

# WORKFORCE IMPACT ASSESSMENT FRAMEWORK: **Community Outreach and Awareness**

*Initiatives focused on creating interest in and understanding of  
biomanufacturing career opportunities*



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# ABOUT THE FRAMEWORK

To help meet the growing workforce needs of the biopharmaceutical manufacturing industry, the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) is developing a **suite of tools to standardize how the community can:**

- Evaluate feasibility of proposed workforce initiatives and programs
- Maximize and communicate the impact of existing workforce initiatives
- Facilitate program benchmarking and comparison through standardized metrics



## Framework

Outlines activities, considerations, and measures that define industry-informed best practices for initiative development and sustainability

Comprehensive guidance by initiative type; covers all phases



## Self-Assessment

Web-based assessment to help organizations identify initiative strengths and areas for enhancement

Offers a more tailored view of the framework, customized to initiative type and phase



## NIIMBL Endorsement Program

### ANTICIPATED 2027

Recognizes workforce initiatives aligned with the specific needs of the biopharmaceutical manufacturing industry

Grounded in the guidance and measures in the

These tools are customized for **three different types of initiatives:**

1. **Community Outreach and Awareness:** Initiatives focused on creating interest in and understanding of biomanufacturing career opportunities
2. **Non-Degree Training and Programs:** Training and professional development opportunities designed to recruit new workers and upskill current workers
3. **Industry-Aligned Degree Programs:** Post-secondary education that builds specialized knowledge and expertise in biomanufacturing

## Impact of the Framework: Efficiency, Consistency, Effectiveness

The framework offers education and workforce development (EWD) providers the opportunity to leverage **industry-aligned best practices for developing or improving initiatives** and **standard methods for assessing and communicating initiative impact**, yielding **successful initiatives that better meet workforce needs**.

While NIIMBL has developed the framework oriented around the biopharmaceutical manufacturing industry, its principles and guidance are **transferable to all advanced manufacturing sectors**.

## How the Framework Was Developed

Spurred by an interactive 2024 NIIMBL National Meeting session and with support from the Gates Foundation, the NIIMBL team engaged Nexight Group to help develop the workforce impact assessment framework.

### Key Stakeholder Engagement

The development process was informed by active engagement of the broader biopharmaceutical manufacturing ecosystem, including:

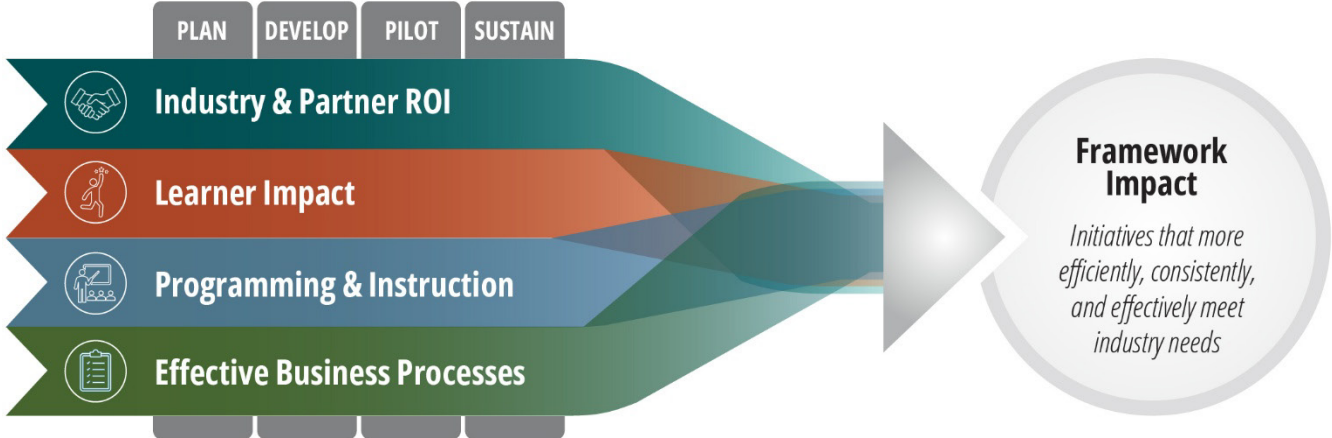
- **Industry:** Small, medium, or large biopharmaceutical manufacturers and suppliers
- **Training Providers:** Training centers, community colleges, universities
- **Economic Development Organizations:** Local, state, or federal governments; non-profits and community organizations; regional economic development organizations

After conducting a comprehensive landscape assessment and literature review of existing program assessment resources, best practices, and guidelines, the team began the development of the proposed framework, soliciting key stakeholder inputs through:

- **March 2025:** Reviews of the framework concept and key components with members of the NIIMBL Workforce Activities Committee (WAC) and a brainstorming session with participants at the 2025 Biopharma Workforce Partnership Conference
- **May – June 2025:** A series of interviews with training providers, industry, and regional economic development organizations to understand current biopharma workforce program benchmarking/evaluation practices and how the framework could support their work
- **June 2025:** A feedback session at the 2025 NIIMBL National Meeting in which more than 40 participants had an opportunity to provide direct input on the guidance and best practices in the framework, with a focus on non-degree training and programs
- **June – September 2025:** Small focus group working sessions to validate and refine activities and corresponding guidance, evaluation markers, and evidence of anticipated impact, as well as help define baseline evaluation criteria and key indicators of exemplary programs
- **October – January 2026:** Review cycles with focus groups to identify areas that needed to be refined or clarified
- **December 2025 – June 2026:** Development of online self-assessment to tailor the framework content to the initiative type and phase of an individual user

# UNDERSTANDING THE FRAMEWORK STRUCTURE

Both new and experienced EWD professionals can use the suite of framework tools to identify initiative strengths and potential areas to focus on to continuously improve and communicate initiative impact. This framework should be used as a roadmap to help better **plan, develop, pilot, and sustain EWD initiatives** by considering the perspectives and needs of all stakeholders integral to the success of these initiatives.



## Initiative Development Phases

Key phases for developing an initiative, from initiation through implementation and long-term sustainment:

<b>PLAN</b>	Define initiative scope, considering priority workforce needs, target participants, programming, and resource requirements
<b>DEVELOP</b>	Validate and refine initiative value to industry and participants, develop programming, and define implementation plan
<b>PILOT</b>	Launch initiative on a small scale to evaluate its success and develop an operational plan to sustain it
<b>SUSTAIN</b>	Continuously evaluate and improve initiative to maximize its impact <ul style="list-style-type: none"> <li>• <b>Sustain an initiative:</b> Continue to follow the business and operational model with new cohorts</li> <li>• <b>Grow an initiative:</b> Increase participant enrollment and/or initiative frequency at the same location/region</li> <li>• <b>Scale an initiative:</b> Replicate the initiative for new geographies and/or new target audiences</li> </ul>

## Foundational Dimensions of Impact

Key categories of activities that cut across initiative development phases and involve engagement with key stakeholders critical to the successful development and implementation of workforce initiatives:

<b>Industry &amp; Partner ROI</b>	Align initiative with current and/or projected workforce needs
<b>Learner Impact</b>	Enhance learner skill marketability and career opportunities
<b>Programming &amp; Instruction</b>	Apply best practices to optimize initiative delivery and instructional effectiveness
<b>Effective Business Processes</b>	Support initiative success through sound operational planning and practices

## Components for Improving Initiatives

Each foundational dimension of impact includes tables with the following content:

<b>Activities</b>	<p>Key elements and/or actions needed to plan and implement an impactful workforce initiative.</p> <p><i>Note: Activities are recommended at each dimension of impact but are not intended to be completed sequentially.</i></p>
<b>Considerations and Guidance</b>	Best practices and steps related to the activity that can set the initiative up for success
<b>Assessment Criteria and Measures</b>	Each activity includes both baseline (minimum achievement) and exemplary (exceptional achievement) measures. These measures form the basis of the rating system in the self-assessment.

*Note: Depending on initiative scope, some activities, considerations and guidance, and/or measures may not be relevant.*

## Example Measures: Community Outreach and Awareness

The table below provides an **overview of the kinds of measures used in the framework**, across all dimensions of impact.

	ENGAGEMENT EXAMPLE MEASURES	VALUE/IMPACT EXAMPLE MEASURES
<b>INDUSTRY &amp; PARTNERS</b>	<p><b>In-kind industry support:</b> subject matter expertise, contributions to initiative delivery and programming, marketing and outreach support</p> <p><b>Committed resources beyond time:</b> funding, access to facilities and equipment, commitments to drive enrollment</p>	<p><b>Increased awareness of industry:</b> number of initiative participants per year, increased community awareness and understanding of the biomanufacturing field and associated occupations</p> <p><b>Positive industry marketing:</b> improved brand recognition and community involvement</p>
<b>LEARNERS</b>	<p><b>Interest and activation:</b> registration and enrollment numbers</p> <p><b>Progress and persistence:</b> participant completion rates, frequency or duration of engagement, satisfaction and willingness to refer</p>	<p><b>Professional development:</b> increased skill marketability, professional networks, professional pride and motivation</p> <p><b>Increased awareness of industry:</b> increased awareness and understanding of the biomanufacturing field and different educational/career pathways</p>
<b>TRAINING PROVIDERS</b>	<p><b>Reach:</b> actual enrollment compared with targets</p> <p><b>Effectiveness:</b> demonstration that initiative programming is engaging, informed, and well-structured</p>	<p><b>Industry and partner value:</b> committed resources and consistent participation; alignment with projected workforce needs at the individual company, regional, or national level</p> <p><b>Business value:</b> revenue and profitability, credibility and track record of initiative, alignment with policy and economic development strategies</p>

# USING THE FRAMEWORK

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## How to Evaluate Initiative Impact

The framework provides **example measures** across phases that capture the value proposition and assess the impact from the perspective of key stakeholder audiences. As you review the framework, **note the following**.

### Guidance and measures should not be viewed as a checklist.

- The information provided in the framework—and the accompanying self-assessment tool—should be used as guidance to **inform continuous improvement** and help increase initiative impact. The self-assessment tool will generate a custom report with feedback based on the maturity of a given workforce initiative and how you self-assess against the questions in this framework.
- **Examples are intended to be selected and adapted for use** according to what is most applicable to a given initiative, including setting specific qualitative or quantitative targets for the measure as appropriate. As noted above, some may not be relevant to your initiative or the level of effort may need to be scaled based on staff availability and expertise. For example, if you do not have access to marketing or communications staff, you can still be thoughtful about your outreach or leverage student support to help you meet baseline measures.

### Impactful initiatives need not achieve all exemplary measures.

- **Measurement is dependent on the initiative scope**; the goal is not necessarily to achieve the exemplary measures for all activities.
- **Measurable indicators of activity success may be qualitative and/or quantitative.** Qualitative measures can be more storytelling or testimonials, as quantitative measures may not always be available or easy to obtain. For example, while industry partners may be unable to provide longitudinal data on individual participants, they may be willing to share anecdotal evidence and demonstrate continued willingness to support the initiative.
- Many exemplary measures may be more aspirational in nature and represent an ideal to work toward as part of **continuous improvement**.

### Self-assessment does not represent NIIMBL endorsement.

- **NIIMBL is exploring an endorsement program** that will likely be grounded in the framework but with more extensive programmatic guidelines and requirements.
- Evaluating initiatives using the self-assessment tool can help give a clearer idea of the **kinds of improvements needed** in both the near and long term.

