

Design, Implementation, and Evaluation of an Education Program for Medical and Undergraduate Students to Advocate Diversity, Equity, and Inclusion in Radiology

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Background

- Diagnostic radiology = 9th largest largest residency program
 - 17th for female representation
 - 20th for underrepresented minorities (URM) representation¹
- Why?
 - Lack of preclinical exposure → misconceptions and less interest in radiology²
 - Women: lack mentorship³ and perceive radiology as too competitive⁴
 - URM: lack of understanding of the field⁵
- The 5C's of Radiology Framework⁶ has been introduced as a model to structure educational programming in radiology for students.

Curriculum

- Approach to interpreting common imaging studies
- Basic understanding of different imaging modalities
- Anatomy
- Radiation risk and exposure

Coaching

- Mentorship
- Observerships
- Research
- CaRMS application and interview support

Commitment

Collaborating

- Understanding radiologist's role on interdisciplinary teams
- Indications for imaging studies
- Knowledge of when to consult a radiologist

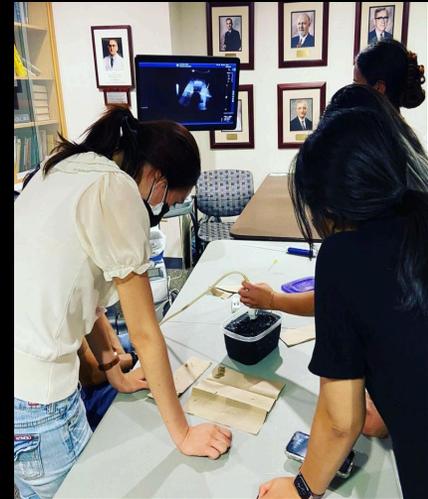
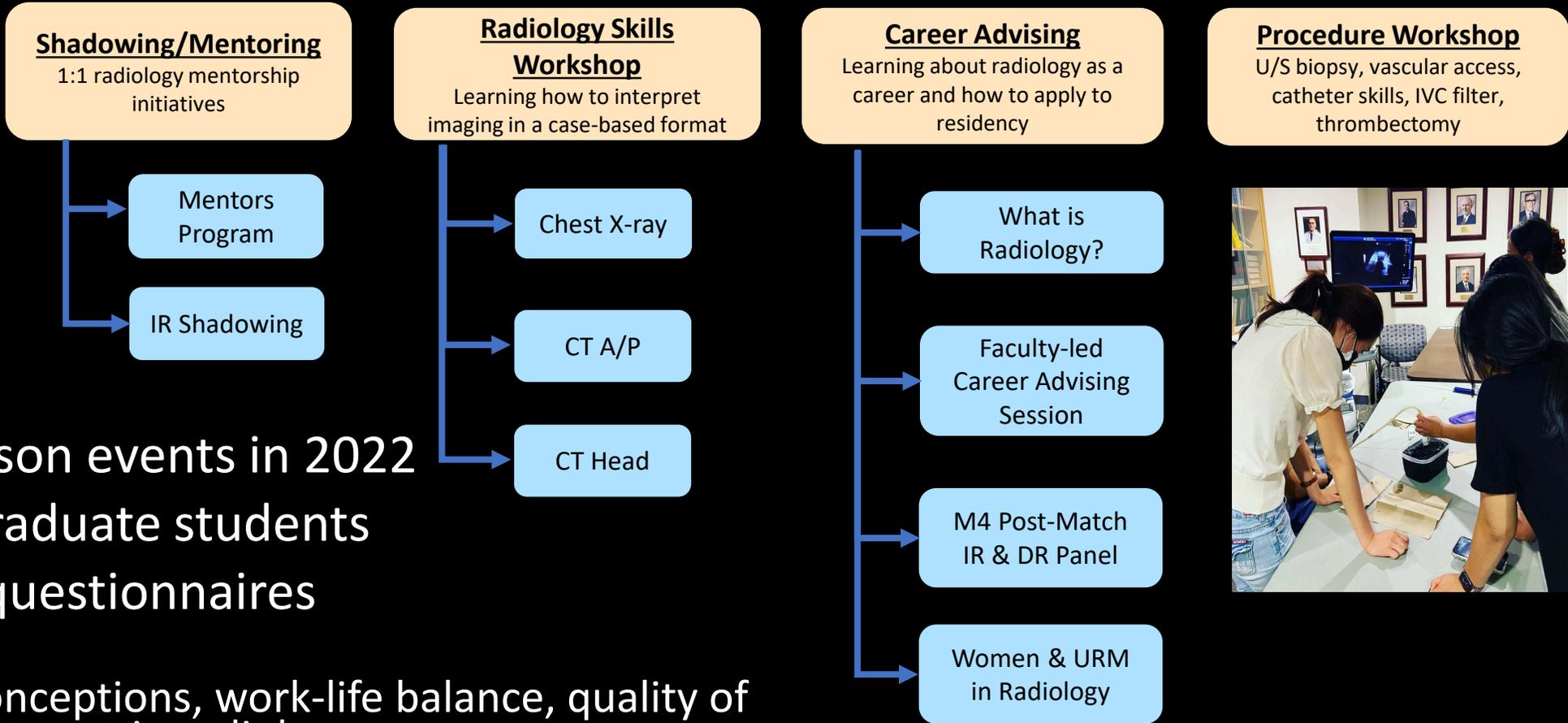
Career

