

Analysis of the Impact of NHGRI's Centers for Excellence in ELSI Research (CEER) Program

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Background

- Established by NHGRI in 2004, sunsets this year
- 11 full Centers, 4-10 years of funding each
- ~10-25 investigators at each site
- Evaluation of the Centers' three main goals
 - 1) Trans-disciplinary work
 - 2) Training and career development
 - 3) Sustainable impact on the ELSI field

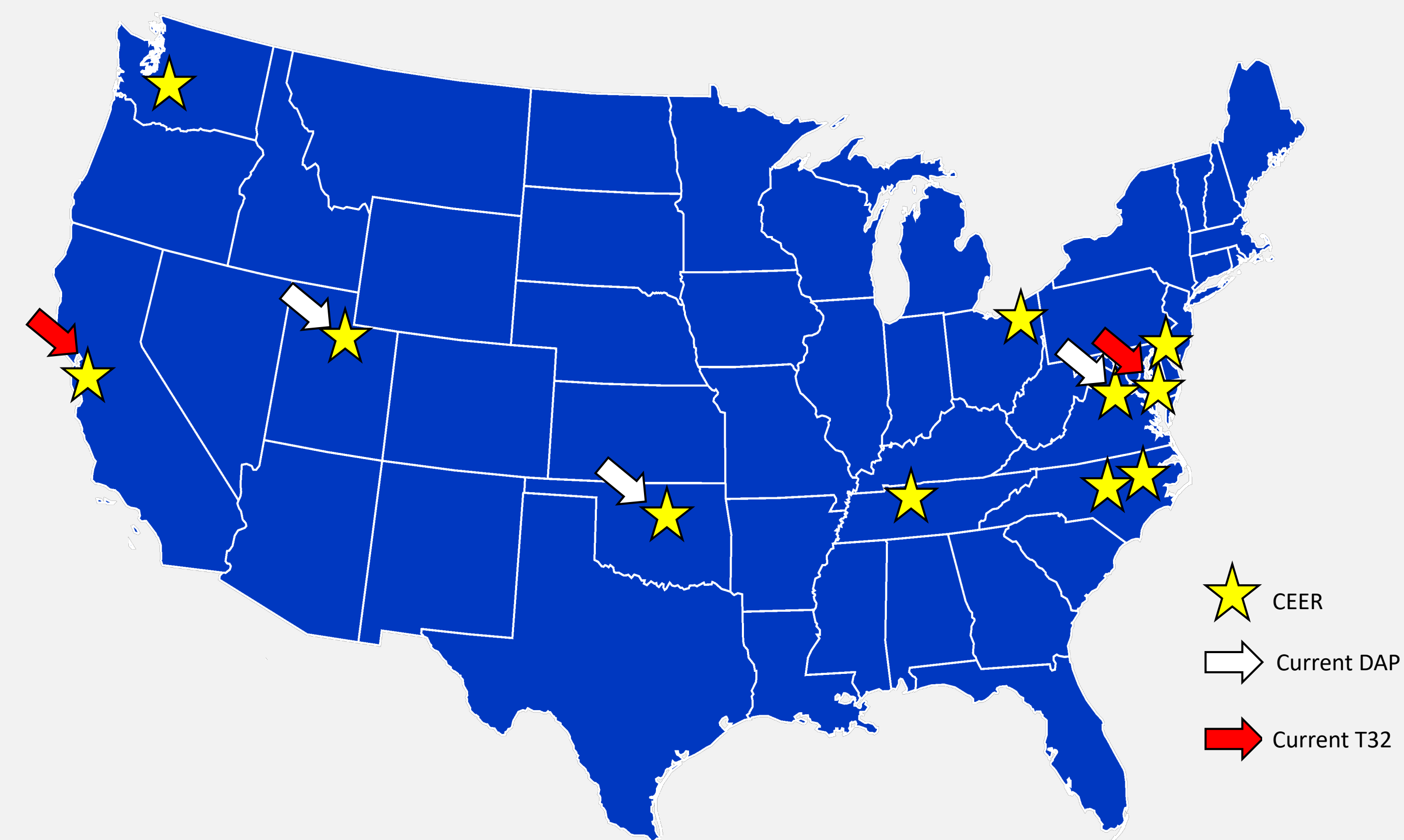


Figure 1. Map of the Continental United States locating all eleven past and current full Centers for Excellence in ELSI Research (CEER), and current NHGRI T32 and Diversity Action Plan (DAP) ELSI training programs.

Methods

Transdisciplinary Work

- Compared 11 CEERs to 81 ELSI R01s awarded 2004-2024
- Calculated average # of key personnel and unique fields of study
- Categorized journal topics of publications linked to CEER and R01 grants

Training ELSI Scholars

- Compared CEER trainees to other ELSI K applicants and awardees
- Calculated success rates of K01 or K99 and R01 or R21 applications
- Among K-awardees, calculated average publications/year and 1st and last author publications/year since K was awarded

Program Sustainability and Impact

- Determined recipients of NHGRI-funded ELSI K Awards
- Gathered Altmetric data on the mentions of CEER findings
- Created a visualization of a CEER publication co-authorship network

Conclusions, Limitations, and Future Directions

Conclusions

- Individual sites and the whole program achieved broad transdisciplinary scholarship
- CEER sites provided platforms for current ELSI training programs
- CEER sites are hubs for collaborations with other institutions
- CEER research influenced academia, society, and government
- Former sites remain involved and competitive at NHGRI

