Thanks to Our Sponsor

U.S. Small Business Administration
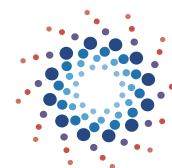
SBIR·STTR
America's Seed Fund™
POWERED BY SBA

Presented by:

mti
Maine Technology Institute
Investing in Innovation

MAINE CENTER FOR ENTREPRENEURS

www.mainetechnology.org

www.mced.biz

Agenda

1. SBIR/STTR Program Overview

2. USDA SBIR Program Specifics

3. Elements of a Proposal

4. Registrations

5. MTI Support Programs & MCE

6. Next Steps

Maine SBIR/STTR Award Snapshot

- Over 114 small businesses have won 397 awards

- Maine's small businesses have received over $115M since 1997

- Businesses in all 16 Maine counties have received awards

- With MTI support, companies tend to have a *higher* success rate than going it alone!

- **USDA – 54 companies - $9.5M**

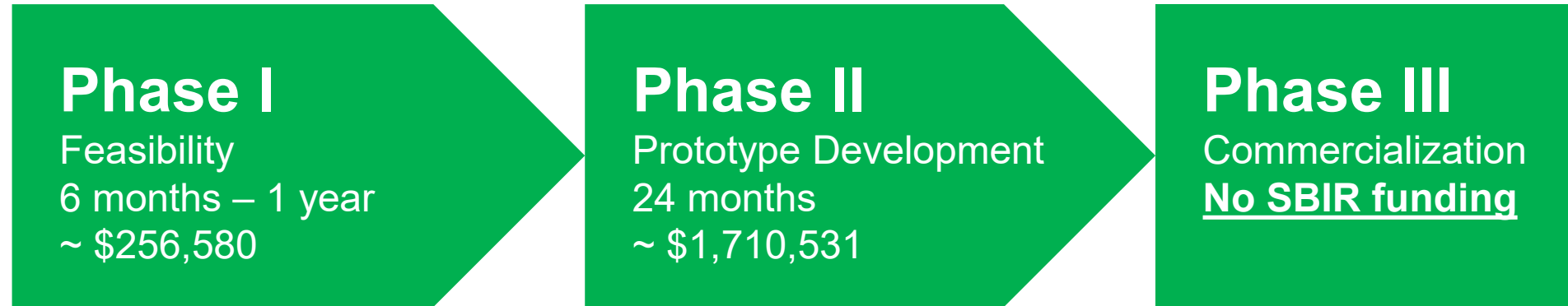YOUR COMPANY COULD BE ONE OF THEM!

SBIR/STTR Overview

Poll Time!

SBIR/STTR Program

SBIR - Small Business Innovation Research/STTR - Small Business Technology Transfer

- o Supports scientific excellence and technological innovation
- o Supports efforts with strong societal benefits
- o Funds early stage research and development (R&D)
- o Ensures a small business role in meeting federal (R&D) needs
- o Transforms applied R&D into commercial products, processes and services
- o Foster and encourage participation by socially & economically disadvantaged persons
- o Authorized through 2022 for extramural R&D activities set-asides:
  - o SBIR: 3.2% STTR: .45%
  - o Approximately $3.7 Billion yearly

Three Phase Process, normally

Phase I
Feasibility
6 months – 1 year
~ $256,580

Phase II
Prototype Development
24 months
~ $1,710,531

Phase III
Commercialization
No SBIR funding

Solicitation to Award Process

Find Solicitation → **Proposal Submission** → **Evaluation** → **Award Phase I**

Agencies that Participate in SBIR & SBIR/STTR

Department of Agriculture (USDA)

Department of Commerce (DoC) NIST, NOAA

Department of Defense (DoD)

Department of Education (ED)

Department of Energy (DOE)

Department of Health and Human Services (HHS)

Department of Homeland Security (DHS)

Department of Transportation (DOT)

Environmental Protection Agency (EPA)

National Aeronautics and Space Administration (NASA)
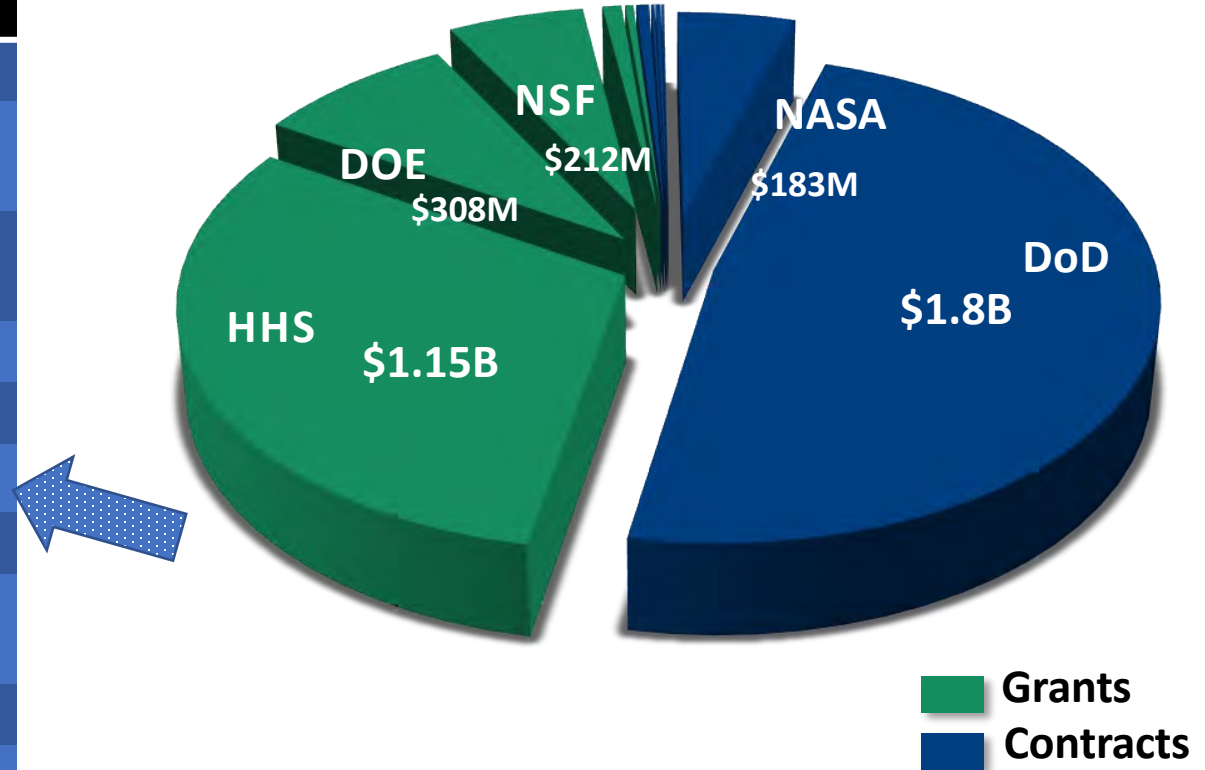
National Science Foundation (NSF)

