

undergraduate students from diverse majors. The RAPID curriculum is comprised of 5 key components: 1) didactic training in data science skills and health equity principles, 2) application of skills in a research practicum, 3) exposure to examples of CTR, 4) clinical shadowing, and 5) professional development and career networking. To date, RAPID has had 2 student cohorts complete the program during the summers of 2024 and 2025 (*N* = 10). Each cohort was comprised of 5 students from various undergraduate majors (table 1). Admission to the program is based on GPA, letters of recommendation, and letter of interest. RESULTS/ANTICIPATED RESULTS: For the summer 2025 cohort, we received 40 applications for 5 available positions in RAPID. We conducted pre- and post-program surveys to assess student confidence in 4 key research competencies. The scoring system for student confidence was as follows: 5 – extremely, 4 – very, 3 – moderately, 2 – slightly, and 1 – not confident. Student confidence in Data Science Research increased from 2.1 to 3.9, in Health Equity Research from 2.1 to 4.6, in Scientific Research from 3.1 to 3.9, and in Science Identity from 3.4 to 4.2. The curriculum components that ranked highest were the research practicum, mentoring, interaction with translational researchers, and networking opportunities, all of which received a rating of 4.4 out of 5 (4 – very and 5 – extremely satisfied). Overall, student satisfaction with RAPID was 4.6 out of 5. DISCUSSION/SIGNIFICANCE OF IMPACT: RAPID seeks to inspire undergraduate students from diverse majors to pursue careers in CTR. We will track students longitudinally to gauge career trajectories. Student feedback is promising, “The connections I gained through my peers, mentors, and guest speakers are priceless. I discovered a newfound sense of purpose within the field of data science.”

Table 1

|                         |    |
|-------------------------|----|
| Female, %               | 70 |
| Race, %                 |    |
| Black                   | 50 |
| Asian                   | 30 |
| White                   | 10 |
| Multiracial             | 10 |
| Major, %                |    |
| Math, Data Science      | 50 |
| Computer Science        | 20 |
| Pre-Med                 | 20 |
| Journalism              | 10 |
| Out-of-state college, % | 20 |

**Career ladders and clinical research professionals: Results of a workforce development discussion across the CTSA consortium**

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OBJECTIVES/GOALS: CTSA hubs are developing career ladders for clinical research professionals (CRPs) to professionalize roles and provide consistency. While these ladders classify roles based on responsibilities, skill, and experience, requirements for demonstrating professional abilities and promotion vary widely among institutions.METHODS/STUDY POPULATION: At the ACTS meeting in April 2025, we conducted a panel session to encourage audience discussion regarding the role that career ladders and certification play in robust workforce development. Fifty-seven people attended, representing 34 universities and institutions. Audience members worked in small groups to identify the benefits and challenges of developing career ladders at their institutions. Each group included a facilitator to encourage discussion and take notes. Six open-ended questions were provided to guide discussion surrounding the topics of career progression, certification requirements, and standardized job descriptions. Attendees were also provided with a QR code to answer five additional online survey questions regarding the structure and hiring climate at their institution. RESULTS/ ANTICIPATED RESULTS: Content analysis was conducted by two reviewers, and survey summary statistics were generated. Discussion group analysis identified nine themes including working with human resources on career ladders, coordinating competencies with promotion, job progression for those not conducting clinical trials, decentralization of systems, certification requirements for promotion, employee turnover, choosing job titles, strategies to train CRPs, and transparency in career ladder expectations. Thirty-one people completed the online survey with 85% indicating their institution had a decentralized structure, 61% had a formal CRP career ladder, 54% considered certification but did not require it for promotion, and 63% did not provide financial assistance to CRPs to complete professional certification. DISCUSSION/SIGNIFICANCE OF IMPACT: Analyses show that as institutions in the CTSA Consortium develop career ladder programs to professionalize the CRP role in the workforce, there continues to be wide variability in structure and requirements. These results can be used by hubs to help create roadmaps for career progression and to make decisions regarding their career ladder programs.

**Implementation and preliminary evaluation of an entrepreneurship, biomedical innovation, and design pathway in a school of medicine curriculum**

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OBJECTIVES/GOALS: New educational approaches are needed for healthcare in the 21st century. Here, we describe the