



## Creating a Culture for Innovation

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**Vanderbilt University**

**Geoffrey D. Rubin, MD, MBA**  
**Duke University**



## Introduce our faculty



**Richard G. Abramson, MD**  
**Vanderbilt University**  
Rick Abramson, MD is Associate Professor and Vice-Chair for Innovation in the Department of Radiology and Radiological Sciences at Vanderbilt University School of Medicine. At Vanderbilt, Dr. Abramson combines active clinical radiology practice with NIH-funded research into quantitative imaging biomarkers and machine learning. In his Vice Chair role, he directs Radx, Vanderbilt Radiology's innovation and entrepreneurship incubator. Dr. Abramson is an alumnus of the Association of University Radiologists-GE Radiology Research Academic Fellowship (GERRAF). He serves on the board of directors for Vanderbilt Imaging Services, LLC, and on the advisory boards for two Nashville-based health care venture capital funds.



**Geoffrey D. Rubin, MD, MBA**  
**Duke University**  
Geoffrey D. Rubin, MD, MBA, FACR, FSCBTMR, FNASCI is the George B. Geller Distinguished Professor for Research in Cardiovascular Diseases and Professor of Radiology at Duke University. His current work focuses on applications of artificial intelligence toward assisted interpretation of volumetric medical imaging, the contributions of perceptual variations to radiologist performance in volumetric image interpretation, and effective leadership and management in radiology and healthcare. In support of the latter focus, he is an avid mentor for radiology leaders and has developed and taught several national leadership training programs for the Radiology Leadership Institute of the American College of Radiology, where he has served as a founding Board Member since 2012. Dr. Rubin is also President and Board Chair of the International Society for Computed Tomography, Board Member of RAD-AID International, and is co-chair of the RSNA-ACR Public Information Website Committee overseeing RadiologyInfo.org.

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# Defining Innovation

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## 10 awesome innovations changing the future of fashion

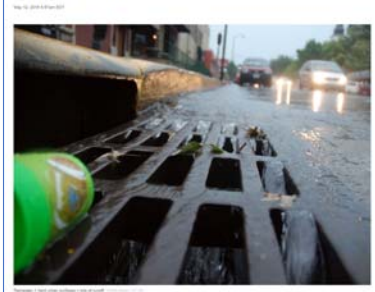
Michelle Bremer  
November 4, 2015



## THE CONVERSATION

Arts • Culture • Economy • Business • Education • Environment • Energy • Ethics • Religion • Health • Medicine • Politics • Society

### Stormwater innovations mean cities don't just flush rainwater down the drain



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### Innovation in Healthcare: Why It's Needed and Where It's Going

Healthcare innovation

Top 10 health care innovations  
More value, better outcomes, for less

6 Innovations That Will Change Healthcare

Health IT Innovation

Top 5 Medical Technology Innovations

Scaling Healthcare Innovations

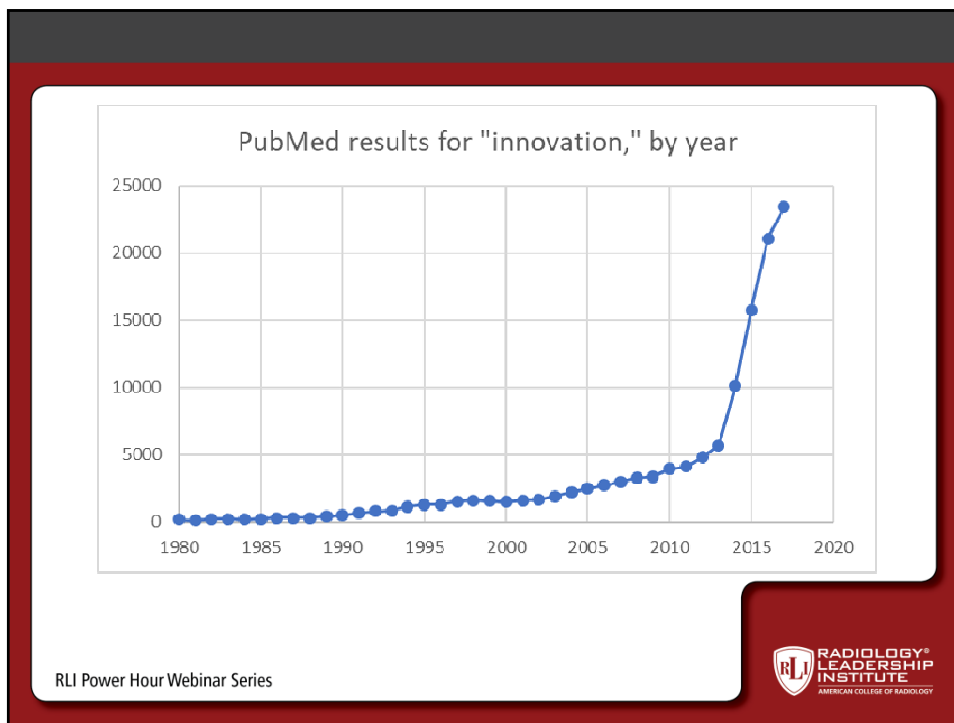
The Collaborative Nature Of Healthcare Innovation

