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Promotion and Tenure Innovation and Entrepreneurship (PTIE) White Paper

Supplementary Material from Nationwide Survey to Gain Understanding of the Current Evaluation of Tenure-line Faculty Members' I&E in P&T Considerations.

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This PDF file includes:

Methods
Tables S1 to S2
Figs. S1 to S16

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Materials and Methods

Methods

We implemented a survey to gain understanding of the current terrain of factors relevant to the evaluation of tenure-line faculty members' I&E in P&T considerations across IHEs in the US. Our 27-item survey included adapted items from the previously validated and relevant research surveys concerning our topics of focus (5). Overall, our survey asked about tenure-line (only) faculty members' innovation, entrepreneurship, and/or technology-based transfer activities in promotion and tenure policies and practices; learn of the difficulties in integrating these activities into P&T; and building collaborative national efforts in integrating these activities in P&T considerations for faculty. We asked about the prevalence of these activities and institutional policies and procedures concerning specific structures (e.g., tenure and promotion norms, implicit and explicit), as well as information about relevant faculty and student training concerning I&E. Survey drafts were reviewed by administrators and faculty representatives (across institution types) for assessment regarding their relevance, validity, and adequacy to their institutional realities, and suggested changes were made accordingly.

We emailed the survey to 845 representatives from 377 institutions across five Carnegie Classification designations (25): Doctoral Universities with Very High Research Activity (*R1*) and High Research Activity (*R2*); Master's Colleges and Universities – Larger programs (*ML*); Baccalaureate Colleges (*BC*); Tribal Colleges (*TC*); and Medical Schools and Centers (*MS*). Within these classifications were Minority-Serving Institutions such as Historically Black Colleges and Universities (HBCU) and Hispanic-serving Institutions (HSI), and NSF I-Corps institutions. We sent the surveys to those we believed would possess relevant knowledge, including upper administrators (provosts, associate/vice provosts, $n=377$), mid-level administrators (deans or heads of colleges, $n=242$), and I-CORP university contacts, $n=226$). We sent up to two email reminders, roughly one week apart. We asked these initial contacts to also forward the email with the survey link to others at their institution that they thought may possess relevant knowledge, and suggested some individuals for consideration, such as mid-level administrators (deans or heads of colleges), department chairs, and other relevant faculty (e.g., faculty senate presidents).

Of the 377 institutions targeted, representatives from 99 unique institutions responded, via 123 representative individuals, for an institutional response rate of 26%. (See Tables S1 and S2 for institutional and representative response). Of the responding 99 institutions, 13 institutions had multiple respondents (range=2-8, median = 2), with the following distribution of numbers of respondents at institutions that had a least one other respondent from their institution per institution category: *R*, $n=19$; *R2*, $n=2$; *ML*, $n=11$; *BC*, $n=5$. Final respondents included provosts ($n=18$) associate provosts/ associate vice presidents of research ($n=63$), I-Corps affiliated contacts ($n=20$), and faculty leads and program directors (college-level and below) ($n=14$). Data were downloaded from Qualtrics and analyzed using SPSS Statistics. Descriptive data analysis was performed across type of respondents, as well as type of institutions. We report the total number of respondents for each question across these two categories, with multiple respondents from the same institution included in totals.

Table S1: Number of Representatives and Institution Responses and Those Contacted		
IHE Types Responses/Contacted	Total Representatives from IHE Type	Total IHE Type Responses
Doc Univ Very High (R1)	57	46/121
Doc Univ High (R2)	14	13/36
Master's-Large (ML)	32	23/119
Baccalaureate (BC)	19	16/87
Tribal (TC)	0	0/11
Med. Schools & Centers (MS)	1	1/3
Totals	123	99/377

Table S1. Number of survey respondents from different types of institutions, and total number of institutions with any survey respondents. There were 13 institutions that submitted multiple survey responses from different personnel. The number of duplicate responses ranged from 2-8, with 2 being the median number of duplicates (R1: n=19, R2: n=2, ML: n=11, BC: n=5; where n = number of duplicates).

Table S2. Number of Unique Institutional Survey Responses by Institutional Type, Versus Those Contacted			
Institution Type Responses/Contacted	HBCU	HSI	I-Corps Affiliated
Doc Univ Very High (R1)	0/0	4/8	41/69
Doc Univ High (R2)	2/8	3/7	10/22
Master's-Large (ML)	2/9	1/25	0/2
Baccalaureate (BC)	2/6	0/1	0/0
Med. Schools & Centers (MS)	0/0	0/2	0/1
Totals	6/23	8/43	51/94

Table S2. Number and type of institution recognized as Historically Black Colleges & Universities (HBCU), Hispanic Serving Institutions (HSI), and/or I-Corps affiliated institutions that were contacted and responded (n=18 duplicate responses from I-CORP affiliates and n=2 from HSIs).

