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## Supplemental Digital Appendix 3

### **Promoting Research Opportunities Fully—Prospective Academic Transforming Health (PROF-PATH) Post-Summer Focus Group Guide**

#### **Aims:**

- To gather student perspective on their overall experience with the PROF-PATH program
- To understand how the Careers-in-Progress sessions and overall PROF-PATH experience is useful to students now and later

#### **Notes:**

- Ask students to give examples when answering.
- The focus will not be on the specifics of the research projects.

#### **I. Opening Probe**

Please take a few minutes to reflect back on your experiences with being part of the PROF-PATH program and let's talk about your overall experience and impression.

- PROBE: If no one volunteers information, start round robin.
- PROBE: Pick up on general sentiment/themes that emerge during question 1 to focus which question should be asked second. If no themes emerge, go to question 2.

#### **II. Overall CIP Sessions**

How would you describe your overall experiences with the CIP sessions?

- PROBE: What was the most valuable or interesting session?
- PROBE: What was the least relevant session AND why? Or topics that you wished had been covered?
- PROBE: If the CIP sessions helped, please explain how you think they helped? With your research project? With other activities? (give examples)
- PROBE: How are you using these (new) skills?

#### **III. Impact on Career**

How did your overall experience with the program impact your perspective on your career goals and aspirations?

#### **IV. One-on-One Sessions**

Do you have any overall feedback on the one-one sessions with Dr. Fernandez and Dr. Flowers?

##### **IV-a. Working with Dr. Fernandez**

How would you describe your overall experience working with Dr. Fernandez?

- PROBE: Was she easily approachable?
- PROBE: Did you receive any advice about your future career options or opportunities?

- PROBE: Did she provide insights/advice that was helpful to your current project?

#### **IV-b. Working with Dr. Flowers**

How would you describe your overall experience working with Dr. Flowers?

- PROBE: Was she easily approachable?
- PROBE: Did you receive any advice about your future career options or opportunities?
- PROBE: Did she provide insights/advice that was helpful to your current project?

#### **V. Less Important Questions: Networking Experience** (Follow up if they bring it up!)

What was your experience being with a group of students with similar backgrounds or career interest?

- PROBE: Did the CIP program provide forum for social network and support?

#### **VI. Other Topics**

PROBE: Anything else you would like to address that we have not asked about?

## Supplemental Digital Appendix 4

### **Promoting Research Opportunities Fully—Prospective Academic Transforming Health (PROF-PATH) Yearlong Fellows Interview Guide (30-45 Minutes)**

#### **Project Development**

- How did you come to be involved in your project?
- Perception of research
  - What role does it play in medicine?
  - Student's level of interest in conducting research
  - Research topic interests
  - If not interested in research, why not?
- Future career plans
  - Work setting, work content
  - Sense of self-efficacy with regard to career

#### **Research Development**

- How did you grow over the year as a researcher?
- How did you integrate the work in the CIPs with your mentor and in your project?
- Tell us about your experience with mentoring in PROFPATH

#### **CIP Experience**

Please take a few minutes to reflect back on your experiences with being part of PROF-PATH program and let's talk about your overall experience and impression.

- How would you describe your overall experiences with the CIP sessions?
- What was the most valuable or interesting session?
- What was the least relevant session AND why?
- Possible additional probes:
  - Topics that you wished had been covered?
  - What did you think of the balance between discussion time and didactic teaching time?
  - Your experience of the balance between emotional competence and skill teaching?

#### **One-on-One Sessions**

- Do you have any overall feedback on the one-one sessions?
- How would you describe your overall experience working with Dr. Fernandez?
  - Additional possible probes:
    - Was she easily approachable?
    - Did you receive any advice about your future career options or opportunities?
    - Did she provide insights/advise that was helpful to your current project?
- How would you describe your overall experience working with Dr. Flowers?
  - Was she easily approachable?
  - Did you receive any advice about your future career options or opportunities?
  - Did she provide insights/advise that was helpful to your current project?

### **Networking Experience**

- What was your experience being with the group of students with similar backgrounds or career interest?
- Did the CIP program provide sufficient opportunities to meet or work with other students with similar interest?
- Did the CIP program provide forum for social network and support?

### **Impact on Career**

- How did your overall experience with the program impact your perspective on your career goals and aspirations?
- Anything you would like to address that we have not asked about?

