not yet available from the National Science Foundation.

³ National Science Foundation, Total R&D Expenditures at Universities and Colleges, FY 2000.

⁴ National Science Foundation. *Survey of Research and Development Expenditures at Universities and Colleges, FY 1998.*

The EPSCoR program has played an important role in building Idaho's research base and offers a continuing opportunity to strengthen the state's research infrastructure. Between FY 89 and FY 2001, Idaho received more than \$49 million in EPSCoR funding and the Idaho EPSCoR office has been informed that the state will receive an additional \$9 million from the NSF EPSCoR program for the 2002 – 2005 time period.

While investments in the state's university R&D capacity is critical, it is also important that these investments be targeted strategically. The EPSCoR program offers the opportunity to develop research capacity in areas that support the state's existing industrial base and emerging technology areas, while at the same time responding to the mission and requirements of the federal agencies. Recognizing this, the Board of Education decided that this is an appropriate time to review the structure and operation of Idaho's statewide EPSCoR Advisory Committee and to consider options for making the most effective use possible of Idaho's EPSCoR program.

The Board of Education engaged Battelle's Technology Partnership Practice to survey existing EPSCoR Advisory Committee members to solicit their views on the appropriate role and responsibilities of the committee and to assess how well they feel the committee is functioning. In addition, Battelle was asked to benchmark Idaho's EPSCoR processes against those of three other states to identify options that Idaho could consider to improve the operation of the committee and to encourage greater collaboration of the state's research institutions and linkage to state technology development policy.

This draft report describes the structure and operations of EPSCoR committees in the states of Alaska, Maine, and Montana and compares them to the Idaho EPSCoR Committee. Next, it presents the results of a phone survey of Idaho's EPSCoR Committee members. Third, it presents options for changes in Idaho's EPSCoR program for the consideration of the Idaho Board of Education.

Review of Benchmark States' Programs

Three states, Alaska, Maine and Montana, were selected for examination. These states were chosen because federal program managers and others familiar with the EPSCoR program, as having highly effective statewide committees and processes, view each. In addition, each has some unique approaches that may be of interest to Idaho. The following section describes the composition of each state's EPSCoR committee, the role the committee plays in developing and selecting EPSCoR projects, and the relationship of the EPSCoR program to overall state technology policy and programs.

ALASKA

Alaska's EPSCoR program is in a very early stage. Alaska received its first NSF EPSCoR funding in FY 2000. The EPSCoR committee that was assembled to pursue participation in EPSCoR played an instrumental role in the state being successful in receiving an EPSCoR award. In September 2001, NIH awarded \$6 million to the University of Alaska to build Alaska's capacity in biomedical research through the Biomedical Research Infrastructure Network (BRIN), a component of NIH's IDeA program.

Composition and Structure of EPSCoR Committee

The EPSCoR committee is composed of members appointed by the President of the University of Alaska system and must include:

- Representatives of the four-year colleges and graduate universities with experience in the University's research role and mission;
- A representative of the Governor's office;
- One or more members of the Alaska Legislature;
- Representatives of the private sector with experience in innovation and entrepreneurial activities, applied research and development, management and finance, or community economic development; and
- The EPSCoR project director serves as an ex officio member.

The current EPSCoR committee includes 16 members and is chaired by the Chief of Staff to the President of the University of Alaska system. Other members include two state legislators, the Chair of the Senate Finance Committee and the House Whip, a Republican and a Democrat, and the Governor's Deputy Chief of Staff. The state EPSCoR project director indicated that these political leaders "helped tremendously" in building initial state support for and interest in the program." The committee also includes two business members and a foundation official who represents Native American interests. On the academic side, the committee includes the Director of Arctic Research, an Associate Professor of Marine Science, and the Director of the Institute of

Artic Biology, all at the University of Alaska-Fairbanks; the Director of Biomedical Programs, University of Alaska-Anchorage; and the Vice-Chancellor, University of Alaska -Southeast.

The Executive Director of the Alaska Science and Technology Foundation (ASTF) is a member of the committee. ASTF is a state agency created in 1988 that invests funds to improve Alaska's economy and to increase the state's science and engineering capabilities.

