Technology
Commercialization and
Startup Primer

University of Florida
Office of Technology Licensing (OTL) and UF Tech Connect®
Where Science Meets Business
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Overview

The objective of this startup guide is to provide information and assistance to faculty, staff, and entrepreneurs who may be interested in commercializing University of Florida (UF) technology through the formation of a new company.

Technology commercialization refers to the process by which an idea or innovation is transformed into a product or process available in the marketplace. Before an idea, invention or innovation can be commercially developed into a product or specialized service, it is necessary to understand whether or not there is a need for the product in the marketplace. If a market need can be identified, the technology can be patented and then transferred to another outside entity for commercial development. Technology transfer is the process by which intellectual property moves out of the laboratory or research environment into the commercial sector for development and dissemination.

The Office of Technology Licensing (OTL) and UF Tech Connect® work together to help support inventors to get their discoveries to the marketplace through the creation of startup companies with long-term viability. OTL is the main commercialization entity for UF and works with inventors to facilitate the transfer of technologies to the commercial sector for public benefit. UF Tech Connect® was created as a partnership between the University of Florida and the Economic Development Administration to provide a venue for bringing together the necessary elements to create companies: inventors, technologies, entrepreneurs and financial capital.

Technology Commercialization at the University of Florida

The Office of Technology Licensing (OTL) at the University of Florida was established in 1985 to work with inventors to facilitate the transfer of technologies created at UF to the commercial sector for public benefit. We are dedicated to assisting employees who feel they have something new and useful that is potentially able to be patented or copyrighted.

OTL was created in the wake of the Bayh-Dole Act, which fundamentally changed the way America develops technologies from federally funded university research, enabling small businesses and non-profit organizations, including universities, to retain title to inventions made under federally funded research programs. The underlying principle of the Bayh-Dole Act was to move university research discoveries to the commercial market to improve the human condition.

The benefits of technology licensing include:

- Attracts research funding
- Forms industrial partnerships
- Earns royalty income
- Places graduate students in rewarding jobs
- Moves research discovery to market for public good

Dr. Paul Holloway – UF Dept of Materials Science and Engineering, Patent #
According to the World Intellectual Property Organization, Intellectual property (IP) refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce. There are different types of Intellectual Property:

- **Patents** (new ideas / inventions ex: machines, plants, medicines, designs) A patent is an intellectual property right granted by the Government of the United States of America to an inventor “to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States” for a limited time in exchange for public disclosure of the invention when the patent is granted. There are three types of patents:
  - **Utility patents** may be granted to anyone who invents or discovers any new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof;
  - **Design patents** may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture; and
  - **Plant patents** may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.

- **Copyrights** protect works of authorship, such as writings, music, video games and works of art that have been tangibly expressed. The Library of Congress registers copyrights which last for the life of the author plus 70 years.

- **Trademarks** protect words, names, symbols, sounds, or colors that distinguish goods and services from those manufactured or sold by others and to distinguish products from their competitors (e.g., Gatorade). Unlike patents, trademarks can be renewed forever as long as they are being used in commerce.

Researchers, faculty, graduate students and clinicians should disclose all intellectual property that may be eligible for protection as soon as possible. The criteria for protection is generally defined by the following characteristics:

- **Novel** - New, never before used
- **Useful** - Must have a purpose or intended use
- **Non-obvious to someone “skilled in the art”** ie: peers and/or a patent examiner would not readily identify the improvement or new application

The Office of Technology Licensing works with hundreds of researchers every year to assist them in protecting their intellectual property. With a patent, you can prevent others from making, using or selling your invention for a certain period unless they have your permission. Patent protection is vitally important to finding a commercial partner willing to invest in getting your discovery from the lab to the market.
Don’t underestimate the value of your work! While very few research discoveries generate millions of dollars, many play a key role in improving the human condition and making the world a better place. Unless a researcher discloses, however, their work is rarely commercialized.

