

Work-in-Progress: Fostering university library collaborations to support small business owners and aspiring entrepreneurs above and beyond campus

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Abstract

The fundamental purpose of the United States Patent and Trademark Office (USPTO) is to foster innovation competitiveness, and job growth by recognizing and securing intellectual property rights, through the delivery of high-quality and timely patent and trademark examination and review proceedings. Then, the Patent and Trademark Resource Center (PTRC) Program is a network of academic, public, and state libraries designated to assist independent inventors and small businesses while navigating the application process sponsored by the USPTO.

This paper describes the efforts of a team of librarians affiliated to a PTRC within a public university to develop collaborations with public libraries and government agencies that support small business owners and aspiring entrepreneurs to provide them with access to information resources related to intellectual property protection, as a means to extend those services mainly provided only to faculty, students, researchers and staff on campus.

The preliminary analysis of a PTRC service transactions and events, from Spring 2024 to Fall 2025, shows that several information sessions on intellectual property protection for small business owners and aspiring entrepreneurs have been coordinated and delivered in collaboration with a local Center for Entrepreneurship, the Business and Non-Profit Resource Center in a public library, a local Small Business Development Center (SBDC), and a local Chamber of Commerce. In addition, several undergraduate students, graduate students, university alumni and members of the general public have requested individual consultations related to intellectual property protection for specific products, services and innovations across disciplines.

Based on preliminary results, it seems that the development of PTRC collaborations with local agencies helps to increase awareness of the richness and relevance of the intellectual property protection resources available not only for faculty, students, and researchers on campus, but also available for small business owners, aspiring entrepreneurs and the general public. Future research will strive to further develop opportunities for collaborations and partnerships with other agencies and resource centers that support research and innovation across disciplines, above and beyond campus.

Key words: Entrepreneurship Education, Intellectual Property Protection, Patent and Trademark Resource Center Program, United States Patent and Trademark Office

1. Introduction

Entrepreneurship Education: The role of collaborations in entrepreneurship education, together with its potential opportunities, challenges and innovations across domains, has been addressed in previous research. In general terms, education about entrepreneurship investigates it as a societal phenomenon, addressing the acquisition of skills and knowledge to start up a new

enterprise, and using the entrepreneurial process as a tool to achieve a particular set of learning objectives. It can be seen primarily as a possibility of guidance to bring together the business world and schools and universities. Therefore, most entrepreneurial initiatives and programs are designed as extra-curricular activities in higher education [1].

Entrepreneurship Education is also regarded as a platform offering several components for entrepreneurs, such as knowledge, skills, networking and assistance, together with more perceptual components such as motivation, self-confidence and growth intentions [2].

The traditional approach to entrepreneurship education can be extended by including interactions between different disciplines, diverse stakeholders, organizations, and funding bodies. There is a need for further research with a broader perspective on the role of higher education institutions and in turn alternative forms of collaborations to foster entrepreneurship education beyond business or engineering schools [3].

An Entrepreneurial Mindset (EM) in Engineering Education: The *Kern Entrepreneurial Engineering Network (KEEN)* was founded in 2005 as a nationwide partnership of more than 30 undergraduate engineering programs that are committed to the mission of graduating engineers with an Entrepreneurial Mindset (EM) encompassing attitudes, habits and behaviors that shape a unique approach to problem-solving, innovation and value creation. For engineering students, EM amplifies the technical skills they learn, becoming able to recognize and identify opportunities, assess and emphasize their impact, while pursuing and creating value in any context. Today, KEEN includes 70 colleges and universities across the United States as partners to promote entrepreneurially minded learning through curriculum development, collaborative research, national conferences, and events [4].

The promotion of collaboration and creativity skills within entrepreneurship education for engineering students is increasingly important [1]. The American Society for Engineering Education conducted a series of workshops to envision what competencies future engineers need to meet the challenges of new and different ways of living and working. The results emerging from those workshops include the *Future-Ready Engineering Ecosystem (FREE) Competency Taxonomy* describing technical competencies and personal/professional competencies for future engineers, emphasizing the need to promote the development of multidisciplinary knowledge, awareness of societal issues, creativity, innovation and entrepreneurship [5].

2. Literature review

This section describes the main concepts related to the role of Intellectual Property Protection and the agencies that recognize and secure Intellectual Property rights of researchers, innovators, small business owners and aspiring entrepreneurs in the United States and its territories.