A somewhat unique aspect of Alaska's committee is that the committee membership includes two individuals from outside the state. The Vice-President of Research at the University of Oklahoma and a retired Vice President of Research from the University of Montana are members of the Alaska EPSCoR committee. These out-of-state members bring with them expertise and an objectivity that may be more difficult for people involved with individual Alaska research institutions to achieve. The project director indicated that the input from these outside experts has been very valuable.

Function of the EPSCoR Committee

The purpose of the Alaska EPSCoR committee as stated in the Committee's by-laws are to: 1) assist Alaska in focusing and enhancing its capacity for research and development through a partnership of Alaska's colleges and universities, industry, and state government, and 2) to promote research in the universities and economic development of the state of Alaska. To accomplish this, the committee is charged with

- Developing a state strategic plan for advancing scientific and engineering research and training at the colleges and universities, determining research priorities for emphasis, and implementing strategies for investment of resources to enhance research capacity;
- Cooperating with various state agencies in promoting research and development;
- Promoting private sector involvement in university research and expediting technology transfer; and
- Coordinating applications for EPSCoR program funding from federal agencies.⁵

The Alaska EPSCoR committee created a number of subcommittees. These include a Research Subcommittee that approves proposed research topics, an Outreach Subcommittee that is seeking to address K-12 education issues, a Technology Transfer Subcommittee and a Policy and Administration Subcommittee, which serves as a type of Executive Committee.

While the initial focus of Alaska's EPSCoR committee was on planning for and securing EPSCoR funding, the focus is now shifting to look at future development and maintenance of the effort. It is likely that some changes in membership will be made as a result.

⁵ Draft Bylaws for Alaska EPSCoR, <http://www.alaska.edu/epscor/bylaws.html>.

Proposal Development and Review Processes

This is the process that was used to develop Alaska's NSF EPSCoR proposal. As a first step, the EPSCoR program office solicited research topic nominations and concept papers from faculty at all of the state's research institutions. The concept papers submitted were evaluated by the EPSCoR Grants subcommittee, which is comprised of the EPSCoR vice Chair and four university representatives. The Grants subcommittee reviews and ranks the concept papers and identifies 4 – 8 as potential research focus areas. Proposers are then asked to prepare proposals for the selected research areas. Each proposal is then sent out for an external peer review. Any proposal that is judged to be congruent with the priorities of ASTF is also sent to the Foundation for review. The Grants subcommittee examines the proposals and reviews and selects 3 – 4 to recommend to the full committee for submission.

A similar process is followed to develop proposals to be submitted to other federal agencies. Generally all faculty are invited to submit proposals. If the number submitted exceeds the maximum allowed per state, the EPSCoR committee chooses the proposals to submit.

Relationship of EPSCoR Committee to Overall State S&T Policy

The Alaska EPSCoR program has only been operating for a year and a half so it is probably too soon to determine what role EPSCoR will play in supporting the development and implementation of state science and technology policies and programs. The inclusion of the Director of ASTF on the EPSCoR committee is one mechanism being used to encourage coordination of the state's activities aimed at supporting the growth of technology-based companies with EPSCoR's efforts to build the state's R&D capacity. Clearly the by-laws of the committee call for EPSCoR to cooperate with various state agencies and to promote economic development of the state of Alaska.

MAINE

Maine, one of five original states, has participated in EPSCoR since 1980. The Maine EPSCoR program is housed in the Maine Science and Technology Foundation (MSTF). MSTF is a state-chartered non-profit organization that stimulates economic growth in Maine through the application of science and technology in education, research, and business. In 2001, the State of Maine created the position of State EPSCoR Director. Funding for this position, which is housed in MSTF, is shared on a 50:50 basis between MSTF and the University of Maine System. The State EPSCoR Director reports to the Chair of the Research Capacity Committee (RCC), which is Maine's Statewide EPSCoR Advisory Committee. This position is separate from the state's NSF EPSCoR program director who is located at the University of Maine.