Limitations

- Evaluation was not required by NIH throughout the program
- Transdisciplinary nature of research is hard to measure
- Quantitative analyses will miss nuances

Possible Future Directions

- Qualitative analysis of experiences
- Other sustainability measures

*Bibliometric support was provided by Joelle Mornini, Biomedical Librarian at the NIH Library

Results

Transdisciplinary Work

Table 1. Fields of study of CEER key personnel

Fields of Study of CEER Key Personnel	Count	Percentage
Medicine	35	21%
Law	26	16%
Other	22	13%
Anthropology	9	5%
Philosophy	8	5%
Epidemiology	7	4%
Genetics	7	4%
Bioethics	7	4%
Psychology	6	4%
Economics	6	4%
Sociology	6	4%
Nursing	6	4%
Pharmacology	6	4%
Public Health	3	2%
Health Care Policy	3	2%
Genetic Counseling	2	1%
Biology/Biostat/Biotech	2	1%
History	2	1%
Political Science	2	1%
Total	165	

Key Personnel and Unique Fields of Study

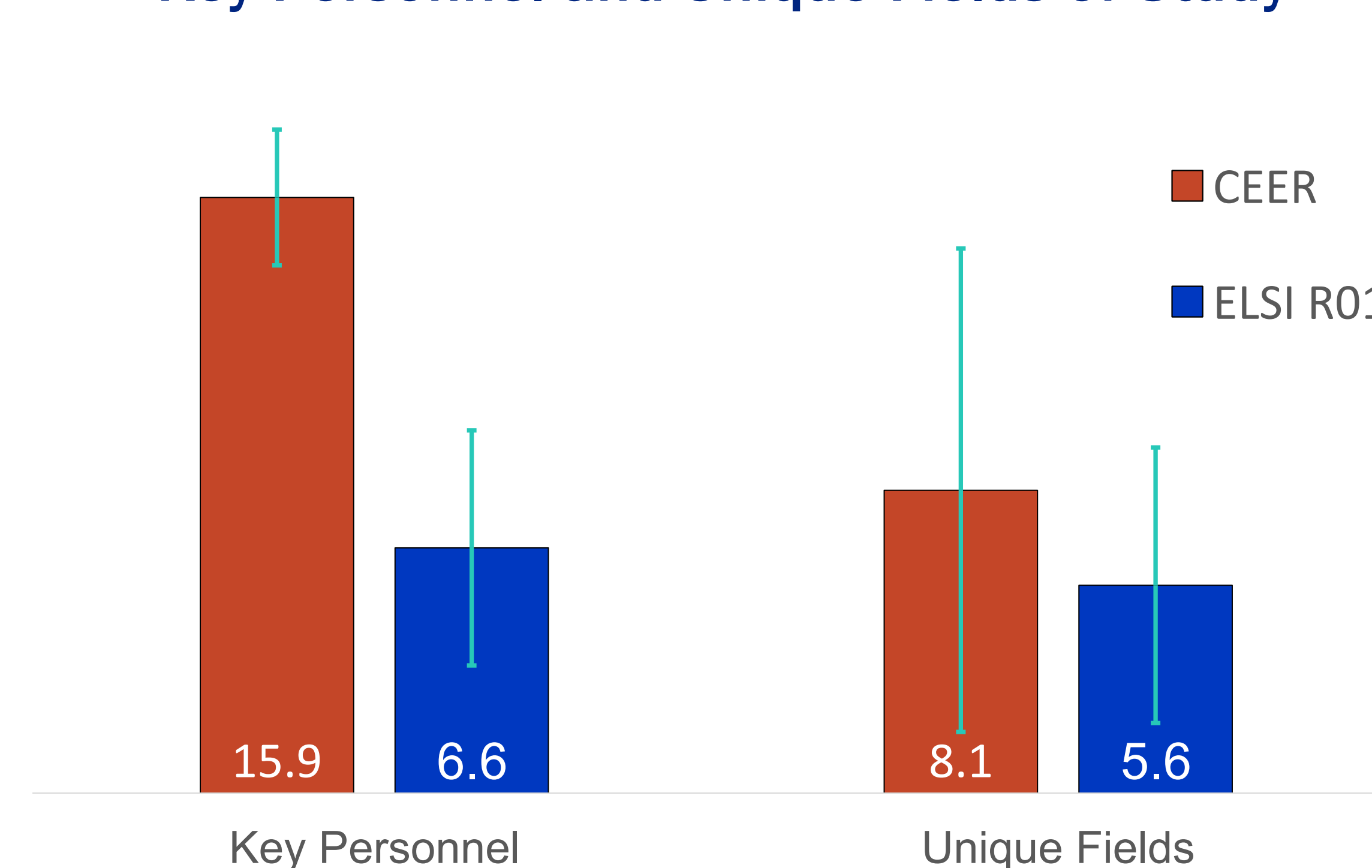
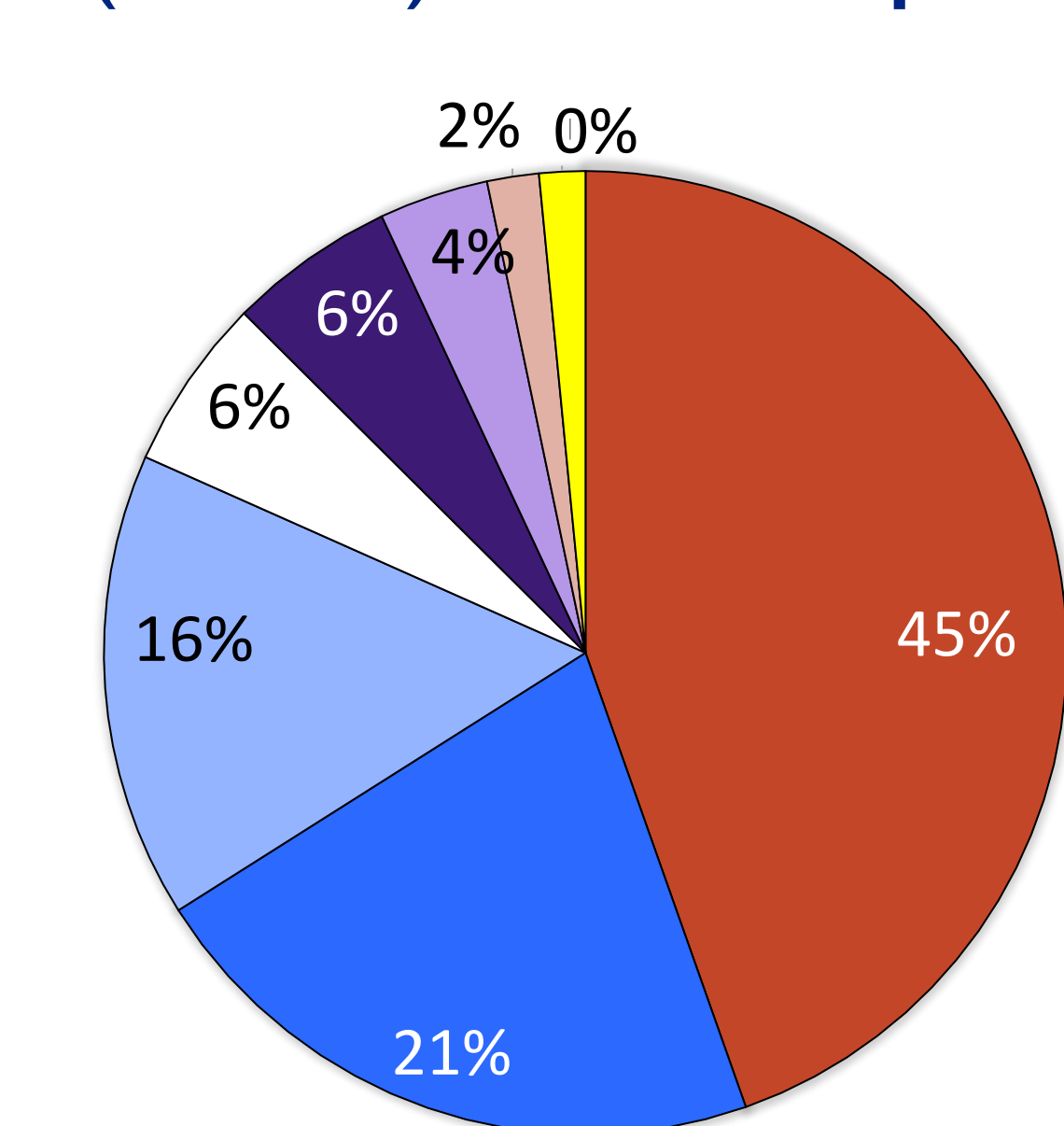


