CTTC
Center for Technology Transfer
& Commercialization

Serving the Vanderbilt University
and VUMC Community

VentureStudio

CTTC SUPPORT SERVICES

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VentureStudio

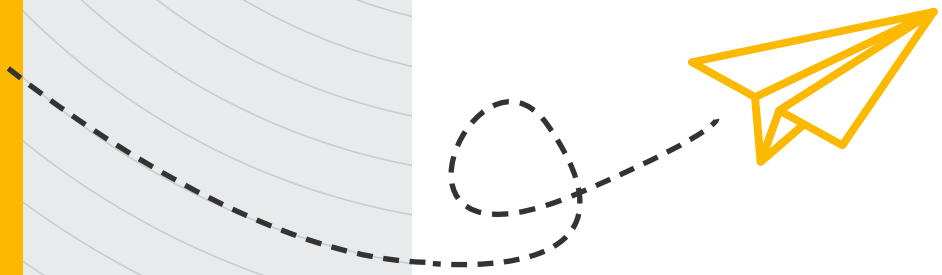
Serving the Vanderbilt University and VUMC Community

INNOVATION
@VANDERBILT

Overview for Faculty Entrepreneurs

This document describes the process by which the Center for Technology Transfer and Commercialization (CTTC) and its New Ventures (NV) Team can help Vanderbilt University and Vanderbilt University Medical Center faculty and staff launch new ventures to commercialize inventions made at Vanderbilt. Resources exist across Vanderbilt to support entrepreneurship – these resources are outlined here, and those specifically provided through CTTC are described in detail in an effort to convey as much transparency as possible to ensure faculty and staff are optimally able to understand and pursue their entrepreneurial aspirations.

While every new venture follows its own unique path, the major steps to launch a business are summarized below.



Introduction

What is Innovation?

In contrast to "invention," which indicates the creation of a new idea or concept, "innovation" includes the identification of applications or uses for novel concepts. In the specific context of a business, innovation can be defined as a process by which a domain, a product, or a service is renewed and brought up to date by applying new processes, introducing new techniques, or establishing successful ideas to create value.

While innovation is arguably one of the most important drivers for the long-term success of all companies, it is crucial for new ventures. Innovations take many forms, but they are generally categorized as broad and/or deep types as outlined below in Table 1.

	BROAD INNOVATION	DEEP INNOVATION
TRANSFORMATIVE ASPECT	Use-based (e.g. app, website, modified surgical tool)	R&D-based (e.g. new drug, new diagnostic)
KNOWLEDGE BASE	Builds on existing knowledge	Builds on newly discovered knowledge
RESOURCE NEEDS	Can be modest or substantial	Substantial
PROGRESSION TIMELINE	Months or years	Years or decades
ENDPOINTS	Understood at the outset	Unknown at the outset
VANDERBILT IP	Variable	Likely yes
DRIVER	Often led by both faculty and non-faculty/students	Often led by faculty

TABLE 1: COMPARING ASPECTS OF BROAD AND DEEP INNOVATIONS

Entrepreneurship

Entrepreneurship encompasses activities that aim to explore and understand market forces with the objective of establishing a successful business venture. Entrepreneurship is inherently risky, but there are standard practices and resources to help evaluate and de-risk opportunities. Vanderbilt's Innovation Center, the Wond'ry, provides critical training for aspiring entrepreneurs. Additional startup support is provided by CTTC for startups licensing Vanderbilt intellectual property as described in detail below.

Intellectual Property

CTTC is responsible for protecting and managing the intellectual property (IP) of both Vanderbilt University and Vanderbilt University Medical Center. IP is defined as the creation of the mind, such as inventions, ideas, programs, and literary/ artistic works. The common forms of IP are patents, copyrights, trade secrets, and trademarks. Patents cover ideas (e.g., products, methods, compositions of matter), copyrights cover tangible expressions (e.g., publications, software, content, musical scores), trade secrets include any information that is not public yet valuable to the owner (e.g., patentable subject matter for which a patent is not sought). Trademarks comprise designs placed on products that are used to identify the source of such products (e.g., names, symbols, logos).

Contact CTTC for more information about the various forms of IP.

Attributes of a Successful New Venture

A good idea does not necessarily result in a good product, and a good product does not necessarily result in a successful company. A new venture needs more than a good idea or product to succeed. Its success requires that the good idea truly addresses a real market need and does so effectively. A talented and experienced staff and management team are required to ensure successful execution of the business plan. Capital is essential to keep the lights on, push the venture ahead, and scale at the right time. The NV Team will help to address these fundamental requirements and obtain the resources that will increase the chances of launching a successful new venture.

