

**INSTRUCTION, RESEARCH AND STUDENT AFFAIRS
OCTOBER 19, 2022**

TAB	DESCRIPTION	ACTION
1	BOARD POLICY III.E. CERTIFICATES AND DEGREES – FIRST READING	Action Item
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3	ESTABLISHED PROGRAM TO STIMULATE COMPETITIVE RESEARCH (EPSCOR) ANNUAL REPORT	Information Item

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SUBJECT

Board Policy III.E. Certificates and Degrees – First Reading

REFERENCE

December 2013	Board approved first reading of amendments to Board Policy III.E that included updates to definitions for technical certificates and credit hour.
February 2014	Board approved the second reading of amendments to Board Policy III.E.
June 2018	Board approved the first reading of amendments to Board Policy III.E and asked staff to provide a definition of an applied baccalaureate degree, separate from the academic baccalaureate degree.
February 2019	Board approved another first reading of amendments to Board Policy III.E due to changes between readings. This included a definition of an applied baccalaureate degree and a definition of micro-certifications.
April 2019	Board approved second reading of amendments to Board Policy III.E.
June 2020	Board approved the first reading of amendments to Board Policy III.E that added a definition of a specialized certificate.
August 2020	Board approved the second reading of amendments to Board Policy III.E.

APPLICABLE STATUTES, RULE OR POLICY

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

BACKGROUND/DISCUSSION

Board Policy III.E. provides definitions for approved certificates and degrees, including credit requirements for career technical education programs and academic programs.

In August 2020, the Board approved a definition for a new type of certificate aimed at providing individuals that already hold a certificate or degree with additional opportunities to further develop and/or upgrade their skills in an occupation. Prior to that, the Board approved a new definition of micro-certification that would apply to not only career technical programs but also academic programs. As these policy amendments were implemented and institutions started to work on potential proposals, concerns started to surface in terms of how those definitions were being interpreted and applied, specifically for academic programs and the potential for transcription of credit.

To address these concerns, the Board office established a working group comprised of representatives from all eight public postsecondary institutions, the Idaho Division of Career Technical Education and the Office of the State Board of

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Education. This group met over the last year and held work sessions to fully review and update definitions for specialized certificates and micro-certifications including how credit can be assessed. Proposed amendments do the following:

- Change the definition of micro-certification to microcredential and break down the definition to differentiate between a stacked microcredential and a digital badge.
- Provide that microcredentials will be tracked and maintained through a platform approved by the Division of Career Technical Education. Currently this is SkillStack.
- Update definitions of academic undergraduate and graduate certificates to clarify that these certificates can be stand-alone or attached to an undergraduate or graduate degree, respectively.
- Reorganize the definition of technical certificates with one main definition to differentiate between basic, intermediate, and advanced technical certificates by a range of credits required for each.
- Remove the advanced associate of applied science (AAS) degree. The work group felt the definition for an advanced AAS and a specialized certificate were similar and given there are no current Advanced AAS options being offered, the specialized certificate would meet the need to have an advanced specialized option.
- Clarify that institutions may not confer honorary degrees on staff of the Office of the State Board of Education (OSBE).

IMPACT

The proposed amendments will provide institutions with guidance for the development of microcredentials and specialized certificates and will assist with distinguishing the differences between the technical certificates. Proposed amendments will require institutions offering technical certificates to reevaluate existing offerings to ensure those align with the new definition. Finally, proposed amendments will allow institutions to confer honorary degrees on employees of the Board who are not OSBE staff.

ATTACHMENTS

Attachment 1 – Board Policy III.E. Certificates and Degrees – First Reading

STAFF COMMENTS AND RECOMMENDATIONS

Institutions and Board staff identified a need to revisit definitions for specialized certificate and micro-certification, including advanced associate of applied science degree, to clarify intent and update, where necessary, definitions that will aid institutions in the development of these credentials.

The Council on Academic Affairs and Programs reviewed the proposed policy amendments at their September 29, 2022 meeting. The Instruction, Research, and Student Affairs committee reviewed the proposed amendments at its October 6, 2022 meeting.

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Board staff recommends approval.

BOARD ACTION

I move to approve the first reading of proposed amendments to Board Policy III.E. Certificates and Degrees as submitted in Attachment 1.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

Idaho State Board of Education
GOVERNING POLICIES AND PROCEDURES

SECTION: III. POSTSECONDARY AFFAIRS

SUBSECTION: E. Certificates and Degrees

August 2020 December 2022

1. Definitions

Programs of instruction require specified numbers of credits earned through educational work on the part of students. Completion of the program of instruction results in the awarding of a certificate to or conferring of a degree upon the student by the faculty and the Chief Executive Officer. The following definitions have been approved by the Board:

a. MICROCREDENTIALS

Credentials awarded for mastery of defined skills or concepts, including career technical and academic skills. Microcredentials reflect skills, knowledge, and abilities gained in increments and measured by identified outcomes that are equal to or less than a single course of study but may also build upon or complement each other, resulting in a stacked microcredential. Microcredentials are most often distributed as digital badges.

i. Stacked microcredential

A set of organized microcredentials that an individual can earn after meeting specific outcomes. Completion of stacked microcredentials may result in credit through institutions' prior learning assessment policies.

ii. Digital Badge

A visual representation of one or more microcredentials. Digital badges, in compliance with standards recognized by the Division of Career Technical Education, are embedded with metadata that are verifiable and portable.

b. CERTIFICATES

i. Academic Certificate of Completion

A credential awarded for completion of a coherent program of study consisting of one (1) to six (6) semester credits ~~or less~~, representing a coherent body of knowledge that does not lead to an academic undergraduate certificate or a degree.

ii. Academic Undergraduate Certificate

A credential awarded for completion of a coherent program of study consisting of ~~seven (7)~~ semester credits or more, representing a coherent body of knowledge that may lead to an academic degree. Academic undergraduate certificates may be earned as standalone certificates or attached to an undergraduate degree.

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iii. Graduate Certificate

A credential awarded for completion of a coherent program of study consisting of nine (9) or more semester credits of graduate course work, representing a coherent body of knowledge that may lead to a degree or may be unique and standalone. Graduate certificates may be earned as standalone certificates or attached to a graduate degree.

~~iv. Technical Certificate of Completion~~

~~A career technical credential awarded by the institution consisting of seven (7) semester credits or less that represents mastery of a defined set of competencies.~~

~~v. Basic Technical Certificate~~

~~A credential awarded for completion of requirements in an approved career technical program of at least eight (8) semester credit hours and represents mastery of a defined set of competencies.~~

~~vi. Intermediate Technical Certificate~~

~~A credential awarded for the completion of requirements in an approved career technical program of at least 30 semester credit hours and represents mastery of a defined set of competencies.~~

~~vii. Advanced Technical Certificate~~

~~A credential awarded for completion of requirements in an approved career technical program of at least 52 semester credit and represents mastery of a defined set of competencies.~~

iv. Technical Certificate

A credential awarded for completion of requirements in an approved career technical program that represents mastery of a defined set of competencies. Technical certificates are awarded based on a total number of required credits and intended to be stackable:

- 1) Technical Certificate of Completion – 1 to 7 credits
- 2) Basic Technical Certificate – 8 to 29 credits
- 3) Intermediate Technical Certificate – 30 to 51 credits
- 4) Advanced Technical Certificate – 52 to 59 credits

~~viii. Microcertification~~

~~A credential in a narrowly focused area within career technical program or academic program that confirms mastery through a formal assessment of a specific industry related skillset or topic. Completion of multiple microcertification courses may lead to a certificate.~~

~~ix~~v. Specialized Certificate

A credential awarded upon successful completion of specific credit-bearing courses within a career technical or academic program of fewer than 60 semester credits that have been industry validated and sequenced for the

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purpose of developing new skills and/or upgrading existing skills in an occupation. Specialized certificates are to be stacked on or appended to other credentials as advanced training. In exceptional cases, stand-alone Specialized Certificates may be proposed if justified by the content of the certificate.

- bc. ASSOCIATE OF APPLIED SCIENCE DEGREE: A credential awarded for completion of requirements in an approved career technical program of at least 60 semester credits (includes a minimum of 15 general education credits) and represents mastery of a defined set of competencies. An Advanced option may be awarded for additional credits of at least 15 credit hours that are beyond the A.A.S. degree.
- cd. ASSOCIATE DEGREE: A credential awarded for completion of requirements entailing the equivalent of at least 60 semester credits of academic work. An Associate Degree shall not require more than 60 semester credits unless necessary for matriculation to a specific baccalaureate program or for unique accreditation, certification, or professional licensure purposes or by exception approved by the Board.
- de. BACCALAUREATE DEGREE: A credential awarded for completion of requirements entailing the equivalent of at least 120 semester credits of academic work. A baccalaureate degree shall not require more than 120 semester credits unless needed for unique accreditation, certification, professional licensure purposes, or by exception approved by the Board.
- ef. APPLIED BACCALAUREATE DEGREE: A credential awarded for completion of requirements entailing the equivalent of at least 120 semester credits of academic and career technical coursework (includes a minimum of 36 general education credits). An applied baccalaureate degree shall not require more than 120 semester credits unless needed for unique accreditation, certification, or professional licensure purposes or by exception approved by the Board.
- fg. GRADUATE DEGREES: A credential awarded for completion of academic work beyond the baccalaureate degree, including any required research. Graduate degrees consist of master's degrees, specialist degrees, and doctoral degrees.

2. Academic and Career Technical Credit Hour Requirements

A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

- a. One (1) hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or

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- b. At least an equivalent amount of work as required in paragraph (a) of this definition for other academic activities as established by the institution, including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

3. Requirements for Certificates and Degrees

A postsecondary institution ~~will~~ has authority to establish the number of earned credits required for each certificate and degree. The requirements may differ from the general requirements specified in the definitions in subsection 1; however, all credit requirements must receive Board approval in accordance with the program approval policies provided in Board Policy III.G. Institutional catalogs ~~will~~shall specify the required number of earned credits for each certificate ~~or~~ and degree.

