



New Hampshire

Department of Education

Learn Everywhere Program Renewal Application

1.0 Applicant Information [Ed 1403.01(b)(2)].

Organization Name: Advanced Regenerative Manufacturing Institute, Inc.

Name of Primary Contact: Christy Johnson, Director of Education & Workforce Development

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2.0 Purpose, mission statement, or both [Ed 1403.01(b)(1)].

The Advanced Regenerative Manufacturing Institute (ARMI) is a New Hampshire membership-based, not-for-profit organization. It was initially awarded \$80 million by the Department of Defense to operate the BioFabUSA program.

The mission of ARMI | BioFabUSA is to enable the scalable, consistent, and cost-effective manufacturing of engineered tissues and tissue-related technologies to benefit existing industries and grow new ones. As a part of this effort, ARMI | BioFabUSA is working to close the educational skills gaps in tissue engineering and organ manufacturing through accessible education and training opportunities.

BioTrek, a program of BioFabUSA, is a dynamic project-based learning initiative designed to equip students with a comprehensive understanding of the biofabrication industry and its vast career opportunities. Through hands-on activities and collaborative projects, students gain foundational knowledge in biofabrication, while also developing essential skills in entrepreneurship, innovation, and presentation. BioTrek fosters creativity and critical thinking, empowering students to explore the intersection of biology, engineering, and business, and to envision and communicate their ideas for the future of this cutting-edge industry.

3.0 A description of the demonstrated instructor qualifications required for the program(s) and a statement assuring that the instructor(s) satisfies those qualifications [Ed 1403.01(b)(3)].

The designated instructor for the ARMI | BioFabUSA BioTrek program will have a college degree in STEM from an accredited college or university.

ARMI | BioFabUSA assures that all instructors will satisfy the above qualifications requirement.

- 4.0** **Either a criminal history records check policy that provides for an annually recurring records check or a one-time records check upon employment and includes a statement affirming that the sponsoring entity shall not allow instruction or student contact by a person who has been charged pending disposition for, or convicted of, any violation or attempted violation of any of the offenses outlined in RSA 189:13-a, V; or a statement that a criminal history records check policy is not included in the applicant’s learn everywhere program.**

The applicant shall also provide a statement assuring they will notify the parents, in writing, regarding its criminal records check policy prior to the enrollment of a student in the learn everywhere program. [Ed 1403.01(b)(4)].

In accordance with SaF-C 5703.06-11, “All staff, contractors, and volunteers will be subject to a criminal background check and child welfare and private adoption agency systems check as required by He-C 4003.14 – “Verification of Staff Qualifications.”

ARMI will complete pertinent staff background checks before students enter the facility.

ARMI | BioFabUSA affirms that they shall not allow instruction or student contact by a person who has been charged pending disposition for, or convicted of, any violation or attempted violation of any of the offenses as outlined in RSA 189:13-a, V pursuant to a criminal history records check conducted by the department of safety as outlined in Saf-C 5703.06 through Saf-C 5703.11.

ARMI | BioFabUSA affirms that they shall notify the parents, in writing, regarding its criminal records check policy prior to the enrollment of a student in the Learn Everywhere program.

- 5.0** **Identification of the required subject from Ed 306.27(v) for which students completing the learn everywhere program shall receive high school credit(s) [Ed 1403.01(e)(1)(a)].**

Students that successfully complete the ARMI | BioFab BioTrek program would be awarded a certificate for 0.5 credit as an Open Elective toward meeting high school graduation requirements. Future enhanced iterations may offer science credit.

- 6.0** **An outline of each program for which approval is sought, which includes goals, competencies, a detailed description of the course of instruction, and a description of expected student outcomes [Ed 1403.01(e)(1)(b)].**

The hour BioTrek program is offered to schools as a five-week program that is embedded within their science-based classes, including biology, anatomy and physiology or CTE health science, etc. The Learn Everywhere extended learning opportunity model offers a 25 hour weeklong summer workshop or equivalent after school version for participating schools.

The BioTrek programs align with NGSS and Career standards.