Innovation, Start-ups and Intellectual Property Management: As innovation essentially involves converting new ideas into action, the scope of innovation is wide ranging, from developing new products, processes and technologies, to creating new markets or administration systems such as business models or procedures. Using a broad definition of innovation, previous research has found that firms engage in innovative practices including innovation in goods and

services, innovation in operational processes, innovation in organizational processes, and innovation in marketing methods [6].

An understanding of the complex nature of innovation management processes is a vital research area for policy makers, managers, entrepreneurs, advisors, and academics; furthermore, in the context of systematic uncertainty, Intellectual Property Protection rules provide a framework where entrepreneurship activity can take place, influenced by a specific innovation ecosystem, cultural factors and the degree of awareness from the general public regarding its existence, its benefits, and its opportunities [7].

Intellectual Property is an important ingredient that contributes to the success of start-ups, but start-ups are often overwhelmed with Intellectual Property matters, such as the lack of knowledge, no dedicated budget, limited capacities, and no access to software tools. From this perspective, start-ups are at a disadvantage and despite the general advice to file applications to protect their innovations, start-ups often prefer a risky but fast approach based on confidentiality agreements. Only a few start-ups protect their innovations, but these are significantly more successful than those that do not protect their Intellectual Property rights [8].

The United States Patent and Trademark Office (USPTO): The fundamental purpose of the USPTO is to foster innovation competitiveness, and job growth by recognizing and securing Intellectual Property rights, through the delivery of high-quality and timely patent and trademark examination and review proceedings. Its headquarters, the Northeast Regional Outreach Office, and the Southeast Regional Outreach Office are located in Alexandria, Virginia. The USPTO also operates four additional regional outreach offices across the United States and one community outreach office in Durham, New Hampshire. Combined with their examining corps, their outreach offices provide inventors, entrepreneurs, and small businesses with a USPTO presence in every U.S. time zone. In addition, the USPTO [9]:

- is the federal agency under the Department of Commerce, with a mission to drive innovation and global competitiveness in the United States for the benefit of the general public.
- advises the president of the United States, through the Secretary of Commerce, and Federal Government Agencies on national and certain international Intellectual Property Policy.
- advises Federal Departments and Agencies on Intellectual Property Policy matters in the United States and other countries.
- furthers effective Intellectual Property Protection for American innovators and entrepreneurs worldwide by working with other agencies to secure strong Intellectual Property provisions in free trade and other international agreements.
- provides training, education, and capacity building programs designed to foster respect for Intellectual Property and encourage the development of strong Intellectual Property enforcement regimes by United States trading partners.

The Patent and Trademark Resource Center (PTRC) Program coordinates a nationwide network of academic, public and state libraries designated by the USPTO to assist independent inventors and small businesses in protecting their Intellectual Property. It includes designated

centers across the United States and its territories. While PTRC representatives cannot provide legal advice, they can [10]:

- Provide information sessions on the types of Intellectual Property protection and its relevance for aspiring entrepreneurs and small business owners
- Describe the application process for patents and trademarks
- Demonstrate how to use patent and trademark search tools
- Provide access to a directory of patent attorneys and agents registered to practice before the USPTO
- Provide access to other USPTO resources, such as a calendar of events, training materials, FAQs, and online manuals.

For a library to be designated as a PTRC by the USPTO, it must comply with these requirements [10]:

- Provide free assistance to the general public in the efficient use of patent and trademark information resources provided by the USPTO.
- Provide quarterly metrics on the use of patent and trademark services and outreach efforts as stipulated by the USPTO.
- Attend the USPTO-hosted PTRC training seminars generally held on an annual basis.

Prospective PTRCs are identified by [10]:

- Institutions with a history of public programming and service to entrepreneurs
- Institutions with demonstrable expertise in Intellectual Property
- Institutions with demonstrable leadership in professional library associations
- Major research institutions
- Institutions within commuting distance of major metropolitan areas
- Institutions within or near economically distressed areas
- Institutions that offer programming and create web content in Spanish, Mandarin, and/or other non-English languages

Libraries designated as PTRC by the USPTO receive basic and/or advanced training necessary to understand the basic provisions of patent and trademark protections. Libraries will also receive the search tools needed to access patent databases and trademark registrations. Additionally, designated PTRCs will receive ongoing support to excel. As an additional resource, all PTRCs are welcome to take part in the USPTO's annual training seminar. The seminar serves as a tool to exchange ideas, help improve PTRC products and services, and reaffirms the USPTO's mission to disseminate patent and trademark information to the general public [10].