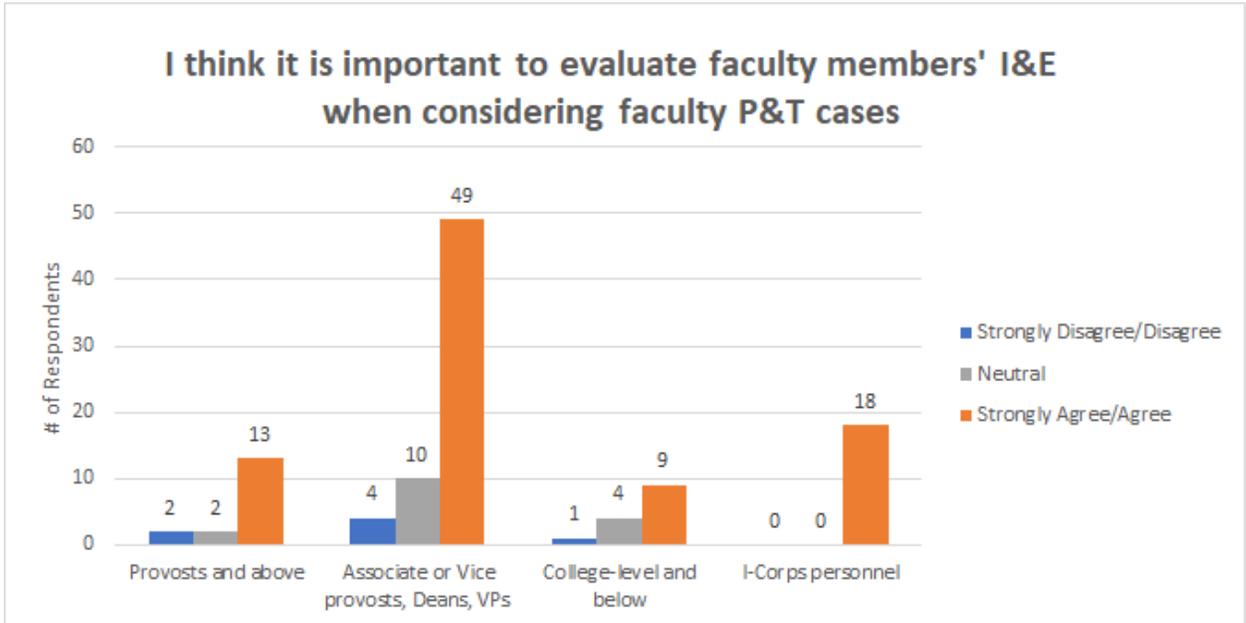


Fig. S1. Comparison of IHE personnel's perceptions of the importance of evaluating faculty members' I&E when considering faculty P&T cases at their institutions.

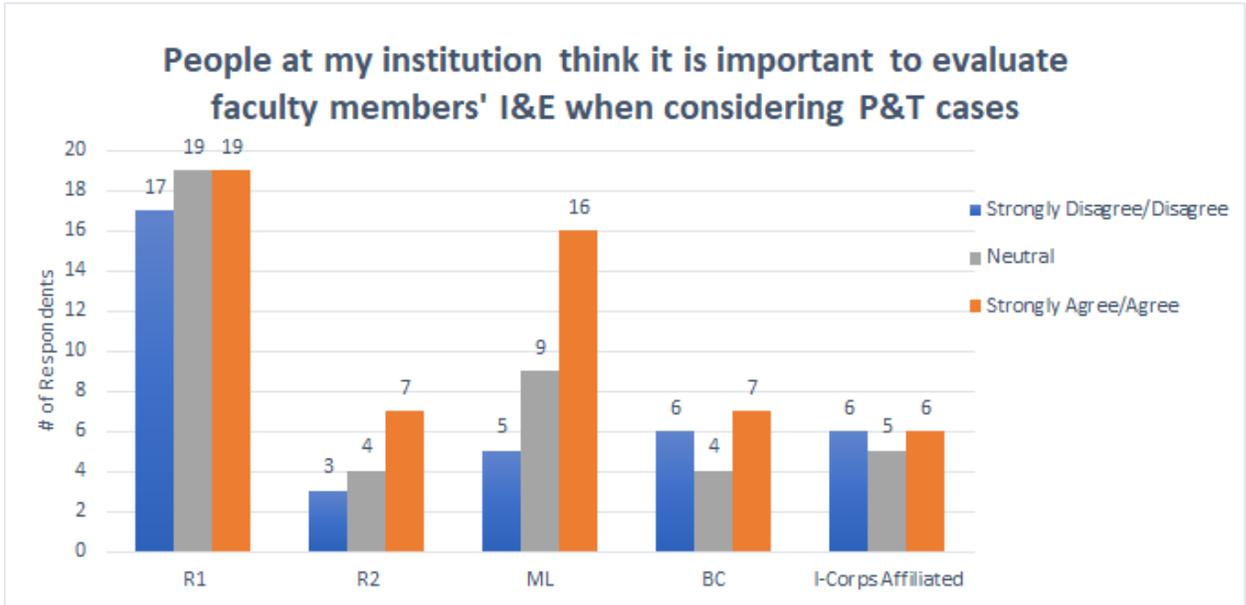


Fig. S2. Comparison of respondents' perceptions of how other people at their institution regard the importance of evaluating faculty members' I&E when considering faculty P&T cases at their institutions.

