Predictors of applicant pool diversity during the physician assistant admissions cycle

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Introduction

Health workforce diversity

- The USA is becoming more diverse.

- Many parts of the health workforce, including the PA profession, have not kept pace with that trend.

- This gap has significant impacts on patients and providers.

Benefits of a diverse health workforce

A diverse health workforce benefits patients and providers.

- Varying patient preferences for provider race and gender

- Evidence of increased satisfaction for patients and providers

- Racial biases influence perceptions of pain among both lay people and doctors.

- This can alter patients' treatment plans.

Admissions

- Admission to training programs is the first major gateway into the health professions.

- To get into the workforce, you have to get into school.

- To get into school, you have to apply.

- Most studies focus on matriculation; few have examined the application phase.
  - Example: Tactics like holistic admissions require having a diverse applicant pool to begin with.

New ARC-PA standard A1.11

The sponsoring institution must demonstrate its commitment to student, faculty and staff ==diversity and inclusion== by:

a) supporting the program in defining its goal(s) for diversity and inclusion,

b) supporting the program in implementing ==recruitment strategies==,

c) supporting the program in implementing retention strategies, and

d) making available, resources which promote diversity and inclusion.

Aim

Examine the relationship between PA program characteristics and the diversity of their applicant pools to better understand flows of diversity into the profession

Methods

Sample

- 2017-2018 CASPA cycle

- 26,616 applicants
  - Includes only applicants that provided race/ethnicity data

- 183 PA programs
  - Excludes programs with a pre-PA phase

Diversity summary metrics

Proportion of underrepresented minority applicants (URM)

Proportion of underrepresented in medicine applicants (URMed)

Simpson's diversity index (SDI)

Underrepresented Minority definition

URM:

- Hispanic **or**
- Any non-white race **or**
- Any non-white race in combination with white race

Not URM:

- Non-Hispanic, single-race white

Underrepresented in Med. definition

URMed:

- Hispanic **or**
- Any non-Asian, non-white race **or**
- Any non-Asian, non-white race in combination with Asian or white races

Non-URMed:

- Non-Hispanic, single-race Asian
- Non-Hispanic, single-race white
- Non-Hispanic Asian and white

Simpson's diversity index

Originated in biology and economics but has been used in education research as well.

Definition: the probability that two entities taken at random from the dataset of interest represent different types.

First, categorize each **applicant** into an ethnicity/race combination:

- American Indian or Native Alaskan
- Asian
- Black or African American
- Native Hawaiian or Pacific Islander
- White
- Hispanic or Latino (of any race)
- Two or more races

Example: High Simpson diversity

Race/Ethnicity	n	Proportion	Squared proportion
White	5	0.5	0.25
Asian	2	0.2	0.04
Black	2	0.2	0.04
Hispanic	1	0.1	0.01
Total	**10**	**1.0**	**0.34**

SDI = 1 – 0.34 = **0.66**

Example: Low Simpson diversity

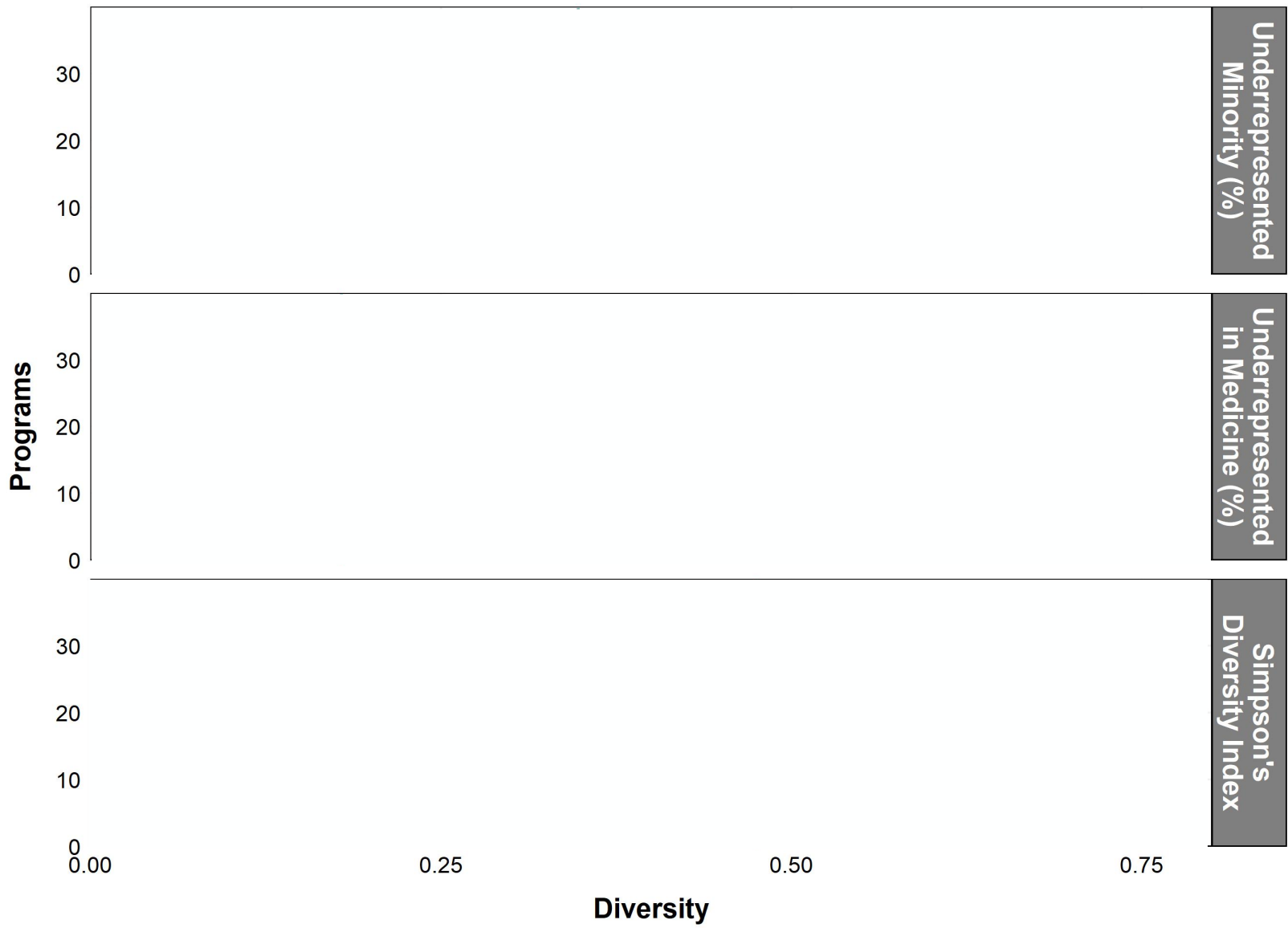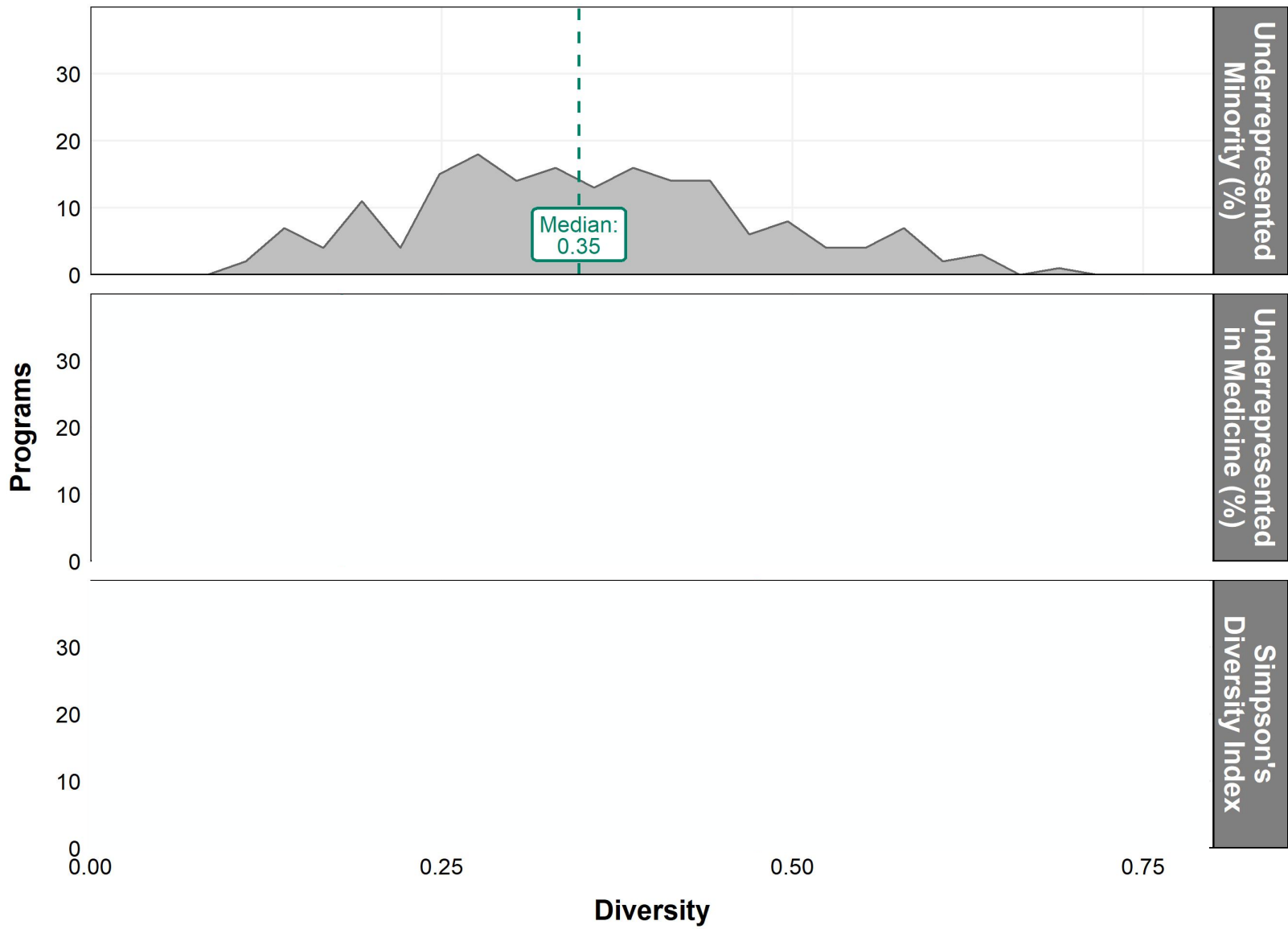| Race/Ethnicity	n	Proportion	Squared proportion
White	9	0.9	0.81
Asian	1	0.1	0.01
Total	**10**	**1.0**	**0.82**