Figure 2. Average number of key personnel and unique fields of study in CEER (n=11) and NHGRI ELSI R01 (n=81) research teams. Key personnel identified from progress reports were coded for field of study using field(s) of highest degree in biosketches.

CEERs have had 518 peer-reviewed publications

- In 198 different journals
- Covering 85 NLM index topics

CEER Publications' (n=518) Journal Topics



ELSI R01 Publications' (n=912) Journal Topics

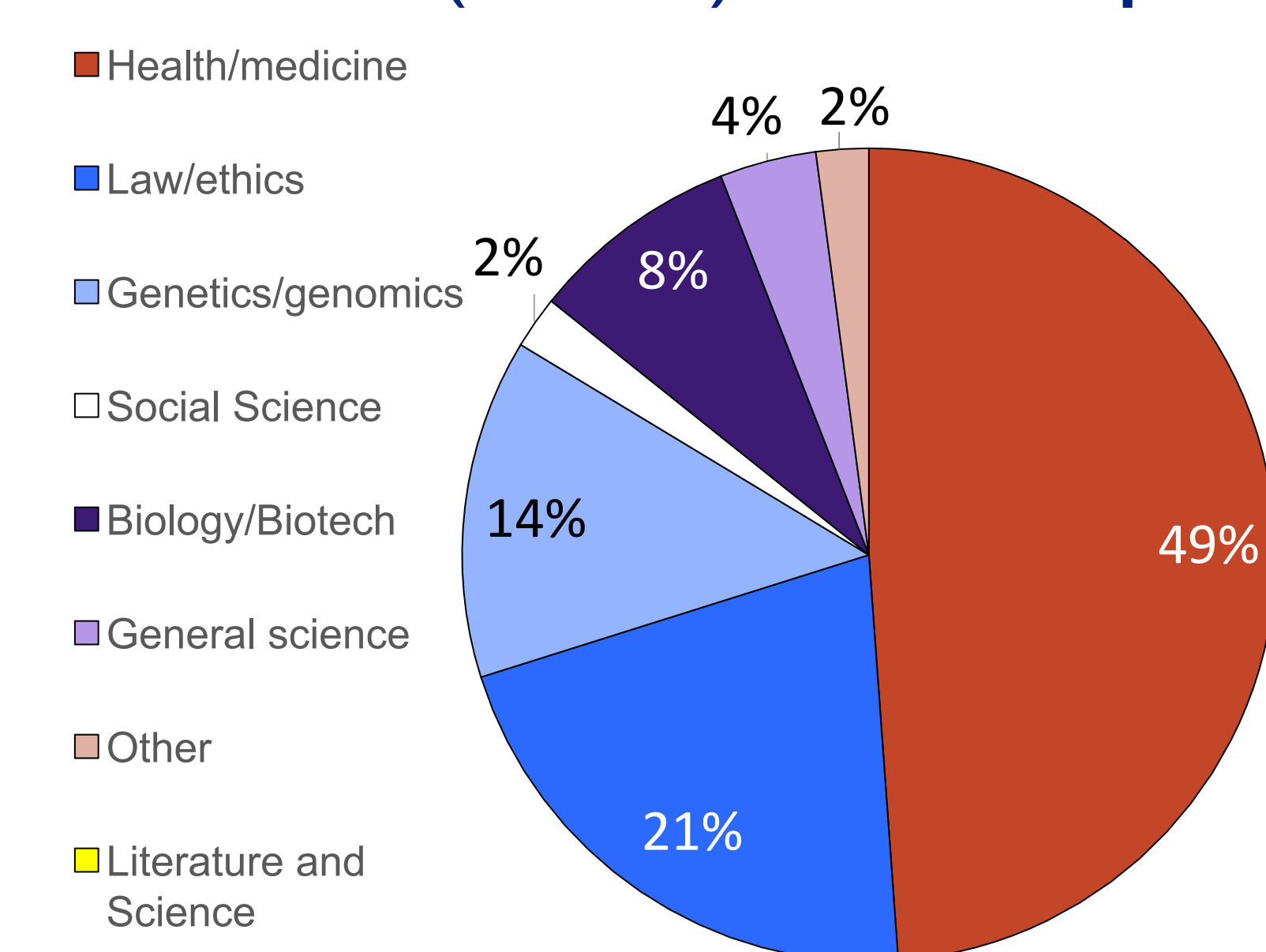


Figure 3. Journal topics of CEER and ELSI R01 (2004-2024) publications; manual coding was verified using the National Library of Medicine PubMed topic indices. Publications used were those linked to grants on NIH RePORTER. The eleven CEER sites published across the same breadth of topics as 81 R01s.

Training

There were 152 CEER trainees tracked

- 24% went on to receive NIH ELSI grant funding
- Another 34% went on to work in ELSI-related fields
- At least 4 are at NIH

Departmental Affiliations of Prior CEER Trainees Now in Academia (n=39)