## Where to Start


Use the decision tree below to determine the current phase of your initiative:

QUESTION		ACTION
1) Have you developed programmatic materials with industry and community organization input and involvement, and identified all necessary resources?	NO	➔ <a href="#">PLAN PHASE</a>
	YES	➔ Go to question 2
2) Have you already secured resources and funding to conduct a pilot?	NO	➔ <a href="#">DEVELOP PHASE</a>
	YES	➔ Go to question 3
3) Have you completed a pilot with an initial set of participants?	NO	➔ <a href="#">PILOT PHASE</a>
	YES	➔ <a href="#">SUSTAIN PHASE</a>

# PLAN

Define initiative scope, considering priority workforce needs, target participants, programming, and resource requirements

## Activities by Dimension of Impact

	<p><b>Industry &amp; Partner ROI</b></p>	<p>Identify projected workforce needs</p>
	<p><b>Learner Impact</b></p>	<p>Determine target audience characteristics and motivations</p> <p>Develop participant outreach and marketing strategy</p>
	<p><b>Programming &amp; Instruction</b></p>	<p>Define high-level learning and/or engagement objectives</p> <p>Define initiative type and approach</p>
	<p><b>Effective Business Processes</b></p>	<p>Conduct a landscape analysis of existing, similar, or competing initiatives</p> <p>Clarify understanding of needed vs. available resources</p> <p>Synthesize an initiative business case</p>



# Industry & Partner ROI

*Align initiative with current and/or projected workforce needs*

**ACTIVITY: Identify projected workforce needs** — Define the initiative scope based on anticipated demand for specific knowledge and skills

## CONSIDERATIONS & GUIDANCE

<p><b>Identify high-level initiative objectives</b></p>	<p>Consider regions, needed occupations and roles, and participant education and/or vocational experience (e.g., is the initiative targeting a regional or national audience? Is it specific to particular occupations, roles, or career pathways? What is the target audience’s familiarity with the field?)</p>
<p><b>Engage employers, industry experts, and community organizations to assess anticipated needs</b></p>	<p>Collect related information to refine the high-level initiative objective, such as: projected job growth; anticipated knowledge and skill needs (technical and non-technical); and changes in workforce needs (e.g., due to technology, process, policy, or customer preference)</p> <ul style="list-style-type: none"> <li>• Assess the mix of stakeholders that must be engaged to collect representative input             <ul style="list-style-type: none"> <li>○ Number of stakeholders engaged and participation/response rate</li> <li>○ Type of stakeholders engaged (e.g., industry, community-based organizations, economic development organizations, unions, sector partnerships, consortia, local workforce development boards)</li> <li>○ Organization size and geographic location</li> <li>○ Job/role/functional area of stakeholders involved (e.g., community engagement or relations managers, corporate leadership, site managers, manufacturing managers, talent acquisition, human resources)</li> </ul> </li> <li>• Potential engagement mechanisms: interviews, roundtables, surveys, and/or focus groups</li> </ul>

**ASSESSMENT QUESTION: To what extent have you identified projected workforce needs at the individual company, regional, or national level?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative capture of projected workforce needs, derived from multiple credible sources</b></p> <ul style="list-style-type: none"> <li>Informal industry and community organization engagement (e.g., small-scale surveys and interviews)</li> </ul>	<p><b>Quantitative supporting data from industry on projected needs and relevant occupations</b></p> <ul style="list-style-type: none"> <li>National, regional, employer-specific, and/or occupation-specific data (e.g., projected unmet demand for relevant jobs in 5–10 years, supporting analysis for trends and drivers related to projected unmet demand) and how the initiative will address these needs</li> </ul> <p><b>Industry or community organization commitment to invest or engage in the initiative</b></p> <ul style="list-style-type: none"> <li>Examples: letters of support/commitment, funding, access to facilities or equipment, advisory board participation, initiative co-development and delivery</li> </ul>



# Learner Impact

*Enhance learner skill marketability and career opportunities*

## ACTIVITY: Determine target audience characteristics and motivations

— Understand and define the “market” (i.e., who the initiative is being designed for, including their characteristics and any barriers to initiative participation)

### CONSIDERATIONS & GUIDANCE

<b>Assess characteristics of target participants</b>	Consider age, background, education level, income, language, geographical location, occupation and role, employment status, motivations and goals, challenges, cultural or community influences, learning preferences, media and technology habits
<b>Identify how participants will access initiative</b>	Examples: open enrollment that anyone can sign up for, community organization referral, pipeline from another education or training program
<b>Identify potential barriers to participation</b>	Define the factors (e.g., time, money, location, language or literacy, technology access or skills, trust or stigma, cultural norms) that could stop or prevent someone from participating in the initiative

**ASSESSMENT QUESTION: To what extent have you identified your target audience’s characteristics and motivations for participation?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative capture of target audience characteristics and motivations</b> that would define initiative format and structure</p> <ul style="list-style-type: none"> <li>• Example information: geographical location, education level, employment status, vocational background and skills, level of familiarity with the industry, incentives and barriers to initiative participation</li> <li>• At least some information is gathered or validated through industry and community organization engagement</li> </ul>	<p><b>Quantitative, regionally specific data and robust qualitative understanding of target audience characteristics and motivations</b> to align the target audience to the talent pipeline needed to fulfill workforce needs</p> <ul style="list-style-type: none"> <li>• Example quantitative data: age, income, language, audience size</li> <li>• Example qualitative information: background, motivations and goals, cultural or community influences, learning preferences, media and technology habits</li> <li>• Information gathered through industry, community organizations, and/or engagement with prospective participants</li> </ul>

**ACTIVITY: Develop participant outreach and marketing strategy —** Analyze outreach channels, define outreach approach, and outline initial messaging to reach the target participant audience and encourage them to participate in the initiative

**CONSIDERATIONS & GUIDANCE**

<p><b>Identify potential outreach channels</b></p>	<p>Determine which channel(s) will best help reach the target participant audience:</p> <ul style="list-style-type: none"> <li>• Digital: social media, websites, email, ad campaigns</li> <li>• Traditional: posters, flyers, advertisements</li> <li>• In-person: open house/site visits, events, meetings, direct outreach to community organizations</li> <li>• Organizational: associations, schools, supervisors, teachers, networks, other influencers who could refer/encourage participation</li> </ul>
<p><b>Evaluate channel reach, penetration, credibility, and effectiveness</b></p>	<p>Assess who each channel reaches, channel accessibility, how the audience interacts with the channel and frequency of use, audience perception of channel credibility, and past experience with the effectiveness of channel engagement (e.g., open rates, click throughs, sign-ups, attendance)</p>
<p><b>Prioritize channels based on projected return on investment</b></p>	<p>Consider budget needed to effectively use a channel; staff time or expertise required; printing, design, or ad costs; and ongoing management</p>
<p><b>Define content needs in alignment with channels</b></p>	<p>Identify high-level content parameters, including use of visuals or interactivity, content complexity, calls to action, and how to communicate the initiative value proposition to the target audience</p>

**ASSESSMENT QUESTION:** To what extent have you demonstrated that the initiative outreach and marketing will effectively reach the target audience?

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative assessment and prioritization of outreach channels</b> (e.g., digital, traditional, in-person, organizational) based on target audience reach, channel credibility and effectiveness, and cost)</p>	<p><b>Quantitative data to support outreach channel prioritization and allocation of marketing resources</b></p> <ul style="list-style-type: none"> <li>• Examples: projected number or percentage of target audience members that would be reached via prioritized channels, channel cost relative to reach</li> </ul>



# Programming & Instruction

*Apply best practices to optimize initiative delivery and instructional effectiveness*

**ACTIVITY: Define high-level learning and/or engagement objectives —**  
 Develop clear, concise, and measurable statements that define initiative participant outcomes

## CONSIDERATIONS & GUIDANCE

<b>Define learning objectives based on desired initiative outcomes</b>	Assess the change in knowledge, skills, abilities, or behaviors that the initiative is intended to enable (i.e., what participants need to know, be able to do, or feel differently about after participating in the initiative)
<b>Refine objectives to be action-oriented and measurable</b>	Leverage academically-recognized instructional design frameworks (e.g., Bloom’s Taxonomy, SMART—Specific, Measurable, Achievable, Relevant, and Time-bound—methodology) to ensure learning and/or engagement objectives are meaningful and participant achievement toward objectives can be assessed
<b>Align objectives with target participant audience</b>	Define the participant’s anticipated prior knowledge or skill level based on target participant characteristics, and assess the feasibility of whether the learning objectives will allow the target audience to achieve the industry-defined desired initiative outcomes

**ASSESSMENT QUESTION: To what extent can you demonstrate that your learning and/or engagement objectives support industry-defined needs?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Demonstration that learning and/or engagement objectives align with industry and participant needs</b></p> <ul style="list-style-type: none"> <li>Informal industry and community organization engagement (e.g., small-scale surveys and interviews) to validate high-level initiative objective and workforce needs</li> </ul>	<p><b>Demonstration of more in-depth mapping of workforce needs to learning objectives, initiative outputs, and corresponding job roles and occupations</b></p> <ul style="list-style-type: none"> <li>Industry-vetted learning and/or engagement objectives, with industry subject matter experts committed to driving initiative development (e.g., reviews from industry, program inputs)</li> <li>Leverages academically recognized instructional design framework (e.g., Bloom’s taxonomy, DACUM [Developing a Curriculum])</li> </ul>

**ACTIVITY: Define initiative type and approach** — Outline methods and techniques the initiative will employ to achieve learning objectives

**CONSIDERATIONS & GUIDANCE**

<b>Select initiative type</b>	Based on target participant audience analysis and preliminary learning objectives, identify the initiative type (e.g., K-12 workshop, immersive learning experience, information session, speaker series, webinar, career fair, marketing campaign)
<b>Identify needed resources and constraints</b>	Assess available time, staff, space, technology, platforms, and tools
<b>Determine delivery format and level of interactivity</b>	Define whether initiative will be in-person, online, or hybrid; synchronous (live) or asynchronous (self-paced); individual or group-based; and cadence of delivery method
<b>Identify all engagement strategies and techniques</b>	Consider use of lecture, case studies, role-play/simulations, group work, demonstration and practice, flipped classroom, microlearning, mixed methods
<b>Define assessment approach to measure engagement</b>	Consider a variety of assessment methods, including assessment (e.g., quizzes, reflections, peer feedback) and participant evaluations (e.g., feedback on the initiative)

**ASSESSMENT QUESTION: To what extent have you demonstrated that the defined initiative approach is able to accomplish the industry-aligned learning objectives and is accessible to the envisioned target participant audience?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Demonstration that the initiative modality</b> (e.g., in-person, virtual, hybrid, asynchronous) <b>and delivery approach will achieve the learning and/or engagement objectives</b></p> <ul style="list-style-type: none"> <li>• Demonstrated alignment with content complexity, target audience size and characteristics, and logistical feasibility and accessibility</li> <li>• Demonstrated availability and suitability of resources (e.g., instructor(s) with relevant industry experience; quantity and accessibility of equipment, facilities, materials, and tools)</li> </ul>	<p><b>Demonstrated use of accepted instructional and assessment methodologies and best practices</b></p> <ul style="list-style-type: none"> <li>• Alignment with regional or national learning standards</li> </ul> <p><b>More industry-relevant content and activities, such as:</b></p> <ul style="list-style-type: none"> <li>• Industry-relevant context for job roles and responsibilities (e.g., real-world operation and environments)</li> <li>• Hands-on, experiential learning</li> <li>• Networking opportunities</li> <li>• Exposure to industry equipment and facilities</li> </ul>



# Effective Business Processes

*Support initiative success through sound operational planning and practices*

**ACTIVITY: Conduct a landscape analysis of existing, similar, or competing initiatives** — Identify and examine existing initiatives, trends, and characteristics of initiatives within the biomanufacturing workforce development space to leverage previous efforts, better focus resources, and identify unique elements of initiative scope

## CONSIDERATIONS & GUIDANCE

<b>Define analysis scope</b>	Identify the characteristics of initiatives that should be included in the assessment; consider target participant audience, occupations and roles of focus, target workforce needs, and geographic reach
<b>Define data needs and data sources</b>	Identify desired data points, such as initiative goals and objectives, funding source and size, delivery model, key partners, duration/timeline, and evidence of effectiveness <ul style="list-style-type: none"> <li>Identify data sources (e.g., websites, reports, databases, and direct stakeholder input) for this information on relevant initiatives</li> </ul>
<b>Synthesize best practices and lessons learned</b>	Analyze compiled data to inform approaches that can streamline initiative development and avoid duplication of effort (e.g., identify potential partners; leverage existing resources, facilities, and equipment)

