RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

Faculty Start-up Guide

New Ventures Team (NV)

https://research.rutgers.edu/new-ventures | https://research.rutgers.edu/startups

This guide is for Rutgers faculty and researchers interested in pursuing a University start-up company. In addition to this guide, you may find helpful the guide on applying for SBIR/STTR awards. This guide has significant resources available only through hyperlinks. For the best user experience, this guide should be read in a digital format on a device with an active internet connection.

RUTGERS UNIVERSITY
Office for Research

This document was prepared by NV for informational purposes only. While we have endeavored to present the most accurate information possible, we cannot guarantee that this information is up to date. NV encourages the reader to contact a NV team member with any questions.

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II. Introduction

The Rutgers New Ventures (NV) team is a group within the Office for Research (OfR). NV works with faculty, the licensing managers and intellectual property (IP) teams, investors, experienced entrepreneurs, and industry to commercialize Rutgers technologies through start-up company formation.

This document was prepared for our Rutgers faculty and staff as a step-by-step guideline in considering and forming a start-up. The document also explores questions each individual should ask in determining whether a start-up is the best path forward both, for themselves and in commercializing their technologies. While those new to entrepreneurship will benefit most from this document, we encourage even experienced researchers to review the material as the NV team is continually updating this document for time-proven best practices.

To learn more about NV and what a start-up might entail for you, please visit our website https://research.rutgers.edu/new-ventures or contact us per the contact details below.

We look forward to working with you!

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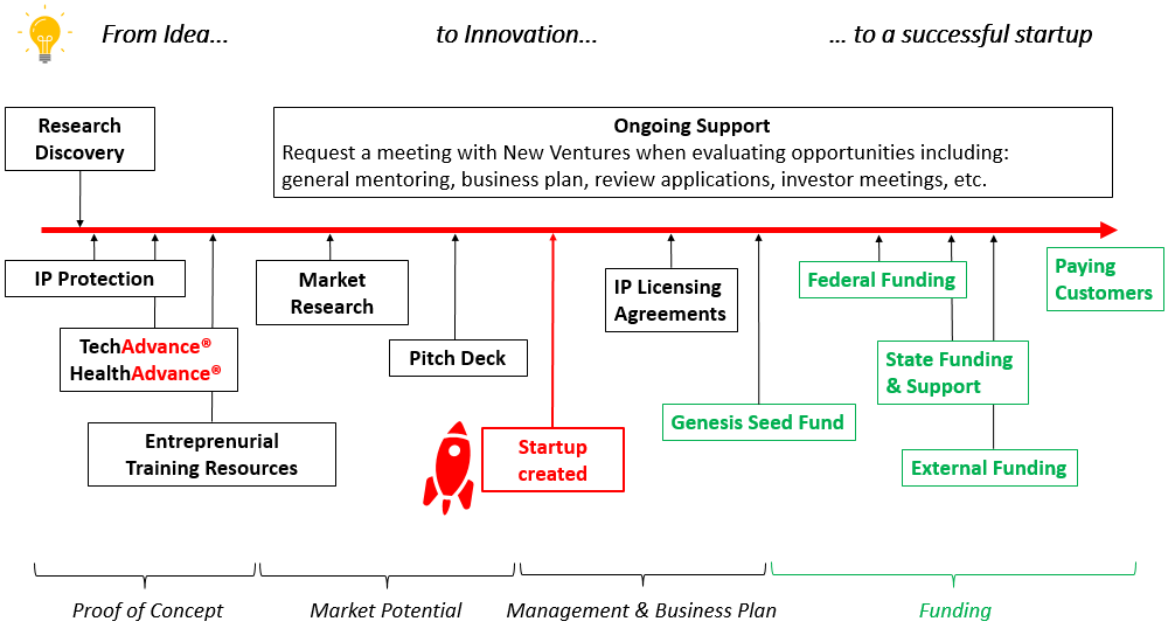
III. Step-by-Step Guideline for Start-up Formation

- To begin, visit the **Rutgers New Ventures webpage** and review information regarding University start-ups.
- Also carefully review University policies for IP and HR **here**.

The following graphic can be used as a roadmap for what needs to be done before a startup is created and everything that needs to be done after. Each of these is described in more detail in this document.



- When considering the relevant intellectual property (could be multiple) for licensing, review current prosecution status and speak with a Licensing Manager.
- Schedule a meeting with the NV team to discuss the opportunities, process, and resources available in pursuing a start-up company. (Dan Benderly: **dan.benderly@rutgers.edu**, or Pragati Sharma: **pragati.sharma@rutgers.edu**)

IV. University Policies for Faculty and Staff

A. Overview of Patent Policy

Please carefully review the patent policy 50.3.19
If the link above does not work on your device, please go to the Policy Library. You will be able to search for the specific sections by Section (Section 50 in this case).

The Rutgers patent policy outlines the ownership, royalty distribution and relevant processes concerning the disclosure and patent prosecution of university-derived inventions. In general, these policies do not apply to undergraduate student inventions unless they have been afforded extraordinary resources or otherwise bound by contract (employment) or agreement.

- Faculty and staff are required to disclose inventions to, for review by, Rutgers Office for Research before public disclosure. Forms and instructions on how to file an invention disclosure can be found here.
- All faculty and staff are required to assign to Rutgers the rights to their inventions. In some cases, these rights may be licensed back the inventor at the discretion of NV.
- NV shall decide if it is in the best interests of the University to pursue patent protection.
- NV can enter into specific licensing agreements to commercialize technologies.
- Licensing Revenue will be subject to the following distribution schedule:
  - Inventor(s): 35%
  - Research or Academic Unit(s): 30%
  - TechAdvance Commercialization Fund: 5%
  - Innovation Ventures: 30%

B. Overview of Copyright Policy

Copyright law protects the tangible expression of original works of authorship and describes the categories of works that may be copyrighted. Copyright owners have certain exclusive rights subject to some exceptions, including “fair use” which permits some limited use of copyrighted materials. Neither ideas nor facts may be copyrighted. Some copyright works developed by Rutgers University faculty and staff are assignable to the University. In such cases, royalties will be shared. Please refer to the policies below for more details. NV can also be contacted for more information.