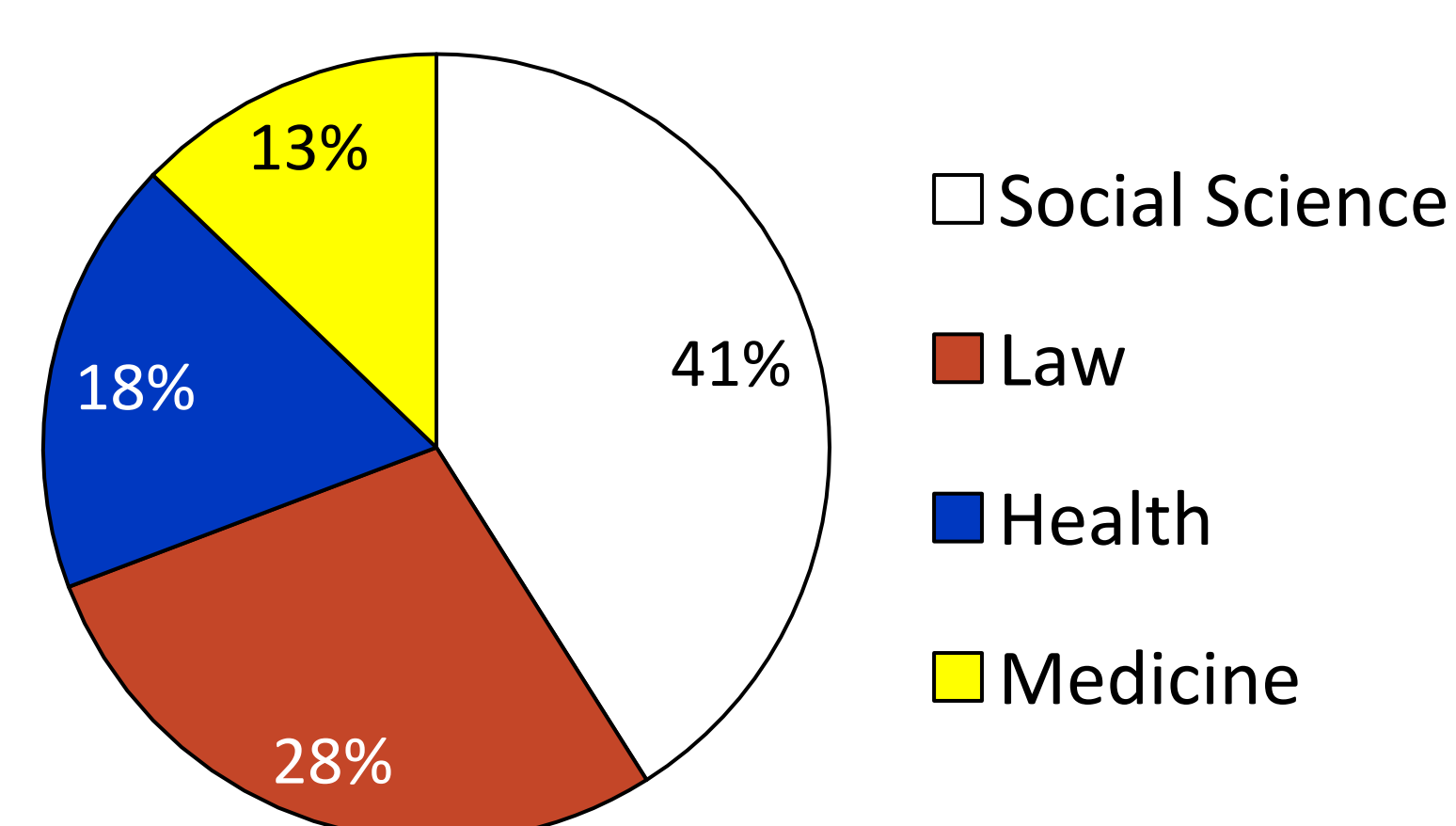


Figure 4. Academic areas of 39 former CEER trainees (LinkedIn, Google, and NIH database QVR). Expansion of legal and social science affiliations is notable.

Grant Application Success Rates: CEER Trainees and non-CEER ELSI applicants

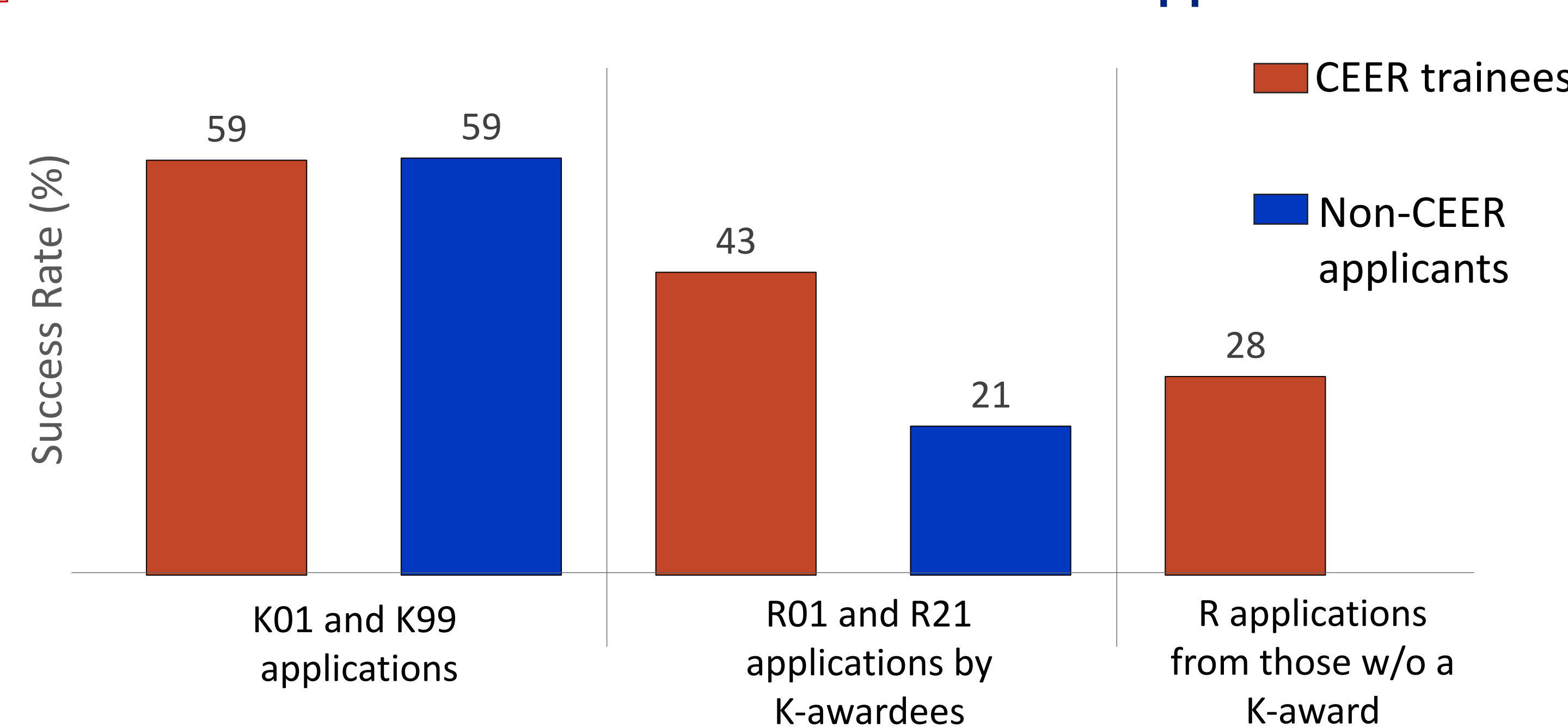


Figure 5. Success rates of K01 or K99 applications, and R01 or R21 applications by CEER trainees, compared to other ELSI K01 or K99 applicants. CEER trainees had higher R01 or R21 success rates than other ELSI K-awardees. Success Rate = # Awards / # Applications.