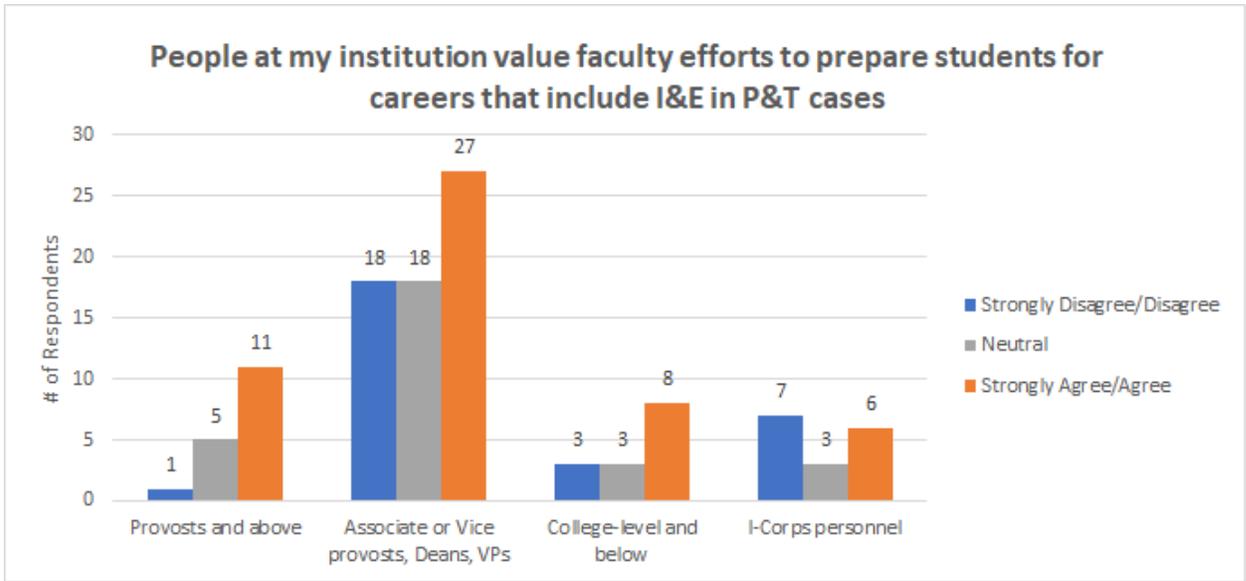


Fig. S3. Comparison of respondents' perceptions of how other people at their institution value in P&T cases faculty efforts to prepare students for careers that include I&E.

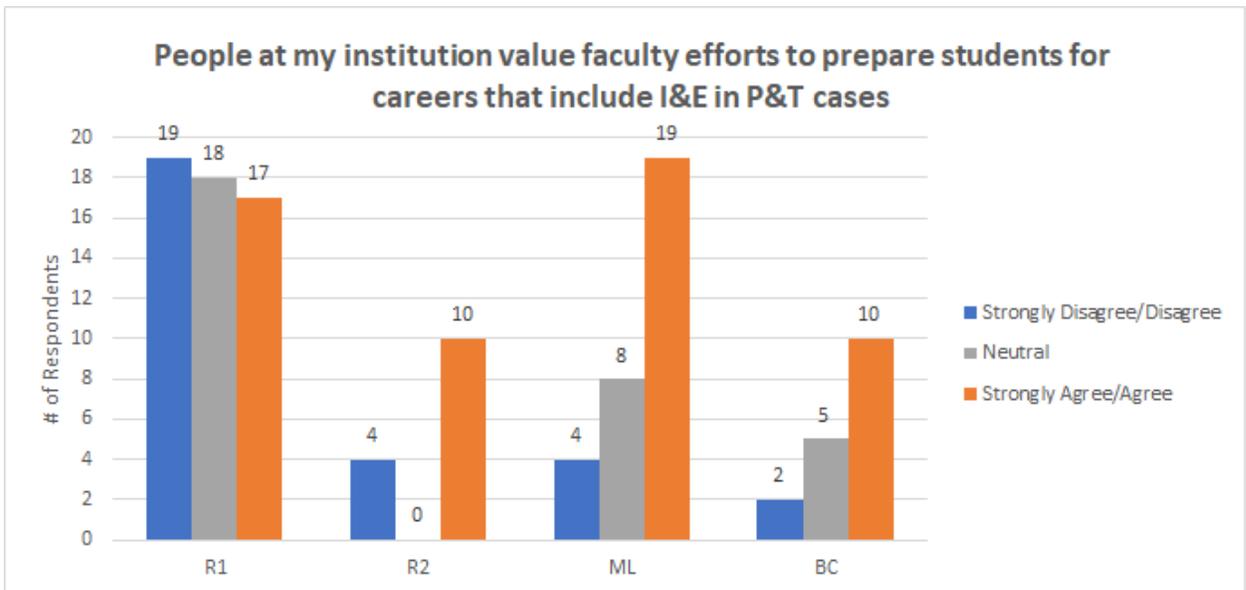


Fig. S4. Comparison of institution type responses related to how people at their institution value in P&T cases faculty efforts to prepare students for careers that include I&E.

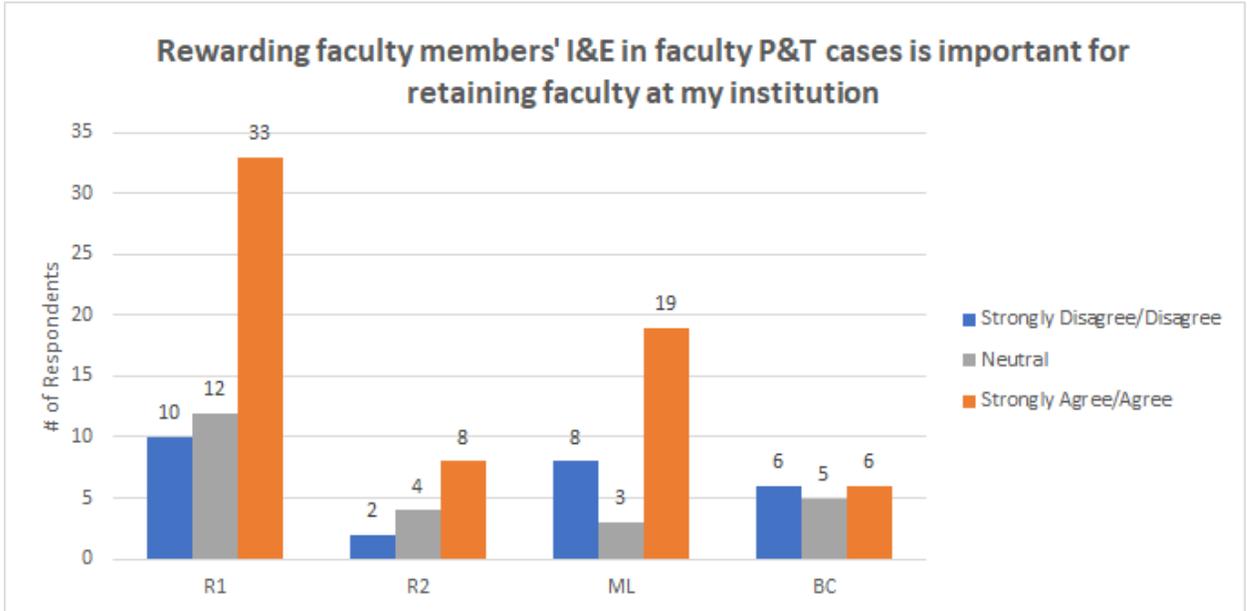


Fig. S5. Comparison of institution type responses about rewarding faculty members' I&E in P&T as important for retaining faculty at the institution.