Code	Standard	Alignment
HS-LS1-1	Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.	<p>BioTrek introduced students to six main components necessary for building a Tissue Engineered Medical Product (TEMP):</p> <ol style="list-style-type: none"> 1. Cellular Component <ol style="list-style-type: none"> a. Students need to decide which cell type they would like to use in their TEMP, which supports the idea of specialization. 2. Scaffold (Biomaterial) <ol style="list-style-type: none"> a. This prompts students to understand the physical structure of an organ, which allows them to understand the context for the Central Dogma (as described in the standard) and introduces the relationship between structure and function. 3. Media (Biomolecules) <ol style="list-style-type: none"> a. The concept of "cell food" allows students to understand the requirements necessary for systems of specialized cells to thrive. 4. Growth factors/hormones/metabolites (Biomolecules) <ol style="list-style-type: none"> a. Growth factors are an integral part of the Central Dogma and allow students to apply the standard to a relevant situation as they design their TEMP. Growth factors are proteins and provide a concrete connection to the DNA to protein pathway. 5. Stimuli <ol style="list-style-type: none"> a. Once again, this allows students to understand the requirements necessary for cell proliferation. 6. Equipment and growth environment <ol style="list-style-type: none"> a. Once again, this allows students to understand the requirements necessary for cell proliferation.

Code	Standard	Alignment
HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.	A TEMP is an organ, and to understand how to design one, students need to understand its structure and functions. Students will research the organ's relevance to the human body as a whole as well as interacting systems within the organ itself.
HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	Students identify a problem within human biology upon which to base their project. This problem is an issue with homeostasis and response to stimuli. Their task is to understand the concepts necessary to build their TEMP and solve it.
HS-LS1-4	Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	Students will dive deep into cellular differentiation when deciding on the cellular component of their TEMP. They will investigate the process and reason behind differentiation in order to choose the consequent elements of their TEMP.
HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.	Students will identify a complex real-world problem in the medical field and health care industry and evaluate a tissue-engineered or biofabricated solution based on prioritized criteria and trade-offs that account for a range of constraints, including cost, efficiency, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

Learning Outcomes:

Students will learn to accurately explain and apply concepts of:

- Biofabrication,
- Biomanufacturing,
- Regenerative medicine,
- Regenerative manufacturing,
- Cell biology
- Cell differentiation
- Transplantation
- Advanced technologies, and
- Tissue engineered medical products (TEMP).

Students should have prior understanding of basic biology concepts or have already successfully completed a biology course prior to signing up.

Students will explore core principles of BioTrek:

- Career opportunities
- Entrepreneurship
- Next-generation technologies of biofabrication

Students will work in teams improve skills of:

- **Collaboration**, by working with the team to identify a problem focus and product strategy
- **Independence**, by completing assigned tasks
- **Leadership**, by taking charge organically

Students will develop academic skills:

- **Research** limitations and challenges of the healthcare field to offer treatments for debilitating diseases and injuries.
- **Evaluate** current treatments and **conceptualize** a superior alternative
- **Gather and analyze** demographic and financial data
- **Present findings** to different audiences

In the four phases of the BioTrek programs, the core principles are embedded within a student-led, design-thinking approach to problem solving that motivates students to assume the role of scientists, engineers, and business entrepreneurs. Students research, debate, then by consensus agree to focus on one medical problem that can be addressed with the science of biofabrication.

Phase 1: Problem Identification

Student teams discuss medical-related problem options then concentrate on a specific problem area that holds real meaning for them, i.e. ACL repair, heart disease, cancer. In a collaborative learning model, students will research problem to identify data, demographics, and relevant advances in treatment to conceive a tissue engineered medical product (TEMP) that could offer a better treatment of that problem. Students focus on improving outcomes for patients.

The process encourages students to develop a sense of empathy as they research the problem and

come to understand the impact of the problem in their family, community, or society as a whole.

Phase 2: Product Development

Students research challenges in the healthcare system and medical problems that can be addressed with the science of biofabrication and biomanufacturing. Through direct instruction enhanced by independent research, teams of students learn how to approach and solve complex problems.

They will be prepared to accurately use and apply relevant terminology.