The Patent and Trademark Resource Center Association (PTRCA) was established in September 1983 as the *Patent Depository Library Association (PDLA)*, evolving later into *PTRCA*. The mission of the PTRCA includes [11]:

- To discover the interests, needs, opinions, and goals of the PTRCs
- To advise the USPTO in these matters for the benefit of PTRCs and their users
- To assist the USPTO in planning and implementing appropriate services for the PTRC's, their staff and patrons.

Some of the PTRCA rules and bylaws are defined for membership, divisions, executive council and committees. Since the PTRCA is organized exclusively for educational purposes, a comprehensive document providing a *Guide for Best Practices for Patent and Trademark Resource Centers (PTRCs)* was created and is being updated on an annual basis for the benefit of future PTRC libraries and representatives. This living document is the collective wisdom and experience of the PTRC community and is essential for both established and emerging resource centers alike. In a particular section in the guide [11] there are suggestions for forming collaborations and partnerships that understand that effective Intellectual Property Protection involves diverse communities and stakeholders. Therefore, the guide describes suggestions for developing collaborations and partnerships, with Community Centers, High School STEM Programs, Business/Entrepreneur Incubators, Small Business Development Centers (SBDC), and Pro Bono Groups and Law Schools.

3. Procedures

Research design: There is a tendency in academic libraries to use qualitative research to address issues related to information seeking, information use, and communication behavior by information users in natural settings [12]. This study is based upon a descriptive, single-case study paradigm, tracing a sequence of events over time [13], [14], focusing on understanding the information needs of faculty, students and staff at a public university, together with the needs of small business owners and aspiring entrepreneurs trying to protect the works, products and services emerging from their individual research, innovation and entrepreneurial efforts. The study received a "Non-Human Subjects Research" determination from the host university IRB committee in December 2025, not requiring any extra review or approval.

Research questions: The research questions addressed in this study are:

- How can the services provided by a PTRC in an academic library within a public university enhance access to basic information related to Intellectual Property Protection?
- What kind of collaborations and partnerships help to increase the awareness of diverse Intellectual Property Protection resources relevant for entrepreneurship, research and innovation above and beyond a university campus?

Case selection: The unit of analysis in the study was a specific PTRC in an academic library within a public university, supported by a team of subject librarians. A theoretical construct sampling strategy guided the selection process, in which the topic of interest is defined well before the researcher goes to the field [15], [16]. Therefore, the case study is focused on a PTRC designated and sponsored by the USPTO to assist independent inventors and small businesses while navigating the application process.

Data gathering: The data gathering process included a review of the literature related to entrepreneurship education with a particular interest in current practices for Intellectual Property Protection. Then, once a specific PTRC was selected as the unit of analysis, a list of transactions for information sessions and individual consultations from Spring 2024 to Fall 2025 was created for the study by extracting relevant data using specific tools, as follows:

- **Information sessions:** each information session delivered and/or coordinated by a PTRC staff member was registered using the PTRC online calendar of events; after each

session, a more permanent transaction record was manually created using *LibInsights*, a communication platform widely used in libraries to keep track of information and/or instruction sessions by date, by location, by staff member, by topic, by audience and other filters [17].

- **Individual consultations:** each request for an individual consultation with a PTRC staff member was registered in a calendar using Microsoft Booking tools; once that the transaction is completed, a more permanent transaction record was manually created using *LibAnswers*, a communication platform widely used in libraries to keep track of reference transactions by date, by location, by staff member, by question type, and other filters [18].

Data analysis: A content analysis protocol was conducted based on standard analytic coding procedures for interpretation of specific phenomenon, by manually coding each entry within the list of transactions for information sessions and the list of individual consultations created for the study, identifying the level of analysis, developing a coding scheme to guide the analysis and to determine the existence and frequency of descriptions, emerging themes and assertions relevant to the research questions [15], [16]. Appendix A shows the coding schemes developed for the data analysis process of this study.