Composition and Structure of EPSCoR Committee

The RCC is responsible for overseeing all of Maine's EPSCoR programs. The committee currently has 18 members representing academia, not-for-profit research institutions (of which Maine has quite a few), industry, and government. The government

representatives include a senator and representative from the legislature and the President of MSTF. The committee includes five private sector representatives, one of whom serves as the chair. The committee seeks to have fairly even representation from the academic, not-for-profit and industrial communities. Although the members represent the various elements of Maine's R&D enterprise, they are asked to serve on the committee with a view beyond their own institutional biases.

The existing committee membership can propose new members, who must be selected by the RCC Executive Committee, which includes the University of Maine System, the MSTF, and the chair of the RCC.

Function of the EPSCoR Committee

The RCC seeks to provide a mechanism for coordination across the State's research institutions and a forum to discuss state priorities and needs. In addition to serving as the statewide committee for EPSCoR and IDeA, RCC oversees the approval and allocation of state matching funds for federal programs and recommends awards under specific state programs as needed. The RCC also serves as an advocate for R&D in the state.

RCC's Charter identifies the following RCC responsibilities:

- Providing oversight to the EPSCoR/IDeA programs in the context of the shared vision of the University of Maine System, the Maine Science and Technology Foundation and the Chair of RCC;
- Conducting the preselection process in federal research competitions, where each participating state is limited in the number of proposals that may be submitted;
- Ensuring that the institutional proposals submitted for EPSCoR and IDeA are consistent with the state's overall S&T plan, other state policy documents, and meet the requirements of the federal funding agencies;
- Distributing EPSCoR/IDeA information across the state; and
- Participating in EPSCoR IDeA activities as necessary; e.g. coordinating the state's participation in federal agency events.

In addition, the RCC is responsible for reviewing and recommending proposals for state matching funds. Because the RCC has this responsibility, the committee monitors the use of matching funds on an ongoing basis. The RCC requires organizations that receive state funds to submit an Annual Report. The committee is currently preparing guidelines for how matching funds should be awarded.

Proposal Development and Review Processes

One role of the State EPSCoR Director is to make Maine's research institutions aware of federal R&D grant opportunities. In those cases where the state can submit only one or a limited number of applications for an EPSCoR type program, the State EPSCoR Director is responsible for holding an in-state competition to select the proposal(s) to submit. Proposals are solicited from Maine researchers. These proposals are then subject to an initial technical review by outside peer reviewers. A panel, composed of AAAS members, is assembled to review the best technical proposals. The review panel and the

RCC meet to discuss the proposals. The RCC's primary role is to represent the needs and interests of the state. The RCC then selects the proposals to submit.

Relationship of EPSCoR Committee to Overall State S&T Policy

MSTF is the state agency charged with developing and overseeing Maine's science and technology policies and programs. MSTF is responsible for developing a Maine Science and Technology Action Plan. The state's first 5-year plan was prepared in 1992 followed by a second in 1997. A third state S&T action plan was released in 2001. It recommends actions designed to "create the conditions in which vibrant research and technology sectors will generate economic opportunity for the citizens of Maine."⁶

One of the goals of the Maine 2001 Action Plan is to create a robust R&D enterprise. The plan specifically calls for creating a Maine EPSCoR Program to provide matching funds for high quality EPSCoR proposals. The placement of Maine's EPSCoR program at MSTF and the creation of the position of Statewide EPSCoR Director, are aimed at ensuring that Maine's EPSCoR program is an integral component of the state's overall S&T strategy.

MONTANA

Montana, like Maine, is also one of the five original EPSCoR states that joined the program in 1980. In addition to NSF EPSCoR, Montana participates in the EPSCoR programs of USDA, DoD, EPA, NASA, and NIH. Project Directors for agency programs report to the State EPSCoR Committee.

Composition and Structure of EPSCoR Committee

The Montana EPSCoR Committee, like those in Alaska and Maine, include a mixture of academic, government and industry representatives. The Committee includes two state government officials, one from the Department of Commerce and one from the Board of Regents. The Vice-Presidents of Research from Montana State University and the University of Montana both sit on the Committee. Montana's program is focused in three research areas and the committee includes prominent researchers with experience in each of the focus areas. The Committee, like Alaska's, includes two individuals from outside the state.