**ASSESSMENT QUESTION: To what extent can you demonstrate that the initiative will deliver unique or additive value by addressing an unmet/unfulfilled need or building on existing initiatives?**

BASELINE MEASURES	EXEMPLARY MEASURES
<b>Assessment of a sample of existing competing, similar, and complementary initiatives</b> , with synthesis of best practices and lessons learned to streamline initiative development and avoid duplication of effort	<b>More comprehensive assessment across sectors, geographies, initiative types</b> (depending on initiative scope), <b>and stakeholders</b> aligned with planned initiative scope

**ACTIVITY: Clarify understanding of needed vs. available resources —**  
 Outline all necessary resources for the initiative, take inventory of current resources, and source new ones

**CONSIDERATIONS & GUIDANCE**

<p><b>Identify all needed resources</b></p>	<p>Consider:</p> <ul style="list-style-type: none"> <li>• Human resources (e.g., staffing, volunteers, instructors/facilitators)</li> <li>• Material/physical resources (e.g., equipment, supplies, printed materials, facilities)</li> <li>• Technology (e.g., software, platforms, hardware)</li> <li>• Financial resources (e.g., seed funding, long-term funding, funding mechanisms)</li> <li>• Administrative/operational resources</li> </ul>
<p><b>Inventory all available resources</b></p>	<p>Assess what resources are available to support and sustain the initiative</p>
<p><b>Perform a resource gap analysis</b></p>	<p>Evaluate the biggest gaps between what is needed and what is available, identify the gaps that are critical to develop and pilot the initiative, and prioritize accordingly</p>
<p><b>Strategize to fill gaps</b></p>	<p>Assess whether it is possible to reallocate existing resources, partner with another organization, or secure additional resources. If resources are limited, assess whether the initiative can be developed in phases or if the scope can be adjusted to match available resources</p>
<p><b>Build a resource plan</b></p>	<p>Map resource needs to the timeline to develop and sustain the initiative, assign ownership for securing and/or managing resources, and define future funding models</p>

**ASSESSMENT QUESTION: To what extent have you identified and outlined a plan to procure the resources required to support the development and pilot of this initiative?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Clearly articulated list of resource requirements and outlined budget/estimated costs</b></p> <ul style="list-style-type: none"> <li>• Example resources: instructors/facilitators, staffing, partnerships, facilities, equipment, consumables</li> </ul>	<p><b>Detailed plan for securing resources</b>, with demonstrated feasibility of securing them</p> <ul style="list-style-type: none"> <li>• Examples: currently available resources, funding commitments, fundraising plans, equipment and facility access, in-kind contributions</li> </ul>

**ACTIVITY: Synthesize an initiative business case** — Develop a value proposition for the initiative to help secure partnerships and other business-level support

**CONSIDERATIONS & GUIDANCE**

<b>Articulate initiative value proposition</b>	Clearly define the unique gap or issue that the initiative will address, such as target participant audience, target workforce needs, and geography
<b>Outline initiative scope and implementation approach</b>	Synthesize takeaways from industry and community organization needs assessments, target participant audience outreach strategy, and learning objectives and instructional methodology
<b>Demonstrate anticipated return on investment</b>	Conduct a cost-benefit analysis, presenting key advantages and impacts of the initiative on target stakeholders, and estimating high-level costs and resource needs
<b>Conduct a risk assessment</b>	Include mitigation strategies that can ensure initiative success

**ASSESSMENT QUESTION: To what extent does your initiative’s business case demonstrate that the initiative can be successfully developed, piloted, and sustained (if applicable)?**

<b>BASELINE MEASURES</b>	<b>EXEMPLARY MEASURES</b>
<p><b>Clear articulation of initiative impacts and value for both participants and industry, required resources, and needed funding</b></p> <ul style="list-style-type: none"> <li>• Synthesis of all data gained through the Plan phase</li> <li>• Defensible cost estimates based on initiative throughput and cost per person</li> </ul>	<p><b>More robust demonstration of the initiative business case</b>, such as:</p> <ul style="list-style-type: none"> <li>• Secured or pledged resources and committed partners (e.g., teaming agreements)</li> <li>• Potential for initiative sustainment and scalability (e.g., long-term funding/revenue models)</li> <li>• Risk assessment and mitigation plans (e.g., operational, financial, market)</li> </ul>

# DEVELOP

Validate and refine initiative value to industry and participants, develop programming, and define implementation plan

## Activities by Dimension of Impact

	<p><b>Industry &amp; Partner ROI</b></p>	<p>Validate value proposition for industry and community organizations</p> <p>Obtain industry and community organization inputs to and feedback on draft initiative materials and activities</p>
	<p><b>Learner Impact</b></p>	<p>Validate value proposition for participants</p>
	<p><b>Programming &amp; Instruction</b></p>	<p>Define needed programmatic resources</p> <p>Develop and vet initiative materials</p>
	<p><b>Effective Business Processes</b></p>	<p>Outline an initiative operational plan</p> <p>Establish a communications plan</p> <p>Develop an evaluation plan</p>



# Industry & Partner ROI

*Align initiative with current and/or projected workforce needs*

**ACTIVITY: Validate value proposition for industry and community organizations** — Build out and refine a value proposition for the initiative that meets the needs outlined by industry and garners industry and community organization support and engagement

## CONSIDERATIONS & GUIDANCE

<p><b>Obtain feedback on industry and partner organization expectations and learning and/or engagement objectives</b></p>	<p>Seek input on industry and community organizations' expectations for the skills and knowledge participants should gain and industry's perception of whether the initiative's delivery methods would build community awareness about the biomanufacturing field and associated occupations and job functions</p> <ul style="list-style-type: none"> <li>• Consider the most anticipated knowledge and skills, projected job growth, new and emerging technologies, market shifts, and policy</li> <li>• Assess the mix of stakeholders that must be engaged to collect representative input             <ul style="list-style-type: none"> <li>○ Number of stakeholders engaged and participation/response rate</li> <li>○ Type of stakeholders engaged                 <ul style="list-style-type: none"> <li>▪ Industry: community engagement or relations managers, human resources (HR) managers, hiring managers, talent acquisition specialists, corporate leadership, site managers, industry association leaders, front-line managers, subject matter experts</li> <li>▪ Community: local or regional government, associations, area schools, other community-based organizations, economic development organizations</li> </ul> </li> <li>○ Organization size and geographic location</li> </ul> </li> <li>• Potential engagement mechanisms: interviews, roundtables, surveys, and/or focus groups</li> </ul>
<p><b>Consider cost vs. benefit perception</b></p>	<p>Determine if the perceived benefits of the initiative (i.e., extent to which the initiative will result in increased biomanufacturing awareness regionally or nationally) outweigh the costs (in time, money, or effort)</p>

<p><b>Align on needed industry and community organization support for the initiative</b></p>	<p>Evaluate and secure commitments from industry and community organizations, including:</p> <ul style="list-style-type: none"> <li>• Commitments for human resources for development (e.g., support for program development, review, revision, and validation)</li> <li>• Capital resources for development (e.g., funding, facilities, equipment)</li> <li>• Other commitments related to future program delivery (e.g., tours, experiential learning opportunities)</li> </ul>
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**ASSESSMENT QUESTION: To what extent have industry and community organizations confirmed there is sufficient value in the initiative such that they are willing to support its development and implementation?**

<p><b>BASELINE MEASURES</b></p>	<p><b>EXEMPLARY MEASURES</b></p>
<p><b>Demonstrated alignment between training providers and industry and/or community organizations on initiative scope and focus</b></p> <ul style="list-style-type: none"> <li>• Clearly articulated value proposition with projected return on investment (e.g., number of participants per year compared with anticipated job demand, increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations, positive industry marketing and organizational community involvement)</li> </ul> <p><b>In-kind support</b></p> <ul style="list-style-type: none"> <li>• Examples of support: participation in subject matter reviews, advisory board participation, initiative delivery and instruction, marketing and outreach support</li> <li>• Small number of industry and/or community organization early adopters/participants</li> </ul>	<p><b>Committed resources beyond time</b></p> <ul style="list-style-type: none"> <li>• Examples of support: funding, access to facilities and equipment for experiential learning opportunities, commitments to drive enrollment</li> <li>• Broader industry and/or community organization commitment, dependent on initiative scope (i.e., engaged decision makers and/or a greater number of organizations)</li> </ul>

**ACTIVITY: Obtain industry and community organization inputs to and feedback on draft initiative materials and activities** — Engage with industry and community organizations to ensure initiative aligns with industry and community needs, including anticipated demand for specific knowledge and skills

**CONSIDERATIONS & GUIDANCE**

<b>Define clear objectives and level of detail for feedback</b>	Outline what feedback is needed, on what aspects of the initiative (e.g., learning objectives, initiative type and approach, engagement strategies and techniques, initiative materials and activities), and what level of detail is required (e.g., broad strategic input, tactical feedback, high-level feedback, specific recommendations)
<b>Determine the right stakeholders for feedback</b>	Identify the stakeholder perspectives and subject matter expertise needed, as well as the desired mix of feedback across these perspectives, considering: <ul style="list-style-type: none"> <li>• Type of stakeholders engaged (e.g., community engagement or relations managers, community associations, local workforce development boards, area schools, front-line managers, subject matter experts)</li> <li>• Organization size and geographic location</li> </ul>
<b>Define mechanisms for ongoing and iterative feedback</b>	Define the process and expectations for review of the initiative as it is developed, piloted, and/or sustained

**ASSESSMENT QUESTION: To what extent have industry and community organizations been involved in developing, reviewing, refining, and/or validating initiative materials and activities?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative positive feedback from industry and community organizations that demonstrates confidence in the initiative approach and content</b></p> <ul style="list-style-type: none"> <li>Informal input through ad hoc engagement (e.g., surveys, focus groups / roundtables, individual meetings and interviews)</li> </ul>	<p><b>Industry or community organization commitment to participate in initiative delivery</b></p> <ul style="list-style-type: none"> <li>Examples: initiative sponsorship, guest speakers, case studies, networking and mentorship, commitment to provide data on initiative impact</li> </ul> <p><b>Clearly articulated mechanism and defined frequency for ongoing feedback</b> to inform initiative improvements and ensure alignment with anticipated workforce needs</p>



# Learner Impact

*Enhance learner skill marketability and career opportunities*

**ACTIVITY: Validate value proposition for participants** — Corroborate and refine the initiative’s outlined benefits and value to participants

## CONSIDERATIONS & GUIDANCE

<p><b>Assess mechanisms for engaging or learning about prospective participants</b></p>	<p>Consider relevant past initiatives, conversations with industry or community organizations who engage with the target participant audience, or through direct interaction with the target audience</p>
<p><b>Consider cost vs. benefit perception</b></p>	<p>Determine if the perceived benefits (e.g., increased skill marketability, job opportunities and quality, compensation, job satisfaction, professional networks, career pathways, professional pride and motivation) of the initiative outweigh the costs (in time, money, or effort)</p> <ul style="list-style-type: none"> <li>• Consider initiative affordability, available funding/support, time commitment, scheduling constraints, accessibility, and delivery format (e.g., experiential/interactive opportunities)</li> </ul>
<p><b>Refine value proposition</b></p>	<p>Synthesize and integrate findings to better capture interests and needs of the target participant audience</p>

**ASSESSMENT QUESTION: To what extent has the target audience or audience proxies (e.g., industry, community associations, area schools, career centers) confirmed they perceive value in the initiative and would be interested in participating?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Demonstrated understanding of and clearly articulated value proposition of the range of projected participant return on investment (ROI)</b></p> <ul style="list-style-type: none"> <li>• Examples of participant ROI: increased skill marketability, job opportunities and quality, compensation, job satisfaction, professional networks, career pathways, professional pride and motivation</li> <li>• Alignment with target audience characteristics (e.g., geographical location, education level, employment status, vocational background and skills, level of familiarity with the industry, incentives and barriers to initiative participation, age, background, income, language, motivations and goals, cultural or community influences, learning preferences, media and technology habits)</li> </ul> <p><b>Qualitative positive feedback from target audience and/or audience proxies</b> that demonstrates target audience interest in the initiative</p>	<p><b>Planned engagement mechanisms with participants post-initiative</b></p> <ul style="list-style-type: none"> <li>• Examples: survey, focus groups, self-reflection tools</li> </ul> <p><b>Demonstration of relevant industry input and involvement</b>, such as:</p> <ul style="list-style-type: none"> <li>• Corporate sponsorship and guest speakers</li> <li>• Hands-on, experiential learning</li> <li>• Networking opportunities</li> <li>• Access to industry equipment and facilities</li> </ul> <p><b>Quantitative positive feedback from target audience and/or audience proxies</b> that demonstrates target audience interest in the initiative (e.g., survey feedback)</p>