Terminology learned:

- TEMP, tissue engineered medical product
- Autologous
- Allogeneic
- Growth factors and media
- Bioreactors
- Cell Growth and differentiation
- Decell-Recell
- 3D Bioprinting
- Stem cells
- Scaffolds
- Biocompatibility
- iPSC (induced pluripotent stem cells)
- MSC (mesenchymal stem cells)

Phase 3: Business model and Entrepreneurship

Students develop a sense of entrepreneurship as they formulate an imaginary business entity that will identify problem data, marketing strategy, and financial models for their conceived TEMP. They will be prepared to explain relevant terminology.

Terminology learned:

- Outsource
- Financial modeling
- Gross profit margin
- Target market
- Market gap
- Entrepreneurship

Phase 4: Presentation

In the final presentation experience of Phase 4, students demonstrate understanding of what they learned by accurately applying terminology and explaining methods in their responses to questions from the panel of judges. In this process, students:

- Learn how to interact with industry advisors,
- Apply learned knowledge to new perspectives
- Develop presentation skills

As a result of these unique experiences, students gain:

- Perspective on the professional opportunities available in the advanced

manufacturing and technology sectors

- Increase awareness of the education and training pathways required to work in these fields

The BioTrek program is aligned with the NGSS and Career standards.

7.0 A plan for recording student progress in meeting expected student outcomes [Ed

Recording progress:

Formative written assessment, class and individual discussion, teacher observations, and final summative assessment can be documented.

8.0 A description of assessments of student learning outcomes, including, but not limited to:

- 1. Instructor observation of project-based learning, including off-site learning projects;**
- 2. Competency-based or performance-based assessments;**
- 3. Instructor observations of student performance;**
- 4. Project evaluation rubrics used to evaluate program proficiencies; and**
- 5. Other assessment approaches as determined by the applicant's learn everywhere program**

[Ed 1403.01(e)(1)(d)].

Observation, formative assessment rubrics, and summative assessment rubrics will be used for each phase of the program to assess understanding of essential terminology and advanced technologies as presented. Rubrics are included below for reference.

The final presentation serves as a **summative assessment** of knowledge acquired. For the problem they chose, the student teams present their learning to identify, quantify, and explain the tissue engineered medical product conceived to address that problem. Their business plan will exemplify their understanding of financing, business strategy, market analysis, and marketing of that product.

Students are expected to apply research and the aforementioned terminology with at least 80% accuracy within the required components of the presentation pitch deck or scientific poster. The built in Question and Answer period with industry representatives provides additional exposure to the academic and entrepreneurial requirements.

Final presentation components:

- Problem overview
- Product development and components
- Key industry partners
- Treatment methods
- Financial modeling
- Selected advanced technologies
- Shared team presentation roles
- Presentation skills

Long term outcome:

The ultimate goal of BioTrek is to illuminate diverse education, training, and career opportunities within the industry of biofabrication and inspire students of all backgrounds to include and consider biofabrication in their post-high school planning dialog. ARMI seeks to open career opportunities to everyone interested in joining the biofabrication workforce. Exposure to this new field, the science and technology involved, and the many types of professional careers that comprise it will increase awareness and broaden the aspirations of students who participate in this program

9.0 The number of credits the program will fulfill [Ed 1403.01(e)(1)(e)].

Students will earn 0.5 credits at the completion of the 5 day or 25 hour course.

10.0 A description of the competency-based grading system [Ed 1403.01(e)(1)(f)].

Students will demonstrate an understanding of ARMI I BioFabUSA BioTrek career pathways component by explaining the required responsibilities and training for the careers addressed.

BioTrek Assessment

Assessment	Formative or Summative?	Grade scale	Grading criteria
Problem Pitch Presentations Teacher Graded or Self-Assessment	Formative or Summative	/20	Problem Pitch Rubric
Phase 1 Workbook Check	Formative	/20	Formative Assessment Rubric
Industry Day Activity	Formative	/20	Formative Assessment Rubric
Systems Diagram Check-in (Phase 2 Workbook Check)	Summative	/12	Systems Diagram Check-in Rubric
College Day Activity	Formative	/20	Formative Assessment Rubric
Phase 3 Workbook Check	Formative	/20	Formative Assessment Rubric
Final Pitch Rehearsal Teacher graded	Formative	/15	Rehearsal Feedback Form and Rubric
Self-Assessment or Peer Evaluation	Formative	/20	Formative Assessment Rubric
Final Pitch and Project Grade	Summative	/28	Final Pitch Rubric
Final Pitch Self-Assessment	Summative	/20	Final Pitch Rubric

