

Call for Proposals

eDNA Emerging Areas & Commercialization Seed Grants

Maine's iconic coastline is one element of a complex macrosystem linking inland lakes and rivers to the sea through watersheds, estuaries, and nearshore coastal waters to the open Gulf of Maine. The overarching hypothesis of Maine-eDNA is that we can transform our understanding of the ecological dynamics and sustainability of Maine's coastal macrosystem through innovations in environmental DNA (eDNA) science that unlock new spatiotemporal and taxonomic scales of inference.

One of the objectives of the Maine-eDNA project is to encourage valuable contributions from researchers in emerging areas of eDNA technology and its application to marine ecosystem monitoring. We seek one-year seed grant proposals to be reviewed and awarded on a competitive basis, with total project costs up to \$20,000 (*Option-1*), and the potential for an additional \$20,000 of matching funds from MTI for applications targeting eDNA relevant commercialization activities (*Option-2*). We anticipate awarding funding for two projects per year for the next three years, contingent upon funding.

Institutions and individuals associated with Maine-based research organizations, companies and community organizations are eligible to apply. Early career researchers and entrepreneurs are particularly encouraged to apply, as are individuals from groups who are underrepresented in STEM (women, persons with disabilities, blacks, Hispanics, and American Indians).

Research priority areas for this call include are:

- Priority area 1 - Environmental DNA Technologies: Includes sampling technologies, molecular tools, novel detection methods, bioinformatic tools, data management and visualization technologies. Technologies that advance widespread needs in the field, emerging environmental monitoring needs, and/or community participation and well-being are strongly encouraged.
- Priority area 2 - Sustainable Seafood and Seaproducts: Includes ways that eDNA can improve sustainability and economic value of seafood products, whether aquacultured or harvested. Could include eDNA for improved aquaculture practices (e.g., farm siting), reducing harvest bycatch, improving seafood safety (e.g., pathogen testing), seafood traceability, that benefit Maine's marine fisheries and aquaculture sectors.

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Option 1: eDNA Emerging Areas Research Grant Program

eDNA Emerging Areas Research Grant Program applications must use the following format. Only applications submitted in the format required will be accepted for consideration. The application is limited to 3 pages, single spaced, using Times New Roman 12pt font and 1” margins.

1. **Abstract:** Prepare this section to clearly summarize for non-specialized readers the significance and objectives of the proposed eDNA-related research initiative. Indicate the potential impact on the Maine-eDNA project and the state of Maine. Abstracts must be no longer than 100 words.
2. **Background Information:** Provide information regarding the research and scholarly activities that may occur, and the relevance of the proposed work to the Maine-eDNA project and the state of Maine.
3. **Specific Goals or Objectives of the Proposed Research or Scholarly Activity:** The initiative’s focus and goals should be clearly stated, and link to the body of knowledge surrounding eDNA technology and its application to ecosystem monitoring. Evidence of a plan to ensure adaptive, knowledge to action activities as part of the grant should be clearly presented in the proposal.
4. **Metrics of Success:** Describe clearly the procedures of information/data collection, analysis, and interpretation, associated with measuring the success of the proposed work. Anticipated outcomes of the project (e.g., specific funding opportunities to target, new collaborations with researchers or businesses, partnerships formed, publications, etc.) should be indicated. A final report documenting the outcomes of supported research activities will be required. This report should detail outcomes during the funded period as well as 6-months post-funding.
5. **Bibliography** (does not count toward 3-page limit). Include only those references cited in the text.

A budget table and budget justification are also required as appendices to the application (do not count toward the 3-page limit). Indirect overhead of the home institution may be included in the project’s budget, with a total budget request limited to \$20,000.

Possible products resulting from the eDNA Emerging Areas Research project: Collaborative proposal to funding agencies; a collaborative, peer-reviewed manuscript; a white paper or multimedia communications product targeted to a key external partner or stakeholder group, e.g., in local government or state resource management agencies; and/or a tech transfer/commercialization end product.

