Funding a Life Sciences Company

Life Sciences & The Law

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Practical & Entertaining Education for:

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• Business Owners
• Executives • Investors

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Meet the Faculty

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Panelists

Deborah Hemingway - Ecphora Capital

Steven Ferguson - Life Sciences Advisor, joining in his Personal Capacity

Zack Mueller - Foley Hoag

Elizabeth Smith - Fzata

Moderator

Jay Reilly - Foley Hoag

Funding a Life Sciences Company

All startups fight to raise money, but Life Sciences companies have access to resources not necessarily available to other types of companies. We'll tap our panel of experts for tips on what types of funding are available, when to tap into friends and family for funds, how to find early stage funders, and when you're ready to start seeking VC funding and how that works. This episode will also explore the mechanics of how these various funding mechanisms work. What does it take to apply for an SBIR? What other federal agencies tend to fund life sciences companies? How do you get those grants? What's the difference between SAFE funding and convertible debt? How does preferred stock work? What are the benefits and pitfalls of teaming up with industry collaborators? In what ways can working with a VC backfire?

In this episode, we'll help you make sense of all of these various vehicles, explain how they work, and help to provide some guidance as to what vehicles might be the best for your Life Sciences company.

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About This Series

LIFE SCIENCES & THE LAW 2025

This webinar is part of a series titled “Life Sciences & The Law 2025.”

"We Bring Good Things to Life" was an advertising slogan used by General Electric between 1979 and 2003, focused mainly on General Electric's appliances and lighting fixtures. We’d argue that it would be an even better slogan for the Life Sciences industry.

The Life Sciences Industry encompasses companies and organizations that are dedicated to researching, developing, manufacturing, and distributing products and technologies to improve human and animal health. Key sectors within life sciences include biotechnology, pharmaceuticals, medical devices, and diagnostics. The industry’s work ranges from bench research and small-scale manufacturing to performing small and large-scale clinical trials, developing manufacturing processes on a commercial scale, working closely with regulatory agencies, to developing pricing, marketing, and distribution strategies. The life cycle of a drug or medical device often involves many parties controlling the product at various times, involving the bench of university researchers, development by small startup companies, commercialization by larger industry players, diversification by sublicensees, and distribution by resellers.

Life sciences is a highly regulated field due to its direct impact on health and safety, with strict compliance standards overseen by regulatory bodies like the FDA in the United States and EMA in Europe. The industry is characterized by high research and development (R&D) costs, long development timelines, and significant investment in innovation and technology. The life sciences industry is also increasingly interdisciplinary, intersecting with data science, artificial intelligence, and bioinformatics to drive advancements in personalized medicine, gene therapy, and diagnostics.

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Episodes In This Series

1. Life Sciences Industry Basics

   Premiere date: 4/29/25

2. Life Sciences Regulatory Overview

   Premiere date: 6/10/25

3. Life Sciences Startups – How to Begin

   Premiere date: 7/29/25

4. Funding a Life Sciences Company

   Premiere date: 10/7/25

5. IP Strategies for Life Sciences Companies

   Premiere date: 11/18/25

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Episode #4

Funding a Life Sciences Company

Each Financial Poise Webinar is delivered in Plain English, understandable to investors, business owners, & executives without much background in these areas, yet is of primary value to attorneys, accountants, & other seasoned professionals. Each episode brings you into engaging, sometimes humorous, conversations designed to entertain as it teaches. Each episode in the series is designed to be viewed independently of the other episodes so that participants will enhance their knowledge of this area whether they attend one, some, or all episodes.

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Dilutive vs. Nondilutive Financing

- Are you sharing a piece of the company
- Investments - Stock and stock equivalents
  - ➢ Common and Preferred Stock
  - ➢ SAFEs and Convertible Debt
- Nondilutive financing

Federal grants	Tax incentives and credits
Philanthropic grants	State and local grants
Loans and debt	Sponsored research and collaborations

Ownership 101

- Corporations
  - ➢ Stock
  - ➢ Common vs. preferred

- LLC's
  - ➢ Percentage ownership
  - ➢ Contractual preferences

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Competing Goals of Founders and Funders

- Founders
  - ➢ Keep a large stake of ownership over time
  - ➢ Maintain control over day-to-day decisions
  - ➢ Need $$ to operate the Company
  - ➢ External validation/strategic partners

- Funders
  - ➢ Pay as little as possible for as large a stake as possible
  - ➢ Downside protection (i.e. first $ out)
  - ➢ Control of Board and major decisions
  - ➢ Exit Strategy – need to satisfy their LPs

Valuation

- Shark tank explained: $5 million for 20%
- Pre-money vs. post money valuations
- Determining valuation
  - ➢ (Sum of the parts)
  - ➢ (Comparable transactions)
  - ➢ (Discounted cash flow)
- Negotiation

