

Trainee Career Outcomes Tracking: Postdoctoral Fellows at MD Anderson as a Case Study

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Summary

Cancer Research Training and Education Coordination components or CRTECs (previously Cancer Research Career Enhancement or CRCEs) are responsible for reporting overall outcomes of research education and training programs at NCI-designated cancer centers. This includes tracking the career trajectories of alumni over multiple years, as they progress professionally. This is a highly time-consuming and labor-intensive process that CRTECs struggle with, as they balance meeting many other mandates, often with limited resources. We report our strategy of leveraging institutional resources available at The University of Texas MD Anderson Cancer Center in order to track our postdoc alumni at one-, five- and ten-year timepoints after they complete their training. Using a combination of approaches ranging from alumni surveys, to social media scraping, to cyber sleuthing, we located and tracked 1,276 postdoc alumni representing 54.1% of all postdocs who completed their training between Fiscal Years (FYs) 2011 and 2021. We report our preliminary results coded using the Coalition for Next Generation Life Science taxonomy, discuss challenges overcome in this endeavor, opportunities for streamlining future efforts, and next steps for tracking career outcomes for our research trainees.

Research Trainee Populations

As of Sept. 1, 2022

| Career Stage | Description | Count |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------|
| Summer Experience Programs * | Mostly college students, but also medical/health professional, graduate, and high school students | 285 |
| Graduate Students (GSBS) | Students from nine PhD and one MS program who have joined laboratories of MD Anderson faculty members | 258 |
| Graduate Students (Non-GSBS) | Students from PhD and masters programs of UTSPH, BCM, Rice, UH, Houston/TMC institutions, and others | 111 |
| Postdoctoral Fellows | In both institutional training programs (i.e., extramural training grants, internal funding) and postdocs of individual faculty | 461 |
| GME Trainees on T32s | Residents or clinical fellows in research years of graduate medical education program who are supported by T32 grants | 22 |

Fig. 1 – Counts of research trainee populations at the start of FY2023. Asterisk (*) indicates the count of participants in the 2022 Summer Experience Programs taken on July 1, 2022.

Extramural Funding

As of Sept. 1, 2022

| | |
|---|-----------------------------------------------------------------------|
| 7 | T32/equivalent training grants |
| 2 | MPI T32s with other institutions |
| 5 | T32/equivalent training grants with participating MD Anderson faculty |
| 3 | Research experience R25s |

