

Manning IALS Innovation Awards 2021

Create a Commercialization Plan in 90-Minutes



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UMassAmherst
Institute for
Applied Life Sciences

UMassAmherst
College of Natural Sciences

UMassAmherst
Berthiaume Center
for Entrepreneurship





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Summer Business Innovation Fellows

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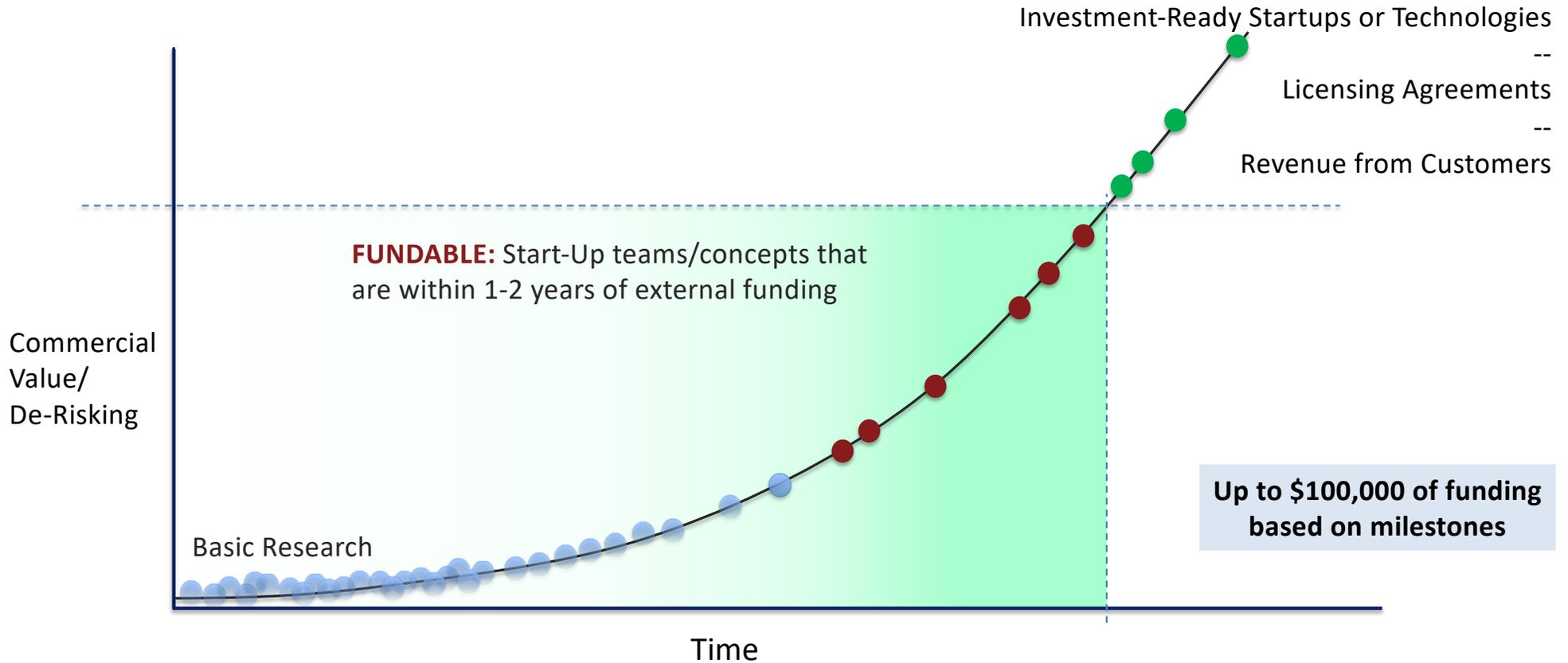
manning-ials@umass.edu

Call for applications:

<https://www.umass.edu/ials/manningials-innovation-awards>

Program Mission:

To advance translational and applied R&D efforts
through the development of **spin-out/startup companies** or the **out-**
licensing of UMass IP.