THE VANDERBILT UNIVERSITY
NEW VENTURE CONTINUUM

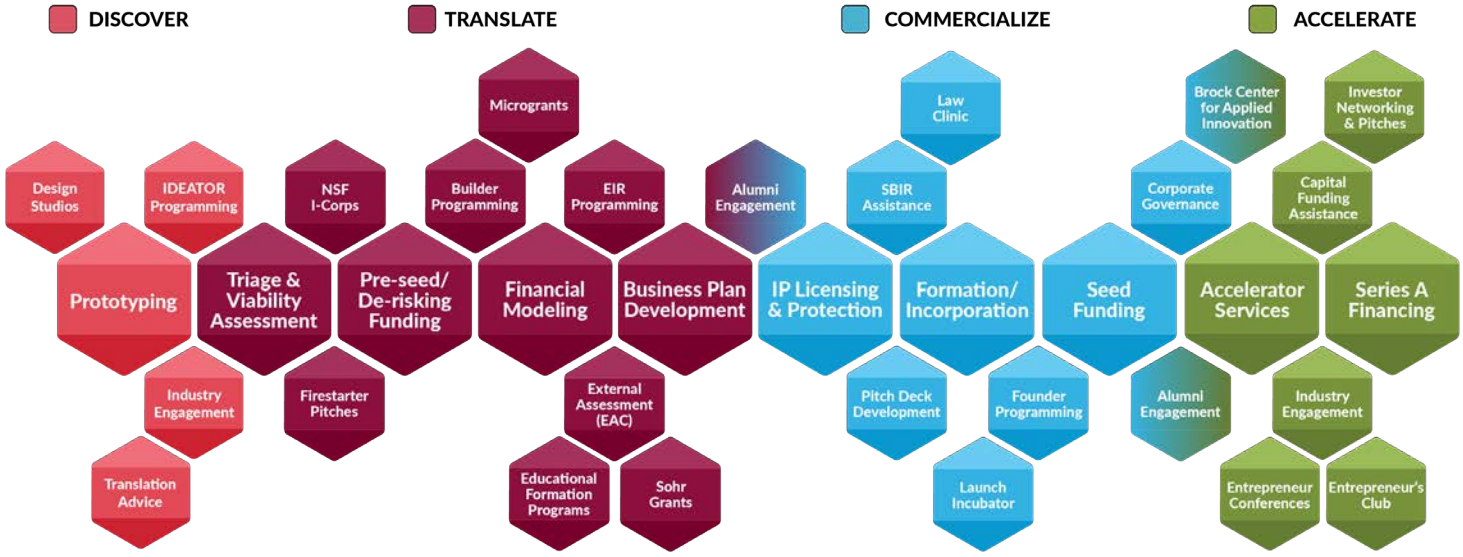
A successful ecosystem supporting entrepreneurship and new venture creation requires significant support from a variety of key administrative and academic groups, forming a continuum of available services.

The new venture continuum spans a broad range of activities from discovery and implementation to translation and proof of concept, to commercialization via a new venture, through scaling and growth of the venture and its business. Figure 1 provides a sense of the range and variety of services available across the Vanderbilt community that are utilized to advance concepts from the bench to commercial impact through a startup company. This figure is reproduced on the CTTC website in interactive form, so the reader can quickly understand each step and which Vanderbilt entity can assist.

In addition to CTTC, the Wond'ry, the Owen School Center for Entrepreneurship, the VUMC Brock Center for Applied Innovation, multiple academic schools and departments, and administration leadership all play key roles in this process.

The New Venture Continuum is highlighted in Figure 1 below:

FIGURE 1:
VANDERBILT NEW VENTURE CONTINUUM



THE CTTC
NEW VENTURES TEAM

CTTC is committed to supporting new venture activity and entrepreneurship that advance Vanderbilt innovations. The NV Team serves as a catalyst for venture creation within the Vanderbilt community and a reliable partner for Vanderbilt inventors and creators. They also support local and regional entrepreneurs exploring new ventures powered by Vanderbilt technologies.

The NV Team provides two general categories of services – entrepreneurial services for aspiring entrepreneurs and institutional services to advance Vanderbilt's mission.

ENTREPRENEURSHIP SERVICES
aimed at assisting Vanderbilt entrepreneurs with evaluating startup opportunities, launching their startups, and planning for growth.

INSTITUTIONAL SERVICES
help ensure that the Vanderbilt innovation ecosystem remains robust and able to sustain new venture launch and growth.

The CTTC New Ventures Team

STEPHEN MILLER
Executive Director
New Ventures

GEORGE WILSON
Assistant Director
New Ventures Programs

CAMERON CRAIN
Venture Acceleration Manager
New Ventures

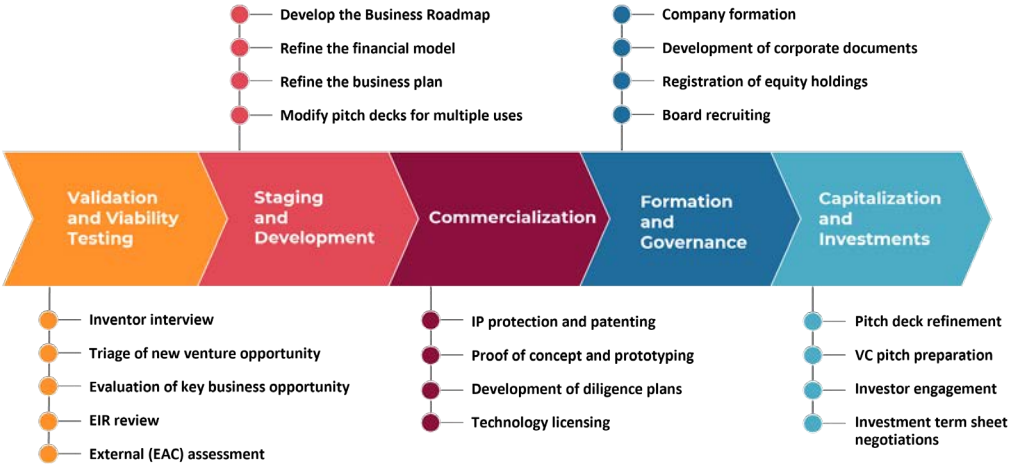
AMIT GUPTA
New Venture Officer
New Ventures

HEATHER KACHINKO
Coordinator
New Ventures

ENTREPRENEURIAL SERVICES

Entrepreneurial services can be distilled down to five principal stages, highlighted in Figure 2 below:

FIGURE 2:
CTTC ENTREPRENEURIAL SERVICES



The components of these stages are described in detail on the following pages.

VALIDATION & VIABILITY TESTING

The first step in the provision of entrepreneurial services is comprised of a professional and comprehensive assessment to validate the commercial viability of the proposed new venture, beginning with a consultation with the inventor.

INVENTOR CONSULT AND TRIAGE

This consultation allows the inventor and the NV Team to work together to better understand the viability of the new venture opportunity. The NV Team works with the inventor to answer a short series of survey questions in each of four focus areas: **technology, team, market,** and **money.** This will also give the NV Team a chance to assess the entrepreneurial experience of the inventor and identify the elements that will be needed to launch the venture. The survey tool employed to guide this discussion can be found on the CTTC website. The NV Team may request additional information from the inventor based on the results of the original discussion. This information-gathering stage leads to a deeper dive into the strengths and weaknesses of the startup opportunity.

