



PTIE Findings: Expanding Promotion and Tenure Guidelines to Inclusively Recognize Innovation and Entrepreneurial Impact

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Overview of Effort. Funded through a grant from the National Science Foundation (Award # [CNS-1936073](#)), Oregon State University has led a nationwide effort to identify best practices for the inclusive recognition of innovation[†] & entrepreneurship (I&E) impact within promotion and tenure (P&T) guidelines. The grant PI for this effort is Rich G. Carter. The Co-PIs are Karl Mundorff, Jana Bouwma-Gearhart, Tuba Özkan-Haller and Irem Tumer. Additional organizing committee members are Julie Risien and Brian Wall. The overarching effort is referred to as **Promotion & Tenure Innovation & Entrepreneurship (PTIE)**.

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[†] Innovation has been defined by the National Science Foundation as “the introduction of new or significantly improved products (goods or services), processes, organizational methods, and marketing methods in internal business practices or the marketplace.” <https://www.nsf.gov/eng/iip/innovation.pdf>



Background. Universities[‡] are under increasing pressure to demonstrate their continued relevance by: **(a)** providing tangible benefits from government-supported research & education, **(b)** addressing societal challenges to improve the lives of humankind and **(c)** supporting the innovation economy to strengthen our Nation. This emphasis is equally important for the university's most important output: people (including both the students trained and faculty supported by the institution). The university has an obligation to ensure that the people that pass through their halls are not just career ready but career resilient – ready to tackle an everchanging workforce. For faculty, a misalignment currently exists between their reward structure and the University-level values and priorities they are expected to support. In addition, faculty are increasingly seeking more tangible societal/public impact from their work beyond traditional academic outputs. This PTIE effort is intended to facilitate a “broadening of the bar” to include faculty I&E impacts within P&T evaluations. Any recommended modifications should not be viewed as additional requirements that raise (or lower) faculty expectations and faculty should not be required to engage in I&E endeavors as a criterion for promotion.

PTIE organizers have employed a multi-step approach to identify consensus and next steps on how to inclusively recognize I&E outputs within P&T. In late 2019, a nationwide survey was conducted by co-PI Bouwma-Gearhart to establish the current status of this topic within existing P&T guidelines and practices on universities across the country. A [white paper](#) summarizing those results is available on the [ptie.org](#) website. Critical to the success of any modifications to P&T is the recognition that universities must work in a concerted fashion to expand guidelines and practices. This network system approach to change facilitates more rapid identification of best practices and the coordinated adoption of common set of recommendations. Consequently, the PTIE effort has included the creation of a nationwide coalition of over 65 institutions and 10+ national stakeholder organizations to work collaboratively on this important opportunity. A list of current [PTIE Coalition Member Institutions](#) and [PTIE Stakeholder Organizations](#) can be found on the [ptie.org](#) website as well as the description of the criterion for membership. Coalition and stakeholder members participated in a series of facilitated small group conversations over a period of 2.5 months in Summer 2020. For each of the five covered topics (successes & challenges, diversity, metrics, language and process changes), background information and homework were provided to all participants. The discussions around the topics were summarized and shared with the members to gain additional feedback. The recommendations from these small group conversations have been summarized below. During the nationwide virtual summit on September 16-18, 2020, these recommendations were finalized and implementation strategies were discussed. After the summit, PTIE organizers will continue to welcome new members to join the coalition and will work to facilitate implementation with institutions ready to move forward. Please contact ptie.info@oregonstate.edu to learn more about this effort.

[‡] The term university in this document refers to the full spectrum of higher education institutions – from primary undergraduate institutions (PUIs) to PhD granting/Research 1 (R1) institutions.