- Day in the life of a radiologist
- Lifestyle and salary
- Job availability, outsourcing and teleradiology
- Occupational hazards
- Residency difficulty and fellowships
- Residency applications and competitiveness

Purpose and Objectives

- Purpose
 - Apply the 5C's to create a **longitudinal educational program** in radiology for students
- Objectives
 - Primary: increase **knowledge** and **interest** in radiology
 - Secondary: increase the **diversity** of students applying to radiology residency

Methods

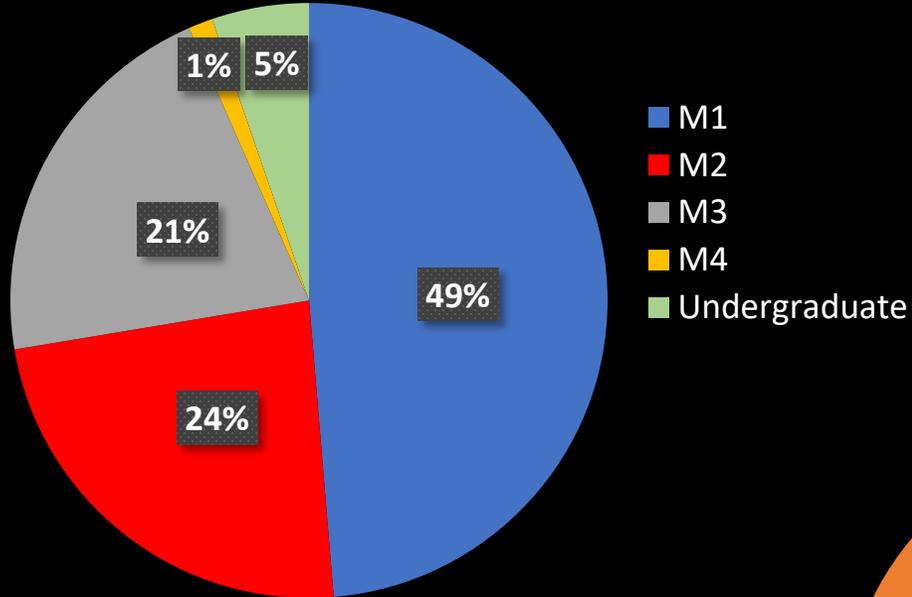


- 15 virtual & in-person events in 2022
- Medical & undergraduate students
- Two post-session questionnaires
 - Demographics
 - Knowledge: misconceptions, work-life balance, quality of program, future interest in radiology
- Two-tailed t-test comparison
 - Session modalities
 - Gender: Male v. female
 - Race: URM (African American, Hispanic/Latino, 2/2+ races) v. non-URM