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SAFEs and Convertible Debt

- Investor provides money to the company and gets either a SAFE or debt
- That SAFE or debt converts into stock the next time the Company raises money
- If the Company doesn't raise money, debt gets paid back to the investor, SAFE's do not
  - ➢ Debt looks more like a loan
  - ➢ If the Company can't raise money, there generally isn't anything left to pay back the debt

- Both SAFE's and debt may offer:
  - ➢ Conversion into equity at a discount
  - ➢ A cap on valuation

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SAFEs and Convertible Debt – Pros and Cons

- Faster and cheaper to execute than a priced round
- More control over your company (notes do not vote, and generally you don't give board seats or significant protective provisions to note holders)
- Delays dilution until you can increase the valuation
- "Cost" of discount vs. benefit of delaying dilution
- Capital gains/QSBS treatment does not start until conversion happens

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SAFEs

- Simple Agreement for Future Equity
  - ➢ SAFEs were created by Y-Combinator

- They aren't THAT simple. There are 3 variations plus a side letter in their current versions.
  - ➢ Discount, no valuation cap
  - ➢ Valuation cap, no discount
  - ➢ MFN, no valuation cap, no discount

- SAFEs are not debt. If a company goes under before SAFEs convert AND there is money to be paid out, they will be subordinate to payment of debt.
- SAFEs are intended to "avoid negotiation", but very often it turns out an investor actually wants to negotiate.
  - ➢ Economic provisions
  - ➢ Side letter

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Equity Investments

- Common Stock
  - ➢ Financial Rights: liquidation preferences, accruing dividends

- Preferred Stock
  - ➢ Financial Rights: liquidation preferences, accruing dividends
  - ➢ Governance Rights: participation rights, board seats, special voting, ability to remove the management team

Liquidation Preference

- Amount
  - ➢ Multiple of amount invested
  - ➢ Accrued and unpaid dividends

- Seniority
  - ➢ Typically last in/first out
  - ➢ Pari passu

- **Participating vs. Non-participating**
  - ➢ **Participating preferred gets two bites at the apple**

Dividends

- Cumulative vs. Noncumulative
- Obligated vs. discretionary
- Form
  - ➢ Cash
  - ➢ Paid-in-kind

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Stockholder Voting Rights

- Generally, preferred votes with common
- Board Seats
- Veto Rights
  - ➢ Issuances of senior equities
  - ➢ Mergers or acquisitions
  - ➢ Repurchases of securities
  - ➢ Liquidating the company
  - ➢ Changing the size of the board
  - ➢ Incurring significant debt

Conversion

- Rationale
- Optional vs. Mandatory
- Dilution protection
  - ➢ Full Ratchet vs. Weighted Average

Registration Rights

- Demand vs. Piggyback
  - ➢ Length of time until triggered
  - ➢ Percentage required to trigger
- IPO lockup

Additional Rights

- Right to participate in future rounds
  - ➢ Preserves ownership percentage
- Tag along
  - ➢ Participation in sales of others
- Drag along
  - ➢ Pulling others in on a sale of the company
- Right of first refusal
  - ➢ Generally over sales by founders
- Redemption
  - ➢ Creates urgency to meet inflection points

Limitations and Obligations

- Control over size of employee equity pool
- Vesting of shares for founders
- Vesting of shares for employees
- Granular approval rights by VC director
- Key man life insurance
- Information rights
- Payment of fees

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Considerations for Subsequent Rounds

- Subsequent investors typically get better rights than previous investors
- When negotiating financings, factor in how existing stockholders are impacted
- Valuations, and “down” rounds
- Impact of participation rights

Technology and Intellectual Property

- ASSIGNMENT OF INVENTIONS AGREEMENTS
- Secure all necessary patent rights
- Scrutinize the agreements with your contractors and consultants

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Building Appropriate Incentives

- Appropriate sharing of equity
- Vesting of founders' shares
- Vesting of employee shares
- Cash and Bonus provisions for employees and executives

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Corporate Hygiene

- Board authorizations for all material actions
- Board authorization for all stock and option issuances
- Complete files of all contracts, signed, with all supporting exhibits and SOW's
- Immaculate stock records
- Clear financial records

Federal Grant Programs – SBIR/STTR

- SBIR (Small Business Innovation Research)
  - ➢ For small businesses conducting independent R&D.
  - ➢ PI (Principal Investigator) must be employed primarily by the small business.
  - ➢ Encourages commercialization of new technologies.

- STTR (Small Business Technology Transfer)
  - ➢ Requires formal collaboration between small business and a U.S. research institution (university, nonprofit, federal lab).
  - ➢ At least 30% of work must be done by the nonprofit research partner, 40% by the business.
  - ➢ Facilitates technology transfer from research labs to market.