Framework for Recommendations. The PTIE organizing committee recognizes the wide variation in current frameworks for evaluation of promotion and tenure across institutions and understands that suggested language, metrics and process changes will have to be incorporated into existing structures. With that in mind, the guidance for adopting PTIE recommendations at an institution should contain the following set of core elements:

- (1) Overarching language that links a university's stated mission, values and goals to the criteria for P&T evaluation;
- (2) Explicit description of a diverse list of metrics with examples for evaluation that can be integrated into existing university criteria;[§]
- (3) Sample text for capturing evidence of innovation and entrepreneurial (I&E)-related impact within the commonly used research, teaching and service categories; and
- (4) Recommendations for process changes to ensure recognition of faculty engagement in I&E, acceptance of metric criteria and an unbiased evaluation of each case to help create culture change.

(1) Overarching Language & Linkage to University Priorities. In order to gain broad support for the recognition of I&E within P&T guidelines and processes, it is critical that I&E supporters on university campuses use language and terminology which is relatable across their institution. For example, PTIE organizers and many others have found that use of the “societal” or “public” phraseology (e.g. societal / public impact, societal need, [Public Impact Research](#)) to be an effective mechanism to inclusively engage with faculty around the topics of I&E. Use of alternate terms such as “economic impact” or “market impact” can create a misperception of an overweighting of importance on the financial aspects of the faculty member's work in I&E. Additionally, not all I&E-related impact has an immediate and/or overt linkage to a financial transaction. This approach allows the topic to be viewed more broadly across campus and support a wider cross-section of faculty. Similarly, it is important to convey that value assigned to I&E-related work in the P&T process varies widely across institutions and across disciplines within institutions. This current paradigm retards the pursuit of knowledge by discouraging some faculty from following a line of intellectual inquiry which may run counter to the current criterion for evaluation (e.g. annual evaluations, P&T).

In order to foster change across a campus, university-level guidance on P&T needs to include explicit language linking the evaluation of faculty to the stated mission, values and goals of the institution. For example, interdisciplinary and transdisciplinary practices are a cornerstone of innovation and can be integrated throughout these guidelines. Given the widespread existence of societal impact-focused priorities in university mission statements and strategic plans, this approach provides the justification for

[§] This broad list of metrics is intended to be as inclusive as possible for evaluating faculty active in I&E endeavors. Individual institutions may choose to use a subset of this list and/or make additions as appropriate for their culture and priorities.



expansion of the criterion valued in evaluation without adding additional complexity or becoming a point of division on a university campus. The inserted language would include both **(a)** institution-specific language that cites the mission statement and/or stated university priority (sample text below in **blue**) and **(b)** common wording across all PTIE coalition members that links those priorities to the evaluation process (sample text below in **red**). If the university mission statement and/or existing university priorities are insufficient to capture the importance of societal impact, additional language may be necessary. A third sentence below states the importance of articulating how the faculty member contributes to broader societal impacts (sample text is provided in **green**). This third sentence is inspired from pioneering language from a PTIE coalition member (Texas A&M) for valuing societal need in their existing P&T guidelines ([Page 45 of their document](#)). For some universities, the necessary overarching language may already be present in existing guidelines and/or may find new importance through this effort. For example, here is how one would adapt Oregon State University's stated priorities into promotion & tenure guidelines:

Oregon State University promotes economic, societal, cultural and environmental progress for the people of Oregon, the Nation and the world through producing graduates competitive in the global economy, supporting a continuous search for new knowledge and solutions and maintaining a rigorous focus on academic excellence. Evaluation of faculty for promotion and/or tenure includes their contributions to the institution's mission and stated priorities. Evidence for broader (societal) significance of the work, either now or in the near future, should be included within their personal statement and/or other appropriate portions of their dossier.

Supplemental language within individual colleges and departments will further add support to the importance assigned to I&E when aligned with overall university priorities. It should be noted that if university validation of these college-level priorities does not exist, the misalignment regarding I&E will persist. Additionally, it is challenging for that initial spark of I&E activity within an individual department, college and school to gain traction without clear support at the institutional level. One of our PTIE Coalition members ([Arizona State University – College of Engineering](#)) has some sample language for college-level recognition of I&E:

Engineering recognizes all innovative and impactful research, no matter where it falls in the fundamental/basic - translational - applied research spectrum. It also recognizes research that crosses and extends beyond traditional disciplinary boundaries. This is necessary to achieve its goals related to intellectual fusion, societal impact, and the magnitude and external recognition of its research enterprise. Additionally, intellectual property development with associated technology or knowledge transfer, especially to commercial entities that are able to develop and deploy commercially viable technology or products, reflects innovation, impact, and contributions to entrepreneurship.