# Programming & Instruction

*Apply best practices to optimize initiative delivery and instructional effectiveness*

**ACTIVITY: Define needed programmatic resources** — Assess needed equipment, facilities, personnel, and any other resources needed to implement the initiative

## CONSIDERATIONS & GUIDANCE

<p><b>Refine needed resources</b></p>	<p>Based on resource inventory, gap analysis, and resource plan (from Plan phase), further define the following resources:</p> <ul style="list-style-type: none"> <li>• Human resources (e.g., instructors/facilitators, programming staff, volunteers)</li> <li>• Equipment and facilities (e.g., equipment, classroom or meeting space, instructional materials and supplies)</li> <li>• Instructional technology (e.g., software, platforms, hardware)</li> </ul>
<p><b>Assess resource characteristics and requirements</b></p>	<p>Consider:</p> <ul style="list-style-type: none"> <li>• Relevance and value (i.e., what resources are most critical to achieve learning objectives)</li> <li>• Quantity (e.g., instructors/facilitators, physical space capacity, equipment and technology)</li> <li>• Accessibility (e.g., usability, cost, accommodations, and convenience)</li> <li>• Compliance (e.g., legal, safety, and/or policy considerations)</li> <li>• Scalability and sustainability (i.e., can resources grow with the initiative)</li> </ul>
<p><b>Determine sources from which to acquire resources</b></p>	<p>Identify internal, vendors, partners, or community sources, as well as their value, reliability, and/or mission alignment, and work through operational plan to secure them (see “Effective Business Processes”)</p>

**ASSESSMENT QUESTION: To what extent are programmatic resource requests well documented?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Refined and validated resource requirements and plans for securing them</b> (e.g., purchase requests; requests to hire, contract, or seek volunteers)</p> <ul style="list-style-type: none"> <li>• Demonstrated availability and suitability of resources (e.g., instructor(s) with relevant industry experience; quantity and accessibility of equipment, facilities, materials, and tools)</li> </ul>	<p><b>Identified sources for resource acquisition</b> (e.g., internal, vendors, partners, or community sources)</p> <ul style="list-style-type: none"> <li>• Vendors/sources reviewed for price, quality, and availability comparison (materials, technology, and facilities)</li> <li>• Qualified candidates identified for staff and instructor positions</li> </ul>

**ACTIVITY: Develop and vet initiative materials** — Engage iterative third-party review to evaluate initiative approach, content, activities, and instructional methods and techniques to ensure they are accurate, relevant, effective, and aligned with industry and participant needs

**CONSIDERATIONS & GUIDANCE**

<p><b>Develop and assess initiative content</b></p>	<p>Ensure content supports learning and/or engagement objectives and is aligned with industry needs, as well as target participant audience characteristics and needs</p> <ul style="list-style-type: none"> <li>• Integrate real-world relevance: Ensure use of credible sources, include experiential learning opportunities, and employ instructional methods focused on skill application and performance</li> <li>• Ensure initiative materials, activities, and instructional methods and techniques are aligned with the target participant audience’s characteristics, needs, and motivations</li> <li>• Ensure activities are engaging, credible, relevant, and aligned with community engagement strategies and best practices</li> <li>• Consider customizability and adaptability: Ensure content is modular/editable so it can be further tailored to different audiences or adapted to different formats (e.g., virtual vs in-person)</li> </ul>
<p><b>Identify assessment tools to evaluate engagement</b></p>	<p>Consider a variety of methods, including assessment (e.g., quizzes, reflections, peer feedback) and/or participant evaluations (e.g., feedback on the initiative)</p>

**ASSESSMENT QUESTION: To what extent are initiative materials and activities designed to align with workforce needs and target participant audience characteristics?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Demonstrated alignment of initiative materials and activities with workforce needs and target participant audience characteristics</b></p> <ul style="list-style-type: none"> <li>Informal industry and community organization engagement (e.g., small-scale surveys and interviews, material mark-up) to review initiative materials and activities</li> </ul> <p><b>Demonstrated quality of initiative content</b></p> <ul style="list-style-type: none"> <li>Leverages instructional best practices and credible sources</li> <li>Aligned with community engagement strategies and best practices</li> </ul>	<p><b>Integration of industry-relevant content and activities</b>, such as:</p> <ul style="list-style-type: none"> <li>Industry-relevant context for job roles and responsibilities (e.g., real-world operation and environments)</li> <li>Hands-on, experiential learning</li> <li>Networking opportunities</li> <li>Exposure to industry equipment and facilities</li> </ul> <p><b>Clearly articulated mechanism and defined frequency for ongoing feedback</b> to inform initiative improvements and ensure alignment with anticipated workforce needs</p> <ul style="list-style-type: none"> <li>Advisory board of industry and community organizations</li> </ul>



# Effective Business Processes

*Support initiative success through sound operational planning and practices*

**ACTIVITY: Outline an initiative operational plan** — Develop a logistical plan for successfully executing the initiative

## CONSIDERATIONS & GUIDANCE

<b>Establish operational goals and milestones</b>	Define the following: <ul style="list-style-type: none"> <li>• Frequency of initiative</li> <li>• Enrollment goals</li> <li>• Budget requirements and expected revenue over time, if applicable (i.e., reliance on external funding, goal of revenue generation, plan to achieve cost neutrality or operate at a loss)</li> <li>• Initial plans for initiative sustainment and/or scale-up</li> </ul>
<b>Define and assign tasking</b>	Outline specific tasks needed to reach each goal and stakeholders involved in completing them
<b>Refine required administrative resources</b>	Include funding, administrative staff, logistical process tools (e.g., registration, accounting infrastructure), insurance, licenses, software, and office equipment and supplies
<b>Establish data management practices</b>	Identify and implement mechanisms to protect sensitive information
<b>Assess potential risks and develop a risk management strategy</b>	Consider potential risks, mitigation strategies, and contingency plans
<b>Acquire resources</b>	Develop internal agreements and formal contracts with external entities to secure administrative resources and instructional resources requested through programmatic support

**ASSESSMENT QUESTION: To what extent does your initiative’s operational plan demonstrate that the initiative can be successfully piloted and sustained (if applicable)?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Clearly articulated goals, milestones, and roles and responsibilities</b></p> <ul style="list-style-type: none"> <li>• Frequency of initiative, enrollment targets, and cost per participant</li> <li>• Internal processes, including logistics, data management, and risk management</li> <li>• Informed by engagement with key internal and external stakeholders (e.g., industry leadership and managers, community partners)</li> </ul> <p><b>Detailed budget and plan for securing resources</b> in alignment with implementation timeline and milestones</p> <ul style="list-style-type: none"> <li>• Example plans: agreements and contracts for funding, human resources, equipment and facility access, instructional technology</li> </ul>	<p><b>More robust operational plan that extends beyond the initiative pilot</b>, with components such as:</p> <ul style="list-style-type: none"> <li>• Potential for initiative sustainment and scalability (e.g., long-term funding/revenue models, potential to adapt to different formats/topics or expand to different audiences and/or regions)</li> <li>• Risk assessment and mitigation plans (e.g., operational, financial, market)</li> </ul>

**ACTIVITY: Establish a communications plan** — Develop a strategy for conducting targeted outreach about the initiative with messaging tailored by channel for each key stakeholder group (participants, industry, community organizations)

### CONSIDERATIONS & GUIDANCE

<p><b>Conduct an audience analysis</b></p>	<ul style="list-style-type: none"> <li>• Identify each target audience for outreach, considering which industry, target participant, and community organization stakeholders should engage with the initiative and why (e.g., participants – registration, industry – support and/or sponsorship, community – promotion)</li> <li>• Align target audiences with outreach channels; identify the channels best suited for each audience type</li> </ul>
<p><b>Develop a content strategy</b></p>	<ul style="list-style-type: none"> <li>• Craft key messages tailored to each audience and outreach channel type</li> <li>• Identify the call to action (CTA) / action you want each audience to take</li> <li>• Develop content appropriate to each prioritized channel; consider level of specialized support that may be required / desired (e.g., digital development, videography, graphic design), depending on resources             <ul style="list-style-type: none"> <li>○ Digital: social media posts, website content, email marketing and/or newsletters, paid ad campaigns, radio spots</li> <li>○ Traditional / in person: posters, flyers, advertisements, event materials</li> </ul> </li> </ul>
<p><b>Develop an implementation plan</b></p>	<ul style="list-style-type: none"> <li>• Identify metrics for analysis to ensure outreach is effectively reaching key audiences. Examples include:             <ul style="list-style-type: none"> <li>○ Digital: social media and website (engagement rates), email (open rate), paid ads (clicks)</li> <li>○ Traditional / in person: sign up / attendance</li> </ul> </li> <li>• Develop an outreach timeline / frequency cadence aligned with the CTAs</li> <li>• Assign ownership of tasks (e.g., writing, distribution, monitoring feedback, metrics analysis)</li> </ul>

**ASSESSMENT QUESTION: To what extent does your initiative’s communication plan demonstrate your ability to successfully engage key stakeholder groups?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Clearly articulated communications plan that demonstrates key messages and content are tailored to all target audiences and outreach channels</b></p> <ul style="list-style-type: none"> <li>• Outreach timeline is realistic and content/materials are aligned with budget</li> <li>• Outlined key performance indicators (KPIs) (e.g., projected engagement, referrals) to assess return on investment</li> <li>• Analytics tracking mechanisms are in place</li> <li>• Defined roles and responsibilities</li> </ul>	<p><b>More robust communications plan</b>, with components such as:</p> <ul style="list-style-type: none"> <li>• Opportunities for feedback and input from target audiences</li> <li>• Plans for ongoing participant engagement beyond initiative completion (e.g., education/career pathway tracking, participation in other related initiatives and programs)</li> </ul>

**ACTIVITY: Develop an evaluation plan** — Outline a plan to assess the success of the initiative in meeting workforce needs in a sustainable manner

**CONSIDERATIONS & GUIDANCE**

<p><b>Define stakeholders who must inform the evaluation plan</b></p>	<p>Identify the goals and key stakeholders of the evaluation (e.g., participants, instructors/facilitators, industry partners, community organization partners)</p>
<p><b>Solidify indicators of success</b></p>	<p>Refine and synthesize the indicators that will provide evidence of a successful initiative—both in the short-term and long-term; consider KPIs and benchmarks by dimension of impact</p> <ul style="list-style-type: none"> <li>• <b>Industry &amp; Partner ROI:</b> Number of participants per year; increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations; positive industry marketing; representative industry and community organization stakeholder engagement; alignment with industry market data (e.g., anticipated occupations and roles); resources committed compared with value realized</li> <li>• <b>Learner Impact:</b> Registration/enrollment numbers; increased skill marketability; increased awareness and understanding of the biomanufacturing field and different educational/career pathways; increased compensation, job satisfaction, professional networks, and/or professional pride and motivation; satisfaction and willingness to refer other participants</li> <li>• <b>Programming &amp; Instruction:</b> Committed industry and community organization resources and consistent participation in initiative development and delivery; demonstration that initiative learning objectives, materials, and activities are aligned with workforce needs; demonstration that initiative is engaging, informed by instructional and engagement best practices, and well-structured</li> <li>• <b>Effective Business Processes:</b> Secured resources (human resources, facilities, equipment, technology, supplies, software, logistical process tools); clear operational goals and milestones along with tracking mechanisms and clear roles/responsibilities; robust data management practices; robust risk management strategy; sustainable funding strategy</li> </ul>
<p><b>Outline logistics of evaluation</b></p>	<p>Select data collection methods (e.g., quantitative, qualitative, and mixed), timeline and frequency, resources of evaluation (e.g., budget, human</p>

	resources, and tools and technology), and ethics (e.g., confidentiality, consent, and bias)
<b>Outline plan for data management, analysis, and reporting</b>	Establish a plan for data analysis and reporting to understand and communicate findings, ensuring the report delineates actionable insights; use results for continuous initiative improvement