Please carefully review the following copyright policies:
Rutgers Copyright Policy 50.3.7
UMDNJ Copyright Policy 50.3.15
If the links above do not work on your device, please go to the Policy Library. You will be able to search for the specific sections by Section (Section 50 in this case).

C. Overview of Conflict of Interest (COI) Policy

Please carefully review the COI Guidelines.

Rutgers University faculty and staff have a **fundamental obligation to act in the best interests of the University** and not let outside activities or outside financial interests interfere with that obligation. In addition to their other research conflict of interest obligations, Rutgers employees involved with starting a new company while maintaining their University position must manage potential conflicts-of-interests and conflicts-of-commitments.

- Faculty members may not represent or negotiate for outside organizations (including start-ups) connected with contracts, grants, applications, cause, proceeding, or other matter pending before the University.
- Faculty members may not act on behalf of the University in any matter involving an outside organization in which they have a direct or indirect financial interest and must disclose any outside financial interest.
- Faculty members may not use their positions at the University to secure inappropriate privileges or advantages for themselves or others.
- Full-time faculty members whose outside employment averages five (40 hours) or more days a month shall report such employment to their Department Chair or unit head.
- Faculty involved with Rutgers start-ups must undergo a conflict-of-interest review.
- **Please review the COI guidelines and fill out the COI Questionnaire. A Department Chair Letter of Support must also accompany the COI Questionnaire submission (template).** If you have any questions, please contact a NV team member or a member of the COI committee directly.

1. Strategies to Manage Conflicts

- **Be aware** of situations and circumstances that may lead to conflicts.
- All faculty and staff should **inform their Chairs/Unit Heads early** on about their intentions to pursue a start-up.
- **Communicate openly** with your department chair and the NV team.
- Keep your company **activities separate and distinct** from your Rutgers employment and teaching activities. You may want to use separate email addresses and phone numbers and avoid use of University resources and facilities when conducting company activities.

2. Examples to Consider

No perceived conflict	Appearance of conflict	In conflict
• Use Rutgers equipment via a contract; said equipment must be available for use by any external company. • Serve as a non-voting board member or advisor. • Assign new IP rights to Rutgers according to Patent Policies. • Hire former university affiliates (students, postdocs).	• Involving students who are taking a leave of absence. • Using University equipment, even for a fee, in ways not available for use by outside companies.	• Involve current students in your company. • Use University facilities or equipment without a contract. • Not disclose new intellectual property. • Negotiate with Rutgers on behalf of your start-up. • Make decisions for Rutgers involving your company.

3. Use of University Resources

Pending any conflict-of-interest review, there are opportunities that would allow a faculty start-up to subcontract work and use of equipment in a Rutgers research lab or center. These opportunities are structured as contract requests, which are reviewed and agreed to by Rutgers' Office of Research Contract Services. Their website and instructions for submitting a proposal can be found at here.

It is important to emphasize that no Rutgers resources should be used related to an outside organization without an approved agreement in place. Agreements will require a statement of work from Rutgers if you plan to use the University as a subcontractor. This process will take time, so reach out to Research Contract Services as soon as possible. IDC/F&A may be required to be included in contract costs.

V. New Ventures: Resources for Start-ups

A. Internal Resources

1. Ongoing Support

The NV team will provide guidance for your research, starting from the initial proof of concept phase, through patenting, licensing and all the way to commercialization.

- **Submitting an Invention Disclosure**

If you have discovered something unique with possible commercial value, you should disclose the innovation to our office through the Innovator Portal. NV encourages you to communicate frequently with our office regarding your technologies so we can offer advice on timing of disclosing, patentability, and potential paths to commercialization.

- **Technology Assessment**

A Licensing Manager will analyze the patentability and market potential of your innovation and prepare a technology assessment report including whether to file a patent for your invention.

- **Protecting your Innovation**

Please refer to the section on Intellectual Property (IP) Assessment & Protection for more details.

- **Market Assessment and Licensing**

Once a patent application is filed, your Licensing Manager prepares a non-confidential summary of the invention and begins marketing the technology to potential partners and licensees using sources and strategies to identify potential licensees and market inventions. If a match is found and a company is interested in your innovation, a licensing agreement and/or research collaboration can be made. More information on licensing agreements can be found here.

- **Entrepreneurial Training Resources**

Entrepreneurial training for scientists is crucial as it equips them with the skills and mindset necessary to bridge the gap between scientific discoveries and real-world applications, fostering innovation and commercialization. NV provides resources to help innovators navigate business landscapes, secure funding, and effectively communicate their scientific breakthroughs, thereby maximizing the societal impact of their research.
Please see the later section "Entrepreneurial Resources" for a list of available resources.

- **Launching a Startup**

The NV team works with Rutgers innovators to evaluate the potential for a startup as a vehicle to bring innovations to the market. If a startup option is selected, NV team also provides mentoring, assistance with business plans and investor presentations, feedback on investor

pitch decks as well as assistance with sourcing both non-dilutive and dilutive funding and making introductions to potential partners and investors.

- **Opportunity Alerts**

NV sends out limited opportunities for funding, resources, programs with Innovation Support Organizations in the region. Please see a later Sections "Internal Funding", "External Resources" and "Entrepreneurial Resources" for more details.

2. Intellectual Property (IP) Assessment & Protection

The scope, defensibility, and uniqueness of intellectual property have a significant impact on a start-up's ability to raise funding from investors, and effectively commercialize a given innovation.

Therefore, the first step in the formation of a University start-up is to identify specifically what IP should (and needs to) be licensed from Rutgers, for the short-, mid-, and long-term success of the start-up.

In some cases, a firm may want rights to multiple related intellectual property assets (see USPTO list) to keep their opportunities broad. However, this typically leads to higher costs and management burden (e.g., patent prosecution, multiple progress and milestone requirements, and other considerations). The start-up needs to strike a delicate balance between developing an extensive IP portfolio that provides solid protection, and the allocation of resources to other aspects of the business, such as technology de-risking, product development, and business development.