Innovative Medicines Deserve an Innovative Payment System

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RADIOLOGY®  
LEADERSHIP  
INSTITUTE  
AMERICAN COLLEGE OF RADIOLOGY



## Defining innovation

“The development and implementation of creative ideas for advancing and evolving the mission of an organization”

– or –

“The purposeful creation of value-enhancing change”

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## Disruptive vs. incremental innovation

- **Disruptive innovation** – The development and introduction of breakthroughs that fundamentally alter an organization’s business model and its surrounding market
- **Incremental innovation** – The process of making improvements or additions to an organization while maintaining the organization’s core product or service model

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## Why innovate?

- Adapt to changing market conditions
- Adopt new technologies
- Enhance clinical quality and patient experience
- Align with partners

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## Incremental innovation pillars

**Culture**

**Structure**

**Process**

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# Culture

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## A Culture of Adaptation

- Change is ever present
- Commitment to
  - Introspection
  - Find opportunities
  - Question norms
  - Seek improvement
  - Gain Knowledge



*"We only have two demands!  
Why don't people just give us what we want?"*

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## Culture and Innovation

- Positive characteristics
  - Adaptation
  - Introspection
  - Commitment
  - Inclusiveness
  - Embrace weakness and threats as opportunities
  - Accepting risk
- Negative characteristics
  - Overly prideful organizations
  - NIH syndrome
  - Complacency borne from an easy past

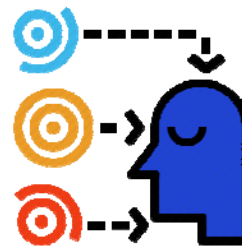
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## Absorptive Capacity is Needed

- The ability and conviction of an organization to seek and exploit outside knowledge
- Key characteristics
  - AC of individuals
  - Communication Systems
  - Diversity of knowledge and experience
  - Active engagement in R&D



Cohen WM, Levinthal DA. *Adm Sci Q* 1990;35(1):128



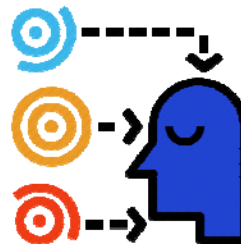
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## Encouraging Absorptive Capacity

- Individual Absorptive Capacity
  - Strategically aligned learning
    - Conferences, readings, observerships
    - Organ system & modality focus
    - Non-traditional competencies
  - Undirected learning
    - Encourage passion for learning
    - Recognize value of learning
    - Should have potential to create value