(2) Explicit Description of Metrics. A comprehensive listing of *common metrics* is critical to provide the ***indicator data to support a narrative thesis of impact*** by the faculty member. It is expected that faculty engaged in this area will most likely have a combination of traditional academic and I&E outputs. Both the candidate and the evaluators (internal and external) will benefit from having this common set of metrics as I&E impact is not adequately valued through the lens of publications and grants. Furthermore, a lack of a common set of metrics is often cited as a reason that I&E-related work is not valued at the same level as other forms of faculty member impact. PTIE coalition members and organizers have developed a listing of sample metrics through small group conversations in Summer 2020. These metrics should provide a road map for faculty engaged in I&E for P&T to document the impact from their work. The list is broken down into six groups which are intended to flow along a continuum of societal impact. These groupings are meant to be comprehensive and it is not expected that any one faculty member engaged in I&E will make contributions in all groupings. The examples provided are meant to be inclusive; however, individual universities are encouraged to consider additions to this listing to address university-specific priorities.

- **Intellectual Property:** patent applications, patents awarded, copyrights (including software), trademarks, tangible property (e.g. cell lines), trade secrets & know how, germplasm protection, invention disclosures, novel data products, novel processes & procedures, installation of creative works, commissioned works.
- **Sponsored Research:** industry sponsored activities (contracting and material transfer agreements, research, services and testing), non-profit and foundation support, government commercialization programs (e.g. STTR and SBIR grants, NSF PFI, state and/or local funding opportunities).
- **Use** & Licensing:** licensed intellectual property and technologies (e.g. database access, cultivar and software releases, novel animal models for industrial use), royalty generated, usage of product/service/methods, discipline and/or unit-specific evidence of societal impact.
- **Entity Creation:** startup/spinout organizations (including for-profit, non-profits and foundations to allow for broad recognition of societal impact) founded on specific university intellectual property including funds raised/follow-on funding (e.g. private and public commercialization funds beyond SBIR/STTR, private equity investment), revenue/funds generated, people impacted & people employed.
- **I&E Career Preparation:** students & researchers trained/mentored as part of the work/curriculum, student-led innovations and startups under faculty mentorship, incorporation of I&E skills into classroom, curricular development/enhancements based on I&E work.
- **I&E Engagement:** engaging with industry, government, non-profit, foundation, community and/or other entities/individuals *that can be linked to the university*

** Use refers to products authored or created by university faculty and publicly posted information used or adopted for community benefit.



mission, serving in leadership role for university I&E priorities (e.g. Industry-Sponsored Institute, Industry Affiliate Program, IUCRCs, programs that foster entrepreneurialism for students).

It is important to acknowledge that this listing above is **not** meant to supplant the **(a)** research (scholarship & creative activity), **(b)** teaching & advising and **(c)** service categories used on university campuses. Instead, it serves as a primer for how one starts to quantify faculty impact within I&E. For example, a faculty member that has only demonstrated impact within intellectual property (IP) is unlikely to have achieved the same level of societal impact as a faculty member that has extended that IP into sponsored research and/or a licensed technology to an outside entity.

(3) Sample Text for Capturing Evidence of I&E-Related Impact within Research, Teaching and Service. PTIE organizers felt it would be prudent to provide category-specific language and structure that can be utilized as appropriate within P&T guidelines. The identified groupings (**Intellectual Property, Sponsored Research, I&E Career Preparation, Use & Licensing, Entity Creation** and **I&E Engagement**) may each include indicator metrics as well as more qualitative and contextualized narrative evidence for evaluating I&E that may be applicable across any or all of the three categories (research, teaching & service). Depending on individual university's P&T structure, it may be most appropriate to arrange the identified I&E metrics within one (or more) of the three categories (research, teaching & service). Additionally, a subset of the academy at a given university may have responsibilities that are not typically classified within the research/teaching/service descriptors (e.g. extension, clinical work). Consequently, each university will need to integrate their internal structure with the metrics and language provided by the PTIE coalition.