In other cases, you may identify IP assets that you wish to incorporate into your business at a future date (in accordance with your business plan and model). In the meantime, you could preserve your rights to them through mechanisms such as an option agreement.

If you are unsure about your IP status, or which technologies you may want to pursue, we highly recommend you contact your Licensing Manager or our New Ventures teams. Ultimately these types of decisions should be made in consultation with all stakeholders – your business founder, legal advisors, and Rutgers Innovation Ventures.

Finally, **do not underestimate the value of know-how**. Know-how is the information, knowledge, processes, and experience that allow the possessor (e.g., a licensee) to achieve practical results not achievable by someone without them. In the case of Rutgers start-ups, know-how might be contained within a faculty researcher or the lab from which the original innovation is derived. If access to know-how involving your technology will be important to your company's success, you will want to include rights to this IP in the license agreement with your start-up.

Additional IP assessment resources:

- USPTO's IP awareness assessment tool to identify the types of IP that are important for your start-up's business model/plan (click here)

3. Agreements

The NV office collaborates with innovators to facilitate agreements for IP protection and licensing, which is a crucial aspect of the commercialization process. In addition to scientific and market considerations, ensuring appropriate legal protections are in place is vital. The office works closely with innovators to develop suitable contracts that safeguard the interests of both the university and the innovators.

- **Agreements for IP Protection**
  - **Confidentiality agreements (CDAs) and Non-Disclosure Agreements (NDAs)** are used to protect the confidentiality of an invention or research during evaluation by potential 3rd parties such as potential licensees, partners, or investors. NDAs also protect proprietary information of third parties that University researchers access when conducting or evaluating research opportunities. These agreements facilitate the discussions of confidential materials and protect information disclosed during discussions.
  - **Material Transfer Agreements (MTAs)** are used for incoming and outgoing materials. These agreements describe the terms under which University researchers and outside researchers may share materials, typically for research or evaluation purposes. An MTA ensures Intellectual property rights are not endangered when materials are used from or by another entity.
  - **Inter-Institutional Agreements** describe the terms under which two or more institutions (generally universities) will collaborate to assess, protect, market, license, and share in the revenues received from licensing jointly owned intellectual property.
  - **Sponsored Research Agreements** describe the terms under which sponsors provide research funding to Rutgers. Sponsored Research Agreements are negotiated by Rutgers Sponsored Research and Corporate Contracts teams. Clauses relating to intellectual property are often additionally reviewed by members of the NV team.

- **Licensing Agreements**
  License agreements are legal agreements that transfer rights to use intellectual property to third parties. They define the rights to University patents, copyright and software. Technologies are made available under a wide range of licensing models including:
  - **Exclusive licenses** grant rights to use intellectual property to a single organization, precluding use by others. Sometimes an exclusive license will be granted that limits the exclusive rights to a specific market, to a field of use, or by some number of years, so that multiple licenses can be offered with non-overlapping limited exclusivity.
  - **Non-exclusive licenses** are used when there is a desire to grant rights to intellectual property to more than one organization. Each organization has equal rights to the

technology. This may be due to the broad utility of the technology and is frequently the way that materials, copyrighted works, and software are licensed.

- **Express licenses** are useful for speeding up the licensing process for frequently licensed technologies to companies and individuals. The licenses are typically non-exclusive and include predetermined, non-negotiable standard terms and conditions. Express licenses are often used for software and copyrighted works and include options for immediate payment and download. The technologies are provided as-is.
- **Option Agreements** are entered into with third parties that describe conditions under which the university reserves a right for a third party to negotiate a license for intellectual property for a certain period of time. Option agreements can be provided as part of a sponsored research agreement or in standalone form. Typically, these agreements enable third parties to evaluate a technology or develop a business plan for a limited time prior to entering into a full license agreement.

4. Rutgers Library Resources for Market Research

Rutgers Libraries has a compendium of world-class resources including databases of business journals, company and market size information, market trends and industry insights, analyst reports, etc., all useful for further evaluating the market opportunity for a startup, creating a business plan, and pitch deck.

- **Becky Diamond, Rutgers Business Instruction Librarian** can set up a one-on-one discussion to guide you through Rutgers Library resources to ensure you have access to all that Rutgers has to offer to support your efforts. Not only can Becky answer your questions, but her expert guidance can expedite your search efforts.
- Becky created a **Library Resource Guide for I-Corps** which compiles the relevant databases, including Factiva, Statista, MarketLine, Business Source Premiere, USPTO database, etc. This LibGuide is especially useful for regional I-Corps teams preparing for the National I-Corps Teams program.

5. Affordable and No-Cost Legal Services

- **The Rutgers Law School Entrepreneurship Clinic** - Early-stage startups/small businesses in NJ which are bootstrapped, self-funded, or have raised only small amounts of friends & family capital can apply for pro bono legal services on a first come first serve basis, subject to qualification and availability in the Clinic. Located in Newark, NJ.
- Rutgers **Intellectual Property Law Clinic -** Helping businesses, non-profits, start-ups, and entrepreneurs with trademarks, licenses, and patents.
- Rutgers University Student Legal Services (RUSLS) provides eligible Rutgers University students with professional legal advice and assistance at no cost by attorneys licensed to practice in the State of New Jersey.

B. Internal Funding

1. TechAdvance® Fund

- **Early-stage technology development fund** created to advance technologies toward commercialization by bridging the gap between basic research and commercialization-readiness.
- TechAdvance®/TechXpress™ - grants of up to $75K/$15K, respectively, depending on the scope of work. For software technologies, grants of up to $25K are available.
- Note, TechAdvance is designed for pre-startup funding; however, we encourage faculty considering start-ups to leverage this resource as a steppingstone towards commercialization.

