

# **THE FUTURE OF RADIOLOGY EDUCATION/TRAINING**

***NOVEMBER 11, 2018***

**THE FUTURE OF MEDICAL IMAGING - TRENDS AND PERSPECTIVES  
IS3R INTERIM MEETING 2018**

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**EMORY**  
UNIVERSITY  
SCHOOL OF  
MEDICINE



**SHOULD WE ASSIGN EACH OF  
OUR RESIDENTS A DIGITAL TWIN?**

## **FUTURE OF EDUCATION = ENVISIONING FUTURE OF OUR FIELD**

I skate to where the puck is going to be, not where it has been.

Wayne Gretzky

## **AREAS OF DISCUSSION**

- Talent pool and development
- Degree of Specialization/Patient-facing
- Qualitative vs Quantitative
- Informatics/AI
- Health policy and economics



# THE IMPORTANCE OF GROWING TALENT

“In a traditional workforce, the worker serves the system; in a knowledge workforce, the system must serve the worker.”

- Peter Drucker



## QUESTION

- Should we be selecting and training for adaptability?

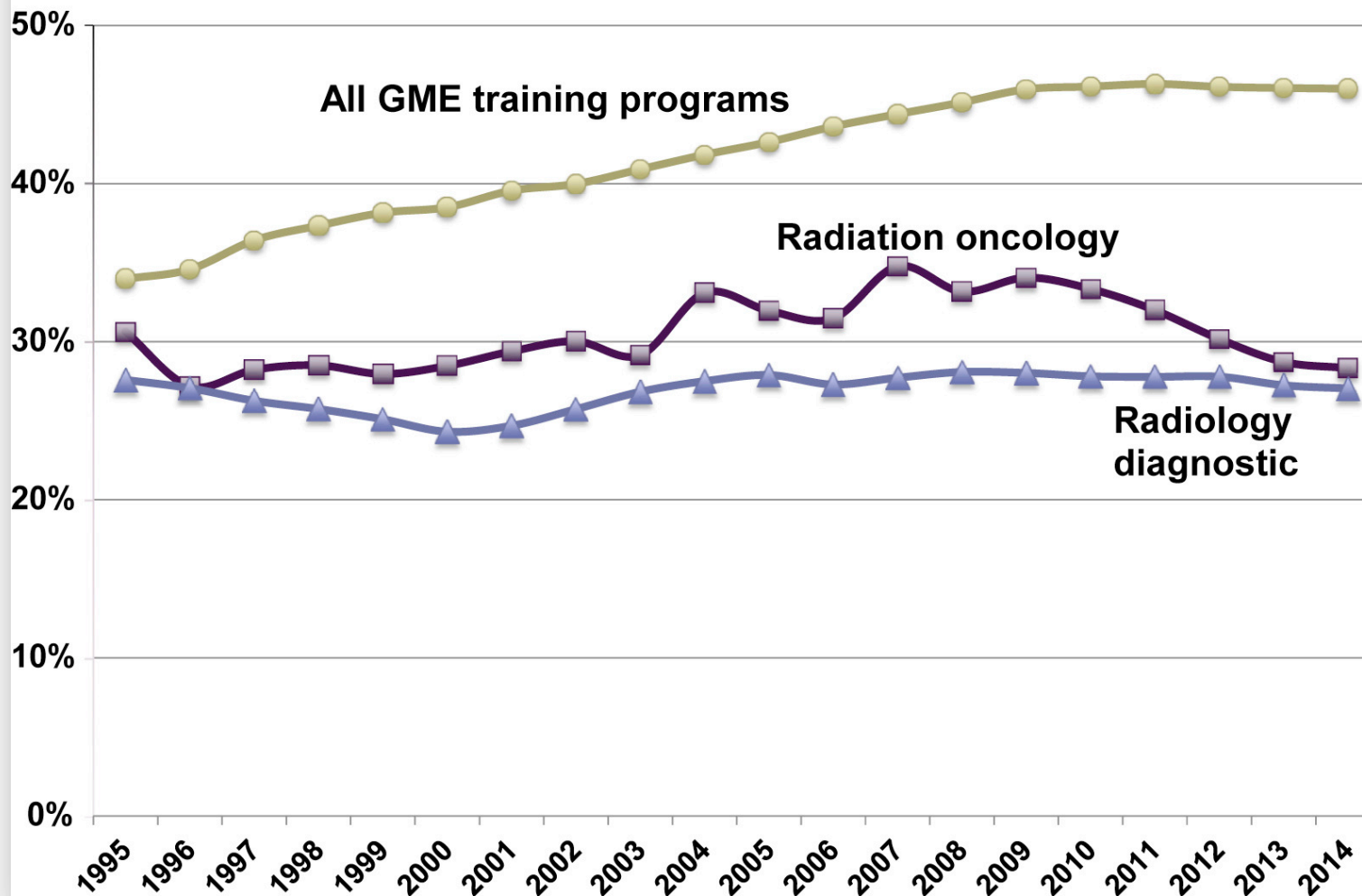
# TALENT POOL AND DEVELOPMENT

- Diverse and inclusive
- Leadership skills



# NEED TO BROADEN TALENT POOL

Representation of women among all GME trainees, and trainees in the radiological professions



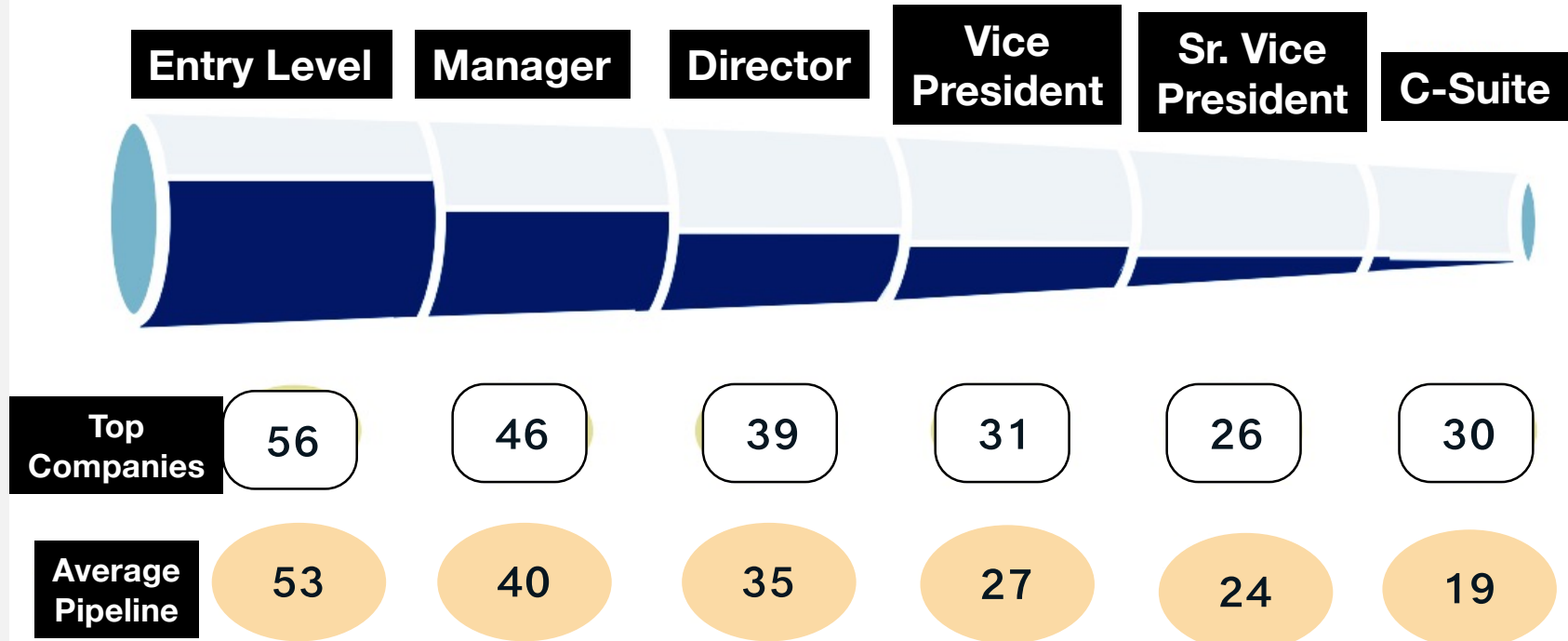
Lightfoote et al.  
Journal of the  
American College of  
Radiology 2016 13,  
1421-1425

