THE STARTUP GUIDE

For Cornell faculty, research staff, graduate and postdoctoral fellow entrepreneurs

Cornell University

CTL CENTER FOR TECHNOLOGY LICENSING AT CORNELL UNIVERSITY

CTL CENTER FOR TECHNOLOGY LICENSING AT CORNELL UNIVERSITY

CATALYZING COMMERCIALIZATION

PROMOTING NEW VENTURES

YOUR LAUNCH PARTNER FOR SUCCESS

We are here to serve you, the inventor, on your quest to launch a new company based on Cornell technology.

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FIRST EDITION
VERSION 1.1

172

LICENSED STARTUP COMPANIES SINCE 1990

$2.2

BILLION RAISED*

4K

JOBS CREATED*

*Sourced from voluntary licensee reports. Actuals likely higher.

WELCOME

Greetings,

The ecosystem supporting entrepreneurship at Cornell has seen tremendous growth in recent years. Faculty and student entrepreneurs can now take advantage of, among other things, technology incubators, translational centers, maturation funds, training programs for students and researchers, and business plan competitions.

As Cornell's university-wide technology transfer office, we here at The Center for Technology Licensing (CTL) are part of the ecosystem contributing to this growth. Since 1990, more than 170 startups have been launched based on licensed Cornell technologies. As new ventures are growing in importance for commercializing University technologies, CTL is experimenting and evolving in ways to facilitate greater startup activity.

To that end, we are proud to share with you this Startup Guide, which we have written to help clarify the roadmap for potential entrepreneurs interested in launching new ventures, make the startup licensing process more transparent to the community, and link potential entrepreneurs to startup resources within the ecosystem at Cornell and beyond.

The release of this guide is coupled with our recently launched FastTrack Startup License—an experimental program in the fields of engineering and physical sciences—described further on in this guide. We will continue to contribute to the growing entrepreneurial ecosystem here at Cornell as we deliver on one of our key missions: promoting new venture formation and growth to foster economic development within New York State and beyond.

Thank you and best of luck on your journey,

Alice Li

Alice Li, PhD, CLP
Executive Director
Center for Technology Licensing
Cornell University

ARE YOU AND YOUR IDEA READY FOR A STARTUP?

By virtue of reading this guide you are considering starting a company, congratulations! As you are likely beginning to realize, embarking on this adventure entails much more than simply further developing your innovation. Ensuring you are protecting your ideas, constantly aligning with customer demand, building networks, hiring great people, executing a successful financing strategy and accurately forecasting the future are all necessary activities that contribute to developing your discovery when launching a startup. Success can be elusive and may take years, however, failure can be certain without a well-rounded understanding of the effort and necessary commitment. As you explore, you'll find a welcoming Cornell community offering essential support as you learn, evaluate and develop your startup idea. Here are key factors you may want to consider as you go and revisit throughout:

- How much of your available time can be committed to the effort on an ongoing basis?
- Are you ready to tap personal resources and networks for support?
- What is your tolerance for risk and what may often seem like chaos?
- How developed is your skill to be resilient yet flexible simultaneously?

Launching a business requires a large commitment and new entrepreneurs often underestimate the time, resources and funding required. Many of us can readily envision the perfect technology development plan, with expected efforts, resources and funding needed, as there are many similarities with how faculty seek research funding. Unlike the research lab environment, however, startup plans are often influenced and changed by factors outside of the entrepreneur's control. Financing challenges, market pivots, getting patents issued, navigating business creation for the first time, and customer delays are just a few things that can derail the best laid plans. Handling these situations draws on the depth of your answers to the questions above.

You may have others launching the business with you. Ensuring open communication and common goals amongst the founders is critical as they underpin the collective decisions you will need to make (sometimes very quickly!) as a team. If you are a faculty member, seek to clearly communicate what your co-founders can expect from your commitment as you balance the demands of a start-up and your University appointment.

Further guidance on working with co-founders, including a helpful 'Founders MOU,' can be found in the Startup Guidebook published by the NYS Science and Technology Law Center. Please refer to the Additional Resources section of this guide.

Please note: This guide seeks to address the primary path for startup companies based on Cornell technologies, but there are others. If you find your startup opportunity is not aligned with the information in this guide, please discuss your plans with your Technology Licensing Officer, who will be happy to connect you with alternative, suitable resources and, information.

How will addressing conflicts of interest affect launching my startup?

If you remain at the University while starting a company you must comply with the University's conflict of interest (COI) policies:

University Policy 4.14, Conflict of Interests and Commitment
https://www.dfa.cornell.edu/sites/default/files/policy/vol4_14.pdf

University Policy 1.7, Financial Conflict of Interest Related to Research
https://www.dfa.cornell.edu/sites/default/files/policy/vol1_7.pdf

Both set forth the principles and procedures to identify, report, review, and manage real and apparent conflicts of commitment and conflicts of interest.

Conflict of Commitment is managed by individual colleges.

Weill Cornell Medicine Conflict Management Office manages COI and Commitment for WCM researchers.
http://researchintegrity.weill.cornell.edu/conflicts_management_office

The Office of Research Integrity and Assurance manages Financial COI for researchers at Ithaca and Cornell Tech campuses.
https://oria.cornell.edu/COI

IS YOUR INNOVATION READY?

Innovations from the Cornell community are as expansive and unique as the range of research interests across all of our campuses. Assessing the readiness of an innovation to be the bedrock of a startup company involves knowledge and understanding in two key areas.

Understanding what product you will be selling and who will be purchasing it

Coming from the research lab, you may be most comfortable jumping in by focusing on developing your innovation. More startups fail, however, due to developing the wrong product at the wrong time as compared to those whose promised technology doesn't deliver. Developing your understanding of what you will be selling, and to whom, is the first step of defining the business.

Aligning your solution with a clear need in the market is the most effective foundation to develop a robust commercialization plan. However, starting with this alignment can sometimes be challenging. Exploring and validating your ideas and hypotheses about the market's need for your product very early on may seem counterintuitive. You may be thinking: If we tell people what we are doing now, can't someone simply copy us? Those chances are always there, however, you've likely already met with CTL and protected your innovation. Furthermore, your CTL Technology Licensing Officer can guide you through considering what should and shouldn't be shared at this stage.

