Promotion and Tenure Innovation & Entrepreneurship (PTIE) Coalition: Introduction

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PTIE Website: www.ptie.org
Outline

• Intent and Key Terms
• Addressing I&E within P&T
• Survey Data & Additional Background Information
• Framework for Evaluating I&E
• Engaging Faculty in I&E
• Structure for PTIE Coalition and Summit
Intent and Key Terms
PTIE Effort

• The PTIE effort seeks to expand university promotion and tenure (P&T) guidelines and practices for faculty to more inclusively recognize innovation and entrepreneurship (I&E) impact.

• Faculty engagement in I&E provides tangible benefits to the faculty, students, university, and society (Public).

• The PTIE Coalition have been established to address these issues using a collaborative, networked systems approach.

http://www.ptie.org/
PTIE Commitment to Diversity

- Diversity of voices is central to the effort.
  - Coalition member institutions are from all regions of our country and with varying student and faculty demographics.
  - PTIE provides an opportunity to reshape the demographics of future innovators & entrepreneurs through new ways to engage professors as well as through the graduates of PTIE institutions.
  - The coalition will continue to welcome new members with a focus on this same inclusive approach.
  - NSF grant provides $100K in support for travel to the Summit to ensure diverse representation.

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PTIE Coalition Intent & Outcome

• **Intent:** To (a) identify best practices, suggested language and possible metrics for evaluation of P&T cases containing I&E impact as well as (b) identify barriers to adoption and develop solutions (including possible P&T process improvements) to support the inclusive recognition of I&E impact within P&T.

• **Outcome:** Production of a report containing specific recommendations which can be used by institutions across the Nation for conversations on their campus about additions and/or changes to P&T guidelines and processes to support the 21st century faculty members and students while better aligning faculty reward structure with institutional priorities.

[http://www.ptie.org/](http://www.ptie.org/)
PTIE Coalition Members & Stakeholders

• Membership is non-binding and does not constitute endorsing specific solutions or P&T policies.
• **Coalition members** are universities committed to being a part of the conversation with on this topic.
  • Coalition members are asked to consider adopting the recommendations from the 2020 PTIE summit for expanding P&T guidelines on their own campus.
• **Stakeholders** are organizations committed to being a part of the conversation with universities on this topic.
Definition of Key Terms

• **Innovation**: The identification or creation of new resources (including methods, services, or technologies) with commercial or social good/impact potential.

• **Innovation with commercial and/or social good potential**: While faculty innovation is diverse in goals and impacts, in this effort we are specifically asking about faculty innovation with commercial (e.g. wearable technology, medical devices) and/or greater social good/impact potential (e.g. low-cost water filtration methods, wildfire monitoring systems). This definition would not include more typical collegiate items produced by faculty for teaching and learning, e.g. textbooks, course curriculum, etc.
Definition of Key Terms (continued)

• **Entrepreneurship**: Recognizing and attempting to realize the commercial potential/business opportunities of innovation. Faculty may or may not engage in entrepreneurship with respect to their innovations.

• **Intellectual Property (IP) transfer**: Formal sharing of innovations with other entities (including industry, governments, non-governmental organizations, universities, community stakeholders) for the specific intent to maximize use and impact. Faculty may or may not engage in IP-based transfer with respect to their innovations. Technology transfer is a subset of this topic.

• **University**: For the purpose of this effort, the word *university* will serve as encompassing all institutions of higher education.
Entrepreneurship

• Entrepreneurship in this setting refers to research/commercialization activities that is connected to faculty member’s academic pursuits.
  • Aligned with the faculty member’s effort is support of student entrepreneurship skill development.
  • Faculty member’s role in providing consultation or advice within a commercial entity should be considered.
  • PTIE is not attempting to recognize faculty members’ commercialization efforts outside of their academic pursuits.
Addressing I&E within P&T
Misalignment and Pressure

- **Misalignment** currently exists between the reward structure for faculty and University-level values and priorities they are expected to support.

- Universities are under increasing **pressure** to demonstrate their continued relevance by:
  - Providing tangible benefits from government-supported research & education.
  - Supporting the innovation economy to strengthen our Nation.
  - Addressing economic, environmental, social and cultural challenges to improve the lives of humankind.

[http://www.ptie.org/](http://www.ptie.org/)
• PTIE is specifically focused on I&E within P&T

• Other efforts are underway to tackle other aspects of faculty advancement. PTIE should be viewed as a spoke in the wheel of promotion and advancement.
  • The National Academies held a convocation in October 2019 entitled “Re-envisioning Promotion and Advancement for STEM Faculty: Aligning Incentives with Values.”