Program Differences

	SBIR	STTR
Partnering Requirement	Permits partnering	Requires a non-profit research institution partner
Principal Investigator	Primary employment (>50%) must be with the small business	PI may be employed by either the research institution partner or small business (check solicitation)
Work Requirement	May subcontract up to: 33% (Phase I) 50% (Phase II)	Minimum: 40% Small Business 30% Research Institution Partner
IP Ownership	Rights remain w/SB	Negotiate allocation of rights
Majority VC ownership	Allowed by some agencies	Not allowed
Participating Agencies	11 agencies (extramural R&D budget > $100M)	5 agencies (extramural R&D budget > $1B)

The small business is ALWAYS the applicant and awardee!

FY2019 SBIR/STTR Budgets by Agency

Agencies	Budget
Department of Defense (DoD)*	$1.80 B
Department of Health and Human Services (HHS)**, including the National Institutes of Health (NIH)	$1.15 B
Department of Energy (DOE), including Advanced Research Projects Agency – Energy (ARPA-E)	$308 M
National Science Foundation (NSF)	$212 M
National Aeronautics and Space Administration (NASA)	$183 M
U.S. Department of Agriculture (USDA)	$30 M
Department of Homeland Security (DHS)	$17 M
Department of Commerce: National Oceanic and Atmospheric Administration (NOAA)	$9.5 M
Department of Education (ED)	$8.4 M
Department of Transportation (DOT)	$5.2 M
Department of Commerce: National Institute of Standards and Technology (NIST)	$3.9 M
Environmental Protection Agency (EPA)*	$3.6 M

*Budgeted Amount; other Agencies Obligated Amount
**Provides grants and contracts

Grants
Contracts

SBIR: $3.28 Billion
STTR: $453 Million

Award Mechanisms

Contracting Agencies	Granting Agencies
▪ Agency establishes plans, protocols, requirements	▪ Principal Investigator initiates approach
▪ Highly focused topics	▪ Less-specified topics
▪ Procurement mechanism	▪ Assistance mechanism
▪ More fiscal requirements	▪ More flexibility
▪ Invoiced on progress	▪ Allows upfront payment
▪ Deliverables – monthly, final report	▪ Funds support a public purpose, best efforts in research
DoD, DHS, NASA, EPA, DOT, DoED	**NSF, DoE, USDA, NIST**

Contracting <u>and</u> Granting: **HHS/NIH** (mostly grants), **NOAA**
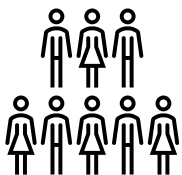
SBIR/STTR Program Numbers

REQUIRED

FOR-PROFIT   U.S. OWNED & OPERATED   UNDER 500 PEOPLE

**92%** of Phase I awardees have 10 or few people!

15% success rate – Phase I - USDA

40-50% success rate – Phase II

Principal Investigator (PI)

→ Must be employed by the small business (or partnering research institution for STTR) at **time of award** (check solicitation)

→ Doesn't need to have Ph.D. or M.D.

→ But should have appropriate expertise to oversee project scientifically and technically