Customer discovery is an effective process to address the market question. This process is often repeated as a startup seeks to find its best model, mastering it is worth every minute invested. Customer discovery is taught in many of the available entrepreneurship programs on campus and is a key focus of the NSF I-Corps training course based on the Lean Launch Pad methodology introduced by Steve Blank. Cornell is one of the eight Regional Nodes of the I-Corps program. You can find more information on these programs in Resources section of this guide.

Cornell's incubators, accelerators and related programs play key roles beyond serving their tenants and provide assistance to Cornell technology startups along their entire journey. Particularly, the Kevin M. McGovern Family Center for Venture Development in the Life Sciences, Praxis Center for Engineering and Physical Sciences, BioVenture eLab for Weill Cornell Medicine, and the Startup programs at Cornell Tech can assist entrepreneurs seeking business, market development and management expertise for technology startups. You can find more information on incubators and accelerators in the Resources section of this guide.

Understanding how much time, how many people and how much funding it will take to commercialize the technological innovation into a product or the next commercial inflection point

Your customer discovery has informed your plans and you can start to visualize and identify milestones, resources, and funding needs to get you there. Compiling this understanding involves aligning a combination of 'bottom-up' and 'top-down' thinking. Starting with what you know and where you are today, identify steps needed to create the first prototype, complete any product validation testing and develop the supply chain and resources to meet anticipated market demand. Combine this with a top-down perspective incorporating how your target market adopts innovations. For example, if you are seeking to disrupt an existing, large commodity market, the time, resources and strategies will likely be dramatically different from stepping into a race with other venture-backed startups chasing a rapidly churning, hot market opportunity.

PAQs

(purposely asked questions)

What are my goals?

How disruptive is my idea?

How soon can a commercial product be ready?

Who is going to buy my product?

What roles will I and my co-founders have?

How large is the market?

Who will own the company?

What are the company's goals?

YOU ARE READY FOR A STARTUP WHEN:

- [ ] You understand the product you will sell, who will buy it, for how much and when
- [ ] You have a strong sense of the time, people, and funding it will take to create your product
- [ ] You have accounted for the value of protecting your idea
- [ ] You’ve built an appreciation for the scope and effort necessary to launch, support and grow a business beyond technology development that includes marketing, sales, accounting and finance, and operations
- [ ] You've explored and identified a business model that is a fit for your technology and market
- [ ] You understand the funding and time required to develop the product and its market potential
- [ ] Your gut tells you to do it

WHERE TO START?

6 Steps to the Startup Process at CTL

CONTACT CTL & DISCLOSE YOUR INVENTION

PROTECT THE INTELLECTUAL PROPERTY

NETWORK & IDEA INCUBATION

PLAN YOUR BUSINESS

DEVELOP A FINANCING STRATEGY

PARTNER WITH CTL & LICENSE THE TECHNOLOGY

CONTACT CTL & DISCLOSE YOUR INVENTION

CTL has a legacy of shepherding over 170 ventures through ideation, licensing and launch.

Your Technology Licenising Officer (TLO) serves as the primary point of contact to assist you through the information and steps described throughout this guide. They are on hand to answer questions about University policies, discuss disclosures of inventions, evaluate and develop an IP protection strategy, review your business plan, help market the technology and negotiate licensing and related agreements. They are also well connected to Cornell's entrepreneurial ecosystem and beyond to link you to the relevant resources and people.

In addition to being an invaluable resource as you explore and create your startup, your TLO is also responsible for the management and commercialization of Cornell inventions and related property rights. This responsibility is largely aligned with the needs of startup companies and balancing both your and Cornell's interests is often seamless to the inventor/entrepreneur. TLO's are well versed in being your startup resource while representing the University and will ensure you are aware when they seek to balance both.

Contacting Your TLO

Our TLOs contact information and their respective areas are listed online and in the Resources section of this guide.

Disclosing Your Invention

All Cornell inventions made by a Cornell appointee or with University resources are to be disclosed to CTL through a confidential "Invention Disclosure" form which should fully describe the new aspects of the invention, the critical solution it provides and its advantages over existing technologies.

LINDSAY FRANCE / CORNELL UNIVERSITY

Is my discovery a Cornell invention?

Cornell University Policy 1.5 defines discoveries owned by Cornell:

Inventions made by anyone with a University appointment and resulting from activities carried out in furtherance of their responsibilities, and/or with the use of University resources, are considered a Cornell invention.

http://www.dfa.cornell.edu/sites/default/files/policy/vol1_5.pdf

PROTECT THE INTELLECTUAL PROPERTY

Our licensed startups usually begin as a research project. Research projects conducted at Cornell's Ithaca locations, Weill Cornell Medicine campus and the Cornell Tech campus generate the majority of inventions and discoveries managed by CTL.

LINDSAY FRANCE / CORNELL UNIVERSITY

Disclosure Evaluation

Your TLO will evaluate your disclosure for its commercialization potential together with the inventors and, at times, with the input of industry experts. This evaluation includes an analysis of the market, competing technologies and an overview of existing patents.

Along with your participation and assistance, this evaluation helps determine the most appropriate way to protect the invention and guide the licensing strategy. Sometimes that can include applying for a Patent. Patent applications are filed in the name of Cornell with the assistance of the inventor. CTL is responsible for interacting with the U.S. Patent and Trademark Office and foreign patent offices about the application. Other times, such as with some software, reliance on copyright protection may be more appropriate.

LINDSAY FRANCE / CORNELL UNIVERSITY

It is CTL's responsibility to ensure that inventions made at the University can be used by entities best positioned to bring those technologies to the marketplace. If you are planning a startup based on the technology, sharing those intentions is best done at the time of disclosure. While CTL does not mandate where new ventures should be created, we encourage entrepreneurs to establish their ventures in New York State.

THE 7 RULES OF STARTUP NETWORKING by Zahedul Amin

1 Pay Forward Attitude

This remains the cornerstone for all relationships. The goal for networking should always be to help others and not seek immediate returns. Relationships are like bank accounts, as you need to make initial deposits before yielding returns. Effective networkers sincerely seek to help in whatever ways possible to build a friendship with the contact.