Evaluation Criteria for the eDNA Emerging Areas Track:

Proposals in the eDNA Emerging Areas Track shall be evaluated on the basis of the following criteria, using the indicated weighting factors.

- Intellectual merit (35 points)
- Relevance to Maine’s economy (30 points)
- Likelihood of additional funding (20 points)
- Extent of collaboration with Maine-eDNA project participants (15 points)

Option 2: eDNA Commercialization Grant Program (offered in collaboration with MTI)

eDNA Commercialization seed grant applications will be reviewed and scored the by the Maine-eDNA Commercialization Working Group, and if approved, advanced to the Maine Technology Institute seed grant review [process](#). Once advanced to MTI, investigators must fully adhere to MTI's requirements for their seed grant review process.

eDNA Commercialization Grant Program applications must use the following format. Only applications submitted in the format required will be accepted for consideration. The application is limited to 3 to 5 pages, single spaced, using Times New Roman 12pt font and 1" margins.

1. **Abstract:** Prepare this section to clearly summarize for non-specialized readers the significance and objectives of the proposed eDNA-related research or development initiative. Indicate the potential impact on the economy and workforce development in the state of Maine. Abstracts must be no longer than 100 words.
2. **Background Information:** Provide information regarding the research and scholarly activities that may occur, and the relevance of the proposed work to the Maine-eDNA project, and Maine's economy and workforce development needs.
3. **Specific Goals or Objectives of the Proposed Research, Scholarship or Technology Development:** The initiative's focus and goals should be clearly stated, include clear statements of the proposed research and development work, and link to the Maine-eDNA project and Maine's economy. Indicate the specific market segment that will benefit from the research and development activities, including potential workforce development, products commercialized, and/or companies formed. Evidence of a plan to ensure adaptive, knowledge to action activities as part of the grant should be clearly presented in the proposal.
4. **Metrics of Success:** Describe clearly the procedures of information/data collection, analysis, and interpretation, associated with measuring the success of the proposed work. Anticipated outcomes of the project (e.g., specific funding opportunities to target, new collaborations with researchers or businesses, partnerships formed, publications, etc.) should be indicated.
5. **Economic/Commercial Impact of the Research, Scholarship, or Technology Development Being Proposed:** The applicants are requested to summarize how this grant will increase the likelihood of successful economic/commercial impact.
6. **Bibliography (does not count toward 5-page limit).** Include only those references cited in the text.

A budget table and budget justification are also required as appendices to the application (do not count toward the 5-page limit), to be built in line with MTI's budget development and formatting requirements.

Successful awards from MTI shall be matched 1:1 by the Maine-eDNA grant up to combined financial total of \$40,000.

Possible products resulting from the eDNA Emerging Areas Research project: Collaborative proposal to funding agencies and/or a tech transfer/ commercialization end product.

Evaluation Criteria for the Commercialization/Applied Track:

The following criteria is in line with MTI's assessment criteria. Scores start from 1 and go up to 9 based on applicants self assessment.

Team:

1. Strong founding team - at least 2 people with differentiated skillsets.
2. Team has senior members with lived experience of the problem and/or deep understanding of their target customer's problem.
3. Team has technical ability to build fully functional product and has a clear understanding of the value chain and cost structures in their industry.
4. Team has clear understanding of how their target market operates and has strong industry contacts in this market.
5. Team has clear sales/ops understanding and strategy.
6. Team has proven sales, product dev skills, and management ability to support a growing team for scale.
7. C-suite as good or better than founding CEO and can stay with company through its growth and exit phases.
8. Team is recognized as market leaders in the industry.
9. Team positioned to navigate M&A, IPO.

Problem and Vision:

1. Team has identified a specific, important, and large problem.
2. The team can solve the problem and can articulate its vision at scale - what does the world look like if they succeed?
3. The company can articulate why they're the best ones to solve this problem.
4. The company can articulate system-level change - how this solution would transform the industry.
5. Evidence of impact tied to solution - the company has evidence that by growing the business, company solves the problem.
6. Sales validate impact tied to solution and grow as solution scales.
7. Impact is successfully validated.
8. Systems-level Change validated.
9. Global leader in stated vision.