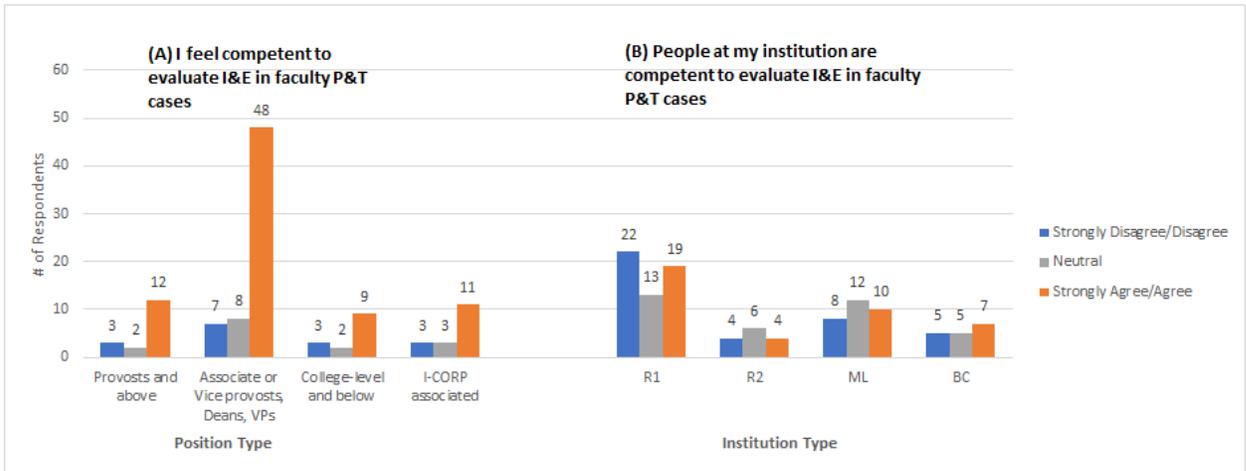


Fig. S6. Comparison of felt competencies by position types in evaluating faculty members' I&E when considering P&T cases (A) and the same sample by institution types, the degree to which they felt others at their institutions possessed this competency (B).

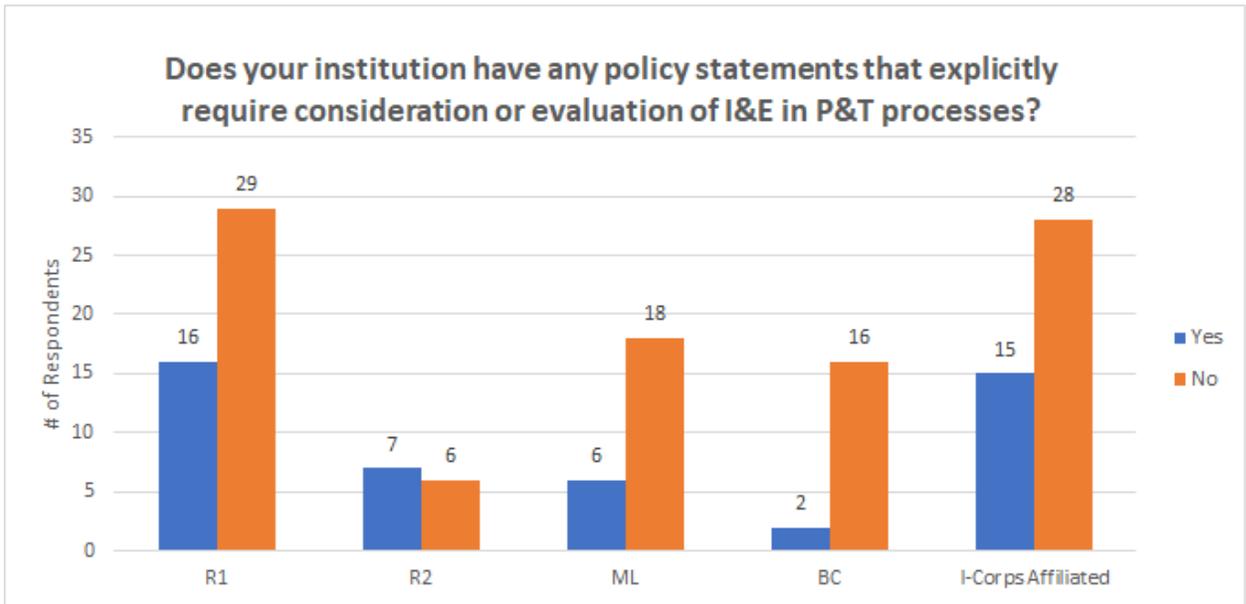


Fig. S7. Comparison of institution type responses, including I-Corps affiliated institutions, on the existence of policy statements that require consideration or evaluation of I&E in P&T processes at their institutions.