# CORPORATE AMERICA PARALLELS ACADEMIC MEDICINE

**Top companies outperform average ones throughout the pipeline.**

Share of women in leadership pipeline, %

■ Women  
■ Men



*\*Barsh and Yee, Unlocking the Full Potential of Women at Work, McKensey & Co. 2011  
(60 Fortune 500 level companies)*

# FACULTY/STAFF AND LEADERSHIP DEVELOPMENT



DEGREE OF SPECIALIZATION/PATIENT-FACING

## QUESTION

Should we continue to train generalist radiologists? Multi-specialty radiologists?



## QUESTION

Should radiology work be ***Centralized*** vs ***Distributed***?



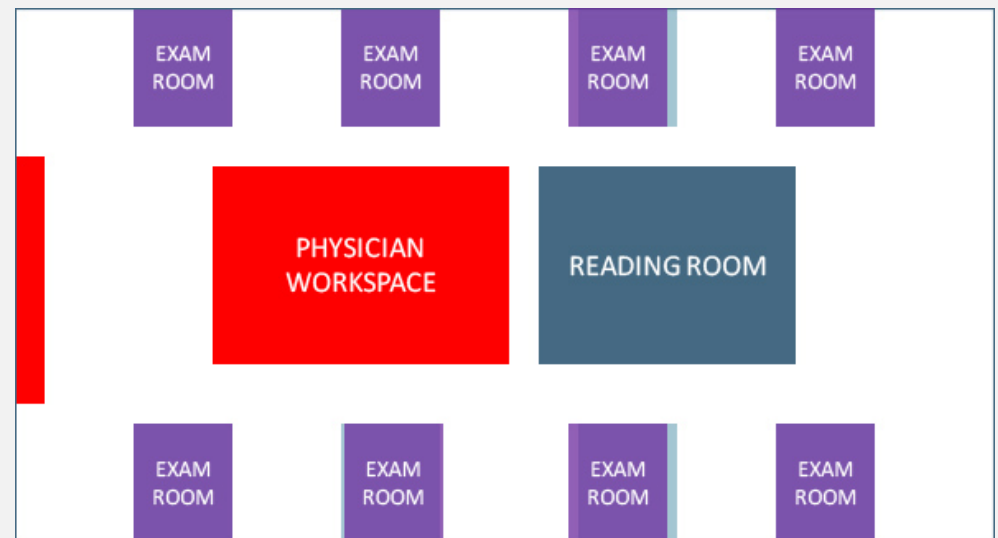
## DEGREE OF SPECIALIZATION/PATIENT-FACING

- Our residents must be trained on how to directly communicate with patients on their radiological findings and how these impact their health/disease
- Our training must prepare radiologists to be full members of interprofessional care teams
  - Embedded subspecialty radiologists in key clinics, ERs and wards

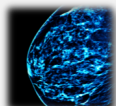
## NEURORADIOLOGY PIONEERS INTEGRATED CARE MODELS

- Neuroradiology embedded within Neurology clinic at EPI2 and ENT clinic at EUHM
- Direct patient reporting of imaging results in ENT clinic
- NI-RADS for standardized follow-up of head & neck cancer
- Neuroradiology fellows trained in integrated care

Embedded Head and Neck  
Neuroradiology in ENT Clinic  
Director: Pat Hudgins, MD