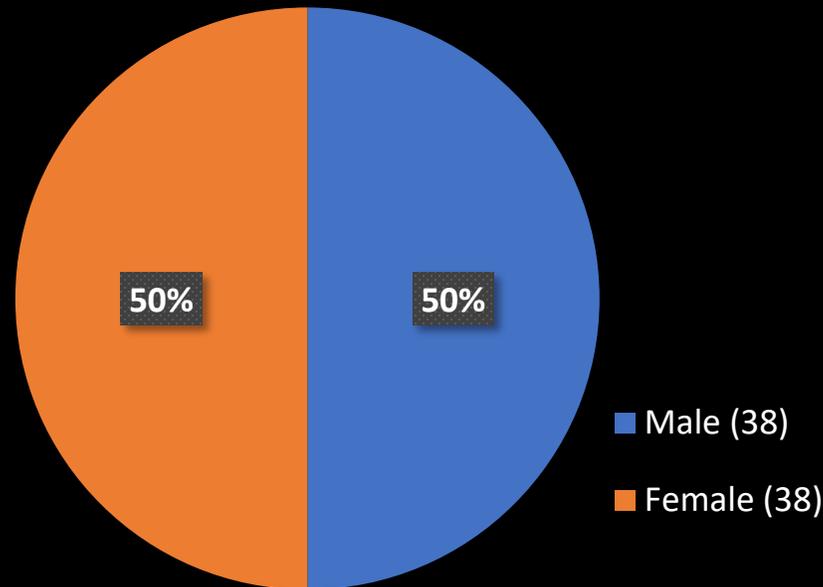
Demographics

163 attendees with 47% survey completion rate (76 responses)