2. HealthAdvance Fund®

- As part of the Rutgers Optimizes Innovation initiative, HealthAdvance Fund® provides commercialization funding to assist the development of early-stage life sciences technologies and make them more attractive for continued follow-on investments from industry partners and external investors.
- HealthAdvance™ offers grants of up to $ 150 K for up to 18 months.
- HealthXpress™ offers grants of up to $ 50 K for up to 9 months.

3. Busch Biomedical Grant Program

- The Busch Biomedical Grant program is designed to enhance health-related research at the University and to strengthen the competitive position of faculty members who seek external research funds.
- The grant supports research projects up to $60,000 in total for up to a two-year period.

C. Entrepreneurial Resources

1. Road to Commercialization Symposium Series

This includes introductory 3-hour webinar modules designed to educate innovators about the fundamentals of research commercialization. Held three times a year, each event focuses on a different theme and includes keynote presentations and panel discussions on topics such as industry partnerships, non-dilutive funding, choosing between startup and licensing, etc. Additionally, this series aims to highlight available opportunities and resources that focus on the process of translating scientific discoveries into marketable products, solutions, and services. Some of these webinars can be found here. Please contact NV for a more comprehensive list.

2. NSF I-Corps Hub Northeast Region

- Helps researchers explore the potential for their discoveries to become products and services that can benefit society through an experiential, customer discovery program coupled with business mentoring and entrepreneurship training.

- Various programs and events happening all year round. Sign up for the Hub Newsletter to stay updated for any upcoming programs.
- Three types of I-Corps Programs to transform your research discoveries and explore the commercial potential for your innovation:
  - Novus – Introductory half-day in-person workshop/training/networking event followed by self-study coursework. Learn to shift the mindset from the science to the people who would benefit from its commercialization. Eligible for individuals including student researchers, post-doctoral scholars, faculty.
  - Propelus – Get out of the building to meet with 15+ potential customers and stakeholders to better understand the pain points and the unmet needs of the market. Four-week virtual program focused on customer discovery, lean startup, and business model canvas with reimbursement of up to $3,000 for Customer Discovery expenses. Eligible for teams of 2 or more.
  - National I-Corps – Explore the entire business model canvas over 7-weeks with an award of up to $50,000, with a pace of about 15-17 interviews per week. Regional I-Corps experience and full team of 3 team members required (Entrepreneurial Lead, Technical Lead, Industry Mentor). Make sure to review with the Rutgers I-Corps leadership team before you apply here for the National I-Corps Teams program.

3. Nucleate

- Nucleate is a student-run nonprofit organization that facilitates the formation of new life science ventures.
- The program matches innovators and inventions with scientific trainees and business students interested in entrepreneurial opportunities, followed by connecting them with a world-class advisor network of startup founders, executives, venture investors, and renowned scientists, providing support and mentorship to drive biotechnology innovation.
- This is an equity-free activator program that establishes teams that ultimately create companies to tackle the biggest challenges in human health (Bio Track) and sustainability (Eco Track).

4. University City Science Center

- The University City Science Center helps startups grow and nurtures a diverse STEM workforce.
- **Founders Fellowship**
  - It is a 12-month experiential program offering hands-on startup experience for those with an advanced STEM degree to transform concepts into a business reality.
  - Participants receive a $50K stipend and access to the Science Center's robust network of industry experts, investors, and entrepreneurs in addition to facilities at CIC Labs + Innovation Campus in Philadelphia.
- **Capital Readiness Program**
  - It is a one-week intensive curriculum designed to prepare medtech companies seeking to raise $1M - $5M in investment within 6-12 months.
  - The program equips founders with the know-how to create a capital ready due diligence deal room, helps navigate sophisticated investor and partner capital

related inquiry and due diligence processes, and provides direct feedback from industry-relevant investors.

5. Osage University Partners (OUP)

- OUP is a venture capital firm that invests in startups developing pioneering technologies in partnership with top universities and research institutions in the US and abroad.
- Refer to their youtube page for relevant and insightful webinars.
- OUP also offers informal Virtual Office Hours to partner institutions so innovators can get VC feedback on startup ideas.
- For any additional information or materials like Pitch Deck, Licensing & Equity compensation from OUP, contact the NV team.

D. External Resources

1. External Organizations

- New Jersey Small Business Development Centers (NJSBDC)
  - The NJSBDC has consultants, events, and resources available for virtually any business industry.
  - Their Technology Commercialization Program (Tech Team) specifically provides FREE confidential counseling to help innovators win non-dilutive SBIR/STTR funding.
  - For the I-Corps audience, they can assist with the exact struggles of innovators, such as Business Start-Up, Business Planning, Business Modeling, Patent Assistance, Proposal Reviews, Customer Discovery, Etc.
  - Visit this site for the most up-to-date SBIR/STTR information, SBIR/STTR Intro Videos and the NJSBDC Tech Team site to learn more about the program.
- New Jersey Economic Development Authority (NJEDA) & New Jersey Commission on Science, Innovation and Technology (NJCSIT)
  - NJEDA-CSIT is focused on strengthening the innovation economy within NJ, by encouraging collaboration and connectivity between industry and academia and the translation of innovations into successful high growth businesses.
  - Catalyst Seed R&D Grant Program's goal is to help NJ-based early-stage innovation-based companies accelerate development of technologies to transform new discoveries from research stage into commercially viable products and services. Applicants developing life sciences therapeutics can apply for grants of up to $150K, all other applicants are eligible to apply for grants of up to $75K.
  - Get strategic support and guidance from the Sector Lead of your specific Industry guidance from the NJEDA. More information about strategic sectors can be found here, and NV can help facilitate a meeting with the sector lead.
- TechLaunch
  - TechLaunch is a business accelerator program for early-stage startup companies with high growth potential, an experienced team, a demonstrated Product or Service, and generating revenue.
  - They accept applications on a rolling basis.

    - TechLaunch also offers Virtual Office Hours, targeted to Entrepreneurs and Tech Startups who want to get guidance and coaching on launching or growing their startup.
    - More information can be found here.
- TechUnitedNJ
    - TechUnitedNJ is a community of innovators in NJ that sponsors and organizes educational events and facilitates networking opportunities.
    - One of their prominent events is the Propelify Innovation Festival.