Supplementary Assessment

Assessment	Formative or Summative?	Grade scale	Grading criteria
BioFab Explorer Activity	Formative	/20	Formative Assessment Rubric
Bioreactor Lab Activity	Formative or Summative	/20	Formative Assessment Rubric
Ghostly Heart Activity	Formative	/20	Formative Assessment Rubric
Peer Evaluation/Collaboration Grade	Summative	/20	Peer Evaluation Responses and Rubric

FORMATIVE ASSESSMENT RUBRIC



	Advanced (4)	Proficient (3)	Developing (2)	Emerging (1)
Completion	All questions complete.	Most questions complete.	Some questions complete.	One or two questions complete.
Clarity & Engagement	Goes above and beyond - answers are thorough and well-articulated.	Answers questions clearly and accurately.	Attempts to answer questions but with little clarity.	Struggling with communicating clear thoughts/answers.
Productivity & Self Direction	Advanced effort to develop ideas, produce work and use time well. Accessed available resources when needed.	Proficient effort to develop ideas, produce work and use time well. Sometimes accessed available resources.	Some effort to develop ideas, produce work and uses time. Rarely accessed available resources.	Minimal or no effort to develop ideas, produce work, and use time well. Never accessed available resources.
Teamwork	Works to complete all group goals. Always has a positive attitude about the tasks and work of others. Contributes equally and is well prepared for teamwork.	Usually helps to complete group goals and maintain a positive attitude about the work of others. Assists team members in the project and is prepared to contribute.	Occasionally helps to complete group goals. Sometimes acts negatively to the work of others. Finishes individual tasks but does not assist team members.	Does not work well with others and shows no interest in completing group goals. Often displays a negative attitude toward others and makes little to no contribution.
Grammar	Precise language and vocabulary used. Virtually free from mechanical, grammatical, punctuation, and spelling errors.	General language and vocabulary used. Occasional mechanical, grammatical, punctuation, and spelling errors.	General language and some vocabulary used. Several mechanical, grammatical, punctuation, and spelling errors.	General language with no use of vocabulary. Many mechanical, grammatical, punctuation, and spelling errors.

Notes:|

Total Score _____ / 20



PROBLEM PITCH RUBRIC

	Advanced (4)	Proficient (3)	Developing (2)	Emerging (1)
Problem Identification	Problem context and causes are clearly described and are supported with ample statistical and anecdotal evidence.	Problem context and causes are stated and are supported with some statistical and anecdotal evidence.	Problem context is described but lacks and causes. Limited supporting data is used.	Problem is unclear and almost no supporting data is used.
Existing Solutions	Existing solutions are identified in detail (efficiency, cost, comfort, etc.).	Existing solutions are identified at surface level.	Only one existing solution is mentioned but is not described in detail.	Existing solutions are not identified.
Quantify the Problem	Quantifiable data and a highly detailed, heart-felt, case story is used to identify demographics and pertinence of problem.	Quantifiable data and a detailed case story are used to identify demographics and pertinence of problem.	Some quantifiable data and a simple case story are used to identify demographics and pertinence of problem.	Limited to no quantifiable data is used and lacks a case story to identify demographics and pertinence of problem.
Presenter Performance	Speaks clearly with virtually no filler words. Confident posture and makes eye contact with the audience. Includes smooth, balanced team participation.	Speaks clearly with minimal filler words. Semi-confident posture and makes eye contact with the audience. Includes some balanced team participation.	Speaks mostly clearly with several filler words. Collapsed posture and makes little eye contact with the audience. Includes unbalanced team participation.	Speaks quietly with many filler words. Collapsed posture and lacks eye contact with the audience. No balanced team participation.
Time	Presentation is between 3-4 minutes long.	Presentation is over 4 minutes long.	Presentation is between 2-3 minutes long.	Presentation is less than 2 minutes long.