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Federal Grant Programs – SBIR/STTR

- Phases
  - ➢ Phase I – Feasibility & proof of concept (≈ $250K, 6–12 months).
  - ➢ Phase II – R&D and prototype development (≈ $1.5M–$2M, up to 2 years).
  - ➢ Phase III – Commercialization (no SBIR/STTR funds; relies on private or other federal funding).
- Agencies
  - ➢ 11 federal agencies participate (NIH, NSF, DoD, DOE, NASA, etc.).

Federal Grant Programs – Collaborative Research Agreements

- Formal partnerships between outside organizations (companies, universities, nonprofits) and NIH intramural scientists to conduct joint research
- Provides access to world-class NIH researchers and labs and an opportunity to de-risk early-stage science
- Key features:
  - ➢ Jointly defined research plan and objectives
  - ➢ Each party contributes resources (funding, staff time, technology, data, or materials)
  - ➢ Inventions are typically jointly owned if both contribute
- NIH cannot provide contract services, but in the course of the mutual scientific research, NIH labs can provide services such as:
  - ➢ access to specialized laboratories, core facilities and equipment
  - ➢ access to cell lines, reagents and animal models not otherwise available

Federal Grant Programs – Congressional Directed Medical Research Programs

- The CDMRP originated in 1992 via a Congressional appropriation to foster novel approaches to biomedical research in response to the expressed needs of its stakeholders-the American public, the military, and Congress.

- Hallmarks of the CDMRP include:
  - investing in groundbreaking research
  - targeting critical gaps
  - reviewing application using a two-tier formal review with no standing peer review panels and no "pay line"
  - involving consumer advocates throughout the program cycle
  - supporting both the next generation of researchers and established scientists.
  - funding the full pipeline of research development, including basic, translational, and clinical research.
  - fostering (or employing) collaboration and synergy

Federal Grant Programs – Additional Programs

The CDMRP fills research gaps by funding high impact, high risk and high gain projects that other agencies may not venture to fund. While individual programs are unique in their focus, all the programs managed by the CDMRP share the common goal of advancing paradigm shifting research, solutions that will lead to cures or improvements in patient care, or breakthrough technologies and resources for clinical benefit.

https://cdmrp.health.mil/

Federal Grant Programs – CRADAs

- Legal agreements that let federal laboratories collaborate with industry, universities, and nonprofits on R&D
- Agencies That Use CRADAs: NIH, FDA, CDC, DoD (Army/Navy/Air Force labs), DOE National Labs, NASA, USDA, and others
- Key features:
  - ➢ Shared expertise, facilities, and resources
  - ➢ Partners may contribute funding, staff, or materials
  - ➢ Federal labs provide access to facilities, data, and technical expertise
  - ➢ Partners can obtain first rights to negotiate exclusive licenses to government-developed inventions
  - ➢ Each party retains rights to pre-existing IP
- Requirements for entering a CRADA:
  - ➢ Collaboration must be consistent with the mission of the federal agency/lab.
  - ➢ Federal labs cannot provide direct funding to the partner (only in-kind support).
  - ➢ Partners must contribute resources (e.g., expertise, personnel, materials, or funding) to support the federal lab's work).

Federal Grant Programs – Recent Developments

- Compliance with Bayh-Dole
- In an August 8, 2025 letter, Secretary of Commerce Howard Lutnick notified Harvard that:
  - ➢ "the U.S. Department of Commerce … is initiating ***an immediate comprehensive review of the compliance*** – or lack thereof – of Harvard's federally funded research programs. The Department is also ***initiating the 'march-in' process*** under the Bayh-Dole Act ***pursuant to which the U.S. Government intends to grant third party licenses to Harvard's patents or take title where Harvard has failed timely to disclose or elect title to inventions***."
- The Secretary demanded Harvard to provide a list of all patents it received stemming from federally funded research grants and sufficient information to prove its compliance with Bayh-Dole (including dates of disclosure and election of title, current application and licensing details)

Federal Grant Programs – Bayh-Dole Compliance

- Requirements for:
  - ➢ timely disclosure and election
  - ➢ preference for U.S. industry, and
  - ➢ taking effective steps to achieve practical application

- Risk of forfeiture of patent rights if contractor fails to timely disclose to the federal agency providing funding, or elect title, in connection with applicable patent applications

- Risk of march-in rights, requiring the contractor/licensee to grant a license to a "responsible applicant," if there is failure to take effective steps to achieve practical application, to alleviate health or safety needs, or failure to comply with the preference for U.S. industry