4. Authorization Required

Programs offered at the institution, as well as the certificates and degrees to which they lead, are subject to review and approval in accordance with the program approval policies provided in Board Policy III.G. A certificate or degree conferred upon the student is conferred under the authority of the Board.

5. Authorized Microcredentials, Certificates, and Degrees

A current listing of authorized certificates and degrees awarded by each institution is maintained at the institution by the Chief Executive Officer and for all institutions at the Office of the State Board of Education. All microcredentials shall be tracked as digital badges through a platform approved and maintained by the Division of Career Technical Education.

6. Honorary Degrees

Each institution may award honorary degrees, not to exceed the highest level of Board-authorized degrees currently awarded by the institution, to persons in recognition of distinguished achievements at the local, state, or national level in areas such as education, public service, research, sciences, humanities, business, or other professions. The award of an honorary degree must receive the prior approval of the Chief Executive Officer upon recommendation by the faculty.

Each institution will develop its own procedures for seeking nominations for and selecting honorary degree recipients. Those procedures may include a statement of eligibility requirements for honorary degrees. However, no person who is currently employed by the institution, is a member of the Board, ~~is or the Board's staff~~ of the Office of the State Board of Education, or is an incumbent elected official is eligible for an honorary degree during the term of employment, appointment, or office.

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SUBJECT

Board Policy III.Z, Planning and Delivery of Postsecondary Programs and Courses
– First Reading

REFERENCE

October 20, 2016	The Board approved the first reading of the proposed amendments to Board Policy III.Z., updating institutions' statewide program responsibilities.
December 15, 2016	The Board approved the second reading of proposed amendments to Board Policy III.Z.
December 21, 2017	The Board approved the first reading of proposed amendments to Board Policy III.Z., changing the planning timeframe from five years to three years.
February 15, 2018	The Board approved the second reading of proposed amendments to Board Policy III.Z.
June 21, 2018	The Board approved the first reading of proposed amendments to Board Policy III.Z., adding responsibilities for applied baccalaureate degrees to each region.
August 16, 2018	The Board approved the second reading of proposed amendments to Board Policy III.Z.
June 10, 2020	The Board approved the first reading of proposed amendments to Board Policy III.Z., changing the name of a statewide program listed for the University of Idaho.
August 26, 2020	The Board approved the second reading of proposed amendments to Board Policy III.Z.
February 18, 2021	The Board approved the first reading of proposed amendments to Board Policy III.Z that added new definitions for high-demand programs and joint programs.
April 22, 2021	The Board approved the second reading of proposed amendments to Board Policy III.Z.

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies and Procedures, Section III.Z. and Section III.G.
Section 33-113, Idaho Code
Section 33-2107A, Idaho Code

BACKGROUND/DISCUSSION

The purpose of Board Policy III.Z, “is to ensure Idaho’s public postsecondary institutions meet the educational and workforce needs of the state through academic planning, alignment of programs and courses, and collaboration and coordination.” The purpose is to also meet the statutory requirement to “as far as practicable prevent wasteful duplication of effort” by the institutions.

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In spring 2022, the University of Idaho submitted a proposal to the Board requesting approval to offer several associate degrees. In addition, in 2021, several community colleges included bachelor's degrees on their three-year plans. The Board does not have a set of criteria to evaluate proposals to offer degree programs that fall outside the traditional level of degrees offered at the institutions. Similarly, the institutions do not have a set of criteria by which to make a case to the Board to approve such proposals. At the work session of the April 2022 Board meeting, Board members requested Board staff to work with the institutions to develop a framework and set of criteria by which the Board can evaluate these types of proposals.

IMPACT

Proposed amendments describe a set of five minimum criteria by which the Board will evaluate proposals by the universities to offer new associate degrees and proposals by the community colleges to offer bachelor's degrees.

ATTACHMENTS

Attachment 1 – Board Policy III.Z. Planning and Delivery of Postsecondary Programs and Courses – First Reading

STAFF COMMENTS AND RECOMMENDATIONS

Board staff worked with the provosts and presidents of all eight institutions to develop the new criteria for evaluating proposals by the universities to offer new associate degrees and proposals by the community colleges to offer bachelor's degrees. All parties agreed that Policy III.Z. is the appropriate place to include these criteria in Board policy.

The Council on Academic Affairs and Programs, the President's Leadership Council, and the Instruction, Research and Student Affairs Committee of the Board reviewed the proposed policy amendments at their meetings in August, September, and October 2022, respectively.

Board staff recommends approval.

BOARD ACTION

I move to approve the first reading of proposed amendments to Board Policy III. Z. Planning and Delivery of Postsecondary Education Programs and Courses as submitted in Attachment 1.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

Idaho State Board of Education

GOVERNING POLICIES AND PROCEDURES

SECTION: III. POSTSECONDARY AFFAIRS

Subsection: Z. Planning and Delivery of Postsecondary Programs and Courses

[April 2024 December 2022](#)

The purpose of this policy is to ensure Idaho’s public postsecondary institutions meet the educational and workforce needs of the state through academic planning, alignment of programs and courses (hereinafter referred to collectively as “programs”), and collaboration and coordination. This subsection shall apply to the University of Idaho, Boise State University, Idaho State University, Lewis-Clark State College, College of Eastern Idaho, College of Southern Idaho, College of Western Idaho, and North Idaho College (hereinafter “institutions”). The State Board of Education (the Board) aims to optimize the delivery of academic programs while allowing institutions to grow and develop consistent with their vision and mission with an appropriate alignment of strengths and sharing of resources.

This policy requires the preparation and submission of academic plans to advise and inform the Board in its planning and coordination of educational programs in a manner that enhances access to quality programs, while concurrently increasing efficiency, avoiding unnecessary duplication and maximizing the cost-effective use of educational resources through coordination between institutions. As part of this process, the Board hereby identifies and reinforces the responsibilities of the institutions governed by the Board to deliver Statewide Programs. The provisions set forth herein serve as fundamental principles underlying the planning and delivery of programs pursuant to each institution’s assigned Statewide and Service Region Program Responsibilities. These provisions also require collaborative and cooperative agreements, or memorandums of understanding, between and among the institutions.

This policy is applicable to campus-based face-to-face programs, including those that use technology to facilitate and/or supplement a physical classroom experience. It also applies to hybrid and blended programs where a substantial portion of the content is delivered on-line and typically has reduced seat time.

1. Definitions

- a. Designated Institution shall mean an institution whose main campus is located in a service region as identified in subsection 2.b.ii.1) and 2) below; and which possesses the first right to offer programs within its designated service region(s).
 - i. With respect to academic programs, Designated Institutions and Partnering Institutions shall have Service Region Program Responsibility for those regions identified in subsection 2.b.ii.1).
 - ii. With respect to career technical programs, Designated Institutions and Partnering Institutions shall include only the College of Southern Idaho, College of Western Idaho, North Idaho College, College of Eastern Idaho, Lewis-Clark

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State College, and Idaho State University and shall have Service Region Program Responsibility for those regions identified in subsection 2.b.ii.2).

- b. A memorandum of understanding (MOU) is an agreement between two or more institutions offering duplicative programs within the same service region that details how such programs will be delivered in a collaborative manner. An MOU is intended to provide specific, practical details that build upon what has been provided in each Institution's Plan.
- c. High-Need Program shall mean a program identified by an institution or the Board as critical to supporting the future growth of a profession.
- d. Joint Program shall mean an educational program jointly developed and delivered concurrently by two or more institutions.
- e. Partnering Institution shall mean either
 - i. an institution whose main campus is located outside of a Designated Institution's identified service region but which, pursuant to a Memorandum of Understanding, offers Regional Programs in the Designated Institution's primary service region, or
 - ii. an institution not assigned a Statewide Program Responsibility which, pursuant to a Memorandum of Understanding with the institution assigned the Statewide Program Responsibility, offers and delivers a statewide educational program.
- f. Service Region Program shall mean an educational program identified by the Board to be delivered by a Designated Institution within its respective service region that meets regional educational and workforce needs.
- g. Service Region Program Responsibility shall mean an institution's responsibility to offer and deliver a Service Region Program to meet regional educational and workforce needs in its primary service region as defined in subsection 2.b.ii.1) and 2) below. Service Region Program Responsibilities are assigned to the Designated Institution in each service region, but may be offered and delivered by Partnering Institutions in accordance with the procedures outlined in this policy.
- h. Statewide Program shall mean an educational program identified by the Board to be delivered by a particular institution which meets statewide educational and workforce needs. Lewis-Clark State College, College of Eastern Idaho, North Idaho College, College of Southern Idaho, and College of Western Idaho do not have Statewide Program Responsibilities.
- i. Statewide Program Responsibility shall mean an institution's responsibility to offer and deliver a Statewide Program in all regions of the state. Statewide Program Responsibilities are assigned to a specific institution by the Board, taking into account the degree to which such program is uniquely provided by the institution.

2. Planning and Delivery Process and Requirements

a. Planning

i. Three-Year Plan

The Board staff shall, using the Institution Plans submitted, create and maintain a rolling three (3) year academic plan (Three-Year Plan) which includes all current and proposed institution programs. The Three-Year Plan shall be approved by the Board annually at its August Board meeting.

ii. Institution Plan

Each institution shall, in accordance with a template to be developed by the Board's Executive Director or designee, create and submit to Board staff a rolling three (3) year academic plan, to be updated annually, that describes all current and proposed programs and services to be offered in alignment with each institution's Statewide and Service Region Program Responsibilities (the Institution Plan). Institution Plans shall be developed pursuant to a process of collaboration and communication with the other institutions in the state.