SDI = 1 − 0.82 = **0.18**
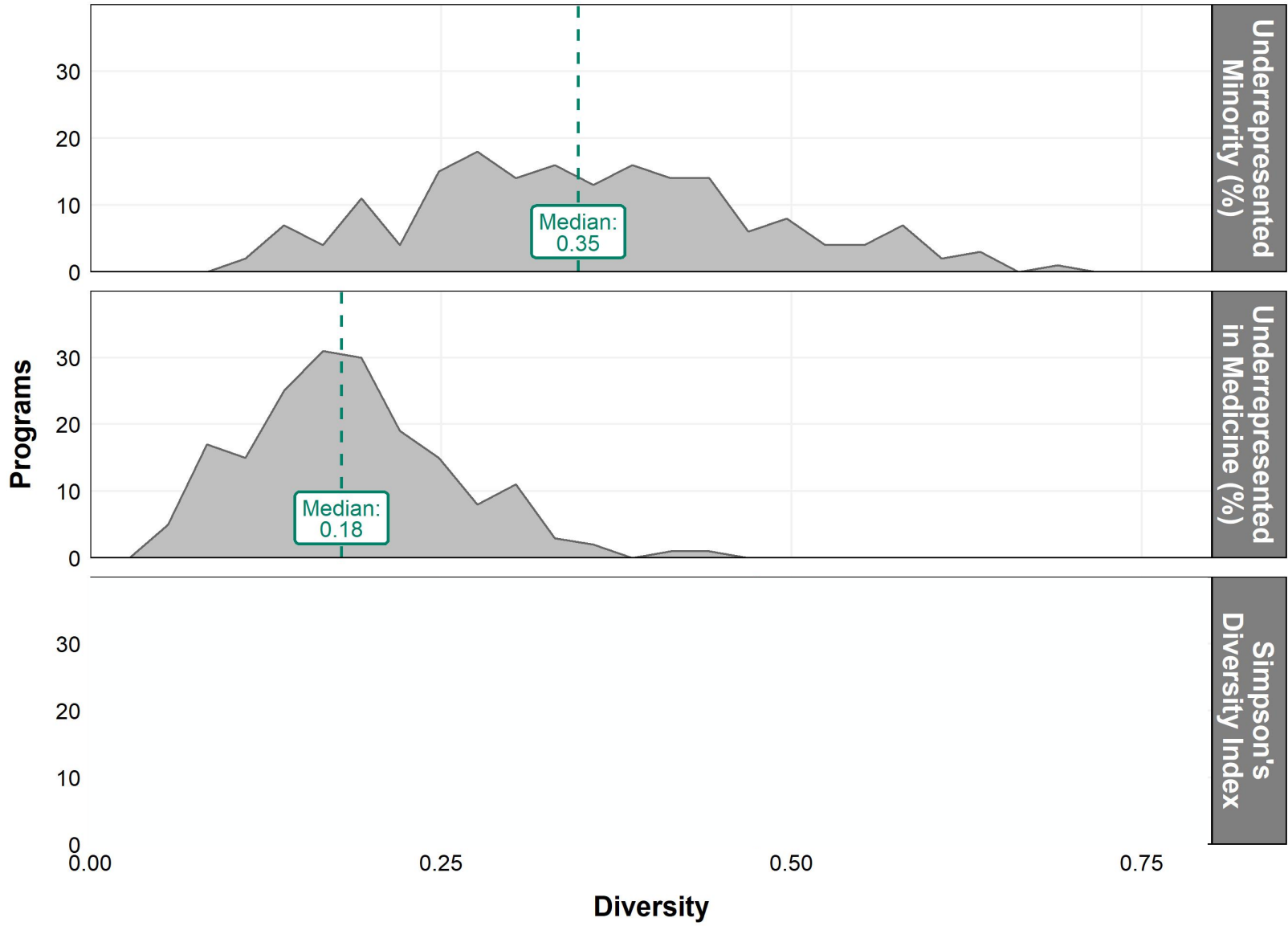
Statistical methods

Independent variables

- Accreditation status: Provisional, **Continuing**, or Probation

- Academic health center status: AHC or **Non-AHC**

- Public/private status: Public or **Private**

- Require GRE: **Yes** or No

- Rural-Urban Continuum Code:
    - **RUCC 1 (Metro area, pop. 1M or greater)**
    - RUCC 2 (Metro area, pop. 250K-1M)
    - RUCC 3 (Metro area, pop. < 250K)
    - RUCC 4-9 (Non-metro area)

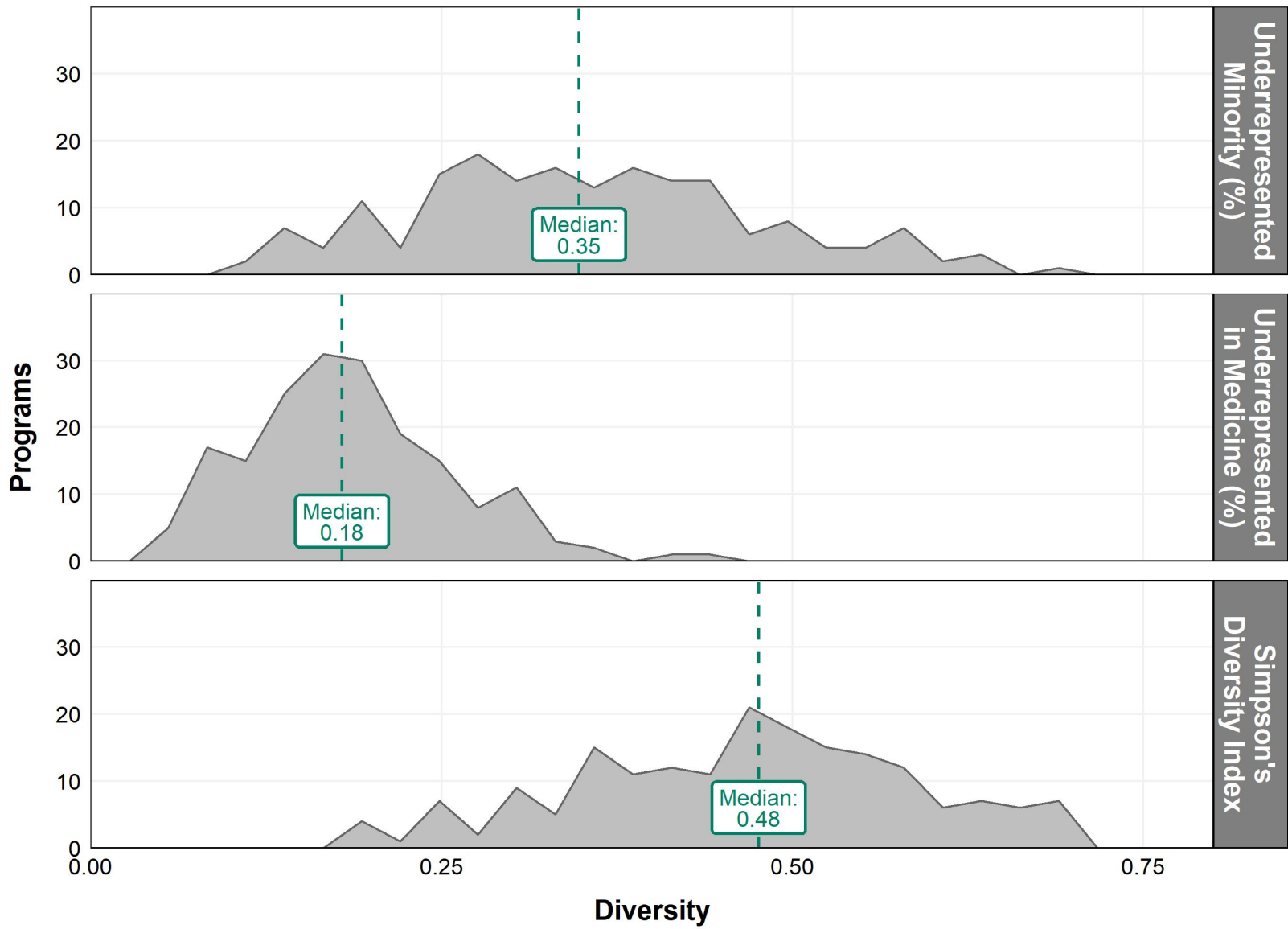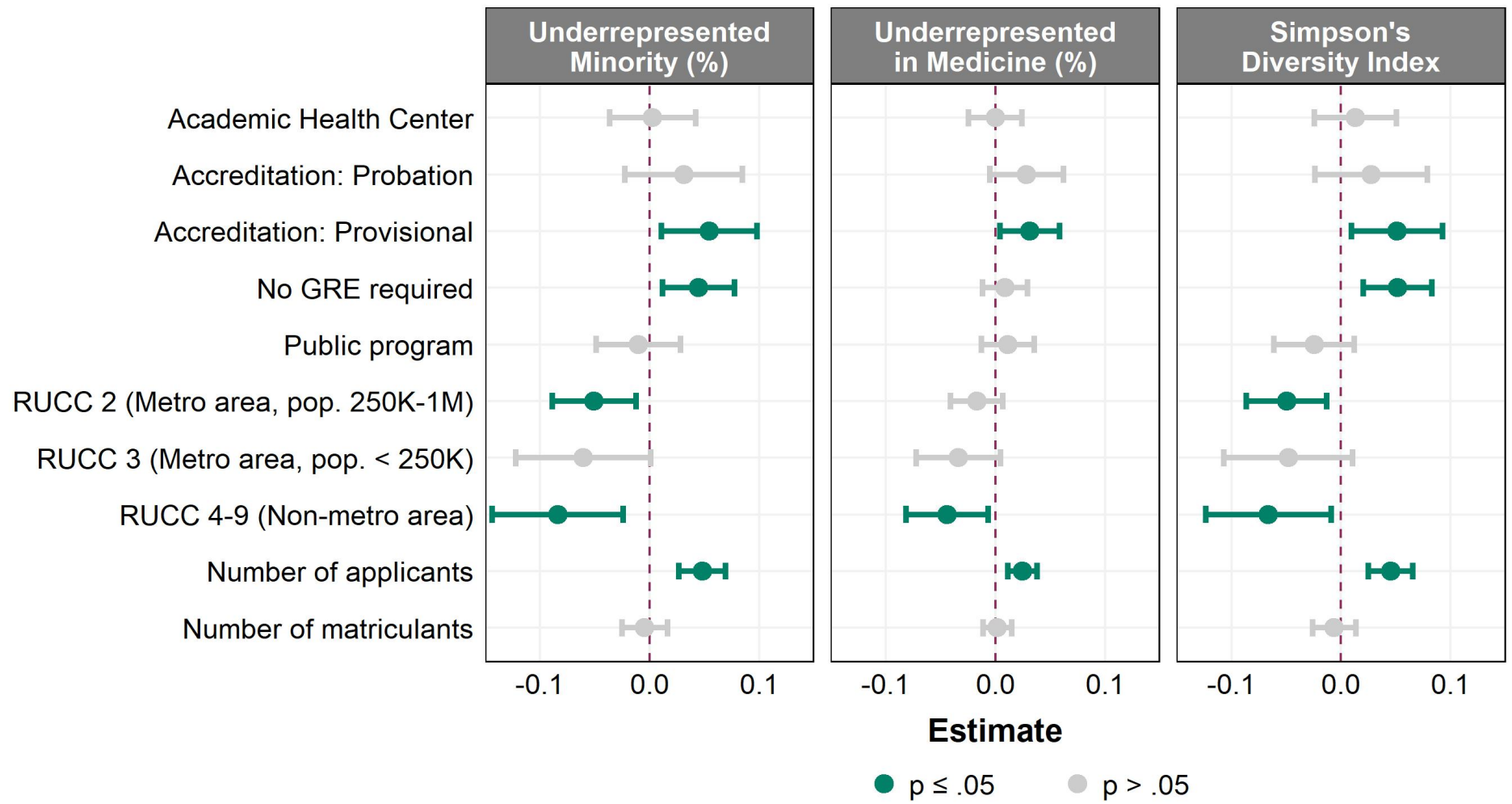- Number of applicants
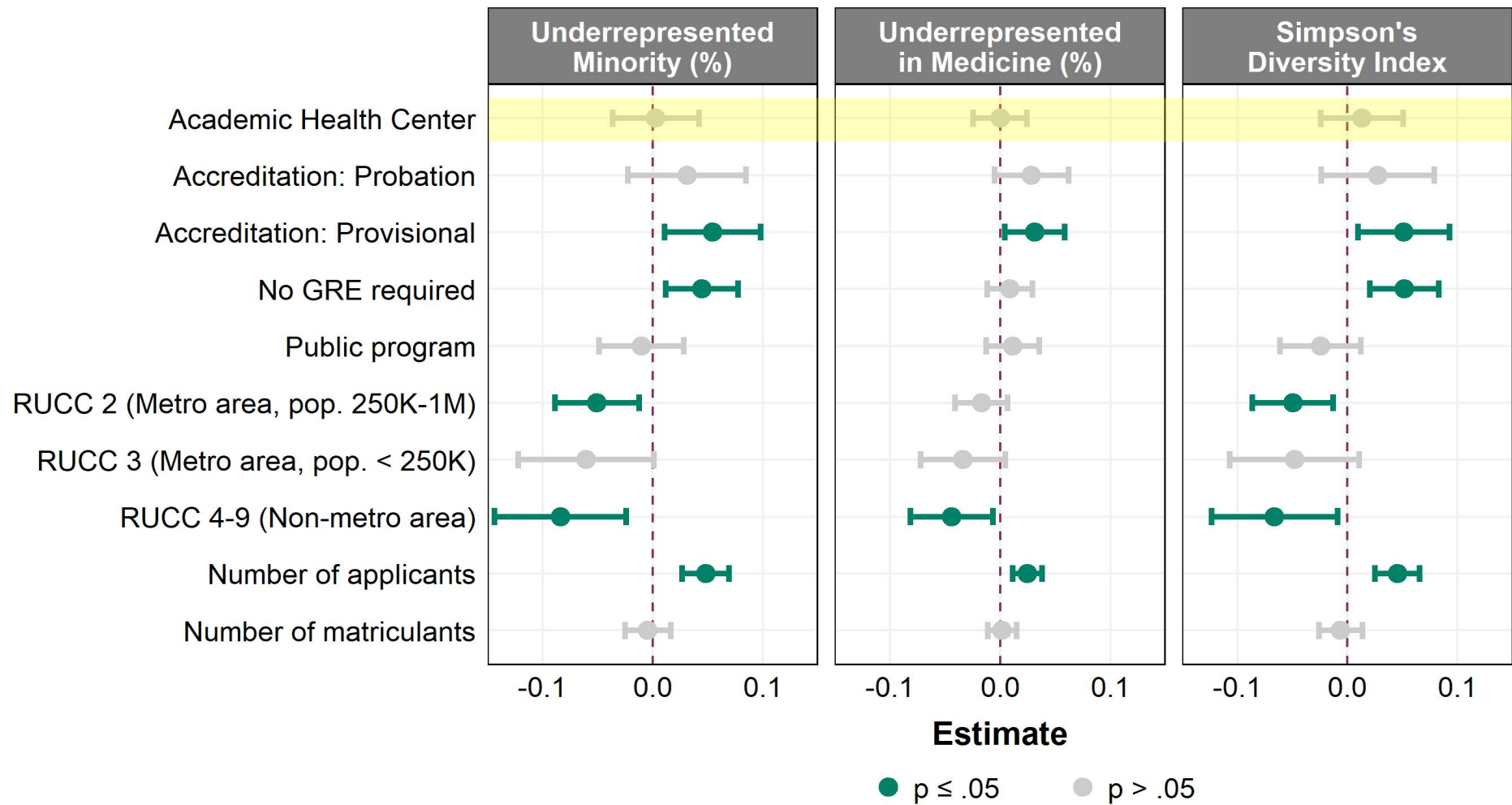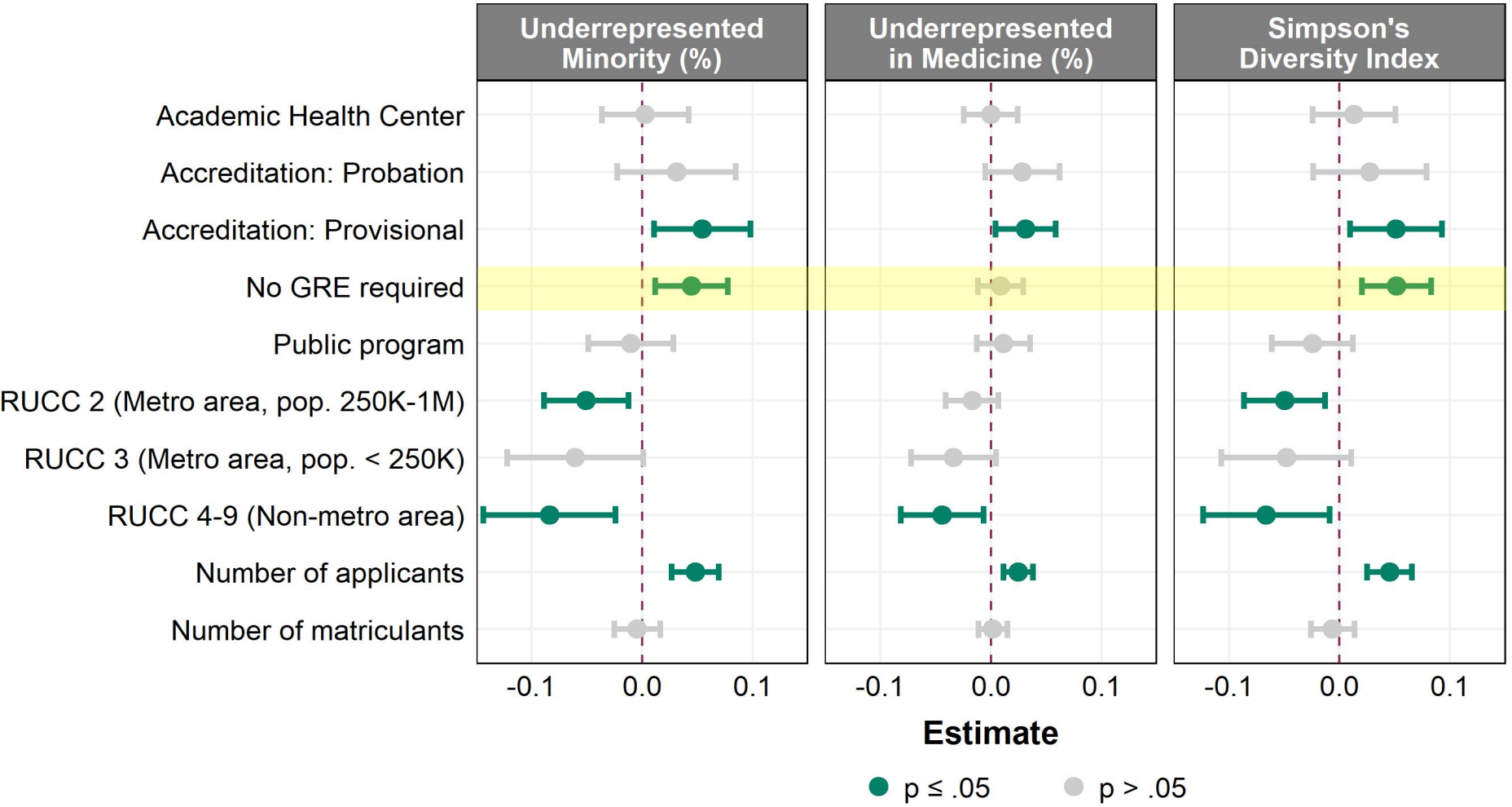
- Number of matriculants