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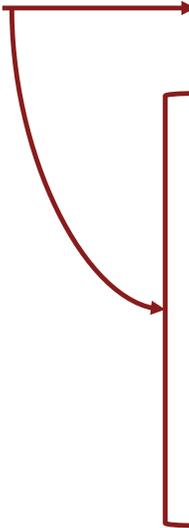
Only one-page but a key consideration in other sections as well

Full Applications are due Thursday, July 15, 2021:

Invited Applications must be submitted by Thursday, July 15, 2021. Submissions will be reviewed for the potential to advance a translational project from basic research toward application to real-world problems. This is further defined as:

- Identification of and commitment to achieving **translational milestones**
- A realistic plan to advance the research/technology towards **establishment/development of a spinout/startup that can attract follow-on funding/resourcing from investors/agencies and/or significant sales**

Each application contains the following (7 pages MAX, not counting budget/and appendixes):

- 
- **Executive summary:** Project title, team members, and abstract. For startup companies this will also include the key elements of a commercialization plan by briefly describing product candidates, the unmet need met, a differentiation plan, an IP plan, progress towards assembling a startup/spinout team, and resource needs to support development into a self-sufficient enterprise (1-page max).
 - **Statement of Work:** High-level objectives; Project Plan including timeline, interim milestones/deliverables and final milestones/deliverables (up to 3 pages)
 - **Progress to Date/Preliminary Data:** (up to 2 pages inclusive of any figures)
 - **Intellectual Property Status/Strategy:** (up to 1 page)
 - **Budget:** Must contain the major budget categories, named personnel or timeline for hiring if these are TBD, and a brief justification for each category (up to 1 page)
 - **Appendix A - Other Support:** List other funding by source, grant number, amount start/stop dates, and a summary sentence on specific aims (up to 2 pages, up to date NIH or NSF current and pending forms are acceptable)
 - **Appendix B - Biosketches:** Provide bios for Faculty PI, Research Team Members, Advisors, and/or other/potential startup co-founders (up to 2 pages for each team member, up to date NIH or NSF current and pending forms are acceptable)
 - **Appendix C - Up to 3 letters of support:** (1 page each)
 - **Appendix D - Bibliography and Patent Information:** (up to 2 pages)
 - **Appendix E - Intellectual Property:** List all relevant invention disclosures, provisional patents, patents pending, patents grants and the technology licensing officer at the UMass Amherst TTO with whom you work

What is meant by a “commercialization plan”?

How can we fit everything into the one-page Executive Summary?

Do I need to talk with the TTO about my IP strategy?

Who should be on the team?

How can we define a product candidate when the research isn’t complete?

How do we find funding vehicles?

What is an impactful commercialization milestone?

Add other questions in the chat or “raise” your hand!

What is a commercialization plan?

Living document (a plan not a promise) that explains how the team expects to:

- De-risk
- Add value

Road map and source document for:

- Synchronizing R&D and non-R&D efforts
- Grant applications and investor pitches
- Time-based milestones and expected outcomes

6 key elements:

- Product candidate(s)
- Unmet need
- Differentiation plan
- IP plan
- Assembling a startup/spinout team,
- Resources to support development into a self-sufficient enterprise or to result in a license



Business plan



Executive Summary



Elevator speech



Pitch deck

"This is how we expect to go from idea to an operating, funded startup or license"

Overview: six interdependent categories every effort needs

“This is how we expect to go from idea to an operating, funded startup or license”

Venture Assessment	Ideation & Conceptualization	Exploration & Validation	Implementation & Commercialization
Technology & Product	Product and/or service to be offered has been identified. Initial proof-of-concept complete.	Evidence-based product/technology development and differentiation plan in place. Initial prototyping has occurred. Minimum viable product (MVP)/equivalent is under development.	A technology/product is ready for commercialization (for either purchase by a customer or a partnering).
Intellectual Property	Discussion with technology transfer office staff initiated/completed; protectible IP identified.	Filed for IP protection or other steps to establish IP approach are underway (e.g., open source).	There is an established IP strategy (option/license on UMass IP, patent filings, trade secret policies, TM and ©) in place.
Team & Venture Structures	Potential founder(s) demonstrate interest and active engagement in pre-startup/startup efforts..	Founder(s) committed to growth. There is a plan for founders' roles and early additions to the team.	An entity has been established. Key management and R&D roles have been filled.
Market Discovery & Development	Initial market application/unmet need has been identified. The size of the market is understood.	Evidence-based product-market fit and market differentiation plan has been developed. A plan has been established for early customer development including necessary regulatory approvals.	Customers and/or partners are being developed. Filings to secure regulatory approvals and certifications are underway.
Funding & In-Kind Resources	Basic research funding in place; seeking funding for early customer discovery and translational research.	Customer discovery and translational research funding in place; long-term funding plan in place; actively seeking funding.	External funding secured to enable the venture to scale sales or meet an equivalent milestone.
Business Model & Business Plan	Overall business concept is in writing and suitable for sharing with industry, potential team members/advisors, and investors. Business models related to different product/market opportunities have been articulated.	Business planning and materials are established to support milestone-driven development across all key elements.	Executable business plan for operations including key milestones in place.