2 Focus on Quality

In various networking sessions, entrepreneurs tend to focus more on collecting more business cards rather than deepening key relationships. As the Pareto principle goes, 20% of contacts yield 80% of the deals. Preparing a network hit list is a smart move before attending networking events or conferences.

3 Have a Clear Goal in Mind

Entrepreneurs must identify potential business contacts based on their organizational vision. A business-to-business (B2B) focused organization must identify sector focus and try establishing network with potential clients and partners. A shift in organizational strategy should also give way to change in networking strategy. A more focused networking strategy will bring about immediate results in the form of higher revenue and more opportunities for personal growth.

4 Do Not Forget to Follow Up

A meeting with a potential network must immediately be followed by a follow up email. People hardly close a deal in the first meeting; rather, the immediate objective is securing a second meeting. The follow up mail should be sent within 24-48 hours requesting time for the meeting. The contact goes stale if no immediate contacts are made by entrepreneurs within the first week.

5 Do Research Before Meeting Someone

Before meeting someone, it is imperative to conduct individual research. Main areas of interest include the person's interests, achievements and expertise. A simple Google or LinkedIn search can suffice to provide adequate information about the contact. Talking with other contacts can also help to gauge the main talking points of the meeting. Entrepreneurs should ideally look for the avenues where there is common ground with the contact as this will help deepen the relationship and build trust.

6 Maintain a Database

Proficient networkers tend to have a list of contacts who can more in handy for furthering relationship. At times, a well-managed list of contacts can be more valuable than a portfolio of stocks. Effectively leveraging contacts can help in building the business and exploring new opportunities.

7 Ping the Contacts

All relationships need to be nurtured in order to keep them alive. Entrepreneurs must periodically contact all networks and, if possible, host small events to maintain the relationship. Exchange of periodic gifts in the form of notepad, calendar, etc. can be an effective medium for retaining mind share. Social media and email can also be effective ways to stay in touch.

Adapted with author's permission from: https://zahedulamin.com/2015/02/7-rules-of-startup-networking

NETWORK & IDEA INCUBATION

A key competitive advantage of Cornell entrepreneurs is the ability to tap into the University's wealth of entrepreneurial resources, networks and reputation. Cornell inherently fosters an interdisciplinary approach across a welcoming academic research community that encourages the development of startups. Entrepreneurs can access a vast array of educational opportunities, networks of founders, angel investors and advisors, and access resources such as offices, laboratories, incubators, manufacturing facilities and warehouses. As you explore and develop your startup idea, taking advantage of the networking and educational opportunities on your campus is essential for building a rounded view of the road ahead of you.

Network, Mentorship, Training and Education

Entrepreneurship at Cornell: The gateway to everything entrepreneurial at Cornell University. Upcoming events, startup resources, educational opportunities and general information about entrepreneurship.

Blackstone LaunchPad at Cornell University: Cornell's dedicated mentorship program, providing advice, connection to mentors, and the power of community.

The Bioventure eLab, a subsidiary program of the Office of BioPharma Alliances & Research Collaborations (BPARC), works collaboratively with CTL to host networking events for researchers, clinicians and staff at Weill Cornell Medicine. The eLab also offers a 12-week ABI (Accelerating Bioventure Innovations) training program.

The Kevin M. McGovern Family Center for Venture Development in the Life Sciences (Ithaca) hosts events and provides startup mentorship.

The Praxis Center for Venture Development in Engineering and the Physical Sciences (Ithaca) hosts events and provides startup mentorship.

Cornell Tech Runway Startup Post Doc Program: A 12-36 month program for recently completed PhD's who want to harness their deep tech expertise and start a company in New York City and with funding from day one.

Rev: Ithaca Startup Works: A startup incubator that helps any company in the Ithaca area succeed and hosts numerous networking events.

The Center for Life Science Enterprise: A NY State funded Center of Advanced Technology, in the Institute of Biotechnology, which promotes and funds biotechnology development. Hosts networking events and coordinates biotech-focused I-Corps training with the UNY I-Corps Node.

Center for Technology Licensing: We, too, host networking and educational events for the startup community.

UNY I-Corps Node is part of the NSF-funded National Innovation Network (NIN) and offers I-Corps training in both short- and full- formats for University researchers and early-stage startup founders who are interested in exploring the market potential of their work and learning entrepreneurial skills.

Cornell Engineering PhD Commercialization Fellows Program: The College of Engineering offers a unique opportunity for PhD students to spend a fully-funded semester and summer in an intensive entrepreneurship program with a personal mentor to explore commercializing a product of the student's choosing.

W.E. Cornell program: Helps STEM women commercialize their innovations and overcome the challenges of leading a growing technology-based business.

Additional information on these programs and their respective organizations can be found in the **Resources** section.

CORNELL CAMPUS INCUBATORS & PROGRAMS

Kevin M. McGovern Family Center for Venture Development in the Life Sciences

The McGovern Center, located in Weill Hall on the Ithaca campus, fosters and develops Cornell life science startup companies. The Center reports into Cornell's Research Division and is also funded by the Institute of Biotechnology, and a generous gift from Kevin M. McGovern '70 and his family. The Center offers programming and hosts events focused on identifying and grooming potential client companies for application to the Center, accelerating the research/development of its client companies' technology/products, validating its client companies' business plans, and strengthening its client companies' management teams.

Praxis Center for Venture Development in Engineering and the Physical Sciences

The Praxis Center for Venture Development, located in Duffield Hall on the Ithaca campus and introduced in 2018, fosters and develops Cornell startups based on discoveries in Engineering and the Physical Sciences. The Center offers programming and hosts events focused on grooming client companies for application to the Center, accelerating the development of its client companies' technologies/products, validating its client companies' business plans, and strengthening its client companies' management teams.

Bioventure eLab at Weill Cornell Medicine

A program of the Office of BioPharma Alliances and Research Collaborations, the Bioventure eLab is the hub for entrepreneurship on the Weill Cornell Medicine campus and serves as the central clearinghouse for members of the Cornell community interested in building the next generation of life science ventures. The eLab provides access to resources, training and mentorship in biomedical entrepreneurship.

Runway Startup Postdocs at Cornell Tech

Based at the Jacobs Technion-Cornell Institute at Cornell Tech, the Runway Startup Postdoc Program ushers recent PhDs in the digital technology field into a 12-36 month program that incorporates academic and business mentorship and provides a financial package that includes salary, research budget, a housing allowance and space. The faculty includes experts in connective media, health technology, security and privacy, computer vision and a number of other fields. Startup Postdocs with related backgrounds are selected so they can tap into the excellent resources and mentors there.