2. External Non-Dilutive Funding

Non-dilutive funding is a desirable source of startup funding because the founders retain as much equity in the company before investment from venture capital seed and future investment rounds begin to erode their equity position.

- SBIR/STTR (Small Business Innovation Research & Small Business Technology Transfer)
    - Also known as America's Seed Fund, the SBIR/STTR programs provide over $3 billion in grant funding to small businesses each year. The grants are meant for technologies with commercialization potential in all fields of study.
    - The SBIR program is a highly competitive program that encourages domestic small businesses to engage in Federal Research/Research and Development that has the potential for commercialization. Through a competitive award process, SBIR enables small businesses to explore their technological potential and provides the incentive to profit from commercialization. By including qualified small businesses in the nation's research and development (R&D) arena, high-tech innovation is stimulated, and the United States gains entrepreneurial spirit as it meets its specific R&D needs.
    - The STTR program expands funding opportunities in the federal innovation arena. Central to the program is the expansion of the public/private sector partnership to include joint venture opportunities between small businesses and nonprofit research institutions. The unique feature of the STTR program is the requirement for the small business to formally collaborate with a research institution in Phase I and Phase II. STTR's most important role is to bridge the gap between the performance of basic science and the commercialization of resulting innovations.
    - Please visit this website, the NJSBDC Tech Team site or to the SBIR/STTR guide for more information.
- NSF PFI: AIR-TT
    - Similar in focus and scope to the SBIR/STTR programs but must have NSF funding lineage (this includes the NSF I-Corps National Teams program).
    - NSF PFI: AIR-RA is a separate but related track for translation of research through partnerships between multiple agencies, institutions, and/or academic fields.
- Activate
    - Two-year fellowship program to help transition your technology into a product.
    - Fellows receive a yearly living stipend of $80,000 to $110,000 plus a health insurance stipend and travel allowance.
    - Each project also receives $100,000 in research funding and access to at least $100,000 in additional flexible capital.
    - Provide mentorship, entrepreneurial education, access to funders and industry experts.
    - Activate respects the intellectual property of fellows and ensures that they maintain full ownership of any IP generated throughout their two-year fellowship period.

- NJEDA Innovation Fellows
  - This two-year program provides $200,000 as a base award (income replacement), and up to $200,000 in bonuses (resulting in a total $400,000 award) to aspiring teams of entrepreneurs (teams must comprise of at least 3 full time individuals to qualify for this program).
  - During the course of this program, teams are required to participate in mentorship programs facilitated by the New Jersey Innovation Institute (NJII) or The Rowan Center for Innovation & Entrepreneurship (RCIE).

3. Other External Funding Sources *(dilutive and non-dilutive)*

As the startup advances towards product development and growth phases, the company may need to explore venture capital and angel investment for the investment dollars and mentorship in order to effectively scale up their manufacturing, production, sales & marketing, and distribution operations.

- Foundation Venture Capital Group (FVCG)
  - In conjunction with the New Jersey Health Foundation (NJHF; parent of FVCG), FVCG provides pre-seed and seed funding to life sciences-related companies in NJ.
  - Innovation grants of up to $100,000 to further the technology (i.e., pre start-up; follow-on grants of $100,000 possible).
  - Investments of up to $500,000 in seed capital to launch a start-up.
- Indiebio
  - Indie Bio is a startup development program under the venture capital firm SOSV.
  - Offer pre-seed and seed funding - Up to $500K in funding available starting with an initial $275K package (for an equity position of 11.2% post-debt, which on average converts to 7.5% at Seed). This is offered as $200K in cash and $75K in-kind. During the program, an additional $250K maybe offered.
- HAX
  - HAX is the venture capital firm SOSV's pre-seed fund for hard tech startups.
  - 250K investment is offered.
  - Supports fundraising strategy, investor introductions and continued investment into follow-on rounds from Pre-Seed to Pre-IPO.
- The Rutgers NV team partners with other VCs, Angel investors, and institutions.
  - Institutions that sponsor pitch competitions with various prizes (cash or otherwise):
    - NCET, MABA, BioNJ, AUTM, NJTC, TechLaunch, and many others.
  - Some investors sponsor a "Rutgers Day" where select Researchers or start-ups can pitch their technology in hopes of obtaining grants and/or investments.
  - Please contact the Rutgers Innovation Ventures Team with any questions.

When ready to present to prospective investors, please see Appendix 3 for a "Do's and Don'ts of Convincing Investors to Bet on Your Technology".

4. Law Firms

As you look to form a company, it is important to have representation independent of Rutgers. There are a number of law firms that are dedicated to early-stage companies. For a list of lawyers and practices specializing in startups, contact NV.

VI. Creating Investor Presentations & Business Plans

A. General Guidelines for Investor Presentations & Business Plans

Whatever field the start-up is in, some key topics an investor presentation **must** address are:

- What is the problem and **unmet market** need?
- How is the company **solving** it?
- Who is the company solving it for? (who **specifically are your customers**)
- How is the problem currently being solved? What is the **competition**?
- How is the technology **unique**? (discuss key metrics relative to existing solutions)
- What is the **current stage** of development? (patent status, POC*, MVP*)
- What do you plan to **accomplish** over the near-term? (be specific)
- Who is the **team** that will be doing it?
- If you raise funding, **how exactly will you spend** it?
- Ultimately, **how will the investor make money**?

** Proof-of-concept: a research idea or innovation that has been reduced to practice.*
** Minimum viable product: a product that has just enough features to satisfy early customers.*

It is not expected that all of these will be fully known and developed at the beginning; NV will mentor and work with the innovators to address any gaps.

OUP also has relevant and insightful webinars on their YouTube page that can be very helpful as you go about creating your business plans and pitch decks. NV can also provide access to other relevant resources that OUP has available to its partner institutions.

Business model canvasses are an increasingly popular tool to help refine a company's business development plan.