→ Expertise of the PI and team are one of the three evaluation factors
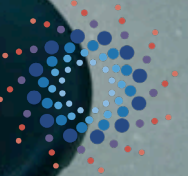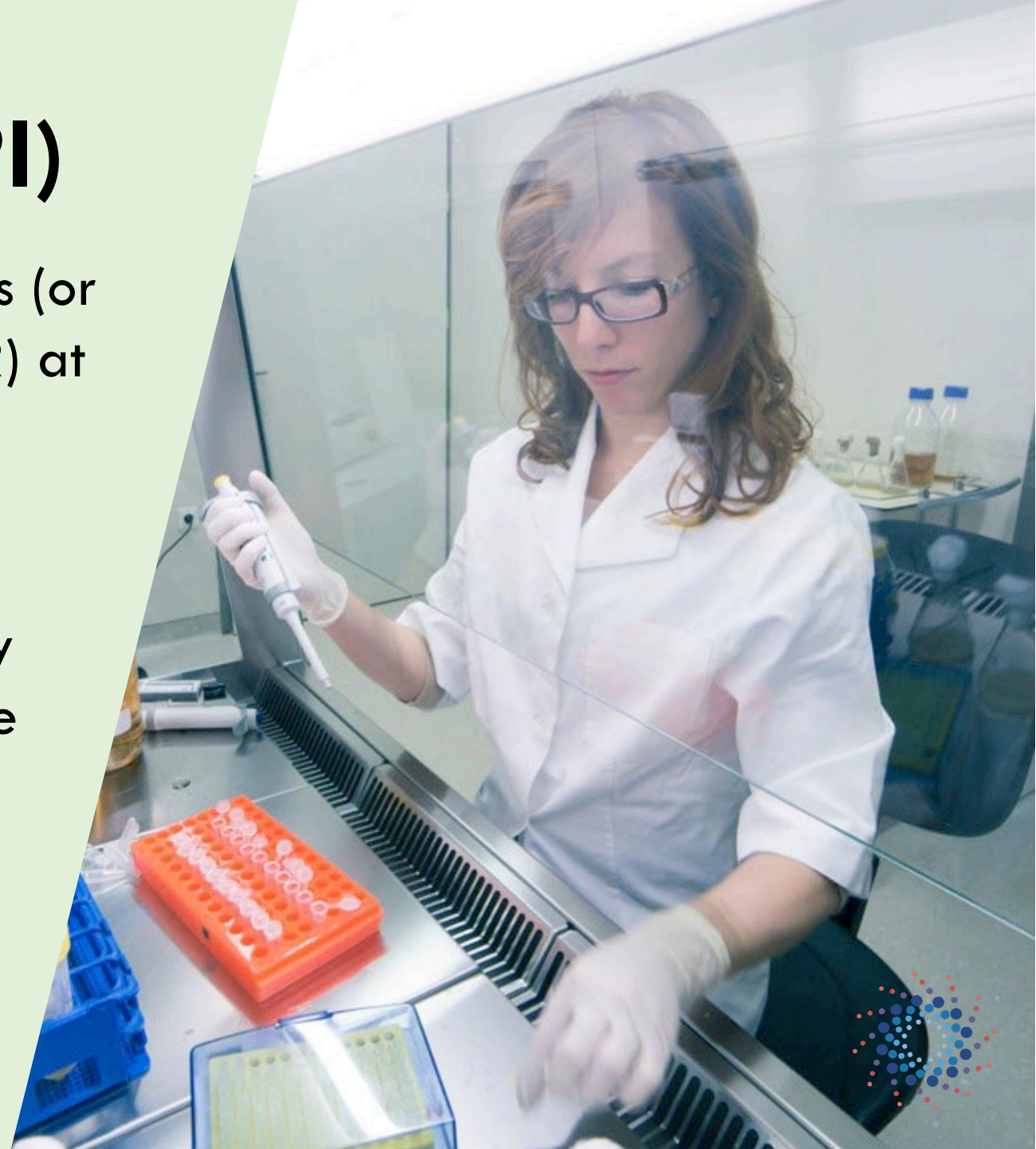
The SBIR/STTR Process Summary

- 11 agencies have Small Business Innovation Research (SBIR) Program

- 5 agencies have Small Business Technology Transfer (STTR) Program

- Gated Program – Phase I ➡ Phase II ➡ Phase III 💵

  - With exceptions and caveats

- Agencies issue solicitation with topics of interest

- Small Businesses submit technically competitive proposals

- Agencies award over 5,000 grants or contracts

USDA SBIR Program

USDA SBIR

National Institute
of Food
And Agriculture
(NIFA)

To Advance Knowledge
For Agriculture, the Environment,
Human Health and Well-being,
and Communities

Maine Blizzard Clownfish From Sea & Reef Aquaculture

Edible Seaweed

USDA Home Page

https://nifa.usda.gov/program/small-business-innovation-research-program-sbir

USDA Topic Areas of Interest

- 8.1 Forests and Related Resources

- 8.2 Plant Production & Protection – Biology

- 8.3 Animal Production & Protection

- 8.4 Conservation of Natural Resources

- 8.5 Food Science & Nutrition

- 8.6 Rural and Community Development

- 8.7 Aquaculture

- 8.8 Biofuels and Biobased Products

- 8.12 Small & Mid-Size Farms

- 8.13 Plant Production & Protection – Engineering

Technology Areas

- Information Technology
- Robotics
- Electronics
- Biotechnology
- Nanotechnology
- Microelectro Mechanical Systems (MEMS)

- Genetic Engineering
- Material/Coatings
- Food Safety
- Biofuels
- Machine Vision
- Precision Agriculture

- Acoustics
- Remote Sensing
- Engineering
- Physics
- Chemistry

USDA Specific Topic

8.6 Rural and Community Development

Objective: is to improve the quality of life in rural America by creating and commercializing technologies that address important economic and social development issues or challenges in rural America.

Projects must:

- Discuss the rural problem or opportunity and how your solution (science-based technology) will successfully address it, including assessing impact or socio-economic development
- Need not be centered on agriculture but focus area must have the potential to provide significant benefit to rural America
- USDA portfolio wants to mix high risk, high reward with new applications of existing technologies

Sub-topic areas:

- ❖ Improve efficiency/effectiveness of local gov'ts and Public/Private Institutions
- ❖ Enhance environment/promote economic development
- ❖ Reduce vulnerabilities from hazards
- ❖ Address the needs of youth/elderly, etc. in rural areas
- ❖ Increase opportunities for employment/income generation
- ❖ Expand broadband

USDA Specific Topic

8.12 Small and Mid-Size Farms

Objective: promote and improve sustainability and profitability of farms and ranches.