**ASSESSMENT QUESTION: To what extent does your initiative’s evaluation plan demonstrate that you can successfully assess the outcomes of your initiative?**

<b>BASELINE MEASURES</b>	<b>EXEMPLARY MEASURES</b>
<p><b>Clearly defined KPIs and benchmarks by dimension of impact</b> (i.e., Industry &amp; Partner ROI, Learner Impact, Programming &amp; Instruction, Effective Business Processes)</p> <p><b>Clearly defined data collection, management, analysis, and reporting plan</b>, including key stakeholders, methods, and frequency</p>	<p><b>More robust evaluation plan that extends beyond the initiative pilot</b>, with components such as:</p> <ul style="list-style-type: none"> <li>• Demonstrated use of validated and accepted methodologies and best practices for evaluation</li> <li>• More comprehensive set of defined KPIs (SMART: Specific, Measurable, Achievable, Relevant, Time-bound) and corresponding collection, management, analysis, and reporting plan</li> </ul>

# PILOT

Launch initiative on a small scale to evaluate its success and develop an operational plan to sustain it

## Activities by Dimension of Impact

	<p><b>Industry &amp; Partner ROI</b></p>	<p>Secure industry and community organization champions for initiative</p> <p>Collect and communicate data from the pilot related to industry- and community-relevant metrics</p>
	<p><b>Learner Impact</b></p>	<p>Engage community members and encourage participation in initiative</p> <p>Collect and communicate data from the pilot related to learner impact metrics</p>
	<p><b>Programming &amp; Instruction</b></p>	<p>Deliver initiative to initial cohort of participants</p> <p>Collect and analyze data from the pilot related to programming and instruction metrics</p>
	<p><b>Effective Business Processes</b></p>	<p>Demonstrate business case for sustainment</p> <p>Refine planning for initiative sustainment</p>



# Industry & Partner ROI

*Align initiative with current and/or projected workforce needs*

**ACTIVITY: Secure industry and community organization champions for initiative** — Establish sustained engagement from industry and community representatives who will help ensure continued initiative alignment with workforce needs and expand initiative awareness and recognition

## CONSIDERATIONS & GUIDANCE

**Identify key industry and community partner influencers, decision-makers, and subject matter experts**

Building on industry and community engagement during initiative planning and development, identify the industry and community organization contacts needed to maintain the initiative’s industry relevance, inform continuous initiative improvements, help drive enrollment, and help capture and communicate the initiative’s value and impact

- Determine needed stakeholder representation
  - Number of stakeholders engaged and participation/response rate
  - Type of stakeholders engaged
    - Industry: community engagement or relations managers, HR managers, hiring managers, talent acquisition specialists, corporate leadership, site managers, industry association leaders, front-line managers, subject matter experts
    - Community: local or regional government, associations, area schools, other community-based organizations, economic development organizations, local workforce development boards
  - Organization size and geographic location
- Identify individuals from industry and community organizations who have been integral to initiative development and work with them to identify others within their organization who should be engaged and/or informed about the initiative, broadening initiative awareness and mitigating potential turnover of key representatives

<p><b>Develop an industry and community engagement plan</b></p>	<p>Leverage the broader initiative communications plan to:</p> <ul style="list-style-type: none"> <li>• Align communications channels and engagement mechanisms with different industry and community audiences based on how they should optimally be engaged to maximize the initiative’s impact</li> <li>• Define the incentives/benefits of engagement for industry and community organizations, including sponsorship visibility; helping to expand the talent pool; ability to inform initiative learning objectives, materials, and activities</li> <li>• Outline the frequency and expectations of engagement (i.e., the specific role and calls to action from industry and community representatives), ensuring industry and community champions are actively engaged and feel invested in the initiative</li> </ul>
<p><b>Confirm industry and community organization commitments</b></p>	<p>Obtain a statement or other assurance from industry and community organization representatives clarifying their role in and goals for the initiative, such as committed resources (e.g., funding, facilities, equipment), sponsorship and marketing support, delivery and instructional support, experiential learning opportunities, program reviews, participant referrals for enrollment, or initiative feedback to inform continuous improvement</p>

**ASSESSMENT QUESTION: To what extent have industry and community organizations committed to support the initiative’s development and implementation?**

<p><b>BASELINE MEASURES</b></p>	<p><b>EXEMPLARY MEASURES</b></p>
<p><b>In-kind support</b></p> <ul style="list-style-type: none"> <li>• Examples of support: participation in subject matter reviews, advisory board participation, initiative delivery and instruction, marketing and outreach support, engagement with participants, initiative feedback to inform continuous improvement</li> <li>• Sustained support from a small number of industry and/or community organization early adopters/participants</li> </ul>	<p><b>Committed resources beyond time</b></p> <ul style="list-style-type: none"> <li>• Examples of support: funding, access to facilities and equipment for experiential learning opportunities, commitments to drive enrollment</li> <li>• Broader industry and/or community organization commitment, dependent on initiative scope (i.e., engaged decision makers and/or a greater number of organizations)</li> </ul> <p><b>Clearly articulated mechanism and defined frequency for ongoing feedback</b> to inform initiative improvements and ensure alignment with anticipated workforce needs</p>

**ACTIVITY: Collect and communicate data from the pilot related to industry- and community-relevant metrics** — Collect data needed to evaluate the initiative’s alignment with workforce needs, and communicate results to inform initiative improvements and grow industry and community support and recognition of the initiative

**CONSIDERATIONS & GUIDANCE**

<b>Execute on evaluation plan</b>	<p>Capture data about indicators of success relevant to industry and community organizations</p> <ul style="list-style-type: none"> <li>• Examples:             <ul style="list-style-type: none"> <li>○ Number of participants per year</li> <li>○ Increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations</li> <li>○ Positive industry marketing</li> <li>○ Representative industry and community organization stakeholder engagement</li> <li>○ Alignment with industry market data (e.g., anticipated occupations and roles)</li> <li>○ Resources committed compared with value realized</li> </ul> </li> <li>• Employ data collection methods from evaluation plan to collect relevant data, including from industry and community partners and initiative participants</li> <li>• Implement data management and analysis plan outlined in evaluation plan</li> <li>• Ensure data is reasonably reliable, unbiased, and representative</li> </ul>
<b>Synthesize and communicate findings</b>	<p>Leverage communications plan to align available data with key messages to demonstrate the industry and community value proposition</p> <ul style="list-style-type: none"> <li>• Define and prioritize initiative changes that will better align the initiative with industry and community needs</li> </ul>

**ASSESSMENT QUESTION: To what extent can you demonstrate that the initiative provides a return on investment to industry and community organizations?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative positive feedback that demonstrates industry and/or the community's perceived value of the initiative</b></p> <ul style="list-style-type: none"> <li>• Examples: testimonials and surveys capturing increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations; improved brand recognition and community involvement</li> </ul>	<p><b>Quantitative data that demonstrates industry and/or the community's realized value from the initiative</b></p> <ul style="list-style-type: none"> <li>• Alignment with industry market data, including anticipated occupations and roles</li> <li>• Data comparisons of initiative participants with similar groups who did not participate</li> </ul> <p><b>Multiple methods used for collecting and reporting data on initiative impact</b></p> <ul style="list-style-type: none"> <li>• Collection examples: survey/feedback forms, interviews, roundtables, focus groups</li> <li>• Reporting examples: industry and community case studies and testimonials that can be used in future initiative marketing and communications</li> </ul>



# Learner Impact

*Enhance learner skill marketability and career opportunities*

**ACTIVITY: Engage community members and encourage participation in initiative** — Conduct outreach to target participant audience and enroll participants in the initiative pilot

## CONSIDERATIONS & GUIDANCE

<p><b>Execute communications plan for target participant audience</b></p>	<p>Use identified outreach channels to message initiative details and value proposition to prospective participants, communicating a clear call to action and intuitive enrollment process in all materials</p> <ul style="list-style-type: none"> <li>• Coordinate with relevant recruitment partners, including community organizations (e.g., career centers, schools), higher education institutions, and local government to promote the initiative to the target participant audience</li> </ul>
<p><b>Support prospective participants during the enrollment process</b></p>	<p>Work with prospective participants to ensure they are successfully able to enroll (e.g., online, in-person, assisted), answer any questions and address any concerns, communicate logistical information, and provide any relevant background materials</p>
<p><b>Track and analyze metrics for target audience outreach</b></p>	<p>Assess whether the target participant audience is engaging with outreach content and mechanisms</p> <ul style="list-style-type: none"> <li>• Adjust outreach strategy, as needed, to reach target audience and achieve enrollment objectives</li> </ul>

**ASSESSMENT QUESTION: To what extent has the initiative met its pilot enrollment objectives?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Enrollment metrics</b></p> <ul style="list-style-type: none"> <li>Examples: number of individuals who apply for and/or enroll in the initiative compared with enrollment targets</li> </ul> <p><b>Qualitative demonstration of alignment between enrolled participant characteristics and target participant audience characteristics</b></p> <ul style="list-style-type: none"> <li>Examples: geographical location, education level, employment status, vocational background and skills, level of familiarity with the industry</li> </ul> <p><b>Qualitative assessment of target audience outreach strategy</b></p> <ul style="list-style-type: none"> <li>Examples: how interested prospective participants heard about the initiative, why prospective participants were interested in participating, satisfaction in enrollment process</li> </ul>	<p><b>Quantitative demonstration and more robust qualitative alignment between enrolled participant characteristics and target participant audience characteristics</b></p> <ul style="list-style-type: none"> <li>Example quantitative data: age, income, language</li> <li>Example qualitative information: background, motivations and goals, cultural or community influences, learning preferences, media and technology habits</li> </ul> <p><b>Quantitative assessment of target audience outreach strategy</b></p> <ul style="list-style-type: none"> <li>Examples: social media and website engagement rates, email open rate, paid ad clicks, sign-up / attendance at promotional events, cost of marketing approaches compared with reach/enrollment</li> </ul>

**ACTIVITY: Collect and communicate data from the pilot related to learner impact metrics** — Collect data needed to evaluate participant engagement with the initiative

**CONSIDERATIONS & GUIDANCE**

<p><b>Execute on evaluation plan</b></p>	<p>Capture data about indicators of success relevant to learner impact</p> <ul style="list-style-type: none"> <li>• Examples:             <ul style="list-style-type: none"> <li>○ Registration/enrollment numbers</li> <li>○ Increased skill marketability</li> <li>○ Increased awareness and understanding of the biomanufacturing field and different educational/career pathways</li> <li>○ Increased compensation, job satisfaction, professional networks, and/or professional pride and motivation</li> <li>○ Satisfaction and willingness to refer other participants</li> </ul> </li> <li>• Employ data collection methods from evaluation plan to collect relevant data, including from industry partners and initiative participants</li> <li>• Implement data management and analysis plan outlined in evaluation plan</li> <li>• Ensure data is reasonably reliable, unbiased, and representative</li> </ul>
<p><b>Identify and capture participant case studies</b></p>	<p>When collecting data from participants, identify participants with compelling success stories or testimonials that could help demonstrate the value of the initiative to future prospective participants</p>
<p><b>Synthesize and communicate findings</b></p>	<p>Leverage communications plan to align available data with key messages to demonstrate the participant value proposition</p> <ul style="list-style-type: none"> <li>• Define and prioritize initiative changes that will better align the initiative with target participant audience needs</li> </ul>