Function of the EPSCoR Committee

The committee has two primary roles. The first is a monitoring role. The committee is responsible for making sure that the EPSCoR program directors are implementing the grant in good faith. Second, the committee plays an important role in helping to consider new IDEAs and areas of emphasis for the EPSCoR program. The EPSCoR project directors often develop new IDEAs, which they bring to the committee to see whether the committee thinks they should be pursued.

⁶ *Maine Science and Technology Action Plan 2001: Positioning Maine for the New Economy*, MSTF.

The full committee meets once or twice a year; the Executive Committee, which includes the Vice-Presidents of Research for the University of Montana and Montana State University and the EPSCoR project directors, meets monthly.

Proposal Development and Review Processes

While the committee reviews EPSCoR proposals before their submission, responsibility for generating the proposal resides primarily with the Director and Co-director of the EPSCoR program. Montana places great emphasis on generating IDeAs for EPSCoR projects. Proposals developed are submitted to outside reviewers.

Relationship of EPSCoR Committee to Overall State S&T Policy

Montana's EPSCoR program is closely tied to the state's Research and Technology Commercialization Fund, which is the primary state S&T initiative. Through this fund, the state invests in projects expected to lead to marketable products or processes. The Fund provides matching funds for Montana's EPSCoR projects.

The Montana Board of Research and Commercialization oversees the Research and Technology Commercialization Fund. While the Fund is not reserved for EPSCoR projects, preference is given to projects in which at least 25 percent of total project costs come from non-state funds. The Board was authorized to provide \$4.85 million in grants or loans in FY 2000.

The EPSCoR Committee and the Board of Research and Commercialization do not have overlapping membership but the two groups have a strong working relationship.

Review of Idaho's EPSCoR Program

As would be expected there are many similarities between Idaho and the benchmark states in terms of the structure and operation of their respective statewide EPSCoR committees. But there are also some differences that may suggest options for improving the operation of Idaho's EPSCoR committee and better integrating it into the state's overall science and technology activities. Table 1 compares Idaho's EPSCoR program to those of Alaska, Maine and Montana on selected variables.

COMPOSITION AND STRUCTURE OF EPSCoR COMMITTEE

Idaho's EPSCoR committee includes 18 members from diverse areas of the state. The committee includes 11 private sector business representatives, the research officers from Boise State University and Idaho State University, two state legislators, two academic researchers, one of whom is from the University of Idaho and serves as the EPSCoR Project Director, and a former administrator in Idaho's K-12 system.

Idaho's committee has relatively more industry representation than the committees of the benchmark states. This may reflect the fact that Idaho's technology economy is better developed than that of the benchmark states. Each of the committees includes legislative and state government representation, as does Idaho's committee. Idaho does not include any members from out of state, as is the case in Alaska and Montana.

One difference in Idaho's committee composition as compared to the benchmark states is that in Maine and Montana the EPSCoR project director is not a member of the EPSCoR committee. In Alaska, the director serves as an ex-officio member of the EPSCoR

Members of the Idaho EPSCoR Committee

- Doyle Jacklin, Chair, Managing Partner Riverbend Commerce Park, Post Falls
- Senator Laird Noh, Vice-Chair
- Representative Maxine Bell
- R. James Coleman, President, J-U-B Engineers, Coeur d'Alene
- Blake Grant, Principal, Grant and Associates (bioconsulting firm), Hagerman
- Edwin House, Chief Research Officer, Idaho State University
- Jim Kempton, Delegate to Northwest Power Planning Council
- Major General (Ret.) Darrell Manning, Member, State Board of Education
- Carole Baldwin McWilliam, Retired Director of Secondary Education for Pocatello School District Number 25
- John Owens, Vice President, Boise State University
- Leo Ray, President, Fish Breeders of Idaho, Inc.
- Debonny Shoaf, Manager of Research Initiatives, INEEL
- Jean'ne Shreeve, State of Idaho EPSCoR Project Director
- Ray Smelek, President and CEO, Extended Systems, Inc.
- Dennis Stevens, Chief of Infectious Disease Unit, VA Hospital
- Jon Stoner, VP of Standard Products, AMI Semiconductors
- Frederick Templeton, President Insightek of Pocatello
- Parker Woodall, Educator and Businessman from Coeur d'Alene.

committee. In this case, however, the benchmark states may differ from the norm as the national NSF EPSCoR Office Director reports that in nearly all of the states, the EPSCoR project director is a member of the Statewide Advisory Committee.