Division of Education and Training

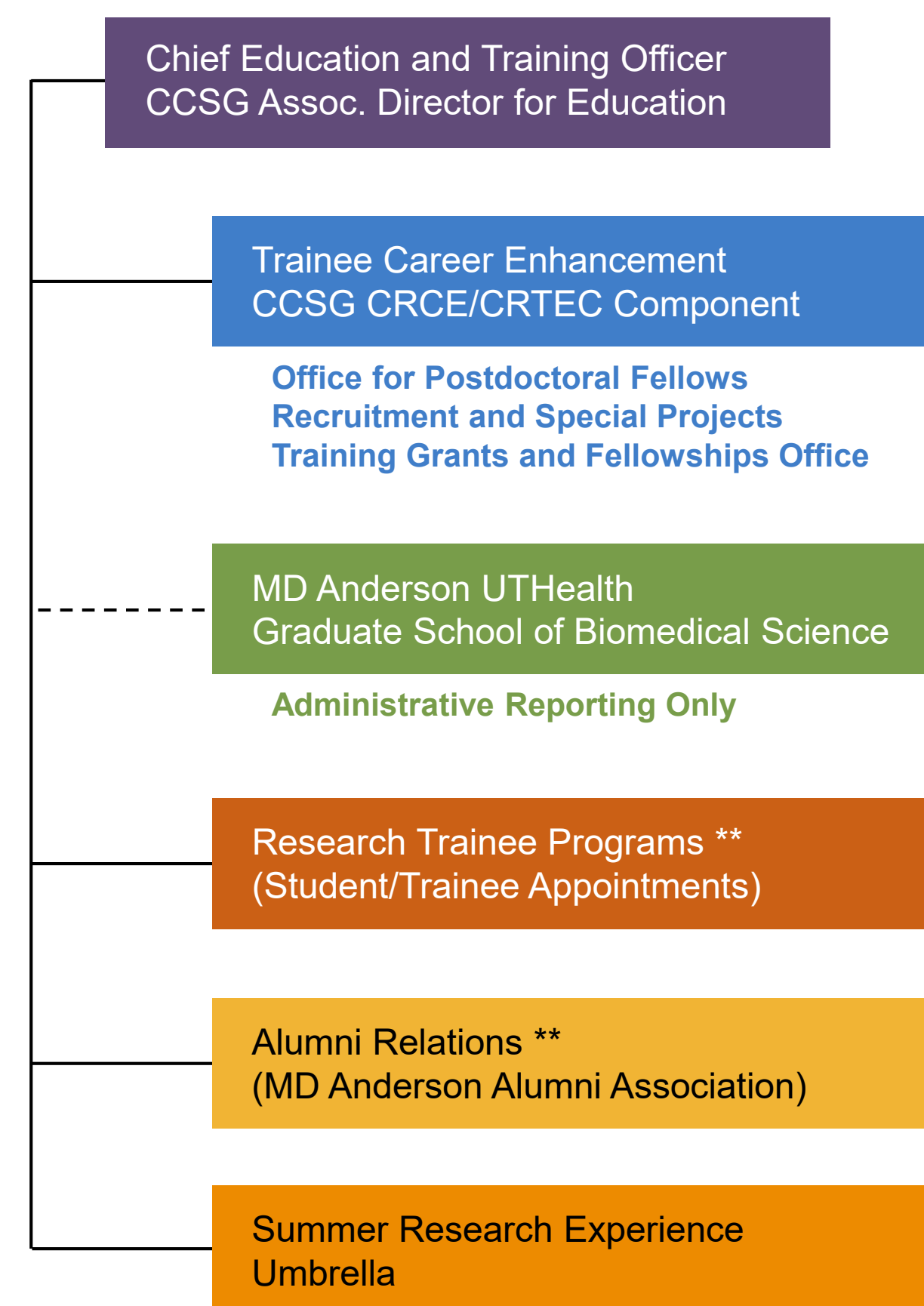


Fig. 2 – Selected organizational units within the Division of Education and Training. The Chief Education and Training Officer serves as CCSG Associate Director for Education and CRTEC Director. The Director of Trainee Career Enhancement and the Sr. Associate Dean of the GSBS serve as CRTEC Co-Directors. Two additional CRTEC Co-Directors (not shown) lead integration of COE and DEI. Double asterisks (**) indicate departments that provided postdoc/postdoc alumni information.

Sources of Information

Trainee Appointments and HR Systems

Alumni Relations

Social Media Scraping

Alumni Surveys

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Success Rates for Locating Former Postdocs

| One Year Out | | | Five Years Out | | |
|--------------|----------------------|---------------|----------------------|--------------------|---------------|
| Cohort (FY) | Found / Total | % Found | Cohort (FY) | Found / Total | % Found |
| 2011 | 101 / 197 | 51.3 % | 2011 | 100 / 197 | 50.8 % |
| 2012 | 174 / 318 | 54.7 % | 2012 | 182 / 318 | 57.2 % |
| 2013 | 190 / 312 | 60.9 % | 2013 | 182 / 312 | 58.3 % |
| 2014 | 105 / 191 | 55.0 % | 2014 | 114 / 191 | 59.7 % |
| 2015 | 145 / 227 | 63.9 % | 2015 | 146 / 227 | 64.3 % |
| 2016 | 114 / 221 | 51.6 % | 2016 | 117 / 221 | 52.9 % |
| 2017 | 92 / 193 | 47.7 % | Total | 841 / 1,466 | 57.4 % |
| 2018 | 65 / 173 | 37.6 % | Ten Years Out | | |
| 2019 | 72 / 151 | 47.7 % | Cohort (FY) | Found / Total | % Found |
| 2020 | 98 / 186 | 52.7 % | 2011 | 100 / 197 | 50.8 % |
| 2021 | 119 / 188 | 63.8 % | 2012 | 126 / 318 | 39.6 % |
| Total | 1,276 / 2,357 | 54.1 % | 2013 | 188 / 312 | 60.3 % |
| | | | Total | 414 / 827 | 50.1 % |

Fig. 3 – Counts of postdoctoral fellows for whom job information was found one, five, and ten years after completion of postdoctoral training at MD Anderson. Counts of the total number of postdocs who completed training in each indicated FY are included, as well as the ratio of found / total postdocs.

