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

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Organized by Oregon State University

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.

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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.

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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 <u>not</u> 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.

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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.

Promotion & Advancement Efforts

- 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 PUIs 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.

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

Framework for Evaluating I&E

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.

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.

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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.

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Engaging Faculty in I&E

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.

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**.

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).
  - 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.

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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.
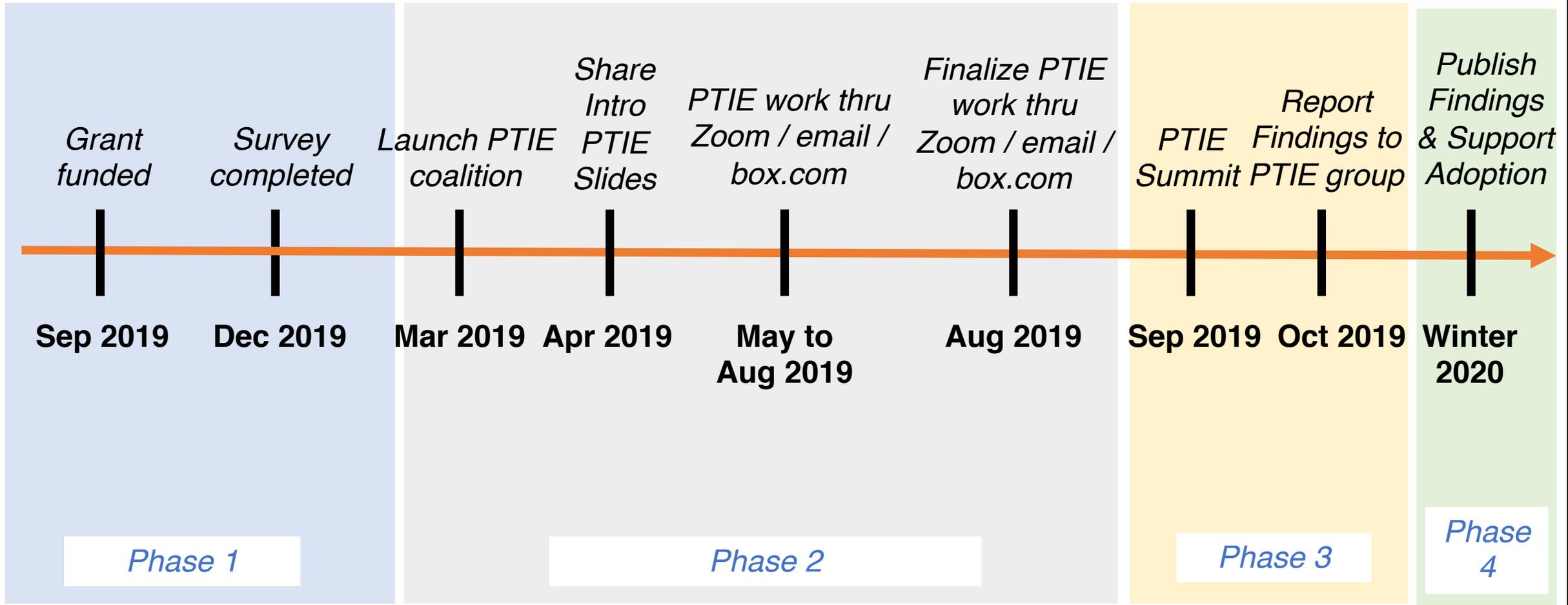 - The entrepreneurial spirit is nurtured, rounding off the university experience.

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.

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Timeline

Phase 1
- **Sep 2019** — *Grant funded*
- **Dec 2019** — *Survey completed*

Phase 2
- **Mar 2019** — *Launch PTIE coalition*
- **Apr 2019** — *Share Intro PTIE Slides*
- **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** — *PTIE Summit*
- **Oct 2019** — *Report Findings to PTIE group*

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

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.

PTIE Organizing Committee

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Questions?

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