Projects must:
- Show how it supports small farms in rural areas where they are critical to sustaining and strengthening the leadership and social fabric of rural communities
- Emphasize how effort contributes to well-being of rural communities and institutions
- Show how results get disseminated to other small farmers and benefit to the community

Sub-topic Areas:
- ❖ New Ag. Enterprises, plant/animal, specialty crops
- ❖ New Marketing Strategies
- ❖ Farm Management
- ❖ Natural Resources/Renewable Energy
- ❖ Urban Farming

USDA SBIR Specifics

- Phase I Grants = 8 months/$100,000

- Phase II Grants = 2 years/$600,000

- 12 Month no-cost extension available

- Contact with SBIR National Program Leaders anytime

- All applicants receive verbatim copies of reviews

- If application is rejected, may resubmit one time

- Will only fund two awards per small business

USDA SBIR Specifics

Phase I

- FY 2020/2021 solicitation was released July 2019 – 2 years
- Phase I Proposal Deadline – October 23, 2020
- Review panels will meet in January & February of 2021
- Award Decisions made early March 2021
- Phase I research effort ~ July 2021 to January 2022

Phase II

- FY 2022 solicitation release November 2022 (only current Ph I winners)
- Phase II Proposal Deadline Date – February 2023
- Phase II Development effort ~ August 2023 – July 2025

FYI - USDA permitted Ph I early response deadline with COVID impact (May 2020)

Benefits & Reality

- Evaluation is based on scientific and technical merit, firms' qualifications, commercial potential and societal benefits

- Requires NO REPAYMENT of monies received

- Requires NO EQUITY sacrifice

- Intellectual property rights remain with the small business

- Highly competitive

- A credible project team must be assembled

- A viable commercialization plan is critical

- Must submit a proposal that:
  - Excites reviewers - compelling
  - Is innovative
  - Meets a need and provides a solution
  - Potential for significant commercial impact

Questions???????

Elements of a Proposal

Proposal Elements

- Summary/Abstract (one page) Non-confidential
- Project Narrative – 17 pages
  - Response to Previous Review – for a resubmission
  - Responsiveness to USDA NIFA SBIR Program Priorities
  - Identification/Significance of Problem or Opportunity – why this problem and how are you going to solve it?
  - Background & Rationale – how did you come up with this idea? What literature supports your hypothesis?

Proposal Elements

- Relationship with Research or Research and Development – What does Phase II look like? Anticipated result?

- Technical Objectives – How are you going to prove feasibility?

- Work Plan – What tasks will you do to support the objectives?

- Related Research or Research and Development - What are the experts doing? What have you done? What's already out there?

- Market Opportunity – Addressable market, economic drivers, customers, competition, resources needed, risk….

Note: Phase II requires substantial discussion of Phase I results and a 10-page commercialization plan

Additional Elements

- Outside of 17 pages

  - Bibliography and Cited References

  - Facilities & Other Resources

  - Equipment

  - Other – specific requirements, outside services, commitment letters

  - Senior/Key personnel profiles – current/pending support, Conflict of Interest

  - Budget & justification – 10% de minimus G&A, profit up to 7%

  - Subaward budgets & justification

- Letters of Support – very important!

Review & Award Process

Criteria for Award

- Evaluation is based on:
    - Scientific and technical feasibility,
    - Market potential,
    - Importance of the problem
    - Investigator/Resource qualifications, and
    - Budget
- Proposals reviewed by outside experts – academia, businesses and consultants
- Subcontracting to universities/labs permitted and encouraged
- You need to submit an excellent and compelling proposal that excites reviewers, is complete and is innovative
- Two – four month due diligence/award process

Award Requirements

- Interim and final reports

- Practice sound fiscal management

    - Separate funds

    - Timekeeping

    - Understand consistent treatment of costs

- May reallocate budget with approval

- Funds drawn down as needed in Phase I

- Phase II – 50% year 1, 50% year 2 after receipt and approval of interim report

Next Steps

Next Steps
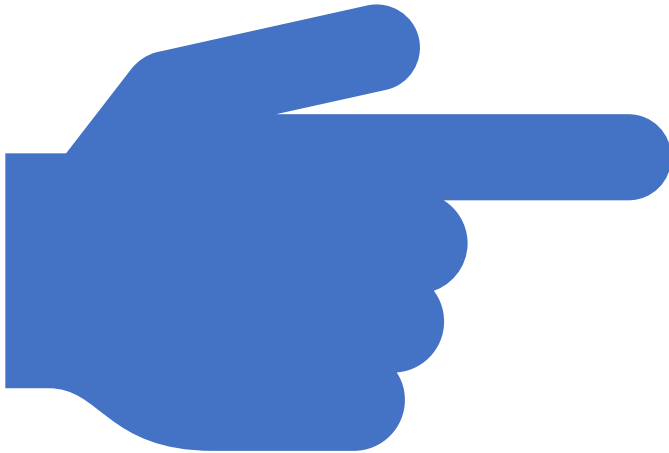
- Get Registered – contact Maine PTAC (www.maineptac.org) for assistance up to 5 required registrations

- Contact Karen West!

- Get mentally prepared to spend 140-180 hours to write a competitive proposal

- Pull together your team

- Understand where your technology fits into the market

- Read the solicitation, over and over and over again

- Understand the elements of a proposal

- Have faith that you can do it!

Determine Technology Fit

- Search the literature
- Conduct market research
- Talk to potential customers, end users, experts
- Understand what differentiates your approach and technology from others
- Review www.SBIR.gov
    - Closed topics
    - Closed awards
    - Open solicitations
    - Tutorials
    - Talk to agency program manager

Keep in mind: each agency has its nuances!