EVALUATE KEY BUSINESS OPPORTUNITY

The NV Team next initiates an internal due diligence process to gain additional insights into the focus areas covered above:

TECHNOLOGY
Analyze the IP status and technology readiness level (TRL)

TEAM
Determine immediate needs for management team, consultants, and advisors

MARKET
Understand more deeply the industry dynamics, market trends, and competitive landscape

MONEY
Estimate capital required to advance the technology and launch the new venture

Once the evaluation is complete, the NV Team will conduct an analysis of the strengths, weaknesses, opportunities, and threats (SWOT) for the proposed startup. This SWOT analysis will be accompanied by recommendations on how the startup should proceed based on the findings of the NV Team, subject to external review by CTTC's Entrepreneurship Advisory Council (EAC), one of CTTC's Entrepreneurs-in-Residence, or advice obtained from Vanderbilt's Owen School of Management.

EIR Review

One important element of the internal assessment process is evaluation by an Entrepreneur-in-Residence (EIR). EIRs are experienced entrepreneurs with scientific, professional, and industry backgrounds in a variety of fields and successful track records in building companies, securing financing, launching products, and managing growth-stage ventures.

EIRs volunteer with CTTC to work with the NV Team and Vanderbilt entrepreneurs to evaluate the viability of potential Vanderbilt-affiliated startup companies. EIRs can help identify gaps in business plans and company strategy, and work to fill them. An EIR may be brought on as interim management or as a consultant for select startups.

External Assessments

The NV Team frequently engages external subject matter experts, investors, and/or entrepreneurs in attempts to answer any outstanding questions and close out the validation and viability testing phase. Often this review is provided by CTTC's Entrepreneurship Advisory Council (EAC), which is comprised of experienced members of the local business, investor, and entrepreneur community who provide feedback on preliminary inventor pitches and business model discussions. Positive EAC reviews provide valuable intelligence and perspective, and EAC members often elect to serve in an advisory role to startups that move forward.

The Council members' diversity and depth of business experience, as well as their commitment to facilitate the growth of a more entrepreneurial culture at Vanderbilt, are valuable catalysts of the commercialization process.

STAGING & DEVELOPMENT

Once a determination is made to move forward with a new venture, the process advances to setting the stage for a company launch.

FORM THE BUSINESS ROADMAP

The business roadmap builds off information gathered in the Validation and Viability Testing to define the core elements of the business model and establish a foundation for the business plan. The NV Team helps establish a sound framework for the business, develops the mission statement, determines the value proposition, and formulates an effective market strategy. Where applicable, the regulatory landscape will be evaluated by CTTC's Medical Product Support Services group (MPSS) and included in the roadmap as well.

DEVELOP THE BUSINESS PLAN/PITCH DECK

A business plan should be a work in progress that evolves as new information and prespectives are acquired. Entrepreneurs must know everything about their products or services in order to persuade someone to invest in their company. While some investors still prefer a traditional business plan for established companies, more commonly investors prefer a leaner startup plan (e.g., a thorough business model canvas) in the form of a short, concise PowerPoint deck. Example business plans and related documents can be found on the U.S. Small Business Administration website.

The following areas comprise the essential elements of a solid business plan or deck:

EXECUTIVE SUMMARY

This summary provides a concise overview of the entire business opportunity for investors in a few paragraphs or a slide that must grab the reader's interest and motivate them to keep reading. The Executive Summary appears first but is often the last section written.

MARKET ANALYSIS

This section demonstrates mastery of the specific industry in which the business will operate. It should also present general highlights and conclusions of any marketing research data collected.

MARKETING AND SALES

This section defines the marketing strategy, the target customers, and the manner of developing a growing customer base. Further, it outlines the specific go-to-market strategy the company intends to employ.

COMPANY DESCRIPTION

Without going into much detail, this section provides insight into how all the elements of the business fit together. This section should include information about the nature of the business including a list of the primary factors that will make the business successful, and how the business achieves product/market fit identified through customer discovery.

FINANCIAL MODEL

The financial model is built after completing the market analysis and customer research. This is covered in more detail in the next section below.

SERVICE OR PRODUCT LINES

This section describes the services and/or products offered, emphasizing the benefits to customers and advantages over competing products. The specific problems that the company's products solve is detailed. Information regarding manufacturing, suppliers, and distribution channels are important, as is pricing.

ORGANIZATION AND MANAGEMENT NEEDS

This section explains the roles and responsibilities of the founding members and key employees, and it provides information about their backgrounds and areas of expertise brought to the business. This section outlines the company's organizational and ownership structures, profiles the management team, and identifies the members of the boards of directors and advisors.

FUNDING NEEDS

This section outlines the current and future funding needs of the company and a description of the use of funds to enhance products, develop sales channels, recruit talent, and build the business. The financial section must be consistent with capital needs. If a specific funding request is made, the terms offered for the sale of equity should be summarized.

APPENDICES

Additional compelling information and anticipated questions should be built into appendices to be easily accessible without clouding the primary message. Certain audiences may need access to select information contained in appendices, while others do not, so appendices are custom crafted with the individual reader in mind.

As the elements of the business plan take shape through iterations, the information acquired will be used to develop the preliminary pitch deck.

BUILD THE FINANCIAL MODEL

The following outlines the critical financial statements to include in the business plan.

PROSPECTIVE FINANCIAL DATA

All businesses, whether a startup or growing company, must supply prospective financial data to their constituents. Typically, investors will want to see the company's expected financial performance over the next three to five years. Each year's projections should include forecasted income statements, balance sheets, cash flow statements, and capital expenditure budgets. For the first year, monthly or quarterly projections are typical. Quarterly or yearly projections for the following years generally suffice. A brief summary analysis of the company's financial information is also valuable, including ratio and trend analyses. Graphic depictions of trend analyses can greatly assist in driving home key points of the business model.