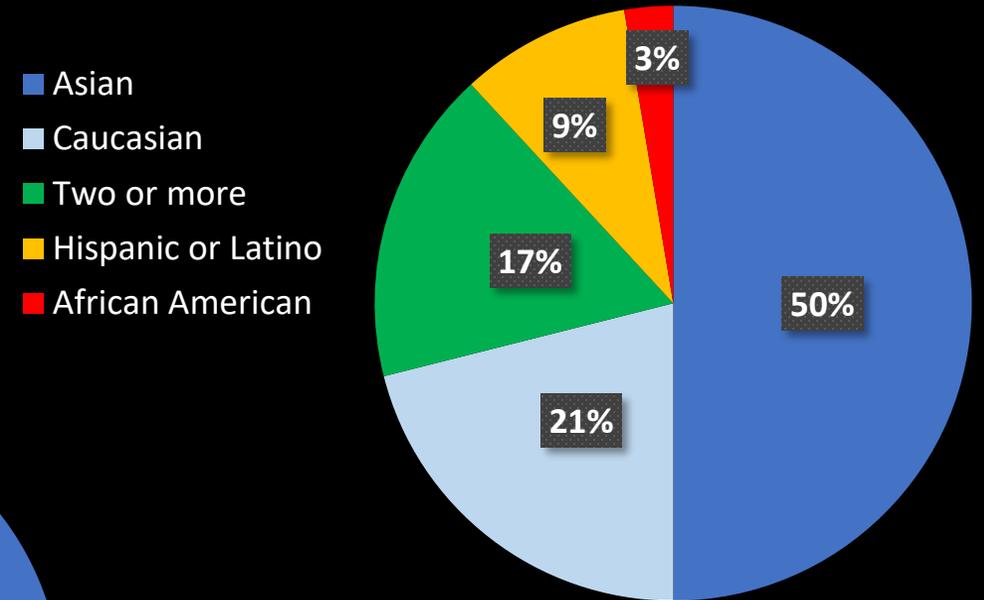
Education Level



Gender



Race

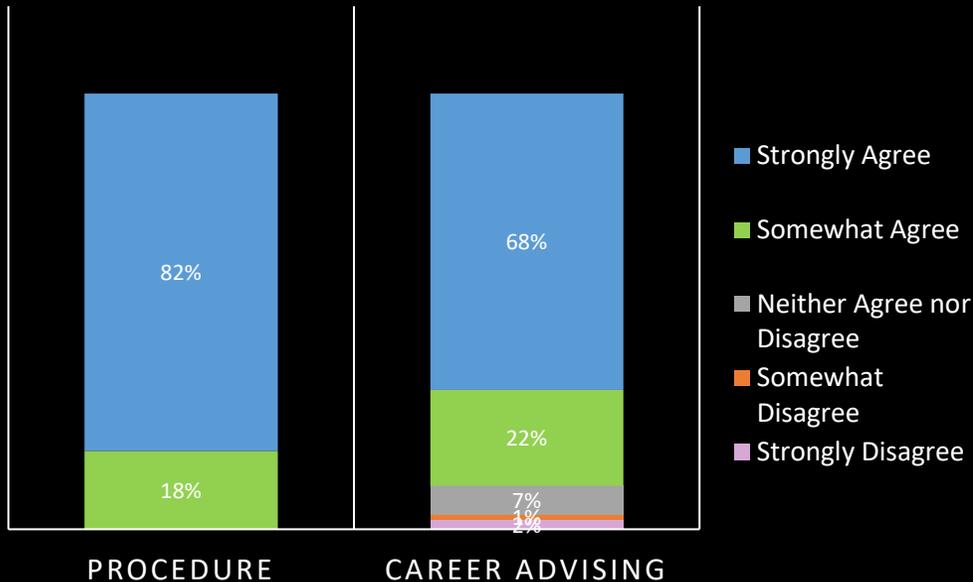


Results

- Session Modality

- **Quality:** Procedure workshop rated highest quality modality (statistically significant*)
- **Interest:** Undergrad sessions significantly* peaked radiology interest more than graduate sessions
- **Misconceptions:** Procedure workshop significantly* less effective than other modalities for addressing misconceptions

Quality of Procedure vs. Career Advising Session Modality*



Effectiveness of eliciting interest in radiology by session modality

	Undergrad	Skills	Procedure	Career
Mean	5	4.61	4.70	4.60
Variance	0	0.31	0.35	0.43
N	8	33	46	88
P (two-tail) vs. Undergrad		0.00029*	0.0011*	0.00000015*

Effectiveness of addressing misconception by session modality

	Procedure	Shadowing	Career	Undergrad
Mean	3.73	4.00	4.33	4.75
Variance	1.14	0.86	0.66	0.20
N	48	15	70	12
P (two-tail) vs. procedure		0.35	0.0015*	0.0000084*

Results

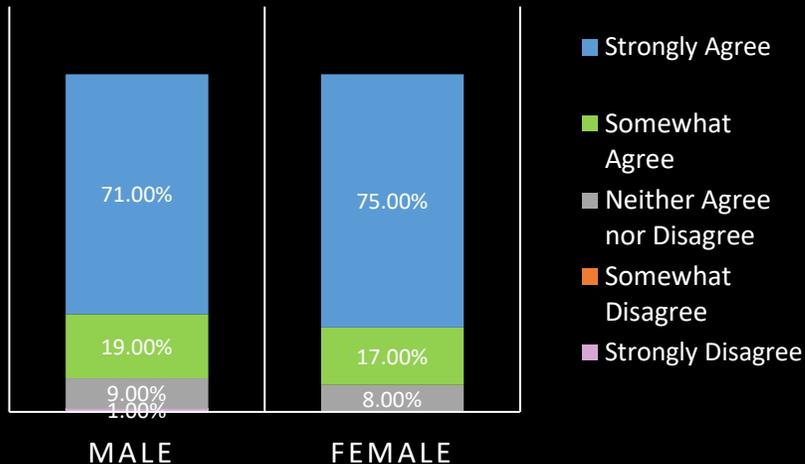
- Women

- No statistical difference of sessions on interest, work-life balance, or addressing misconceptions between male vs female
- **Trend:** greater positive impact on **increasing interest** in radiology and **promoting the work-life balance** in **women** than men