Each of the 6 commercialization plan elements has broad implications

Venture Assessment Categories	6 Key Commercialization Plan Elements					
	Product Candidate(s)	Unmet Need	Differentiation Plan	Intellectual Property Plan	Startup Team	Resources to Support a Self-Sustaining Effort
Technology & Product	X	X	X	X	X	X
Intellectual Property	X	X	X	X	X	X
Team & Venture Structures	X	X	X	X	X	X
Market Discovery & Development	X	X	X	X	X	X
Funding & In-Kind Resources	X	X	X	X	X	X
Business Model & Business Plan	X	X	X	X	X	X

How does the R&D effort described in the Statement of Work "sync up" with other elements?

What product candidate(s) will you build based on your research?

Core technology?

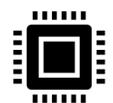
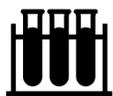
- Molecules
- Software
- Device
- Material
- Method
- Etc.

Early versions of a product?

- Therapeutic candidate
- Demo
- Prototypes
- MVP (minimum viable product)
- Pilot

Commercialization

- Product
- Service
- License
- Investment
- Strategic partner





Societal problems

- Health
- Energy
- Environment
- Equity



Technical challenges

- New capabilities
- Better, faster, cheaper



Customer needs and wants

- Who has the problem?
- How severe is it?
- How many have the problem?
- Who will pay for your solution?

Customers broadly construed:
End users, investors/funders, strategic partners, potential licensees

Technology perspective

- Scientific competitors?
- Business competitors?
- Alternative approaches?

Funding perspective

- Match with mission/priorities
- “Portfolio” considerations
- Potential partner’s priorities

Customer perspective

- Match with customer needs and wants but stand out from the crowd of competing/alternative solutions

	Competitor	Competitor	Us
Efficacy > 80%	No	No	Yes
Non-toxic	Yes	Yes	Yes
Shelf stable	No	No	Yes

IP Landscape

- Patent searching
- Freedom to operate

UMass IP

- Patents
- Copyrights
- Other

NewCo IP

- Patents
- Copyrights
- Trade secrets
- Contracts



<https://www.umass.edu/tto/inventors-artists>



<https://guides.library.umass.edu/patents>

If your proposal and project are funded, how will you build a team?

- Start with the founding team and their roles



Who else will you need?

- C-Suite?
- Subject matter experts?
- Technicians?
- Science/technology advisors?
- Business advisors?
- Service providers?

The screenshot shows a search bar with the 'Y' logo and the word 'Search'. Below the search bar, the title of an article is displayed: 'How to spin your scientific research out of a university and into a startup'. The author is listed as 'By Jared Friedman'. A blue hyperlink is provided below the title: <https://blog.ycombinator.com/how-to-spin-your-scientific-research-out-of-a-university-and-into-a-startup/>

How will you “fuel” the pre-startup and startup? How will you make money?

Funding

- Grants (non-dilutive)
- Investors (dilutive)
- Industry partners
- **Customers/sales**



In-kind resources

- Advisors/mentors
- Startup Law Office Hours
- Business Innovation Fellows

Revenue from customers!

Licensing agreements!