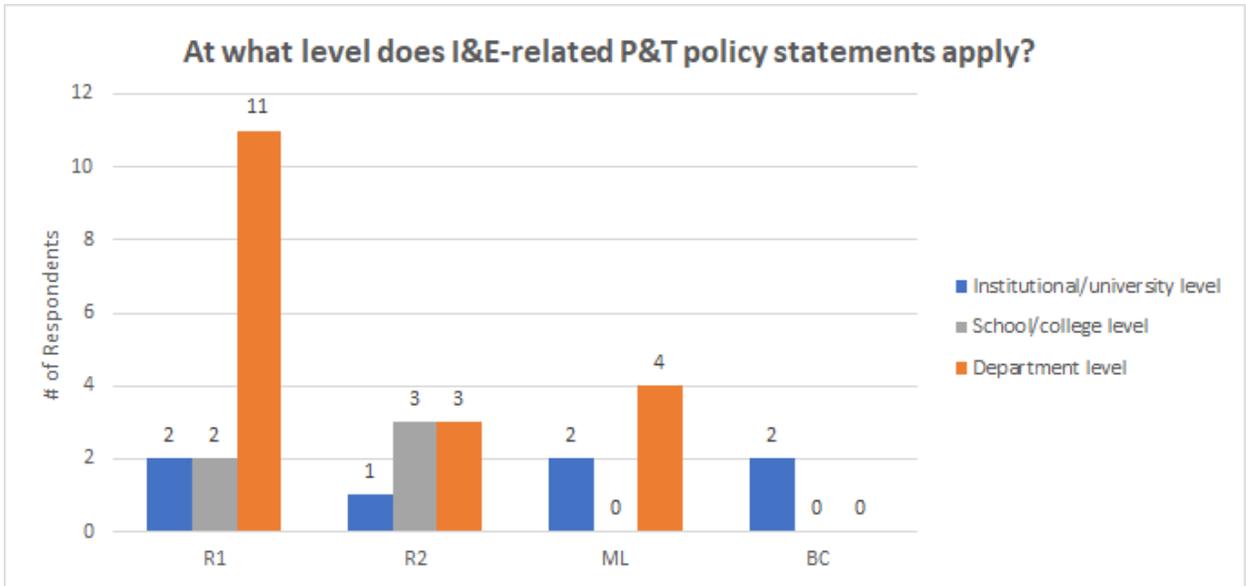


Fig. S8. Comparison of institution type responses of the level where I&E related P&T policy statements apply at their institutions.

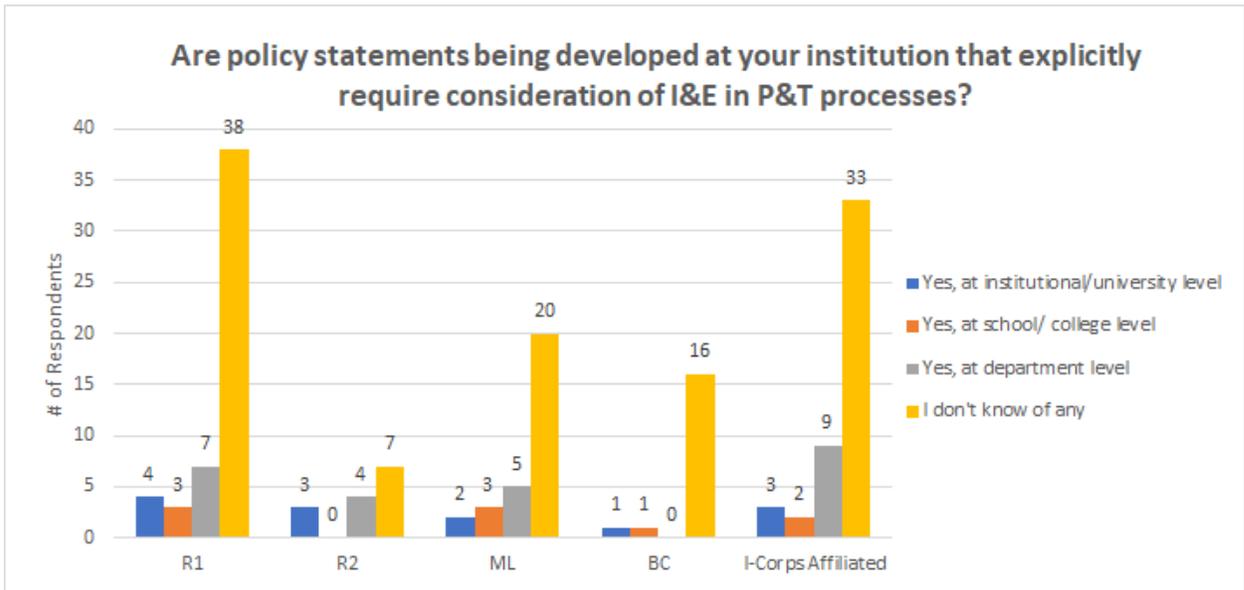


Fig. S9. Comparison of institution type responses, including I-Corps affiliated institutions, whether policy statements are being developed that require consideration of I&E in P&T processes at their institutions.