Results

	Underrepresented Minority (%)	Underrepresented in Medicine (%)	Simpson's Diversity Index

Academic Health Center
Accreditation: Probation
Accreditation: Provisional
No GRE required
Public program
RUCC 2 (Metro area, pop. 250K-1M)
RUCC 3 (Metro area, pop. < 250K)
RUCC 4-9 (Non-metro area)
Number of applicants
Number of matriculants

Estimate

● p ≤ .05   ● p > .05

	Underrepresented Minority (%)	Underrepresented in Medicine (%)	Simpson's Diversity Index

Academic Health Center

Accreditation: Probation

Accreditation: Provisional

No GRE required

Public program

RUCC 2 (Metro area, pop. 250K-1M)

RUCC 3 (Metro area, pop. < 250K)

RUCC 4-9 (Non-metro area)

Number of applicants

Number of matriculants

Estimate

● p ≤ .05   ● p > .05

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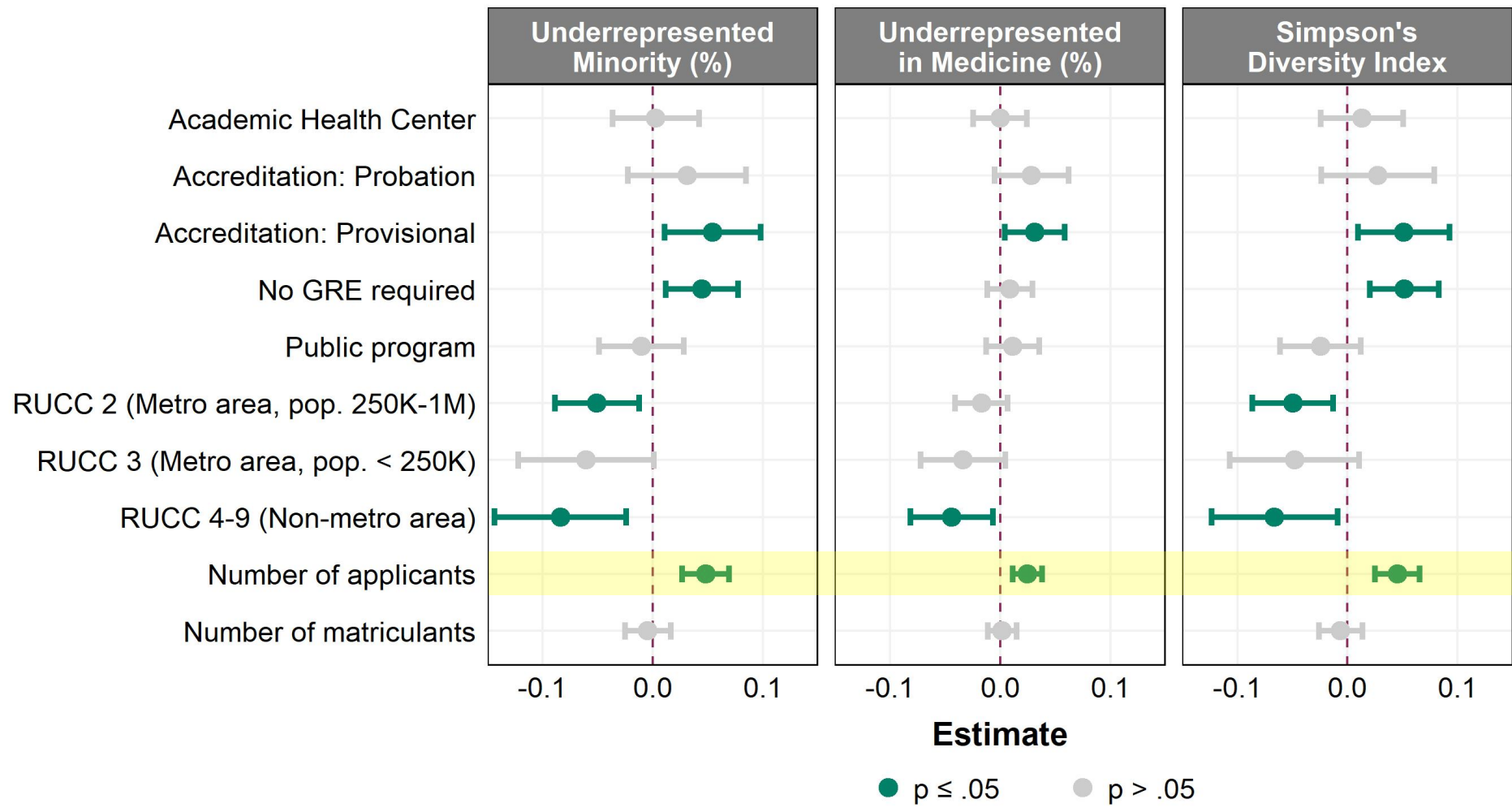# Discussion