Show in the proposal how **your team** intends to commercialize as defined by:

1. Product candidates to be created
2. Unmet real-world needs to be addressed
3. Differentiation from alternatives
4. Startup team
5. Intellectual property that will create value
6. Resources

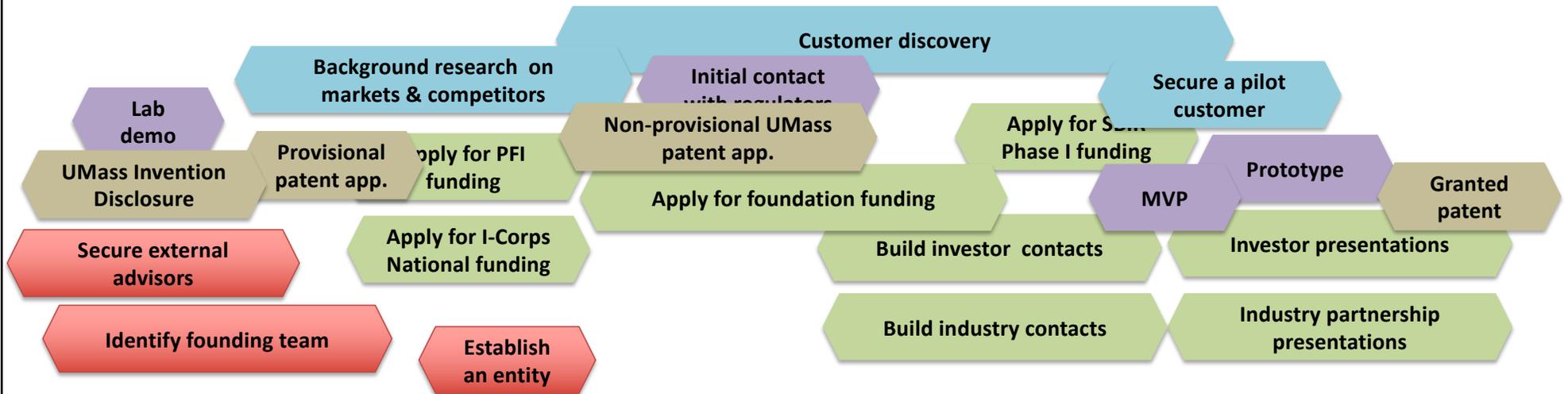
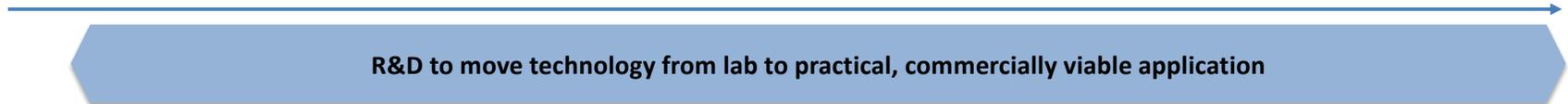
Executive Summary

Also:

Statement of Work
Milestones
Budget
People

Visualize your commercialization plan by moving items into place

Time



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Intellectual property

- Patent & Trademark Resource Center (<https://guides.library.umass.edu/patents>)
- Technology Transfer Office (<https://www.umass.edu/tto/>)

Pre-startup and startup planning/development

- IALS Venture Development (<https://www.umass.edu/ials/innovation-services>)
- I-Corps @ UMass Amherst (<https://www.umass.edu/icorps/>)
- UMass Libraries (<http://guides.library.umass.edu/business>)
- Startup Know-How Videos (<https://www.umass.edu/ials/innovation-services/startup-know-how-talks>)
- UMass Amherst Conflict of Interest (COI) (<https://www.umass.edu/research/compliance/research-ethics/conflict-interest-coi>)

Funding

- Maroon Venture Partners (<https://www.maroonventurepartners.com/>)
- Massachusetts Clean Energy Center (<https://www.masscec.com/innovate-clean-energy/funding-opportunities>)
- Massachusetts Life Sciences Center (<https://www.masslifesciences.com/funding-programs/>)
- MassVentures (<https://www.mass-ventures.com/>)
- NSF I-Corps National Teams Program (https://www.nsf.gov/news/special_reports/i-corps/teams.jsp)
- NSF Partnerships for Innovation (<https://www.nsf.gov/eng/iip/pfi/index.jsp>)
- SBIR/STTR (<https://www.sbir.gov/>)
- VentureWell (<https://venturewell.org/e-team-grant-program/>)

It's okay not to have all the answers!

Sign up for office hours

Summer Business Innovation Fellows

Venture Assessment Office Hours (June 24, 2-4pm)

Karen & Hannah Office Hours (Fridays, 2-4pm)

<https://www.umass.edu/ials/manningials-innovation-awards>

Contact us at

manning-ials@umass.edu

Slides will be emailed along with a link to the recording