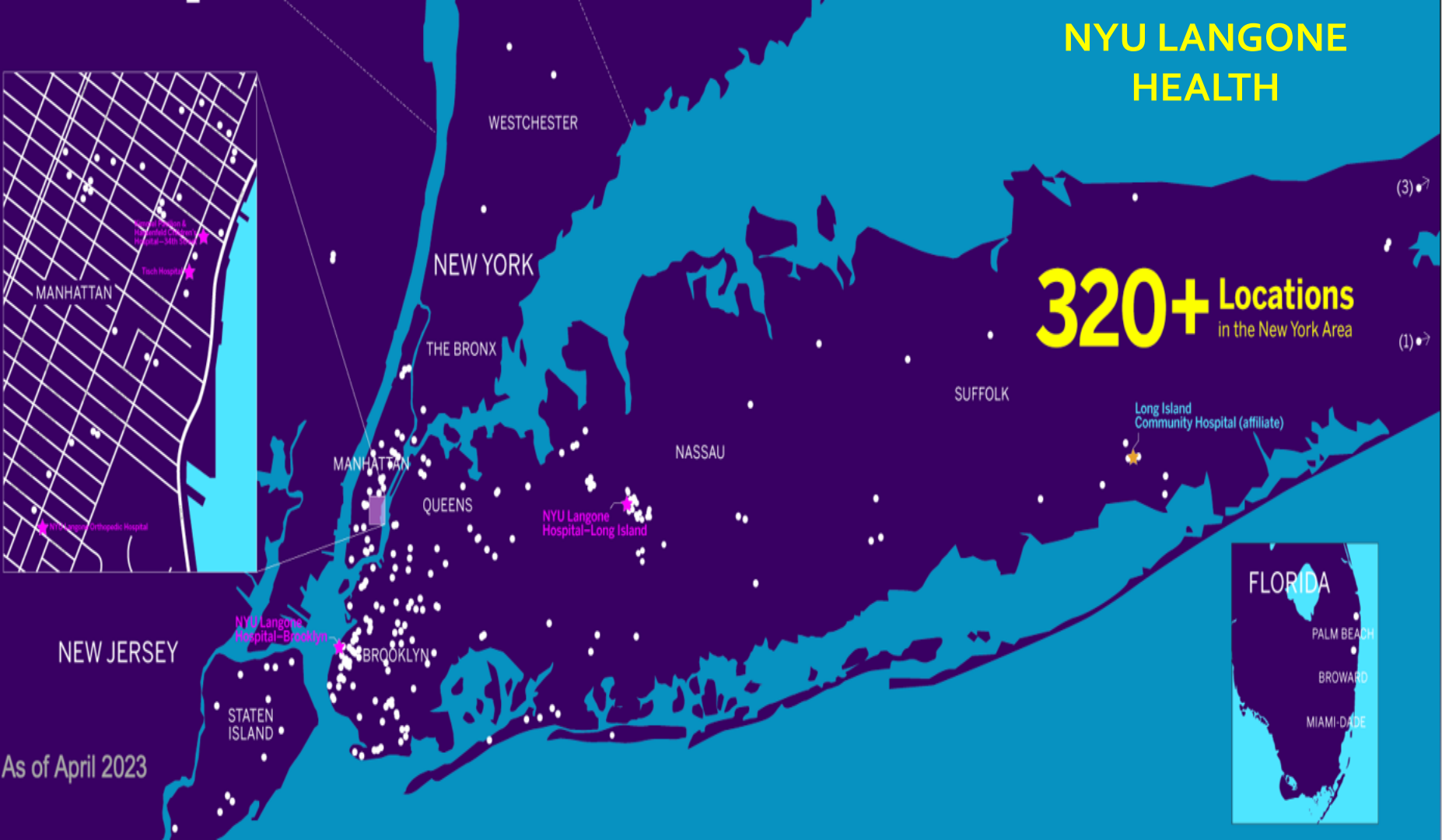


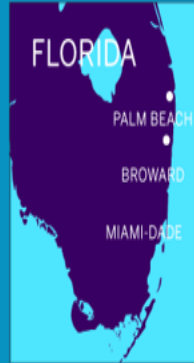
GREAT RESIGNATION AND QUIET QUITTING'S IMPACT ON LARGE INTEGRATED HEALTHCARE SYSTEMS