Finding: the metric matters
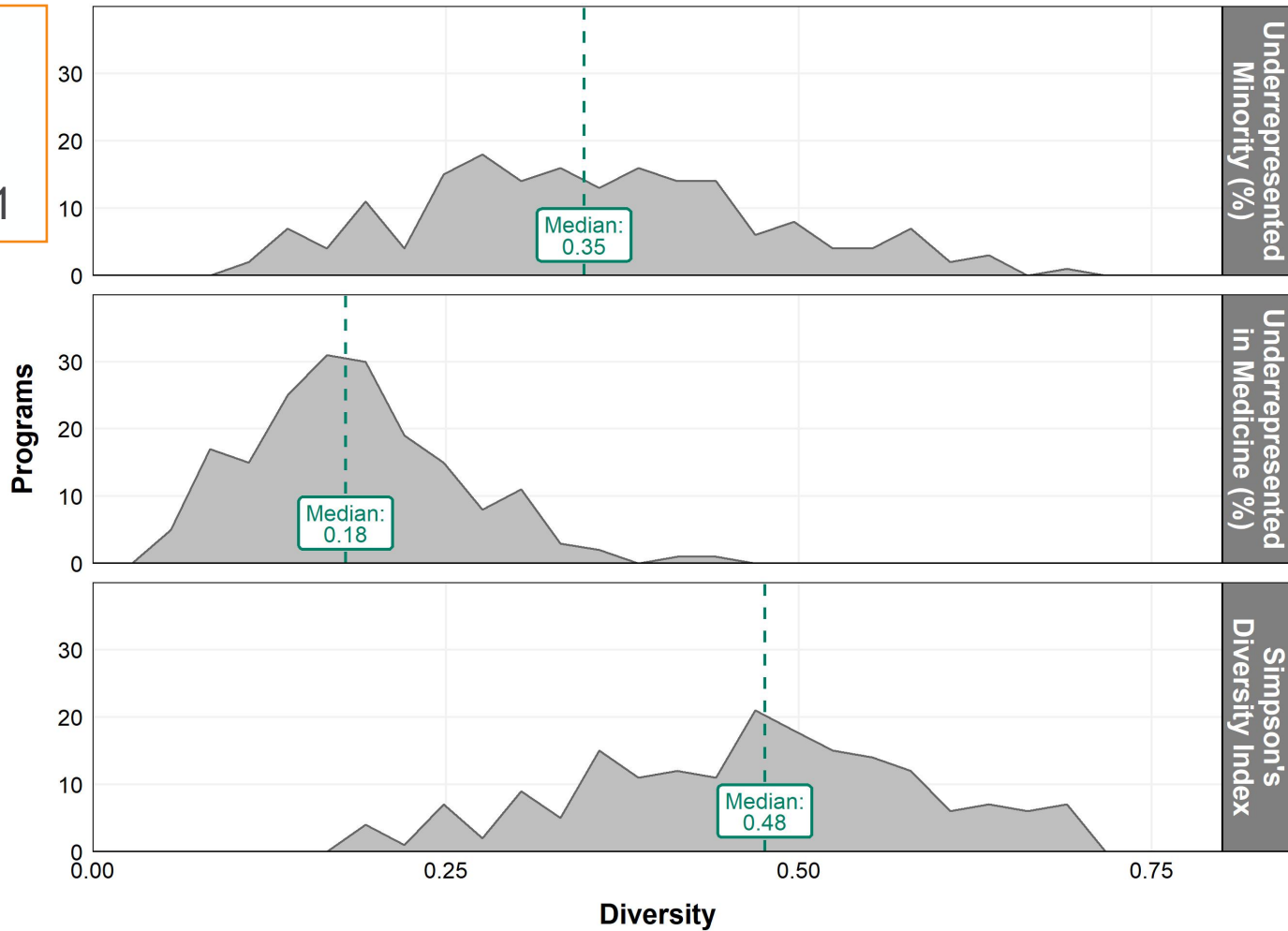
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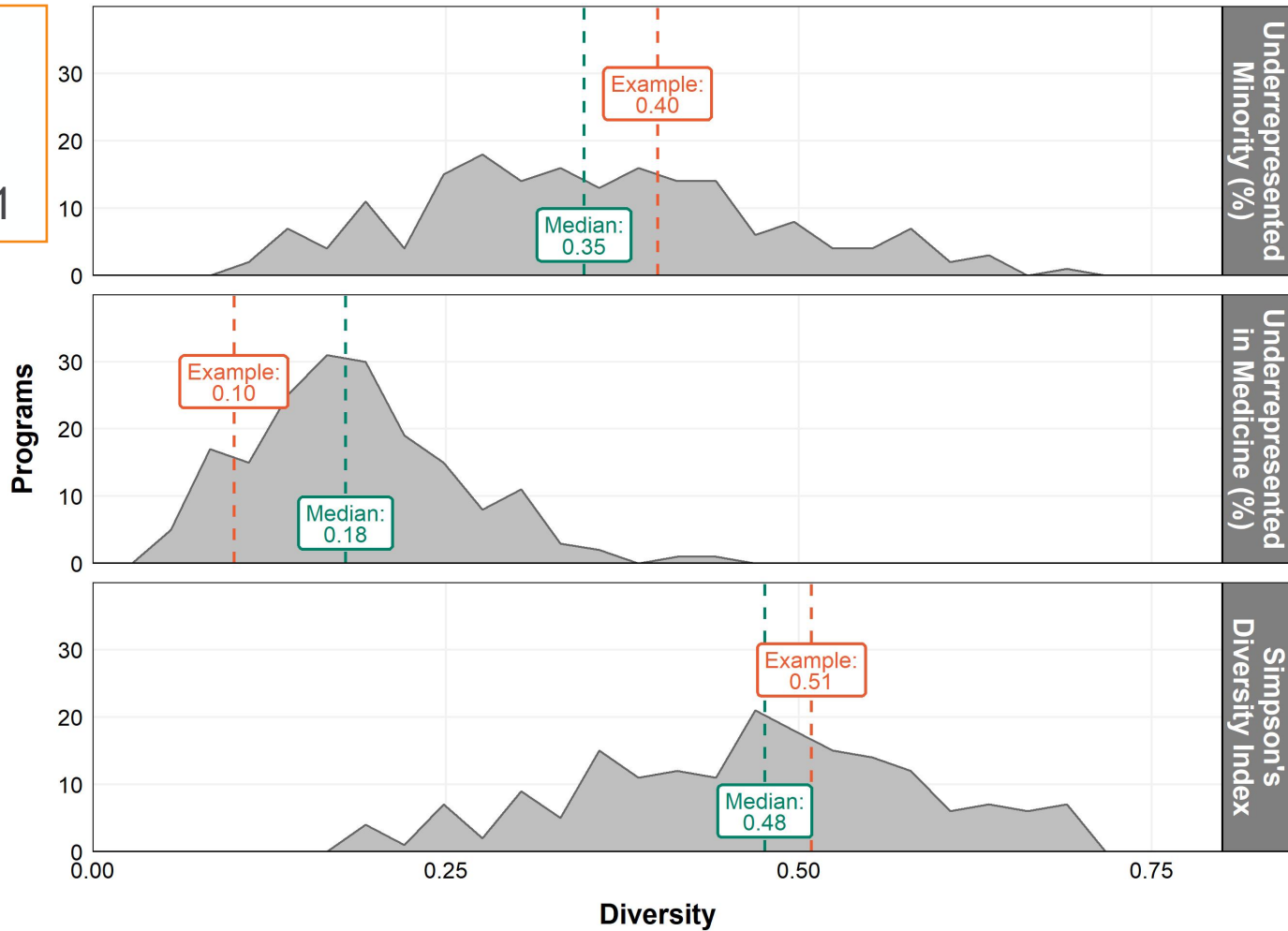
Finding: consistent program correlates

- Accreditation status
- Require GRE
- RUCC
- Number of applicants

What can programs do?

How will your program define and measure diversity?

Think about the entire admissions process, especially the steps before matriculation.

Consider how admissions requirements may affect prospective applicants.

Think about how to increase the size of your applicant pool, especially attracting underrepresented groups.

What can PAEA do?

Tell the stories of programs' successes in recruiting and retaining diverse student bodies.

Listen to members and engage them with resources like the DEI and Project Access toolkits.

Broaden research to incorporate other domains of diversity.