Never judge an agency by its name!
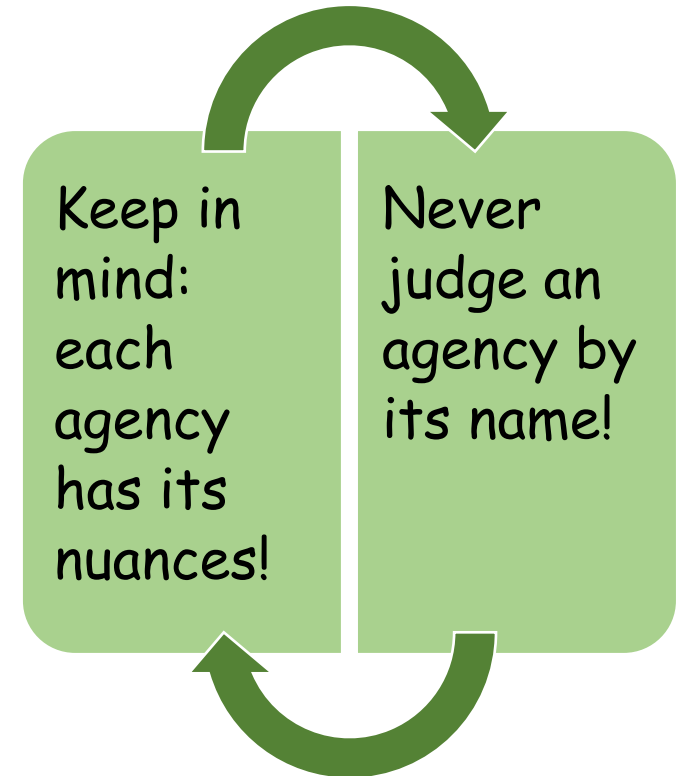
Determine Technology Fit

- Review abstracts of prior awards: https://nifa.usda.gov/abstracts-funded-sbir-projects
  - Slightly outdated but USDA awards through 2017
  - All topic areas
- Research CRIS – current research information system for all USDA awards - https://cris.nifa.usda.gov/
- Talk to USDA National Program Leader for your topic of interest

Grantsmanship

- Be Exciting
- Write clearly, concisely and completely
- Understand current state-of-the-art
- Develop strong citations to support hypothesis/arguments
- Give the reviewer a break –
  - Break up text – pictures, graphics, charts on each page
- Give sufficient detail in work plan to allow reviewers something to evaluate
- Use experts/team members to write sections of proposal
- Get experts to review proposal and critique
- Use acronyms sparingly

Registrations

Registrations

- Register the business with the IRS and receive a Taxpayer Identification Number
- Register with Dun & Bradstreet at http://fedgov.dnb.com/webform (free, 1 day)
- Register with System for Award Management (SAM) at https://www.sam.gov (free)
- Register with SBIR.gov: www.sbir.gov
- Beta.SAM.Gov is replacing D&B
- USDA submission portal: Grants.gov and set up workspace

Register early - There are no exceptions – except death or illness
Contact your local counselor from the Maine PTAC for assistance – www.maineptac.org
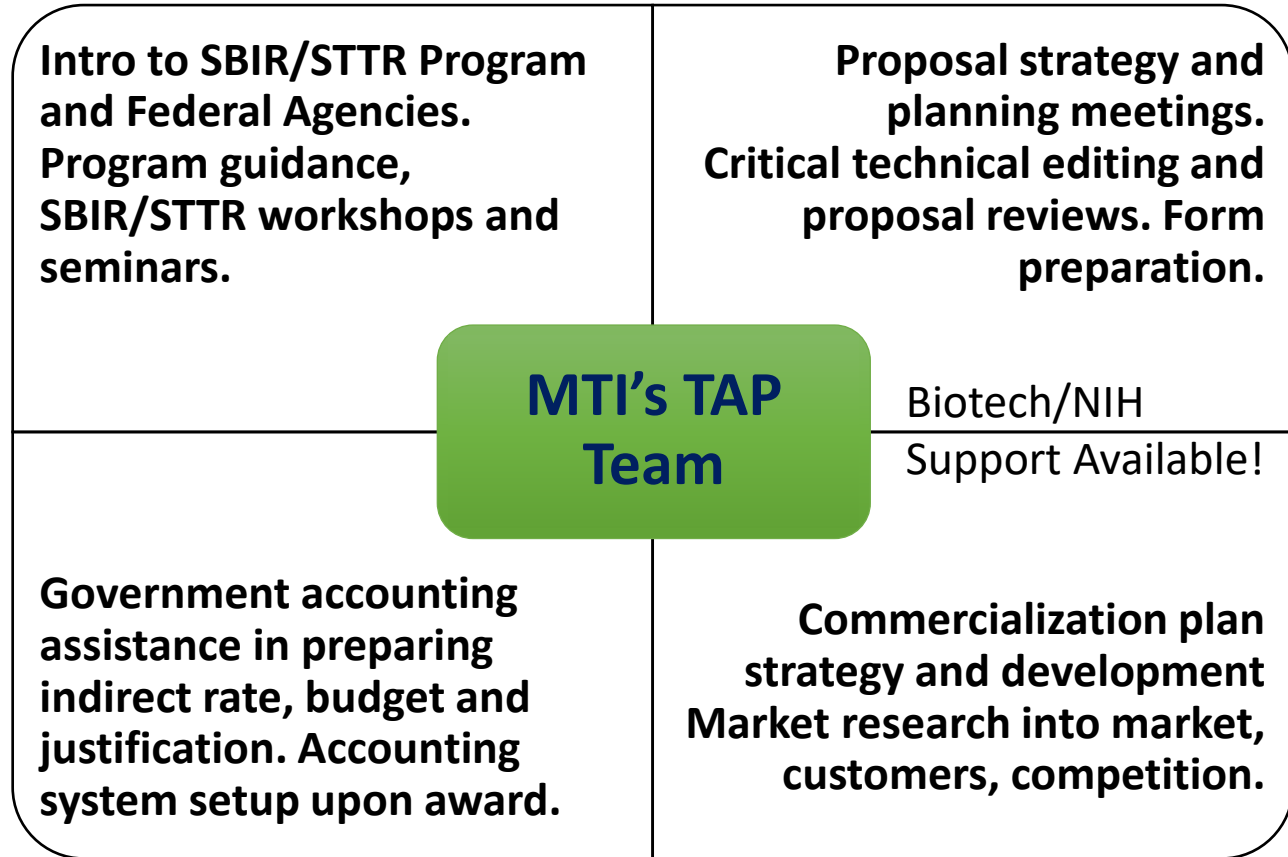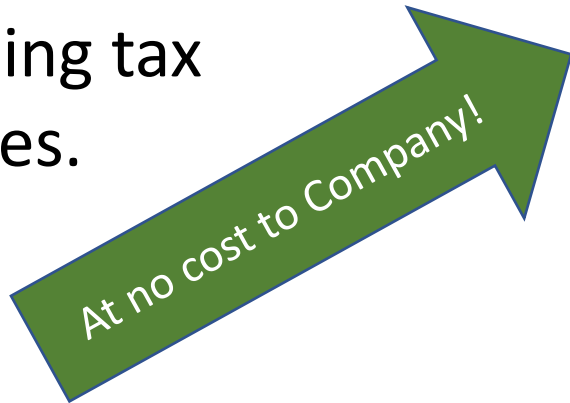
Questions???????

