

# Business Concepts for Life Scientists

## Course Syllabus—

### Overall Course Goals and Mission Statement

Are you about to start your own lab and need tips on how to do it? Or, are you already running a lab, and want to learn how to run it more efficiently? Or, instead, are you planning to leave academia altogether for a job in industry and don't know what to expect? Then the Business Concepts for Life Scientists course can help you plan and strategize.

Developed by the UCSF Office of Career and Professional Development, the goal of this course is to help prepare scientists who want to start their own labs or go into industry by providing: (1) basic knowledge about business strategy, development, and finance (2) best practices for engaging in collaborations strategically, and (3) tools to develop a scientific strategy and monitor progress on strategic plans.

Using a combination of videos, podcasts, and learning exercises, this course will equip PhD-level scientists with an understanding of foundational business concepts. **The coursework is unique because it is designed to prepare scientists for career transitions into both academic and non-academic settings.**

By the end of the course, we hope you will be able to:

- Explain key terms used in the business and financial management of scientific enterprises.
- Apply foundational concepts to your own research planning.
- Develop increased confidence in using business terminology during interviews or networking events.
- Identify knowledge areas within business for further study.

### Course Format

There are no prerequisites to take this course. The course is composed of videos, instructional text, podcasts, discussion questions, and open response assessments. The majority of the instructional materials are contained within the videos, podcasts, and additional resources.

There are two assessment tracks in the course, an **"Analyze a Company"** track and a **"My Strategic Plan"** track. In the "Analyze a Company" track you will choose an existing company to investigate and use as a case study to apply the business concepts you are learning in the course. In the "My Strategic Plan" track you will apply the business concepts in the course to yourself and your own research plans. Each track has a final compiled document that you can find under the "Review" tab on the left-hand navigation. There you can print or save the document for your own records.



To pass this course and get a certificate of completion, you only need to answer enough questions to complete one of the assessment tracks. However, to get the full benefit of the course, we strongly encourage you to complete both tracks.

You will spend approximately 2-4 hours total per week on the course (~1 hr per week on watching videos and reading text; ~2-3 hrs per week on assessments).

## Course Schedule

### Module 1: Introduction to Strategy

The lessons in this module will provide an overview of how scientific enterprises use strategy to achieve their overarching goals, and examples to illustrate the concepts.

#### Lesson 1: Value Proposition

In this lesson, Dr. Dauber introduces the concepts of strategy, value proposition, and how defining a value proposition can guide the strategy for both business and academic enterprises. At the end of lesson 1, you will be able to:

- Define strategy and how scientific enterprises use strategy.
- Identify the value proposition of a scientific enterprise.
- Determine key stakeholders for a scientific enterprise.
- Discuss how organizational context impacts budget and resource allocation.

#### Lesson 2: Organizational Capabilities

In this lesson, Dr. Waugh Ruggles introduces you to the development cycle for scientific enterprises, how enterprises can be structured, and the resources used to achieve their objectives. At the end of lesson 2, you will be able to:

- Identify where an enterprise is in the development cycle.
- Define the structure of a scientific enterprise.
- List the resources available to an enterprise to help them achieve their objectives.

#### Lesson 3: Parallels to Academia

Dr. Anatol Kreitzer speaks about how he defines the value proposition for his lab and how he thinks about organizing the lab structure and allocating resources so he is successful. At the end of lesson 3, you will be able to:

- Devise a strategic plan for your research.

- Explain why your work is important, what is unique about your approach or technology, who has a stake in the outcomes of your work, and what each stakeholder values.
- Define the structure of your lab and list the resources available to you.

## Module 2: Business Development

The lessons in this module are designed to provide an overview of the business development process. Topics include how to grow or expand a business by identifying gaps and ways to fill them.

### Lesson 4: Identifying the Gap

In this lesson, we introduce you to the business development process, how a business identifies gaps, and how a business determines if the gaps are in scope for their company. By the end of the lesson 4, you will be able to:

- Define business development.
- Identify steps in the business development process.
- Understand how business development contributes to a business' vision and goals.