Rev: Ithaca Startup Works

Rev is a startup incubator offering business mentorship, workspace, and startup resources for any new or growing business that will create jobs in the Ithaca community and was created by a partnership between Cornell University, Ithaca College and Tompkins Cortland Community College.

PLAN YOUR BUSINESS

Your networking, learning, exploring and planning help realize your vision becoming a commercial venture. Capturing all of the various information, focusing, organizing and projecting it is the process of business planning.
This process is a living exercise conducted and refined throughout the life of your business.

Business planning is not to be confused with a business plan. A business plan is a snapshot in time of your planning process that summarizes who you are, where you've been and where you are going. The role and format of business plans are constantly evolving with the needs of your business. Maintaining the process of continually planning your business, however, is vital to your success.

When planning your technology startup five main elements are considered, including your innovation-to-product development roadmap, market analysis, sales plans, human resource needs, and financing strategy. For University-based technology startups, the last item merits its own step and is covered in the next section of this guide.

Innovation-to-product development roadmap combines both "bottom-up" and "top-down" information and thinking. Your development plan bridges these two perspectives, creating a full plan summarizing milestones, human resources needed and financial needs.

Market Analysis: Becoming a disciple of your market, including its history, activity and players is essential as your knowledge in this drives many financial decisions and business development strategies. Understanding your market clarifies the need for your solution/product, as well as who will be buying it and for how much. Your analysis of the market should also include a breakdown of your competitors or those companies who are currently selling to your future customers. For example, if the last innovation introduced in your market took 8 years to reach $200M in sales and you're projecting $500M in 3 years—you need to be able to clearly explain why. Even if you have developed novel technology, you will still face competition from existing and substitute offerings, and the analysis should acknowledge and account for such potential impacts.

Your Sales Plan is the combination of your market knowledge and product development plans. A sales plan captures the variations in product offerings, market intro timing of each, initial product volumes—typically detailed monthly for the first 24 months, and accretive sales projections annually for the following 3-5 years. If your sales plan goes something like ... "Our market is $1.2B and we anticipate a 3% penetration in the first 3 years or $36M in annual sales," plan to go back to the drawing board. Bottom line—be realistic with your sales plan, validate it with your mentors and those with market expertise.

Team Excellence: Feeding the product development and sales efforts requires a core leadership team and resources. Whether you are pitching to investors, writing grant applications, or recruiting mentors, advisors or employees—planning for, and conveying that you are building a winning team is essential. Understanding the capabilities of the founding team, compared to the scope of needs to launch the business, is essential to planning for additional team members. Finding like-minded technical resources to develop the technology will be relatively easy, given it's most often the area of founder expertise. It’s usually more challenging to match people with relevant business background and experiences. If you’ve never built a sales organization, developed a product, built an operations team, remember the value of experience when planning for these functions.

DEVELOP A FINANCING STRATEGY

The integral component of your business planning process is determining how you will need to fund the launch of the business until it's able to sustain itself and grow with cash flow. This is commonly known as 'crossing the valley of death.' Unless you have your own, bottomless source of funds, you will need a viable financing strategy.

> **"Great ideas may start businesses, but it's the world of finance that builds them."**
>
> -ANCIENT PROVERB

Understanding your financing options is critical and the choice is often defined by the dynamics and needs identified through your business planning. Some startups are a direct fit for venture capital and can launch with their funding; others seek grants and angel investors to first reach some milestones or pursue a smaller scale business; others are a fit for a corporate strategic relationship or investment; and many are a mixture of some, or all, of the above.

Understanding your financing requirements, potential sources and when that information is needed can be as critical to your success as your technology delivering on what it promises.

Your idea may well be a bullseye fit for venture capital; the more knowledge you have about the market and the time it will take to enter it will inform your approach to raising this funding. While continually building your knowledge in this area is imperative, making decisions around your financing strategy can be stage-based, and guided by your near-term progress and the eagerness of the market for your solution.

Types of Early Stage Startup Funding

- **Grants:** No obligation to repay provided that the terms of the grant are met.
- **Debt:** Borrowed funds, repayable on a fixed schedule with interest.
- **Convertible Debt:** Structured like debt but rather than repaying, the borrowed amount typically converts to equity at a later date.
- **Equity:** Ownership through either stock or membership; Equity funding can have profound effects on by-laws, voting rights, operational control, and future investment rights.

Early Stage Funding Sources

Self-financing is exactly as it sounds: founders fund the business with personal savings. This allows the entrepreneurs to maintain complete control of the business. Additionally, when external funding is sought, investors look for entrepreneurs who have "skin in the game." An entrepreneur who has self-financed a business has already signaled to investors that he or she is serious about moving the business forward.

Bootstrapping is the reinvestment of early product sales or revenues into a company. It requires a customer-centric process of development that permits the company to bill for early sales. Bootstrapping allows entrepreneurs to maintain control of a business without having to acquiesce to outside influence, while also preventing the entrepreneurs from risking their own personal savings. It's appropriate for certain types of businesses.

Federal Grant Programs

SBIR/STTR ($150K - $1.5M): The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs are competitive federal grant programs that fund research and development with the potential for commercialization. Funding is competitively awarded in 2 Phases, with Phase 1 awards focused on validating the technology with amounts that range from $150,000-$225,000 (varies by agency) and Phase II awards meant to produce a functioning prototype with amounts reaching $1,500,000. STTR is a similar, but slightly different, a partnership with a University research lab is integral to the grant and the amounts available are slightly larger with the STTR program.

Equity/Additional Funding Sources

Angel Investors are high net worth individuals who typically invest between $25,000 and $100,000 of their own money as seed or very early stage capital when the startup is pre-revenue. While there are deals that are more than $100K and less than $25K, this is the area most angels fall into. Angel Groups work to syndicate many angels together into a single investment that may average $750,000 or more.