1) Statewide Programs

Institutions assigned a Statewide Program Responsibility shall plan for and determine the best means to deliver such program. Each institution assigned a Statewide Program Responsibility shall include in its Institution Plan all currently offered and proposed programs necessary to respond to the workforce and educational needs of the state relating to such Statewide Program Responsibilities. Each Institution Plan shall include the following information for proposed Statewide programs:

- a) A description of the Statewide Programs to be delivered throughout the state and the anticipated resources to be employed.
- b) A description of the Statewide Programs to be offered by a Designated or Partnering Institution.
- c) A summary of the Memoranda of Understanding (MOUs), if any, to be entered into with Partnering Institutions pursuant to Subsection 2.b.iii. below.

2) Service Region Programs

It is the responsibility of the Designated Institution to plan for and determine the best means to deliver Service Region Programs that respond to the educational and workforce needs of its service region. If, in the course of developing or updating its Institution Plan, the Designated Institution identifies a need for the delivery of a program within its service region, and

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the Designated Institution is unable to provide the program, then the Designated Institution shall coordinate with a Partnering Institution (including institutions with Statewide Program Responsibilities if applicable) located outside of the service region to deliver the program in the service region.

The Institution Plan developed by a Designated Institution shall include the following:

- a) A description of the proposed academic programs to be delivered in the service region, or outside of the service region, by the Designated Institution and the anticipated resources to be employed.
 - b) A description of proposed programs to be offered in the service region by Partnering Institutions, including any anticipated transition of programs to the Designated Institution.
 - c) A description of proposed Statewide Programs to be offered in the service region by an institution with Statewide Program Responsibilities, or by the Designated Institution in coordination with the institution holding the Statewide Program Responsibility.
 - d) A summary of proposed MOU's, if any, to be entered into between the Designated Institution and any Partnering Institutions in accordance with Subsection 2.b.iii. below.
 - e) A summary of collaborative programs created to meet areas designated as high-need.
- 3) Institution Plan Updates

Institution Plans shall be updated and submitted to Board staff annually as follows:

- a) Preliminary Institution Plans shall be developed according to a template provided by the Board's Executive Director or designee and submitted to the Council for Academic Affairs and Programs (CAAP) for review, discussion and coordination annually in April.
- b) Following review by CAAP, Institution Plans shall be submitted to Board staff. Upon submission of the Institution Plans to Board staff, the Board's Executive Director or designee shall review the Institution Plans for the purpose of optimizing collaboration and coordination among institutions, ensuring efficient use of resources, and avoiding unnecessary duplication of programs.
- c) In the event the Board's Executive Director or designee recommends material changes, he/she shall work with the institutions and then submit

those recommendations to CAAP for discussion prior to submission to the Board for inclusion in the Three-Year Plan.

- d) The Board's Executive Director or designee shall then provide their recommendations to the Board for enhancements, if any, to the Institution Plans at a subsequent Board meeting. The Board shall approve the Institution Plans annually through the Three-Year Plan submitted by Board staff. Board approval of Institution Plans acts as a roadmap for institutional planning and does not constitute Board approval of a program. Institutions are still required to follow the standard program approval process as identified in Board Policy Section III.G to gain program approval.

b. Delivery of Programs

i. Statewide Program Delivery

The Board has established statewide program responsibilities for the University of Idaho, Boise State University, and Idaho State University. Each institution must assess the need for, and when determined by the assessment, ensure the statewide delivery of educational programs assigned by the Board. A statewide program list consisting of statewide program responsibilities shall be updated by the Board every two years in accordance with a schedule developed by the Executive Director or designee. The program list will be contained in the Board approved three-year plan document and maintained by Board staff.

ii. High-Demand Programs

The Board recognizes that the need for high-demand, high-need programs may require joint delivery by multiple institutions statewide. These high-demand programs must be delivered through collaboration between institutions in order to preserve rural and statewide access. Service region restrictions and primary institution first rights to offer a program do not apply to Board identified high-demand programs. Criteria for statewide program high-demand designation includes, but is not limited to:

- 1) Idaho Department of Labor data,
- 2) Idaho industry demand as demonstrated by unfilled positions and industry data,
- 3) Demonstrated Idaho state needs for programs supporting underserved populations, and
- 4) Requested by the Board.

An institution wishing to offer a high-demand program that does not have statewide responsibility in the program area must meet the criteria above, have a signed MOU with the Institution with the Statewide Program Responsibility, and the approval of the Board's Executive Director or designee. At that point, the Partnering Institution shall include the program in its Institution Plan. If the

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Board determines that an emergency need exists for a program that the Institution with Statewide Program Responsibility cannot meet, then upon Board approval the two Institutions shall enter into an MOU for the delivery of such program.

iii. Service Region Program Delivery

The Board has established service regions for the institutions based on the six geographic areas identified in Section 33-2101, Idaho Code. A Designated Institution shall have the Service Region Program Responsibility to assess and ensure the delivery of all educational programs and services necessary to meet the educational and workforce needs within its assigned service region.

1) Academic Service Regions

Region I shall include the area within Area No.1 under Section 33-2101, Idaho Code. Lewis-Clark State College, the University of Idaho, and North Idaho College are the Designated Institutions serving undergraduate needs. The University of Idaho is the Designated Institution serving the graduate education needs. Lewis-Clark State College, and North Idaho College are the Designated Institutions serving applied baccalaureate degree needs.

Region II shall include the area within Area No.2 under Section 33-2101, Idaho Code. Lewis-Clark State College and the University of Idaho are the Designated Institutions serving undergraduate needs. The University of Idaho is the Designated Institution serving the graduate education needs.

Region III shall include the area within Area No.3 under Section 33-2101, Idaho Code. Boise State University and College of Western Idaho are the Designated Institutions serving undergraduate needs. Boise State University is the Designated Institution serving graduate education needs. Boise State University and College of Western Idaho are the Designated Institutions serving applied baccalaureate degree needs.

Region IV shall include the area within Area No.4 under Section 33-2101, Idaho Code. Idaho State University and College of Southern Idaho are the Designated Institutions serving undergraduate needs. Idaho State University is the Designated Institution serving the graduate education needs, with the exception that Boise State University will meet undergraduate and graduate business program needs. Idaho State University and College of Southern Idaho are the Designated Institutions serving applied baccalaureate degree needs.

Region V shall include the area within Area No.5 under Section 33-2101, Idaho Code. Idaho State University is the Designated Institution serving undergraduate and graduate education needs.

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Region VI shall include the area within Area No.6 under Section 33-2101, Idaho Code. Idaho State University and College of Eastern Idaho are the Designated Institutions serving undergraduate education needs. Idaho State University is the Designated Institution serving the graduate education needs. Idaho State University and College of Eastern Idaho are the Designated Institutions serving applied baccalaureate degree needs.

2) Career Technical Service Regions

Postsecondary career technical education is delivered by six (6) institutions, each having responsibility for serving one of the six geographic areas identified in Section 33-2101.

Region I shall include the area within Area No.1 under Section 33-2101, Idaho Code. North Idaho College is the Designated Institution.

Region II shall include the area within Area No.2 under Section 33-2101, Idaho Code. Lewis-Clark State College is the Designated Institution.

Region III shall include the area within Area No.3 under Section 33-2101, Idaho Code. College of Western Idaho is the Designated Institution

Region IV shall include the area within Area No.4 under Section 33-2101, Idaho Code. College of Southern Idaho is the Designated Institution.

Region V shall include the area within Area No.5 under Section 33-2101, Idaho Code. Idaho State University is the Designated Institution.

Region VI shall include the area within Area No.6 under Section 33-2101, Idaho Code. College of Eastern Idaho is the Designated Institution.

3) Program Offerings by Partnering Institutions

If a Partnering Institution (other than an institution with Statewide Program Responsibilities) identifies a Service Region Program not identified, or anticipated to be identified, in a Designated Institution's Plan, and the Partnering Institution wishes to offer such program in the Designated Institution's service region, then the Partnering Institution may communicate with the Designated Institution for the purpose of allowing the Partnering Institution to deliver such program in the service region and to include the program in the Designated Institution's Plan. In order to include the program in the Designated Institution's Plan, the Partnering Institution must demonstrate the need within the service region for delivery of the program, as determined by the Board (or by the Administrator of the Division of Career Technical Education in the case of career technical level programs). In order to demonstrate the need for the delivery of a program in a service region, the Partnering Institution shall complete and submit to the Chief Academic Officer of the Designated Institution, to CAAP and to Board staff,

in accordance with a schedule to be developed by the Board's Executive Director or designee, the following:

- a) A study of business and workforce trends in the service region indicating anticipated, ongoing demand for the educational program to be provided.
- b) A survey of potential students evidencing demand by prospective students and attendance sufficient to justify the short-term and long-term costs of delivery of such program.
- c) A complete description of the program requested to be delivered, including a plan for the delivery of the program, a timeline for delivery of the program, the anticipated costs of delivery, the resources and support required for delivery (including facilities needs and costs), and program syllabuses.

iv. Associate Degrees at Universities and Baccalaureate Degrees at Community Colleges

When a university proposes to offer an associate degree or a community college proposes to offer a baccalaureate degree, the Board will evaluate the proposed degree using at least the following criteria:

1) Demand

Proposed offerings must be to meet an urgent, local need based on where students who complete the offering will be employed rather than on where the students reside. The demand for the proposed offering needs to be clear, urgent, and compelling, as evidenced through data and industry input. Commitments of practical support (e.g. funding, internships, etc.) from industry stakeholders constitutes evidence of demand.

2) Specialization

The proposed offering must be based on the unique capability at the institution, founded on specialized instructional expertise and any infrastructure necessary for program delivery.