**ASSESSMENT QUESTION: To what extent does the initiative successfully engage and deliver a return on investment for participants?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative positive feedback from participants that demonstrates their engagement in the initiative</b></p> <ul style="list-style-type: none"> <li>Examples: participant completion rates, drop-off points, frequency or duration of engagement, time to complete initiative, increased awareness and understanding of the biomanufacturing field and breadth of associated occupations, satisfaction and willingness to refer</li> </ul>	<p><b>Qualitative and/or quantitative positive feedback from participants that demonstrates their perceived value of the initiative</b></p> <ul style="list-style-type: none"> <li>Examples: extent of industry-relevant content and activities, increased skill marketability, job opportunities and quality, compensation, job satisfaction, professional networks, education/career pathways, professional pride and motivation</li> </ul> <p><b>Multiple methods used for collecting and reporting data</b></p> <ul style="list-style-type: none"> <li>Collection examples: participation/engagement tracking, self-reflection tools, survey/feedback forms, interviews, roundtables, focus groups</li> <li>Reporting examples: participant case studies and testimonials that can be used in future initiative marketing and communications</li> </ul>



# Programming & Instruction

*Apply best practices to optimize initiative delivery and instructional effectiveness*

**ACTIVITY: Deliver initiative to initial cohort of participants —**  
Implement operational plan

## CONSIDERATIONS & GUIDANCE

<b>Coordinate resources and logistics to execute instructional plan</b>	<p>Leverage initiative operational plan to coordinate:</p> <ul style="list-style-type: none"> <li>• Human resources, including communication with and engagement of instructors/facilitators, participants, and other program and instructional staff support</li> <li>• Equipment and facilities, including access to equipment, setup of classroom or meeting space, organization of instructional materials and supplies</li> <li>• Instructional technology setup, including software, platforms, hardware, and physical instructional materials (e.g., notebooks, handouts)</li> </ul>
<b>Deliver initiative materials and activities</b>	<p>Ensure alignment with learning and/or engagement objectives, industry and community needs and input, and engagement assessment</p>
<b>Implement risk mitigation and contingency plans as needed</b>	<p>Monitor resources and make any real-time adjustments to improve the participant experience and ensure initiative alignment with initiative operational plan</p>

**ASSESSMENT QUESTION: To what extent was the pilot delivered as planned?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Demonstration of successful coordination of resources and logistics</b></p> <ul style="list-style-type: none"> <li>• Reliable access to equipment, facilities, and technology</li> <li>• Qualified instructors/facilitators and other programmatic staff support</li> <li>• Instructional setup, including software, platforms, hardware, and physical instructional materials</li> <li>• Implementation of risk mitigation and contingency plans, if needed</li> </ul>	<p><b>Integration of industry-relevant content and activities</b>, such as:</p> <ul style="list-style-type: none"> <li>• Industry-relevant context for job roles and responsibilities (e.g., real-world operation and environments)</li> <li>• Hands-on, experiential learning</li> <li>• Networking opportunities</li> <li>• Exposure to industry equipment and facilities</li> </ul>

**ACTIVITY: Collect and analyze data from the pilot related to programming and instruction metrics** — Collect data needed to evaluate initiative material and activity effectiveness

**CONSIDERATIONS & GUIDANCE**

<p><b>Execute on evaluation plan</b></p>	<p>Capture data about indicators of success relevant to programming and instruction</p> <ul style="list-style-type: none"> <li>• Examples:             <ul style="list-style-type: none"> <li>○ Committed industry and community organization resources and consistent participation in initiative development and delivery</li> <li>○ Demonstration that initiative learning objectives, materials, and activities are aligned with workforce needs</li> <li>○ Demonstration that initiative is engaging, informed by instructional and engagement best practices, and well-structured</li> </ul> </li> <li>• Employ data collection methods from evaluation plan to collect relevant data</li> <li>• Implement data management and analysis plan outlined in evaluation plan</li> <li>• Ensure data is reasonably reliable, unbiased, and representative</li> </ul>
<p><b>Synthesize and analyze findings</b></p>	<p>Assess initiative effectiveness, and define and prioritize initiative changes that will better achieve initiative learning objectives</p>

**ASSESSMENT QUESTION: To what extent did the initiative’s materials and activities ensure participants achieved industry-vetted learning objectives?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative data to demonstrate the effectiveness of initiative content, activities, and delivery</b></p> <ul style="list-style-type: none"> <li>• Collection examples: instructor/facilitator feedback, initiative evaluation from participants</li> <li>• Leverages instructional best practices and credible sources</li> <li>• Aligned with community engagement strategies and best practices</li> <li>• Recommendations to refine initiative learning objectives, materials, activities, and delivery approach</li> </ul>	<p><b>Clearly defined data collection, management, analysis, and reporting plan</b>, including key stakeholders, methods, and frequency</p> <ul style="list-style-type: none"> <li>• Clearly defined key performance indicators (KPIs) and benchmarks</li> <li>• Synthesis of evaluation, lessons learned, and next steps for improvement and continuation (e.g., understanding of ideal enrollment numbers for optimal outcomes)</li> </ul> <p><b>Clearly articulated mechanism and defined frequency for ongoing feedback</b> to inform initiative improvements and ensure alignment with anticipated workforce needs</p> <ul style="list-style-type: none"> <li>• Advisory board of industry and community organizations</li> </ul>



# Effective Business Processes

*Support initiative success through sound operational planning and practices*

**ACTIVITY: Demonstrate business case for sustainment** — Collect and outline evidence of value to justify continuation of the initiative

## CONSIDERATIONS & GUIDANCE

<b>Provide evidence of impact and industry and community organization support</b>	Assess participant outcomes (e.g., increased skill marketability, awareness of different educational/career pathways), industry and community organization value (e.g., increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations, positive industry marketing, alignment with workforce needs), and extent of strategic partnerships
<b>Assess financial stability and sustainability</b>	Consider initiative cost effectiveness (e.g., cost per participant), initiative provider return on investment, affordability for participants, and long-term funding strategy
<b>Demonstrate logistical viability and longevity</b>	Consider infrastructure and capacity for scale (e.g., organizational readiness, resource modifications), scalability model (i.e., increased enrollment, increased frequency, or growth across regions), credibility and track record of initiative, and policy alignment (i.e., local, state, and/or federal priorities)
<b>Update risk assessment</b>	Based on pilot, update potential risks and associated mitigation strategies to ensure initiative success

**ASSESSMENT QUESTION: To what extent has the initiative’s pilot provided evidence of the initiative’s value to justify its continuation?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative information to justify initiative continuation:</b></p> <ul style="list-style-type: none"> <li>• Demonstrated value to a variety of stakeholders (e.g., commitment to support initiative delivery and continuous improvement, confirmation of continued need)</li> </ul>	<p><b>Quantitative and/or more robust qualitative information to justify initiative continuation:</b></p> <ul style="list-style-type: none"> <li>• Assessment of continued market need (e.g., anticipated unfilled positions for specific jobs and/or skills, alignment with regional and/or national priorities)</li> <li>• Financial stability and logistical viability (e.g., new or continued funding secured; continued access to needed facilities, equipment, and materials; ability to secure instructional expertise and program support personnel; cost per participant compared with target and available resources; actual enrolled participants compared with target enrollment)</li> </ul>

**ACTIVITY: Refine planning for initiative sustainment** — Synthesize lessons learned to define and prioritize recommendations for initiative improvement that will enable initiative sustainment, growth, and/or scaling

**CONSIDERATIONS & GUIDANCE**

<p><b>Refine initiative operational goals and milestones</b></p>	<p>Consider:</p> <ul style="list-style-type: none"> <li>• Frequency of initiative</li> <li>• Enrollment goals</li> <li>• Budget requirements and expected revenue over time, if applicable</li> <li>• Plans for initiative sustainment and/or scale-up</li> </ul>
<p><b>Develop recommendations for initiative updates</b></p>	<p>Consider needed changes to initiative learning and/or engagement objectives, materials, activities, and delivery</p> <ul style="list-style-type: none"> <li>• Validate recommended changes with industry and community organizations</li> </ul>
<p><b>Refine operational plan, including resource needs</b></p>	<p>Assess current capacity and tasking, including staffing, partnerships, facilities and equipment, and funding; define key needs and outcomes for initiative sustainment; and identify any additional risks and mitigation strategies</p>
<p><b>Refine communications plan</b></p>	<p>Consider needed changes to audience analysis, content strategy, and implementation plan (e.g., outreach channels, geographic areas)</p>
<p><b>Refine evaluation plan</b></p>	<p>Consider needed changes to contributing stakeholders; indicators of success; and plan to manage, analyze, and communicate impact metrics to stakeholders and decision makers</p>

**ASSESSMENT QUESTION: To what extent do your initiative’s refined business plans demonstrate your ability to successfully sustain, grow, or scale the initiative (if applicable)?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Refined goals, milestones, roles and responsibilities, and associated resource requirements</b></p> <ul style="list-style-type: none"> <li>• Refined frequency of initiative, enrollment targets, and cost per participant</li> <li>• Internal processes, including logistics, data management, and risk management</li> <li>• Budget and plan for securing resources (e.g., agreements and contracts for funding, human resources, equipment and facility access, instructional technology)</li> <li>• Updated risk assessment and mitigation plans (e.g., operational, financial, market)</li> </ul>	<p><b>Refined communications plan informed by key performance indicators</b> (e.g., engagement, referrals)</p> <ul style="list-style-type: none"> <li>• Updated messages and content tailored to target audiences and outreach channels</li> <li>• Assessment of engagement analytics and mechanisms for ongoing monitoring</li> </ul> <p><b>Demonstrated capture and communication of findings from initiative evaluation across dimensions of impact</b> (i.e., Industry &amp; Partner ROI, Learner Impact, Programming &amp; Instruction, Effective Business Processes)</p> <ul style="list-style-type: none"> <li>• Continuous communication of impact metrics to stakeholders and decision makers</li> <li>• Refined evaluation plan with updated data collection, management, analysis, and reporting approaches</li> </ul> <p><b>Consultation of key stakeholders on recommendations and changes to initiative</b></p> <ul style="list-style-type: none"> <li>• Recommendations are prioritized by greatest potential impact and responsiveness to industry, participant, and funder needs; sound rationale is provided for not implementing certain recommendations</li> <li>• Continued/increased stakeholder involvement and commitment (e.g., industry support, participant continued engagement, needed changes to contributing stakeholders)</li> </ul>

# SUSTAIN

## Continuously evaluate and improve initiative to maximize its impact

**Sustain an initiative:** Continue to follow the business and operational model with new cohorts

**Grow an initiative:** Increase participant enrollment and/or initiative frequency at the same location/region

**Scale an initiative:** Replicate the initiative for new geographies (i.e., new locations) and/or new target audiences (i.e., new populations)

### Activities by Dimension of Impact

	<p><b>Industry &amp; Partner ROI</b></p>	<p>Maintain and expand industry and community organization champions</p> <p>Continue to collect and communicate data related to industry- and community-relevant metrics</p>
	<p><b>Learner Impact</b></p>	<p>Maintain and/or grow participation and completion levels</p> <p>Continue to collect and communicate data related to learner impact metrics</p>
	<p><b>Programming &amp; Instruction</b></p>	<p>Continue to collect and analyze data related to programming and instruction metrics</p> <p>Continuously update and vet initiative approach and content</p>
	<p><b>Effective Business Processes</b></p>	<p>Continuously refine and evolve planning for initiative sustainment</p> <p>Develop a growth and/or scaling plan</p>



# Industry & Partner ROI

*Align initiative with current and/or projected workforce needs*

**ACTIVITY: Maintain and expand industry and community organization champions** — Continue to communicate the initiative’s value to industry and community organizations and work with them to continuously refine and secure resources needed for initiative sustainment, growth, and/or scaling