4. Preliminary Results

4.1 The PTRC selected for the study

The PTRC selected as the unit of analysis for this study was designated by the USPTO in February 2024. It is part of an academic library in a public research university serving its main campus and several regional campuses with academic offerings that include 200+ majors and 300 master's, doctoral and professional degree programs with more than 12,000 courses from 15 colleges/schools and 200 research centers/institutes. The total student enrollment increased to 66,901 up 2.3% from 2023. In addition to this PTRC located at the central region of the state, there are two other PTRCs: one serving the northern region and one serving the southeast region, both representing larger metropolitan areas in the state.

In collaboration with private industry, state government agencies have launched diverse programs to attract entrepreneurs and to further develop a state-wide entrepreneurial environment; however, the USPTO reports that the level of employment by Intellectual Property-Intensive Industries varies by state; with a few exceptions, Intellectual Property-Intensive environments cluster around New England, the upper Midwest, and the West Coast. The state hosting the PTRC selected for this study ranks lower than the national average employment share in Intellectual Property-Intensive Industries [19].

In general, the role of subject librarians is to promote access to information resources, data sets, standards and research tools available at University Libraries for faculty, students and researchers in specific disciplines; the team of librarians serving the PTRC selected for this study not only serves as liaison with several academic departments on campus, mainly at the Business School and the College of Engineering, but also provides information sessions and individual consultations for the general public. They are trained to access and use information related to

Intellectual Property Protection, including patents, trademarks, trade secrets, and copyright. However, they are not attorneys and cannot provide any legal advice. The staff currently serving as PTRC Representatives include a Business Librarian, an Engineering Librarian, a Food, Agricultural, and Environmental Sciences Librarian, and a Chemistry and Physical Sciences Librarian. All of them have attended comprehensive training sessions sponsored by the USPTO, since the designation date.

4.2 Information sessions and other events

Table 4.1 shows the type of collaborations that have been developed since the USPTO designated the PTRC selected for this study, in February 2024. The diversity of resources and services shared by each organization enhanced the creation of opportunities to target more specific or broader audiences, depending on the goals and scope of each partnership-based collaboration, extending access and impact, as suggested in previous research [1], [2], [3].

Organization	Resources/Services	Collaborations Timeline
The USPTO	Regional Offices Annual Training Access to information resources related to Intellectual Property Protection Information Sessions, Bootcamps and Guest Speakers for small business owners and aspiring entrepreneurs	From the designation in February 2024, to present
A Business and Non-Profit Resource Center in a Public Library	Information sessions for small business owners and aspiring entrepreneurs	From March 2024 to present
The Patent and Trademark Resource Center Association (PTRCA)	Guide for PTRCs Best Practices A network of 100 PTRCs within the United States and its territories	From April 2024 to present
PTRC-Universidad de Puerto Rico Recinto Mayagüez	Individual consultations and information sessions for small business owners and aspiring entrepreneurs, in English or Spanish	From April 2024 to present
A University Center for Entrepreneurship	Extra-curricular activities and programs for entrepreneur students across disciplines, including both undergraduate and graduate majors	From October 2024 to present
A local Small Business Development Center (SBDC Latino)	Individual Consultations, Information Sessions and Resource Fairs for small business owners and aspiring entrepreneurs, in English or Spanish	From October 2024 to present
A local Chamber of Commerce	Individual Consultations, Information Sessions and Resource Fairs for small business owners and aspiring entrepreneurs, in English or Spanish	From August 2025 to present

Table 4.1: List of main partners that support small business owners and aspiring entrepreneurs.

Type of collaborations: The type of collaborations described in Table 4.1 are consistent with the ones suggested by the *Guide for Best Practices for Patent and Trademark Resource Centers (PTRCs)* [11] to develop resources and services relevant to faculty, students, small business owners and aspiring entrepreneurs. Based on a preliminary content analysis of the PTRC service transactions and events, from Spring 2024 to Fall 2025, a total of 34 information sessions on Intellectual Property Protection for 701 faculty, students, small business owners and aspiring entrepreneurs (Table 4.2) have been organized and delivered in collaboration with a local Center for Entrepreneurship, the Business and Non-Profit Resource Center in a public library, a local Small Business Development Center (SBDC), and a local Chamber of Commerce.

	Sessions	Participants
2024	14	309
2025	20	392
Total	34	701

Table 4.2: Participants in information sessions and other events.