3) Non-Competitiveness

The proposed offering must be non-competitive with other institutions' offerings within the identified service area (whether regional or statewide) and supported by other institutions within the service area. The Executive Director or designee may request written commitments from the presidents of other institutions within the service area expressing conceptual and, if necessary, practical support for the proposed program.

4) Collaboration

Alternative approaches to meeting the identified demand addressed by the proposed offering should be fully considered, including potential collaboration with other institutions. High-demand programs must be offered through inter-institutional collaboration as described in this policy.

5) Resources

The institution must have sufficient resources to develop and deliver the proposed offering.

These criteria do not apply to Associate Degrees in General Studies currently offered or proposed to be offered by the universities.

iv-v. Memoranda of Understanding

The Board encourages and fosters orderly and productive collaboration between Idaho's public institutions. Memoranda of Understanding can support such collaboration.

Institutions proposing to offer a joint program shall develop an MOU to identify the specific roles of each participating institution; the student-related processes associated with delivery of the program; and a timeline for review.

When an institution desires to offer a program already being offered by another institution in the latter institution's service region, an MOU shall be developed between the institutions to offer the program.

If a Designated Institution has identified a workforce or educational need for the delivery of a program within its service region and is unable to provide the program, the Designated Institution may collaborate with a Partnering Institution to offer the program. An MOU will not be required for review or approval prior to implementation in this case. Institutions are required to follow the standard program approval processes as identified in Board Policy III.G to obtain program approval.

An institution with Statewide Program Responsibility need not enter into an MOU with any other institutions before offering the statewide program in service regions outside the service region of the institution with Statewide Program Responsibility. If an institution desires to offer a program for which another institution has Statewide Program Responsibility, the institution that does not have Statewide Program Responsibility shall be required to enter into an MOU with the institution that has Statewide Program Responsibility for that program.

When an institution with Statewide Program Responsibility or Service Region

Program Responsibility desires to offer a program within a service region where such program is currently being offered by another institution, the institutions shall enter into a transition MOU that includes an admissions plan between the institutions providing for continuity in student enrollment during the transition period.

Idaho public postsecondary institutions may enter into MOUs with out-of-state postsecondary institutions or private postsecondary institutions to offer programs. Such MOUs do not require notification or approval by the Board, but shall be shared with the Council on Academic Affairs and Programs. While the Board does not prohibit MOUs with out-of-state postsecondary institutions, agreements with in-state public institutions are preferred.

Articulation agreements between any postsecondary institutions for the purposes of facilitating course or program transfer do not require approval by the Board. Such agreements shall be managed and tracked by the institutions, and shall be reported to the Board on an annual basis as part of the three-year planning process. All articulation agreements must be in compliance with Section 33-3729, Idaho Code, and Board Policy III.V.

All MOUs shall be submitted in conjunction with related program proposals following the standard program approval processes as identified in Board Policy III.G.

v.vi. Facilities

For programs offered by a Partnering Institution (whether an institution with Statewide Program Responsibilities, or otherwise) within a municipal or metropolitan area that encompasses the campus of a Designated Institution, the Partnering Institution's programs offerings shall be conducted in facilities located on the campus of the Designated Institution to the extent the Designated Institution is able to provide adequate and appropriate property or facilities (taking into account financial resources and programmatic considerations), or in facilities immediately adjacent to the campus of the Designated Institution. Renting or building additional facilities shall be allowed only upon Board approval, based on the following:

- 1) The educational and workforce needs of the local community demand a separate facility at a location other than the campus of the Designated Institution or adjacent thereto as demonstrated in a manner similar to that set forth in Subsection 2.b.ii.1) above, and
- 2) The use or development of such facilities are not inconsistent with the Designated Institution's Plan.

Facilities rented or built by a Partnering Institution (whether an institution with Statewide Program Responsibilities, or otherwise) on, or immediately adjacent to, the "main" campus of a Designated Institution may be identified (by name)

**INSTRUCTION, RESEARCH AND STUDENT AFFAIRS
OCTOBER 19, 2022**

ATTACHMENT 1

as a facility of the Partnering Institution, or, if the facility is rented or built jointly by such institutions, as the joint facility of the Partnering Institution and the Designated Institution. Otherwise, facilities utilized and programs offered by one or more Partnering Institutions within a service region shall be designated as “University Place at (name of municipality).”

For programs offered by a Partnering Institution (whether an institution with Statewide Program Responsibilities, or otherwise) within a municipality or metropolitan area encompassing a campus of a Designated Institution, to the extent programmatically possible, auxiliary services (including, but not limited to, bookstore, conference and other auxiliary enterprise services) and student services (including, but not limited to, library, information technology, and other auxiliary student services) shall be provided by the Designated Institution. To the extent programmatically appropriate, registration services shall also be provided by the Designated Institution. It is the goal of the Board that a uniform system of registration ultimately be developed for all institutions governed by the Board. The Designated Institution shall offer these services to students who are enrolled in programs offered by the Partnering Institution in the same manner, or at an increased level of service, where appropriate, as such services are offered to the Designated Institution’s students. An MOU between the Designated Institution and the Partnering Institution shall outline how costs for these services will be allocated.

vi-vii. Duplication of Courses

If courses necessary to complete a Statewide Program are offered by the Designated Institution, they shall be used and articulated into the Statewide Program.

vii-viii. Discontinuance of Programs

Unless otherwise agreed between the applicable institutions pursuant to an MOU, if, for any reason, (i) a Designated Institution offering programs in its service region that supports a Statewide Program of another institution, (ii) a Partnering Institution offering programs in the service region of a Designated Institution, or (iii) an institution holding a Statewide Program Responsibility offering Statewide Programs in the service region of a Designated Institution, wishes to discontinue offering such program(s), it shall use its best efforts to provide the institution with Statewide or Service Region Program Responsibility, as appropriate, at least one (1) year’s written notice of withdrawal, and shall also submit the same written notice to the Board and to oversight and advisory councils. In such case, the institution with Statewide or Service Region Program Responsibilities shall carefully evaluate the workforce need associated with such program and determine whether it is appropriate to provide such program. In no event will the institution responsible for the delivery of a Statewide or Service Region Program be required to offer such program

(except as otherwise provided herein above).

3. Existing Programs

Programs being offered by a Partnering Institution (whether an institution with Statewide Program Responsibilities, or otherwise) in a service region prior to July 1, 2003, may continue to be offered pursuant to an MOU between the Designated Institution and the Partnering Institution, subject to the transition and notice periods and requirements set forth above.

4. Oversight and Advisory Councils

The Board acknowledges and supports the role of oversight and advisory councils to assist in coordinating, on an ongoing basis, the operational aspects of delivering programs among multiple institutions in a service region, including necessary resources and support and facility services, and the role of such councils in interacting and coordinating with local and regional advisory committees to address and communicate educational needs indicated by such committees. Such interactions and coordination, however, are subject to the terms of the MOU's entered into between the institutions and the policies set forth herein.

5. Resolutions

All disputes relating to items addressed in this policy shall be forwarded to the Board's Executive Director or designee for review. The Board's Executive Director or designee shall prescribe the method for resolution. The Board's Executive Director or designee may forward disputes to CAAP and, if necessary, make recommendations regarding resolution to the Board. The Board will serve as the final arbiter of all disputes.

6. Exceptions

- a. This policy is not applicable to programs for which 90% or more of all activity is required or completed online, or dual credit courses for secondary education.
- b. This policy also does not apply to courses and programs specifically contracted to be offered to a private, corporate entity. However, in the event that an institution plans to contract with a private corporate entity (other than private entities in the business of providing educational programs and course) outside of their Service Region, the contracting institution shall notify the Designated Institutions in the Service Region and institutions with Statewide Program Responsibilities, as appropriate. If the corporate entity is located in a municipality that encompasses the campus of a Designated Institution, the Board encourages the contracting institution to include and draw upon the resources of the Designated Institution inasmuch as is possible.

**INSTRUCTION, RESEARCH AND STUDENT AFFAIRS
OCTOBER 19, 2022**

SUBJECT

Established Program to Stimulate Competitive Research (EPSCoR) Annual Report

REFERENCE

August 2016	EPSCoR provided their annual report to the Board
October 2017	EPSCoR provided their annual report to the Board
October 2018	EPSCoR provided their annual report to the Board
October 2019	EPSCoR provided their annual report to the Board
October 2020	EPSCoR provided their annual report to the Board
October 2021	EPSCoR provided their annual report to the Board

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies & Procedures, Section III.W. Higher Education Research

BACKGROUND/DISCUSSION

The Established Program to Stimulate Competitive Research (EPSCoR) is a federal-state partnership designed 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. Through EPSCoR, participating states are building a high-quality academic research base that is serving as a backbone of a scientific and technological enterprise.

Idaho EPSCoR is led by a state committee composed of 16 members, appointed by the Board, with diverse professional backgrounds from both the public and private sectors and from all regions in the state. The Idaho EPSCoR committee oversees the implementation of the Idaho EPSCoR program and ensures program goals and objectives are met. The Idaho EPSCoR office and the Idaho EPSCoR Project Director are located at the University of Idaho. Partner institutions are Boise State University and Idaho State University.

The purpose of EPSCoR awards is to provide support for lasting improvements in a state's academic research infrastructure and its research and education capacity in areas that support state and university Science and Technology Strategic Plans. Idaho EPSCoR activities include involvement in K-12 teacher preparation and research initiatives and projects ranging from undergraduate research through major state and regional research projects.

Consistent with Board Policy III.W.2.d., EPSCoR has prepared an annual report regarding current EPSCoR activities that details all projects by federal agency source, including reports of project progress from the associated external Project Advisory Board (PAB).