Idaho's EPSCoR Committee has an Executive Committee that is comprised of the Chair, Vice-Chair, the research officers from BSU and ISU, and the EPSCoR project director. Most committees have an Executive Committee that usually includes representatives of the higher education institutions and the committee chair.

Both Idaho and each of the benchmark states have a single committee that oversees participation in all federal EPSCoR type programs. Having individuals responsible for individual federal agencies that report to the EPSCoR Director and Committee appears to be a common approach.

Table 1: Comparison of Idaho EPSCoR Program Practices with EPSCoR Programs in Alaska, Maine, and Montana

	Alaska	Idaho	Maine	Montana
Entity responsible for making appointments to the EPSCoR Committee	President, University of Alaska	Idaho State Board of Education via the Higher Education Research Council (HERC)	Executive Committee that includes representatives of University of Maine and MSTF and the Committee Chair,	
Committee membership includes:				
• Staff from the state ED or S&T agency	Yes	No	Yes	Yes
• Out of state members	Yes	No	No	Yes
Responsible for EPSCoR program management	University of Alaska - Fairbanks	University of Idaho	Maine Science and Technology Foundation (MSTF)	Montana State University
Single committee oversees all federal EPSCoR programs	Yes	Yes	Yes	Yes
Entity responsible for overseeing use of state matching funds	EPSCoR committee	HERC and Board of Education	Research Capacity Committee ⁷	Board of Research and Commercialization

⁷ This committee is Maine's statewide EPSCoR committee.

FUNCTIONS OF THE EPSCoR COMMITTEE

Idaho's EPSCoR committee is responsible for "developing policies, criteria and procedures necessary to ensure that Idaho meets project goals and objectives."⁸ The long-term goals of the committee are to make Idaho competitive in obtaining federal R&D funding. The primary role of Idaho's EPSCoR committee and those of the benchmark states is to provide research opportunities for the state's universities, and to make sure that the highest quality proposals are submitted for funding.

Idaho EPSCoR committee members indicated that the committee members seek to bring awareness of what is going on in the larger research community to the process and work to facilitate partnerships between and among Idaho's research institutions. Committee members also play a role in reviewing project opportunities and helping to solidify ideas.

The committee in Idaho and in each of the benchmark states primary role is to develop and implement the highest quality research program possible and to work towards developing a strong and vibrant research infrastructure. In addition, the EPSCoR committees play a role in developing and supporting state science and technology policies and serving as an advocate for state support for research and development. Members of Idaho's committee actively advocate for support of research and development in Idaho and four members of the EPSCoR Committee, including the chair, plus one past member, also serve on the Governor's Science and Technology Council, which is responsible for developing and implementing science and technology programs in Idaho.

PROPOSAL DEVELOPMENT AND REVIEW PROCESSES

A great deal of similarity was noted in the process used to develop and evaluate proposals for submission to the EPSCoR program. The three benchmark states each use outside evaluators and the EPSCoR committee in the review process. One way in which the processes appear to differ, however, is in how open the process is in terms of identifying initial research focus areas. In both Alaska and Maine, a solicitation is widely disseminated requesting IDEAs for projects. Faculty and researchers are encouraged to submit initial concept papers. In the case of Montana and Idaho, the research institutions and the EPSCoR project directors guide the identification of potential research areas.

The following process was used to develop Idaho's most recent, and successful, NSF EPSCoR proposal. The first step involved a meeting of EPSCoR committee representatives from BSU, ISU, and UI. Key principal investigators were also invited to attend this meeting. This ad hoc committee focused on NSF priority areas which include: nanostructures, information technology, biodiversity, and workforce for the 21st Century. A scientist or engineer was identified to develop a concept paper proposing a research focus area for Idaho within each of these major areas. These initial concept papers were presented to the EPSCoR committee.