Working with OTL
OTL is here to ensure your rights are protected and to assist you through the entire process of moving your discovery through the commercialization process. Our office has six licensing teams, comprised of a licensing officer, a licensing associate and an administrative assistant. Each team works within areas of specialty, which broadly cover Life Sciences and Engineering and Physical Sciences. (click here to see our licensing teams).

Steps in the Technology Commercialization Process
- Inventor submits invention disclosure form
- Invention disclosure reviewed by OTL
- OTL sets up a meeting with the inventor
- Invention evaluated for patentability and commercial potential by inventor and OTL
- Decision is made to protect invention or waive rights to invention
- OTL and inventor initiate marketing efforts
- OTL negotiates license with outside company
- Revenue are distributed based on IP Policy (see Distribution of Net Income p. 4-5)
- OTL monitors license agreement milestones for compliance

Disclose
If you think you may have an idea that may be eligible for IP protection, the first step is to report your discovery with the web-based disclosure form, accessible from the main OTL website (www.otl.ufl.edu). Direct link: http://www.research.ufl.edu/otl/newdiscovery.html (IMPORTANT! - Submitting the form to us initiates your interaction with OTL, but does NOT provide patent protection)

Upon receipt, we will contact you to schedule an appointment to discuss your new discovery and discovery with anyone outside your laboratory without first executing a Confidential Disclosure Agreement (CDA). This includes presenting posters at conferences or submitting publications. Telling others what your discovery does is fine, but giving enabling information (ie: how your discovery works) without a CDA in place can drastically affect patent protection.

Confidential disclosure agreements protect your rights if you need to discuss enabling details of your invention with people outside the university. The Office of Technology Licensing staff executes an
average of 300 CDAs per year, often completing many of them on the same day. A CDA serves three purposes:

- It alerts the receiving party to the confidentiality of the information to be received.
- It specifies the responsibilities required of the receiving party.
- It can be used as evidence in subsequent patent processing, e.g., to defeat an allegation that the invention is not novel because the inventor treated it as public information. This kind of allegation arises frequently from those contesting a potentially lucrative patent, so a CDA is more than a "mere formality."

Additionally, should you decide to transfer or receive materials such as antibodies or cell lines, the Office of Technology Licensing will be happy to work with you to execute a Material Transfer Agreement (MTA) to ensure all intellectual property rights are defined prior to the transfer. Material transfer agreements protect your intellectual property rights when you exchange biological, chemical or other materials, including cell lines, plasmids, vectors, transgenic mice or chemical compounds with other organizations. OTL assists researchers in executing more than 350 MTAs each year and can help you in expediting this process to ensure your rights are protected. If you are interested in transferring materials, the OTL staff is ready to assist you. Please note: only authorized university administrators can sign these agreements which do not include Deans or Chairs. To obtain a MTA form, contact Melanie Campos at (352) 392-8929.

Evaluation
Once a disclosure has been made, OTL will begin due diligence to evaluate the ideas and technology to determine the most appropriate course of action. OTL will conduct patent searches (also referred to as a "prior art" search) and do preliminary market analysis to assess commercial potential. The licensing team will then discuss their recommendations with you to determine the best protection strategy for technologies likely to become commercialized. This Exert or Waive decision will be done within 120 days from disclosure as specified in the UF IP Policy.

NOTE: Not all disclosures are patentable or eligible for protection.

Protection
OTL retains patent attorneys to file patent and copyright applications with the U.S. and/or foreign Patent Offices. OTL has contracts with over a dozen intellectual property law firms so they can select the firm whose core expertise are most applicable to the technology being protected.

Distribution of Net Income from Works and Inventions
UF will have rights to the invention in the following circumstances: the invention was made while you were employed at UF AND the invention is in the field/discipline in which you are/were employed OR the invention was made with university resources.