Type of events: The type of events on Intellectual Property Protection from Spring 2024 to Fall 2025 included information sessions in partnership with a public library, information sessions for students in partnership with faculty, a resource fair in collaboration with a local Center for Entrepreneurship, a full-day Patent Bootcamp for faculty and students with Patent Examiners from the USPTO, and a full-day Trademarks Bootcamp for the general public with Trademark Attorneys from the USPTO (Table 4.3). The information sessions and other events organized by topic are shown in Table 4.4.

Type of event	2024	2025
Information session	11	19
Resource Fair	1	1
Full-Day Patent Bootcamp	1	0
Full-Day Trademarks Bootcamp	1	0
Total	14	20

Table 4.3: Type of events organized for small business owners and aspiring entrepreneurs.

Topic of interest	2024	2025
Intellectual Property Protection – basic definitions and general application process in the United States	12	18
Trademark Bootcamp – basic definitions, application process	1	0
Patent Bootcamp – basic definitions, application process	1	0
Patent Search Strategies and Search Tools	0	1
Patent Attorneys	0	1
Total	14	20

Table 4.4: Topics of information sessions and other events.

4.3 Individual consultations

Students as aspiring entrepreneurs: Undergraduate and graduate students requesting individual consultations as aspiring entrepreneurs at a PTRC have access to Intellectual Property Protection relevant to their innovations and ideas, independently from the guidance available on campus through the Office of Technology Transfer and Commercialization, which in general, is charged with providing faculty and students with guidance on Intellectual Property Protection for innovations emerging as a result of a course, an independent study or departmental research projects sponsored by faculty members.

Based on a preliminary content analysis of the PTRC service transactions and events, from Spring 2024 to Fall 2025:

- A total of 44 undergraduate students, graduate students, university alumni and members of the general public have requested individual consultations related to Intellectual Property Protection for specific products, services and innovations across disciplines (Table 4.5 and Table 4.6).
- Individual consultations were conducted in person, by e-mail, using a videoconference system, or by phone (Table 4.7).
- The main topics of interest for individual consultations were related to basic information about the resources and services available at the PTRC, basic information about patents, and basic information about trademarks (Table 4.8).

	2024	2025
Alumni	3	2
Undergraduate students	3	4
Graduate students	0	2
General public	10	20
Total	16	28

Table 4.5: PTRC individual consultations with aspiring entrepreneurs.

	2024	2025
Business Librarian	12	14
Engineering Librarian	4	14
Chemistry and Physical Sciences Librarian	0	0
Food, Agricultural and Environmental Sciences Librarian	0	0
Total	16	28

Table 4.6: Individual consultations provided by PTRC staff.

	2024	2025
In-person	5	10
E-mail	5	2
Videoconference	0	3
Phone call	6	13
Total	16	28

Table 4.7: Types of PTRC individual consultations with aspiring entrepreneurs.

Topic of interest	2024	2025
PTRC Services – basic information	4	2
Patents – basic information	4	11
Provisional patents – application process	1	2
Patent search strategies and tools	1	3
Patent Attorneys	1	1
Trademarks – basic information	3	8
Trademarks – search tools	1	1
Trademarks – application process	0	0
Other	1	0
Total	16	28

Table 4.8: Topics of interest for PTRC individual consultations with aspiring entrepreneurs.

A USPTO Officer shared the total number of individual consultations per quarter, from the second quarter of 2024 to the fourth quarter of 2025, as reported by some of the PTRCs in the United States and its territories. Then, the average number of individual consultations per quarter was calculated by dividing the total number of individual consultations per quarter by the number of PTRCs reporting for that period (Table 4.9).

Year	Quarter	Number of individual consultations per quarter	Number of PTRCs reporting per quarter	Average number of individual consultations
2024	1st	Not available	Not available	Not available
	2nd	1633	83	19.67
	3rd	1286	75	17.15
	4th	1455	76	19.14
2025	1st	1763	83	21.24
	2nd	1532	87	17.61
	3rd	1539	80	19.23
	4th	1512	87	17.38

Table 4.9: Average number of individual consultations at PTRCs for each quarter as reported by a USPTO Officer.

In general, it seems that the number of individual consultations at the PTRC selected for this study in 2024 (16) is close to the average reported by the USPTO for each quarter (Table 4.9), while the average number for 2025 (28) is above the average number of individual consultations per quarter as reported for that year (Table 4.9). However, a more accurate interpretation of these results must consider several aspects, such as the type of library hosting each PTRC, the number of staff members and the audiences being served by each PTRC, together with the type of Intellectual Property-Intensive Industries that support each one of the regions where those PTRC are located [19].

