

Research Council

March 3, 2014

- Please open all wrapped or sealed items in your lunch before the presentations begin.
- Please silence your cell phones & pagers. Thank you!

Clafin Distinguished Scholar Awards 2014

Two-Year Awards

Deadline: Tuesday, March 4 2014 – 9:00 PM

Open to MGH Junior Faculty Women pursuing either basic or clinical research that are within 10 years of first full-time faculty appointment

Applications now being accepted online:

<http://ecor.mgh.harvard.edu/GrantManager/Default.aspx?grantId=51>

MGH Physician and/or Scientist Development Award 2014

Deadline: Friday, March 21 2014 – 4:00 PM

The MGH Physician/Scientist Development Award is designed for MD and/or PhD investigators at MGH who are considered underrepresented in academic medicine (URM). This Award is intended to provide transitional funding.

Applications now being accepted online:

<http://ecor.mgh.harvard.edu/GrantManager/Default.aspx?grantId=46>

UPCOMING PROGRAMS

- **CALL FOR ABSTRACTS: Research Fellows Poster Celebration**
Abstract deadline: Friday, March 21, 2014
Poster Celebration date: Wednesday, May 28, 2014
- **RCR: Research Integrity – It’s a Matter of Trust**
Tuesday, March 25, 2014, noon – 1:00 pm
Speakers: Gretchen Brodnicki, JD and Dennis Brown, PhD
- **“Social” Science: Using Online Media in Your Research and Your Career**
Friday, March 28, 2014, noon – 1:00 pm
Speaker: Melissa Turman, PhD
- **Managing Parenthood and Your Research Career Panel Discussion**
Friday, April 11, 2014
Co-sponsored with the Office for Women’s Careers

To register for any program, email orcd@partners.org

Apple has released an update to Mac OS X 10.9 Mavericks that addresses a security vulnerability with SSL/TLS.

- Mavericks users are strongly encouraged to download and install update 10.9.2.
- **What do you need to do?**
 - Backup your Mac
 - Connect to wired power (recommended)
 - Plug into a wired Internet connection (if available)
 - Go to **Apple menu > Software Updates**
 - Download all available updates
 - Restart your Mac
- Apple's KnowledgeBase: <http://support.apple.com/kb/HT6114>
- Contact the Help Desk if you have any questions: <http://helpdesk.partners.org> | 617-726-5085

Apple has released an update to iOS 7 that addresses a security vulnerability with SSL/TLS connections.

- Users of iOS on iPhones, iPads and other iOS devices are strongly encouraged to download and install update 7.0.6.
- **What do you need to do?**
 - Backup your device prior to upgrading
 - Connect the device to Wi-Fi to download this update
 - Go to **Settings > General > Software Update**
 - Download all available updates
 - Restart your iOS device
- Contact the Help Desk if you have any questions.
<http://helpdesk.partners.org> | 617-726-5085

How safe is your data?

The **Desktop Backup Service** provides back up for work related data on Macintosh, Windows or Linux desktop or laptop computers.

This system does not back up Partners “Standard” PC computers.

How it works:

- The secure, central repository is inside the Partners datacenters.
- The computer must be connected to the Partners Network either via a wired, wireless (PHSWIFI3) or a VPN connection.
- Backups will continue to be made, stored to the local system disk, and synched to the repository once connected.

Full description & FAQ: <http://rc.partners.org/backup/dtbackup/>

Cost: \$5 per computer per month

To request: <https://rcservices.partners.org> (Internal Link)

Questions: rcc@partners.org



FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL
AND MASSACHUSETTS GENERAL HOSPITAL

Innovation

Chris Coburn, VP, Innovation

Irene Abrams, Executive Director

Jonathan Behr, PhD, Market Sector Leader

Phil Licari, Managing Director Operations

MGH Research Council

March 3, 2014

Today's Environment

- Transformation – new priorities, less money
- Sequester new normal
- Industry – broad restructuring
- Investment modes shifting significantly
- All sectors seeking increased collaboration