For companies that have advanced beyond seed funding, historical data related to the company's performance is expected. Most investors request data for the last three to five years, depending on the length of time the business has been in operation, namely income statements, balance sheets, and cash flow statements for each year of operation. Ratio and trend analyses should be included as well.

EVALUATE 'INVEST-ABILITY'

Like the external analysis in the Validation and Viability Assessment, the NV Team will leverage investor networks and other contacts to further evaluate the "invest-ability" of the business model. This step often generates valuable feedback that can be incorporated into the business plan, as well as a chance for entrepreneurs to practice their pitches in a friendly setting.

GRANT APPLICATION REVIEW AND ASSISTANCE

Most academic researchers are well acquainted with the common grant application processes for activities like basic research, discovery, and shared instrumentation. Commercialization and economic development grants (e.g., SBIR, STTR), however, call for a style of communication that may be less familiar to some researchers. The NV Team can provide review and assistance for researchers looking to take advantage of these funding mechanisms. The NV Team can collaborate with faculty inventors to ensure they are connected to the appropriate resources to prepare the most competitive proposals possible, including those with SBIR grant-writing experience.

IP COMMERCIALIZATION

A company's intellectual property (IP) rights are often the principal assets at the inception of the new venture. Sophisticated investors and potential strategic partners will expect these rights to be clearly identified and professionally protected.

IP PROTECTION

When Vanderbilt employees disclose new inventions, the disclosure is assigned to a CTTC licensing officer for review and processing. Disclosures are triaged for completeness, and all contractual obligations to the sponsor of the research are fulfilled, as are all government reporting obligations. The licensing officer assesses patentability and market potential of the invention, then coordinates with the inventors and NV Team to ensure that the scope of IP protection is understood, and appropriate action is taken to protect the invention. This is usually accomplished with the filing of a provisional patent application, coordinated by the licensing officer. For some technologies, however, copyright protection, trade secret security, or some combination thereof is appropriate.

It may be worth noting that a single patent for an invention will cost about $25,000 in the US from start to finish over a five- to seven-year period and will cost $150,000-$200,000 collectively for other major market countries. A new venture commonly has several patent applications filed to cover its inventions.

PROOF OF CONCEPT AND PROTOTYPING

Academic technologies forming the basis of a university-affiliated startup are generally very early stage, risky, and unproven with only preliminary support/validation data. Plans must be executed to prove the technology concept upon which the company will be built before the commercial marketplace will see it as investible. The NV Team works with each inventor to secure resources for proof of concept and prototyping activities. Some of these advancements may be accomplished in the lab, but many risk-mitigation steps require engagement with external developers with unique translational research and manufacturing expertise.

DEVELOPMENT OF DILIGENCE PLANS

The CTTC licensing officer partners with the NV Team and inventors to map out the specific diligence steps that the new venture must take, from product testing and development to capital funding, to ensure that the technology and the new business are advancing toward commercial success. These diligence plans ensure that the new venture will continue to develop the technology in a commercially meaningful way. Developing this comprehensive and defensible development plan is a critical component in any investment pitch made by the startup.

TECHNOLOGY LICENSING

For technologies created in the course of Vanderbilt research, the new venture will need to procure access and rights to the technology through a license agreement with Vanderbilt, managed by CTTC. A license is essentially a grant of rights, usually exclusive, to a technology in exchange for various payments and promises. The licensing process for a new venture begins with a conference between the entrepreneur, inventor, NV Team, and licensing officer. This conference serves as an orientation to the negotiation and contracting processes, a chance for both parties to set reasonable expectations, and is intended to be as transparent as possible.

NEGOTIATION OF BUSINESS TERMS

Before advancing to a full license agreement, the parties agree to key financial terms and conditions for the grant of a license, as well as a section of important non-financial terms. The terms and conditions are memorialized in a Term Sheet.

The Term Sheet generally covers:

The specific IP to be licensed	Earned routalty percentages
Upfront licensing fees	Minimum royalties
Milestone payments	Sharing of sublicensing revenue
Patenting expenses and patent prosecution	Diligence obligations of the licensee
The scope of the license grant (level of exclusivity, field of use)	Indemnification of VU against actions taken by the licensee and insurance

LICENSE AGREEMENT NEGOTIATIONS

Once the parties have finalized a Term Sheet, in-depth discussions commence with the drafting of a License Agreement. The License Agreement is typically a 25- to 30-page document that codifies the details of the licensing relationship between the new venture and Vanderbilt. Vanderbilt has developed a startup-friendly template that is used with Vanderbilt-affiliated new ventures – with startup-appropriate term and conditions – that substantially reduces the negotiating time for the license. All attempts are made to ensure that the licensing process with new ventures is efficient and non-confrontational, and CTTC endeavors to set aside dedicated time to walk the principals of the new venture through each term, what it means, and why it is important.

A select list of such terms include (in addition to the Term Sheet terms):

Key definitions	Dispute resolutions process
Financial terms	Access to non-patent and new IP
Patenting responsibilites	Publication and future research rights
IP enforcement actions	Liability insurance

Due to the legal complexity of licensing transactions and the need to address a myriad of multifaceted business issues to satisfy both parties, finalizing a License Agreement is a team effort involving the licensing professional, the NV Team, the inventor(s), the inventor's legal representative, the Office of General Counsel, and occasionally other groups such as the Office of Contracts and Research Administration, the Office of Contracts Management, the Office of Corporate Relations, Risk and Insurance Management, and the primary department or center in which the technology was developed.

OPTION AGREEMENTS

It is not uncommon for a new venture to express interest in an invention while not yet being able to commit to the diligence and financial obligations required by a License Agreement. Such commitment concerns often result from uncertainties regarding the operability of the invention, the need to raise capital to meet License Agreement obligations, uncertain regulatory pathway, and/or the near-term expense associated with product development and testing.