Publications/Year of CEER and Non-CEER ELSI K-awardees

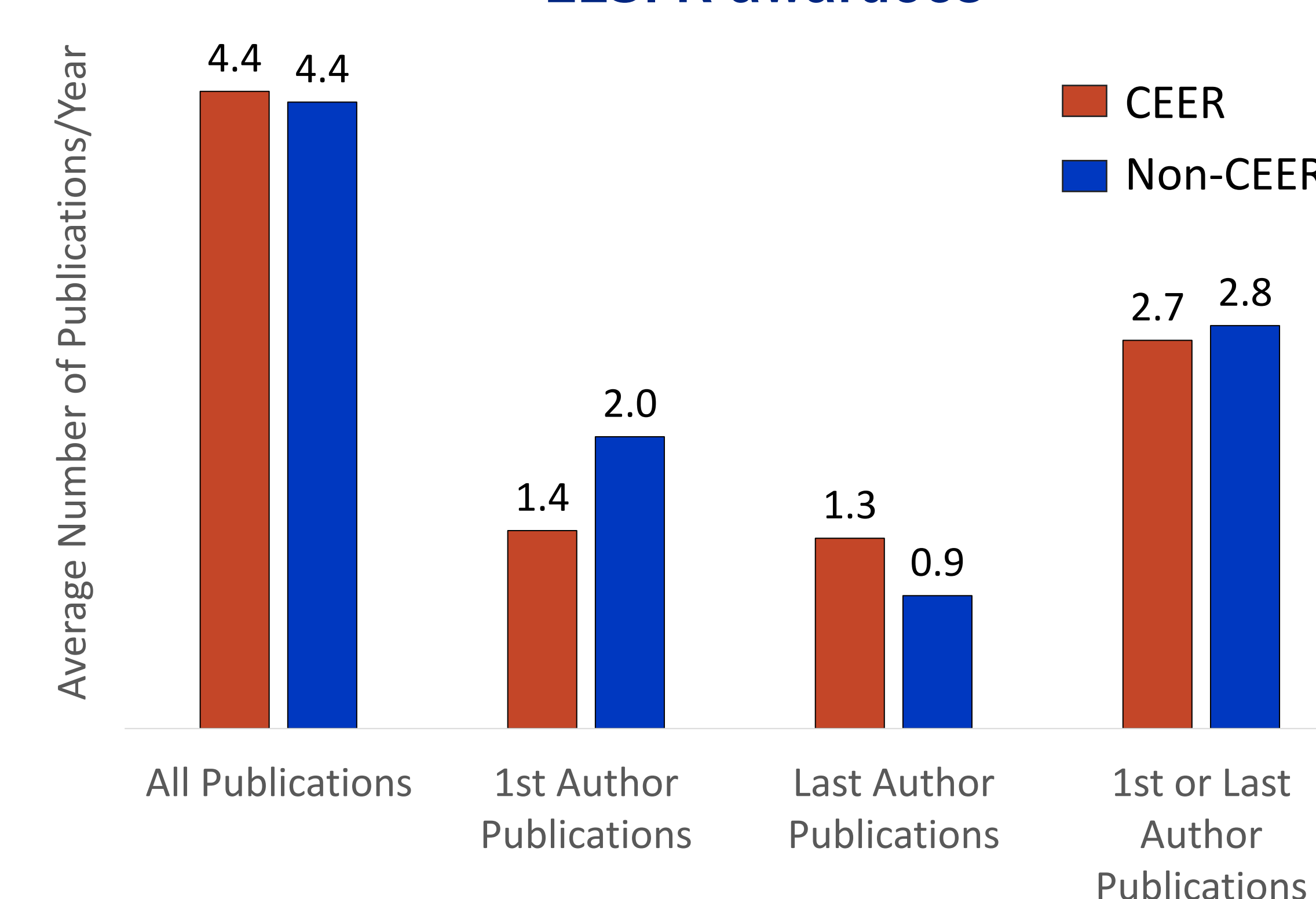


Figure 6. Average annual total publications, 1st author publications, and last author publications by CEER and other ELSI K01 or K99 recipients starting 1 year after being awarded a K grant. Publications were identified on PubMed. The two groups were equally productive.

Sustainability and Impact

Sustainable Training

- All institutional ELSI training grants are at current and former CEER sites (Fig. 1)

Recipients of NHGRI ELSI individual training (K) awards (n=37)

