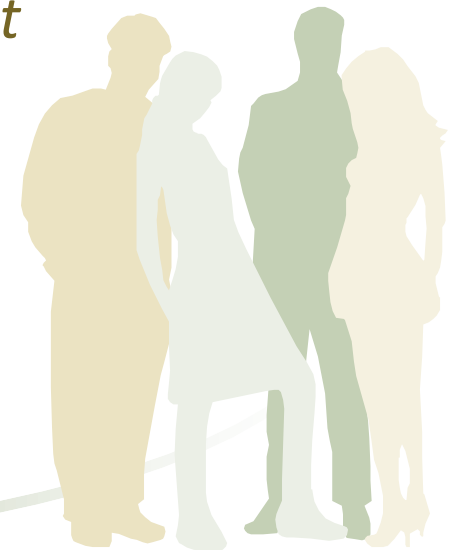




Preparing for the Business Side of Biotech

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Agenda

1. Background
2. Company organization
3. Getting a product to market
4. Business-side job examples
5. Skill development activities:
 - 1) Elevator pitch
 - 2) Speaking the right language
6. Preparing for the future



My Background

- B.A., Psychology, University of Pennsylvania
- Ph.D., Molecular, Cellular & Developmental Biology, Yale
- Over 8 years in biotech:
 - Business Development
 - Corporate Communications
 - Shareholder Relations
 - Marketing & Sales
- Two companies:
 - Protein Sciences Corporation: next generation vaccines
 - Protarga: improved pharmaceuticals (oncology, CNS)



Protein Sciences Corporation

Proprietary Vaccines

- Develop & Manufacture
- U.S. Marketing & Sales
- International Licensing

Flublok[®]
Influenza vaccine

Zika, Rabies, Pandemic Flu

GeneXpress[®]

- Collaborative Agreements
- Technology Licensing

Pfizer
Merck
uniQure
Boehringer Ingelheim

Research Antigens

- Production & Sales
- \$1-2M revenue

Influenza
HIV
Custom Order

BEVS Technology Platform



Company Organization



Major Functional Units

Executive Management

General & Administrative

Finance/Accounting
Legal
Human Resources

Business Development

Communications

Investor Relations

Marketing & Sales

Research & Development

Discovery
Process Development
Formulation
Analytics

Manufacturing

Production
Engineering/Logistics

Quality

Quality Assurance (documents)
Quality Control (lab-based testing)
Validation (equipment & methods)

Clinical

Regulatory



Corporate Structure

Board of Directors

President & CEO

“C-suite”

CFO

Financial

COO

Operations

CSO

Scientific

CAO

Administrative

CIO

Information

Vice Presidents

Directors

Managers



Public vs. Private

Private (Not on the Stock Market)

- How companies start
- Often limited to qualified investors
- No reporting requirements
- More control over communications
- Shareholders have no easy way to liquidate

Public (On the Stock Market)

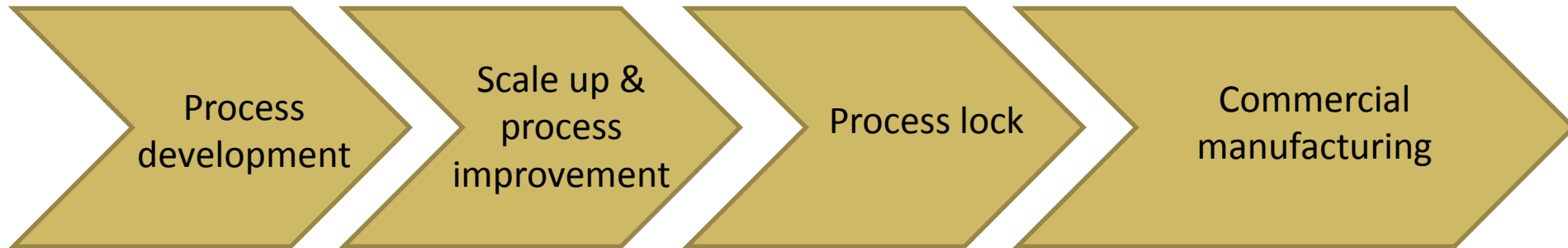
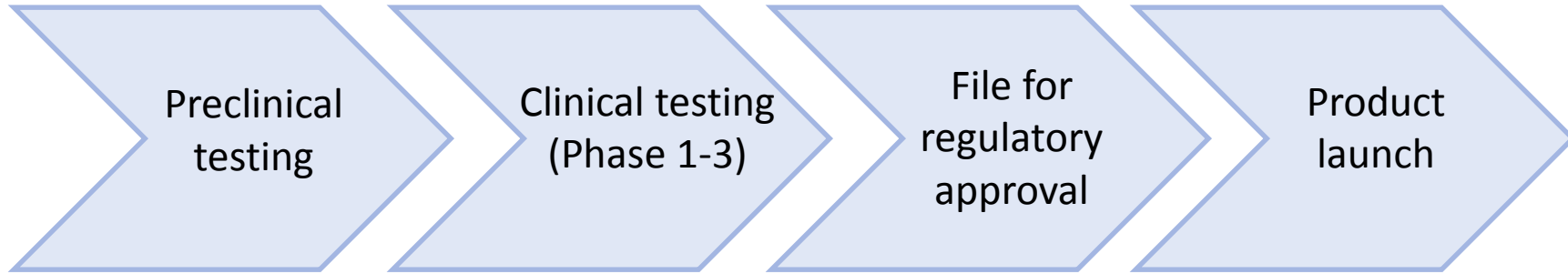
- Anyone can invest – potentially more access to capital
- Buy/sell shares through stock exchange
- Strict reporting requirements
- Susceptible to fluctuations in the market