- Basics of a business model canvas *(Wikipedia)*
- Various tools for start-ups, including business model canvas how-to's *(Steve Blank).* Steve Blank is well regarded in the world of entrepreneurship, particularly in commercialization of lab research.
- Business Model Canvas by Coursera Project Network
- Business Model Canvas: A Tool for Entrepreneurs and Innovators
- Coursera Project Network's How to Use the Lean Canvas to Validate Your Business Model

Pitch Decks are used to pitch your idea or company to investors. These consist of slides that give a detailed but concise snapshot of your company.

- Y Combinator's How to Pitch Your Startup
- OUP's Pitching 101: How to Present Your Startups and Technology Innovation to Potential Funders
- Science Center's OnRamp: Harnessing the Power of Your Pitch

Please also see the Appendix 1 for more information on ***Start-up Viability and Business Planning***.

VII. Appendix

Appendix 1: Start-up Viability and Business Planning

A start-up **may,** or **may not,** be the best commercialization vehicle available for a given technology or invention. For start-ups with significant required capital investment, overhead costs, limited market, or long lead-time to commercialization, a licensing deal with an existing company may be more appropriate.

Start-ups, on the other hand, create significant value opportunity for the founders and investors of the business. Start-ups also enable the management team to direct a specific business model (whether product specification, targeted customer segment, pace of development) that they think is most attractive.

Researchers need to consider that a **start-up creates additional significant responsibilities**: taxes, legal work, meetings, management, and others. Even with having a seasoned business co-founder, **nurturing a start-up will require some time commitment by the PI inventor**. **Also consider, that just because you think you have a great technology (and you indeed may), does not mean that you will automatically have access to funding**.

1. Differentiating Good Science versus Good Business

When innovators consider pursuing a start-up company, it is important for them to make the **distinction** between the value of good science and the market value of any given invention or technology. One challenging question is to ask a researcher to translate his or her work into a vision of a product or service that **specific customers** are willing to buy.

- Indicators of **Good Science** can be predicted by the number of publications, presentations, awards, prizes and research grants.
- Good Science typically leads to new theories, models, laws, systems, equations, and validation that experimental results achieve desired results.
- Indicators of **Good Businesses** can include strength of intellectual property (know-how, trade secrets, copyrights, marks and patents), strong management team, wide market opportunity, and long runway for growth.
- Good Businesses lead to customer acceptance, profits, and return on capital. Paying customers are the best validation that you are creating value for that customer.

2. Technology Assessment for a Start-up

As mentioned previously, the development of a technology from a concept into a market-ready product can be very time consuming and expensive. If a technology is too early, creating a start-up to commercialize it may not be feasible. If this is the case, we recommend that faculty seek additional basic or translational research funding to advance their work.

In some cases, sponsored research with existing companies may be a good option. There may also be potential for SBIR/STTR Phase I and FastTrack awards (to SBIR/STTR Phase 2), or a

business model that allows for early positive cash flows that can be reinvested into product development.

Key for a technology assessment is to identify what the derived **minimally viable product** would be. **You can then work backwards to assess how much development (funding, resources, time) is required** to get to the final product from where you are currently.

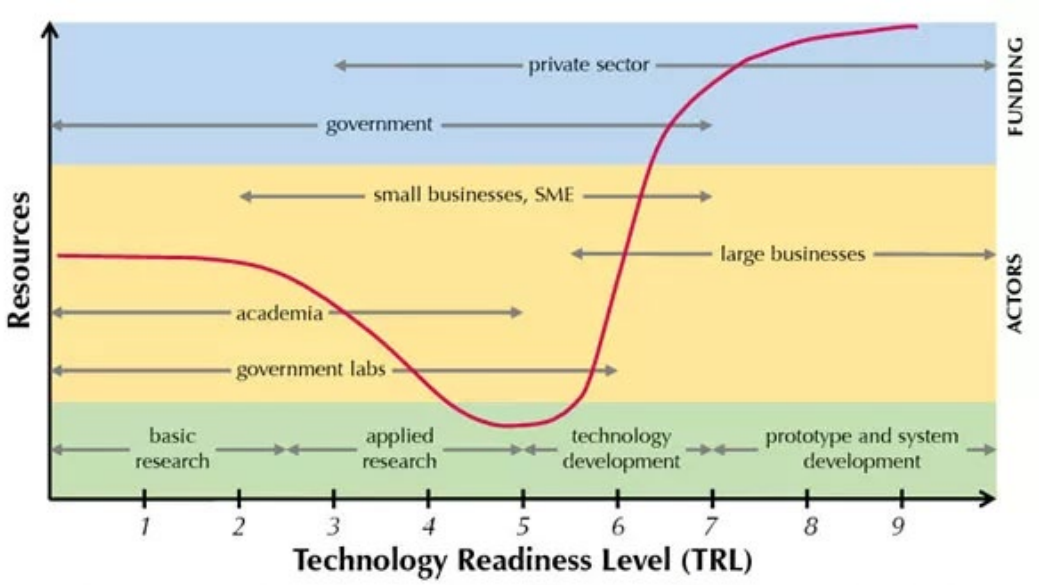
3. Technology Readiness levels

Technology Readiness Levels (TRL) was originally designed by NASA in the 1980s as a tool for reducing technical risk and minimizing technology-driven cost. It has since been adopted in some form by many government agencies. It is a metric-based assessment scale of the maturity of a technology from concept to fully operational.

- **European Union's Readiness Levels**

TRL Scale	Description
TRL 1	Basic principles observed
TRL 2	Technology concept formulated
TRL 3	Experimental proof of concept
TRL 4	Technological validity in a lab
TRL 5	Technology validated in relevant environment
TRL 6	Technology demonstrated in relevant environment
TRL 7	System prototype demonstration in an operational environment.
TRL 8	System completed and qualified
TRL 9	Actual system proven in operational environment

Adapted from EARTO. "The TRL Scale as a R&I Policy Tool - EARTO Recommendations. Retrieved from https://www.earto.eu/wp-content/uploads/The_TRL_Scale_as_a_R_I_Policy_Tool_-_EARTO_Recommendations_-_Final.pdf



Source: Hensen, Jan & Loonen, Roel & Archontiki, Maria & Kanellis, Michalis. (2015). Using building simulation for moving innovations across the "Valley of Death". REHVA Journal. 52. 58-62.