NYU LANGONE HEALTH



320+ Locations
in the New York Area



As of April 2023

NYU Langone by the Numbers

271
Clinical faculty

2,000,000
Imaging exams

105,973
Hospital
Discharges

2,073
Beds

8.37M
Patients in Our
Electronic Health Record

14,393
Births

13M SF+
Space
Portfolio

6
Inpatient
Locations

286,464
Emergency
Department Visits

10.1M
Outpatient Visits
per Year

GREAT RESIGNATION

- At peak more than 5 million workers quit per month¹
- Health care industry second largest industry affected, reporting losses of 20% of the workforce²
- It is estimated that up to 47% of US health care workers plan to leave their positions by 2025³
 - One in five physicians⁴

¹Boston-Fleischhauer, JONA 2022

²Morse, S. Healthcare Finance. Jan. 5, 2022

³Weissman, et al JACR 2023

⁴Siewert, et al JACR 2023

GREAT RESIGNATION

- Job postings in the ACR Career Center reached high of 3,150 in August 2022¹
 - Radiology second most sought after specialty
- 53% of US Radiologists are over 55 years of age²
- Between 2010 to 2020, the number of DR trainees entering the workforce increased 2.5% compared to a 34% increase in the number of adults over 65³

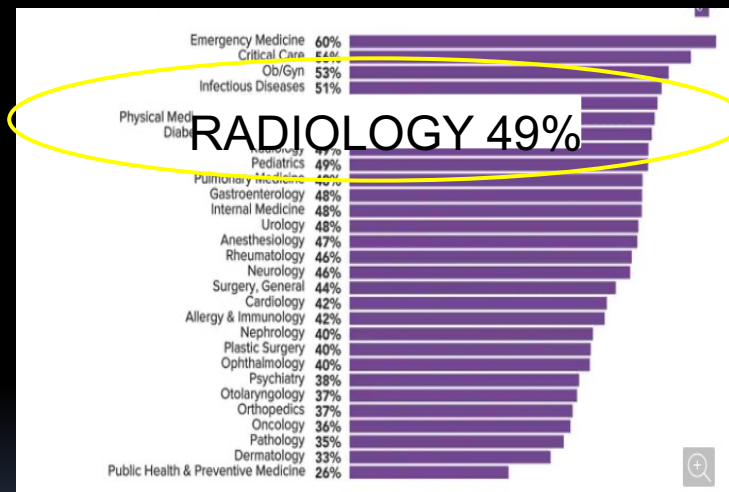
¹Siewert, et al JACR 2023

²Ray Semin Intervent Radiol 2022

³RSNA 2022

WORKLOAD

- Radiologist's perception
 - Longer hours
 - Worsening work-life balance
 - Less time for research and education
- Decreased morale and engagement
- Increased burnout



Medscape 2022

WORKLOAD

- Workload has increased between 55 to 143% depending on subspecialty in past 25 years
- The average radiologist needs to interpret one image every 3-4 seconds to meet the volume demands¹



<http://www.business2community.com>

WORKLOAD

“We are approaching a tipping point in which the rewards of being a radiologist and the conduct of other valuable work (e.g., research and educating trainees) are being overwhelmed by the pressures of an increasingly demanding clinical workday. ”

Guest Editorial

Productivity, Meet Burnout

Acad Radiol 2018

Richard H. Cohan, MD, Matthew S. Davenport, MD

TECHNOLOGISTS

- 2023 ASRT staffing survey
 - Every modality reported unprecedented increase in vacancy rates
 - Every modality experienced all time highs in vacancy rates since inception of survey in 2003
 - The U.S. Bureau of Labor Statistics projects that radiologic and MRI technologist employment will grow 9% by 2030, estimating 20,800 openings for these positions each year

VACANCY RATES

MODALITY	2019 VACANCY RATE	2023 VACANCY RATE
RADIOGRAPHY	8.5%	18.1%
CT	10.1%	17.7%
US	9.0%	16.7%
MR	8.7%	16.2%
MAMMOGRAPHY	3.6%	13.6%
NUCLEAR MEDICINE	5.2%	14.5%

WHAT DO WE NEED TO DO?

