Technology Transfer Basics for Academic Medical Centers

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What is Technology Transfer??

- People talking to each other
- Publication in Journals
- Seminars
- Sponsored Research/Affiliates Programs
- Consulting
- Licensing

Basic Purposes of an Academic Technology Transfer Office

- Public Benefit
- Work with faculty and students to transfer their ideas to industry
- Work with companies who are interested in taking the ideas of faculty and students and developing products from them
- Fostering good industry relationships

Kinds of Technology

- tools
- research reagents
- assays
- screening technology
- libraries
- mice
- receptors
- drugs
- instruments
- arrays
- service models

Types of Agreements

- Material Transfer Agreements
- Collaborations
- Clinical Trial Agreements
- Research Agreements
- License Agreements
  - Biological Material
  - Patent and Biological Material
  - Patent Only

Licensing Generalities

- Exclusive vs. nonexclusive
- Finding licensees, licensors
- Pricing

Technology Transfer is Complex

- "Technology Champion" is the most important factor
- Patents are only a small part of the picture
- Commercialization of early-stage research is high risk and success depends on receptiveness of industry/entrepreneurs

Factors that Affect Licensing

- Environment
- Quality of inventions
- Critical mass of inventions
- “planting seeds” vs. nurturing seedlings
- Culture
  - Administration
  - Inventors

Observations

- Age of the office is important
  - 20-25 year proposition
- Metrics are not always meaningful!
  - They just point the way
- Each deal is different
  - Flexible
  - Reasonable
  - Precedence
- Free agency model not a good idea!

Metrics

- Number of disclosures
  - 1 for $2M in sponsored research
  - Still need critical mass
- Number of Patents filed
  - One can file on anything!
- Number of licenses
  - Depends on quality of invention and receptivity of industry/VC
- Royalties reflect long ago activity, not “today’s”

Best Practices for Tech Transfer

- Research and Education first
- Do what's best for the technology
  - Don't chase the $$$
  - The dollars will come if you do a good job
- Plant as many seeds as possible (need those base hits!)
  - Some will bear fruit
- We cannot predict winners

Nine Points

- Universities should reserve the right to practice licensed inventions, and to allow other non-profit and governmental organizations to do so
- Exclusive licenses should be structured in a manner that encourages technology development and use
- Strive to minimize the licensing of "future improvements"
- University should anticipate and help to manage technology transfer related conflicts of interest
- Ensure broad access to research tools
- Enforcement should be carefully considered
- Be mindful of export regulations
- Be mindful of the implications of working with patent aggregators
- Consider including provisions that address unmet needs

Challenges to Tech Transfer

1. America Invents Act –
   - Patents 20 years from filing vs. 17 years from issuance (shorter time)
   - Essentially no publication grace period (researchers publish so patenting decisions have to be made too early)
   - Narrow patents granted – being able to patent "what one has shown" is often too narrow to have much value
   - Extensive post-grant proceedings give rise to uncertainty of patent validity for many years after issuance
   - Fee shifting provision and expense of litigation discourages patent enforcement

More Challenges

2. Courts
   - Have generally been seen to be anti-patent

3. Bayh-Dole
   - Steady undercurrent criticizing the Bayh-Dole patent law (e.g., universities patent too much, universities are just in it for the money, universities hinder innovation, universities should not retain title to inventions, universities are patent trolls, etc.)
   - Request for March-In to control drug prices – if this is granted, universities will not be able to license therapeutic inventions to companies. Universities are not the problem and are not the solution.

Internal Challenges

- Conflict of interest
- Start-up vs. Big Pharma
- Exclusivity
- Patenting is expensive
- Equity vs. royalties

Current Issues

- Foundations
- Health data (HIPAA, Privacy, translation)
- Licensing clinical data for money or not
- New types of proposed arrangements for translation
  - Biohub
  - PICI
  - Corporate
  - CRO's
  - Venture capitalists

Thank you for listening!

Questions?