Examples that can help you determine the TRL level of your innovation/technology can be found here.

Additional Technology assessment resources:

- NASA's TRL
- DoE's Technology readiness assessment guide
- DoD TRA Deskbook

4. Target Product Profile (TPP) (helpful for Life Sciences)

The Target Product Profile (TPP) is a template that was recommended for adoption by the FDA in 1997 with the goal of improving communications concerning the drug development process. It is essentially a summary of a drug's labeling concepts.

For Rutgers researchers considering a start-up involving a compound or biologic with potential clinical applications, a TPP can help focus pre-clinical efforts (help identify which assays and models to use) and assist with any future FDA filings (is part of a proprietary Investigational New Drug file).

Additional Target Product Profile resources here:

- TPP simple worksheet (1 page PDF)
- FDA TPP Guidance (25 page PDF)

5. Available Courses and Lectures on Start-ups

- "How to Build a Startup – The Lean LaunchPad" free course on Udacity taught by Steve Blank. View the course at https://www.udacity.com/course/ep245.
- Customer Discovery
    - "How to Do Customer Discovery" http://vimeo.com/87302754

    - Pre-Planning: Contacts http://vimeo.com/87303446
    - Customer Interview Dry Runs http://vimeo.com/87302981
    - Pass/Fail Experiments http://vimeo.com/87302754
    - Conducting a Customer Interview http://vimeo.com/87302479
    - Looking for Insights http://vimeo.com/87301695
    - Death By PowerPoint http://vimeo.com/76171146
    - Understanding the Problem http://vimeo.com/76173388
- Osterwalder Business Canvas
    - Site with instructions and videos on how to create a business model canvas http://www.alexandercowan.com/business-model-canvas-templates/
- Y Combinator's Startup school: https://www.startupschool.org/

For a more comprehensive list of relevant courses, contact NV.

Appendix 2: Template Investor Presentation

- **Slide 1: Cover Page**
  - Title of your technology (or company name) with a 1-line, non-technical description
  - Your name, title, affiliation
  - Other team members name, title, affiliation (if appropriate)

- **Slide 2: Introduction**
  - Elevator pitch / mission statement: a simple paragraph, no more than 2-3 sentences that encapsulates:
    - What your technology is / how it works, in "plain English";
    - What specific problem it looks to solve;
    - How the technology is unique and superior; and
    - Who actually uses the product (if appropriate).
  - A picture or diagram of your technology is usually helpful.
  - This slide should be crafted for a **generalist / non-scientist**.

- **Slide 3: Problem & Market Need**
  - What is the unmet market need?
  - What is the problem you are trying to solve?
  - What is the estimated market size ***specific*** to your technology?
    - "We are targeting a $180B market for oncology" is unrealistic, too broad, and comes across as not being thoughtful.

- **Slide 4: The Innovation – Summary**
  - **Visual display** of your product and service
    - What does it do?
    - How does it solve the market need?
  - **Compare** and contrast to current solutions / current **gold standard**
    - How is your solution unique?
    - What are the advantages?
    - What are the risks and disadvantages?
    - Typically, a short and small table comparing **key metrics** (no more than 3-4) works well
    - **Avoid saying 'there is no competition'**. There is always current or future competition, or even substitutive products/services. Presenting to savvy investors that 'there is no competition' comes across as uninformed.

- **Slides 5-7: The Innovation – Details**
  - Section to talk in more depth about the technology.
  - For each slide (limit to 3 incremental slides), describe **one specific aspect** or improvement that your technology offers.

- **<u>Slide 8: Current Stage of Technology</u>**
  - What is the IP / patent status, if appropriate.
    - How defensible is your technology?
    - Other than Rutgers, are there other institutions or co-owners of the technology?

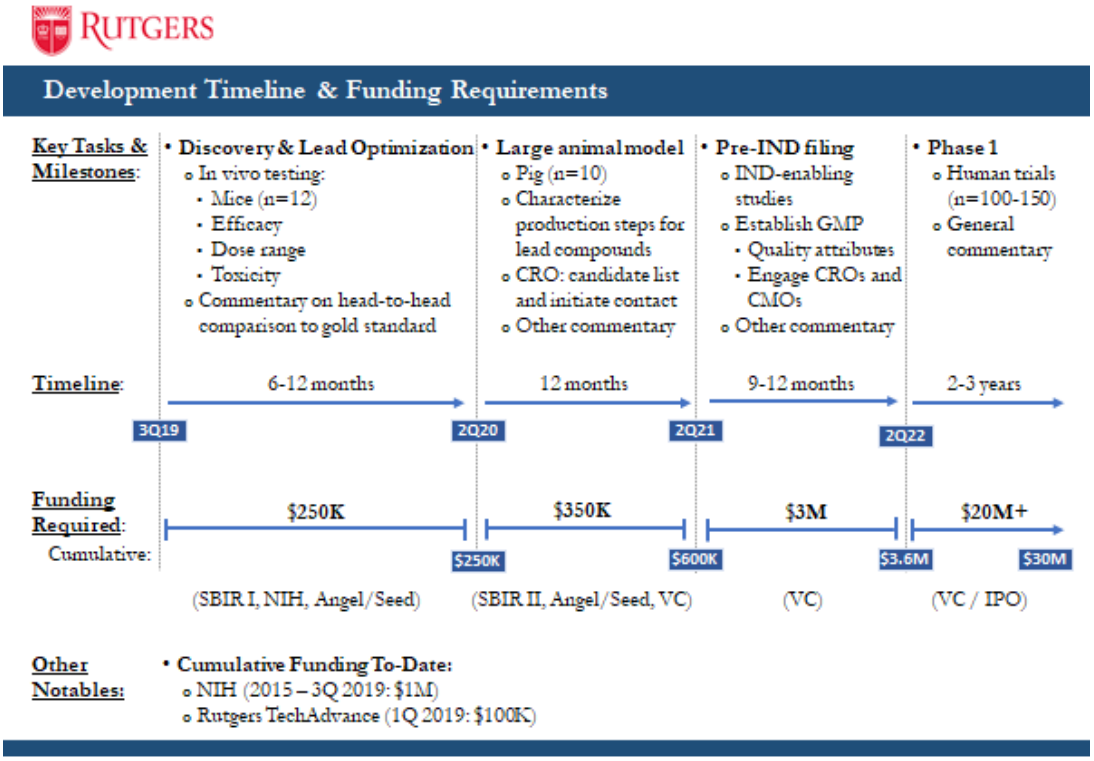
  - What is the current stage of technology?
    - i.e., "Where are you today"?
    - For example:
      - *"We achieved…"; or "We discovered that…"*
      - *"We have a working prototype that does…"*
      - *"Our lead compounds exhibit…"*
      - *"We are ready to manufacture components of…"*
      - *"Our customer discovery process suggests…"*
    - The more **tangible** your descriptions, the better the investor reception will be
    - This section should include a combination of the above, and serves as a natural segue to the next slide.