An alternative to a License Agreement that gives the startup the ability to lock up IP rights for a period of time while other issues are further explored is an Option Agreement. An Option Agreement is a simpler agreement – generally five-to-six pages in length – in which CTTC agrees not to license the invention to third parties for a specified period of time in exchange for a cash payment, coverage of patent costs, or other reasonable modest form of consideration. The length of time the Option Agreement is in effect varies from a few months to as long as one year. During the option term, the company has the exclusive opportunity to research outstanding questions, either internally or under a Sponsored Research Agreement at Vanderbilt, thereby reducing the company's risk. If the company elects to exercise its option, the parties negotiate a License Agreement as described above. If the option is not exercised, Vanderbilt can pursue other licensing partners.

FORMATION & GOVERNANCE

INCORPORATION

The appropriate time to form a company will vary depending on a number of factors. The NV Team will help inventors decide when the timing is right. CTTC works through outside counsel to incorporate the new venture and to develop all the necessary corporate documents described below. CTTC also covers the legal expenses associated with incorporation.

DEVELOPING CORPORATE DOCUMENTS

There are several fundamental corporate documents developed as part of company formation. These include, among others: a certificate of incorporation, articles of organization, by-laws, and various other agreements among equity owners. These documents address ownership, organizational structure, and the rules for management (e.g., opening bank accounts and authorization to borrow money). The certificate of incorporation is a set of state-required forms identifying the name, location, purpose, and ownership of the company that grants it the ability to conduct business. The by-laws or operating agreement detail the corporate structure and the operating rules of the organization, as well as decision-making responsibilities (e.g., of the board and CEO). The stockholders' agreements dictate the terms of ownership between the respective stockholders, the rights of stockholders, and how liquidation and ownership transfer is conducted.

BOARD OF DIRECTORS & ADVISORY BOARD

A strong board of directors (which has governance responsibilities for the business formed) and a diverse advisory board (which advises management on business and scientific matters but has no governance responsibility) are vital to keeping a new venture on track, utilizing resources in the most efficient manner, and setting objectives for management. Strong boards will have varied expertise, with each member bringing a unique set of skills to bear for the benefit of the company (e.g., manufacturing or sales experience, international market experience, fundraising experience, important industry connections).

Using its local, regional, and national networks, the NV Team can help identify valuable board candidates and corporate mentors for Vanderbilt-affiliated new ventures. Further, Vanderbilt is often asked to assign a member to serve on the board of directors, which it is willing to do for a pre-determined period of time as the skill sets of CTTC employees generally become less useful to the new venture over time. Alternatively, a member of the NV Team, or CTTC more broadly, will serve as a board observer, which allows for board participation without actual governance responsibility.

CAPITALIZATION & INVESTMENT

PITCH DECK REFINEMENT

Several versions of pitch decks will likely be required to gain and hold the attention of investors. Each version will be tailored for specific audiences and specific circumstances. Angel investors and other seed-level investors make investment decisions using somewhat different criteria than larger institutional investors, and so require different information for their decision-making process. A first pitch to an investor will be shorter and more concise than the much more involved pitches made to later stage investors when many elements of the business model have been refined. Some decks will not contain confidential or proprietary information, and others will by necessity.

The NV Team will help to ensure that these decks are complete, compelling, on point, and properly handle confidential information.

PITCH PREPARATION AND PRESENTATION

Making an effective pitch requires not only an intelligent business model, but preparation and practice. The NV Team will drill with entrepreneurs to ensure that their pitches are concise, compelling, fluent, and on time. The Wond'ry and the Owen Graduate School Center for Entrepreneurship have programs to assist with pitch practice. The EAC may also be utilized to critique pitches and identify areas for improvement.

INVESTOR ENGAGEMENT

Using its network of regional and national investors, the NV Team can help find the right company-investor fit for Vanderbilt-affiliated startups. Company-investor fit is perhaps the most underappreciated need for a growing company. A new venture needs not only investment capital, but investors with appropriate industry backgrounds and connections. Investors are long-term partners who need to bring startup experience, operational expertise, financial insight, and industry connections to downstream financing in addition to satisfying current capital needs.

Each institutional investor has its own investment profile. Some invest at the seed stage while others are typically later-stage investors. Some investors will lead an investment syndicate and associated due diligence efforts; others prefer to participate but not lead. Most have investment foci that target a particular industry or technology-type (e.g., medical devices). Some investors will supply management for new ventures. The NV Team will help find the right investors with the right profile for each company.

INVESTMENT TERM SHEET NEGOTIATIONS

The NV Team has considerable experience negotiating investor term sheets and will provide guidance and input with respect to developing investor terms, evaluating investment offers, preparing counterproposals, and helping to arrive at reasonable terms that protect current investors without negatively impacting future fundraising efforts.

INSTITUTIONAL SERVICES

Institutional services can be distilled down to four principal steps, pictured in Figure 3 below and highlighted in the following pages.

FIGURE 3: CTTC INSTITUTIONAL SERVICES

REGIONAL OUTREACH *& ENGAGEMENT*

Regional Board/Committee Participation

The NV Team members and CTTC more broadly are active participants in regional and state-wide organizations through participation on boards and committees and in other volunteer capacities. Such engagement is important to both connect with other regional stakeholders and ensure Vanderbilt's perspectives on entrepreneurship and economic development are considered. Examples of organizations in which the NV Team is or has served in a governance or advisory capacity include Launch TN, Life Science Tennessee, the Nashville Entrepreneur Center, Cumberland Emerging Technologies, the Global Action Platform, the Nashville Healthcare Council, the Greater Nashville Technology Council, and various task forces.