### Lesson 5: Filling the Gap & Executing the Deal

In this lesson, we introduce you to deal types and structures to address gaps or opportunities and types of agreements that help achieve goals and align with internal company values. By the end of the lesson 5, you will be able to:

- Describe different deal types (also called vehicles).
- Describe how to use vehicles to strategically achieve goals.
- Explain how to work with stakeholders to structure a deal.
- Identify how to maximize the success of a deal.

### Lesson 6: Parallels to Academia

Dr. Kreitzer speaks about how labs use business development. He discusses how labs identify gaps in a field and use deal types to fill those gaps. He also reveals his approach to partnering with other researchers in order to achieve research goals. At the end of lesson 3, you will be able to:

- Describe gaps in your research that you could fill to make progress in your projects.
- Identify vehicles or deals to fill those gaps.
- List potential pitfalls.
- Describe your ideal academic collaboration.

## Module 3: Strategic Collaborations

The lessons in this module are designed to provide an overview of how scientific enterprises engage in collaborations and use examples to illustrate the concepts.

### Lesson 7: Academic and Biopharma Collaborations

In this lesson, learn about the nuts and bolts of what each side seeks to achieve and the process for partnering successfully. By the end of lesson 7, you will be able to:

- Define what industry and academia seek to achieve when partnering with each entity.
- Describe common industry-academic partnering models.
- Describe common agreements executed by the Office of Technology Management (OTM) or a tech transfer office at a university.
- Describe how a biopharma company's "partnering process" works.
- List key best practices for industry-academic collaborations.

### Lesson 8: On Being Collaborative and Influential

This lesson focuses on the soft skills needed to collaborate successfully. By the end of lesson 8, you will be able to:

- Identify effective business communication etiquette.
- Define structures for working together.
- Explain ways you can be influential effectively.
- Describe the purpose of feedback in a business context.

## Module 4: Strategy Toolkits

The lessons in this module are designed to provide an overview of the tools used to develop and assess strategy.

### Lesson 9: Environmental Assessment

This lesson introduces you to frameworks to evaluate an operating environment of a scientific enterprise. By the end of lesson 9, you will be able to:

- Describe commonly used tools for environmental assessments.
- Explain the benefits of doing the analyses.
- Identify which tool applies best in a given setting.
- Use one or more tools to describe the operating environment of a scientific enterprise.

## Lesson 10: Developing Strategy

This lesson introduces you to tools that help set, generate, and prioritize an enterprise's goals. By the end of lesson 10, you will be able to:

- Describe the key elements of an enterprise's strategy.
- Identify common tools used to facilitate strategy development.
- Draft SMART objectives.
- Explain the value of monitoring progress towards goals.

## Module 5: Finance

The lessons this week are designed to provide an overview of how enterprises allocate, evaluate, and prioritize their finances. These principles involved in financial planning and decision making will be reinforced using practical examples from academic and industry settings.

### Lesson 11: Financial Statements and Forecasting

This lesson introduces you to an overview of financial statements and how enterprises allocate resources and forecast their finances. By the end of this lesson, you will be able to:

- Identify the three different financial statements and how companies use them.
- Calculate burn rate.
- Define forecasting and how forecasting contributes to strategy.

### Lesson 12: Basic Financial Principles

This lesson introduces you to an overview of how enterprises evaluate, prioritize, and compare projects financially. By the end of this lesson, you will be able to:

- Define cost of capital and the factors that go into determining cost of capital.
- Explain opportunity cost.
- Define net present value.
- Describe factors that contribute to the financial assessment of a project.

### Lesson 13: Parallels to Academia

In this lesson, Dr. Aimee Kao speaks about how she manages and plans the finances for her lab. By the end of this lesson, you will be able to:

- Devise a financial plan for your research.
- Reflect on the resources you will seek to stay on top of your financial plan.



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