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Survey Data and Additional Background Information
Current State of I&E within P&T

• PTIE organizers conducted a nationwide survey conducted late 2019
  • 377 institutions surveyed
  • Representing a broad cross-section of institutions from PUls to R1s including MSIs and all parts of USA
• Clear interest exists regarding this topic of recognizing faculty I&E within existing P&T structures and processes.
  • 99 unique institutions responded, over 120 individual responses.
• Detail of survey findings are provided on the PTIE Content webpage.

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Select PTIE Survey Findings

• Survey found insufficient structure and policies exist for evaluation of faculty I&E in considerations of P&T.
  • All levels within a university struggle with ability to evaluate faculty I&E in P&T considerations.
  • When I&E is evaluated, typically considered somewhat important by P&T evaluators, and as an optional and flexible activity for faculty.
  • Training for evaluation of faculty I&E in P&T considerations, for both faculty and administrators, is practically nonexistent.

• 70% of survey respondents interested in working together to problematize and support evaluation of faculty I&E in P&T considerations.

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Additional Prior Findings

• **2014 PNAS article** (Sanberg et. al.) outlined how faculty that are engaged with industry
  • Increased opportunities for research funding
  • Access to unrestricted funds for further institutional investment
  • Sustains high scholarship level
  • Student success through exposure to real-world translational research experiences connected to immediate societal need
  • Increased prestige for faculty, students and institution
  • Demonstrates public benefit

[http://www.ptie.org/](http://www.ptie.org/)
Framework for Evaluating I&E

http://www.ptie.org/
Evaluation of I&E with P&T Categories

- Recognition of I&E is best accomplished within the existing three core areas:
  - Research
  - Teaching
  - Service

- I&E can occur in any or all of these core areas.

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Thoughts for Evaluating Research I&E

• Important to recognize that patents alone are unlikely to be an adequate metric.
  • Financial cost to university to obtain.
  • Potentially places the Tech Transfer office is a gate-keeper role in the P&T process.

• A collection of metrics in I&E will likely prove more effective.

• Suggested research-focused metrics might include:
  • patent applications, patent awards, copyrights (including software), plant variety protection and invention disclosures.
  • industry sponsored projects, STTR and SBIR grants.
  • licensed technologies, cultivar releases, and commercialization outputs.
  • startup companies who license University faculty member IP including funds raised, revenue generated & people employed.

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Thoughts on Teaching & Service
Evaluating I&E

• Possible metrics should focus on quality and measurable outputs and less on quantity
  • Minimize focus on primarily # of students advised, mentored and/or taught per unit time.

• Evaluation should include what benefit the I&E-output brought to university, faculty member, their students and/or society

• Suggested possible metrics might include:
  • Creation of I&E-focused classroom projects and laboratory experiments that tie to current societal challenges.
  • Placement of students in internships aligned with their career aspirations.
  • Valuing serving as consultant or advisor for company to the same level universities value serving as reviewer for journal and funding agencies.

http://www.ptie.org/
Addressing P&T Evaluation Practices

• Changing the P&T guidelines will likely be inadequate to effect change in university culture.

• Changes to P&T practices will likely also need to be made to ensure faculty are supported to pursue I&E-focused work in departments.

• For example, the use of a trained advocate (from another Department) in Departmental P&T discussions could ensure rule changes to P&T are followed.
  • Many universities already have trained “Search Advocates” that can be utilized in this role at no additional cost to the university.
  • This approach protects the candidate, the Department and the institution by providing an unbiased, trained 3rd party during the discussions.

http://www.ptie.org/
Engaging Faculty in I&E

http://www.ptie.org/
Effective Terminology

• Careful choice of inclusive language is needed to best engage a broad cross-section of faculty on this subject.

• We all better relate to the terms *societal impact* and *innovation* which focus the beneficial impact of their discoveries on society as opposed to *entrepreneurship*.

• *Market impact* and *economic impact* are more focused on financial aspects.
  • The *market* is merely a mechanism for maximizing societal impact.

• Universities should view I&E as a concept that can have impact across campus.
  • As faculty, the artist, musician, author benefits from the same I&E skills as an engineer for finding the right fit for their output in society.
  • Inclusive approach makes the concept more widely accepted.

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Academic Freedom

• Universities have long provided a supportive environment for faculty to pursue their research interests regardless of the topic.
• This freedom to pursue knowledge has enabled countless discoveries (both intentional and accidental).
• I&E informed research should be treated with the same level of academic freedom as any other area of research.
• The current disproportionately lower value assigned to I&E-focused research creates an inequity amongst different types of research and retards (not protects) the pursuit of knowledge.

http://www.ptie.org/
Benefits to Faculty

• I&E provides an avenue for faculty looking to maximize the societal impact from their work.
  • Recruitment and retention tool for faculty.