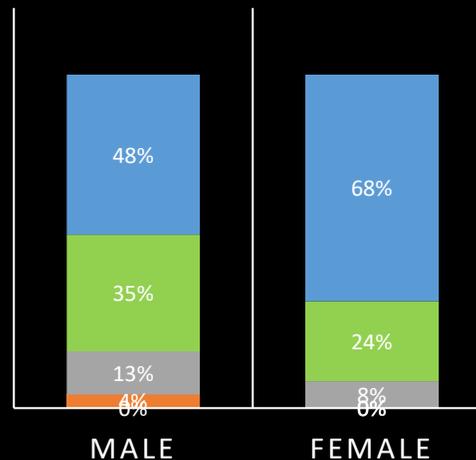
- Underrepresented minorities (URM)

- No statistical difference of sessions on interest, work-life balance, or addressing misconceptions between URM vs. non URM
- **Trend:** greater positive impact on **increasing interest** in radiology in **URM** vs non-URM

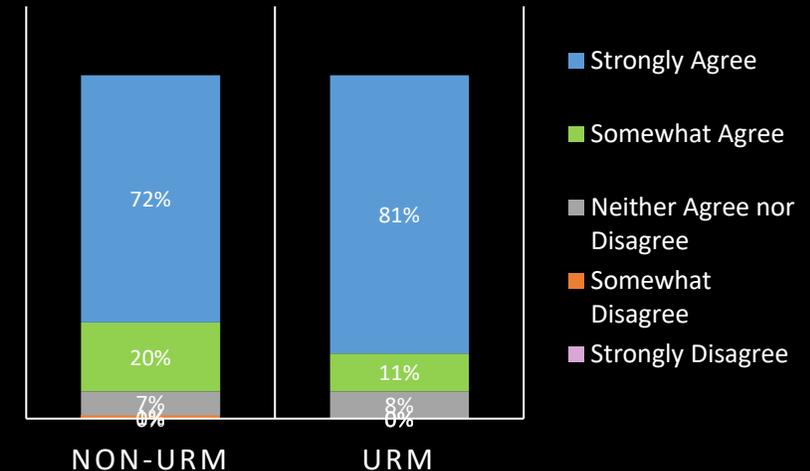
Male vs. Female: Effectiveness in increasing interest in Radiology



Male vs. Female: Effectiveness in promoting work-life of Radiology



Non-URM vs. URM: Effectiveness in increasing interest in Radiology



Discussion

- Our program: **equally effective** in **increasing the interest of all students**, regardless of race or gender.
- Students **value hands-on, interactive** sessions > non-interactive sessions.
 - However, **career advising sessions** made a more **positive impact** on **addressing misconceptions** compared to interactive procedure workshops.
- **Undergraduate outreach events** significantly **increase students' interest** compared to graduate outreach events.
 - Undergraduate outreach = **key pipeline**

Conclusion & Next Steps

- Future projects: **explore targeted strategies** for underrepresented groups
 - Ex: Hosting one event **showcasing women radiologists** significantly impacts female students' **misconceptions**⁷.
 - Consider **previously identified barriers**⁸:
 - Preconceived notions of priorities for **women**:
 - Highlighting the **family-friendly lifestyle** of radiology = **patronizing**
 - Hidden curriculum for **URM**:
 - Encouraged to **pursue primary care**
- Future directions
 - Amplifying diagnostic radiology shadowing
 - Faculty-led career advising session
 - M4 Post Match Panels in diagnostic and interventional radiology
 - Radiology skills and procedure workshops
 - **Undergraduate outreach**

Thank you!

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