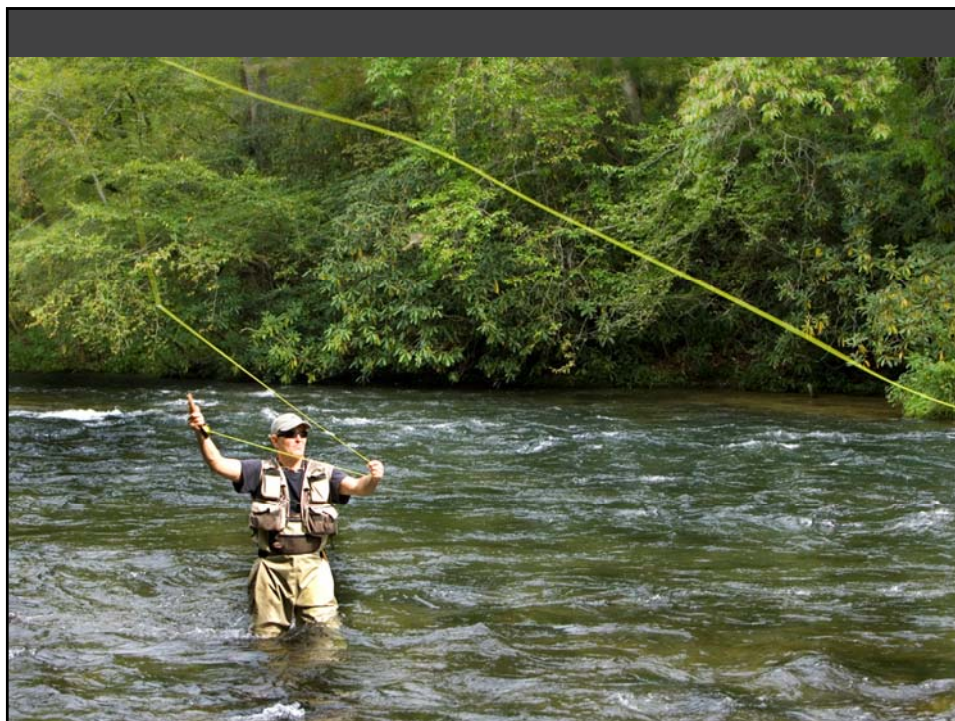


*Cohen WM, Levinthal DA. Adm Sci Q 1990;35(1):128*

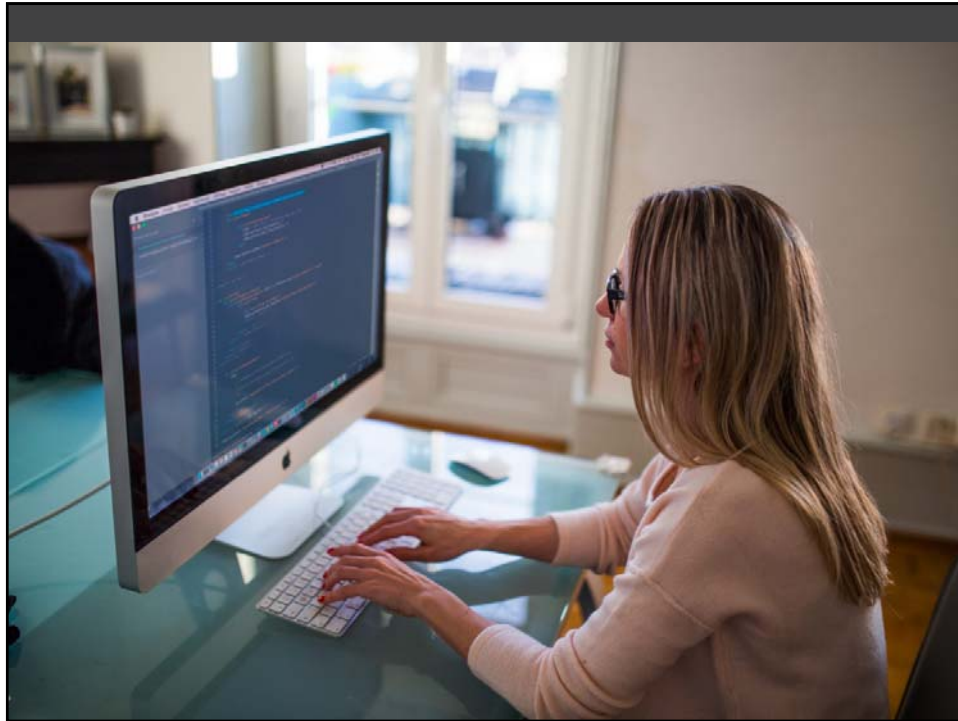


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## Encouraging Absorptive Capacity