⁸ Excerpted from recent Idaho NSF EPSCoR proposal.

Once the committee agreed that these topics should be pursued, team leaders were selected for each topic. Each team included representatives of Idaho's three universities. A researcher from UI led a team that focused on nanophotonics, a researcher from BSU focused on IT, specifically the area of mixed signal electronics (although this team subsequently withdrew from the proposal), and a UI researcher led the biodiversity team that focused on the interface of bacteria and subsurface materials. Another team focused on novel ideas in workforce development.

The teams prepared 5 page concept papers, which were sent out for external review. They were also reviewed by NSF program directors and by staff in the NSF Director's office. Based on the input received from the reviewers, the concepts were refined and the team leaders prepared concept proposals that defined essential goals and tasks to be undertaken. These proposals were then sent out for another round of external reviews.

Next the proposal was sent to the EPSCoR committee members for review. In some cases, the members saw copies of the external reviews but not in all cases. A meeting of the Committee was held by conference call and each member had the opportunity to comment on the proposal. The proposal was modified and approved by the committee and submitted to NSF.

RELATIONSHIP OF EPSCoR COMMITTEE TO OVERALL STATE S&T POLICY

Among the benchmark states, Maine views the EPSCoR program and the EPSCoR committee as an integral part of the state's science and technology policy infrastructure. Indeed the placement of the EPSCoR program in the MSTF and the creation of the position of Statewide EPSCoR Director demonstrate that Maine sees the EPSCoR program as a key part of the state's efforts to build its science and technology base.

The State of Idaho began implementing a science and technology strategic plan within the last year. The strategy proposes that the State undertake a research excellence initiative that would provide funding for faculty recruitment and infrastructure to develop research excellence in areas identified as key to Idaho's future economic growth. The Governor's S&T Advisory Council proposed that an Idaho Science and Technology Corporation be established and given responsibility for working with Idaho's universities, INEEL, and the technology business community to identify the technology areas to be targeted under this initiative.

If this new organization is created, it will be essential to integrate and coordinate the activities of this entity, or any existing organization designated to implement the science and technology strategy, with the EPSCoR program and committee. Efforts to encourage such coordination and implementation have already begun as four members of the EPSCoR Advisory Committee also serve on the Governor's Science and Technology Advisory Council.

PERSPECTIVES OF COMMITTEE MEMBERS

Battelle conducted short telephone interviews with 16 of the 18 members of the EPSCoR Statewide Committee. The committee members were asked a number of open-ended questions regarding their participation on the committee and their views regarding how well the committee is fulfilling its function. An attempt has been made to indicate the number of committee members that raised a particular issue or expressed a particular viewpoint. Please note, however, that every member was not specifically questioned about each issue and in some cases, newer members indicated that they did not have sufficient experience with the committee to express an opinion. The purpose of the survey was to identify issues of concern to any of the committee members and to solicit input on actions that could be taken to further strengthen the committee and Idaho's EPSCoR program. Appendix A contains a copy of the interview guide that was used. The following section summarizes the findings from the interviews.

The committee members view the primary roles of the committee to be 1) to improve the quality of research in Idaho; 2) to provide research opportunities for Idaho's universities; and 3) to review and approve proposals. Additional roles for the committee include: making sure funds are adequately distributed and bringing a statewide perspective to the proposal selection process. Four members indicated that they thought the role of the committee was somewhat unclear. One member suggested that a charter or by-laws be developed that would explicitly state the role and responsibilities of the committee.

By and large, the committee members feel that the EPSCoR Committee is effectively fulfilling its role of ensuring that Idaho submits the most qualified proposals for funding. Nine committee members indicated that they are afforded sufficient opportunity for input and that they are confident that Idaho is submitting proposals with the greatest chance of being funded. Four committee members indicated that the time to review proposals was limited and that meetings were sometimes held on short notice making it difficult for some members to participate.

The use of outside peer reviewers is seen as an essential and effective element of Idaho's program. The committee members indicated that the evaluations prepared by outside peer reviewers are critical because they ensure that experts in the appropriate technical areas review the proposals and they provide an objective means of comparing and selecting proposals among competing institutions.