With regard to any work or invention owned by the University, net income less any foreseeable development expenses the University or UFRF deems necessary to defend or maintain the work or invention ("net adjusted income") will be distributed as follows:
For net adjusted income up to $500,000:
- 40% individual creator(s)
- 10% program(s)
- 7 ½% creator(s)’s department
- 7 ½% creator(s)’s college
- 35% VPR or UFRF

For net adjusted income $500,000 or over:
- 25% individual creator(s)
- 10% program
- 10% creator(s)’s department
- 10% creator(s)’s college
- 45% VPR or UFRF

Generally speaking, if UF decides to exert on a discovery, OTL will assume responsibility for all patent expenses until the technology is optioned or licensed. See Appendix B for an overview of patent costs and fees.

More detailed information regarding distribution can be found in the University IP policy.

**Strategy: Startup versus Licensing**

Not all inventions are appropriate to be the basis of a startup company. Some technologies are better suited to be licensed to an existing company as it may fit into their product offerings and markets. However, if the technology is sufficiently broad based (e.g. a platform technology that enables a range of different product to be produced, possibly for a range of different markets) or novel or where the capital investment required for product development and commercialization is justified by the potential returns, creating a startup company may be determined to be the best strategy for commercialization. Ultimately, when deciding on whether to form a new company or to license the technology to an existing company, the costs and risks must be weighed against the potential returns. Licensing to an existing company offers relatively low risk and typically ensures that the technology will have the necessary infrastructure such as channels to market, sector knowledge, facilities, commercial management, and an existing contacts network in place. Forming a new company as a means of commercializing technology presents a higher risk than the traditional licensing route; however, there are many instances where the technology is very early stage and without further development done within a startup the technology will never be commercialized. If the technology is licensed to an existing company, OTL will work with the inventor to negotiate the terms of the license agreement, which require the licensee to bring the technology to the marketplace.

If OTL and the inventor jointly decide to pursue a commercialization path via creating a startup company, then they will typically engage UF Tech Connect® to assist in this process.

**Starting your company...UF Tech Connect®**

Co-located in the Florida Innovation Hub incubator and in partnership with OTL, UF Tech Connect® is at the pulse-point of the region’s high-tech startup activity. Because of the tremendous volume of research
generated at UF and the user-friendly reputation of its Office of Technology Licensing, the University of Florida EDA University Center serves as a magnet for entrepreneurs and investors seeking new opportunities, and a catalyst for new business creation. UF Tech Connect® supports regional commercialization efforts by developing and sponsoring new programs, sponsors educational and networking events, and facilitates mutually beneficial connections.

What role does an inventor usually play in a startup company?

Starting a company requires a significant amount of time, effort and planning, and success rates can be discouraging. Statistics indicate that less than 50% of startups are still in operation within five years. Furthermore, running a company is very different than running a research lab and writing a grant is very different than writing a business plan. For these reasons, faculty rarely leaves the University and join the startup. Traditionally, the faculty member and key members of the group will champion the formation effort and continue the technology development while undergoing a search for an appropriate startup team.

Choosing the right management team is critical to a startup’s success. UF Tech Connect® can assist in this process by helping to make introductions to experienced entrepreneurs that have expressed an interest in working with our early stage startups. The following is a list of desirable criteria for a startup CEO typically used by OTL when searching for the correct CEO to pair with your technology:

- Experience in a high tech startup environment
- Experience at executive level
- Experience in the necessary market, function, and geography
- Experience raising angel or venture capital funding

OTL will always work with the inventor to ensure that the management team is a good fit, both in terms of professional expertise and personalities. The continuing role of the faculty in the company can be negotiated based upon the inventor’s expertise and interests, however, in most cases, faculty typically serve as technology advisors, or in some other technical developmental capacity. Student inventors and post-docs may choose to join the startup upon graduation but rarely have the experience or business skills to serve as the company’s sole management. Under the University of Florida Conflict of Interest policy, any kind of faculty and student involvement in a startup must be reviewed by the Committee.