Industry and Investment

- Industry models increasingly challenged
 - late stage failures; weak pipelines
 - complex diseases and novel basic biology
 - device development math breaking down
 - narrow diagnostic reimbursement margins
 - HIT accelerating and shaping HC innovation
 - HC VC greatly reduced; rise of Corporate VC
- Record 2013 biotech IPO levels: early stage biology very attractive
- New innovation models proliferating

Breakthrough Science Essential

AMC Status

- Massive consolidation – mostly cost driven
- Population management requiring new investments
- Federal R&D support declining
- Indirects under new pressure
- Less internal resources to support R&D
- Disease foundations demand commercialization cut

Challenges to US Medical Innovation System Reinforces Value of Top AMCs

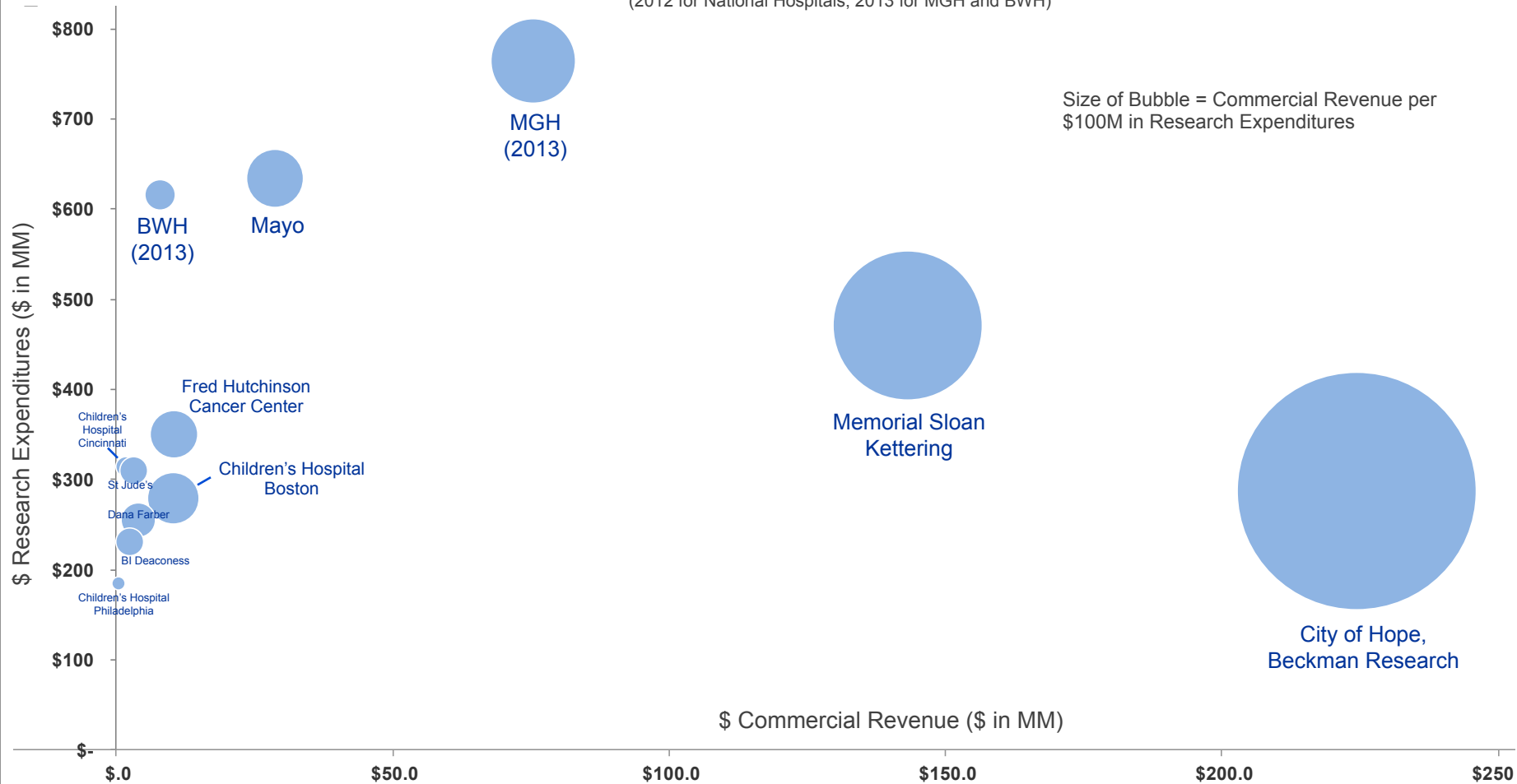
Operating Thesis

- Partners has a special opportunity because it is the largest AMC research enterprise. If it:
 - better organizes those enormous capabilities,
 - more effectively engages industry,
 - better leverages its Boston location and
 - increases its “innovation brand”
- It can derive significantly greater financial and patient benefits from the innovative output of its clinical, research and administrative staff

R&D Level vs. Commercialization

Commercial Revenue per Research Expense

(2012 for National Hospitals, 2013 for MGH and BWH)



\$ in Millions	MGH (2013)	Mayo Foundation (2013)	BWH (2013)	Memorial Sloan Kett	Hutchinson Cancer Center	Children's Hospital, Cincinnati	St Jude Children's	City of Hope, Beckman Research	Children's Hospital, Boston	Dana Farber	BI Deaconess	Children's Hospital, Philadelphia
Source: AUTM 2012 Survey												
Research Expenditures	\$764.2	\$634.0	\$615.6	\$471.1	\$350.3	\$314.0	\$309.8	\$287.5	\$279.1	\$255.3	\$231.3	\$185.4
Commercial Revenue	\$75.5	\$28.8	\$7.9	\$143.2	\$10.4	\$1.7	\$3.3	\$224.4	\$10.3	\$4.1	\$2.5	\$0.5
Commercial Revenue per \$100M in Research Expenses	\$9.9	\$4.5	\$1.3	\$30.4	\$3.0	\$5.0	\$1.1	\$78.1	\$3.7	\$1.6	\$1.1	\$3.3

MGH Activity



MASSACHUSETTS
GENERAL HOSPITAL

	FY13	YTD-FY13	YTD-FY14
Invention Disclosures	383	112	129