5. Implications and future research

In general terms, education about entrepreneurship investigates it as a societal phenomenon, addressing the acquisition of skills and knowledge to start up a new enterprise, and using the entrepreneurial process as a tool to achieve a particular set of learning objectives. Most entrepreneurial initiatives and programs are designed as extra-curricular activities in higher education [1], while new trends regard it as a platform offering several components for entrepreneurs, such as knowledge, skills, networking and assistance, together with more perceptual components such as motivation, self-confidence and growth intentions [2].

This paper described the efforts of a team of librarians affiliated to a PTRC within a public university to develop collaborations with public libraries and government agencies that support small business owners and aspiring entrepreneurs to provide them with access to information resources related to Intellectual Property Protection.

Based on preliminary results, it seems that the development of PTRC collaborations with a local Center for Entrepreneurship, a public library and local government agencies helps to increase awareness of the richness and relevance of the Intellectual Property Protection resources available not only for faculty, students, researchers and staff on campus, but also available for small business owners, aspiring entrepreneurs and the general public.

This research is an attempt to understand the information needs of faculty, students and staff at a public university, together with the needs of small business owners, aspiring entrepreneurs and the general public who are trying to protect the works, products and services emerging from their individual research, innovation and entrepreneurial efforts. The results emerging from this study could guide entrepreneurial education instructors, program coordinators and other librarians serving as PTRC Representatives. By no means is it meant to draw general conclusions, as it is still a work in progress. Its results reflect the researcher's own interpretations of the relevance and overall impact of each one of the collaborations developed in the context of a specific PTRC selected for the study.

Future research will strive to further develop opportunities for collaborations and partnerships with other resource centers and agencies that support research and innovation across disciplines, above and beyond campus, together with a systematic review of the literature related to diverse approaches to further develop collaborations [20] inspired by the type of stakeholders that define Intellectual Property Management for startups suggested in [8].

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Appendix A: Coding Scheme Developed for the Data Analysis Process

A content analysis protocol was conducted in the study, following standard analytic coding procedures for interpretation of specific phenomenon [15], [16]. At this point of the research, still a work-in-progress, only the researcher participated as a coder in the data analysis process.

Transactions for information sessions: Each entry within the list of transactions for information sessions was analyzed and manually coded to determine the frequency of a category or subcategory in the following coding scheme.

- **Type of event**
 - Information session for students in collaboration with faculty
 - Information session for the general public in collaboration with a public library
 - Resource fair in collaboration with a local Center for Entrepreneurship
 - Full-day Patent Bootcamp for faculty and students with Patent Examiners
 - Full-day Trademarks Bootcamp for the general public with Trademark Attorneys
 - Other
- **Topic of interest:**
 - Intellectual Property Protection – basic definitions and general application process in the United States
 - Patent Attorneys
 - Patent Search Strategies and Search Tools
 - Patent Bootcamp – basic definitions, application process
 - Trademark Bootcamp – basic definitions, application process
 - Other
- **Type of collaboration**
 - Organization
 - A University Center for Entrepreneurship
 - A local Small Business Development Center (SBDC Latino)
 - A Business and Non-Profit Resource Center in a Public Library
 - A local Chamber of Commerce
 - The United States Patent and Trademark Office (USPTO)
 - The Patent and Trademark Resource Center Association (PTRCA)
 - Other
 - Resources/Services
 - Collaboration timeline

Transactions for individual consultations: Each entry within the list of transactions for individual consultations was analyzed and manually coded to determine the frequency of a category or subcategory in the following coding scheme.

- **Type of consultation**
 - In-person
 - Videoconference
 - By email
 - By phone
- **Topic of interest:**
 - PTRC services
 - Patents – basic information

- Patent Search Strategies and Search Tools
 - Provisional patents – application process
 - Patent Attorneys
 - Trademarks – basic information
 - Trademarks – search tools
 - Trademarks – basic information
 - Other
- **Background/role of aspiring entrepreneurs requesting PTRC consultations**
 - Undergraduate student
 - Graduate student
 - Alumni
 - General public
 - Other
- **Background/role of PTRC staff providing individual consultations**
 - Business Librarian
 - Engineering Librarian
 - Chemistry and Physical Sciences Librarian
 - Food, Agricultural and Environmental Sciences Librarian