- **I&E Scholarship & Creative Activity.** The **Intellectual Property, Sponsored Research, Use & Licensing, Entity Creation** and **I&E Engagement** metrics and narrative evidence are likely most appropriate for inclusion in this category.
 - In addition, P&T guidelines typical note that all professorial faculty have a responsibility to engage in scholarship and creative activity. Scholarship and creative activity are expected to be intellectual work whose significance is validated by peers (peer reviewed) and which is communicated (published). A suggested way to expand that same message to inclusively recognize I&E could be:
 - *Scholarship and creative activity are understood to be intellectual work whose significance is validated by peers and effectively communicated. As specified in the Promotion and Tenure Guidelines, such work in its diverse forms is: based on a high level of professional expertise; must give evidence of originality; must be documented and validated as through peer review, critique or validation by evidence of societal or disciplinary usage/benefit; and*



must be communicated in appropriate ways so as to demonstrate significant impact for the public and/or for the discipline itself (including future impact as appropriate).

- Training and other potential process changes may be needed to help convey to reviewers the reality that peer-reviewed work can take many different forms. For example, industry-sponsored research typically undergoes an extensive review process by the funding organization prior to funding. Similarly, a technology is only licensed by an outside entity after an extensive review of its potential for impact.
- **I&E Teaching & Advising.** The **I&E Career Preparation** and **I&E Engagement** metrics as well as narrative evidence are likely most appropriate for inclusion in this category. In addition, it may prove helpful to provide some additional specifics within the guidelines.
 - For **teaching**, P&T guidelines typically focus on the ability to demonstrate command of their subject matter, growth in the subject field, and ability to organize material and convey it effectively to students. If a specific listing of examples of evidence in support of that requirement is provided, they often refer to contributions to curricular development, creativity in teaching strategies as well as documented study of curricular and/or pedagogical issues. To reinforce the suggested metrics and the linkage of university missions around societal impact to review criteria, addition of specific examples within this section might include:
 - *creation and /or incorporation of curricular content that connects the subject matter to societal impact through innovation;*
 - *support and instruct students in commercialization and I&E service activities - including developing collaborative approaches to solving complex world problems.*
 - For **advising**, P&T guidelines typically focus on a commitment to the well-being of students, both inside and outside the classroom. Although I&E advising outputs can be captured within this framework, it would be advisable to more explicitly call out the career resiliency and preparation aspects of advising. Inclusion of wording such as “*Effective advising helps create an environment which fosters student learning, student retention and career resiliency*” in the initial description would encourage faculty to move away from a purely numeric evaluation and towards more qualitative measures of their effectiveness in advising. In addition, inclusion of explicit mention of advising work around “*experiential I&E opportunities including facilitating internship opportunities for students*” is advisable. As appropriate, discussion of faculty member’s accomplishments around student placement upon graduation will help to refocus advising towards effectiveness and away from headcount.



- **I&E Service.** Evaluation of faculty members should include assessment of the quality, novelty, and/or impact of I&E-related service activities that advance the mission and stated priorities of the institution. I&E service may include promotion of a culture of innovation and entrepreneurialism within an institution or discipline. The **I&E Engagement** metrics and narrative evidence are likely appropriate for inclusion in this category although other types of metrics and narrative evidence may be needed depending on the nature of service activities and disciplines.