Notes:

Total Score _____ / 20



SYSTEMS DIAGRAM CHECK-IN RUBRIC

	Advanced (4)	Proficient (3)	Developing (2)	Emerging (1)
Components & Terminology	Shows a strong understanding of the TEMP components and uses appropriate terminology. No misconceptions or errors evident.	Makes few mistakes in terminology or shows a fair understanding of the TEMP components. Few misconceptions are evident.	Makes mistakes in terminology and shows a lack of understanding of many components. Some misconceptions are evident.	Shows no understanding of the TEMP components and terminology. Many misconceptions are evident.
Justification & Evidence	All justifications are detailed and accurate, indicating thorough understanding of all TEMP components.	Most justifications are accurate but lack detailed explanations, indicating fair understanding.	Some justifications are accurate but offer vague explanations, indicating lack of understanding.	No justifications are accurate, indicating many misconceptions and lack of understanding.
Grammar	Precise language and vocabulary used. Virtually free from mechanical, grammatical, punctuation, and spelling errors.	General language and vocabulary used. Occasional mechanical, grammatical, punctuation, and spelling errors.	General language and some vocabulary used. Several mechanical, grammatical, punctuation, and spelling errors.	General language with no use of vocabulary. Many mechanical, grammatical, punctuation, and spelling errors.

TEMP components include:

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> • Cells • Media • Growth Factor | <ul style="list-style-type: none"> • Bioreactors • Scaffolding • Stimuli | <ul style="list-style-type: none"> • Quality Control • Automation |
|---|---|---|

Notes:

Total Score _____ / 12

	Advanced	Proficient	Sufficient	Approaching
Collaboration	Team members participated to the best of their ability. Conversations were respectful and the feedback process was mostly constructive and polite.	Team members for the most part participated to the best of their ability. Conversations were largely respectful and the feedback process was mostly constructive and polite.	Participation was not this team's strength. Conversations were largely not productive and feedback was met with negativity or feedback was rarely given.	Participation levels prevented the group from getting anything done. Conversations were completely disrespectful and the feedback process was negative or nonexistent.
Communication	Team members communicated well (meaning deadlines were met, tasks were delegated, and all members were involved).	Team members communicated well, but there were some problems (like a missed deadline due to a miscommunication)	Team members struggled with communication, and there were many problems that could have been avoided by communicating	Team members communicated poorly, and the group's progress was significantly hindered by their inability to do so.
Final product	We are very proud of our final product. It was the product of all of our hard work and each member feels a sense of ownership over the content.	We are mostly proud of our final product, although there are definitely things we could have done better. Most team members feel a sense of ownership over the content.	The final product is not representative of our best work. Team members have variable senses of ownership over the content.	The final product is nonexistent or meets almost none of the criteria. Team members feel no ownership over the content.
Ability to focus and deliver	Our team's meetings were very productive and we made tangible progress during every class meeting. Team members consistently completed individual work on time, allowing the group to progress.	Our team's meetings were mostly productive, although there were some points of distractions. Team members generally completed individual work on time.	Our team's meetings were commonly unproductive, although we made some progress. Team members inconsistently complete individual work on time, hindering the progress of the group.	Our team's meetings were exclusively unproductive and it was hard to make progress. Team members did not complete individual work at all, or they completed it past deadlines so that the group could not progress.