# INTEGRATING DIAGNOSTIC RADIOLOGISTS INTO OUTPATIENT CLINICS



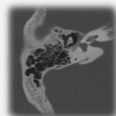
## **Breast Centers**

Clifton WCI, EUHM, ESJH,  
EJCH



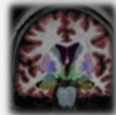
## **Orthopedic Surgery**

EP 59 Orthopedics and Spine Center



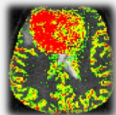
## **Otolaryngology**

EUHM MOT



## **Neurology**

EPI2 Brain Health Center



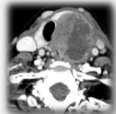
## **Neurosurgery & Neuro-Oncology**

TEC Clinic B



## **Sports Medicine**

EP Sports Medicine Complex

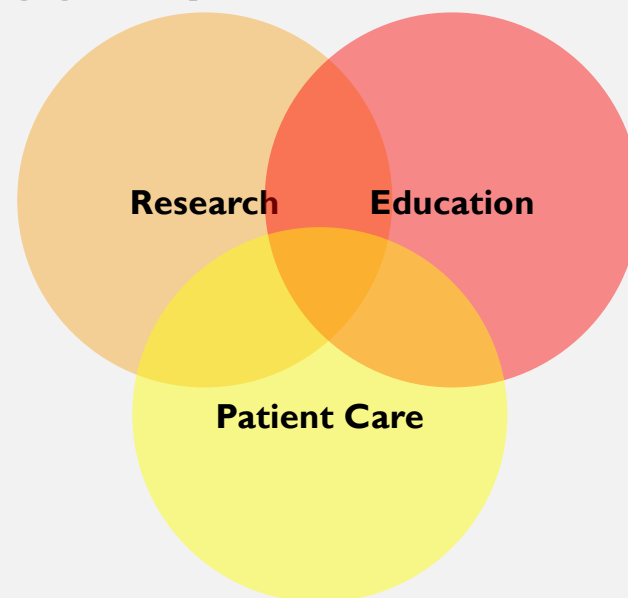


## **Head and Neck Cancer (FY19)**

EUHM MOT Integrated Cancer Clinic

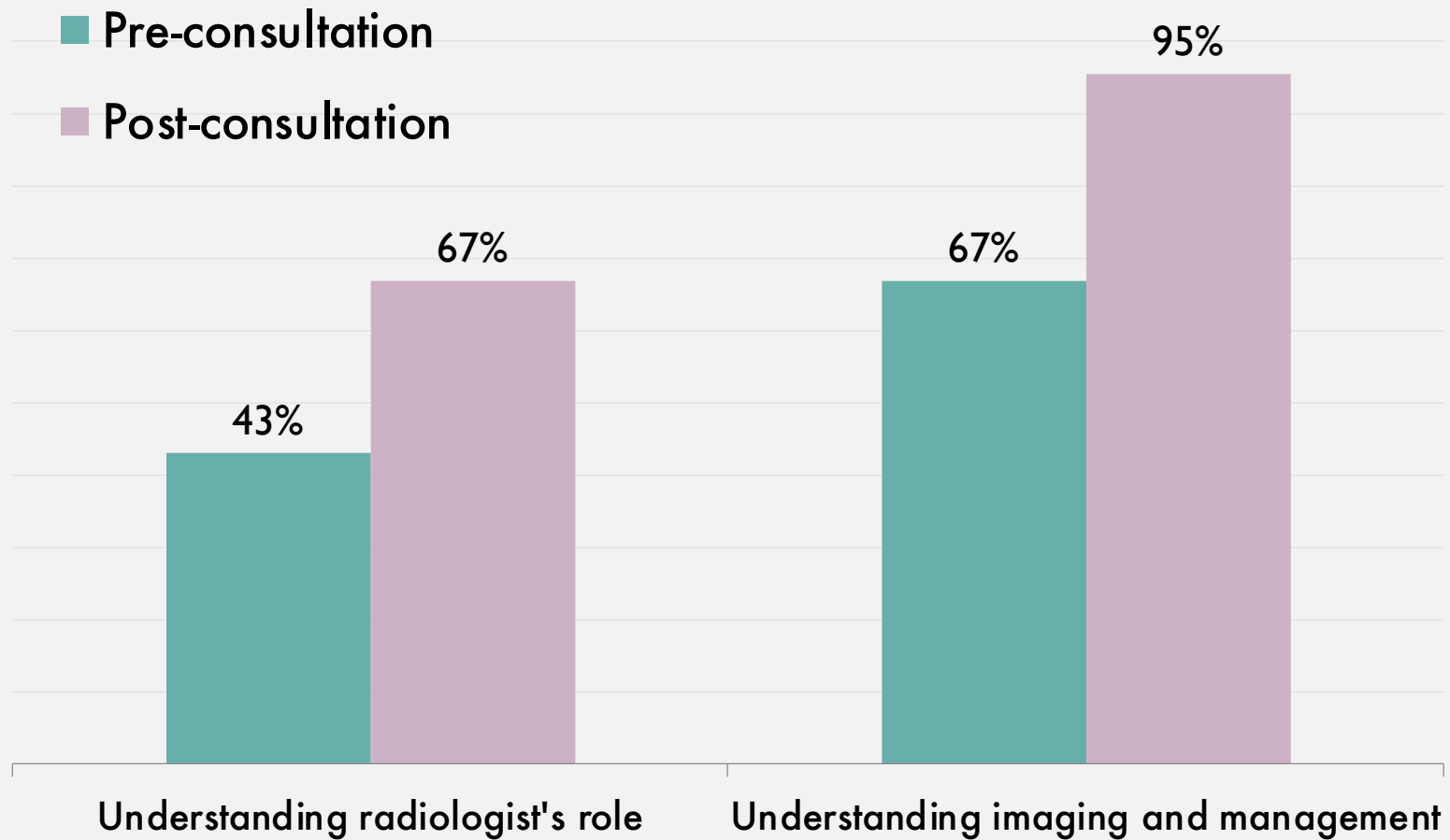
Novel imaging techniques  
and protocols for  
challenging clinical questions

Trainees from radiology  
and referring specialties



Real-time consultations  
Imaging selection and appropriateness  
Prioritization of interpretations for clinic  
throughput  
Direct patient reporting by radiologist

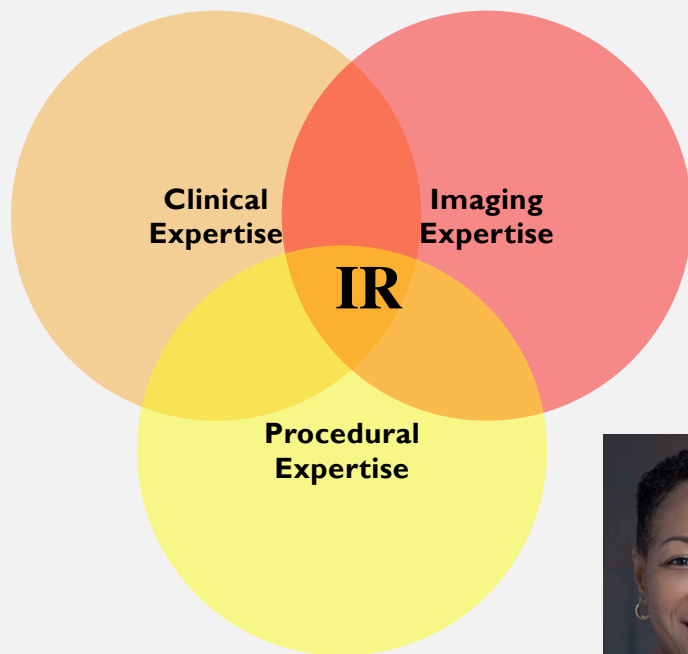
## DIRECT PATIENT CONSULTATION



21 patient responders

Mohan, Scarola, Stapleton, Patel, Duszak, Hudgins, Aiken.  
Making Time for Patients: The Positive Impact of Direct Patient Reporting.  
ASHNR 2016

# IR EXPANDING SERVICE LINES THROUGH A SURGICAL MODEL



**Janice Newsome, M.D.**  
**Division Director**  
**Interventional Radiology**

## New IR Clinical Service Lines Include:

Vertebral Body Tumor Ablation  
(EUH/EUHM/ESJH/EJCH)

Vascular Anomalies Clinic (CHOA/EUH)

Prostate Artery Embolization (EUHM/Grady)

Complex IVC filter retrieval (EUH/EUHM/EUSJ)

Palliative IR / Cryoneurolysis (EJCH/EUHM)

Nonhealing Venous Ulcer / Vein Ablation (EUHM)

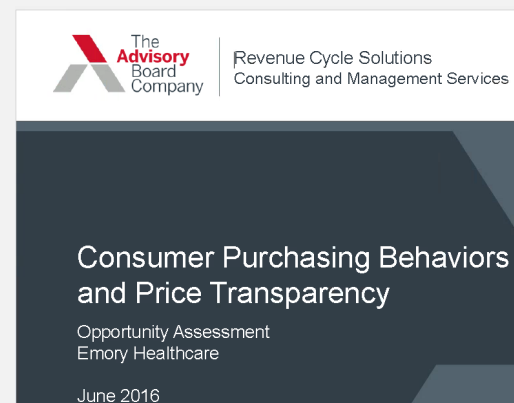
VA Y-90 Radioembolization (EUHM)

Updated GI Bleeding Algorithm (EUHM)

....and more!

# PFA COUNCIL: PATIENT EXPERIENCE HIGHLIGHTS

- Waiting Room Enhancements in WCI
  - Check-in kiosks and new furniture
- Price Transparency Project with Advisory Board
- Service Excellence Institute 3.0 Rollout
  - ~75% of department has been trained
- J-Wing Planning and Updates
  - Patient-centered design
- Patient Communication Task Force
  - Engagement with ENT Clinic
- Patient Portal Results Communication
- Patient Communication & Social Media (RLA)



# RESEARCH, DISCOVERY, AND INNOVATION



 **EMORY**  
UNIVERSITY  
SCHOOL OF  
MEDICINE | Department of Radiology  
and Imaging Sciences

ALL Radiology Department  
employees are invited to attend

**Innovation Workshop**

**MARCH 13, 2018**

*Workshop: Noon - 5pm*  
*Networking Hour: 5 - 6pm*

*School of Medicine Building, Room P190*

*Light lunch will be provided*

Register by March 6 at  
<https://goo.gl/eXJtqT>

What is innovation to you?  
How are you being innovative in your current role?

Come listen and get hands-on experience  
from some of the world's greatest innovators.

Submit questions or ideas to  
[EmoryRADInnovates@LISTSERV.CC.EMORY.EDU](mailto:EmoryRADInnovates@LISTSERV.CC.EMORY.EDU)

**#EmoryRADInnovates**



# INDIVIDUALIZED TEACHING AND RESEARCH TRAINING

IR/DR

Molecular Imaging /Radiology Track

START: Stratified Training in Academic Research and Teaching program

- Lectures
- Mentoring
- Teaching experience in SOM 1<sup>st</sup> year anatomy and 3<sup>rd</sup> year clerkship courses

Radiology Research track

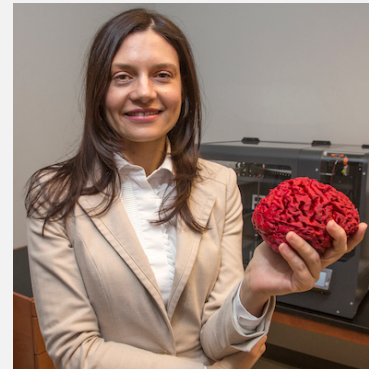
- Up to 16 months for research project
- Mentoring and training

Leadership Journal Club

- 3 years and counting

## OUR ADOPT-A-RESIDENT PROGRAM

- **2 new Adoptions!**
- Alex Dabrowiecki: “Radiology at Emory Medical Innovation (REMI) Track
- Anna Trofimova: “Neuroanatomy Live: An Interactive Curriculum for Radiology Residents and Fellows Using 3D Printing Technology