- Assimilation, dissemination, and exploitation of outside knowledge
  - Attitude is the entrée, but structural supports are key
- Organizational R&D
  - R&D in service to the organization, not the inverse
  - Systematic investigation of organizational and product performance



*Cohen WM, Levinthal DA. Adm Sci Q 1990;35(1):128*

## Inclusiveness & Openness

- Everyone has something to contribute
  - Departmental, Referrers, Hospital, Patients, etc
- Encourage partnership and parity
  - Suspension of hierarchy
  - Tolerance for dissent
- Belief in mutual opportunity and obligation
- Promotes trust, alignment and commitment for implementation

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## Attitudes Toward Change

- Awareness and understanding of the effect of innovation on individual and group competencies
- Facilitates organizational preparation with emotional intelligence
  - Fear of personal disruption or obsolescence
  - Competency enhancing versus destroying
- Seek to mitigate competency traps



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## Structure

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### Structure: Organizing for innovation

- Proactive establishment of elements to support the innovation process
- Analogous to companies investing in R&D
- Intentional dedication of resources:
  - Space
  - Personnel
  - Funding
  - Time

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## Structure in support of process

### **INNOVATION PROCESS STEPS**

Identification of recent marketplace advancements

Evaluation of processes and technologies for adoption

Assessment of internal capabilities and gaps

### **ENABLING STRUCTURAL ELEMENTS**

Training/recruitment of personnel with key skills

Dedicated funding from organizational budget

Protected time for certain individuals to engage in innovation activities

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## Structural enablers

- Innovation teams
  - Accountability versus overcompartmentalization
  - Benefits of a flexible structure
  - Clear purpose and agreed-upon rules
- Strong practice governance
- Robust communication channels
- Incentives for participation

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## Process

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## Process: Getting it Done!

- Discovering opportunities
- Collecting, testing, and filtering candidates
- Implementation



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## Discovering Opportunities

- Start with strategic planning
- Align to articulated goals
- Proactive not reactive
- Routine environmental scanning
  - Functional, business, culture, market, partnerships ...

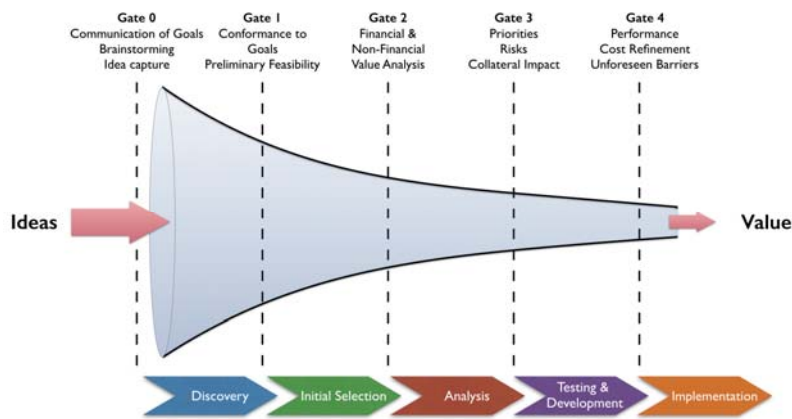


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## The Innovation Funnel: collect, test, filter

