Supplemental Digital Appendix 1
Definition for Underrepresented in Medicine (URiM) for Each Site Included in a Study of the Association Between Resident Race/Ethnicity and Assessment Scores, 2016-2017

	Underrepresented in Medicine (URiM)	**Not Underrepresented in Medicine (non-URiM)**
Site 1	Black or African American, Hispanic or Latinx, Native American or Pacific Islander, Cambodian or Laotian, and two or more race/ethnicities where at least one race/ethnicity was URiM	All other race and ethnicities not included as URiM
Site 2	Black or African American, Hispanic or Latinx, and Native American or Pacific Islander, and two or more race/ethnicities where at least one race/ethnicity was URiM	All other race and ethnicities not included as URiM
Site 3	Black or African American, Hispanic or Latinx, and Native American or Pacific Islander, and two or more race/ethnicities where at least one race/ethnicity was URiM	All other race and ethnicities not included as URiM
Site 4	Black or African American, Hispanic or Latinx, and Native American or Pacific Islander, and two or more race/ethnicities where at least one race/ethnicity was URiM	All other race and ethnicities not included as URiM
Site 5	Black or African American, Hispanic or Latinx, and Native American or Pacific Islander, and two or more race/ethnicities where at least one race/ethnicity was URiM	All other race and ethnicities not included as URiM
Site 6	Black or African American, Hispanic or Latinx, Native American or Pacific Islander, Vietnamese or Filipino, and two or more race/ethnicities where at least one race/ethnicity was URiM	All other race and ethnicities not included as URiM
Abbreviations: URiM=Underrepresented in Medicine, non-URiM=Not Underrepresented in Medicine		

Supplemental Digital Appendix 2
Model Specifications and Goodness of Fit Measures in a Study of the Association Between Resident Race/Ethnicity and Assessment Scores, 2016-2017

	Model with URiM - 3 Categories*		Model with URiM - 2 Categories*		Model with Interaction of URiM and Resident Gender*		Model with Interaction of URiM and Faculty Gender*	
	Unadjusted	Adjusted†	Unadjusted	Adjusted†	Unadjusted	Adjusted†	Unadjusted	Adjusted†
	Akaike Information Criteria (AIC)							
PC	8374.9	7959.9	8371.2	7956.3	8376.5	7958.5	8375.3	7959.8
MK	8730.8	8228.5	8728.2	8226.5	8729.1	8229.1	8731.8	8229.9
SBP	8392.3	8075.7	8389.2	8072.7	8396.4	8075.4	8388.2	8074.0
PBLI	7687.4	7512.9	7684.5	7509.9	7685.8	7512.2	7688.6	7513.2
PROF	7799.3	7607.8	7796.4	7604.7	7803.0	7607.3	7792.7	7601.9
ICS	7716.6	7452.1	7712.5	7447.8	7717.3	7450.3	7717.5	7451.1

Abbreviations: ICS=Interpersonal Communication & Skill; MK=Medical Knowledge; NA=not assessed; PBLI=Practice-Based Learning & Improvement; PC=Patient Care; PROF=Professionalism; SBP=Systems-Based Practice; URiM=underrepresented in medicine, non-URiM=not Underrepresented in Medicine

* Cross-classified random-intercept mixed model

† Adjusted model included the following covariates: resident gender, resident postgraduate year, baseline IM In-Training Examination Percentile Rank, time of year evaluated (Jul-Sep, Oct-Dec, Jan-Mar, Apr-May), rotation setting (University, Veterans Administration, Community or Public hospital), faculty gender, faculty rank (Assistant Professor/Instructor/ Chief Resident, Associate Professor, Professor, No Rank/Clinical Associate), and faculty specialty (General Medicine, Hospital Medicine, Subspecialty). Resident gender was excluded as a covariate in the model assessing the interaction of URiM and resident gender. Faculty gender was excluded as a covariate in the model assessing the interaction of URiM and faculty gender.

SAS Code of the unadjusted random-intercept mixed model to assess the relationship of Patient Care Competency with Race/Ethnicity

```
PROC MIXED DATA=ONE COVTEST;
  WHERE (PC NE . );
  CLASS RESCODE RACEETH FACEVALCODE CENTER;
  MODEL PC=RACEETH/S SINGULAR=1E-8;
  RANDOM INT/SUBJECT=RESCODE(CENTER);
  RANDOM INT/SUBJECT=FACEVALCODE(CENTER);
  LSMEANS RACEETJ/PDIFF;
 LSMESTIMATE RACEETH "URIM VS NON-URIM "  1 -1;
  ODS OUTPUT LSMEANS=UAM1PC;
  ODS OUTPUT LSMESTIMATES=UAME1PC;
  ODS OUTPUT TESTS3=UAP1PC;

  TITLE "UNADJUSTED";

RUN;
```

SAS Code of the random-intercept mixed model to assess the relationship of Patient Care Competency with Race/Ethnicity Adjusted for covariates

```
PROC MIXED DATA=ONE COVTEST;
  WHERE (PC NE . );
  CLASS RESCODE RACEETH FACEVALCODE CENTER RESGENDER PGY TIMEYEAR SITE FGENDER
FRANK1 FACEVALDEPT;
  MODEL PC=RACEETH  RESGENDER PGY TIMEYEAR SITE FGENDER FRANK1 FACEVALDEPT/S
SINGULAR=1E-8;
  RANDOM INT/SUBJECT=RESCODE(CENTER);
  RANDOM INT/SUBJECT=FACEVALCODE(CENTER);
  LSMEANS RACEETH/PDIFF;
  LSMESTIMATE RACEETH "URIM VS NON-URIM "  1 -1;
  ODS OUTPUT LSMEANS=UAM1PC;
  ODS OUTPUT LSMESTIMATES=UAME1PC;
  ODS OUTPUT TESTS3=UAP1PC;

  TITLE "ADJUSTED";

RUN;
```

Variable	Description
RESCODE	Individual code for resident
RESGENDER	Resident gender
RACEETH	Resident race/ethnicity
PGY	Resident post-graduate year
FACEVALCODE	Individual code for faculty
FGENDER	Faculty gender
FRANK	Faculty rank
FACEVALDEPT	Faculty department
TIMEYEAR	Time of the year
SITE	Hospital site
CENTER	Training program

Supplemental Digital Appendix 3
Adjusted Standardized Core Competency and Internal Medicine Milestone Scores for Underrepresented in Medicine (URiM) and Non-URiM Residents in a Study of the Association Between Resident Race/Ethnicity and Assessment Scores, 2016-2017

Core Competencies*	URiM Residents	Non-URiM Residents	Difference	P value [a]
	Mean Adjusted Standardized Score (SE)*			
Patient Care	0.073 (0.07)	0.153 (0.05)	-0.079 (0.05)	0.129
Medical Knowledge	0.049 (0.07)	0.172 (0.05)	-0.123 (0.05)	0.021
Systems- Based Practice	-0.136 (0.07)	0.043 (0.05)	-0.179 (0.05)	0.005
Practice- Based Learning & Improvement	-0.001 (0.07)	0.111 (0.05)	-0.112 (0.05)	0.032
Professionalism	-0.016 (0.10)	0.10 (0.05)	-0.116 (0.06)	0.036
Interpersonal & Communication Skills	0.024 (0.07)	0.137 (0.06)	-0.113 (0.06)	0.044

Abbreviations: IM=Internal Medicine; SE=standard error; URiM=underrepresented in medicine, non-URiM=not Underrepresented in Medicine

*Adjusted standardized scores for IM Core Competencies as determined by the Accreditation Council for Graduate Medical Education.

Mean and standard errors obtained from a cross classified random-intercept mixed model adjusted for resident gender, resident postgraduate year, baseline IM In-Training Examination Percentile Rank, time of year evaluated (Jul-Sep, Oct-Dec, Jan-Mar, Apr-May), rotation setting (University, Veterans Administration, Community or Public hospital), faculty gender, faculty rank (Assistant Professor/Instructor/ Chief Resident, Associate Professor, Professor, No Rank/Clinical Associate), and faculty specialty (General Medicine, Hospital Medicine, Subspecialty)

[a] p-value represents significance of the association in mean adjusted standardized scores with resident URiM designation, unadjusted for multiple comparisons

Supplemental Digital Appendix 4
Adjusted Standardized Core Competency Scores by Resident Race/Ethnicity in a Study of the Association Between Resident Race/Ethnicity and Assessment Scores, 2016-2017

IM Core Competencies*	URiM Residents Mean Score (SE)	Non-URiM, Non-White Residents			Non-URiM, White Residents			P value[a]
		Mean Score (SE)	Difference with URiM	P value[b]	Mean Score (SE)	Difference with URiM	P value[c]	
Patient Care	0.074 (0.07)	0.177 (0.05)	-0.103 (0.06)	0.072	0.137 (0.05)	-0.063 (0.06)	0.250	0.188
Medical Knowledge	0.05 (0.07)	0.21 (0.06)	-0.160 (0.06)	0.006	0.146 (0.05)	-0.097 (0.06)	0.082	0.019
Systems- Based Practice	-0.135 (0.07)	0.073 (0.06)	-0.208 (0.06)	<0.001	0.024 (0.05)	-0.158 (0.05)	0.003	0.001
Practice- Based Learning & Improvement	0.000 (0.07)	0.141 (0.06)	-0.142 (0.06)	0.013	0.092 (0.06)	-0.092 (0.06)	0.093	0.044
Professionalism	-0.015 (0.07)	0.131 (0.06)	-0.146 (0.06)	0.016	0.081 (0.05)	-0.096 (0.06)	0.097	0.056
Interpersonal & Communication Skills	0.024 (0.07)	0.13 (0.06)	-0.106 (0.06)	0.086	0.142 (0.06)	-0.118 (0.06)	0.045	0.127

Abbreviations: IM=Internal Medicine, URiM=Underrepresented in Medicine, non-URiM=Not Underrepresented in Medicine

*Adjusted standardized scores for IM Core Competencies as determined by the Accreditation Council for Graduate Medical Education

Mean and standard errors obtained from a cross-classified random-intercept mixed model adjusted for resident gender, resident postgraduate year, baseline IM In-Training Examination Percentile Rank, time of year evaluated (Jul-Sep, Oct-Dec, Jan-Mar, Apr-May), rotation setting (University, Veterans Administration, Community or Public hospital), faculty gender, faculty rank (Assistant Professor/ Instructor/ Chief Resident, Associate Professor, Professor, No Rank/Clinical Associate), and faculty specialty (General Medicine, Hospital Medicine, Subspecialty)

[a] p-value represents significance of the association in mean adjusted standard scores with resident race, unadjusted for multiple comparisons

[b] p-value represents significance of difference in scores between URiM and Non-URiM, Non-White resident, unadjusted for multiple comparisons

[c] p-value represents significance of difference in scores between URiM and Non-URiM, White residents, unadjusted for multiple comparisons

Supplemental Digital Appendix 5
Adjusted Standardized Core Competency Scores for URiM and Non-URiM Residents by Resident Gender in a Study of the Association Between Resident Race/Ethnicity and Assessment Scores, 2016-2017

IM Core Competencies*	Men Residents				Women Residents				
	URiM	Non-URiM	Difference	P value[b]	URiM	Non-URiM	Difference	P value[c]	
	Mean (SE)				Mean (SE)				P value[a]
Patient Care	0.042 (0.08)	0.158 (0.05)	-0.115 (0.07)	0.109	0.106 (0.08)	0.146 (0.05)	-0.040 (0.08)	0.598	0.4652
Medical Knowledge	0.07 (0.08)	0.202 (0.05)	-0.131 (0.07)	0.072	0.028 (0.09)	0.141 (0.06)	-0.113 (0.08)	0.139	0.8639
Systems-Based Practice	-0.141 (0.08)	0.027 (0.05)	-0.169 (0.07)	0.016	-0.13 (0.08)	0.059 (0.06)	-0.189 (0.07)	0.010	0.8409
Practice-Based Learning & Improvement	0.057 (0.08)	0.138 (0.06)	-0.081 (0.07)	0.264	-0.059 (0.09)	0.086 (0.06)	-0.145 (0.08)	0.053	0.5402
Professionalism	-0.045 (0.08)	0.077 (0.06)	-0.122 (0.08)	0.105	0.014 (0.09)	0.124 (0.06)	-0.110 (0.08)	0.176	0.9102
Interpersonal & Communication Skills	-0.009 (0.09)	0.092 (0.06)	-0.102 (0.08)	0.187	0.058 (0.09)	0.183 (0.06)	-0.125 (0.08)	0.120	0.8319

Abbreviations: IM=Internal Medicine; SE=standard error; URiM=Underrepresented in Medicine, non-URiM=Not Underrepresented in Medicine

*Adjusted standardized scores for IM Core Competencies as determined by the Accreditation Council for Graduate Medical Education. Mean and standard errors obtained from a cross-classified random-intercept mixed model adjusted for resident postgraduate year, baseline IM In-Training Examination Percentile Rank, time of year evaluated (Jul-Sep, Oct-Dec, Jan-Mar, Apr-May), rotation setting (University, Veterans Administration, Community or Public hospital), faculty gender, faculty rank (Assistant Professor/ Instructor/ Chief Resident, Associate Professor, Professor, No Rank/Clinical Associate), and faculty specialty (General Medicine, Hospital Medicine, Subspecialty)

[a] p-value represents significance of the association in mean adjusted standard scores with resident URiM and resident gender, unadjusted for multiple comparisons

[b] p-value represents significance of difference between URiM and non-URiM resident scores for men residents, unadjusted for multiple comparisons

[c] p-value represents significance of difference between URiM and non-URiM resident scores for women residents, unadjusted for multiple comparisons

Supplemental Digital Appendix 6
Adjusted Standardized Core Competency Scores for URiM and Non-URiM Residents by Faculty Gender in a Study of the Association Between Resident Race/Ethnicity and Assessment Scores, 2016-2017

	Men Faculty				Women Faculty				
	URiM Resident scores	Non-URiM Resident scores	Difference	P value[b]	URiM Resident scores	Non-URiM Resident scores	Difference	p value[c]	P value[a]
	Mean (SE)*				Mean (SE)*				
Patient Care	0.151 (0.07)	0.235 (0.05)	-0.083 (0.06)	0.168	-0.004 (0.08)	0.07 (0.06)	-0.074 (0.07)	0.251	0.893
Medical Knowledge	0.133 (0.08)	0.261 (0.06)	-0.128 (0.06)	0.038	-0.034 (0.08)	0.082 (0.06)	-0.116 (0.07)	0.079	0.868
Systems-Based Practice	-0.071 (0.08)	0.153 (0.06)	-0.224 (0.06)	<0.001	-0.189 (0.08)	-0.067 (0.06)	-0.122 (0.06)	0.058	0.141
Practice-Based Learning & Improvement	0.095 (0.08)	0.199 (0.06)	-0.104 (0.06)	0.087	-0.101 (0.09)	0.024 (0.06)	-0.125 (0.07)	0.072	0.789
Professionalism	0.007 (0.08)	0.205 (0.06)	-0.199 (0.06)	0.002	-0.02 (0.09)	-0.006 (0.06)	-0.014 (0.07)	0.837	0.013
Interpersonal & Communication Skills	0.097 (0.08)	0.209 (0.06)	-0.112 (0.07)	0.083	-0.049 (0.09)	0.066 (0.07)	-0.115 (0.07)	0.070	0.969

Abbreviations: IM=Internal Medicine; SE=standard error; URIM=underrepresented in medicine, non-URiM=Not Underrepresented in Medicine

*Adjusted standardized scores for IM Core Competencies as determined by the Accreditation Council for Graduate Medical Education. Mean and standard errors obtained from a cross-classified random-intercept mixed model adjusted resident gender, resident postgraduate year, baseline IM In-Training Examination Percentile Rank, time of year evaluated   (Jul-Sep, Oct-Dec, Jan-Mar, Apr-May), rotation setting (University, Veterans Administration, Community or Public hospital), faculty rank (Assistant Professor/Instructor/ Chief Resident, Associate Professor, Professor, No Rank/Clinical Associate), and faculty specialty (General Medicine, Hospital Medicine, Subspecialty)

[a] p-value represents significance of the association in mean adjusted standard scores with resident URiM and faculty gender
[b] p-value represents significance of difference between URiM and non-URiM resident scores for men faculty
[c] p-value represents significance of difference between URiM and non-URiM resident scores for women faculty