Regional Networks Enhancement

A priority of the NV Team is the expansion of key venture-related networks, namely its network of capital investors, entrepreneurs, and key new venture hires. The NV Team is implementing plans to advance its connections with venture investors in multiple ways to create more robust relationships. These connections include the traditional opportunities to participate in startup investment pitches where Vanderbilt new ventures are evaluated as investment prospects. It also extends this participation to Vanderbilt through serving on advisory panels and committees, visiting campus, giving talks, hosting mentorship sessions, and facilitating student internships.

Along with the Wond'ry, the NV Team connects Vanderbilt-affiliated startups to advisors and mentors, and catalogs local talent who can contribute to new venture success and growth. The NV Team connects startups to services providers to help with addressing legal, tax, space, and other company needs. The NV Team is expanding its connections with experienced entrepreneurs that may be well-fitted to lead future Vanderbilt-affiliated startups.

Campus and Community Event Support

CTTC is active with regional community-based organizations, such as the Global Action Platform academic alliance, and it supports entrepreneurial activities on campus and in the region, such as sponsoring the SciPreneur/Tech Venture Challenge and the Launch Tennessee 36|86 student business pitch competition. CTTC sponsors School of Medicine faculty, trainee, and student attendance at the Life Science Tennessee annual LSTCON, supporting more than a dozen attendees each year on average, and sponsors Vanderbilt constituent attendance at other innovation events, such as Launch TN's 36|86 festival.

CTTC also supports teaching and lecturing at multiple Vanderbilt classes, including Innovation Realization, Nanoscale Innovation, Engineering Senior Design, Responsible Conduct in Research, and bootcamps for medical and professional students.

ECOSYSTEM *DEVELOPMENT*

Partnerships with Continuum Participants

Coordination and partnerships among the various participants in Vanderbilt's New Venture Continuum (described in Figure 1 above) are crucial to developing a thriving innovation ecosystem on campus. The Office of the Vice Provost of Research plays the key role of driving overarching institutional priorities. This includes trans-departmental and trans-institutional endeavors to leverage novel funding to support place-based commercialization and workforce development (e.g., EDA Build Back Better Regional Challenge, NSF Engines NIH Advanced Research Projects Agency for Health).

CTTC is continuously seeking to establish new partnerships and refine existing ones in support of the Vanderbilt innovation ecosystem, including the ability to convene diverse and experienced ad hoc committees to advise new ventures. These partnerships have resulted in several unique programs and initiatives.

Collaborative Programs and Initiatives

CTTC is pursuing multiple collaborative programs to enhance innovation and entrepreneurship on campus. CTTC has partnered with the School of Medicine (SOM) and with VUMC via the Enabling Innovation Initiative (EI2) to develop an annual speaker series of four sessions that brings academically-affiliated entrepreneurs to campus to tell their inspiring stories of how they were able to overcome obstacles to launch and build their companies. In conjunction with the Wond'ry, EI2 is also spearheading the Innovation Ambassador Program, which creates a peer contact in each academic department to assist faculty in their innovation and entrepreneurship endeavors.

Another partnership with the SOM is the ASPIRE to Innovate Program, whereby a postdoctoral fellow is sponsored for a two-year term to lead a potential new venture based on Vanderbilt IP. The fellow receives training from CTTC and the Wond'ry about how to build a new venture and to pursue the launch and funding of the venture.

COMMUNICATIONS *AND RECOGNITION*

Venture Launch Newsletter

It is important for Vanderbilt to stay top-of-mind in the investment community. The Venture Launch newsletter is intended to help by highlighting Vanderbilt's key entrepreneurial and new venture activities to members of the national venture community on a regular basis. The newsletter includes information about new companies launched, recent investments in these companies, company liquidations, products launched, internal entrepreneur support programs, and other activities that reflect the growing role of entrepreneurship and new venture formation at Vanderbilt.

Coordinated Institutional Communications

While the Venture Launch newsletter is specifically intended for the venture community, such publication is complimented by other CTTC publications that report on Vanderbilt innovation, including its annual publication of Driving Innovations Forward and the monthly Tech Connect mailing. Further, CTTC coordinates with Vanderbilt Communications to share new venture success stories and companies in progress, along with other topical subjects related to innovation and entrepreneurship.

Master Innovator Recognition Program

The Master Innovator program is an annual recognition program developed to acknowledge Vanderbilt's top innovators and entrepreneurs for their contributions to the development and commercialization of intellectual property. Awardees will have demonstrated excellence in a select number of key commercialization categories, including new inventions disclosed, patent applications filed and issued, new companies formed, technology licenses executed, commercialization revenue generated, and products on the market - all based on the candidate's innovations created at Vanderbilt. Awardees are memorialized as members of the CTTC Innovators' Hall of Fame.

ADMINISTRATIVE *SERVICES*

Equity Management

CTTC monitors equity holdings for all non-liquid stock received from technology commercialization and exercises warrants that may be granted to Vanderbilt at the appropriate time. If equity becomes liquid as the result of an IPO, CTTC works with the Office of Investments to liquidate the equity in an orderly manner and as soon as reasonably practicable, being mindful that liquidating too quickly may adversely affect share price in instances where trading is thin. Revenue from equity liquidations attributable to equity received from the grant of IP rights is distributed in accordance with the revenue distribution table in the Policy on Technology and Literary and Artistic Works.

Startup Metrics Tracking

The NV Team serves as the primary point of contact for Vanderbilt-affiliated startups and tracks the general activities of all startups in which there is a license agreement and/or equity is owned by Vanderbilt. The NV Team also gathers metrics from each startup (e.g., number of employees, amount of capital raised) to be reported in aggregate only to interested parties, such as Vanderbilt leadership, departments and schools, state and federal agencies, and trade organizations. General information about Vanderbilt-affiliated startups and aggregate-only metrics about startup activities can be found on the CTTC website.