The committee members also generally agreed that more needs to be done to facilitate collaboration among Idaho's universities and to bolster the research capabilities of ISU and BSU. Eleven committee members acknowledged that UI has played a dominant role in the EPSCoR program both in terms of project design and implementation. Six committee members indicated that this is a result of UI's stronger research base and believe that the highest quality proposals have been chosen. Four members, however, indicated that UI has exercised significant control over the selection of research focus areas and the proposal development process, which has benefited UI at the expense of ISU and BSU. These members suggested that the proposal process be opened up to the widest number of researchers and faculty and that mechanisms be put in place to provide

all of the universities with early notification of research opportunities. There was consensus among all the members, however, that increasing the competitiveness of ISU and BSU should be an important goal of the program.

The committee members indicated that the committee has not been greatly involved in providing input on research focus areas and generally providing strategic direction for Idaho's EPSCoR effort. Five committee members suggested that the committee should be more involved in an ongoing basis in the identification of research focus areas for the EPSCoR program. These members feel that Idaho is lacking an overall strategic framework that would identify research areas targeted for development in Idaho and what role each of Idaho's research institutions can play in developing capabilities to support these areas.

The composition of the committee is viewed as balanced both regionally and in terms of areas of expertise. In particular, the presence of private sector representatives is viewed as an asset as these members bring knowledge of what is occurring in the larger research community and are not tied to any single institution of higher education. One committee member suggested that the committee might wish to add another individual or two with expertise in the biomedical field since the committee has responsibility for developing proposals for NIH's IDeA program.

In summary, while the majority of the committee members feel that the committee is functioning well, they also felt that the committee could do more, particularly in terms of facilitating collaboration between UI, ISU and BSU and by providing input on the overall strategic framework for the program. The following section suggests changes that could be made in the operation and structure of the committee to accomplish this.

RECOMMENDATIONS

Whether accurate or not, there is a perception among a number of committee members that the EPSCoR program is dominated by UI and that ISU and BSU are given limited opportunities to participate. ***To address this issue, processes must be put in place to ensure that all three universities are made aware of research opportunities and given the opportunity to suggest areas of focus and develop teams to prepare concepts for the consideration of the committee.*** It is proposed that:

- ***All EPSCoR announcements and solicitations be posted*** on the Idaho EPSCoR website on a timely basis. (See <http://alepscor.ua.edu/funding.html> for an example.)
- ***Idaho should consider lodging responsibility for identifying research opportunities, disseminating information on them, organizing research teams and providing technical assistance on developing research proposals with a person or organization that is independent of the state's universities.*** This is the approach that the State of Maine has taken in creating the position of Statewide EPSCoR Director, which is separate from the NSF EPSCoR Project Director. It should be noted, however, that Maine's effort is in an early stage so it is too soon to determine its effectiveness. The most appropriate place to lodge

this responsibility might be in the Idaho Science and Technology Corporation that was proposed by the Governor's Council on Science and Technology, assuming that this entity is established. There are four states in which responsibility for EPSCoR is lodged with an entity other than a university, including Kansas, Kentucky, Louisiana, and Maine.

Until the new organization is established, it may be desirable to assign this function to staff of the State Board of Education.

A clear process should be developed for soliciting ideas for EPSCoR projects. Given concerns raised about the process used in developing Idaho's recent NSF proposal, the Board should direct the EPSCoR office to develop written procedures describing the process that will be used to develop future proposals. The process should be developed by a subcommittee of the Advisory Committee that would include, at a minimum, representatives of Idaho's three universities. The following approach should be considered:

- ***When an opportunity arises, the EPSCoR office would issue a call for letters of intent.*** All researchers and faculty at Idaho's universities would be encouraged to form research teams and submit ideas for proposals. A subcommittee of the EPSCoR committee that would include at a minimum the representatives of the three universities would review the letters of intent. The subcommittee would review and rank the concept proposals and select those that have promise and address the state's priority research areas. (See recommendation below). The proposers would then be asked to develop proposals that would be sent out for external peer review.