Once an appropriate CEO has been identified and agreed upon by all parties, the next step is to develop a viable business plan. UF Tech Connect® has several resources to provide the CEO the assistance needed to ensure that the technology can meet an unmet need in the marketplace and that there are customers willing to pay for this technology as the solution. In addition to the business plan we assist the CEO to develop an investor presentation using the template in Attachment A.
Once these deliverables have been completed, reviewed, and vetted, OTL will circulate to potential investors, and make introductions as appropriate. More information regarding funding can be found in the Funding Your Company section, pages 7-9.

The University of Florida Office of Technology Licensing and Florida Innovation Hub may facilitate introduction of individuals with the goal of encouraging a mutually beneficial business relationship. However, please be advised that one should exercise good judgement in pursuing discussions particularly with regard to appropriate due-diligence prior to executing formal agreements.

Company Formation

The pros and cons of different business formations are worth understanding. They vary by state, and it is important to retain experienced legal counsel to help determine the most appropriate strategy for your company. Starting a business is a specialized area of law, so make sure that your attorney has experience with startups and ask around for recommendations. Also, UF/OTL has a list of attorneys available. As your business grows, a trusted advisor who understands what you are trying to accomplish and how you built your business can be a valuable member of your team.

You need to think about several variables when deciding which entity is most appropriate for your company. Think about how big you want to grow the company. How long do you expect to remain with the company? Is this a company that you plan to build and sell? Do you plan to raise money and give stock options? Do other people have ownership in the company? The answers to these questions will help to guide your formation strategy.

Although several types of business entities exist, for companies interested in licensing technology from the university or obtaining funding from an investor, there are really only two types of corporate entities that are appropriate for consideration:

- **C Corporation** – This is the classic business structure for large companies. If your goal is to build a large business and go public one day this would likely be the most appropriate strategy. C-Corps provide the most liability protection and non-tax benefits.
- **Limited Liability Company, LLC** – LLCs are the most popular option because they offer limited liability and also allow pass-through taxes similar to a partnership. Note: The major difference between C-Corps and LLC is that the corporation is taxed and must file taxes. Then, distribution to the owners are taxed. So in essence, the government takes two revenue cuts (versus one) in a C-Corp versus an LLC.

As a reminder, working with an experienced attorney is important to determine the best strategy for your situation regarding company formation.

Funding Your Company
Starting a company requires money. Expansion, IP, prosecution, acquisition, operating costs (everyday expenses, rent, inventory, salaries, etc.) are items that will eventually appear on your balance sheet. There are various funding options and you will need to determine which most align with your company’s needs and potential.

There are basically two types of funding: dilutive and non-dilutive. Generally speaking, dilutive funding means that others will take some ownership share of your company. This may come in the form of investors or stock sales. A return on investment is expected for dilutive funding. While it may initially sound like dilutive funding would equate to a lower return for you as a company principal, because in essence you own “less of the pie”, having smart, engaged investors can help grow your company significantly and translate to a much “larger pie”, making your “slice” much more valuable than the whole original pie. In contrast, non-dilutive funding provides funds without reducing ownership share. Examples of non-dilutive funding include grants, debt (ie: loans, credit-lines), and sales revenue.

Dilutive funding
In addition to personal equity, and investments from friends and family (which may or may not be dilutive), traditionally startup companies deal with two types of investors: angel investors and venture capitalists (VCs). Angels are wealthy individuals, often retired entrepreneurs or executives, who may be interested in investing in an area in which they have expertise or passion. They usually provide the first rounds of early-stage funding and this money is used to show proof of concept or proof of principal that can then be used to attract early-stage venture funding. The amount of an angel investment can vary, but on average, it may range from $100,000 – $1M. There are also a growing number of angel networks which pool knowledge and financial resources. Venture Capitalists (VCs) are managed funds that invest in startups with perceived long-term growth potential. VCs can provide important funding during the period of time when a company is pre-revenue and working to reach milestones (eg: in-vivo testing, 510K approval, beta launch, etc.) but still burning cash in order to operate and progress. VC funding consists of A, B, and C series, which increase in amounts successively. VC funds differ in their approaches, and it is important to consider if an investor is a good fit for your organization since they will be with you for the long haul.