ATTACHMENTS

Attachment 1 – EPSCoR Annual Report
Attachment 2 – GEM3 Year 4 PAB Final Report

**INSTRUCTION, RESEARCH AND STUDENT AFFAIRS
OCTOBER 19, 2022**

STAFF COMMENTS AND RECOMMENDATIONS

A full presentation and discussion of the EPSCoR Annual Report was provided to the Instruction, Research, and Student Affairs Committee on October 6, 2022.

BOARD ACTION

This item is for informational purposes only.

IDAHO ESTABLISHED PROGRAM TO STIMULATE
COMPETITIVE RESEARCH (EPSCOR):
ANNUAL REPORT - 2022

LAIRD NOH, IDAHO EPSCOR COMMITTEE CHAIRMAN
ANDREW KLISKEY, PROJECT DIRECTOR
RICK SCHUMAKER, ASSISTANT PROJECT DIRECTOR

IDAHO STATE BOARD OF EDUCATION:
IRSA COMMITTEE
OCTOBER 6, 2022



2021 ANNUAL REPORT

- EPSCoR/IDeA National Context
- NSF RII Track-1 “GEM3”
- Success Stories
- RII Track-1 “I-CREWS” proposal

www.idahoepscor.org

The screenshot shows the homepage of the Idaho EPSCoR website. At the top is a navigation bar with links for Home, About, Research, Education and Outreach, Resources, and a search icon. The main content area features a large banner image of researchers in a field, with a text box titled 'THE RESEARCHER IDAHO NSF EPSCoR NEWSLETTER' and a 'more' button. Below this is a 'Welcome to Idaho EPSCoR' section with a paragraph about the organization's mission. Three featured articles are displayed: 'Disappearing Farm Land' (with an aerial view of a valley), 'Current Idaho EPSCoR Research' (with an image of a fish), and 'Future RII Track-1' (with the NSF logo). To the right, there are sections for 'Announcements' (listing defense research funding), 'Subscribe' (for the E-News and newsletter), and 'The Researcher' (newsletter archive). A footer note states 'We are updating our subscriber list! If you currently receive hard copies'.



Federal Funding for All Eligible States

Agency	FY20 Enacted	FY21 Enacted	FY22 Enacted	FY23 Budget Request	FY23 Coalition Goals	FY23 House Appropriations Committee	FY23 Senate Appropriations Committee
NSF	\$190.0	\$200.0	\$215.0	\$247.25	\$265.0	\$225.0	\$247.25
NIH	\$386.6	\$396.6	\$410.0	\$410.6	1% of Allocation	\$423.07	\$423.12
DOE	\$25.0	\$25.0	\$25.0	\$35.0	\$50.0	\$35.0	\$35.0
USDA	\$63.8*	\$65.0*	\$66.75*	\$84.6*	15% Language (*)	\$75.0	\$68.25
NASA	\$24.0	\$26.0	\$26.0	\$26.0	\$33.0	\$26.0	\$26.0
DOD	\$12.0	\$17.0	\$19.0	-	\$25.0	\$5.0	\$20.0
Total	\$701.4	\$729.6	\$761.75	\$803.45	S+ USDA	\$789.07	\$819.62



IDAHO
EPSCoR

Awards to Idaho

- ✓ RII Track-1, Track-2, Track-4
- ✓ INBRE, COBRE
- ✓ Infrastructure
- ✓ Multiple awards
- ✓ Research, Core

Dollars in Millions.

Source:
EPSCoR/IDeA



CREATING HELPFUL INCENTIVES TO PRODUCE SEMICONDUCTORS (CHIPS) ACT 2022 – H.R. 4346

NSF (Section 10325)

- 20% set aside for **EPSCOR** states, but ramps up from 15.5% to 20% over 7 years;
 - Set aside relates to Congress' allocation under the Research and Related Activities and STEM Education Accounts (minus the Antarctic Facilities) only, rather than the whole of NSF.
- FY23: 15.5%
 - FY24: 16%
 - FY25: 16.5%
 - FY26: 17%
 - FY27: 18%
 - FY28: 19%
 - FY29: 20%



NATIONAL REPORTS ON NSF EPSCOR IN 2022

GAO Highlights

Highlights of [GAO-22-105043](#), a report to congressional requesters

August 2022

NATIONAL SCIENCE FOUNDATION

Better Reporting Could Give More Visibility into Gains in States' Research Competitiveness

Changes in Jurisdictions' Research Funding and Proposal Success Rates

Jurisdictions	Program's effect on research funding from NSF and other federal agencies	Trend in research proposal success rates from fiscal year 2011 to 2020
All participating jurisdictions	Statistically significant increase	7 percentage point increase
Jurisdictions joining between fiscal years 1980 and 1992	Statistically significant increase	9 percentage point increase
Jurisdictions joining in fiscal year 2000 or later	No statistically significant change	4 percentage point increase

Source: GAO analysis of data from the National Science Foundation (NSF) on U.S. states and territories (jurisdictions) participating in the Established Program to Stimulate Competitive Research. | GAO-22-105043



NATIONAL REPORTS ON NSF EPSCoR IN 2022

Capstone Report: EPSCoR Recipients Need Stronger Oversight and Controls

NATIONAL SCIENCE FOUNDATION
OFFICE OF INSPECTOR GENERAL

- Assessing and monitoring subrecipient risk
- Charging costs to support summer research programs
- Implementing new accounting systems



NATIONAL REPORTS ON NSF EPSCoR IN 2022



National Science Foundation
WHERE DISCOVERIES BEGIN

Envisioning the Future of NSF EPSCoR

COMMITTEE ON THE FUTURE OF NSF EPSCoR FINAL REPORT August 2022

- Expanding and Supporting Human Capital (recruitment and retention; WFD, diverse career pathways);
- Bridge-Building (increased integration of NSF EPSCoR across directorates; promote intra- and inter-jurisdictional efforts);
- Strengthening Resources and Infrastructure, with inclusion and diversity (proactive inclusion strategies; enhancing geographic diversity).



Active EPSCoR/IDeA Awards in Idaho

Agency	Title	Years	Institution(s)	Award Amount
NSF	Track-1: Linking Genome to Phenome to Predict Adaptive Responses of Organisms to Changing Landscapes	2018-23	U of I (w/ Boise State, Idaho State)	\$20,000,000
NSF	Track-2: Developing a Circular Bio-Based Framework For Architecture, Engineering and Construction Through Additive Manufacturing	2021-26	U of I	\$3,974,309
NSF	Track-2: Leveraging Big Data to Improve Prediction of Tick-Borne Disease Patterns and Dynamics	2020-24	U of I, NV, NH	\$5,830,709
NSF	Track-2: Genomics Underlying Toxin Tolerance (GUTT): Identifying Molecular Innovations that Predict Phenotypes of Toxin Tolerance in Wild Vertebrate Herbivores	2018-23	Boise State (w/ NV, WY)	\$6,598,285
NSF	Track-2: A Multiscale, Multiphysics Modeling Framework for Genome-to Phenome Mapping via Intermediate Phenotypes	2018-23	KY, SC (w/ U of I)	\$6,000,000



Active EPSCoR/IDeA Awards in Idaho

Agency	Title	Years	Institution(s)	Award Amount
NSF	Track-4: Investigating Evolutionary Innovations through Metagenomics	2017-22	Boise State	\$131,000
NSF	Track-4: Mechanical Regulation of Intra-Nuclear Mechanics and Gene Transcription	2019-22	Boise State	\$213,571
NSF	Collaborative Research: Cultivating Indigenous Research Communities for Leadership and Education in STEM (CIRCLES)	2020-22	U of I	\$76,051
NSF	Planning: Idaho EPSCoR RII Track-1 Planning Grant	2022	U of I	\$99,966
DOE	Understanding Interfacial Chemistry and Cation Order-Disorder in Mixed-Phased Complex Sodium Metal Oxide Cathodes for Sodium Ion Batteries	2018-21	Boise State	\$750,000
DOE	DNA-Controlled Dye Aggregation – A Path to Create Quantum Entanglement	2019-23	Boise State	\$8,000,000



Active EPSCoR/IDeA Awards in Idaho

Agency	Title	Years	Institution(s)	Award Amount
NIH	Idaho INBRE^	2019-24	U of I	\$17,664,267
NIH	COBRE: Matrix Biology*	2014-24	Boise State	\$20,815,235
NIH	COBRE: Center for Modeling Complex Interactions^	2015-25	U of I	\$21,600,000
NIH	COBRE: Emerging and Re-emerging Infectious Disease~	2016-22	IVREF	\$10,000,000
NIH	~Identification and Dynamics of SARS-CoV-2 Sequence Variants in Idaho	2021-22	IVREF	\$576,000
NIH	^SARS-CoV-2 variant surveillance using viral genome sequencing and analyses	2021-22	U of I	\$737,106
NIH	*SARS-CoV-2 Surveillance Studies in Southwest Idaho	2022-23	Boise State	\$701,019



Active EPSCoR/IDeA Awards in Idaho

Agency	Title	Years	Institution(s)	Award Amount
NASA RID	Research Infrastructure Development (RID)	2019-23	U of I	\$450,000
NASA Research	Plasma-Jet Printing Technology for In-Space Manufacturing and In-Situ Resource Utilization	2019-22	Boise State	\$791,841
NASA - R3	Water Delivery and Gas Exchange Crop Stress Analysis for Space Exploration	2021-22	U of I	\$36,359
NASA - R3	High-Temperature 3-D SiC Integrated Circuit Chip Packaging for Venus Surface Exploration	2021-22	U of I	\$100,000
NASA Research	Cryoldaho: Building Idaho's Cryosphere Research Community through Analysis of Terrain Effects on Snow and Ice Meltwater Fluxes	2021-23	Boise State	\$750,000
NASA Research	On-Demand Manufacturing of Smart Systems for Structural Health Monitoring	2022-25	Boise State	\$750,000
NASA - R3	Advanced Manufacturing Dense Nuclear Fuels with Complex Geometries	2022-23	Boise State	\$100,000
NASA - R3	Advanced Flip-Chip and TSV Based High-Temperature 3D SiC IC Packing for Venus Surface Exploration	2022-23	U of I	\$100,000
NASA - R3	Characterization of Thermal Transport Modes in Porous Materials	2023	Boise State	\$100,000
NASA – ISS Flight Op	Evaluation of Biofilm Resistant Coatings for Spacecraft Water Systems	2022-24	U of I	\$100,000
NASA – R3	Development of Biofilm Resistant Coatings and Evaluation in Simulated Microgravity	2023	U of I	\$100,000