This process would differ from the way that Idaho's recent NSF EPSCoR project was developed in that in that case research focus areas were identified first and team leaders were asked to prepare concept papers. Under the proposed process, the research topics would be chosen based upon the response to the call for letters of intent. It should be noted that the proposed approach was employed in the development of earlier EPSCoR proposals in Idaho that were not successful in obtaining NSF funding. However, this approach is used successfully in other states. The identification of statewide technology focus areas, discussed below, and the dedication of staff resources to facilitate the development of teams as described above should improve the quality of the letters of intent. This process could also be used in cases in which the number of proposals that can be submitted are limited by the funding organization.

While the composition and structure of the EPSCoR committee is representative of the state's research and industrial community, several changes in the Board could be considered:

- One or two out-of-state members could be added to provide objectivity and to bring additional expertise and experience to the Committee;
- Once the Idaho Science and Technology Corporation is created, the Director should be appointed to the EPSCoR committee.

The Higher Education Research Council should play a greater role in providing strategic direction for Idaho's EPSCoR program. The primary role of the EPSCoR Committee, as perceived by the majority of the committee members is to review EPSCoR proposals and ensure that those of the highest quality are submitted for funding. This is an entirely appropriate role for the committee and one that it is required to fulfill.

The committee members acknowledge that the committee has not played a role in identifying state priorities or setting a strategic direction for Idaho's overall efforts to strengthen the state's research capabilities. Nor do the committee members feel that enough has been done to facilitate partnerships between and among the states' higher education institutions.

The strategy developed by the Governor's Science and Technology Council called for the establishment of a research excellence initiative that would be designed to help Idaho's universities develop research excellence in areas identified as key to Idaho's future economic growth. The strategy suggested that the proposed Idaho Science and Technology Corporation be given responsibility for working with Idaho's universities, INEEL, and the technology business community to identify the technology areas to be targeted under this initiative. It was proposed that Idaho conduct an analysis of the state's technology core competencies and identify technology focus areas that would build on the state's existing and emerging technology clusters. Potential focus areas identified by the Council included agricultural biotechnology, environmental sciences, computer programming and software development, and microelectronics.

Given that the Idaho Science and Technology Corporation has not been established, it may be appropriate for the Higher Education Research Council (HERC) to analyze Idaho's technology core competencies and identify key strategic areas in which Idaho wants to develop research excellence. HERC is well positioned to serve this role given that its membership includes the Governor's Science and Technology Advisor and the President's of Idaho's four-year colleges and universities, as well as private sector representatives. The development of such a statewide strategic framework would provide guidance to the EPSCoR committee by identifying research focus areas that could be pursued cooperatively by partnerships of Idaho's universities.

The Statewide EPSCoR Committee should continue to serve as the oversight committee for all of Idaho's EPSCoR programs. As discussed above, seven federal agencies now operate EPSCoR type programs in addition to the National Science Foundation, the largest of which, NIH's IDeA program, requires the establishment of an IDeA Coordinating Committee, which NIH stipulates may be the state EPSCoR committee and which is the predominant governance model among the EPSCoR states. Presently, Idaho's Statewide EPSCoR Committee also serves to coordinate Idaho's participation in the EPSCoR programs of the other federal agencies. This is the approach taken by Alaska, Maine, and Montana and appears to be the preferred route for a majority of the participating EPSCoR states. All of the EPSCoR committee members interviewed felt comfortable in reviewing EPSCoR proposals for various federal agencies. The committee members feel that the use of outside peer reviewers is sufficient to ensure that people with particular areas of expertise review proposals. If additional participation of

people with backgrounds in specific areas such as biomedical research is desired, this could be accomplished by creating subcommittees within the full EPSCoR committee.

CONCLUSION

Idaho's Statewide EPSCoR Committee is very similar to the committees of other EPSCoR states in terms of structure and operation. Idaho's existing processes have resulted in the submission of successful projects. The committee members agree, however, that greater participation of and partnership with all three of Idaho's universities is desirable.

A challenge for Idaho, and for all the EPSCoR states is to fund research excellence while at the same time trying to improve research capabilities of all the state's research institutions and developing research strengths that tie to and support the state's economic base. The above recommendations suggest actions that the State Board of Education could take that might help to address this issue.