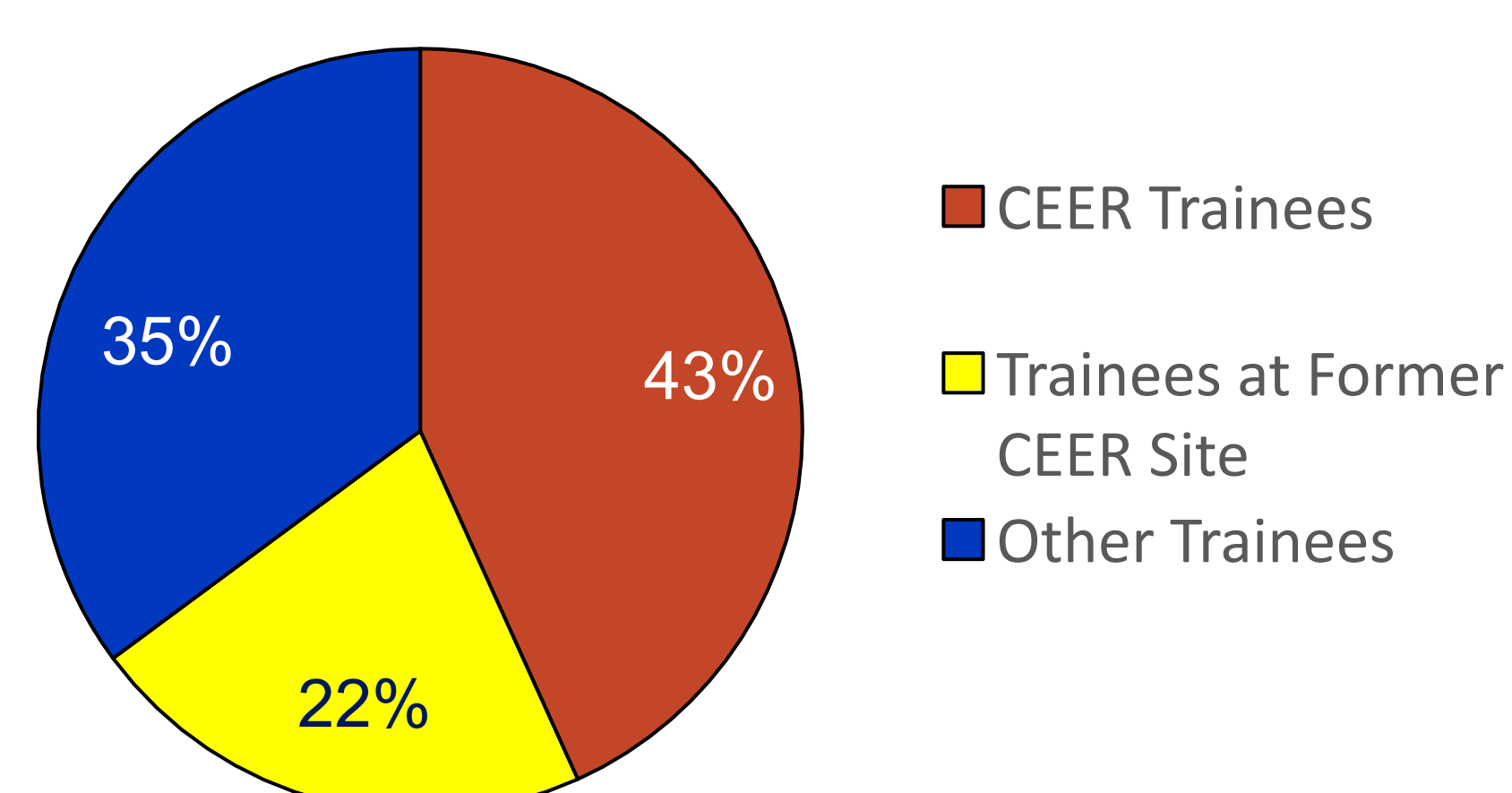


Figure 7. From 2007 through 2024, two-thirds of NHGRI's K01 and K99 ELSI awards have gone to CEER trainees (43%) or trainees at former CEER sites (22%)

