TECHNOLOGY
TRANSFER

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REALITIES OF TECHNOLOGY TRANSFER

- Primarily a human process – education, training, institutions, efforts at acquisition (David Teece 1976).
- Secondarily a legal and intellectual property issue.
PUBLIC SECTOR-PUBLIC SECTOR TRANSFER

- **Examples**
  - CGIAR – National agricultural research systems
  - NIH – National health research systems

- **Issues**
  - Human and training aspects
  - Intellectual property – mainly as a management and decision-making issue
TECHNOLOGY TRANSFER

- Developed world public sector
- Developed world private sector
- Developing world Public sector
- Developing world Private sector
THE BAYH-DOLE PROCESS

- Federal government grants to universities
- Federal and university IP policies and technology licensing offices
- Licenses to private sector
- Commercialization of product of research
- Royalties
- Parallel to other processes, e.g. CRADAs
BAYH-DOLE ISSUES

- **Pros:**
  - Commercialization of products
  - Encouragement of public/private contacts
  - Income for public-sector entity (3.43% of research base in 2002)

- **Cons**
  - Possible redirection of research
  - Possible conflicts of interest
  - Possible loss of access to the scientific commons (research tool problem) (Eisenberg & Heller 1998; UK Commission 2002; Walsh, Arora & Cohen 2003)
APPROPRIATE STANDARDS FOR IP FOR PUBLIC SECTOR

- Need IP where a product would not come to market without significant further private investment (e.g. a pharmaceutical)
- Should not use IP where the technology can be readily used with little further investment (e.g. a laboratory technique)
- Hard case of basic technology that could be basis of a venture capital industry (e.g. a key receptor)
- Need for going ahead with IP in case of uncertainty
HELPING LDC’S IN THE BAYH-DOLE PROCESS

- For developed-nation licensors
  - Direct licenses where appropriate
  - Issue of statutory preference (§ 204)
  - Possibility of humanitarian use exception
  - Importance of education and publication

- For developing-nation research entities
  - When is it wise to adopt Bayh-Dole?
  - Importance of education and publication
TECHNOLOGY TRANSFER

Developed world
Public sector

Developing world
Public sector

Developed world
Private sector

Developing world
Private sector
THE PRIVATE SECTOR PROCESS

- License from corporation to developing country entity. E.g.:
  - Merck-China - 1989
  - GSK-Biomanguinhos - 1998 (?) and 2003
Technology used for import substitution

- Interests of global firm and licensee opposed on price (often hidden in accounting)
- Licensee-nation concern about restrictions on export, tied products and like
- Basis of many laws during 1970s

Technology used for export

- Interests much more aligned, because both want best technology
- Dominant pattern with globalization
- The 1970’s laws disappeared (pretty much) in the 1990s

In medicine, and in large markets, there is still significant import substitution
NEW PARADIGM

Developed world public sector

Developed world private sector

THE PPP

Developing world Public sector

Developing world Private sector
ISSUES FOR THE PPP WORLD

- Acquiring adequate rights to protect “freedom to operate”
- Providing an appropriate package of rights to private sector collaborators
- Forms of collaboration with developing-world researchers and manufacturers
- Production, pricing, and financing arrangements for actual products