Data Elements Collected

| | |
|---------------------------------|--------------------------------------|
| Demographics | Career Outcomes |
| Sex | Job title |
| Residency | Employer |
| URM status | City |
| Doctoral degree and institution | State/Country |
| Length of postdoc | One-, five-, and ten-year timepoints |

Coding Career Outcomes

| | |
|-------------------------------|-------------------------------------------------|
| Job Sector | Job Function |
| Academia | Twenty-five different job functions, including: |
| Government | Faculty titles |
| For profit | Staff/technical directors |
| Non-profit | Postdoctoral training |
| Other | Healthcare providers |
| Career Type | Clinical research |
| Primarily research | Business-related |
| Primarily teaching | Analytics |
| Science-related | Legal and regulatory |
| Not related to science | Further education and training |
| Further training or education | |

Summary of Career Outcomes of Former Postdocs

| Job Sector | Job Type | | | | | Total |
|--------------|--------------------|--------------------|-----------------|------------------------|-------------------------------|--------------|
| | Primarily Research | Primarily Teaching | Science-Related | Not Related to Science | Further Training or Education | |
| Academia | 543 | 17 | 88 | 6 | 311 | 965 |
| Gov't. | 15 | 1 | 15 | 2 | 15 | 48 |
| For Profit | 130 | - | 78 | 12 | 8 | 228 |
| Non-Profit | 6 | 2 | 13 | - | 13 | 34 |
| Other | - | - | 1 | - | - | 1 |
| Total | 694 | 20 | 195 | 20 | 347 | 1,276 |

| Job Sector | Job Type | | | | | Total |
|--------------|--------------------|--------------------|-----------------|------------------------|-------------------------------|------------|
| | Primarily Research | Primarily Teaching | Science-Related | Not Related to Science | Further Training or Education | |
| Academia | 374 | 15 | 75 | 2 | 119 | 585 |
| Gov't. | 6 | - | 13 | 2 | 3 | 24 |
| For Profit | 78 | - | 120 | 10 | 3 | 211 |
| Non-Profit | 4 | 3 | 10 | 1 | 2 | 20 |
| Other | - | - | 1 | - | - | 1 |
| Total | 462 | 18 | 219 | 15 | 127 | 841 |

| Job Sector | Job Type | | | | | Total |
|--------------|--------------------|--------------------|-----------------|------------------------|-------------------------------|------------|
| | Primarily Research | Primarily Teaching | Science-Related | Not Related to Science | Further Training or Education | |
| Academia | 197 | 7 | 43 | 4 | 19 | 270 |
| Gov't. | 5 | - | 10 | 1 | - | 16 |
| For Profit | 40 | - | 65 | 13 | 1 | 119 |
| Non-Profit | 2 | - | 5 | 2 | - | 9 |
| Other | - | - | - | - | - | - |
| Total | 244 | 7 | 123 | 20 | 20 | 414 |

Fig. 4 – Counts of job type vs. job sector of employment for postdoc alumni one, five, and ten years after completing training at MD Anderson.

- Counts above reflect **preliminary results**. We are in the process of reviewing and reconciling counts against source data.
- Preliminary counts of job function vs. job type for the one-, five-, and ten-year timepoints have been completed.
- At least 67.8% of former postdocs who were found are employed in one of these three job functions: Faculty (28.2-39.6%), Scientist, technical director or group leader (21.5-25.8%) and Healthcare provider (10.6-13.8%).
- Former MD Anderson postdocs who pursue additional postdoctoral training falls from 220 (17.2% of those found) to 41 (4.9%) to 10 (2.4%) at the one-, five-, and ten-year timepoints.

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