- Rethink organizational culture
 - Increase Autonomy/Flexibility
 - Allow for Mastery
 - Create a Pipeline
 - Emphasize
 - Wellness
 - DEI

CULTURE
EATS STRATEGY
FOR BREAKFAST
AND TECHNOLOGY
FOR LUNCH
AND THEN...



<https://techcrunch.com>

WORK FROM HOME (WFH)

- Rare prior to Covid
- Ubiquitous during pandemic

A New Working Paradigm for Radiologists in the Post-COVID-19 World JACR 2021

Rapid Deployment of Home PACS Workstations to Enable Social Distancing in the Coronavirus Disease (COVID-19) Era AJR 2020

Table 1. Pandemic-related teleradiology workflow changes

Variable	Increased at-Home Workstations, n (%)	Moved At-Work Shifts to At-Home, n (%)	Contracted Teleradiology Work, n (%)	Reading Room Not Staffed, n (%)
Region				
South	20 (52.6)	38 (66.7)	4 (7.0)	24 (42.1)
Northeast	22 (81.5)	35 (89.7)*	2 (5.1)	15 (38.5)
Midwest	21 (63.6)	39 (75.0)	2 (3.8)	24 (46.2)
West	9 (64.3)	14 (63.6)	1 (4.5)	6 (27.3)
Hospital type				
Academic	40 (71.4)	56 (78.9)	5 (7.0)	25 (35.2)
Community	35 (59.3)	72 (70.6)	4 (3.9)	45 (44.6)

Quraishi, et al. JACR 2020

WFH THE “NEW NORMAL”

- 90% of workers who can do their job remotely want at least some flexibility
- 2/3 of employees say they would look for another job if asked to return full time
- NYU Langone
 - All radiologists can be hybrid - 2 days read from home
 - 40 dedicated remote radiologists



<https://www.pcmag.com/>

ADVANTAGES OF WFH

- Increases workers autonomy and flexibility
 - Can read early in morning or late at night
 - Allows faculty to fulfill other responsibilities
 - Child care
 - Elder care



<https://thepeakperformancecenter.com>

ADVANTAGES

- Productivity increase
 - 13-22% increase for remote workers
 - Pediatric radiology study showed 57% had shorter TAT and increased productivity with no increase in error rates ¹
 - Sustainability- 890 million miles of travel saved per day



<https://www.livescience.com>

WFH'S POTENTIAL DISADVANTAGES

- Lack of visibility
- Negative effect on research
- Negative effect on education
- Decreased mentorship
- Increased distractions
- No work-home separation



<https://blog.hubspot.com>

KEYS FOR SUCCESS

- Maintain a critical mass of faculty from all subspecialty sections onsite at all times
- Be transparent and fair with all expectations and policies
 - Develop strategies to “compensate” onsite faculty for those functions that onsite faculty have to perform that remote faculty do not
 - Ensure that all sections have opportunities to work from home

KEYS FOR SUCCESS

- Develop strong mentoring programs for both junior faculty and residents that incorporate personal interactions
- Develop strong onboarding programs
- Emphasize educational and research missions

TECHNOLOGISTS

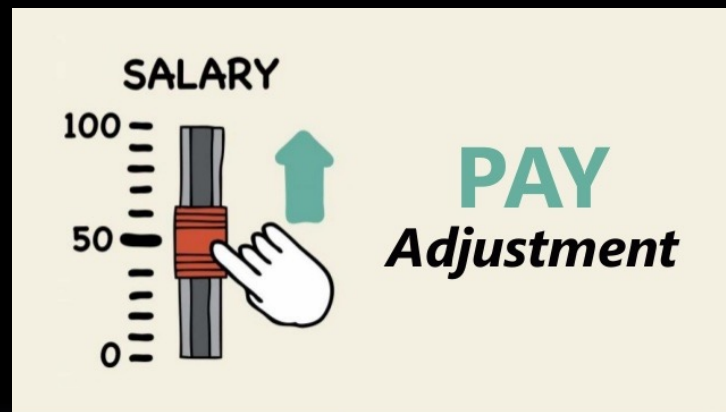
- Can't work from home
- Flexible work schedules the new norm
 - 3 and 4 day weeks
 - 10-12 hour shifts
- We decide hours of coverage, tech managers decide how to cover



<https://www.fuseworkforce.com/>

COMPENSATION

- Ensure that salaries are competitive
- In 2022
 - Adjusted salaries, most marked for junior faculty
 - Average of 15% increase for all radiology technologists



<https://www.dbs-hsv.com/>

MASTERY

- Need continual learning and improvement
 - Faculty
 - Mentoring program
 - Acquisition of additional skills/degrees
 - Leadership opportunities
 - Technologists
 - Acquisition of additional skills/degrees
 - Leadership opportunities



<http://robertjrgraham.com/>

BEST IN PRACTICE

- Select technologists to become **Advanced Practice Specialists (APS)**
 - 50 % clinical, 50% APS
- Program started in MR
- Now extended to all modalities

THE VOICE OF EXPERIENCE

Best in Practice: A Model for Improved Radiologist-Technologist Collaboration and Image Optimization

Michael Recht, MD, Danny Kim, MD, MSE, Kirk Lawson, MBA, Thomas Mulholland, RT

INTRODUCTION

The past several years have seen rapid innovation in imaging techniques, with both hardware and software changes. These changes have occurred in all modalities, including the development of multi-channel CT scanners with low-radiation dose scanning protocols and reconstruction algorithms, ultrasound elastography, parallel transmit and receive MR coils, and the widespread implementation of 3-T field strengths. These imaging changes have led to increasing complexity in the performance of examinations, requiring extensive protocol optimization. At the same time, the development of digital, filmless technology has led to the formation of large, geographically divided departments whose members have limited interactions. The geographic dispersion of imaging departments has led some to advocate for a more independent, decision-making role for technologists [1,2]. However, it has been our experience that the physical separation of technologists and radiologists has led to a breakdown in the traditional team approach between them. This has been particularly true in the areas of protocol development and image optimization.

In an attempt to counteract these developments, New York University Langone Medical Center's (NYULMC) Department of Radiology implemented a program called Best in Practice (BIP) in our MRI department in the summer of 2009.

In this column, we describe the operational details and initial results of this program at NYULMC.

BEST IN PRACTICE OPERATIONAL DETAILS

Goals and Planning

The NYULMC Department of Radiology implemented BIP to achieve the following goals: maximize the potential of our imaging equipment to provide best-in-class imaging for patients, develop internal technical support and protocol optimization, provide ongoing teaching and educational opportunities for all the stakeholders in our department (technologists, radiologists, and physicists), and improve the collaboration between stakeholders.

We chose to begin the program with one modality, MRI, with plans to expand to other modalities if BIP proved successful. We chose MRI as our initial modality because it has the greatest variability across our enterprise. This variability includes scanner specifications (field strength, hardware, coil availability, and software), scanning protocols, and image quality. In addition, it is one of our largest sections, with 14 scanners in 8 locations, with 35 technologists.

To develop internal technical support and lessen our dependency on our vendor for protocol optimization, we created two new positions, referred to as advanced practice specialists (APS). The APS serve as the primary applications

support within the department, with vendor backup as needed. To keep their scanning skills up-to-date and relevant, our APS spend about 50% of their time scanning both clinical and research subjects, with the balance of their time spent learning and teaching.

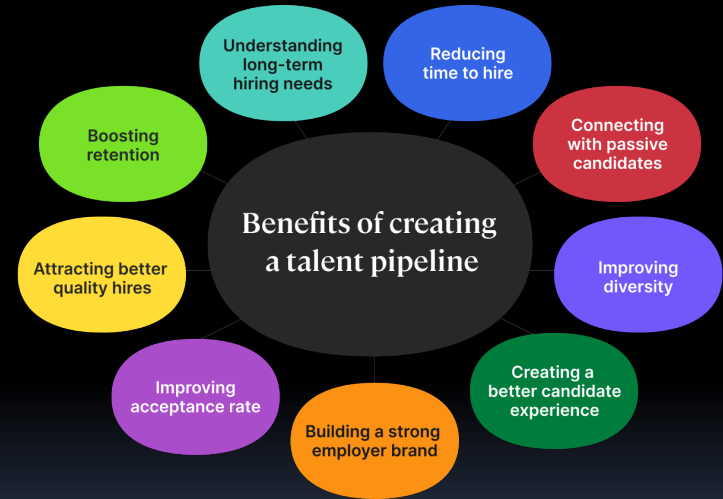
One of our MRI lead technologists (who had previously spent much of his time working on MRI protocols and applications) was designated as the immediate supervisor of the APS. In addition, we identified one of our body imagers to serve as the APS radiologist coordinator and to work with the APS supervisor to support the APS' development and success in interweaving throughout each subspecialized radiology section and our robust research department. Finally, the department administrator actively participated in the development of the APS' role.