Getting a product to market

Pathway to approval

10-20 years, \$100M-\$1B



GMP manufacturing

- cGMP – current Good Manufacturing Practice
- Legal requirement enforced by FDA
- Purpose is to ensure quality of products
- Increasing requirements as product advances through clinical testing to commercial production





Business-side job examples

Non-lab based jobs for science PhDs in biotech

Medical/Scientific Communications

- Objective: communicate the underlying science of the business
- Multiple audiences:
 - Doctors/healthcare professionals
 - Key opinion leaders
 - Scientists
 - Investors
 - Media/general public
- Sample responsibilities:
 - Write scientific publications/publication planning
 - Slide decks
 - Oral presentations





Protein Sciences
CORPORATION

Non-lab based jobs for science PhDs in biotech

Business Development

- Objective: identify and pursue opportunities for business growth
- License in or license out
- Customer relationship management
- Pathway to executive management
- Sample responsibilities:
 - Evaluate new technologies or product opportunities
 - Identify and pursue licensing opportunities
 - Contract negotiations
 - Attend/present at medical/scientific meetings



Non-lab based jobs for science PhDs in biotech

Technical Sales

- Objective: support sales of complex scientific instruments
- Technical expert
- Sell to labs in biotech, pharma, academia
- Sample responsibilities:
 - Give technical presentations and demos (e.g., lunch and learns)
 - Attend tradeshows and scientific meetings
 - Provide technical support for customers





Skill Development Activities

Activity #1

- Come up with 2-4 sentences “selling” yourself and your research
 - Why is what you’re doing important?
 - What problem does it solve?
 - What do you want people to know?
- Keep the language simple and steer clear of scientific jargon



An Elevator Pitch is a short, 30-60 second well crafted pitch telling someone who you are with the intent of getting them interested in you and what you do.



Example Elevator Pitch

“My name is Rachael Felberbaum and I am Senior Director of Business Development for Protein Sciences. We are a vaccine manufacturer dedicated to making modern vaccines that work better, are safer and can be made much faster than traditional vaccines. We use our platform technology that allows us to make just the active ingredient needed for protection rather than having to grow a live virus. Our product Flublok is a pure, protein-based flu vaccine that has been shown to protect over 40% better than traditional flu vaccines.”

Activity #2

- Many different audiences:
 1. Scientists
 2. General/non-scientific
 3. Investors
 4. Healthcare professionals
- Very important to communicate a message your audience cares about

Speaking the “Right” Language



MUST SPEAK RIGHT LANGUAGE, NOT JUST LOUDER



Speaking the “Right” Language

Example: Flublok influenza vaccine

1. Scientists: what Flublok is and how it is made

Flublok is the world’s first recombinant influenza vaccine. It is comprised of highly purified recombinant hemagglutinin protein made using the baculovirus expression vector system and based on the genetic code of the hemagglutinin protein found in circulating flu strains. Therefore Flublok is the only flu vaccine that can perfectly match circulating flu strains and avoid the mutations that often arise as a consequence of egg-based manufacturing.

2. General/non-scientific: consumer-friendly product features

Flublok is the world’s first pure, protein-based flu vaccine. It is the only flu vaccine made without growing a live flu virus and is free of many of the ingredients people find objectionable in vaccines, including mercury, preservatives, antibiotics, egg protein and harsh chemicals. Flublok is the only flu vaccine that is an exact match to circulating flu strains and has been shown to protect people against the flu better than traditional flu vaccines.



Speaking the “Right” Language

Example: Flublok influenza vaccine

3. Investors: investment value of the technology platform

The technology used to make Flublok is the pandemic solution. It is the only technology that can produce a vaccine fast enough in the face of a pandemic and doesn't require growing a dangerous pathogen. It is also the only technology suitable for making a vaccine against avian influenza since the process does not depend on the egg supply, which would be compromised in an avian influenza outbreak. The technology is plug and play and can be used to make vaccines for virtually any infectious disease.

4. Healthcare professionals: clinical benefit

In a clinical study of 9,000 adults 50 years and older, people who received Flublok were over 40% less likely to get cell culture confirmed influenza than people that received a traditional flu vaccine. The better efficacy of Flublok could be due to several of its features: (1) it is the only flu vaccine that is an exact match to circulating flu strains; (2) Flublok contains 3x more active ingredient than traditional flu vaccines; and (3) evidence suggests Flublok may produce more broadly cross-protective antibodies against different strains of flu.



Activity #2

Speaking the “Right” Language

Explain your research to each of these audiences:

1. Scientists
2. General/non-scientific
3. Investors
4. Healthcare professionals



Preparing for the future

- Work on your elevator pitch
- Practice communicating your research in various forms (written, verbal) to various audiences
- Network
- Read biotech news
 - Fierce Biotech
 - Genetic Engineering and Biotechnology News
 - BioWorld Today