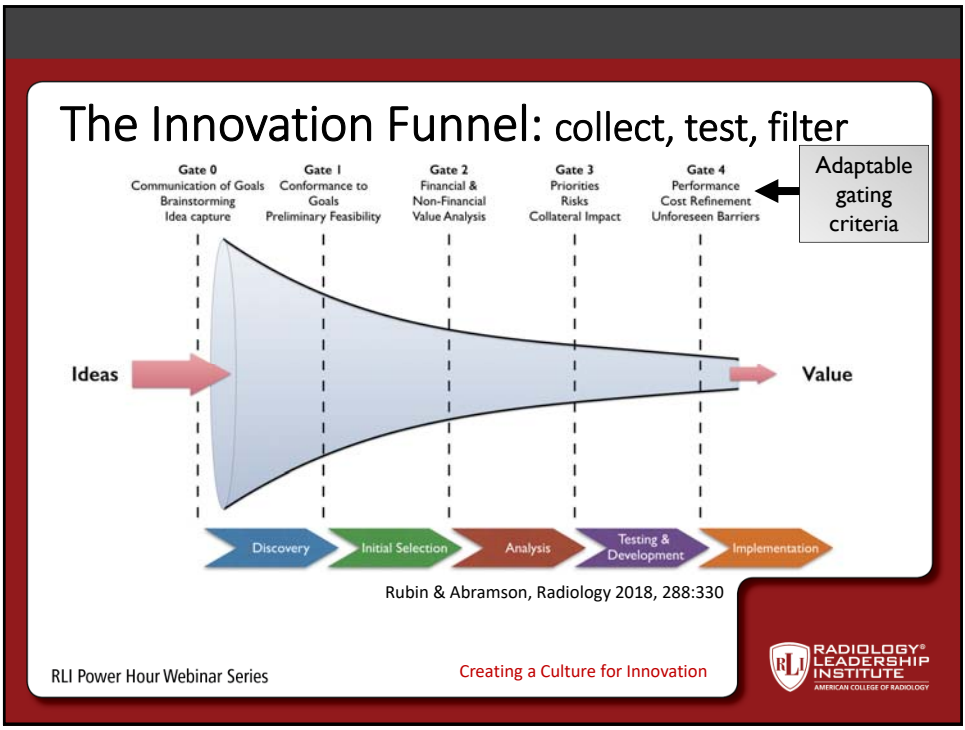
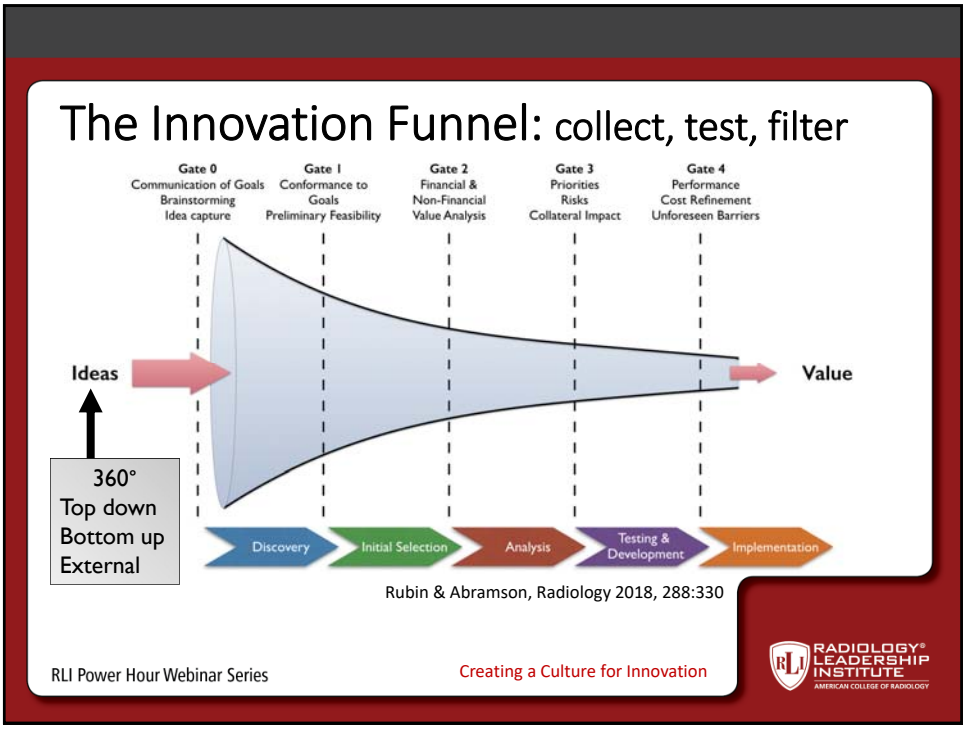


Rubin & Abramson, Radiology 2018, 288:330

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## Implementation

- Projects emerging from the funnel
- Handoff or team with an experienced manager
- Radiologist leader's role
  - Mitigate risks
  - Maximize likelihood for success
- Anticipate disruptions



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## Summary

- Effective innovation is critical to our rapidly evolving professional environment
- Prepare your organization
  - Culture
  - Structure
  - Process



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