COI Management

COI management questions are covered in some detail in the FAQs section at the end of this brochure. CTTC assists faculty, staff, and trainees with navigating individual and institutional COI review and working with the Vanderbilt University Medical Center Conflict of Interest Committee (MCCOIC) and the Vanderbilt University Office of Conflicts of Interest and Commitment Management (OCICM). Standard processes have been developed by MCCOIC and OCICM to expedite conflicts review and management. With respect to startup-related issues, conflicts must be managed when there is more than one relationship between the Vanderbilt inventor, Vanderbilt institution, and the new venture.

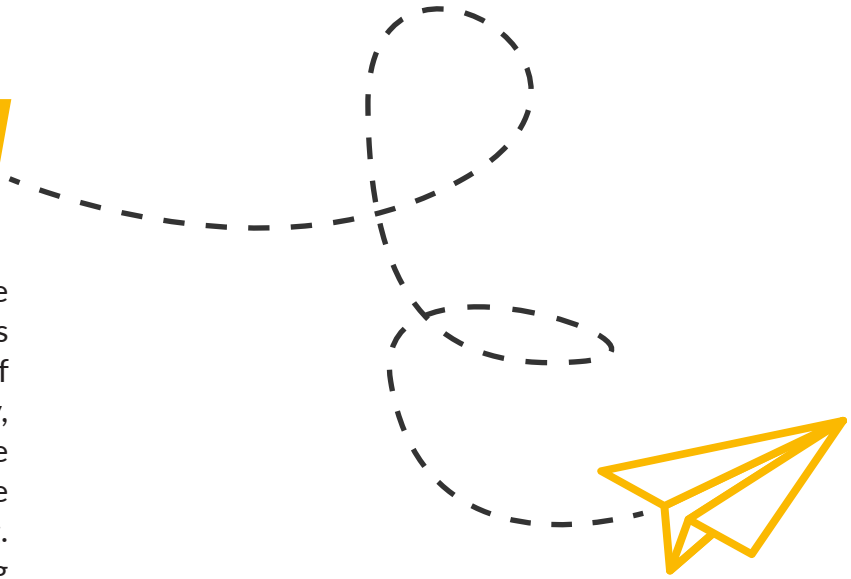
Institutional Policy Revision

CTTC provides recommendations to Vanderbilt leadership when it is considering policies and programs intended to positively impact innovation and entrepreneurship activities at Vanderbilt. Initiatives currently being considered include assisting with sources of funding for translational research and startup formation, office and lab space for startups, and access to unique institutional equipment and resources.

Assistance with Funding Applications

The NV Team assists in developing materials for state and federal grants and contracts that support the innovation and entrepreneurship ecosystem and economic development. The NV Team also connects new ventures with potential partners for funding applications and with entities such as Life Science Tennessee and Launch TN for assistance and support with SBIR and other grant funding and mentorship opportunities.

CONCLUSION



The time it takes to complete the steps in launching a company varies greatly. Factors such as the type of technology, the technology's maturity, and the inventor's ability to marshal the resources to adequately develop the technology will all affect launch timing. Over the past decades, pioneering faculty members have taken on the enormous challenge of starting their own companies in order to see their inventions reach the public.

Vanderbilt, through CTTC, the Wond'ry, and other resources and groups on campus and in the community, now supports new venture creation as an integral part of the research enterprise – making the aspiring entrepreneur's journey as manageable as possible.

Serving the Vanderbilt University and VUMC Community

FAQS
VANDERBILT FACULTY ENTREPRENEURS

COMPANY LAUNCH/ FOUNDING

When should I seek to launch my company?

While there is no formula for determining the proper time to start a new company, raising enough capital to cover two to three years of operations is an often-used rule of thumb. The "right" time is impacted by the stage of research, the availability of non-dilutive research funding to advance a technology, and the existing position of the capital markets. Academic research discoveries are generally quite early stage and far from being ready-for-market products or services. Because they are so early stage, their chances of failing at some point during development are increased over that of many other startup companies. Therefore, the pathway from discovery to product often entails quite a bit of risk, which presents a significant hurdle when raising funds.

What kind of company should I form?

The most common forms of organization for startups is either a limited liability company (LLC,) or a conventional corporation (C-Corp.) LLCs provide operational flexibility, as well as tax and liability benefits. Institutional investors often prefer C-Corps for their corporate and equity structures. Many university-affiliated companies are formed as LLC's, and later, converted to C-Corp's (often, at their Series A financing.)

Can you recommend a good attorney to help get my company started?

CTTC may be able to recommend counsel that is not conflicted with Vanderbilt. There are several experienced firms in town that have represented startups in their negotiations with Vanderbilt and are familiar with how transactions with research institutions are conducted.

How do I determine whether a new company would be the appropriate mechanism for developing/commercializing my idea?

CTTC will assist in evaluating commercialization pathways so that an informed decision can be made. Many academic innovations are best suited for licensing to an existing company with established product lines and sales channels. In some instances, however, a technology will be too risky or too unproven for existing companies to license or may represent platform technologies that existing companies cannot fully exploit. In such events, a startup company may the appropriate commercialization vehicle.

LICENSING

When should I license the technology into the startup company?

The answer varies by circumstance. Usually, this is one of the first steps a new company will take, as the license will be the core asset of the startup. Sometimes an Option Agreement is sufficient in the short term to preserve those rights for a period of time (i.e., 6-12 months). Typically, investors and strategic partners will require a license to be in place before they invest or engage.

Can I negotiate with Vanderbilt/CTTC on behalf of my company?

Negotiating with your employer is discouraged, but not prohibited. It does raise conflict-of-interest issues that must be addressed with the conflicts of interest office. Notwithstanding, to avoid potential conflict-of-interest issues, it is highly recommended that negotiations be led by other startup company principals or advisors with experience in licensing negotiations.

Why is a license agreement necessary?

An exclusive license locks up the technology/asset for the company, giving it a technology monopoly and associated advantage in the marketplace. The license is often the principal asset of the company after incorporation and is a key factor in raising money and attracting top talent to the company.