(4) Recommended Process Changes. During the small group conversations, coalition members discussed the needed process changes to support the P&T guideline recommendations for I&E while being mindful of the broader landscape that exists for reform in promotion and advancement. The PTIE effort is only a portion of the broad re-evaluation of the promotion and advancement process occurring nationally (e.g. [NASEM Convocation on Promotion & Advancement](#), [APLU's Public Impact Research](#), [NIST Green Paper](#)). Potential process changes should be viewed through the lens of concurrently supporting structural changes to better recognize and value the diverse and evolving outputs of the 21st century faculty member. Based on the feedback from the coalition participants, here is the list of suggested recommendations:

- **Mechanical Changes to P&T Process**
 - **Personal Statement.** Inclusion of a personal statement narrative by all P&T candidates placed at the beginning of the dossier that provides a narrative overview and context for the candidate's outputs and evidence of impact in alignment with their position description and stated university review criterion. A 3-5 page limit is recommended as longer versions were viewed as less impactful by coalition members. Universities are encouraged to provide guidance on preparation of this document by the promotion candidate so that it can be contextualized by the reviewers. Similarly, universities should provide guidance on how the overall dossier is going to be reviewed and suggestions on how to be prepared.
 - **External Reviewer Resource and Guidance.** PTIE universities should consider providing guidance to department chairs on ensuring selected reviewers are appropriate to review the candidate's dossier – particularly if the outputs of the faculty member are atypical from other faculty members in the department and/or if the department chair is unfamiliar with the area. The network of PTIE coalition universities and members is suggested as a potential source for identifying external reviewers (by discipline) that are well-versed in I&E (see related "**Creation of PTIE Network for External Reviewers**" in the **Fostering Diversity & Cultural Change** section later in this document).
 - **Letter of Instruction for External Reviewers.** Addition of language within the letter of instruction for external evaluators of a P&T dossier informing them of the institution's commitment to I&E. This statement may



include recognizing the role for social entrepreneurialism on campuses as appropriate.

- *“The candidate’s institution is a member the Promotion & Tenure Innovation & Entrepreneurship (PTIE) Coalition and the institution is committed to valuing innovation and entrepreneurship impacts within promotion and tenure.”*
- **Process Consultant / Proponent.** To ensure a fair and unbiased review of all candidate dossiers (not just I&E-related), consider inclusion of a trained individual (suggested names “Process Consultant” or “Process Proponent”) from another department (which has sufficient distance from the academic unit to have no other stake in the outcome; not limited by disciplinary norms, power dynamics, or working relationships) in the internal review to improve the consistency, validity and fairness of the process. This suggestion is modeled after similar programs currently used in faculty hiring (e.g. [Search Advocate](#)) on campuses across the US. A slide deck and Introductory Video on this topic can be found on the [PTIE Content Page](#).
 - This trained “Process Consultant” or “Process Proponent” would be thoroughly grounded in:
 - Mechanisms of implicit cognitive and structural bias
 - Specific bias risks in P&T process – assumptions and practices that can have unintended exclusive consequences
 - Current institutional P&T process requirements
 - Facilitative questioning strategies
 - Bias mitigation tools tailored to P&T review
 - Initiate conversation with P&T committees *before* dossier review begins - current/past practice, criteria, risks of implicit cognitive and structural bias, strategies to mitigate these risks
 - Serve as neutral process resources – ask and answer questions, offer tools
 - Would engage in continuing education to stay current with university, college, school and department guidelines as well as process best practices
 - Core tenant of this role should include:
 - Facilitative – not the “HR police”
 - Flexible – no “one-size-fits-all” requirements
 - Work with current practice, responsive to feedback
 - Proactive – discuss risks and strategies *before* issues arise
 - System 2 over System 1 thinking – favor slower analytical thinking (System 2) to reduce cognitive bias
 - Evidence-based – examine evidence that supports and contradicts conclusions
 - Processes, not people – strategies are non-blaming, non-judgmental