FINAL PITCH RUBRIC

	Advanced (4)	Proficient (3)	Developing (2)	Emerging (1)
Content	Content follows requirements, is highly relevant, contains accurate information, and demonstrates a thorough understanding.	Content follows requirements, contains accurate information, and demonstrates an understanding.	Content meets most requirements, contains mostly accurate information.	Content does not meet requirements, contains misinformation and lack of understanding.
Presenter Performance	Speaks clearly with virtually no filler words. Confident posture and makes eye contact with the audience. Includes smooth, balanced team participation.	Speaks clearly with minimal filler words. Semi-confident posture and makes eye contact with the audience. Includes some balanced team participation.	Speaks mostly clearly with several filler words. Collapsed posture and makes little eye contact with the audience. Includes unbalanced team participation.	Speaks quietly with many filler words. Collapsed posture and lacks eye contact with the audience. No balanced team participation.
Professionalism	Professional attire and demeanor.	Appropriate attire and demeanor.	Attire or demeanor need improvement.	Attire and demeanor need improvement.
Slide Deck or Scientific Poster	Effective use of visuals, clear and well-organized, professional appearance, and consistent theme and branding.	Good use of visuals, organization, and follows a theme and branding.	Minimal use of visuals, organization, and/or somewhat follows a theme and branding.	No use of visuals, no clear organization, and does not follow a theme or branding.
Q&A Interaction	Handles all questions with confidence and provides insightful responses. Engages the audience with knowledgeable responses.	Responds to questions with confidence. Engages the audience.	Responds to questions from the audience.	Does not respond to questions appropriately.
Grammar	Precise language and vocabulary are used. Virtually free from mechanical, grammatical, punctuation, and spelling errors.	General language and some vocabulary used. Occasional mechanical, grammatical, punctuation, and/or spelling errors.	General language and minimal vocabulary is used. Several mechanical, grammatical, punctuation, and spelling errors.	General language with no use of vocabulary. Many mechanical, grammatical, punctuation, and spelling errors.
Time	Presentation is between 6-7 minutes long.	N/A	Presentation is over 7 minutes long.	Presentation is less than 6 minutes long.

Content Requirements Include:

- Problem Overview
- Case Story
- Product Overview
- TEMP Components
- Target Market / Business Model
- Competitive Analysis
- Financial Breakdown
- Advertising
- Distribution
- Manufacturing
- Key Partners
- Intro & Conclusion

Notes:

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11.0 A description of methods for admission which shall not be designed, intended, or used to discriminate or violate individual civil rights in any manner prohibited by law [Ed 1403.01(e)(2)(a)].

Students will complete an application that expresses their level of familiarity and understanding of biofabrication and identifies science courses they successfully completed to date. This is not designed as a prerequisite to entry, but rather to set realistic expectations about prior knowledge so that our teachers can present the material in the most appropriate and beneficial way.

Acceptance into this 25 hour course requires the completed application, parent approval, and interview. The application process is not designed, intended or used to discriminate or violate individuals civil rights in any manner prohibited by law, but is used by ARMI | BioFabUSA staff to assess student interest, goals, grade level, credit requirement (if any) and experience.

Students seeking school credit will be required to disclose their school and district information, including the name and contact information for their school guidance department.

There is no fee to participate in program.

12.0 A description of how the program will liaison with the LEA for students with an education plan pursuant to section 504 of the Rehabilitation Act [Ed 1403.01(e)(2)(b)].

When provided, instructors will review 504 plans with the student to identify supports necessary to ensure equal access to the curriculum and success in the program.

13.0 A description of how the program will liaison with the LEA for a student with disabilities, consistent with the student's IEP to include, but not be limited to coordinating

- 1. Required special education programs;**
- 2. Support services; and**
- 3. Least restrictive environment.**

[Ed 1403.01(e)(2)(c)].

Instructors will review IEP plans of students with identified learning challenges that are provided by as part of the application process. If appropriate, instructors will provide accommodations described in the IEP and differentiate assignments and activities so students may successfully participate in the program. As warranted, by request or observed need, the instructor will arrange a meeting with a representative of the LEA to address learning challenges and consider remedies that will promote a positive outcome for the student.

If ARMI | BioFabUSA determines it will be unable to provide the required accommodations and or/ or modifications for a student as defined in the learning plan, the parents will be informed before they commit to enrolling their child in the program.

14.0 A statement that the applicant understands that it has certain responsibilities, pursuant to Section 504 of the Rehabilitation Act, if it receives federal funds, or the Americans with Disabilities Act, as amended, to provide students with disabilities with equal access and equal opportunities to participate in the learn everywhere program, including by providing the student with reasonable accommodations [Ed 1403.01(e)(2)(d)].

In accordance with the Americans with Disabilities Act, ARMI instructors understand their legal obligation to provide the accommodations identified in the Individualized Education and 504 Plans for students who provide plans for collaboration.

ARMI |BioFabUSA understands that it has certain responsibilities pursuant to Section 504 of the Rehabilitation Act, if it receives federal funds, or the Americans with Disabilities Act, as amended, to provide students with disabilities equal access and equal opportunities to participate in the Learn Everywhere program, which might include providing the student with reasonable accommodations [Ed 1403.01(b)(2)(d)].