Maine SBIR Support Programs

SBIR/STTR Technical Assistance Program (TAP)

Financial Assistance

MTI Supports SBIR/STTR and BAA Efforts

Goal: Increase the amount of federal R&D dollars into Maine, thereby creating new jobs and increasing tax revenues.

At no cost to Company!

MTI's TAP Team

Intro to SBIR/STTR Program and Federal Agencies. Program guidance, SBIR/STTR workshops and seminars.

Proposal strategy and planning meetings. Critical technical editing and proposal reviews. Form preparation.

Biotech/NIH Support Available!

Government accounting assistance in preparing indirect rate, budget and justification. Accounting system setup upon award.

Commercialization plan strategy and development Market research into market, customers, competition.

MTI - Funding opportunities available to defray the costs of writing a Phase I/II proposal and to support Biz Development activities in support of an award

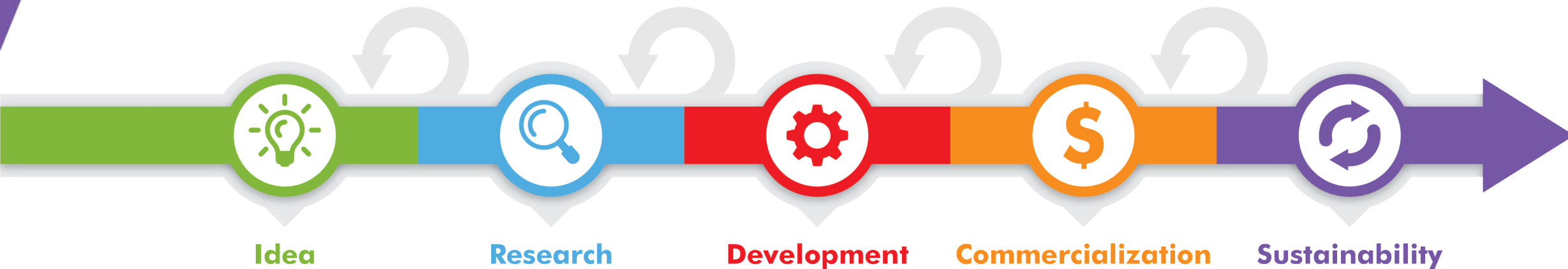Maine Technology Institute

MTI's Core Mission

To diversify and grow Maine's economy by encouraging, promoting, stimulating and supporting innovation and its transformation into new products, services and companies and, ultimately, the creation of quality jobs for Maine people
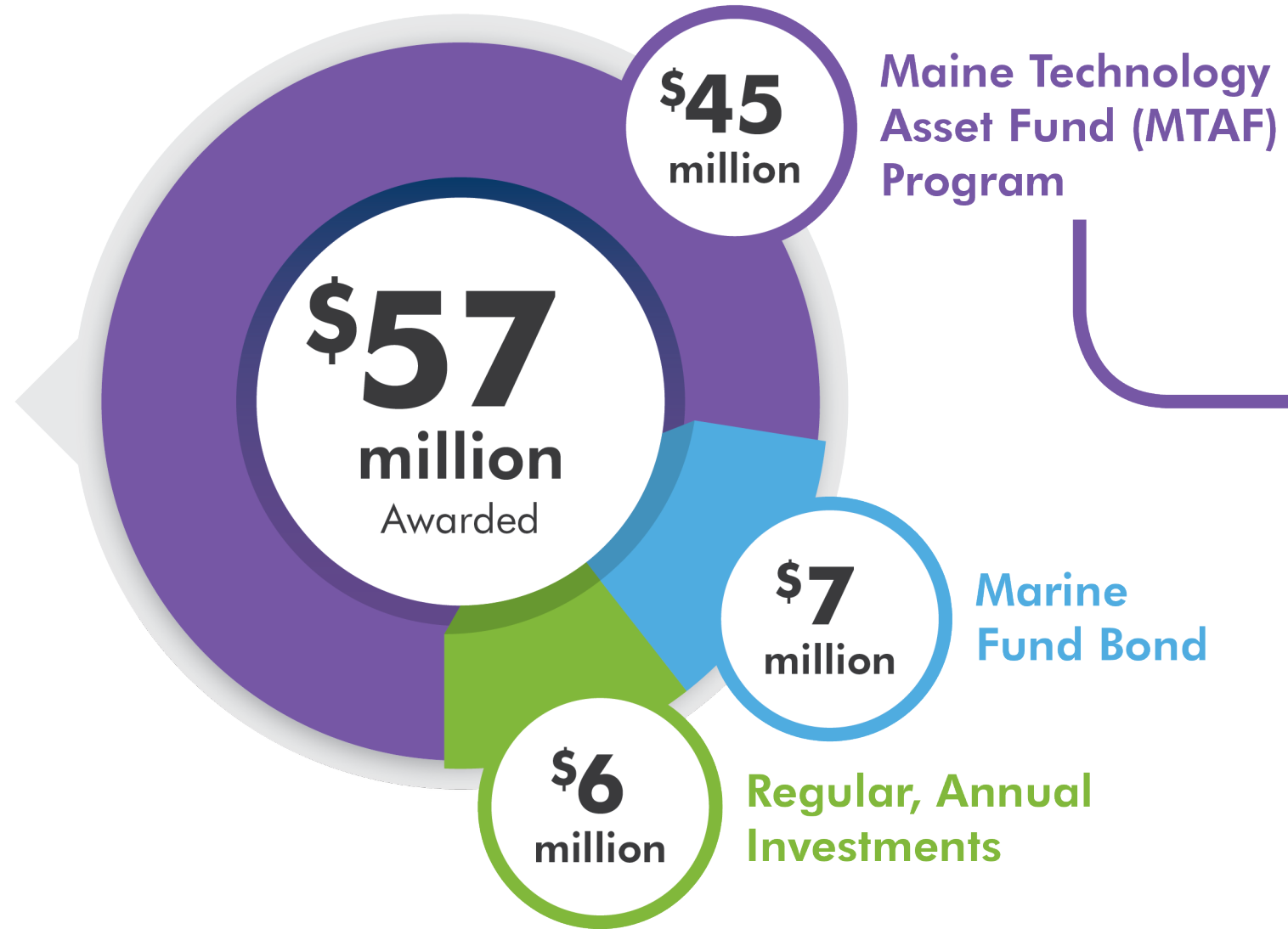
The Innovation Process:
Driving to Commercialization
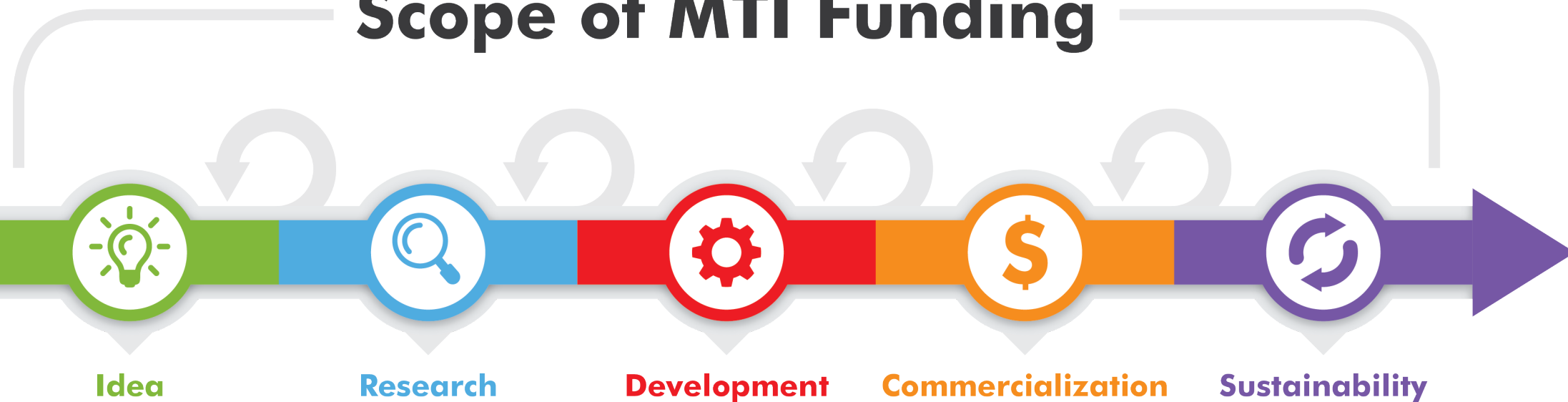
Idea · Research · Development · Commercialization · Sustainability

Adoption of the VIRAL® Assessment Tool

- MTI will use a nationally recognized assessment tool to help our clients assess their strengths and weaknesses to maximize their chances of successfully commercializing their innovation.

- MTI is partnering with Village Capital, the creator of the tool, to adapt and customize for better alignment with the Maine innovation ecosystem

- Anyone applying to MTI for funding will start with this assessment including all entrepreneurs and supporting partners.

VIRAL is a Self-awareness Tool

- Describes key milestones on a path to maturity

- Measures milestones achieved and current maturity

- Identifies milestones you need to "level up"