U.S. Provisional Filings	218	65	62
U.S. Patent Filings	218	65	62
Issued U.S. Patents	74	29	30
Licenses	80	39	40
MTAs	908	295	357

YTD = January 31

Vision

- Best at collaboration in Boston and then best in the business
- Position Partners HealthCare to redefine the AMC role in commercial healthcare innovation
- Deliver high impact industry offerings
- Innovation a high performing entity

In the long history of humankind (and animal kind, too) those who learned to collaborate and improvise most effectively have prevailed.

-Charles Darwin

Innovation – a team of 70 that:

- Engages industry to sponsor, develop and commercialize Partners HealthCare research and capabilities
- Grows the innovation base
- Creates discovery to development pathways
 - Enables research through SRA, MTAs, other
 - Shapes, markets, negotiates, implements deals
 - Company creation, financing and governance
 - Consortia creation and management
- Provides IP management, development, compliance
- Ensures financial stewardship

New Brand: Partners HealthCare Innovation

- “Innovation” captures a broader vision of creating new products based on the breakthroughs of thousands of Partners employees
- Efficiently communicates our promise to engage innovators and to improve care through commercial application of their creativity
- Roll-out Underway



INNOVATION

New Organizational Structure

Market Sectors and Operational Expertise

- Teams organized by all key clinical/research categories –
 - eg Imaging, Neurosciences, Cardiovascular, Anesthesia, Orthopedics
- “Market Sectors” led by experienced industry veteran
- All Innovation staff who touch on Sector part of team
- Strategy set at Market Sector level
- All Innovation interaction – in industry and in discipline – coordinated and following uniform strategy and analytics
- New operational focus – expert manager, new systems
- Will increase deal speed, responsiveness, transparency,

Market Sectors

Strategy
setting and
market
analysis

- Capture and analyze industry priorities and trends
- Codify strengths/assets within field across hospitals
- Develop proactive market sector strategies

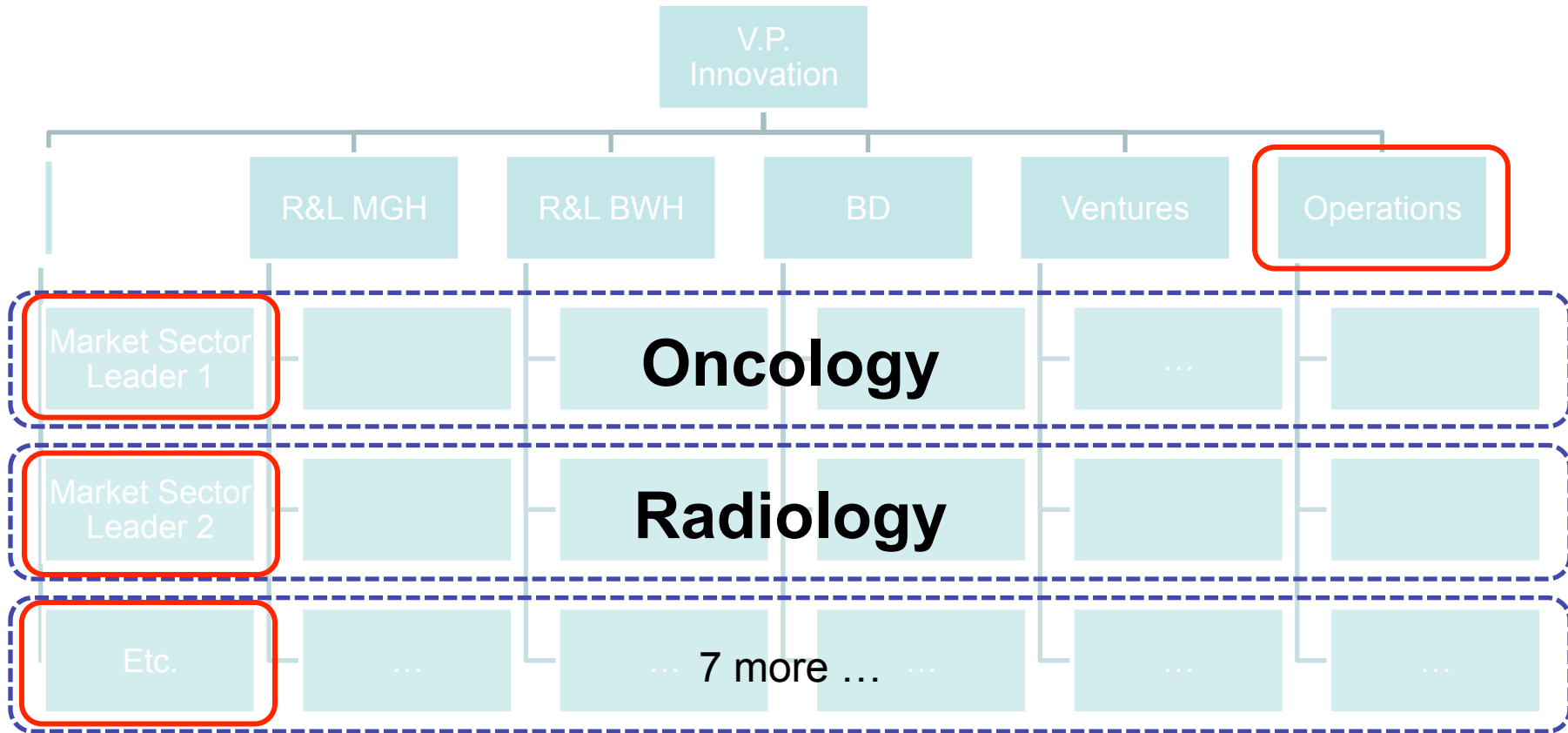
Internal
thought
partnership

- Provide leaders with deep industry experience to serve as thought partners for hospital innovators/chairs

Industry
relationship
building

- Increase visibility for Partners at top levels of industry
- Industry can more directly engage Partners
- Identify and shape industry collaborations

Market Sector Matrix Organization (Simplified)



Market Sector structure provides focus and expertise across existing product lines

 New Positions

Enterprise Research Infrastructure & Services (ERIS)



FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL AND MASSACHUSETTS GENERAL HOSPITAL

Innovation Advisory Board



Duke Collier
Chair of IAB



Joe Cunningham, MD
Santé Ventures



Neil Exter
Third Rock Ventures



Michael Greeley
Flybridge Capital Partners



Adele Gulfo
President,
Pfizer Latin America



Steve Gullans, PhD
Excel Venture Management



Andy Hurd
CEO, MedeAnalytics



Ed Kania
Flagship Ventures



Keith Kerman MD
The Riverside Company



Barbara Lubash
Versant Ventures



Greg Lucier
CEO, Life Technologies



Amir Nashat, PhD
Polaris



Steve Oesterle, MD
SVP Medtronic



Ben Pless
CEO,
Autonomic Technologies



Russ Richmond, MD, CEO,
Advanced
Practice Strategies



Sue Siegel
GE, CEO,
Healthymagination



Carol Vallone
CEO, Educate Online



Steve Weinstein
Novartis Ventures

Commercialization Council

- Jay Austen, MD, MGH
- Barbara Bierer, MD, BWH
- Ken Bloch, MD, MGH
- Rick Blumberg, MD, BWH
- Michael Brenner, MD, BWH
- Merit Cudkowicz, MD, MGH
- Omid Farokhzad, MD, BWH
- Mason Freeman, MD, MGH
- Marcie Glicksman, PhD, BWH
- Ole Isacson, MD, MCL
- Christiana Iyasere, MD, MGH
- Jeffrey Karp, PhD, BWH
- Ramin Khorasani, MD, BWH
- Alexa Boer Kimball, MD MGH
- Adam Landman, MD, BWH
- Richard Lee, MD, BWH
- Orhun Murotoglu, PhD, MGH
- Anders Naar, PhD, MGH
- Harry Orf, PhD, MGH
- Dennis Orgill, MD, BWH
- Mark Poznansky, MD, PhD, MGH
- Brian Seed, PhD, MGH
- Gary Tearney, MD, PhD, MGH
- Ravi Thadhani, MD, MGH
- Chris Thompson, MD, BWH
- Mehmet Toner, PhD, MGH
- Howard Weiner, MD, BWH

Partners Innovation Development Grants

Goals

- Stimulate new inventive concepts and identify commercial strengths
- Engage new innovators
- Promote culture of innovation
- Enhance commercial outcomes

Background

- Maximum of \$1M to fund 20-25 projects, up to \$50K each
- Supports prototyping, pre-clinical, software development, others
- Judged by members of IAB and domain experts

*66 Final Proposals Submitted;
Final Selection to be announced in March*

Boston Biomedical Innovation Center (B-BIC)

- \$31.5M to accelerate CV, lung, sleep commercialization -- therapeutics, devices, and diagnostics
- 3 centers to act as system
- B-BIC, \$12M plus contributions from BWH, MGH, Partners, Harvard, and a pre-competitive consortium of pharma companies
- Innovation led

B-BIC

Find

- Program Leaders
- Domain Experts
- Site Miners
- B-BIC Forums
- Conferences
- Courses



Fund

- Pilot Grants
- Accelerator Program
- Prizes for HLBS Innovation
- Young Investigator Award

Facilitate

- Support Proposals
- Find Collaborators
- Understand & Protect IP
- Create Commercial Options & Plans
- Address Compliance Issues
- Anticipate & Address Regulatory Issues
- Assist in Follow-on Funding

World Medical Innovation Forum™

- **Gather CEOs and top Healthcare decision makers to assess state of medical innovation**
- Spotlight emerging technologies in key clinical area
- Attendees: corporate leaders, investors, entrepreneurs, clinicians and researchers
- Speakers: HC CEOs, PHS clinicians and scientists, government leaders; CEOs of GE, Covidien, Biogen-Idec confirmed
- Panels moderated by top journalists
- 1000-1500 attendees, 2.5 Days
- Sponsors, Exhibitors and Paid Attendance
- April 27-29, 2015, Westin Back Bay

First Clinical Focus: Neuroscience

Innovators Forum

- **Contemporary issues in academic innovation – 5 part series**

November 13th, 2013 – MGH Wyndham Hotel

Protecting Your Invention in the New IP Environment

December 9th, 2013 – BWH Bornstein Amphitheatre

Corporate Venture Funding for Academic Ventures

January 23rd, 2014 – MGH Simches Auditorium

My Commercial Journey – Partners' Innovators Share Their Life Story

February 4th, 2014 – BWH Bornstein Amphitheatre

Corporate Collaboration – Getting it Right From the Start

March 6th, 2014 – MGH Simches Auditorium

Accelerating Innovation in the Electronic Era of HealthCare

*For PHS community, public welcome
5-7pm plus reception*

Definition of Intellectual Property

- Legal term covering commerce of **IDEAS**
- Contrast to real property and tangible property
 - Machine vs. design for machine
 - Drug vs. formula for drug
 - CD vs. musical performance
- Types of Intellectual Property:
 - Copyright
 - Trademark
 - Trade Secret
 - Patent

What is a Patent?

- Patent: is a limited-term monopoly granted by the government allowing patent holder to exclude others from “making, using, selling, or importing” an invention.
- Right to sue
- Lasts 20 years
- Cover ideas, algorithms, designs

What Makes an Invention Patentable?

- **Novelty:** Invention has not been publicly disclosed by anyone (yourself included)
 - *Prior Art:* means all previously disclosed relevant inventions
 - Must be novel over all prior art
- What constitutes an *enabling* public disclosure
 - Abstracts, Posters, Publications
 - Discussions outside your institution (Industry in particular)
- US one year grace period
- ***Non-Disclosure Agreements protect patentability***
- **Non-Obvious**
 - An unexpected result
- **Enabling**
 - enough detail for one skilled in the art to reproduce, in best mode.
 - Full disclosure of invention.
 - Written Description requirement
- **Utility**

Why are there IP Rights?

- Government economic tool which trades protection for inventors for dissemination of information
- Patents are enabling publications of inventions in “best mode.”
- Prior to patents, industry kept advantage via secrecy: guilds. Secrecy discouraged cross-fertilization and innovation.
- US Patent law established by Jefferson, in constitution

Why role does intellectual property play in product development?

- Induce investment in early stage technology
 - Key Question: Without a IP will anyone develop the technology?
- First mover/second mover:
 - Generic pricing vs. patent drug pricing
- Intellectual Property protection induces investment by rewarding the first mover

Ownership of IP

- If you work at an Academic Medical Center or university:
 - The AMC owns your inventions if:
 - Significant use of facilities
 - Use of Hospital Administered funds
 - Salary/Stipend
 - Laboratory support
- Contrast: If you work at a Company
 - The company owns all inventions under “work for hire” laws

The Bayh-Dole Act P.L. 96-517 (1980) 35 U.S.C. §200

- Grants universities/AMCs the right to elect title to patents arising from Federally Funded research
- Rationale: to promote transfer of taxpayer funded research from lab bench to the market place for public benefit
 - Create jobs
 - Create companies and industries
 - New products for public benefit
- Provides incentives to institution and inventors to participate (i.e., keep all income)




What about the Money?

- MGH royalty-sharing policy:
 - 25% to inventor(s)
 - 25% to lab
 - 25% to department
 - 25% to hospital

Simches Satellite Location (2nd Floor)



Getting Started: Your Innovation Contacts

-  Irene Abrams,
Executive Director
-  Jon Behr,
Market Sector Leader
-  Phil Licari,
Managing Operations Director

Thank You



FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL
AND MASSACHUSETTS GENERAL HOSPITAL

Chris Coburn

Vice President,
Partners HealthCare
Innovation

cmcoburn@partners.org

www.partners.org/innovation

617-954-9500



BRIGHAM AND
WOMEN'S HOSPITAL



MASSACHUSETTS
GENERAL HOSPITAL



McLean HOSPITAL
HARVARD MEDICAL SCHOOL AFFILIATE