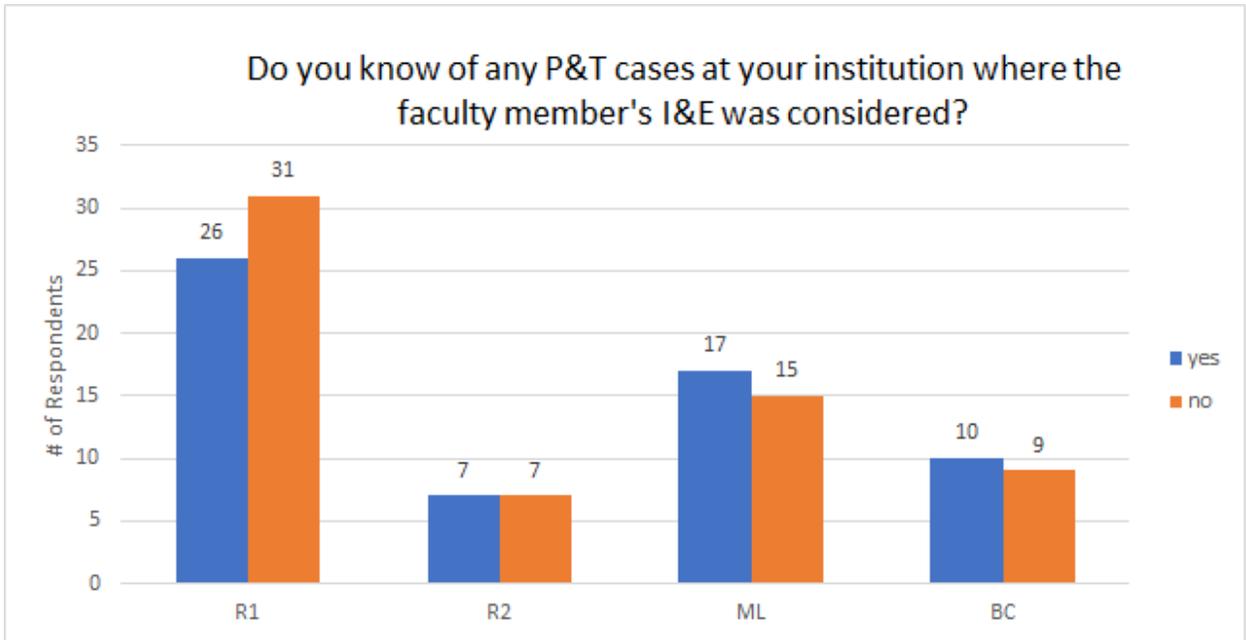


Fig. S10. Comparison of institution type responses of P&T cases where faculty members' I&E were considered at their institutions.

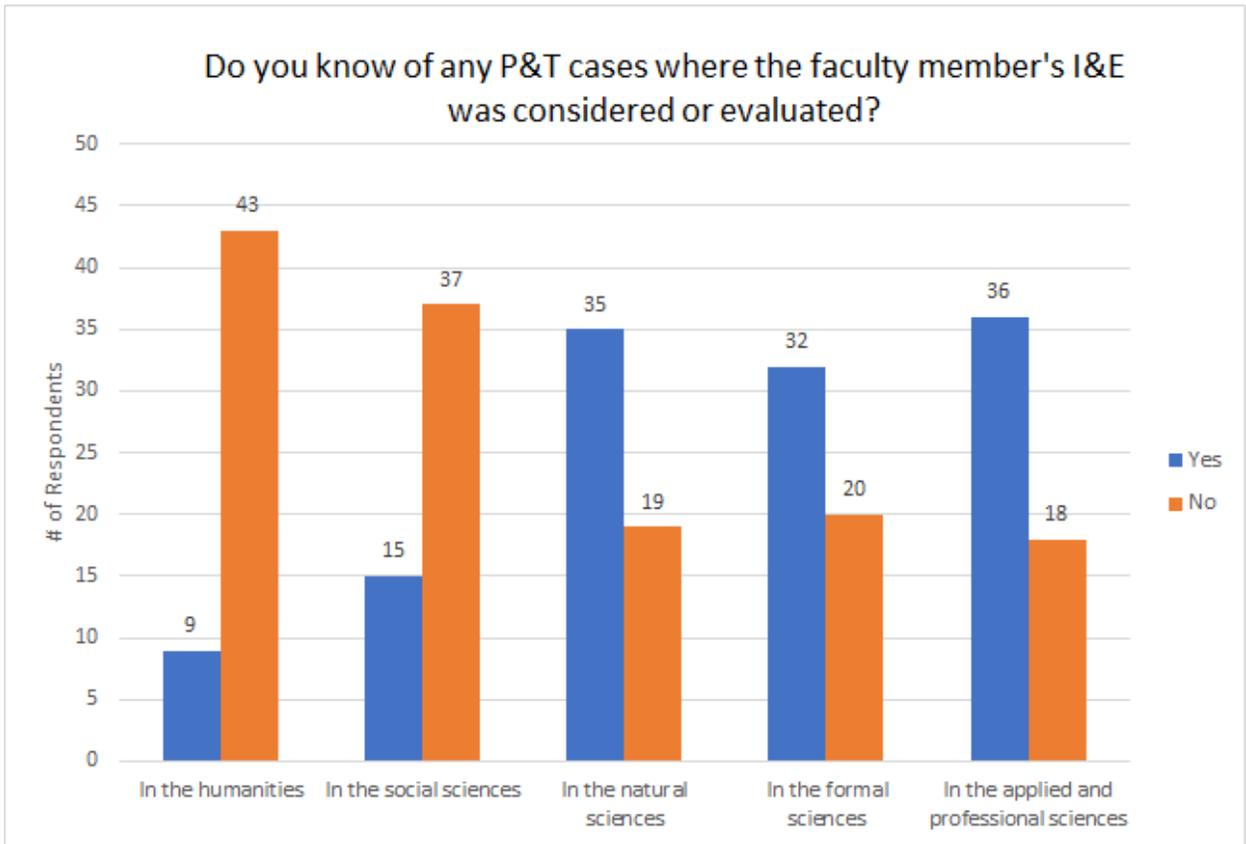


Fig. S11. Comparison of I&E considerations in P&T processes across disciplines at respondents' institutions.