Altmetric Mentions of CEER Publications

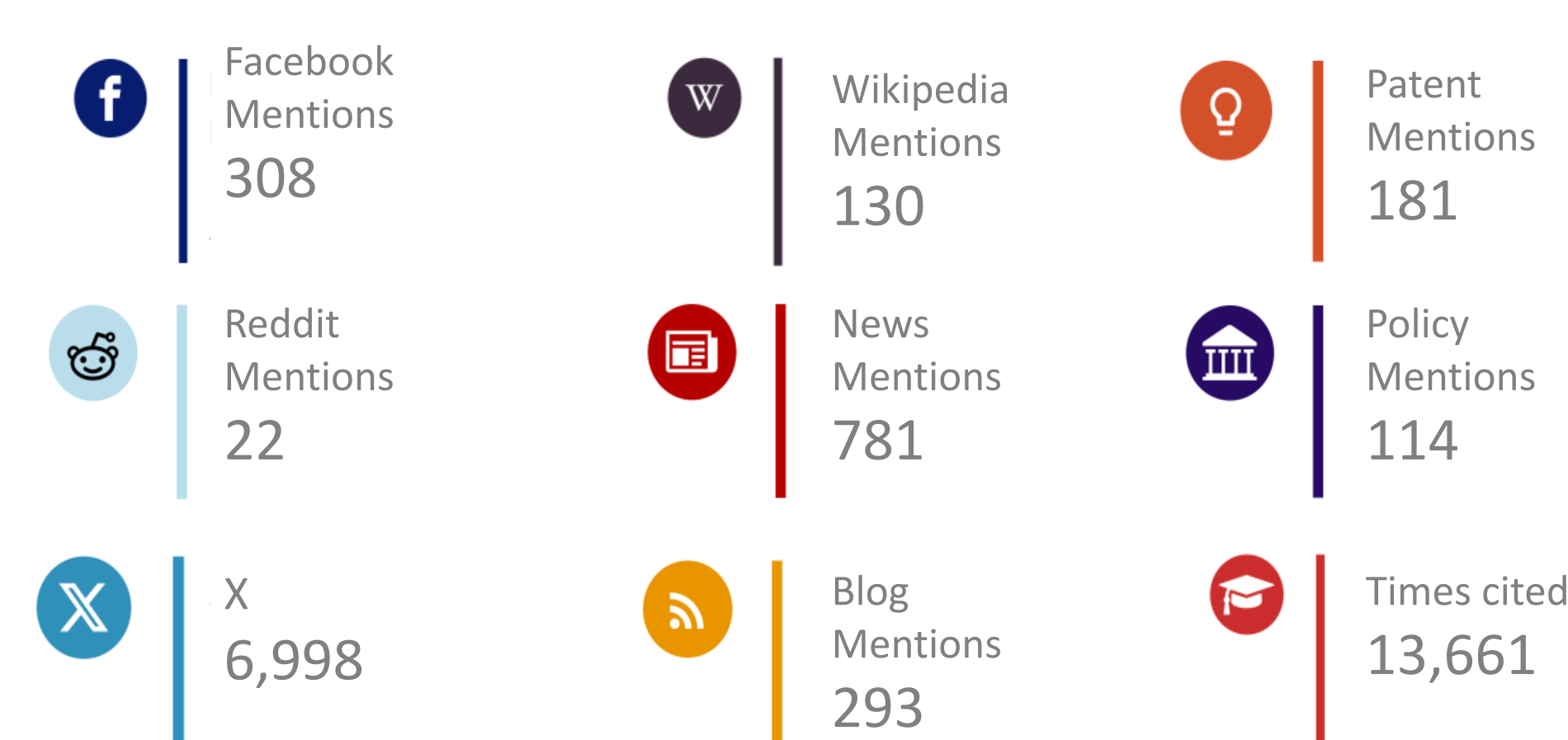


Figure 8. Altmetric mentions of research outputs originating from 518 CEER publications in a variety of social, academic, and legislative media. The same publications used in the journal topics analysis were also used in this analysis. *

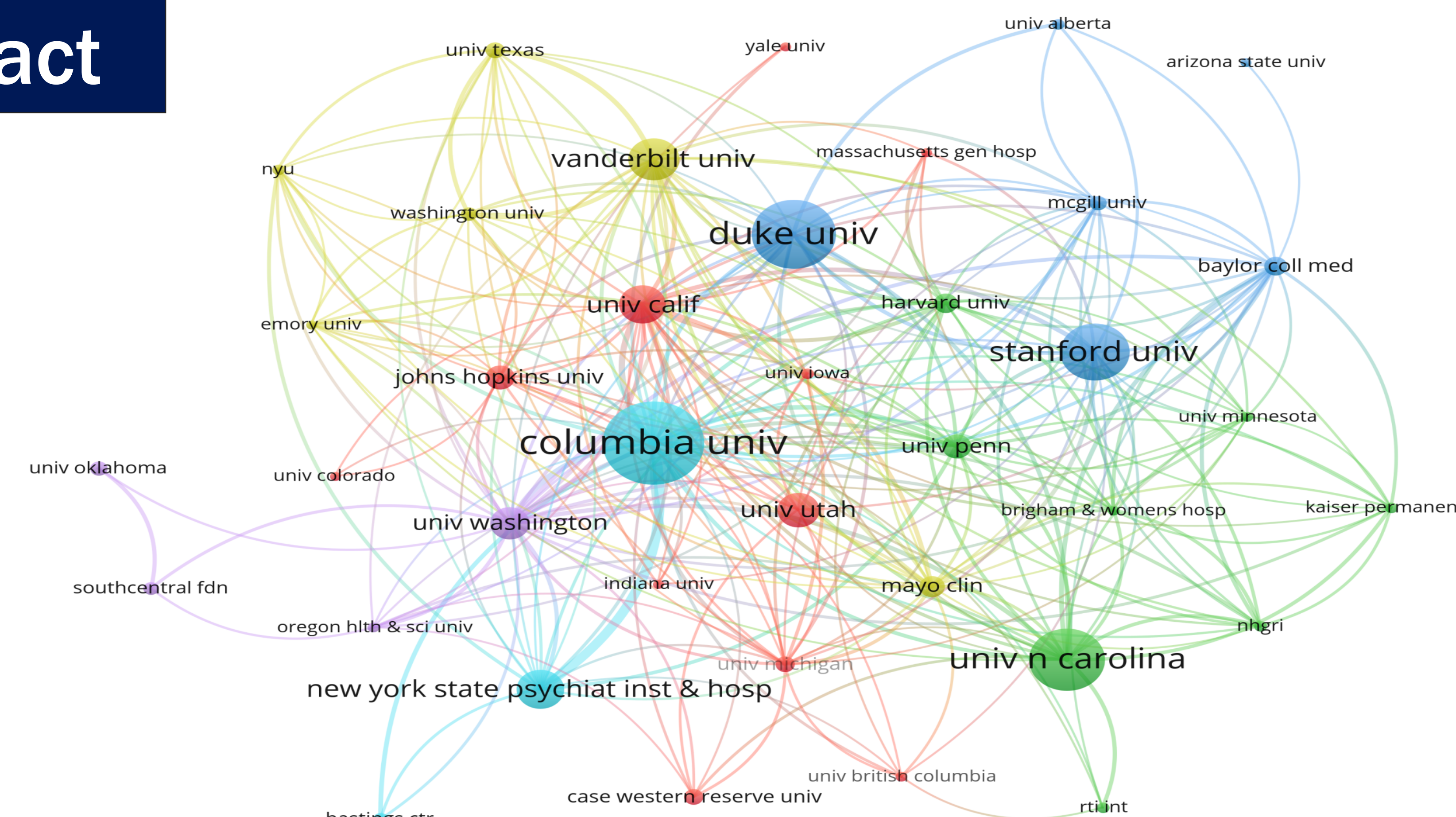


Figure 9. Co-authorship network from all publications linked to CEER grants. Edges are added when investigators from institutions collaborated at least twice. Institutions that had a minimum of 7 associations with publications in the analysis are included in the figure. Created using VOSviewer software. *