How long will the licensing process take?

CTTC's startup-friendly license that it uses with Vanderbilt-related new ventures will expedite the licensing process and ensure that the terms and conditions are a proper fit for the startup. Term sheet negotiations are intended to be as transparent as possible, and most negotiations are completed in a few weeks' time. License agreement negotiations can take from a few weeks to a few months, depending on the complexity and the turn-around time of the startup company's advisors and legal counsel. The startup friendly license streamlines the process but must nevertheless be drafted with the expectation that the new venture will one day be acquired by a larger company – and the license must work for the acquirer as well as the startup.

What can I expect from the licensing process?

Licensing begins with a meeting with CTTC leadership to explain the steps of the process directly to the company. The meeting begins with an explanation of the key terms of the license and why the terms are important. Simultaneous with that meeting or shortly thereafter, a draft term sheet is provided to the company for review. The parties will then engage in discussions to refine and agree upon the points raised in the term sheet. CTTC then prepares a license agreement, utilizing the startup-friendly template and incorporating the terms from the final term sheet. Again, all terms will be explained and access to the CTTC startup-friendly license companion document will be provided.

This companion document provides a written explanation of all terms and their purpose for startups. Even though CTTC's new venture process streamlines negotiations, it is strongly advised that the startup retains the services of transactional counsel familiar with licensing from research institutions to represent it during license agreement negotiations.

What expenses am I expected to cover up front?

Under the startup friendly license, up front licensing fees may be paid with equity in the company. Past patent costs will be deferred for a year, as are new patent costs incurred during the first year of the license. The company will be expected to begin reimbursing patent expenses in installments after the one-year anniversary of the license and to cover new patent expenses in full as they are incurred from that point forward.

The objectives for permitting the payment of up-front fees with equity and the deferral of patent expenses are to help provide sufficient runway to recruit talent and raise capital.

CONFLICT OF INTEREST

When and how do I start the COI process?

The Vanderbilt University Office of Conflict of Interest and Commitment Management (OCICM) and the Vanderbilt University Medical Center Conflict of Interest Committee (MCCOIC) are very helpful in mapping out the timing and plans for managing individual conflicts for Vanderbilt employees. It is best to reach out to OCICM or MCCOIC early in the process so a COI Management Plan can be developed for your particular situation.

Vanderbilt has significant experience developing these management plans and the process is very effective and efficient. CTTC can help initiate this process.

Can I sponsor research in my laboratory from my company?

Many institutions prohibit startups from sponsoring research in the founder's academic lab. Vanderbilt has no policies prohibiting such research so long as a management plan implemented by OCICM or MCCOIC is put in place and approved by the Conflicts Committee.

How much time am I allowed to commit to the company?

For faculty members, up to 20% of their time for consulting. Staff members must obtain institutional permission to consult with the company. Student participation may be restricted by federal grants in which they are involved.

Can I, as a faculty member, be the CEO (or other executive) of my company?

Many universities have policies that prohibit faculty from holding an officer's position in a company that is advancing that faculty member's technology. Vanderbilt does not have an express policy prohibiting this – however, Vanderbilt faculty are limited to dedicating no more than 20% of their time to the new venture under the Vanderbilt COI policy. CTTC strongly encourages partnering with an entrepreneur that has experience running a new company and will work to advance the company on a daily basis. CTTC can provide advice regarding the recruitment of entrepreneurial business partners.

Who owns the inventions I make for my company?

Vanderbilt's policies related to technology ownership are straightforward but challenging to succinctly describe. To provide safe harbor from COI, Vanderbilt employees preforming translational research to advance their invention commercially assign ownership of their inventions to Vanderbilt. This obviates the need for the parties to determine who the employee was working for when the invention was conceived.

However, all such inventions assigned to Vanderbilt are automatically rolled into the existing license between Vanderbilt and the startup for no additional expense, so the startup retains exclusive rights to the invention without additional financial burden. If the invention is co-invented between the Vanderbilt employee and other non-Vanderbilt-affiliated startup employees, the Vanderbilt employee assigns rights to Vanderbilt (which are rolled into the license automatically), and the company employees assign their rights to the startup – so the invention is jointly owned, and the startup retains exclusive control of the invention.

Can I access equipment in my lab for the benefit of my company?

Generally, equipment is only accessible via a sponsored research agreement, master services agreement, or similar agreement with Vanderbilt. There are limited cases where company personnel may contract with Vanderbilt to access specialty equipment. Further, companies can purchase Core Lab services if the specialty equipment resides in a VU/VUMC core facility. Vanderbilt is actively exploring ways to better enable broader access to equipment.

GROWTH AND ACCELERATION

Where can I find laboratory or office space near campus?

Company space is lacking near campus. There is wetlab space offered by Cumberland Emerging Technologies near campus, and the Wond'ry provides access to office space in the Loews complex. There are other options, but finding optimal space remains a challenge – one that Vanderbilt is actively working to address.

What help can the Wond'ry provide?

The Wond'ry has a number of programs aimed at aspiring entrepreneurs in the Vanderbilt community. These include business education programs, mentorship assistance, microgrant programs, I-Corps, maker spaces, pitch competitions, incubation/office space, and several other services. Please explore the Wond'ry website for more information.

Who can help with SBIR/STTR applications drafting?

CTTC can help the company apply for a Launch TN grant to hire a writer for SBIR/STTR applications under Launch TN's 'microgrant' program. Launch TN also has a popular and effective SBIR matching fund program for SBIR award recipients and offers a variety of other startup support services.

How much money will I need to raise to get my company going?

Capital needs depend heavily on the company's product and R&D needs, business model, marketing, and sales needs, among other factors. Most seed financing rounds raise between $100k and $1M; series A rounds raise between $1M and $10M. CTTC can help connect startups to its network of investors that specialize in early-stage company investments.

VANDERBILT UNIVERSITY
Technology Transfer

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