Because they come in at an earlier stage, angel investors tend to assume a higher level of risk than VCs, however, both angel and VC investors will do a great deal of due-diligence before making an investment in a company. Competition for their dollars is fierce. An average investor may hear over 3,000 pitches per year and ultimately only invest in perhaps a half a dozen companies. Ultimately, investors want a return on their investments, and because of the risk associated, the expectation can be as high as 25% for an angel and 3-7 times return for VC investment. This expectation underscores the importance of securing a CEO with prior success in a specific field. Evidence of expertise to navigate an emerging technology through to the marketplace greatly enhances your company’s credibility for investors and likelihood of garnering funding.
Non-dilutive funding

Grants can be an excellent and effective source of funding. Generally speaking, grants are awards that do not require repayment, nor does the granting organization take equity in your company. There are many grant opportunities available, from the government and private foundations and organizations. Research your area of discipline to see if there are opportunities that may be appropriate for your company to target. In addition, there are specialized funding opportunities for minorities.

One of the most prominent granting agencies for technology commercialization is the Small Business Innovation Research (SBIR) program. The SBIR program encourages domestic small businesses to engage in Federal Research/Research and Development (R/R&D) to explore their technological potential and provides the incentive to profit from its commercialization. SBIR grants have 3 award levels. Phase 1 is a $150,000 maximum award designed to establish the “technical merit, feasibility and commercial potential of the proposed R/R&D efforts and to determine the quality of performance of the small business awardee organization prior to providing further Federal support in Phase II. Phase II SBIR awards are made “based on the results achieved in Phase I and the scientific and technical merit and commercial potential of the project proposed in Phase II”. Phase II SBIR awards are granted up to $1M. Phase III awards are specifically for pursuing commercialization objectives and based upon results from the Phase I & II award cycles. UF Tech Connect® offers SBIR workshops throughout the year. Contact your Tech Connect® representative for information about upcoming sessions.

The Florida Hi-Tech Corridor also provides matching funds to help support research at state University Labs to help develop commercially applicable emerging technologies.

Loans and credit lines are other non-dilutive methods to raise capital. However, due to the risky nature of high-tech startup businesses, securing a business loan can be difficult. One good resource with which to familiarize yourself is the U.S. Small Business Administration (SBA). SBA has a robust network to help startup companies, and does provide loans and grant opportunities: http://www.sba.gov/

Here in Florida, the Seed Capital Accelerator Program (SCAP) provides capital to seed-stage companies as a repayable loan, from $50,000-$300,000. To be eligible for the program, qualified companies must have an equal match of cash in an equity-based investment from a private sector third party. The loans are low-interest, payable upon liquidity or $4M in revenue. For more information regarding the SCAP visit the Florida Institute for the Commercialization of Public Research.

If you or a member of your team is affiliated with the University and has a GATOR ONE card, you have access to a wealth of resources to assist in your market analysis and business plan development. These can be accessed via the UF Tech Connect® Business Library Guide portal.

Exit strategy

Although it may seem premature, if you are seeking investment, you will need to do some long-term planning and determine your company’s exit strategy. An exit strategy is the blueprint for how you will
plan to repay your investors. In most cases this “cashing out” represents acquisition by a larger company or a stock offering.
You are our most valuable resource!

Although the success rates for starting a company can be daunting, statistics show that becoming part of an entrepreneurial network can significantly improve your chances of long-term success. UF Tech Connect® in partnership with OTL and the Innovation Hub offers services to help assist you in the startup process.

Ultimately, technology commercialization relies upon people: inventors and entrepreneurs that work to bring these innovative discoveries to the marketplace to help benefit the public. You are our most valuable resource and we look forward to learning more about your ideas and goals.