### **Other Questions**

#### Stresses

- Peer/family perspectives
  - o Perception of peer and family expectations for career

## Supplemental Digital Appendix 5

### Supplemental Digital Appendix 5A

#### Characteristics of PROF-PATH and Traditional Research Program Students, 2014-2016

Characteristic	PROF-PATH students, n (% of 52)	Traditional research program students, n (% of 178)	<i>P</i> value <sup>a</sup>
<b>Gender identification</b>			0.98
Male	25 (48.1)	86 (48.3)	
Female	27 (51.9)	92 (51.7)	
<b>Racial identification<sup>b</sup></b>			
Asian/Pacific Islander	10 (19.2)	76 (42.7)	0.002
Black/African-American	10 (19.2)	5 (2.8)	< 0.0001
Hispanic/Latino	24 (46.2)	14 (7.9)	< 0.0001
Native American	0	1 (0.6)	<0.009
Non-Hispanic White	13 (25.0)	88 (49.4)	0.002
Mixed, Other	10 (19.2)	21 (11.8)	0.17
<b>Year in school</b>			0.39
Rising 2 <sup>nd</sup> years	37 (71.2)	137 (77.0)	
Rising 4 <sup>th</sup> years	15 (28.9)	41 (23.0)	
<b>Project type</b>			0.77
Summer Project	39 (75.0)	137 (77.0)	
Yearlong Project	13 (25.0)	41 (23.0)	
<b>Prior research experience</b>			0.6
None/A Little/Some	27 (51.9)	85 (47.8)	
Moderate/Substantial	25 (48.1)	93 (52.2)	
<b>Presented oral presentation/ poster at professional meeting</b>	34 (65.4)	118 (66.3)	0.9
<b>Author on peer-reviewed paper</b>	19 (36.5)	110 (61.8)	0.001

Abbreviations: PROF-PATH indicates Promoting Research Opportunities Fully—Prospective Academic Transforming Health.

<sup>a</sup>The authors derived the *P* values from the chi-square test.

<sup>b</sup>Students could select more than one racial identification.

**Supplemental Digital Appendix 5B**  
**PROF-PATH and TRP Students' Pre and Post Program Confidence in and Experience With Academic Career Skills (2013 – 2016)<sup>a</sup>**

Question	PRE-PROGRAM			POST-PROGRAM		
	PROF-PATH score (n = 52)	TRP score (n = 178)	P value <sup>b</sup>	PROF-PATH score (n = 52)	TRP score (n = 178)	P value <sup>b</sup>
<b>Mean (SD) level of confidence<sup>c</sup> in skills and abilities to:</b>						
1. Choose the career that best fits my interests	3.75 (0.79)	3.75 (0.82)	0.87	4.04 (0.59)	3.98 (0.71)	0.75
2. Be successful in an academic career	3.29 (0.78)	3.34 (0.88)	0.48	3.73 (0.69)	3.64 (0.90)	0.65
3. Find good mentors	3.27 (0.91)	3.61 (0.89)	0.008	3.96 (0.77)	3.83 (0.83)	0.39
4. Manage my relationship with my mentor	3.44 (1.00)	3.73 (0.91)	0.06	4.12 (0.76)	3.96 (0.82)	0.19
5. Manage professional challenges	3.50 (0.75)	3.58 (0.81)	0.48	4.12 (0.68)	3.83 (0.69)	0.01
6. Effectively showcase myself professionally	3.33 (0.88)	3.42 (0.89)	0.38	3.92 (0.76)	3.75 (0.80)	0.22
7. Effectively describe my research	3.50 (0.94)	3.84 (0.86)	0.02	4.13 (0.69)	4.06 (0.69)	0.55
<b>Mean (SD) level of agreement<sup>d</sup> with the following statements:</b>						
8. I plan to pursue an academic career	3.31 (0.81)	3.56 (0.85)	0.03	3.42 (0.78)	3.63 (0.97)	0.08
9. A research &/or academic career will best utilize my skills and	3.62 (0.89)	3.97 (0.81)	0.007	3.88 (0.88)	3.95 (0.83)	0.77
10. I am getting adequate support from the institution to pursue my research interests	3.54 (1.06)	3.67 (1.01)	0.56	4.04 (0.91)	3.72 (1.09)	0.09
11. I am getting adequate support to develop skills to pursue a research career	3.52 (0.92)	3.59 (0.94)	0.68	3.96 (0.91)	3.74 (1.04)	0.19
12. I have mentors who provide strong support for my research	3.56 (1.00)	3.92 (0.94)	0.02	4.17 (0.96)	4.04 (0.97)	0.33
13. I am able to communicate my needs to my mentor	3.77 (0.88)	3.90 (0.89)	0.36	4.23 (0.83)	4.08 (0.97)	0.42
14. I have discussed authorship with my mentor	3.42 (1.32)	3.46 (1.23)	0.9	4.44 (0.83)	3.81 (1.16)	0.0002
15. I understand the rules of authorship	3.12 (1.17)	3.57 (1.13)	0.007	4.42 (0.70)	3.95 (0.98)	0.001
16. I understand the various ways to disseminate research and	3.08 (1.04)	3.49 (1.02)	0.01	4.35 (0.65)	3.87 (0.90)	0.0005

Abbreviations: PROF-PATH indicates Promoting Research Opportunities Fully—Prospective Academic Transforming Health; SD, standard deviation.