Corporate Partnerships: A startup may also develop strategic partnerships with a larger company which assists with research and development in the form of cash or collaborative assistance. Such partnerships are an excellent source of non-dilutive funding and often serve to increase the startups chances to raise additional funding. Depending on the arrangement, certain rights (for a specific application or region, for example) may be provided to the corporate partner in return for its financial and development support. In the event the company has its own venture investment arm, an equity position in the startup may also be incorporated.

Venture Capital: Venture Capitalists (VCs) are professional investors and money managers who raise, manage and invest a pool of money from high net worth individuals and institutional investors. There are a multitude of venture capital firms with each specializing in a particular industry (Biotech, IT, etc.) or investment theme (early stage, later stage, pre-ipo, etc.). Early stage VCs anticipate that 2 out of every 10 investments will provide significant returns to their investors and they seek to play a critical role in shaping the company, tapping business networks and recruiting the best management for the company at each stage of its growth.

Early Stage Funding Sources in the Cornell Community

Scale Up and Prototyping Awards - Cornell Engineering: Up to $40K from the college to advance laboratory research innovations toward functioning prototypes.

I-Corps Grant: Cornell participants in UNY I-Corps Node short courses are eligible for $2-3K grants to support customer discovery, and upon successful completion of the program are eligible to apply to the national I-Corps Teams program, a 7-week intensive program with funding from NSF of up to $50K to support further customer discovery and business model identification.

IGNITE - Cornell Research Gap Funding Program Provides up to $50K in funding per project to accelerate active CTL inventions from the Ithaca, Geneva, or Cornell Tech campuses towards commercialization.

Daedalus Fund for Innovation (Weill Cornell Medicine): Designed to advance early stage applied and translational research projects that have significant commercial potential. There are two funding cycles per year, with eight $100K projects selected annually.

Runway Startup Postdoc Program at Cornell Tech: The 12-36 month program targets recent PhD graduates looking to commercialize their research, which is generally around high-tech themes. The benefits of the Runway program are significant, with $175K in cash via a convertible note plus in-kind benefits, access to equipment, mentorship and office space.

Cornell Community Matching Grant Programs for startups in targeted areas. Additional matching funds may be available through the following programs:

Biotech Center for Advanced Technology (CAT): Up to $75K grant for PIs in Life Sciences.

CCMR Jumpstart Grant: The Cornell Center for Materials Research (CCMR) provides $5K to New York based companies for collaborations with Cornell researchers.

Cornell Business Plan Competitions

Big Red Venture Fund: An early-stage venture capital fund operatred entirely by a team of MBA students a the SC Johnson Graduate School of Management.

BenDaniel Venture Challenge ($31K+ in Prizes): This is the Big Red Venture Fund's annual pitch competition for startups with a Cornell connection. CTL will match (double) the prize if your company is based on a licensed Cornell technology.

Hospitality Business Plan Competition ($37.5K in total prizes): For Cornell undergraduate and graduate student teams with at least one member from the Hotel School.

Big Idea Competition ($9K in total prizes): Open to all Cornell undergraduate students.

NYC Entrepreneurship Summit ($5K Grand Prize): A pitch competition for selected companies that is integrated into the NYC Entrepreneurship Summit program each Fall.

$100K Biomedical Business Plan Challenge: A subsidiary program of the Office of BioPharma Alliances & Research Collaborations for entrepreneurial scientists from the Weill Cornell Medicine Campus. Participation includes an 8 week intensive mentoring program to build and refine your business plan and pitch.

Startup Awards ($100K): For student startup companies from the Cornell Tech campus award also includes 12 months of co-working space.

Additional information on these funding sources and awards can be found in the **Resources** section.

PARTNER WITH CTL & LICENSE THE TECHNOLOGY

License Agreement

The license is your contract with the University negotiated with CTL. Like most university technology transfer offices, CTL has a duty to ensure that all license agreements serve the mission of the University and comply with all Cornell, federal and state policies. It is the goal of the CTL team to arrive at win-win agreements with entrepreneurs as quickly, fairly and painlessly as possible. Ultimately, the goal of any license agreement is to transform licensed technology into products and services that benefit the public, with Cornell receiving a reasonable return via a fair share of revenue.

A license is an agreement between Cornell, the owner of the intellectual property, also referred to as the technology (licensor), and the company seeking to make use of that intellectual property, (known as the licensee). The terms of the license are built from the components of your business plans.

Generally, a license contains three major components: the grant, diligence, and consideration.

GRANT identifies the scope of the rights that Cornell will grant to the company.

- The grant is based on the description of the product
- The granted rights can be exclusive or nonexclusive. Startup licenses are typically exclusive as the intellectual property is often a key consideration when valuing new ventures for growth financing and investment
- The grant may include field-of-use limitations and territory limitations. For example, if the business plan introduces a new medical device based on the technology, the scope of rights granted in the license may be limited to the use of the technology in medical devices. This is referred to as field-limited licensing and it allows Cornell to follow through on its mission to commercialize Cornell technologies as broadly as possible. The same technology may be useful in a different product that is not in the medical device space. In such a situation, Cornell could also grant a field-limited license to another business in a different space that does not compete with the first licensee. The proposed use of the technology may also affect the exclusivity of the license.

DILIGENCE refers to licensee obligations to meet certain milestones towards commercialization within an agreed-upon window of time. The timeline is based on the product development plans for the business plan. Because a critical part of the mission of CTL is to benefit the public by facilitating the introduction of Cornell technologies into the market, the CTL team places an emphasis on working with licensees to define and meet these milestones. The timeline should be reasonable but will vary from company to company. For example, if the company plans to develop a working prototype within one year and receive regulatory approval to market the product within three years, the license contract would likely include diligence terms for meeting those milestones on that schedule. This is another reason why it is important your business planning process be accurate, realistic, and achievable.

Contract
INVOICE

CONSIDERATION defines the financial obligations in the license and typically include:

- A license issue fee or equity. The license issue fee is a customary fee due on or shortly after the license is signed. Startup companies usually seek to focus their available funds on product development. To support our startup licensees, Cornell is usually willing to share risks and take equity in a startup in lieu of an upfront license fee. The equity percentage is usually in single digits. Cornell may also use a convertible note for suitable technologies.
- Royalty payments, generally expressed as a percentage of sales or a fee per product sold, are incurred when the business initiates sales. Royalty percentages and amounts vary according to the industry and are negotiated based on industry standards. CTL references rates published by Licensing Executive Society, Association of University Technology Managers, and other subscription databases. When discussing these rates, licensees are encouraged to share their comparable market information to help define a fair royalty rate. Minimum annual royalties are usually defined during due diligence and are aligned with the licensees' plan to meet the needs of the market.
- Milestone payments. Long product development timelines, such as for therapeutics and medical applications, may include milestones that can significantly increase the value of the technology and company. Payments at these steps are customary and a component of the consideration.
- Patent expense reimbursement. Licensees are responsible for reimbursing Cornell for expenses incurred when seeking a patent or protecting the intellectual property. These expenses are not always predictable, but can be budgeted for and should be included in your business planning.

Cornell is required to place additional terms in the license that ensure we can continue to accomplish our primary mission as an academic institution. For example, unreasonable impediments to freely publish and disseminate knowledge are not permitted in license agreements. Depending on the source of research funding, the contract may include a reservation of rights for use by the federal government. Cornell always reserves the right to practice and share technologies for research purposes with other non-profit organizations. Without Cornell's prior written consent, no use of Cornell's name or any associated trademarks is permitted.

INVESTORS
LICENSE
PRODUCT DEVELOPMENT
CUSTOMERS
INCUBATORS
FUNDING
MARKET BREAKDOWN
INSURANCE
PATENTS
TAXES
GRANTS
RESEARCH

FASTTRACK STARTUP LICENSE

For discoveries from Physical Sciences and Engineering on the Ithaca campus, CTL introduced an experimental FastTrack License in July 2018, which increases the transparency and speed of the licensing process and has stronger alignment with the needs of our startups. The FastTrack License includes fixed, balanced terms and language shifting the focus of the licensing conversation to the early stage business plans and milestones.

In addition to reducing the time needed to complete the license, the FastTrack License seeks to minimize the initial financial outlay as compared to CTL's standard license. This enables entrepreneurs to increase the focus of their efforts on creating value through technology development. If you believe your technology qualifies for this license, please do not hesitate to explore it with your Technology Licensing Officer at CTL.

Main Features

- The FastTrack Startup license is a 'ready to be executed' agreement with favorable, balanced, and fixed terms. Minimal negotiation focuses on the field-of-use and due diligence from the Licensee in its commitment/milestones to commercialize the innovation.
- There are menu options to choose from, designed to accommodate different types of businesses, from those geared towards VC funding, to those focused on strategic partnerships, to bootstrapped efforts.

Eligibility

Current Technology Fields

INCLUDED: semiconductor, electronics, non-biological chemistry and materials, energy, optics, photonics, MEMS/NEMS

NOT INCLUDED: therapeutics, diagnostics, agriculture, food, veterinary, software, medical devices

Team

Startups based on Cornell technologies in the applicable fields, provided that the inventors agree with the path of new venture and the team selection.

Requirements

To ensure Cornell's technologies are licensed responsibly, CTL seeks to understand the licensees capability and plans to develop the inventions into commercial products and services.
This includes a focus on the following:

- A viable team of founders/committed advisors for the startup
- Value proposition for the market
- Commercialization plan
- Development milestones

Option

FastTrack
STARTUP LICENSE

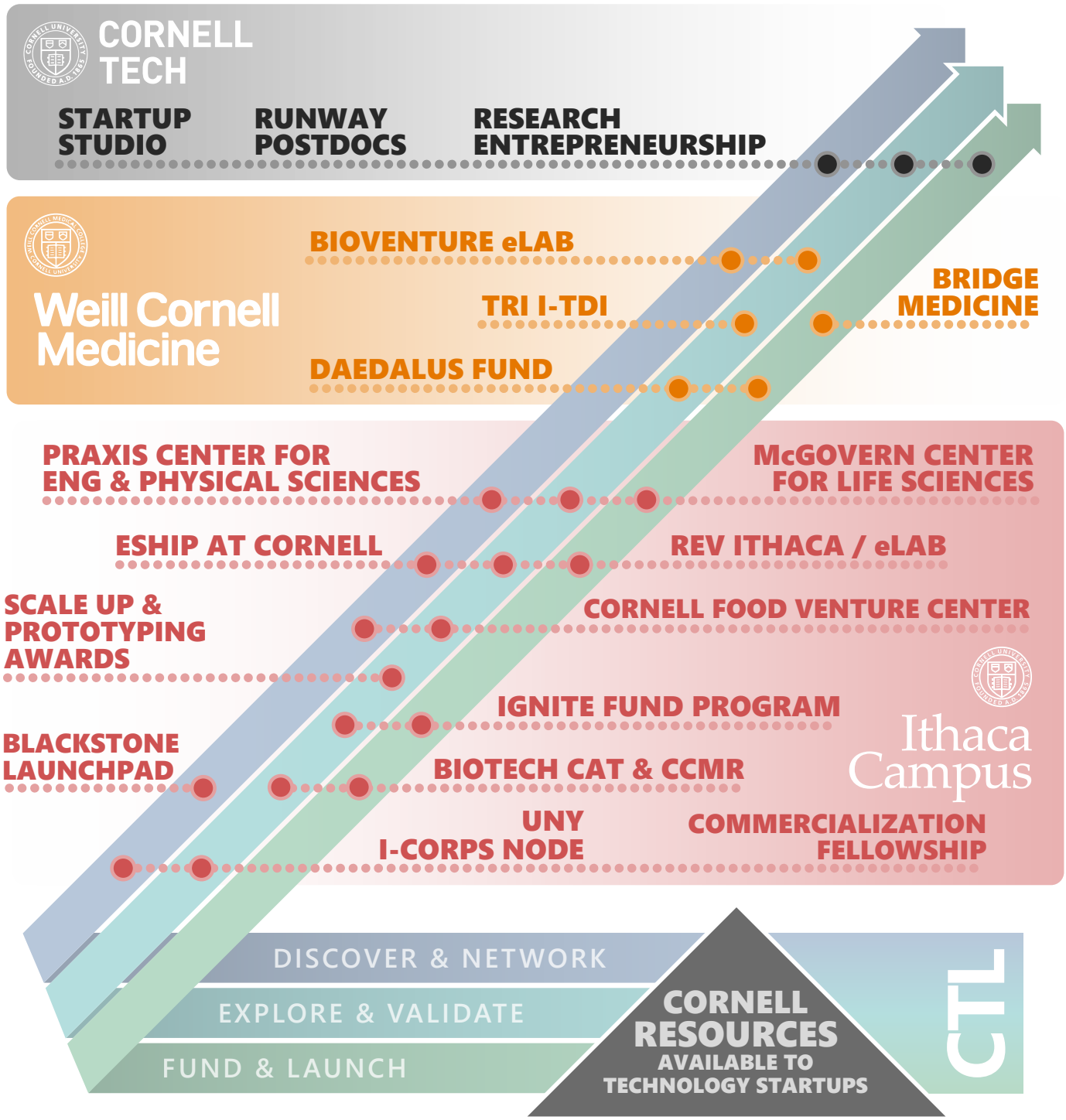
We understand that business plans may evolve as companies grow and adapt to the market place, especially at the early stage development. When the startup is not ready to license the Cornell technology but has the promise to be a viable opportunity:

- A simple 6-month option with a low fee of $1000 (waived if the inventors are part of the founding team)
- The option period can be extended for another 6-months for an additional $2500 at CTL's discretion
- During the option period, the team is expected to work with regional incubators, accelerators, and/or other training programs to develop the business idea and plans to meet the diligence requirements for the commercial license

Key Financial Terms

Equity	**4% non-dilutable through subsequent equity financing aggregating $2 million**	**OR**	**1% non-dilutable until Change of Control**
Upfront Payment	**$0**		
Royalty	**2% of Net Sales* without Anti-Stacking**	**OR**	**3% of Net Sales* with Anti-Stacking (potentially down to 1.5%)**
Sublicensing	**Pass through royalty**, then 15% of other sublicense income**	**OR**	**No pass through royalty**, then 25% of all sublicense income**
Milestone Payment	**$0**		
Annual Fee (Creditable against royalties)	**1-4 years: $0 5-6 years: $15K/year Annual after: $40K/year**		
Patent Expenses	**Reimbursement of all past Patent Expenses, plus the first $5,000 in future patent expenses, will be deferred up to 2 years.** (For any startup companies that elect to locate their principal operations in Tompkins County, NY, Cornell will increase the $5,000 to $20,000 and extend the 2 years to 3 years.)		

* For products based on licensed Cornell technologies
** Pass through royalty means the same royalty rate will apply to all Net Sales for which a sublicensee of Company is the seller when computing the royalty due to Cornell


CORNELL TECH
STARTUP STUDIO
RUNWAY POSTDOCS
RESEARCH ENTREPRENEURSHIP
Weill Cornell Medicine
BIOVENTURE eLAB
TRI I-TDI
DAEDALUS FUND
BRIDGE MEDICINE
PRAXIS CENTER FOR ENG & PHYSICAL SCIENCES
McGOVERN CENTER FOR LIFE SCIENCES
ESHIP AT CORNELL
REV ITHACA / eLAB
SCALE UP & PROTOTYPING AWARDS
CORNELL FOOD VENTURE CENTER
IGNITE FUND PROGRAM
BLACKSTONE LAUNCHPAD
BIOTECH CAT & CCMR
Ithaca Campus
UNY I-CORPS NODE
COMMERCIALIZATION FELLOWSHIP
DISCOVER & NETWORK
EXPLORE & VALIDATE
FUND & LAUNCH
CORNELL RESOURCES AVAILABLE TO TECHNOLOGY STARTUPS
CTL

RESOURCES

Center for Technology Licensing

https://ctl.cornell.edu

The authors of this guide. In addition to technology commercialization and licensing, CTL offers networking events, partnership forums and connections to investors.

Ithaca Campus-Based (listed alphabetically)

Biotech Center for Advanced Technology (CAT)

http://www.biotech.cornell.edu/cat

The CAT provides a grant of up to $75,000 for PIs in Life Sciences, and coordinates NSF I-Corps workshops that are customized toward promoting biotechnology development.

Blackstone LaunchPad

http://eship.cornell.edu/mentors-2/blackstone-launchpad-at-cornell

The Blackstone Launchpad at Cornell is a node of the global Blackstone LaunchPad entrepreneurship program and accessible by over 500,000 students, designed to support and mentor students, staff and alumni - and is a program under Entrepreneurship at Cornell.

CCMR Jumpstart Grant

http://www.ccmr.cornell.edu/industry/jumpstart-program-for-ny-state-small-businesses

The Cornell Center for Materials Research (CCMR) provides $5,000 to New York based companies for collaborations with Cornell researchers.

Commercialization Fellows Program

http://crea.cornell.edu/commercialfellows/

Offers an opportunity for engineering PhD students to take a deep dive into the commercialization process and potential real-world applications of University inventions.

Cornell BEST Program

http://best.cornell.edu

Helps PhD students and postdoctoral scholars make the most informed decisions possible, including entrepreneurship.

Cornell eLab

http://www.elabstartup.com

eLab is an accelerator program for Cornell student startups. Students accepted into the eLab receive a $5,000 investment, additional services to launch a business, and the ability to earn up to 5.5 credits working on their startups at eLab.

Cornell Food Venture Center

https://cfvc.foodscience.cals.cornell.edu

Provides comprehensive assistance to food entrepreneurs' business, product, and process development; product safety; and commercialization.

IGNITE - Cornell Research Gap Funding Program

https://ctl.cornell.edu/inventors/ignite-program/

The IGNITE - Cornell Research Gap Funding Program provides up to $50K in funding per project to accelerate active CTL inventions from the Ithaca, Geneva, or Cornell Tech campuses towards commercialization.

Entrepreneurship at Cornell

http://eship.cornell.edu

The gateway for everything entrepreneurial at Cornell University. Offers Cornell-wide connections to programs, facilities and funding information.

Entrepreneurship Law Clinic

https://www.lawschool.cornell.edu/Clinical-Programs/entrepreneurship-clinic/Home.cfm

A program under the Cornell Law School that provides free legal services to Ithaca-area entreprenuers and startups who are not yet ready to enage paid legal counsel.

Kevin M. McGovern Family Center for Venture Development in the Life Sciences

http://www.mcgoverncenter.cornell.edu

Located in Weill Hall on the Ithaca campus, fosters and develops Cornell life science startup companies.