• Faculty benefit from engaging in I&E activities ([2014 PNAS](http://www.ptie.org/)).
  • Faculty with industry connections are academically more productive and have more impact.
  • These faculty published in significantly more and in higher impact journals.
  • Papers published by university-industry collaborations are cited more than multi- or single university papers.
Benefits to Students

• I&E efforts also should help institutions attract and retain the best students (graduate and undergraduates).
  • I&E skills teach career resiliency which creates the opportunity for better, more sustained outcomes for graduates.

• Students also benefit from engaging in I&E activities (2014 PNAS).
  • Unique exposure to real-world translational research experiences that connect with an immediate societal need – which is not available in the traditional curriculum structure.
  • Value experience in the process of intellectual property management.
  • The entrepreneurial spirit is nurtured, rounding off the university experience.

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Structure for PTIE Coalition & Summit
Phases of Effort

• Four Phases
  • **Phase 1:** Complete nationwide survey of current policies and practices for recognizing I&E within P&T. (Finished)
  • **Phase 2:** Establish non-binding PTIE Coalition and work with them to provide input on agenda, identify best practices for evaluating I&E within P&T, discuss potential solutions, develop suggested recommendations including specific language. (initial group established)
  • **Phase 3:** National PTIE Summit to be held at Hyatt Regency Crystal City in Arlington, VA (September 16-18, 2020)  **Possible Virtual Summit subject to COVID-19 crisis**
  • **Phase 4:** Coalition members take findings from PTIE Summit back to home institution and consider adopting the recommendations on your own campus.
**Timeline**

- **Sep 2019**: Grant funded
- **Dec 2019**: Survey completed

**Phase 1**
- **Mar 2019**: Launch PTIE coalition
- **Apr 2019**: Share Intro PTIE Slides

**Phase 2**
- **May to Aug 2019**: PTIE work thru Zoom / email / box.com
- **Aug 2019**: Finalize PTIE work thru Zoom / email / box.com

**Phase 3**
- **Sep 2019**: Report PTIE Summit
- **Oct 2019**: PTIE Findings to PTIE group

**Phase 4**
- **Winter 2020**: Publish Findings & Support Adoption

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Structure for Phase 2

• **May-August 2020.** Regular Zoom conversations around specific topics.
  • 1-2 topics per month to be discussed with targeted outcomes (solidified PTIE summit agenda items) expected from each topic.
  • Multiple opportunities will be available to engage in small group (Zoom-based) conversations on each topic as well as the ability to provide asynchronous feedback.
  • Not all individuals are expected to participate in each conversation.
  • The time commitment here is modest (we expect 1-4 hours per month max).
  • PTIE Organizers to provide summary of findings from each topic.

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Suggested Topics for Zoom Calls

• Existing challenges that face faculty with I&E within P&T including differences between types of institutions (both policy and in practice).
• Existing successes individual universities have with evaluating I&E within P&T currently – including language from existing P&T guidelines.
• Supporting diversity within I&E.
• Suggested metrics and/or criteria for evaluating I&E including advantages and pitfalls to each.
Suggested Topics (continued)

• Identifying possible language for inclusion in P&T guidelines.
• Managing conflict of interests/commitment with I&E.
• Consideration of needed P&T process recommendations needed to support changes in practice.
• Language for engaging faculty about I&E across campus in an inclusive manner.
• Recommendations for Summit (topics, format, virtual vs on site).

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Application Process for PTIE Summit

• **May 2020**: Contingent on the COVID-19 outbreak, open the application process for PTIE Summit (occurring September 16-18, 2020 at the Hyatt Regency Crystal City in Arlington, VA). This application / selection process will be used to:
  • Ensure a diverse cross section of attendees.
  • Collect additional information about the topic via a short survey from applicants.
  • There is a $100 per person fee for attending in person the Summit (free if virtual)
  • Travel stipend support is available for select applicants to offset costs of in person attendance based on need as well as supporting geographic and underrepresented representation.
  • Each PTIE coalition member institution and stakeholder will be guaranteed at least two attendees.
  • More guidance will be forthcoming on the application process.

• Built-in contingency for virtual summit due to COVID-19

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Draft Structure for Summit (Phase 3)

• In person (or virtual) 1.5 day format with welcoming reception prior to start of 1st day.
• **Day 1:** Series of plenary speakers and/or panel discussions on a specific topic followed by Q&A and then break out sessions around topic.
  • Pre-work from Phase 2 (May-Aug 2020) will provide framework for topics and draft language.
  • Note takers to report back progress to all attendees regularly.
• **Day 2:** Finalize consensus recommendations for consideration by PTIE coalition member institutions.

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Post Summit Activities (Phase 4)

• Continued outreach to support adoption and gain additional coalition members.
  • Publication of Findings.
  • Presentations at appropriate conferences and events on findings.
  • Continued conversations amongst member institutions – including sharing best practices and supporting implementation.

• Seek funding for longitudinal study on impact.

http://www.ptie.org/
PTIE Organizing Committee

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