APS Training

Our APS technologists took 3 trips in fall 2009 to Cary, North Carolina, to attend 3 different MRI applications courses offered by our MR vendor, Siemens Medical Solutions (SMS). In addition, they were offered all of the Web-based training modules that a Siemens Clinical Education Specialist is offered. To facilitate the APS' training, SMS assigned a primary point of contact from their applications team to serve as the day-to-day support person for NYULMC in addition to a small interdisciplinary team for specific issues. Monthly

CREATE A PIPELINE

- Develop strategies to create pipeline of candidates
 - Internships
 - Subsidized education



<https://www.untapped.io>

INTERNSHIPS

- Recruit students from local rad tech schools
- 6-12 month program to learn basic skills
- MRI Intern program started July 2005
 - 20 current interns
- CT Intern program started July 2021
 - 8 current interns
- Now extended to ultrasound and mammography

INTERNSHIP

- 92 MR interns have chosen to stay in our department
- Since initiation of MR internship program and Best in Practice, 42 MR technologists have been promoted to leadership positions across all modalities



SUBSIDIZED EDUCATION

- Partnered with technologist schools to offer remote classes for current employees at no charge with guarantee of position once graduated
- Tuition paid by Institution with “guaranteed” position at graduation

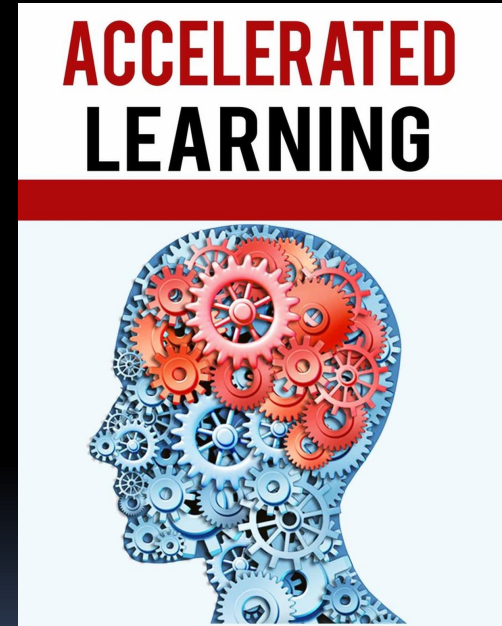
TECH STAFFING

- Overall NYU Vacancy rate is 6%- significantly below national average

MODALITY	NATIONAL 2023 VACANCY RATE	NYULH VACANCY RATE
RADIOGRAPHY	18.1%	5%
CT	17.7%	10%
US	16.7%	4%
MR	16.2%	5%
MAMMOGRAPHY	13.6%	9%
NUCLEAR MEDICINE	14.5%	4%

FACULTY

- Developed initiatives to offer residents accelerated training with guarantee of faculty position
 - “Concentration” year in last year of residency obviating need for formal fellowship
 - 6 month fellowships



Adapted from
<https://www.kobo.com/>

CREATING A CULTURE

- Faculty
 - VC of DEI
 - Women's Leadership Initiative (WLI)
 - Junior Faculty Committee
 - Director of wellness/wellness committee
 - Yearly one on ones with Chair
 - Twice yearly one on ones with Division heads

SUMMARY

- “Great Resignation and Quiet Quitting” have created significant new challenges for Radiology Departments
- Need to develop new strategies to adapt culture
 - Autonomy/Flexibility
 - Mastery
 - Wellness/DEI
 - Pipeline