- **Utilization of Resources to Validate Societal Impact.** Coordination with additional entities within and/or outside the university (e.g. University Tech Transfer office, industry partner, or community organization) as feasible and/or appropriate to provide validation of societal impact of a faculty member's work (e.g. market analysis of technology developed).
- **Alignment of Interest Review and Reframing.** Review of existing Alignment of Interest (AOI) requirements (Note: suggested alternative description as "Alignment of Interests" which reduces negative perceptions as compared to "Conflict of Interest" or "Conflict of Commitment") requirements for faculty to ensure transparency and to avoid the perception of financial implications biasing the rigor of the scholarship.
- **Importance of Diversity, Equity and Inclusion (DEI).** Recognition of importance of parallel and synergistic need to value DEI within promotion & tenure guidelines at universities to foster a culture change toward I&E as inclusive activities on university campuses.
- **Fostering Diversity & Cultural Change**
 - **Engagement with DEI Offices.** Engagement of I&E campus leaders with university diversity offices to foster DEI within I&E. It is important to remember the value of drawing on the lived experience of faculty and students holding minoritized identities in I&E spaces to inform change efforts. Ultimately, actions taken by PTIE partners need to be context-specific and seeking out, listening to, and acting on the needs of faculty and student communities within an institutional context. This approach is essential to create and sustain anti-racist organizations. Gathering this feedback requires trust and a commitment to reflection and action that minoritized communities do not always see in institutional actors.
 - **University Level Commitments to DEI and I&E.** To realize lasting change regarding DEI within I&E, stated prioritization of DEI is needed in the institution's mission statements, strategic plans and/or stated priorities as well as in the evaluation criterion for its employees (to provide structure and incentives for supporting DEI). Concurrent with this commitment is the need for universities to make financial commitments that are commensurate with their importance to their mission statements, strategic plans and stated priorities.
 - Consider adjusting hiring tactics including hiring qualified individuals from groups not currently well represented in their discipline through normal mechanisms as well as cohort-based strategies^{††} and strategic recruitments. Financial mechanisms (e.g. university-level partial funding for position for period of time) should be considered to increase participation from departments both for DEI and I&E.
 - Provide (or improve existing) programs in I&E with diversity embedded into their culture.

^{††} Cohort-based strategies refers to the recruitment of multiple faculty members into one or more departments around a common research area and/or theme.



- Recognize that culture change in DEI and I&E will require both top-down bottom-up leadership and action. Extensive discussions to ensure all voices are heard will be key.
- **Expanded Training.** Provide training for university faculty and administrators on addressing implicit and explicit bias in the review process as well as education on effectively evaluating evolving forms of creative and scholarly activities in which faculty engage to create impact including within I&E.
 - Recognize the value of providing training for students, postdocs and junior scientists in avoiding bias is becoming increasingly common and helps to train the next generation.
 - Bias and resistance to change will take consistent and lasting focus to overcome.
- **Proactive Engagement by I&E Leadership.** Reaching out to diverse groups of people both within the institution and outside (in the community) is critical to reduce barriers to engagement, expand the network of people impacted by I&E and gain the maximum benefit of these activities.
 - Create an “Innovation and Entrepreneurship Fellows” program of leading faculty in I&E from different colleges on campus to facilitate better engagement across the breadth of the university. This group of I&E ambassadors serves as an important dual role to both socialize culture change on I&E on campuses and to support changes to the P&T guidelines and supporting processes. Trained I&E Fellows could also be used to help serve a portion of the role of the “Process Consultant / Process Proponent” to support culture change.
 - Research / Tech Transfer Offices are encouraged to re-evaluate current methods for faculty connecting with the research office about tech transfer to remove barriers and refine its welcoming approach.
 - I&E personnel in universities must push themselves to expand their networks to support DEI and broaden participation.
 - Direct outreach into communities helps to lower barriers and increase engagement
- **Creation of PTIE Network for External Reviewers.** Department chairs and other organization leaders called on to identify potential names for external review letters are encouraged to utilize fellow PTIE coalition member institutions for external evaluation of I&E-focused promotion dossiers. PTIE Organizers intend to develop a database of potential contacts – including members of I&E Fellows groups on PTIE campuses. Initially, PTIE representatives from each institution shall serve as the networking contact.
- **Annual Evaluations.** Ensure that there is alignment with faculty annual evaluation processes regarding I&E such that it supports the PTIE recommended changes for P&T.



Conclusion. The PTIE organizing committee recognizes the significant effort necessary to create and enact the expansion of promotion and tenure criteria and processes listed above. This document was created in partnership with PTIE coalition members and stakeholder organizations. This community collaboratively informed and shaped these recommendations. By engaging in this network systems approach, the impact of this effort will benefit academe for generations to come.