Recent EPSCoR/IDeA Awards in Idaho

Agency	Title	Award Years	Institution(s)	Award Amount (\$)
USDA	6 of 7 AFRI awards	FY16	U of I	\$3,614,585 (61% of total)
USDA	12 of 12 AFRI awards	FY17	U of I, Boise State, ISU	\$2,545,682 (88% of total)
USDA	7 of 12 AFRI awards	FY18	U of I, Boise State	\$3,171,068 (63% of total)
USDA	6 of 10 AFRI awards, inc.*	FY19	U of I, Boise State	\$11,578,423 (95% of total)
USDA	8 of 21 AFRI awards	FY20	U of I, Boise State	\$3,004,362 (42% of total)

Past NSF EPSCoR faculty hires also successfully compete for USDA awards:

BSU: J. Brandt, V. Hillis

UI: T. Hudiburg, F. Liao, G. Murdoch

ISU: M. Burnham

*FY19 includes "Creating a new bioeconomy for dairies to increase nutrient recycling, enhance productivity of crops, & stimulate prosperity in rural America." 2020-2025. Led by U of I: \$10,000,000



Recent Co-Funded NSF Awards to Idaho

	# Grants Awarded	EPSCoR Co-fund \$	Total Project \$
FY16	5	\$1,236,549	\$3,117,085
FY17	3	\$629,029	\$1,258,583
FY18	6	\$1,209,066	\$3,200,014
FY19	3	\$513,723	\$1,586,814
FY20	10	\$1,773,777	\$3,727,664
FY21*	7	\$6,799,960	\$21,587,841
Total	34	\$12,162,104	\$34,478,001

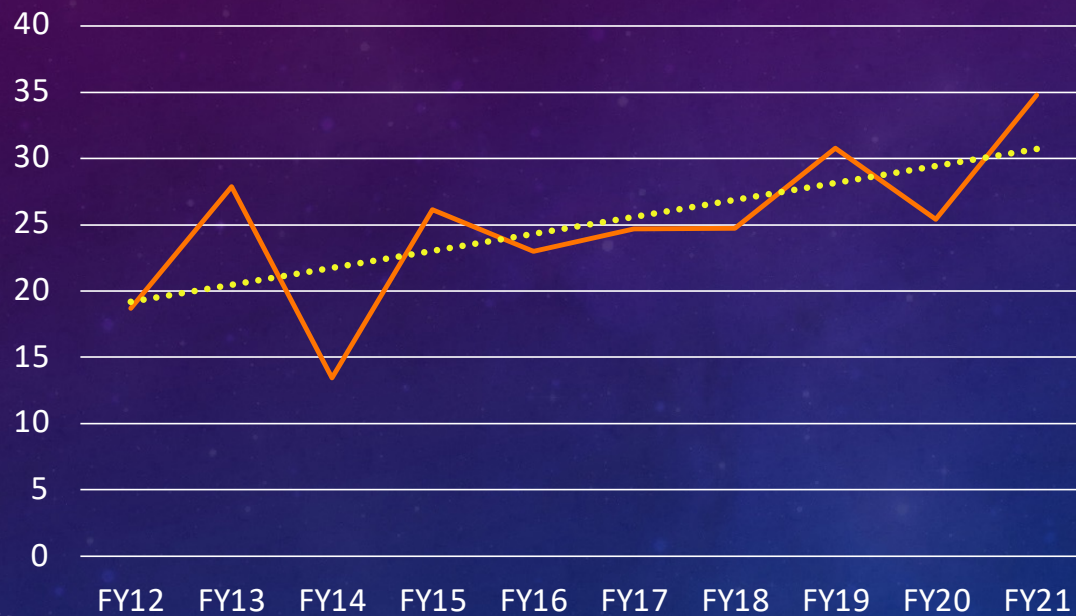


*Including the largest co-Funded Award to Idaho: "Mid-scale RI-1 (M1:IP): A Deep Soil Ecotron facility to explore belowground communities and ecosystem processes." 2021-2026. Led by U of I: \$18,950,955



Idaho's Research Competitiveness at NSF

Idaho's Total NSF funding (\$ millions)



Total NSF funding to Idaho
(FY21) = **\$34.8M**,
51% increase from FY16

NSF EPSCoR eligibility is <0.75%
share of total NSF funding,
excluding EPSCoR RII.

Idaho's share (FY17-21) = **0.28%**



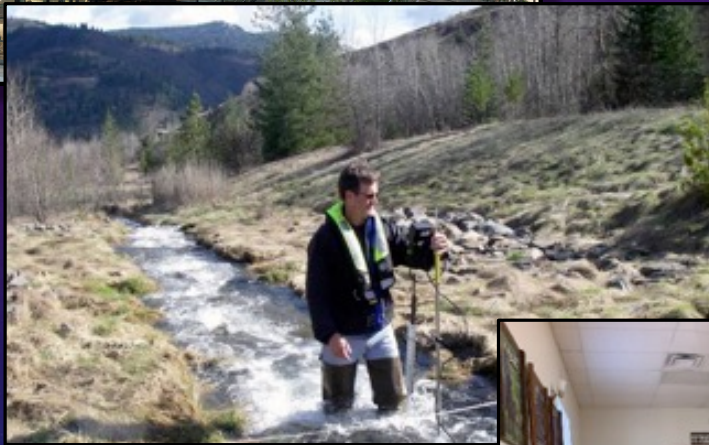
**FUNDING FOR
JURISDICTIONS
UNDER NSF
EPSCOR,
FISCAL YEARS
2012-2021 (\$M)**

2nd, ID

1st, LA

Jurisdiction	Track 1 funding	Track 2 funding	Track 3 funding	Track 4 funding	Co- funding	Other Funding ^a	Total
Arkansas	40.5	8.5	0.8	0.7	17.0	0.3	67.7
Delaware	39.7	14.4	did not receive funding	1.2	14.2	0.1	69.6
Guam	15.2	did not receive funding	did not receive funding	did not receive funding	0.5	0.0 ^b	15.6
Hawaii	28.9	1.0	did not receive funding	1.1	9.7	0.3	40.9
Idaho	40.1	18.7	0.7	0.9	16.3	0.2	76.9
Iowa	12.0	1.0	did not receive funding	0.3	13.2	0.2	26.8
Kansas	31.0	22.2	did not receive funding	1.6	13.2	0.0	68.0
Kentucky	35.9	11.8	0.7	1.5	15.5	0.1	65.6
Louisiana	44.5	21.6	0.7	2.0	17.4	0.1	86.2
Maine	39.7	19.5	0.7	0.6	7.5	0.7	68.7
Mississippi	28.7	17.2	did not receive funding	1.0	\$12.9	0.0	59.9
Missouri	20.4	2.8	did not receive funding	did not receive funding	6.1	0.2	29.5
Montana	32.9	10.4	did not receive funding	1.2	13.5	0.8	58.7
Nebraska	38.6	13.6	0.7	0.8	12.1	0.0	65.9
Nevada	25.4	2.0	0.7	1.0	8.8	0.1	38.0

IDAHO EPSCOR: *INFRASTRUCTURE IMPROVEMENT STRATEGY*



- GEM3 Track-1: Year 5
- I-CREWS Track-1: Under review
- Capacity-building – research, education, WFD, broadening participation, partnerships

Idaho Track-1 RII: “GEM3” *Genes to Environment: Modeling, Mechanisms, and Mapping* - Oct 2018 – Sep 2023



Idaho will lead the nation with thriving, collaborative, and inclusive research to discover and predict how plants, animals, and people interact and adapt to changing environments, resulting in the sustainable management of natural resources.



GEM3 Project Outputs

New
Faculty

- **6 new faculty hired** (5 female / 1 male / 1 URM)

Post
Docs

- **18 post docs** (7 female / 11 male / 1 URM)

Grad
Students

- **67 grad students** (43 female / 24 male / 6 URM)

Under
Grads

- **94 undergrads** (43 female / 51 male / 24 URM)

Students
Graduated

- **20 grad students / 34 undergrad students**

GEM3 Project Outputs

Publications

- **55 pubs** (Year 1-4, GEM3 support)
- **20 pubs** (Year 4 alone, GEM3 support)

NSF Proposals (non-EPSCoR)

- **130 proposals / \$128.9M** (Year 1-4, submitted)
- **60 proposals / \$49.8M** (Year 4 alone, submitted)

NSF Funding (non-EPSCoR)

- **48 awards / \$27.2M** (Year 1-4 awarded)
- **22 awards / \$4.3M** (Year 4 alone, awarded)

GEM3 Project Outputs



G3, 2022, 12(7), jkac122

<https://doi.org/10.1093/g3journal/jkac122>

Advance Access Publication Date: 14 May 2022

Genome Report

A haploid pseudo-chromosome genome assembly for a keystone sagebrush species of western North American rangelands

Anthony E. Melton ^{1,*} Andrew W. Child ² Richard S. Beard Jr ¹ Carlos Dave C. Dumaguit ¹ Jennifer S. Forbey ¹
Matthew Germino ³ Marie-Anne de Graaff ¹ Andrew Kliskey ² Ilia J. Leitch ⁴ Peggy Martinez ¹
Stephen J. Novak ¹ Jaume Pellicer ^{4,5} Bryce A. Richardson ⁶ Desiree Self¹ Marcelo Serpe ¹ and Sven Buerki ¹

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²University of Idaho, Moscow, ID 83844, USA,

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⁵Institut Botànic de Barcelona (IBB, CSIC-Ajuntament de Barcelona), Barcelona 08038, Spain,

⁶Rocky Mountain Research Station, United States Forest Service, Moscow, ID 83843, USA



- **Carlie Sharpes:** Master of Science (Environment Sciences), UI
- **Research problem:** Preserving local ecology through evaluating the combination of hypoxic and thermal stress in redband trout
- **Team:** *Brian Small* (UI Hagerman), *Chris Caudill* (UI fisheries), *Shawn Narum* (Columbia River Inter-Tribal Fish Commission), *Jonathan Masingale* (UI PhD student), and *Zhongqi Chen* (UI post-doc).