- Focus on profitable business with a successful exit or sustained growth

VILLAGE CAPITAL VIRAL PATHWAY © Village Capital 2017

Level	Name	Team	Problem and Vision	Value Prop	Product	Market	Business Model	Scale	Exit	Type of funding typically closed at this level	
9	Exit in Sight	Team positioned to navigate M&A, IPO.	Global leader in stated vision.	Cited as the top solution in the industry solving this problem.	Product recognized as top in industry.	Clear line-of-sight to industry dominance.	Minimum 2x revenue growth for multiple years.	Strong unit economics for multiple customer segments.	Growth with exit.	Acquirers	
8	Scaling Up	Team is recognized as market leaders in the industry	Systems-Level Change validated.	Multiple renewals with low sales effort. Customers in multiple markets love the product.	Strong customer product feedback in multiple markets.	Brand established. Hard-to-beat partnerships for distribution, marketing, and growth.	MOM revenue meets industry standard.	Growth of customer base accelerates month-on-month.	Team has turned down acquisition offer.	Close Institutional VC for Recurring Revenue + Growth	
7	Hitting Product-Market Fit	C-suite as good or better than founding CEO and can stay with company through its growth and exit phases.	Impact is successfully validated.	Majority of first sales in target market are inbound.	Product is built for scale and additional offerings in progress.	Sales cycles meet or exceed industry standard.	Business model validated - Validation of strong unit economics.	Evidence of strong unit economics across multiple markets.	Team has strong relationships with multiple acquirers.		
6	Moving Beyond Early Adopters	Team has proven sales, product dev skills, and management ability to support a growing team for scale.	Sales validate impact tied to solution and grow as solution scales.	Sales beyond initial target customers. Customers love it and are referring the product to others.	Complete product with strong user experience feedback.	Supply/distribution partners see their success aligned with the company's success.	Sales begin to map to projections. Evidence of decreasing CAC with growing customer base buying at target price.	Company has cleared regulatory challenges and (if applicable) is implementing a strong IP strategy.	Team has identified specific acquirer(s) or other exit environment.	Close Institutional VC for 1st Sales, Market Expansion	
5	Proving a Profitable Business Model	Team has clear sales/ops understanding and strategy.	Evidence of impact tied to solution-the company has evidence that by growing the business, company solves the problem.	Target customers love the product and want to keep using it.	Fully functional prototype with completion of product for wide commercial distribution in sight.	Team is having conversations with strategic partners to capture their market faster/cheaper than the competition.	Financial model with evidence of valid projections to reach positive unit economics.	Vision and initial evidence of positive unit economics in two markets.	Inbound interest from large strategics.	Close Round with Angel and Early VC	
4	Validating an Investable Market	Team has clear understanding of how their target market operates and has strong industry contacts in this market.	The company can articulate system-level change - how this solution would transform the industry.	Evidence of differentiation through initial target customer feedback that the solution solves their problem significantly better than others in the market.	Team has clear understanding of product development costs and how to build the initial product cost-effectively.	Evidence of $1B+ total addressable market.	Team has financial model with cost and revenue projections articulated and a strategy for hitting these projections.	Initial evidence that multiple types of customers find value in the solution or in an extension of the product that the company is well-positioned to develop.	Evidence of growth trajectory that could lead to IPO, acquisition, or self-liquidating exit.	Friends and Family, BootStrap	Angel/Seed Funding Starts
3	Solidifying the Value Proposition	Team has technical ability to build fully functional product and has a clear understanding of the value chain and cost structures in their industry.	The company can articulate why they're the best ones to solve this problem.	Evidence that customers will pay the target price. For B2C - 100 customers, for B2B - 5 customers and conversations with multiple stakeholders in each.	Team has built a working prototype and a product roadmap.	Initial evidence through sales that team can capture initial target market.	Team can articulate projected costs along the value chain and target cost points to reach positive unit economics.	Clear strategy to move to multiple markets.	Initial evidence that the solution already solves the problem better than any incumbents.		Grants for R&D (Hardware)
2	Setting the Vision	Team has senior members with lived experience of the problem and/or deep understanding of their target customer's problem.	The team can solve the problem and can articulate its vision at scale - what does the world look like if they succeed?	The team has potential customers who provide evidence that solution solves key pain point - product is a painkiller, not vitamin.	Team has a basic low-fidelity prototype that solves the problem.	Team understands any regulatory hurdles to entering the market and has a strategy to overcome them.	Company can point to pricing and business models of similar products in the industry as further evidence that their revenue assumptions hold.	Initial evidence that multiple markets experience this problem.	Vision for growth has company solving a large piece of the global problem in 10 years.		
1	Establishing the Founding Team	Strong founding team - at least 2 people with differentiated skillsets.	Team has identified a specific, important, and large problem.	Team has identified their hypothesis of their target customer - the specific type of person whose problem they are solving.	Team has ability to develop low-fidelity prototype and has freedom to operate - not blocked by other patents.	Team can clearly articulate total addressable market, the percentage they will capture, and initial target market.	Team has identified an outline of revenue model.	Team has identified multiple possible markets or customer segments and has aspiration to scale.	Team understands what an exit is and has a vision for how they will ultimately provide a return for their investors.		
		Team	Problem and Vision	Value Prop	Product	Market	Business Model	Scale	Exit	Type of funding closed at this level	

Honest Self Awareness

- Higher isn't better, it's just farther along.

- Goal is to know where you are and what you need to do.

- The levels do NOT indicate whether a company is a good or bad investment. Rather, they help companies assess their progress and the key milestones they need to achieve to raise their next round of investment

New Investment Process

Start   **Meet**   **Apply**   **Review**   **Decision**   **Reporting**

Maine Center for Entrepreneurs

MAINE CENTER FOR ENTREPRENEURS

mti
Maine Technology Institute

Since 1997 MCE has empowered Maine's most promising entrepreneurs through accelerator programs, partnerships, and a network of over 130 mentors.

MCE TopGun

MCE Cultivator
FOOD, BEVERAGE & AG ACCELERATOR

MCE MarketShare Accel
FOOD, BEVERAGE & AG SALES ACCELERATOR

- **SBA Growth Accelerator Grant**

- Life Sciences Summit – 2019 and 2020

- Biosciences accelerator program

- AgriTech support program

Finally….

If we knew what we were doing, it wouldn't be called research, would it?"

Albert Einstein

Trust that little voice in your head that says, "Wouldn't it be interesting if.."; And then do it.

Duane Michals

You do not really understand something unless you can explain it to your grandmother.

Albert Einstein

Thank You!

Karen West

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