Philanthropic Grants

- Disease-specific foundations
  - Michael J. Fox – Parkinson's Disease
  - Cystic Fibrosis Foundation
  - Leukemia & Lymphoma Society (now Blood Cancer United)

- Broad biomedical foundations
  - Gates Foundation
  - Wellcome Trust
  - Chan Zuckerberg Initiative

Strategic Collaborations

- Typically takes the form of a Collaboration and License Agreement
- Either funded or joint research pursuant to a Development Plan and Development Budget, under the supervision of a Joint Steering Committee and perhaps other committees
- Either a commercialization phase subject to a Joint Commercialization Committee, or often an option or outlicense in favor of the strategic partner
- Either milestones and royalties or a profit share arrangement

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Tax incentives and credits

- R&D Tax credits
- Investment tax credits
- Grant programs
- Direct funding for startups
- Income and property tax breaks

Questions or Comments?

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Meet The Faculty

Steven Ferguson - fergusos@od6100m1.od.nih.gov

Steven M. Ferguson currently serves as the Deputy Director, Licensing and Entrepreneurship, National Institutes of Health. Prior to joining NIH Office of Technology Transfer in 1990, Mr. Ferguson served in marketing and management positions in biomedical firms subsequent to being a scientist at the National Cancer Institute. His healthcare experience has also included work as Director of Marketing and Public Relations for a rural 70-bed hospital. Registered to practice before the USPTO and a Certified Licensing Professional (CLP), Mr. Ferguson also holds Master's Degrees in Business Administration (George Washington University) and Chemistry (University of Cincinnati) as well as Bachelor's Degree in Chemistry (Case Western Reserve University). Mr. Ferguson has been an economic reviewer for Maryland Industrial Partnerships (MIPS) as well as the Advanced Technology Program (ATP) grant programs and is an instructor for both the USDA Graduate School and the NIH FAES Graduate School where he is also the department chair for the new Certificate in Technology Transfer Program. Mr. Ferguson was also the Susan T. and Charles E. Harris Visiting Lecturer at the Watson School of Biological Sciences at the Cold Spring Harbor Laboratory and has published articles on licensing and technology transfer issues.

Deborah Hemingway - deborah@ecphoracapital.com

Dr. Deborah Hemingway is the Founder and Managing Partner of Ecphora Capital, a medtech venture capital firm in Baltimore, Maryland that has deployed $15M over 11 startups in the past two years. Ecphora Capital leverages first-look access at world-class medical research and manufacturing institutions and is the first and only entity to achieve the top level of a state tax credit program that refunds 75% of their investment.

Additionally, Dr. Hemingway has profound involvement in the entrepreneurial landscape, having founded, invested in, and held board positions for 53 startup companies over twenty years. She has meticulously sharpened her acumen in medical device commercialization, strategic growth, and investing. She is on the board of directors for Mi-Helper and Novel Microdevices. Dr. Hemingway holds a Ph.D. in biophysics from the University of Maryland, College Park.

Zack Mueller - zmueller@foleyhoag.com

Zack Mueller provides practical, efficient legal solutions that advance his client's business goals. He serves large and small business at every stage of the corporate life cycle, assisting companies with early-stage formation, venture financings, commercial contracting, acquisitions and exit events. Zack also assists venture capital investors in financings of all types and sizes.

Zack works with investors and companies across various innovative industries, however he has significant experience in the life sciences, technology and renewable energy sectors.

Jay Reilly - jreilly@foleyhoag.com

Jay is a partner at Foley Hoag, representing biotech, medical device, diagnostic and software companies, as well as universities and nonprofits, in strategic transactions in the life sciences industry, particularly complex collaborative arrangements and technology acquisitions and dispositions. Jay has extensive experience negotiating and closing joint ventures, licensing arrangements, mergers and acquisitions, and venture capital financings. He also handles day-to-day agreements such as manufacturing, clinical trial, consulting and sponsored research agreements.

Elizabeth Smith - Elizabeth_Smith@fzata.com

Elizabeth Anne Smith, PhD MBA, Fzata Chief Business Officer.

Dr. Smith's career is centered on driving therapeutic innovations to patients. Over the past 25 years she has led effective teamwork among scientists, entrepreneurs, and legal teams, increasing biotech enterprise value. With her assistance, dozens of biopharma companies have collectively raised over $50MM in non-dilutive funding and closed licensing as well as partnership deals.

From 2013-2021 Dr. Smith was CEO at SoMax Consulting. She supported biotech startup CEOs across the Maryland life science incubator system and university spin-outs. Prior to SoMax, Dr. Smith was Associate Director of Technology Search and Development at Celsion, an oncology therapeutics company.

Dr. Smith earned a PhD in Biochemistry and Molecular Biology from the University of Chicago (1999) and an MBA from University of Chicago Booth School of Business (2006).

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