GEM3 Project Outputs



- **Ben Kline:** Master of Science (Biology), ISU
- **Research problem:** genetic variation of redband trout comparing wild trout populations from different areas of Idaho with contrasting thermal regimes from desert and montane ecosystems.

GEM3 Project Outputs



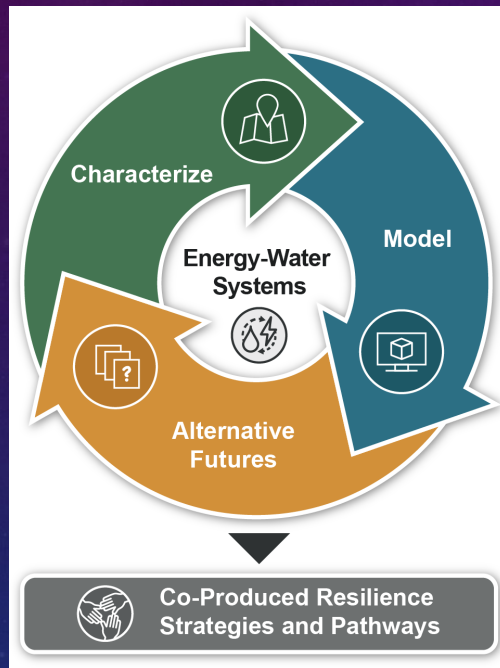
- **Anna Ringelman:** Master of Science (Biology), ISU
- **Research problem:** habitat quality for redband trout in desert and montane streams to determine how seasonal changes in streamflow, temperature, and food availability limit the abundance of suitable habitat using a bioenergetic foraging model



- **Jacob Heil:** PhD (Biology), BSU
- **Research problem:** characterizing the leaf-associated microbiome (fungi and bacteria) of big sagebrush, and the impacts of microbiome on plants and animals
- **Team:** Leonora Bittleson (BSU Biology), Miranda Striluk (CWI), Rachel Capezza (BSU SARE undergrad), Aubrey Osorio (BSU SARE undergrad),

RII TRACK-1: NEW SUBMISSION

IDAHO COMMUNITY-ENGAGED RESILIENCE FOR ENERGY-WATER SYSTEMS (I-CREWS)



Critical national and state need: enhancing access for communities to diagnostic science for proactively addressing impacts of climate, population, and technological change on the interplay between energy and water

Scientific vision: build a world class capacity to characterize, model, and assess a range of futures to promote the resilience of E-W systems to climate, population, and technological change

Submitted: Aug 19, 2022



RII TRACK-1: I-CREWS SUBMISSION



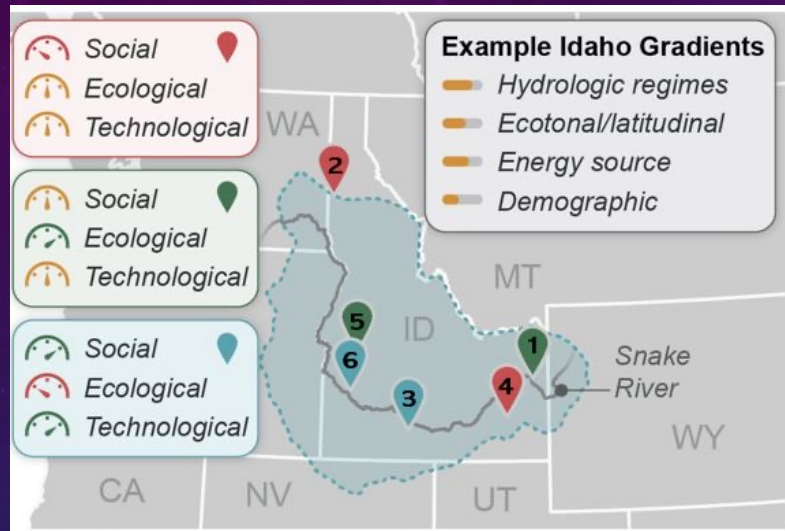
Partnership among Idaho's 3 research universities, 3+ publicly funded colleges, 3+ tribal governments, Idaho National Lab/CAES, and numerous other communities, industry groups, and agencies

State of Idaho alignment: supports the 2022 Idaho Higher Education Research Strategic Plan

- extend and enhance Idaho's research capacity in existing areas of strengths in the geosciences, biological sciences, social sciences, water and energy modeling, and resilience science
- grow Idaho's nascent research capacity in computational modeling, machine learning, and artificial intelligence



RII TRACK-1: I-CREWS SUBMISSION



I-CREWS uses a multi-scale resilience testbed that spans regional-scale to watershed-scale to local-scale to characterize, model and develop alternative futures for energy-water systems

Addresses questions on energy-water storage, efficiency, conservation, local knowledge, and governance dynamics

Building Research Competitiveness through EPSCoR/IDeA



<https://www.idahoepscor.org>



<https://www.idahogem3.org>



<https://www.nsf.gov/od/oia/programs/epscor/>



<https://basicresearch.defense.gov/Pilots/DEPSCoR-Defense-Established-Program-to-Stimulate-Competitive-Research/>



<https://science.osti.gov/bes/epscor>



<https://www.nigms.nih.gov/Research/DRCB/IDeA/Pages/default.aspx>



<https://www.nasa.gov/stem/epscor/home/index.html>



<https://www.nifa.usda.gov/grants/programs/agriculture-food-research-initiative-afri/afri-fase-epscor-program>

IDAHO NSF EPSCoR PROJECT ADVISORY BOARD (PAB) REPORT ON THE
IDAHO EPSCoR RESEARCH INFRASTRUCTURE IMPROVEMENT TRACK-1
COOPERATIVE AGREEMENT
(#IIA-1757324)

YEAR FOUR
DECEMBER 2021

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INTRODUCTION

The RII project “Linking Genome to Phenome to Predict Adaptive Responses of Organisms to Changing Landscapes” was funded by the National Science Foundation (NSF) Established Program to Stimulate Competitive Research (EPSCoR) and led to the Idaho Research Infrastructure Improvement (RII) Track-1 Cooperative Agreement. The project is referred to as *GEM3* for *Genes to Environment: Modeling, Mechanisms, and Mapping*. The Idaho EPSCoR Project Advisory Board (PAB) met virtually December 7-10, 2021 as part of the *GEM3* annual meeting to hear progress toward the goals set forth in the Strategic Plan, which was approved in May 2019. The theme of the meeting was “Creative Connections,” and the meeting was structured with both presentations and discussion/networking time. The PAB was asked to provide objective feedback on the progress to date as compared to the milestones for year four as well as progress on the recommendations and responses to the NSF virtual Site Visit (vSV) report. A roster of current PAB members is provided in Appendix A.

NSF EPSCoR funded this 60-month award in October 2018 at \$20 million over five years. The State of Idaho has committed to contribute \$4 million in additional funds towards the project over the five-year period. The University of Idaho (UI) is the fiscal agent for the award, and Boise State University (BSU) and Idaho State University (ISU) receive funding through subcontracts. Dr. Andy Kliskey is the Idaho EPSCoR/IDeA Project Director (PD) and the Principal Investigator (PI) for the RII Track-1 Cooperative Agreement. Co-Principal Investigators are Dr. Christopher Caudill (University of Idaho), Dr. Jennifer Forbey (Boise State University), and Dr. Colden Baxter (Idaho State University).

This report is intended to provide feedback to help the GEM project team as they work toward the goals and objectives of Year 4 as outlined in their Strategic Plan. This report is comprised of three parts: notable strengths of the project, challenges and recommendations, and conclusions.

STRENGTHS

The GEM3 leadership team continues to propel this project forward with very positive outcomes in all areas. The EPSCoR office is an efficient support mechanism to ensure that leadership is supported as they work toward the goals outlined in the Strategic Plan. The entire project team and support staff should be commended for their resiliency despite the challenges presented by Covid-19. Below are the identified strengths in Research, Education, Diversity, Equity and Inclusion as documented by the PAB at this fourth GEM3 annual meeting.

Research

Last year, the PAB highlighted the importance of integration and synthesis as the Idaho EPSCoR project moved into the later phases of the project. The theme of the annual meeting this year was creative connections, which often come from effective synthesis and integration, where integration is defined as the act or process of uniting different themes and synthesis is defined as the combining of diverse concepts into a coherent whole. The PAB applauds the progress that the project has made to date on

pulling together the disparate parts of this ambitious project. The team should continue to focus on integration, synthesis, and creative connections in the last two years of the project. Specifically, spend time thinking about the major integrative, synthetic, and creative publications that could put an exclamation point on this endeavor.