Value Proposition:

1. Team has identified their hypothesis of their target customer - the specific type of person whose problem they are solving.
2. The team has potential customers who provide evidence that solution solves key pain point - product is a painkiller, not a vitamin.
3. Evidence that customers will pay the target price. For B2C - 100 customers, for B2B - 5 customers and conversations with multiple stakeholders in each.

4. Evidence of differentiation through initial target customer feedback that the solution solves their problem significantly better than others in the market.
5. Target customers love the product and want to keep using it.
6. Sales beyond initial target customers. Customers love it and are referring the product to others.
7. Majority of first sales in target market are inbound.
8. Multiple renewals with low sales effort. Customers in multiple markets love the product.
9. Cited as the top solution in the industry solving this problem.

Product:

1. Team has ability to develop low-fidelity prototype and has freedom to operate - not blocked by other patents.
2. Team has basic low-fidelity prototype that solves the problem.
3. Team has built a working prototype and a product roadmap.
4. Team has clear understanding of product development costs and how to build the initial product cost-effectively.
5. Fully functional prototype with completion of product for wide commercial distribution in sight.
6. Complete product with strong user experience feedback.
7. Product is built for scale and additional offerings in progress.
8. Strong customer product feedback in multiple markets.
9. Product recognized as top in industry.

Market:

1. Team can clearly articulate total addressable market, the percentage they will capture, and initial target market.
2. Team understands any regulatory hurdles to entering the market and has a strategy to overcome them.
3. Initial evidence through sales that team can capture initial target market.
4. Evidence of \$1B+ total addressable market.
5. Team is having conversations with strategic partners to capture their market faster/cheaper than the competition.
6. Supply/distribution partners see their success aligned with the company's success.
7. Sales cycles meet or exceed industry standard.
8. Brand established. Hard-to-beat partnerships for distribution, marketing, and growth.
9. Clear line-of-sight to industry dominance.

Business Model:

1. Team has identified an outline of revenue model.

2. Company can point to pricing and business models of similar products in the industry as further evidence that their revenue assumptions hold.
3. Team can articulate projected costs along the value chain and target cost points to reach positive unit economics.
4. Team has financial model with cost and revenue projections articulated and a strategy for hitting these projections.
5. Financial model with evidence of valid projections to reach positive unit economics.
6. Sales begin to map to projections. Evidence of decreasing CAC with growing customer base buying at target price.
7. Business model validated - Validation of strong unit economics.
8. MOM revenue meets industry standard.
9. Minimum 2x revenue growth for multiple years.

Scale:

1. Team has identified multiple possible markets or customer segments and has aspiration to scale.
2. Initial evidence that multiple markets experience this problem.
3. Clear strategy to move to multiple markets.
4. Initial evidence that multiple types of customers find value in the solution or in an extension of the product that the company is well-positioned to develop.
5. Vision and initial evidence of positive unit economics in two markets.
6. Company has cleared regulatory challenges and (if applicable) is implementing a strong IP strategy.
7. Evidence of strong unit economics across multiple markets.
8. Growth of customer base accelerates month-on-month.
9. Strong unit economics for multiple customer segments.

Exit:

1. Team understands what an exit is and has a vision for how they will ultimately provide a return for their investors.
2. Vision for growth has company solving a large piece of the global problem in 10 years.
3. Initial evidence that the solution already solves the problem better than any incumbents.
4. Evidence of growth trajectory that could lead to IPO, acquisition, or self-liquidating exit.
5. Inbound interest from large strategics.
6. Team has identified specific acquirer(s) or other exit environment.
7. Team has strong relationships with multiple acquirers.
8. Team has turned down acquisition offer.
9. Growth with exit.