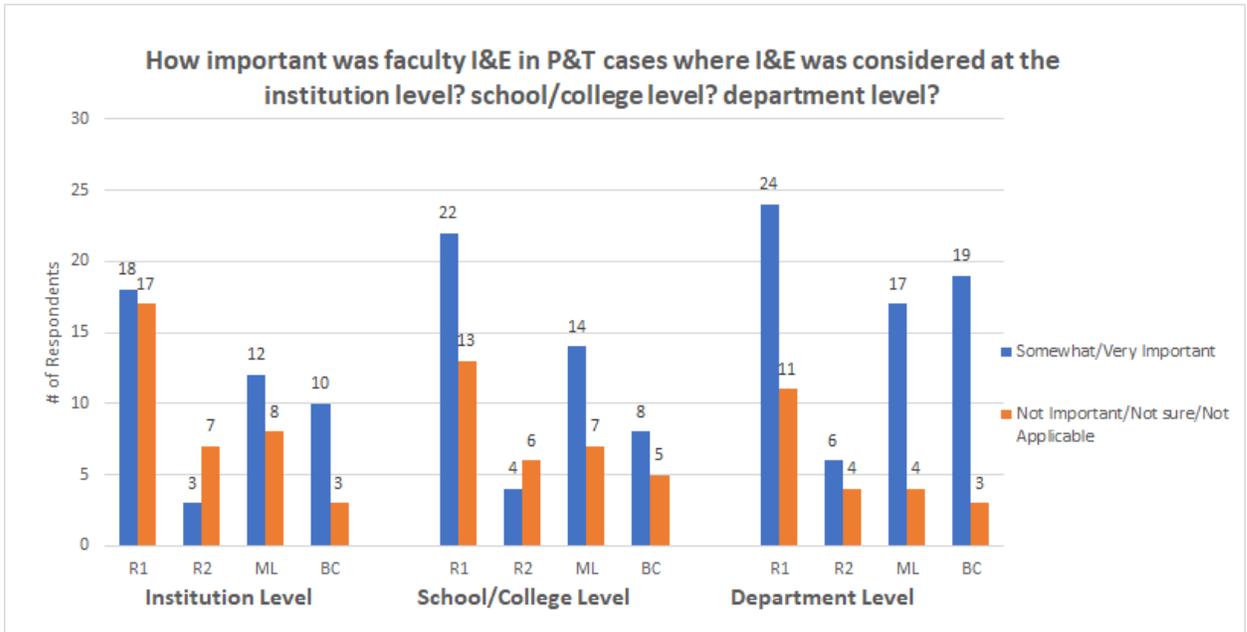


Fig. S12. Comparison of institution type responses of level of importance of faculty I&E in P&T cases at institution, school/college, and department levels at their institutions.

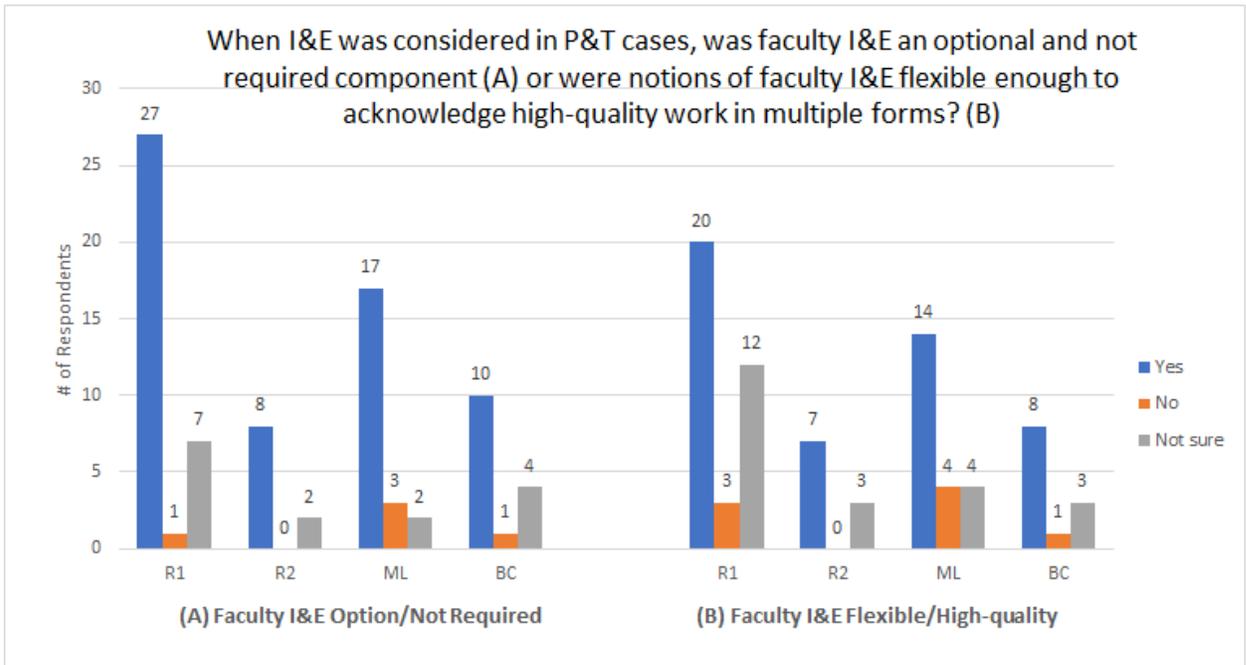


Fig. S13. Comparison of institution type responses of the optional and flexible nature of faculty I&E when it was considered in P&T cases at their institutions.

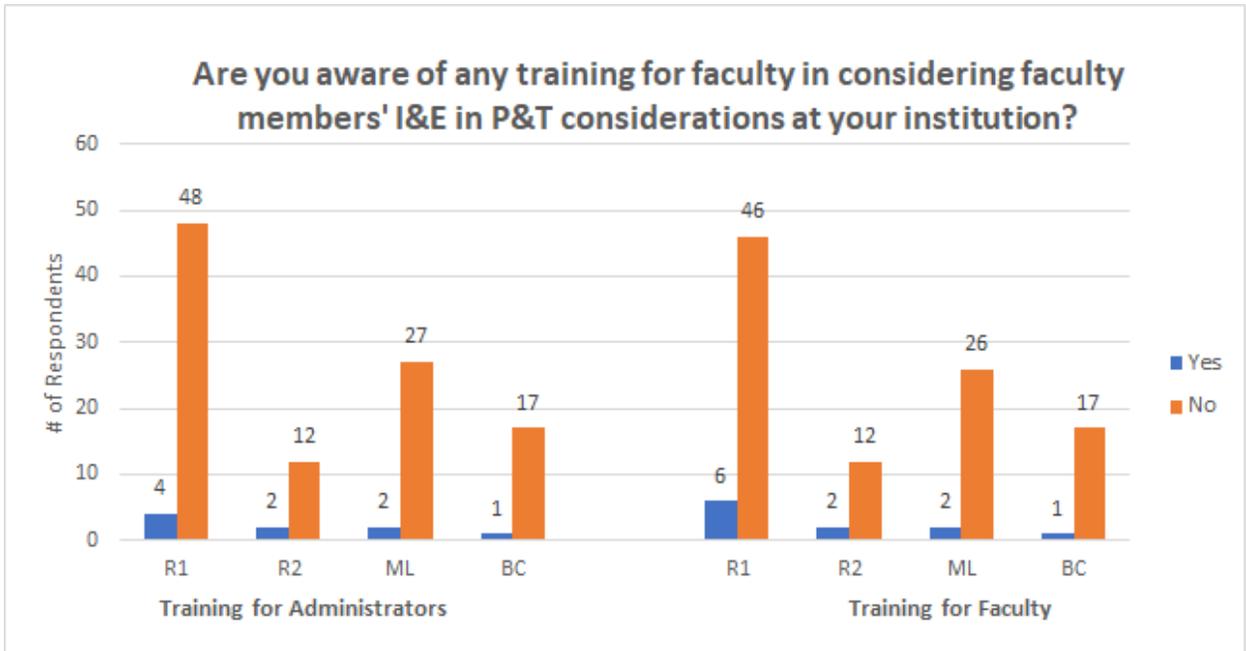


Fig. S14. Comparison of institution type responses of the awareness of any training for administrators or faculty in considering faculty members' I&E in P&T considerations at their institutions.

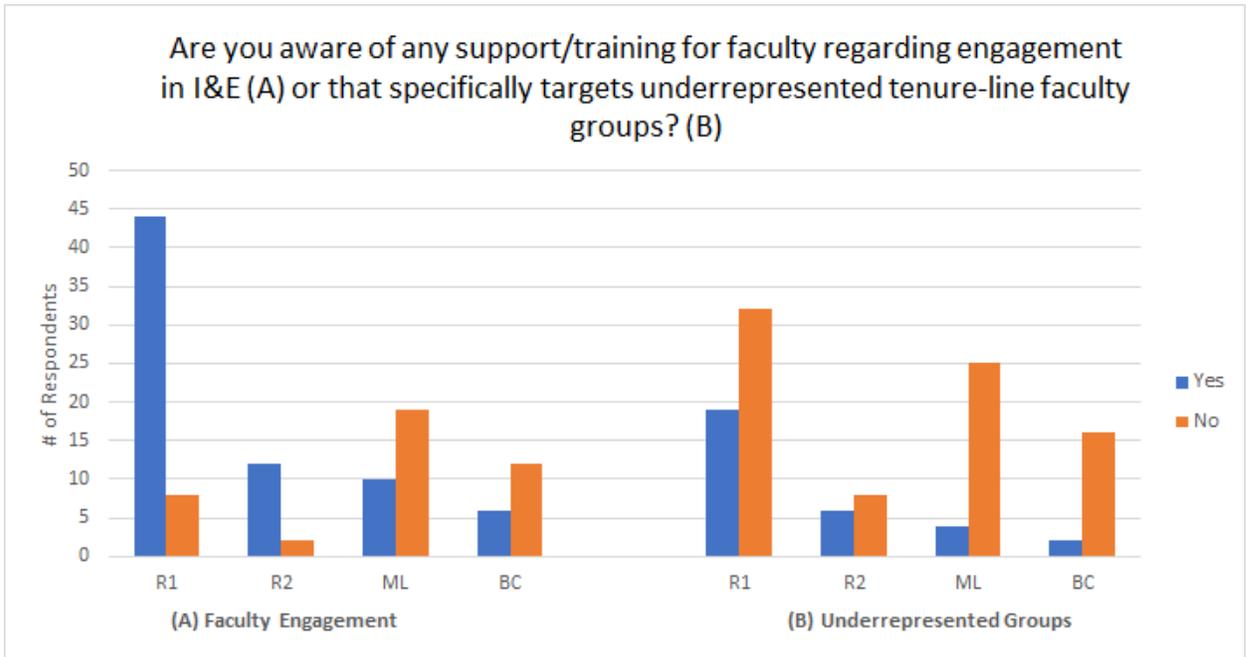


Fig. S15. Comparison of institution type responses of awareness of support or training at their institution that specifically targets faculty engaging in I&E or underrepresented tenure-line faculty groups (e.g., women faculty, faculty of color) engaging in I&E.



Fig. S16. Comparison of institution type responses of known awareness of support or training at their institution for students or postdoctoral employees regarding engagement in I&E.