## CONSIDERATIONS & GUIDANCE

<p><b>Maintain engagement with key industry and community influencers, decision-makers, and subject matter experts</b></p>	<p>Ensure champions continue to value and support the initiative</p> <ul style="list-style-type: none"> <li>• Be mindful of industry and community organization representative turnover: Maintain materials and processes to facilitate knowledge transfer and more quickly get new representatives up to speed on the initiative</li> <li>• Invest in relationships by offering routine engagement opportunities and providing personalized outreach</li> </ul>
<p><b>Grow the circle of initiative champions</b></p>	<p>Build relationships needed to expand the initiative’s recognition and impact</p> <ul style="list-style-type: none"> <li>• Identify gaps in current industry and community champions that should be addressed to broaden the initiative’s reach and success, including:             <ul style="list-style-type: none"> <li>○ Type of stakeholders engaged                 <ul style="list-style-type: none"> <li>▪ Industry: community engagement or relations managers, HR managers, hiring managers, talent acquisition specialists, corporate leadership, site managers, industry association leaders, front-line managers, subject matter experts</li> <li>▪ Community: local or regional government, associations, area schools, other community-based organizations, economic development organizations, local workforce development boards</li> </ul> </li> <li>○ Organization size and geographic location</li> </ul> </li> <li>• Build relationships with organizations similar to current champions             <ul style="list-style-type: none"> <li>○ Potential mechanisms: leveraging existing champions for connections, general networking, hosting roundtables, and presenting at industry or community events</li> </ul> </li> </ul>

<p><b>Provide ongoing mechanisms for industry and community organization feedback and collaboration</b></p>	<p>Collect regular industry and community organization feedback</p> <ul style="list-style-type: none"> <li>• Ensure continued value for champions by adjusting in response to evolving workforce needs and market factors (e.g., economic fluctuations, labor market policy)</li> <li>• Continuously engage industry and community organizations to define the considerations for long-term support (e.g., needed initiative improvements, resource commitments, advisory board participation, enrollment expectations)</li> </ul>
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**ASSESSMENT QUESTION: To what extent have industry and community organizations demonstrated a continued commitment to support the initiative’s sustainment, growth, and/or scaling?**

<p><b>BASELINE MEASURES</b></p>	<p><b>EXEMPLARY MEASURES</b></p>
<p><b>Continued and/or expanded in-kind support</b></p> <ul style="list-style-type: none"> <li>• Examples of support: participation in subject matter reviews, advisory board participation, initiative delivery and instruction, marketing and outreach support, engagement with participants, initiative feedback to inform continuous improvement</li> <li>• Demonstrated industry and community organization support, even with point of contact turnover</li> </ul>	<p><b>Continued and/or expanded committed resources beyond time</b></p> <ul style="list-style-type: none"> <li>• Examples of support: funding, access to facilities and equipment for experiential learning opportunities, commitments to drive enrollment</li> <li>• Broader industry and/or community organization commitment, dependent on initiative scope (e.g., engaged decision makers and/or a greater number of organizations)</li> </ul> <p><b>Clearly articulated mechanism and defined frequency for ongoing feedback</b> to inform initiative improvements and ensure alignment with anticipated workforce needs</p>

**ACTIVITY: Continue to collect and communicate data related to industry- and community-relevant metrics** — Continue to collect data needed to evaluate the initiative’s alignment with workforce needs, and communicate results to inform initiative improvements and grow industry and community support and recognition of the initiative

**CONSIDERATIONS & GUIDANCE**

<p><b>Execute on refined evaluation plan</b></p>	<p>Capture data about indicators of success relevant to industry and community organizations</p> <ul style="list-style-type: none"> <li>• Examples:             <ul style="list-style-type: none"> <li>○ Number of participants per year</li> <li>○ Increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations</li> <li>○ Positive industry marketing</li> <li>○ Representative industry and community organization stakeholder engagement</li> <li>○ Alignment with industry market data (e.g., anticipated occupations and roles)</li> <li>○ Resources committed compared with value realized</li> </ul> </li> <li>• Employ data collection methods from evaluation plan to collect relevant data at defined data collection frequency, including from industry partners and initiative participants</li> <li>• Implement data management and analysis plan outlined in evaluation plan</li> <li>• Ensure data is reasonably reliable, unbiased, and representative</li> </ul>
<p><b>Synthesize and communicate findings</b></p>	<p>Leverage communications plan to align available data with key messages to demonstrate the industry and community value proposition</p> <ul style="list-style-type: none"> <li>• Update and prioritize initiative changes that will better align the initiative with industry and community needs</li> </ul>

**ASSESSMENT QUESTION: To what extent can you demonstrate that the initiative provides a return on investment to industry and community organizations?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative positive feedback that demonstrates industry and/or the community's perceived value of the initiative</b></p> <ul style="list-style-type: none"> <li>Examples: testimonials and surveys capturing increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations; improved brand recognition and community involvement</li> </ul>	<p><b>Quantitative longitudinal data that demonstrates industry and/or the community's realized value from the initiative</b></p> <ul style="list-style-type: none"> <li>Alignment with industry market data, including anticipated occupations and roles</li> <li>Data comparisons of initiative participants with similar groups who did not participate</li> </ul> <p><b>Multiple methods used for collecting and reporting data on initiative impact</b></p> <ul style="list-style-type: none"> <li>Collection examples: survey/feedback forms, interviews, roundtables, focus groups</li> <li>Reporting examples: industry and community case studies and testimonials that can be used in future initiative marketing and communications</li> </ul>



# Learner Impact

*Enhance learner skill marketability and career opportunities*

## ACTIVITY: Maintain and/or grow participation and completion levels —

Continue to conduct and update outreach efforts to target participant audience to sustain or grow enrollment of participants in the initiative

### CONSIDERATIONS & GUIDANCE

<p><b>Refine communications plan for target participant audience</b></p>	<p>Continue to use identified outreach channels to message initiative details and value proposition to prospective participants, communicating a clear call to action and intuitive enrollment process in all materials</p> <ul style="list-style-type: none"> <li>• Coordinate with relevant recruitment partners, including industry employers, community organizations, career centers, area schools, and local government to promote the program to the target audience</li> </ul> <p>Identify outreach successes and potential areas for improvement</p> <ul style="list-style-type: none"> <li>• Track and analyze enrollment patterns: Use data to spot trends (e.g., successful outreach channels, drop-offs, demographic or geographic disparities)</li> <li>• Assess and refine messaging and outreach strategy: Messaging should be clear, outcome-focused, relevant, and aspirational; include participant case studies and testimonials</li> <li>• Use feedback to continuously improve: Incorporate feedback collected through evaluation methods</li> </ul>
<p><b>Continue to support prospective participants during the enrollment process</b></p>	<p>Work with prospective participants to ensure they are successfully able to enroll (e.g., online, in-person, assisted), answer any questions and address any concerns, communicate logistical information, and provide any relevant background materials</p>
<p><b>Contact previous or interested participants</b></p>	<p>Follow-up and re-engage interested target participant audiences to notify them of additional initiative opportunities (e.g., offer waitlists or early application; maintain leads through text messages, newsletters, or past participant success stories)</p>

**ASSESSMENT QUESTION: To what extent is the initiative able to sustain and/or grow participation?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Enrollment metrics</b></p> <ul style="list-style-type: none"> <li>• Number of individuals who apply for and/or enroll in the initiative compared with enrollment targets</li> </ul> <p><b>Qualitative demonstration of alignment between enrolled participant characteristics and target participant audience characteristics</b></p> <ul style="list-style-type: none"> <li>• Examples: geographical location, education level, employment status, vocational background and skills, level of familiarity with the industry</li> </ul> <p><b>Qualitative assessment of target audience outreach strategy</b></p> <ul style="list-style-type: none"> <li>• Examples: how interested prospective participants heard about the initiative, why prospective participants were interested in participating, satisfaction in enrollment process</li> </ul>	<p><b>Quantitative demonstration and more robust qualitative alignment between enrolled participant characteristics and target participant audience characteristics</b></p> <ul style="list-style-type: none"> <li>• New and/or broader target audiences reached (e.g., participants from new regions, different educational/vocational backgrounds)</li> <li>• Example quantitative data: age, income, language</li> <li>• Example qualitative information: background, motivations and goals, cultural or community influences, learning preferences, media and technology habits</li> </ul> <p><b>Ongoing quantitative assessment of target audience outreach strategy</b></p> <ul style="list-style-type: none"> <li>• Examples: social media and website engagement rates, email open rate, paid ad clicks, sign-up/attendance at promotional events, cost of marketing approaches compared with reach/enrollment</li> <li>• Demonstrated mechanism for tracking and engaging with interested target participants who did not enroll / were not accepted</li> </ul>

**ACTIVITY: Continue to collect and communicate data related to learner impact metrics** — Continue to collect data needed to evaluate participant engagement with the initiative

**CONSIDERATIONS & GUIDANCE**

<p><b>Execute on refined evaluation plan</b></p>	<p>Capture data about indicators of success relevant to learner impact</p> <ul style="list-style-type: none"> <li>• Examples:             <ul style="list-style-type: none"> <li>○ Registration/enrollment numbers</li> <li>○ Increased skill marketability</li> <li>○ Increased awareness and understanding of the biomanufacturing field and different educational/career pathways</li> <li>○ Increased compensation, job satisfaction, professional networks, and/or professional pride and motivation</li> <li>○ Satisfaction and willingness to refer other participants</li> </ul> </li> <li>• Employ data collection methods from evaluation plan to collect relevant data, including from industry partners and initiative participants</li> <li>• Implement data management and analysis plan outlined in evaluation plan</li> <li>• Ensure data is reasonably reliable, unbiased, and representative</li> </ul>
<p><b>Identify and capture participant case studies</b></p>	<p>When collecting data from participants, identify participants with compelling success stories or testimonials that could help demonstrate the value of the initiative to future prospective participants</p>
<p><b>Synthesize and communicate findings</b></p>	<p>Leverage communications plan to align available data with key messages to demonstrate the participant value proposition</p> <ul style="list-style-type: none"> <li>• Update and prioritize initiative changes that will better align the initiative with target participant audience needs</li> </ul>

**ASSESSMENT QUESTION: To what extent does the initiative continue to successfully engage and deliver a return on investment for participants?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative positive feedback from participants that demonstrates their engagement in the initiative</b></p> <ul style="list-style-type: none"> <li>Examples: participant completion rates, drop-off points, frequency or duration of engagement, time to complete initiative, increased awareness and understanding of the biomanufacturing field and breadth of associated occupations, satisfaction and willingness to refer</li> </ul>	<p><b>Qualitative and/or quantitative positive feedback from participants that demonstrates their perceived value of the initiative</b></p> <ul style="list-style-type: none"> <li>Examples: extent of industry-relevant content and activities, increased skill marketability, job opportunities and quality, compensation, job satisfaction, professional networks, education/career pathways, professional pride and motivation</li> </ul> <p><b>Multiple methods used for collecting and reporting data</b></p> <ul style="list-style-type: none"> <li>Collection examples: participation/engagement tracking, self-reflection tools, survey/feedback forms, interviews, roundtables, focus groups</li> <li>Reporting examples: participant case studies and testimonials that can be used in future initiative marketing and communications</li> </ul>



# Programming & Instruction

*Apply best practices to optimize initiative delivery and instructional effectiveness*

**ACTIVITY: Continue to collect and analyze data related to programming and instruction metrics** — Assess initiative material and activities to ensure participants continue to reach industry-aligned learning objectives

## CONSIDERATIONS & GUIDANCE

<p><b>Execute on refined evaluation plan</b></p>	<p>Capture data about indicators of success relevant to programming and instruction:</p> <ul style="list-style-type: none"> <li>• Examples:                     <ul style="list-style-type: none"> <li>○ Committed industry and community organization resources and consistent participation in initiative development and delivery</li> <li>○ Demonstration that initiative learning objectives, materials, and activities are aligned with workforce needs</li> <li>○ Demonstration that initiative is engaging, informed by instructional and engagement best practices, and well-structured</li> </ul> </li> <li>• Employ data collection methods from evaluation plan to collect relevant data</li> <li>• Implement data management and analysis plan outlined in evaluation plan</li> <li>• Ensure data is reasonably reliable, unbiased, and representative</li> </ul>
<p><b>Synthesize and analyze findings</b></p>	<p>Assess initiative effectiveness, and define and prioritize initiative changes that will better achieve initiative learning objectives</p>