Praxis Center for Venture Development

http://pcvd.cornell.edu

Located in Duffield Hall on the Ithaca campus and introduced in 2018, fosters and develops Cornell startups based on discoveries in Engineering and the Physical Sciences.

Rev: Ithaca Startup Works

http://revithaca.com

Rev is a startup incubator offering business mentorship, workspace, and startup resources for any new or growing business that will create jobs in the Ithaca community and was created by a partnership between Cornell University, Ithaca College and Tompkins Cortland Community College.

RESOURCES

Scale Up Prototyping Awards

Offers grants up to $40,000 to Engineering faculty and students to support research teams exploring early stage technology and ideas with commercial promise.

UNY I-Corps Node

http://unyicorps.org

The Upstate New York I-Corps Node is a member of the NSF National Innovation Network. The Node offers NSF I-Corps training via both short and long formats and presents a path to further funding and participation in the program on the national level.

Cornell Tech Campus-Based (listed alphabetically)

Research Entrepreneur Program

(launch pending)

This program supports the commercialization of technologies by Cornell Tech faculty, by exploring market opportunities with a dedicated individual focused on transitioning research into entrepreneurship.

Runway Startup Post Docs

https://tech.cornell.edu/programs/startup-postdocs

The 12-36 month Runway Startup program targets recent PhD graduates looking to commercialize their high-tech research and includes funding, in-kind benefits, access to equipment, mentorship and office space.

Startup Studio

https://tech.cornell.edu/studio

For Master's students at Cornell Tech, Studio is comprised of an intensely immersive, interdisciplinary team experiences that provide its students with hands on, real-world skills that challenge and expand their roles in their chosen fields.

Weill Cornell Medicine Campus-Based (listed alphabetically)

Bridge Medicines

https://bridgemedicines.com

A fully funded, professionally staffed biotech company that moves breakthrough research discoveries from partnering institutions including Memorial Sloan Kettering Cancer Center, The Rockefeller University, and Weill Cornell Medicine to the patient by bringing the best in modern drug discovery to the service of academic medicine.

Office of BioPharma Alliances and Research Collaborations (BPARC)

https://research.weill.cornell.edu/funding/osra-contracts/osra-biopharma-alliance

BPARC works together with CTL to market, generate, and structure new opportunities for business development, startups, and translational research alliances with the life science and biopharma sectors. BPARC also offers the following subsidiary programs:

Bioventure eLab

https://elab.weill.cornell.edu

Serves members of the Weill Cornell Medicine community seeking to become the next generation of leaders in life science industries and build new ventures. The eLab provides access to resources, training and mentorship in biomedical entrepreneurship.

Daedalus Fund

http://pre.weill.cornell.edu/daedalusfund

Launched in 2014, Weill Cornell Medicine's Daedalus Fund for Innovation designed to advance early stage applied and translational research projects that have significant commercial potential.

$100K Biomedical Business Plan Challenge

https://elab.weill.cornell.edu/program/100k-biomedical-business-plan-challenge

For entrepreneurial scientists from the Weill Cornell Medicine Campus. Participation includes an 8 week intensive mentoring program to build and refine your business plan and pitch.

Tri Institutional Therapeutics Discovery Institute

https://www.tritdi.org

Made up of Memorial Sloan Kettering Cancer Center, The Rockefeller University and Weill Cornell Medicine (Tri-I) TDI provides industrial-scale technical support for academic projects, making it possible to rapidly assess the utility of specific therapeutic targets in disease-relevant contexts.

ADDITIONAL RESOURCES
FUNDED BY NEW YORK STATE

NYS Science & Technology Law Center
http://nysstlc.syr.edu

Located within the Syracuse University College of Law, this organization is dedicated to providing legal research, education and information to entrepreneurs and companies to help commercialize new technologies from lab to market.

Launch NY
http://www.launchny.org

Launch New York, Inc. (Launch NY) is a 501(c)(3) venture development organization whose mission is to identify, support and invest in high-growth, high-impact companies and catalyze the entrepreneurial culture to drive job and wealth creation in the 27 westernmost counties of Upstate New York.

FuzeHub
https://fuzehub.com

FuzeHub is a non-profit organization that serves the statewide New York Manufacturing Extension Partnership (NY MEP) centers and provides New York State manufacturers with guided access to our extensive network of industry experts, programs and assets to solve productivity, commercialization, research and development issues, and other challenges to growth.

New York City Economic Development Corporation (NYCEDC)
https://www.nycedc.com

NYCEDC is a non-profit organization that serves as the City's primary entity for promoting and implementing economic growth. The organization has created an ecosystem to develop entrepreneurs, offering a access to variety of informative programs and innovative competitions.

Southern Tier Startup Alliance (STSA)
http://www.ststartup.com

The STSA is a member organization of business incubators in the Southern Tier region, working to promote startups and entrepreneurship.

Centers of Excellence
https://esd.ny.gov/centers-excellence

New York State funds 11 Centers of Excellence to foster collaboration between the academic research community and the business sector to develop and commercialize new products and technologies, to promote critical private sector investment in emerging high-technology fields in New York State, and to create and expand technology-related businesses and employment.

Centers for Advanced Technology
https://esd.ny.gov/centers-advanced-technology

New York State funds 15 Centers for Advanced Technology (CATs) to encourage greater collaboration between private industry and universities in the development and application of new technologies.

New York Manufacturing Extension Partnership
https://esd.ny.gov/new-york-manufacturing-extension-partnership

A network of organizations, funded by New York state, that provide growth and innovation services to small and mid-sized manufacturers to help them create and retain jobs, increase profits, and save time and money.

Certified Business Incubators and Innovation Hot Spots
https://esd.ny.gov/certified-business-incubator

New York State has designated 10 Innovation Hot Spots—one for each of New York's economic development regions—and 20 Certified Business Incubators, which receive funding to reach a greater number of early-stage companies.

76West Competition
https://www.nyserda.ny.gov/All-Programs/Programs/76west

A program of NYSERDA, 76West is an unparalleled competition focused on growing clean energy businesses and jobs in New York State's Southern Tier region. The competition offers $20 million in prize money, including a $1 million top prize.

CTL CENTER FOR TECHNOLOGY LICENSING AT CORNELL UNIVERSITY