Q&A

Next steps

Incorporate the matriculation phase
- Do programs retain or lose their applicant pool diversity?

Account for geographic catchment in admissions
- Do programs draw from the local area or elsewhere?

Incorporate other domains of diversity
- What type of programs attract students from rural areas?

Broaden study to include more application cycles
- Do we see similar patterns in other years?

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Related work

Examining barriers to matriculation among students from historically underrepresented backgrounds

- Strength in Differences? The Importance of Diversity to Students When Choosing a Physician Assistant Program
- Predicting Physician Assistant Program Matriculation Among Diverse Applicants: The Influences of Underrepresented Minority Status, Age, and Gender
- Does Prior Community College Attendance Predict Diversity in Health Professions Schools? The Case of Physician Assistants

Accreditation status

	n	%
Continuing	122	66.7
Provisional	40	21.9
Probation	20	10.9
NA	1	0.5
Total	**183**	**100.0**

Academic health center status

	n	%
No	123	67.2
Yes	60	32.8
Total	183	100.0

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Public/private status

	n	%
Private	121	66.1
Public	60	32.8
NA	2	1.1
Total	**183**	**100.0**

Require GRE

	n	%
Yes	100	54.6
No	83	45.4
Total	**183**	**100.0**

RUCC

	n	%
RUCC 1 (Metro area, pop. > 1M)	100	54.6
RUCC 2 (Metro area, pop. 250K-1M)	50	27.3
RUCC 3 (Metro area, pop. < 250K)	17	9.3
RUCC 4-9 (Non-metro area)	16	8.7
Total	**183**	**100.0**

URM

	Estimate
Academic Health Center	0.00 [-0.04, 0.04]
Accreditation: Probation	0.03 [-0.02, 0.08]
Accreditation: Provisional	0.05 [0.01, 0.10]
No GRE required	0.04 [0.01, 0.08]
Public program	-0.01 [-0.05, 0.03]
RUCC 2 (Metro area, pop. 250K-1M)	-0.05 [-0.09, -0.01]
RUCC 3 (Metro area, pop. < 250K)	-0.06 [-0.12, 0.00]
RUCC 4-9 (Non-metro area)	-0.08 [-0.14, -0.02]
Number of applicants	0.05 [0.03, 0.07]
Number of matriculants	0.00 [-0.03, 0.02]