Please contact our office to find out further ways we can assist you.
Appendix A: Chart of patent lifetime costs

**Costs, including official fees through a patent's lifetime**

<table>
<thead>
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<th>Time Segment</th>
<th>t = 0</th>
<th>t = 1</th>
<th>t = 2</th>
<th>t = 2.5</th>
<th>t = 3 - 6</th>
<th>t = 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$5,000</td>
<td>$6,000</td>
<td>$12,000</td>
<td>$29,000</td>
<td>$30,000</td>
<td>$50,000+</td>
</tr>
</tbody>
</table>

- **Delay through PCT:** $19,000
  - Provisional: $3K
  - PCT App.: $12K
  - Examination: $4K

- **National Phase:** $11,000 to Patent (per)
  - National Phase: $2K - $5K
  - Examination: $2K - $10K
  - Patent

- **U.S. $8,000 to Patent**
  - U.S.: $2K
  - Examination: $5K
  - Patent
  - Maintenance Fees: $5K - $20K

- **EPO $22,000 to Patent**
  - EPO: $12K
  - Examination: $8K
  - Grant
  - Valid 1 - 2K
  - Maint. Fees: $10K

- **Litigation:**
  - 1M - 2M
  - Opinions: 12K - 15K per
  - Charts: 6K - 10K per

*All costs estimated and based on AIPPA Economic Survey data.*
Appendix B: Investor Presentation Template

Presenting Your Business Opportunity

Your Audience
- Investors
- Service Providers
- Entrepreneurs
- Executives
- Strategic Partners

Preparation
- 12 Minute Presentation
- Use this Outline and Guidelines
- No more than 18 slides
- Practice!

Slide Presentation Tips
- PowerPoint Presentation
- One Major Topic Per Slide
- Stay Concise (Elaborate Verbally)
- Stay Consistent (Fonts & Layouts)
- Minimum: 32 Point Font Size
- Use Color/Visuals to Enhance

The Presentation Outline
- The Wow Factor
- Problem ➔ Solution
- Product/Service
- Market
- Sales Channel
- Management
- Financial Projections
- Opportunity

The Wow Factor
- Is there a statement you can make about your product that will amaze people – an attention grabber
  - Ex. Because of my product, people will no longer have to shave
  - Ex. Did you know it is possible to control machines just by thinking?
**Problem**

- Key market problems/ needs being addressed
- Define the business opportunity
- Illustrate with Pictures
- Tell Short Story

**Solution**

- Show how Your Product/Service solves Problem or Satisfies Need
- Emphasize Benefits of Your Product/Service

**Product/Service**

- Use Picture(s)
- List Features, Functions and Benefits
- Outline Intellectual Property position

**Competitive Analysis**

- Summarize competitive products & technologies and define your competitive advantages
- Consider a Competitive Matrix comparing your technology against competitive products / technologies for key user features such as cost, performance, ease of use, etc.

<table>
<thead>
<tr>
<th>Key Features</th>
<th>Key Features</th>
<th>Key Features</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Product</td>
<td></td>
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<tr>
<td>Competitive</td>
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<tr>
<td>Product 1</td>
<td></td>
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<td></td>
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<tr>
<td>Competitive</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Product 2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Competitive</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Product 3</td>
<td></td>
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</table>

**Market**

- Describe Who Will Pay Money For Your Product/Service
- How Large is Your Market?
- Summarize the regulatory requirements that company will have to address to bring your technology/product to market

**Sales Channel**

- Who is Going To Sell Your Product?
- How Do They Reach The End Customer?
- How Are They Paid or Commissioned?
Management
• Describe Management Team Qualifications
• List names of key management, title in the company, and brief summary of qualifications

Financial Projections
• Level of detail depends on type of company
• Typically show 3 - 5 years:
  • Projected Revenue
  • Projected Head Count
  • Projected Breakeven
  
  Don't be or say your numbers are conservative

Opportunity
• How much money are you seeking?
• List Uses of funding & key milestones (consider a timeline chart to depict these)
• Identify Your Liquidation Strategy
• Do NOT Mention Percentage of Equity You Would Consider Selling

Closing Slide
• Summary of Opportunity
• Your Contact Information