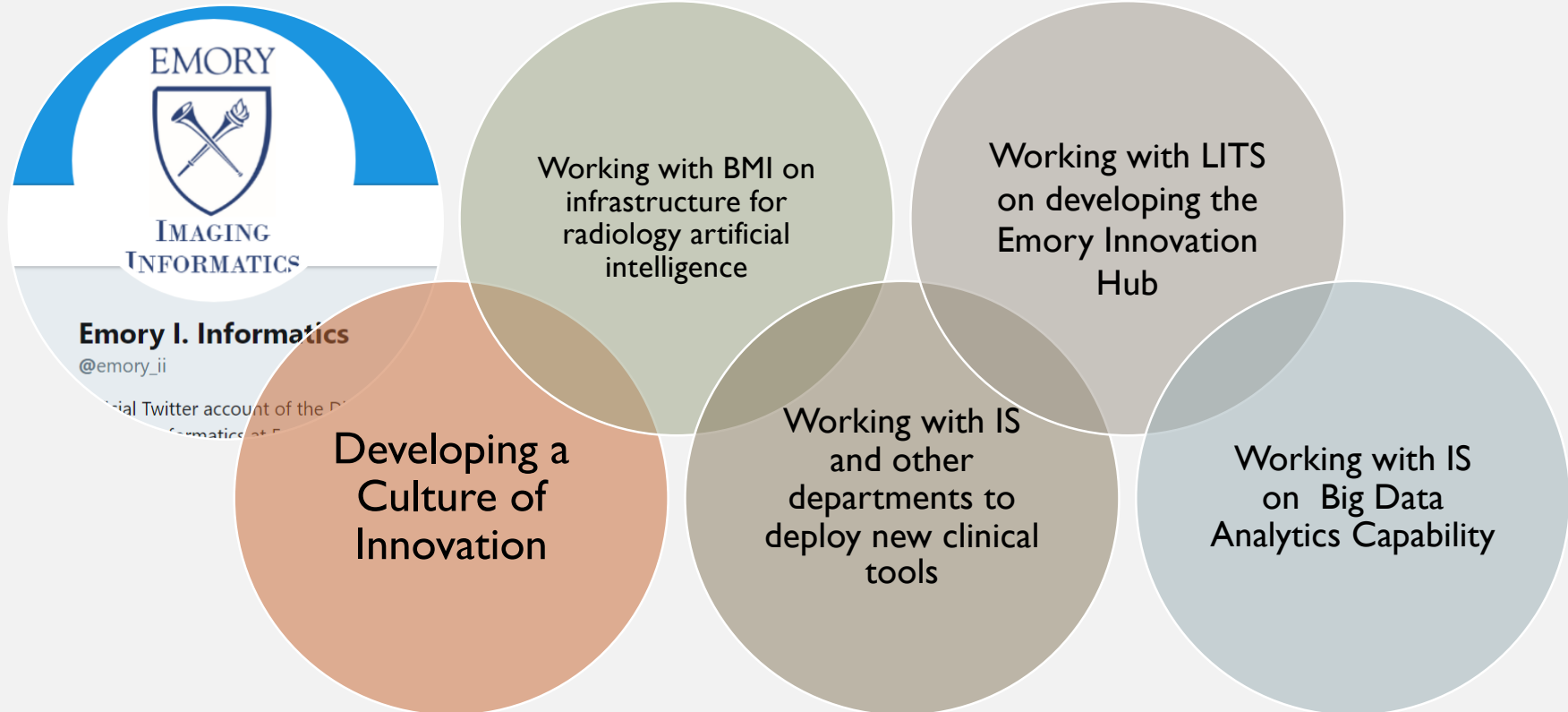
## QUALITATIVE VS QUANTITATIVE

- Value of our reports
  - Structured
  - Quantitative
  - Measureable in terms of diagnostic value and relationship to patient outcomes

## INFORMATICS/AI

- National Imaging Informatics Curriculum and Course developed by Drs. Recht, Safdar, Cook, Andriole for senior radiology residents
  - Supported by RSNA & SIIM
  - Comprehensive curriculum includes PACS/archiving, standards, lifecycle of radiology exam from order to report distribution, security, big data/business intelligence/AI

# INTEGRATED IMAGING INFORMATICS



# HEALTH POLICY AND ECONOMICS

- Understanding role of radiology in current and future care
- Health economics

# NATIONAL LEADERSHIP IN RADIOLOGY POLICY EDUCATION

- Initial two-year health policy, practice management, and professionalism curriculum for radiology residents (P3R2) now permanent part of our conference series
- Incorporated into fellow retreats to meet ACGME requirements for all of our fellowship programs
- Leading the way for programs all across the country

ORIGINAL ARTICLE TRAINING AND EDUCATION

## Practice Management and Health Policy Education in Radiology: An Emerging Imperative

*Ivan M. DeQuesada II, MD, Falgun H. Chokshi, MD, MS, Mark E. Mullins, MD, PhD,  
Richard Duszak Jr, MD*

## QUESTIONS/DISCUSSION

Other Trends?