**ASSESSMENT QUESTION: To what extent do initiative materials and activities continue to effectively contribute to achieving industry-defined learning objectives?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative data to demonstrate the effectiveness of initiative content, activities, and delivery</b></p> <ul style="list-style-type: none"> <li>• Collection examples: instructor/facilitator feedback, initiative evaluation from participants</li> <li>• Leverages instructional best practices and credible sources</li> <li>• Aligned with community engagement strategies and best practices</li> <li>• Recommendations to refine learning objectives, instructional methodology, assessments, and learning material</li> </ul>	<p><b>Clearly defined data collection, management, analysis, and reporting plan</b>, including key stakeholders, methods, and frequency</p> <ul style="list-style-type: none"> <li>• Clearly defined key performance indicators and benchmarks</li> <li>• Synthesis of evaluation, lessons learned, and next steps for improvement and continuation (e.g., understanding of ideal enrollment numbers for optimal outcomes)</li> </ul> <p><b>Clearly articulated mechanism and defined frequency for ongoing feedback</b> to inform initiative improvements and ensure alignment with anticipated workforce needs</p> <ul style="list-style-type: none"> <li>• Advisory board of industry and community organizations</li> </ul>

**ACTIVITY: Continuously update and vet initiative approach and content** — Continue to evaluate refined initiative approach, content, activities, and instructional methods and techniques to ensure they are accurate, relevant, effective, and aligned with industry and participant needs

**CONSIDERATIONS & GUIDANCE**

<b>Develop and implement an initiative review cycle</b>	<p>Regularly seek feedback from instructors/facilitators, industry partners, community organizations, and former participants</p> <ul style="list-style-type: none"> <li>• Collect feedback from instructors/facilitators and participants to identify gaps and challenges in initiative content and delivery and determine actionable insights for improvement</li> <li>• Continuously engage industry stakeholders to ensure learning objectives, initiative materials and activities, and delivery approaches remain aligned with workforce needs</li> <li>• Prioritize and integrate feedback, using data to inform prioritization</li> </ul>
<b>Continue to coordinate resources and logistics</b>	<p>Leverage initiative operational plan to coordinate:</p> <ul style="list-style-type: none"> <li>• Human resources, including engagement with and onboarding of instructors/facilitators, participants, and other program and instructional staff support; knowledge transfer and succession planning</li> <li>• Equipment and facilities, including access to equipment, setup of classroom or meeting space, organization of instructional materials and supplies</li> <li>• Instructional technology setup, including software, platforms, hardware, and physical instructional materials (e.g., notebooks, handouts)</li> </ul>
<b>Update and implement risk mitigation and contingency plans as needed</b>	<p>Monitor resources and make any real-time adjustments to improve the participant experience and ensure training initiative alignment with initiative operational plan</p>

**ASSESSMENT QUESTION: To what extent do initiative materials and activities align with workforce needs and target audience characteristics?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Demonstrated alignment of initiative materials and activities with workforce needs and target audience characteristics</b></p> <ul style="list-style-type: none"> <li>• Informal industry and community organization engagement (e.g., small-scale surveys and interviews, material mark-ups) to review refined initiative materials and activities</li> </ul> <p><b>Demonstrated quality of refined initiative content</b></p> <ul style="list-style-type: none"> <li>• Leverages instructional best practices and credible sources</li> <li>• Aligned with community engagement strategies and best practices</li> </ul>	<p><b>Integration of industry-relevant content and activities, such as:</b></p> <ul style="list-style-type: none"> <li>• Industry-relevant context for job roles and responsibilities (e.g., real-world operation and environments)</li> <li>• Hands-on, experiential learning</li> <li>• Networking opportunities</li> <li>• Exposure to industry equipment and facilities</li> </ul> <p><b>Clearly articulated mechanism and defined frequency for ongoing feedback</b> to inform initiative improvements and ensure alignment with anticipated workforce needs</p> <ul style="list-style-type: none"> <li>• Advisory board of industry and community organizations</li> </ul>



# Effective Business Processes

*Support initiative success through sound operational planning and practices*

**ACTIVITY: Continuously refine and evolve planning for initiative sustainment** — Continuously assess—at least annually—the success of the initiative in meeting workforce needs and implement prioritized recommendations for initiative improvements that will enable continued sustainment

## CONSIDERATIONS & GUIDANCE

<p><b>Continue to refine business case for sustainment</b></p>	<p>Provide frequent evidence of impact and industry and community organization support, including participant outcomes (e.g., increased skill marketability, awareness of different educational/career pathways), industry and community organization value (e.g., increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations, positive industry marketing, alignment with workforce needs), and extent of strategic partnerships</p> <ul style="list-style-type: none"> <li>• Continuously assess financial stability and sustainability, including initiative cost effectiveness (e.g., cost per participant), initiative provider return on investment, affordability for participants, and long-term funding strategy</li> <li>• Demonstrate logistical viability and longevity, including infrastructure and capacity for scale (e.g., organizational readiness, resource modifications), scalability model (i.e., increased enrollment, increased frequency, or growth across regions), credibility and track record of initiative, and policy alignment (i.e., local, state, and/or federal priorities)</li> </ul>
<p><b>Refine initiative operational goals and milestones</b></p>	<p>Reassess and/or confirm:</p> <ul style="list-style-type: none"> <li>• Frequency of initiative</li> <li>• Enrollment goals</li> <li>• Budget requirements and expected revenue over time, if applicable</li> <li>• Plans for continued sustainment, growth, and/or scale-up in response to workforce needs and participant demand</li> </ul>

<b>Refine communications plan</b>	Consider needed changes to audience analysis, content strategy, and implementation plan (e.g., outreach channels, geographic areas)
<b>Refine evaluation plan</b>	Consider needed changes to contributing stakeholders; indicators of success; and plan to manage, analyze, and communicate impact metrics to stakeholders and decision makers

**ASSESSMENT QUESTION: To what extent are your initiative’s business plans refined to support evolving workforce needs and the business case for initiative continuation?**

<b>BASELINE MEASURES</b>	<b>EXEMPLARY MEASURES</b>
<p><b>Refined goals, milestones, roles and responsibilities, and associated resource requirements</b></p> <ul style="list-style-type: none"> <li>• Refined frequency of initiative, enrollment targets, and cost per participant</li> <li>• Internal processes, including logistics, data management, and risk management</li> <li>• Budget and plan for securing resources (e.g., agreements and contracts for funding, human resources, equipment and facility access, instructional technology)</li> <li>• Updated risk assessment and mitigation plans (e.g., operational, financial, market)</li> </ul>	<p><b>Refined communications plan informed by key performance indicators</b> (e.g., engagement, referrals)</p> <ul style="list-style-type: none"> <li>• Updated messages and content tailored to target audiences and outreach channels</li> <li>• Assessment of engagement analytics and mechanisms for ongoing monitoring</li> </ul> <p><b>Demonstrated capture and communication of findings from initiative evaluation across dimensions of impact</b> (i.e., Industry &amp; Partner ROI, Learner Impact, Programming &amp; Instruction, Effective Business Processes)</p> <ul style="list-style-type: none"> <li>• Continuously communicate impact metrics to stakeholders and decision makers</li> <li>• Refined evaluation plan with updated data collection, management, analysis, and reporting approaches</li> </ul> <p><b>Demonstration of operational and logistical maturity</b></p> <ul style="list-style-type: none"> <li>• Increased and/or expanded stakeholder buy-in (e.g., increased funding, resources, and support from within organization; continued engagement and participation from former participants)</li> <li>• Demonstration of thought leadership and expertise (e.g., participation in regional</li> </ul>

	<p>workforce boards and initiatives, sought-after best practices and experience)</p> <ul style="list-style-type: none"> <li>• Demonstrated integration and partnership with the broader community (e.g., connections with community organizations, mentorship, partnerships with training providers across biomanufacturing career pathways)</li> </ul> <p><b>Consultation of key stakeholders on recommendations and changes to initiative</b></p> <ul style="list-style-type: none"> <li>• Recommendations are prioritized by greatest potential impact and responsiveness to industry, participant, and funder needs; sound rationale is provided for not implementing certain recommendations</li> <li>• Continued/increased stakeholder involvement and commitment (e.g., industry support, participant continued engagement, needed changes to contributing stakeholders)</li> </ul> <p><b>Multi-year strategies for needed resources and stakeholder engagement</b></p> <ul style="list-style-type: none"> <li>• Institutional capabilities and infrastructure for securing additional funding (e.g., grant application and management)</li> <li>• Funding models: revenue-generating model, ability to financially sustain itself without continued grants, diversified funding sources</li> <li>• Equipment, technology, and facility re-evaluation (e.g., contracts, maintenance plans, upgrades)</li> <li>• Succession and knowledge transfer planning for instructional and programmatic personnel</li> </ul>
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**ACTIVITY: Develop a growth and/or scaling plan** — Define the business case for initiative growth and/or scaling and refine initiative objectives and plans

**CONSIDERATIONS & GUIDANCE**

<p><b>Define levels of desired growth and/or identify opportunities to scale the initiative</b></p>	<p>Leverage landscape analyses, industry partner and community organization recommendations, funding opportunities, etc. to define and justify strategy</p> <ul style="list-style-type: none"> <li>• Growth is an increase in enrollment of target audiences at the same location</li> <li>• Scale is replicating initiative for new geographies (i.e., new locations) or new target audiences (i.e., new populations)</li> </ul>
<p><b>Demonstrate business case for growth and/or scaling</b></p>	<p>Collect and outline evidence of value and readiness to scale to justify expansion of the initiative</p> <ul style="list-style-type: none"> <li>• Provide evidence of impact and industry and community organization support, including participant outcomes (e.g., increased skill marketability, awareness of different educational/career pathways), industry and community organization value (e.g., increased community awareness and understanding of the biomanufacturing field and breadth of associated occupations, positive industry marketing, alignment with workforce needs), and extent of strategic partnerships</li> <li>• Assess financial stability and sustainability, including initiative cost effectiveness (e.g., cost per participant), initiative provider return on investment, affordability for participants, and long-term funding strategy</li> <li>• Demonstrate logistical viability and longevity, including infrastructure and capacity for scale (e.g., organizational readiness, resource modifications), scalability model (i.e., increased enrollment, increased frequency, or growth across regions), credibility and track record of initiative, and policy alignment (i.e., local, state, and/or federal priorities)</li> <li>• Update risk assessment: update potential risks and associated mitigation strategies to ensure initiative success</li> </ul>
<p><b>Revisit Plan, Develop, and Pilot phases of initiative development</b></p>	<p>Refine operational goals and milestones, operational plan (including resource needs), communications plan, and evaluation plan to reflect growth and/or scaling opportunities and business case</p>

**ASSESSMENT QUESTION: To what extent does the growth or scaling plan demonstrate a business case and availability of adequate resources for growing or scaling the initiative?**

BASELINE MEASURES	EXEMPLARY MEASURES
<p><b>Qualitative information to justify initiative growth and/or scaling business case:</b></p> <ul style="list-style-type: none"> <li>• Updated targets for growth/scaling, including target participant audience, target workforce needs, and geography</li> <li>• Demonstrated value to a variety of stakeholders (e.g., commitment to support initiative delivery and continuous improvement, confirmation of continued and expanded market need)</li> <li>• Financial stability and logistical viability (e.g., continued and expanded access to needed facilities, equipment, and materials; ability to secure additional instructional expertise and program support personnel; repeatable and scalable internal processes, including logistics, data management, and risk management)</li> </ul> <p><b>Refined operational goals and milestones, operational plan (including resource needs), communications plan, and evaluation plan in alignment with growth and/or scaling business case</b></p>	<p><b>Quantitative and/or more robust qualitative information to justify initiative growth and/or scaling business case:</b></p> <ul style="list-style-type: none"> <li>• Assessment of expanded market need (e.g., anticipated unfilled positions for specific jobs or skills; alignment with regional and/or national priorities)</li> <li>• Continued/increased stakeholder commitment and associated resources (e.g., number of new or renewed funders, inclusion in organizational strategy and priorities)</li> </ul>