- **<u>Slide 9: Goals & Milestones</u>**
  - Near-term **goals**:
    - What are next steps to validate commerciality?
    - For example, additional experiments, customer discovery exercises, etc.

  - Gaps to be addressed with the current round of funding
    - What will this funding help you achieve? (must be a specific goal, not "how will you spend the funds")
    - What meaningful results do you expect to generate?
    - What aspect of the technology are you de-risking? (for example: toxicity, efficacy, etc.)

  - Outline a multi-year timeline of product/business development to commercialization.
    - What key research needs to be done at each stage?
    - How do you define each stage (milestone-based)?

  - **Given the difficulty faculty (especially in the Life Sciences field) typically have with this slide, please find below an example slide. This is a general template and ALL numbers and comments are no more than placeholders.** *(slide on next page)*



- **Slide 10: The Ask**
  - What amount of funding are you seeking?
  - How specifically will you be spending the funds?
  - Break out **use of funds by milestones**
    - Even if investors commit to funding, for early-stage start-ups, disbursement is typically staggered and depends on achieving stated milestones.
  - Try to include an "exit path" for investors: how will investors ultimately make a return?
    - Are there large companies that would be interested in acquiring/licensing the tech?
    - Is this a company that could go public (IPO)?

- **Slide 11: The Team**
  - Include pictures of team members, if appropriate
  - Highlight skillsets that are complementary
  - An ideal team would have: Scientific expertise, Clinical expertise, Commercialization expertise (very few teams will have the full suite of expertise at an early stage).

- **Slide 12+: Thank You and Appendix**
  - Always include a Thank You note or slide.
  - You could include an Appendix section with further details on the technology.

Appendix 3: Getting Ready to Pitch to Investors (link to full PDF)

The do's and don'ts of convincing investors to bet on your technology

Do's	Don'ts
• Remember that investors' **main goal is to maximize their Return-on-Investment**. Show them you understand that. Show them you realize that while in your world it's 'all about the data', in the investment world it's about both, the data and financial upside.	• **Don't come across as being 'in love' with your technology, even if you are**. No matter how interesting or fancy your technology is, if it will not make money, investors will not invest. And the more in love you are with your technology, the less likely you are to listen to constructive criticism that may help make it commercially successful.
• **Be a good listener**. While investors may not know your technology as well as you do, they usually have much more experience in commercializing technologies. Even though you feel/know that no one understands your technology and its potential as well as you do, go into the meeting with the mindset that investors know what they are talking about when they ask tough questions. They usually do.	• **Don't argue with investors**. Address their questions calmly and to-the-point. The goal is to answer their questions, so they feel more comfortable and more likely to invest in your technology. The goal is NOT to show them that you are smarter (even if you are). If you need to disagree, make sure you do it in a way that does not make you disagreeable.
• Constantly keep in mind that **investors are evaluating you as a person, not just your technology**. During your presentation and Q&A, investors subconsciously ask themselves 'Would I be able to work effectively with this researcher for the next several years? Would I enjoy working with this researcher?'	• **Do not alienate investors with a 'know-it-all' attitude**. Since investors are constantly and subconsciously evaluating you as a potential partner, try to build chemistry with them. Don't be negative and don't be argumentative.
• When you first start explaining your technology, **use words and terms that even your grandmother would understand**. **Be concise.** Then let the investors lead you with their questions into the 'nuts and bolts' of your technology.	• **Don't start explaining your technology in a complicated way** and using terminology that only people in your field understand. It will likely make investors uncomfortable and may even cause them to become subconsciously antagonistic.
• **If you pitch as a team**, make sure that the team comes across as **a cohesive and productive group**. Support each other during the presentation and demonstrate that the team is synergistic and delivers more than the sum of its members.	• If you pitch as a team, **don't contradict or argue with your team members in front of the investors.** Investors prefer to invest in a cohesive team and not in a disjointed one. A disjointed team raises a red flag as to its ability to work productively.
• **Always mention the current and potential competition.** It demonstrates that you know the territory you are operating in, and therefore less likely to be surprised and more likely to commercialize the technology in a competitive way.	• **Never say 'there is no competition'**. There is always current and/or future competition. Saying to savvy investors that 'there is no competition' comes across as naïve and uninformed.
• **Tell a story, not just cold facts and figures.** Investors use both their brains and their guts when making investment decisions. A compelling story about your technology/startup sets the gut to move the brain in the right direction.	• **Don't prepare an investor presentation like a grant application**. It is more important to weave a credible and investable 'story' than to cram all the technical facts and data into a sprawl of slides.
• **Do dry-runs of your presentation**. Remember that 'practice makes perfect'. Practice presentations in front of people who can provide constructive input regarding the content, as well as the delivery, of your pitch deck. This will make your interaction with investors more effective.	• **Avoid walking into an investor meeting unprepared.** You have only one chance to make a 'first impression'.