Along the lines of synthetic efforts, many of the posters within the sessions were pieces of a larger puzzle, and in discussions with senior PIs on the GEM3 project this is no accident. Assembly of these pieces into a fully synthetic Social and Economic Systems (SES) assessment represents a major challenge on many levels – e.g., conceptual, computational, logistical. The team is envisioning what these synthesis products will look like, and the well-developed computational resources will not be a limiting factor. The depth and breadth of discussion on data stewardship will allow further syntheses beyond the tenure of GEM3.

The PAB noted excellent progress in all research areas. There is exciting progress in getting common garden results that will be very helpful in creating/parameterizing the trout ABM. The diagram for the vSV response showing how Agent Based Models (ABMs) are fed by and feed the other components is excellent and important to keep at the forefront. The "1,000-foot-level" diagram indicates how the ABMs receive their inputs and what outputs they provide to SES components, really highlighting the work remaining. It should be understood by all of the participants, as it is a unifying view that is very important.

The genomic work is excellent across the board. The sagebrush work is doing well, and the PAB was pleased to see other species brought into the research (e.g., jackrabbits). There also was good progress in hydrology and fires and a buildup on the landscape layers and mapping components.

Barrie Robison's summary of the work describing thermal environmental effects and riparian habitat as a function of grazing and of species/subspecies/ploidy in sagebrush as inputs to the ABM models was excellent. Including the outputs from Travis Seaborn's ABMs as inputs to the eco-evo scenarios appears to be progressing. Gaining the capability to predict thermal scenarios and thermal refuges based on land use and climate change scenarios would be remarkable. This is excellent and important work.

Another strength is the number and diversity of moving parts within the scope of this effort, ranging from detailed studies of evolutionary potential using modern genomic techniques to qualitative assessments of social systems and the positions of stakeholders. Inclusion of both terrestrial (sagebrush) and aquatic (redband trout and streams) is an important strength of the effort.

The publication record is strong and appropriate for this stage of the project. The high level of grant proposal success of the GEM3-recruited junior faculty members is praiseworthy, and is a good indicator of the quality of the faculty that this EPSCoR/GEM3 team has been able to recruit. People are one of the most important products of science, and the PAB was impressed by the level of mentorship and engagement of students from beginners to seasoned postdocs. People at every level are committed to paying it forward.

Education, Diversity, Equity and Inclusion

The pervasive emphasis on Diversity, Equity and Inclusion (DEI) was commendable. This is a rapidly evolving topic, and in many other projects of this type there aren't formal processes to address DEI. The PAB recognizes that formal processes are not always the solution. The project has taken a serious approach in focusing on the questions and the issues and developing creative processes and programs to meet the needs of the GEM3 community. Diversity was evident in the people involved in GEM3 research, which demonstrates that not only is DEI being spoken to, but it is producing real outcomes in terms of engaging and advancing diverse individuals in this effort. This should pay dividends not only for ongoing research but also in diversifying the field in the future.

The PAB continues to be impressed by the progress in integrating Tribal science into the overall project. The two new Tribal Visiting Scholar positions, one at UI and one at ISU, indicate that huge strides have been made in ensuring that the Tribes are represented as true partners in the scientific enterprise. The work at Boise State in recruiting diverse faculty is commendable, and lessons learned there should be shared broadly across the state to ensure a diverse scientific workforce for the future.

The VIP project is very novel and successful in meeting its goals. Graduate students, post-doctorates and faculty are engaged in the program and are gaining valuable mentoring skills through both formal workshops and through the network of others in the program. The VIP infrastructure is well-established at BSU and is beginning to gain traction at other campuses.

Project Scientia is a unique program that is helping both graduate students and undergraduates understand the importance of making science accessible to all. Likewise, the new CIRCLES Alliance is fostering partnerships across the state that will embed Diversity, Equity and Inclusion into the culture of Idaho.

CHALLENGES & RECOMMENDATIONS

The PAB noted that the biggest challenge in research at this stage of the project is synthesizing work to date. The PAB would like to see more specifics on how the various parts of different studies will be integrated. This would not necessarily be one huge integrated SES simulation (i.e., the problem of the mythical country that kept improving its map until the map itself was larger than the country), but some form of synthesis to advance big ideas about adaptive capacity (in the social and evolutionary sense) and how they can inform society in general about climate adaptation and other applications. This is not a small task, particularly with the difficulties of in-person meetings due to the pandemic, and could easily take up the majority of time remaining in GEM3 across investigators to realize this. On the other hand, this is one of the perhaps most novel insights the project can offer as a whole. For example, how is it possible to connect the adaptive capacity of social and ecological systems across terrestrial and aquatic ecosystems? What are the major feedbacks, challenges, uncertainties, and lessons learned that can be applied to future research and climate adaptation efforts? The diversity of projects and people was impressive, but how the projects can be unified at the conclusion of this effort remains to be seen.

Additional clarity on what next steps might look like to bring many of the GEM3 products to completion after the 5 years have passed would be helpful. This relates not to new data collection but to synthesis. Much of this synthesis might come from active postdoctoral scientists and soon-to-be-finishing PhD students, as well as the PIs. Are there opportunities to provide some extended support for these individuals beyond the 5-year lifespan of GEM3?

The new supercomputing facility may enable faster running of larger models, but modeling expertise to design the models and data science expertise to turn experimental data into the required parameters for those models will be the limiting factors, and seem to be in short supply relative to the effort devoted to -omics, field work, and common garden work. How can that be bolstered for the final two years of the project? Are there additional faculty members at the three schools whose labs could contribute? Could another post-doc be added? Can more grad students with strong math modeling skills be supported? What other steps could be taken? Jenn Forbey's emerging collaborations with faculty and students at University of Wyoming are an excellent start in this direction, but are other resources also available among the three universities?

There is significant human capital involved in this project, and it will be important to support the people of the project as it comes to completion. Efforts being undertaken to hire Travis Seaborn and Georgia Hart Fredeluces into faculty positions are critical to the legacy of this project and to the sustainability of the partnerships forged in the GEM3 team. These should be vigorously pursued. The massive and multifaceted research effort has been a great success and resulted in a lot of great projects, relationships, and capacity building. As the GEM3 project comes to the end of its 5-year cycle, it seems like there is value in providing additional funds to finish some major projects – particularly synthetic projects that are very difficult to line up and complete within just 5 years.

In discussions with students, the PAB noted that Covid-19 has presented challenges due to a lack of in-person meetings. Students would like to see a spring meeting organized that could potentially be conducted primarily in a Covid-safe outdoor setting, and the project team has already started working on plans for at least one spring meeting. Ideas that were generated from students included a workshop where students could present their work to each other in 15-minute talks and a career panel and/or workshop where students could learn about different career pathways available to them after graduate school. The latter should include different types of jobs such as with government agencies and NGOs in addition to traditional academic career paths. There was also interest in a graduate student (and perhaps post-docs) field trip, again pointing to outdoor field sites being relatively Covid-safe. Travel funds could be provided to incentivize participation.

The Tribal Visiting Scholar positions and relationships with Tribes should continue to be a priority for the project and the institutions involved. The critical linkages to science and community embedded in the Tribal partnerships provide an unparalleled opportunity to make indigenous ways of knowing and traditional ecological knowledge foundations of the scientific enterprise. Idaho can be a model from which others can learn how these productive partnerships can benefit all.

The PAB recognizes the important Diversity, Equity and Inclusion work of this project and looks forward to seeing future updates on how diversity within Idaho's science improves due to the groundwork laid by GEM3 and previous EPSCoR Track I and II projects. The current students, post-doctorates, and early career faculty would benefit from being better integrated into the bigger context of GEM3 and its goals, helping them see how their research fits into the overall project and its long-term goals. The opportunities for students and post-doctorates to get together and discuss their science should be vigorously pursued to help cross-pollinate between research efforts. These gatherings are critical to ensuring that the synthetic manuscripts and proposals come to fruition in the last two years of GEM3.

CONCLUSIONS

The PAB would like to give high accolades to all of the faculty, staff, and students involved in GEM3. The unprecedented difficulties faced in the last two years did not change the team's focus on pursuing the goals set forth in the Strategic Plan. The obstacles are being overcome through much hard work and flexibility by the participants. The Project Director and Project Administrator are doing an excellent job. This annual meeting showcased the extensive work in Research, Education, Diversity, Equity and Inclusion that has been accomplished since the project began. The recommendations made by the PAB are intended to help the project team as they continue their important work and look toward synthesis of research outcomes and sustainability of key components as GEM3 moves into its final stages.

Appendix A. Project Advisory Board Members

Name	Affiliation
Clifford Dahm	Professor Emeritus of Biology, University of New Mexico; Former Lead Scientist, California Delta Science Program
Jason Dunham	Supervisory Research Ecologist/Professor, USGS; Courtesy Faculty Appointment, Department of Fisheries & Wildlife-Aquatic Ecology, Oregon State University
Erik Goodman	Executive Director, BEACON Center for the Study of Evolution in Action; Professor of Electrical and Computer Engineering and of Mechanical Engineering and of Computer Science and Engineering, Michigan State University
Michael Khonsari	Dow Chemical Endowed Chair, Professor of Mechanical Engineering, Louisiana State University; Project Director, LA EPSCoR PD; Associate Commissioner for Sponsored Research and Development Programs, Louisiana Board of Regents
Christine Ortiz	Morris Cohen Professor of Materials and Science and Engineering; Bio; Biotechnology; Nanotechnology; Polymers; Massachusetts Institute of Technology
Camille Parmesan	Professor, CNRS Ecology Institute (SETE), Moulis, France; School of Biological & Marine Sciences, Plymouth University, U.K.; Department of Geological Sciences, University of Texas at Austin, U.S.A.
Anna Waldron (PAB chair)	Evaluation Consultant and Principal at Waldron Educational Consulting, LLC