● p ≤ .05   ● p > .05

PAEA
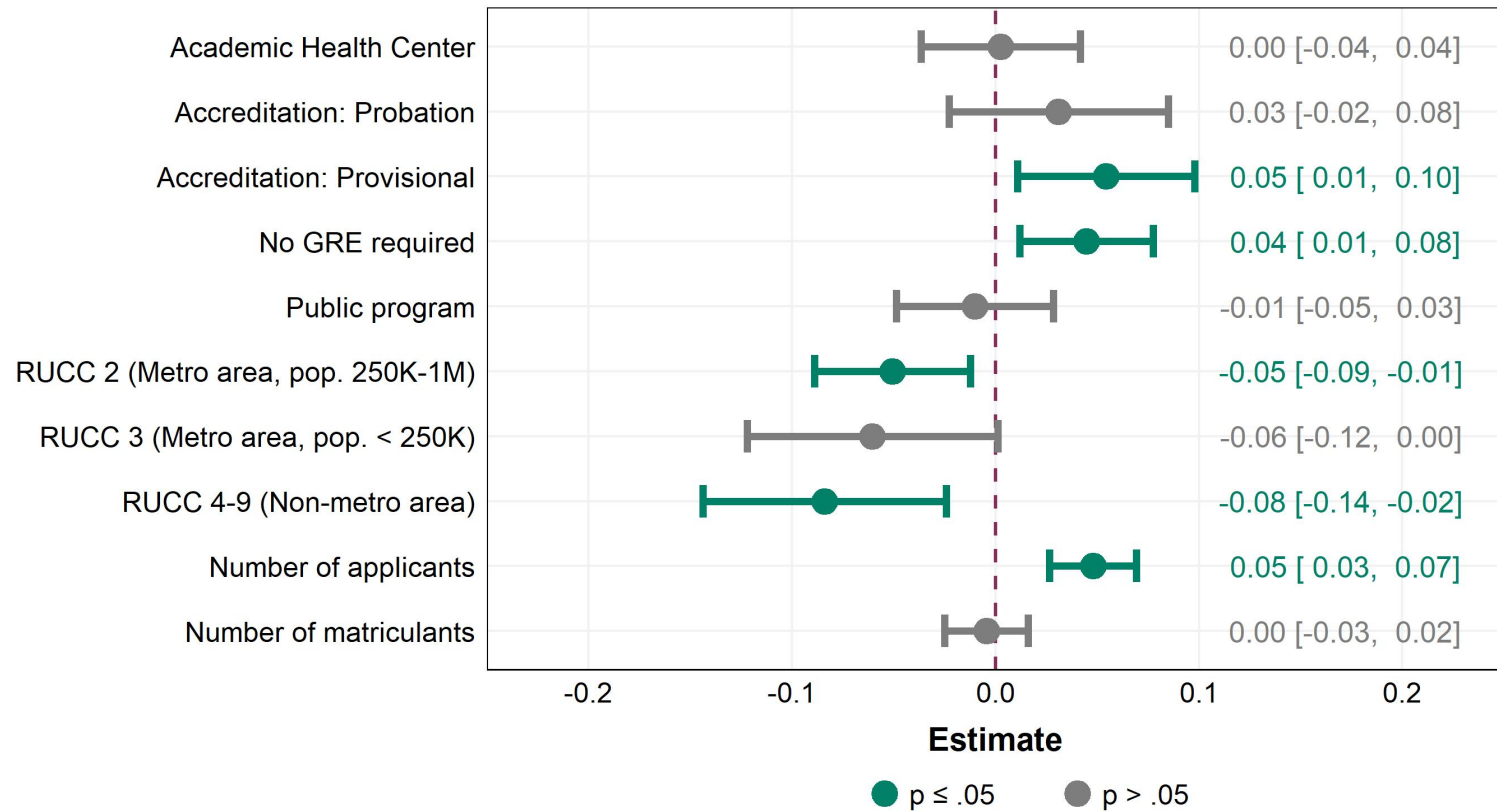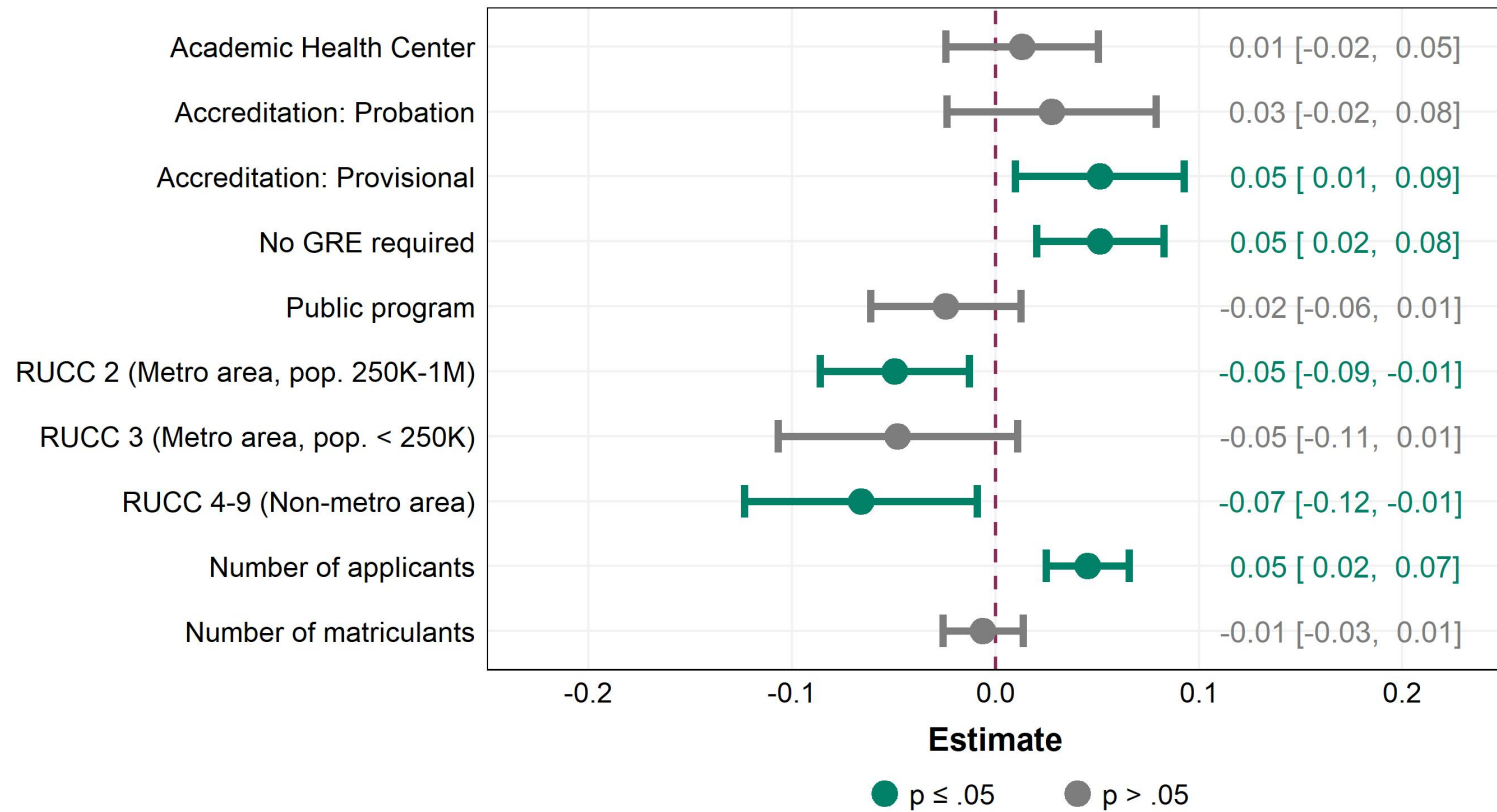
URMed
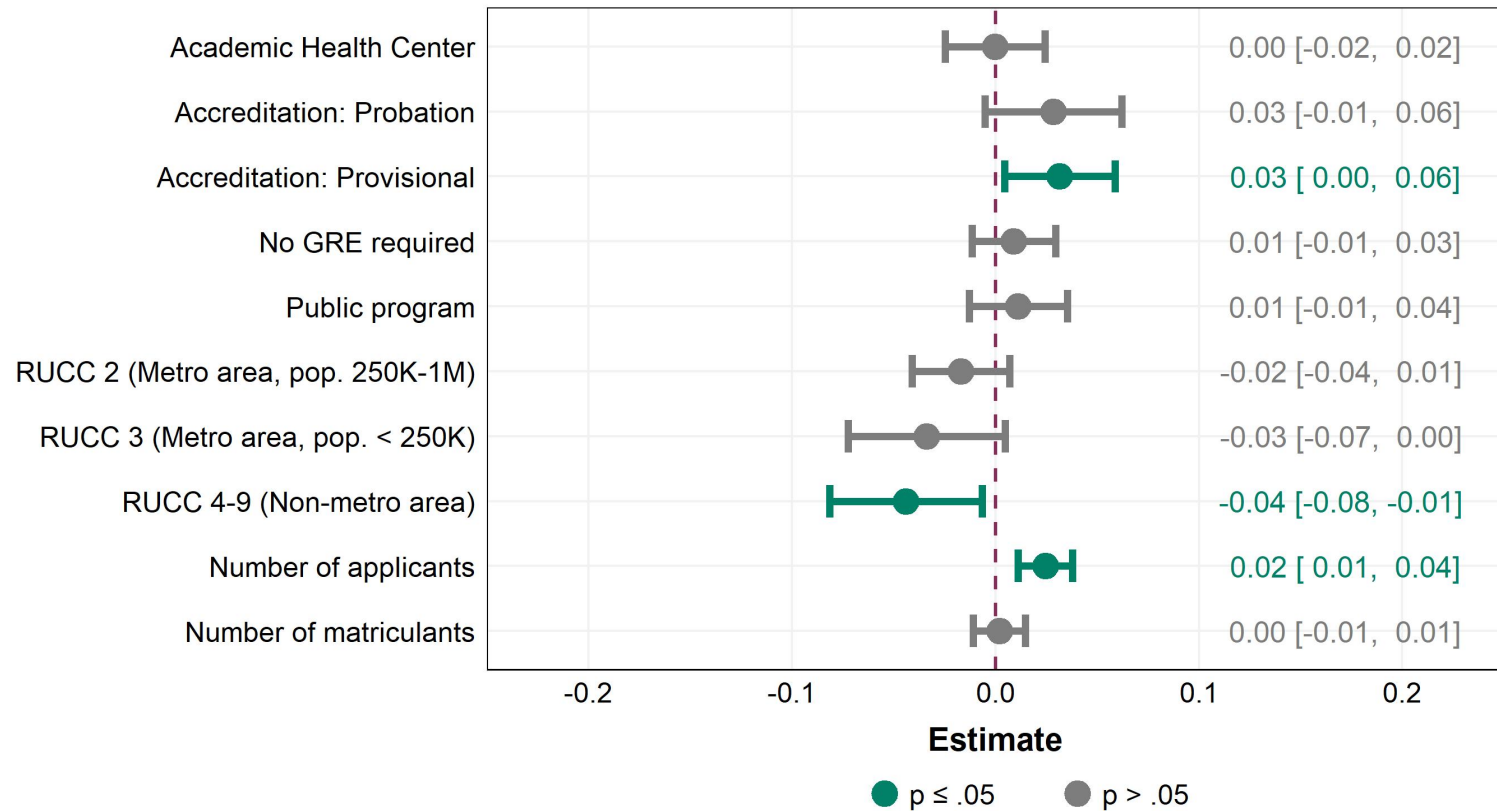
SDI

Diversity in the USA

The U.S. population is becoming more diverse.

- 1.3% American Indian or Alaskan Native
- 5.9% Asian
- 13.4% Black or African American
- 0.2% Native Hawaiian or Pacific Islander
- 60.1% non-Hispanic white

Health workforce diversity

2019 MD graduates

- 0.2% American Indian or Alaskan Native

- 21.6% Asian

- 6.2% Black or African American

- 0.1% Native Hawaiian or Pacific Islander

- 54.6% non-Hispanic white

2019 PA graduates

- 0.5% American Indian or Alaskan Native

- 8.6% Asian

- 3.2% Black or African American

- 1.0% Native Hawaiian or Pacific Islander

- 71.7% white