15.0 A description of facilities to be used for educational instruction and a description of how the facilities will meet the priorities of the program [Ed 1403.01(e)(3)(a)].

All instruction for the BioTrek Extended Learning Opportunity and the ARMI | BioFabUSA BioTrek program will take place in the classroom at 500 N. Commercial Street, Manchester, NH 03101. Enrichment opportunities, including tours of laboratories at 400 and 540 N. Commercial Street, will be established prior to the first day of class. The classroom is not a

laboratory.

16.0 A statement affirming that the facilities shall comply with all applicable federal and state health and safety laws, rules, and regulations, including but not limited to the following

- 1. Fire safety; and**
- 2. Barrier-free access under Abfd 300, code for barrier-free design, and the Americans with Disabilities Act of 1990 (ADA), as amended by the ADA Amendments Act of 2008**

[Ed 1403.01(e)(3)(b)].

ARMI affirms that it complies with all applicable federal and state health and safety laws, rules, and regulations, as required by the Department's rule Ed 1403.01(b)(3)(b).

17.0 Disclosure of insurance, if any, which would cover the participants in the Learn Everywhere program [Ed 1403.01(e)(4)].

ARMI maintains general liability insurance on its facilities in the amount of \$1 million per occurrence and \$2 million aggregate that covers liability for injuries sustained while on ARMI's premises.

ARMI is currently in the process of purchasing additional insurance to cover liabilities related to injuries that may be caused to students due to the misconduct of ARMI employees and contractors. ARMI anticipates this insurance will be in place prior to the approval of this application, and if not that it will have a retroactive coverage date that predates the beginning of ARMI's Learn Everywhere program.

ARMI |BioFabUSA will disclose this insurance coverage to the parents of Learn Everywhere participants upon request.

Additional Information

The applicant is encouraged to include any additional information in this application that further explains their program and how it will meet the needs of students through the Learn Everywhere program.

Christy Johnson, Director of Education and Workforce Development, received her B.S. Degree in biology from Northern Arizona University and her M.Ed in Middle/Secondary biology from Rivier University. She has almost thirty years of both informal and formal education experience including teaching all levels of biology from life science to AP biology, ecology, forensics and physical science at the high school level. Christy is dedicated to expanding the EWD initiatives throughout the state of NH in order to offer opportunities for all learners.

Gabrielle Mourousas, Lead Educator, has an M.Ed in Secondary Education and a B.S. in Zoology from the University of New Hampshire. She has six years of experience teaching stem topics such as biology, ecology and anatomy and physiology to students in grades 7-12. Her partnership with the Manchester Public School District has boosted the educational programming at ARMI | BioFabUSA.

Alanis Vicente, Educator, earned her Bachelor of Arts degree in Mathematics from the University of Massachusetts Lowell. She has three years of experience working as a middle school math teacher. With her passion for STEM education, Alanis is committed to inspiring the next generation of scientists and engineers through interactive education and real-world applications.

Kelly GravesonPayne, Educator, earned her M.Ed. in Elementary Education/STEM Concentration from Worcester State University and her B.A. in Elementary Education from Boston University. Before joining ARMI, she has more than twenty years of experience as a middle school classroom teacher, providing high quality STEM opportunities to her students.

The BioTrek program to date has completed five Extended Learning Opportunity (ELO), which includes more than twelve area schools. Two of the ELO teams have gone on to compete in the BioTrek Championship at the annual Meeting in the Millyard conference held by ARMI in Manchester, NH

ARMI | BioFabUSA's is currently offering sign-ups for the Extend Learning Opportunity (ELO) for credit. Students may also choose to participate in the BioTrek Extended Learning Opportunity through their school ELO program.

Students will:

- a. Learn about the science, manufacturing, and career opportunities in regenerative medicine and biofabrication.
- b. Identify a real-world medical problem that can be addressed through tissue engineering and biofabrication.
- c. Conceptualize a tissue engineered medical product (TEMP) that attempts to solve the problem.
- d. Design a business model to quantify, finance, and market the TEMP
- e. Explain the problem, the product, and business model concept to a panel of professionals in a final pitch event.