<sup>a</sup>The items in italics are statistically significant at the  $P < .0005$  level.

<sup>b</sup>The authors derived  $P$  values from Wilcoxon rank sums test as distributions of score variables not normally distributed.

<sup>c</sup>The answer options were on 1-5 Likert-type scale, ranging from 1 = not at all confident to 5 = extremely confident.

<sup>d</sup>The answer options were on a 1-5 Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree.

## Supplemental Digital Appendix 5C

### Comparison of PROF- PATH and TRP Student Confidence and Experience in Academic Career Skills by Pre and Post Scores<sup>a</sup>

	PROF-PATH STUDENTS			TRP STUDENTS		
	Pre score, n = 52	Post score, n = 52	<i>P</i> value <sup>b</sup>	Pre score, n = 178	Post score, n = 178	<i>P</i> value <sup>b</sup>
<b>Mean (SD) level of confidence<sup>c</sup> in skills and abilities to:</b>						
1. Choose the career that best fits my interests	3.75 (0.79)	4.04 (0.59)	0.008	3.75 (0.82)	3.98 (0.71)	< .0001
2. Be successful in an academic career	3.29 (0.78)	3.73 (0.69)	0.001	3.34 (0.88)	3.64 (0.90)	< .0001
3. Find good mentors	3.27 (0.91)	3.96 (0.77)	< .0001	3.61 (0.89)	3.83 (0.83)	0.0001
4. Manage my relationship with my mentor	3.44 (1.00)	4.12 (0.76)	< .0001	3.73 (0.91)	3.96 (0.82)	0.0004
5. Manage professional challenges	3.50 (0.75)	4.12 (0.68)	< .0001	3.58 (0.81)	3.83 (0.69)	< .0001
6. Effectively showcase myself professionally	3.33 (0.88)	3.92 (0.76)	< .0001	3.42 (0.89)	3.75 (0.80)	< .0001
7. Effectively describe my research	3.50 (0.94)	4.13 (0.69)	< .0001	3.84 (0.86)	4.06 (0.69)	0.0002
<b>Mean (SD) level of agreement<sup>d</sup> with the following statements:</b>						
8. I plan to pursue an academic career	3.31 (0.81)	3.42 (0.78)	0.29	3.56 (0.85)	3.63 (0.97)	0.21
9. A research &/or academic career will best utilize my skills and	3.62 (0.89)	3.88 (0.88)	0.05	3.97 (0.81)	3.95 (0.83)	0.77
10. I am getting adequate support from the institution to pursue my research interests	3.54 (1.06)	4.04 (0.91)	0.0002	3.67 (1.01)	3.72 (1.09)	0.44
11. I am getting adequate support to develop skills to pursue a research career	3.52 (0.92)	3.96 (0.91)	0.0006	3.59 (0.94)	3.74 (1.04)	0.02
12. I have mentors who provide strong support for my research	3.56 (1.00)	4.17 (0.96)	0.0002	3.92 (0.94)	4.04 (0.97)	0.05
13. I am able to communicate my needs to my mentor	3.77 (0.88)	4.23 (0.83)	0.0002	3.90 (0.89)	4.08 (0.97)	0.005
14. I have discussed authorship with my mentor	3.42 (1.32)	4.44 (0.83)	< .0001	3.46 (1.23)	3.81 (1.16)	< .0001
15. I understand the rules of authorship	3.12 (1.17)	4.42 (0.70)	< .0001	3.57 (1.13)	3.95 (0.98)	< .0001
16. I understand the various ways to disseminate research and	3.08 (1.04)	4.35 (0.65)	< .0001	3.49 (1.02)	3.87 (0.90)	< .0001

Abbreviations: PROF-PATH indicates Promoting Research Opportunities Fully—Prospective Academic Transforming Health; SD, standard deviation.

<sup>a</sup>The items in italics are statistically significant at the  $P < .0005$  level.



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<sup>b</sup>The authors derived *P* values from Wilcoxon rank sums test as distributions of score variables not normally distributed.

<sup>c</sup>The answer options were on 1-5 Likert-type scale, ranging from 1 = not at all confident to 5 = extremely confident.

<sup>d</sup>The answer options were on a 1-5 Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree.