

REPORT TO KAUFFMAN FOUNDATION

HEARTLAND CHALLENGE GRANT PROVIDED TO THE UNIVERSITY OF MISSOURI & UNIVERSITY OF IOWA

Study Purposes & Goals

Our effort sought to identify best practices and programs supported by the participating institutions in an effort to improve efforts to identify faculty to target and improve strategies/approaches to educate and recruit them to engage in technology transfer, entrepreneurship and commercialization. The results presented here identify what motivates faculty to participate in entrepreneurial and Commercialization Activities, how best to communicate with them, and what to communicate to them. These findings along with consideration of programmatic best practices provide institutions with a set of action-ready recommendations to consider at their institutions.

What We Did

Our work supported four levels of investigation. First, we compiled and assessed background information and details about the technology transfer and support structure at the nine Midwestern universities who agreed to participate in the study. Second, we individually interviewed representatives from each institution to gain additional insights into programs, faculty identification and recruitment strategies, and communications strategies and tactics. Following these interviews, a group gathering of all institutions was held via Zoom to brief the findings and engage critical feedback. Third, we interviewed 37 faculty drawn from the nine institutions and asked them to recount their motivations for pursuing commercialization, how they first become exposed to support structures, and their observations on the communications toolset and approaches used by those support organizations. Fourth, institutional representatives from Step 2 responded to the results of the faculty interviews and discussed how those results can lead to changes in communications strategies or tactics and influence programming choices.

Outcomes

The outcome of the work is:

1. Perspective on the diverse array of programs and activities used by participating institutions to support Commercialization Activities.
2. Better understanding of the strengths and limitations of the communications strategies and tactics employed by Technology Transfer Offices (TTOs) and related commercialization offices to raise awareness of their programs, support structures and opportunities to assist; and
3. Recognition of the faculty perspective on both #1 and #2 and how they see the usefulness of the programs/support structures and their perceptions of the effectiveness of the communications strategies.
4. Identify any gender-based differences in faculty interest or participation in Commercialization Activities and in recommendations to encourage others to engage.

Output

The report presents the key observations drawn from the programmatic assessments and interviews with faculty and staff. These are incorporated into recommendations concerning communications messaging and tactics (what to convey and how to convey it) and a series of activities that can be used to expand or refine and institution's recruiting and awareness-building goals.

UNDERSTANDING FACULTY:

Why Do Faculty Become Engaged in Commercialization Activities and How Can More Be Encouraged?

Both faculty and their universities increasingly are interested in translating academic research into commercial or other high-impact uses. We sought to better understand why and how faculty first became involved with the technology transfer, entrepreneurial or commercialization efforts at their institutions. Through interviews with faculty at nine Midwestern universities, we developed a broader appreciation for background characteristics, motivations, and direct experiences. We first interviewed and surveyed the support structures of each of the institutions to develop a baseline understanding of what programs were offered, the types of support provided, and how those tools were communicated to faculty at those institutions. When the observations arising from the faculty interviews are compared with the programmatic offerings and communications/marketing strategies of institutional technology transfer, entrepreneurial or commercialization programs, important gaps are revealed as well as opportunities to tailor efforts to address those gaps.

Purpose

The cornerstone challenge to increasing commercialization rates at universities is identifying and accessing the best ideas found on campus. Not surprisingly, those ideas reside with the faculty performing the research. Rates of invention disclosure, patenting, licensing, start-up formation, SBIR/STTR applications, and venture capital acquisition all hinge on enthusiastic faculty embracing the role of entrepreneur (or intrepeneur). Unfortunately, experience and established scholarship show the identification, recruitment, and socialization of faculty to participate in technology transfer, entrepreneurship, or Commercialization Activities (hereafter “Commercialization Activities”) area a weak point for many university-sponsored efforts.

Commercialization Activities

We solicited information about programs, recruitment, and communications approaches from university programs that engage in technology transfer, licensing, entrepreneurship education, and start-up assistance. Each of these activities, and the organizations that administer them, serve the unique missions at the institutions, and face a number of common challenges. For purposes of this report, these efforts are grouped together as “Commercialization Activities” unless otherwise singled out for particular attention.

Our interviews indicate faculty attitudes towards Commercialization Activities are changing. Anecdotes and a review of the literature suggests in some institutions and academic departments apathy or skepticism about the usefulness of Commercialization Activities persists, leading some to not prioritize invention disclosure or have apprehension about working with industry. Undoubtedly these attitudes exist on every campus, but the faculty interviewed for this work see changes at their institutions towards increasing acceptance that technology transfer, start-ups, and working

with industry is important and will only continue growing in importance.

But even when a faculty member does not face these pressures the sheer size of the research university may make it challenging for Commercialization Activities staff to know about the innovative activities of

any particular faculty member. This work sought first to understand the messages and tools used by universities to communicate with their faculty. That effort identified both the programs available to support faculty in undertaking patenting, licensing, corporate outreach or start-up formation as well as how information about those opportunities was distributed to prospective faculty. Then the work explored what motivated faculty who have faced these challenges and proceeded to pursue technology transfer and Commercialization Activities, how they first became exposed to these activities, and their observations on ways to make the programs and how they are discussed more effective. Understanding those motivations can lead to more persuasive awareness-building and marketing campaigns and improved practices to identify and recruit faculty to consider these activities along with their academic work.

The outcome of the work is:

1. Perspective on the diverse array of programs and activities used by participating institutions to support Commercialization Activities;
2. Better understanding of the strengths and limitations of the communications strategies and tactics employed by Technology Transfer Offices (TTOs) and related commercialization offices to raise awareness of their programs, support structures and opportunities to assist; and
3. Recognition of the faculty perspective on both #1 and #2 and how they see the usefulness of the programs/support structures and their perceptions of the effectiveness of the communications strategies.
4. Identify any gender-based differences in faculty interest or participation in Commercialization Activities and in recommendations to encourage others to engage.

Based on this information, best practices were identified and detailed to produce actionable recommendations for partnering institutions to draw on as they consider their own efforts and action-ready programs they could employ to enhance their commercialization efforts.

Method

A mix of interviews and assessments with technology transfer and commercialization leaders and faculty at nine Midwestern institutions, coupled with a review of the existing literature examining faculty attitudes and participation in these activities, was used to examine the issue of how to improve and enhance faculty participation.

Institutions Reviewed	
University of Missouri – Columbia	University of Iowa
Iowa State University	University of Nebraska – Lincoln
University of Kansas	Kansas State University
Washington University in St. Louis	University of Nebraska Medical Center/ UN - Omaha
Wichita State University	
*In the narrative below, Nebraska is sometimes referenced as a system and other times as individual campuses	

First, we compiled and assessed background information and details about the technology transfer and support structure at the nine Midwestern universities who agreed to participate in the study. Basic information about the support system at each institution was collected. This information was used to guide interviews with representatives at each institution.

Second, we individually interviewed staff representatives from each institution to gain additional insights into programs, faculty identification and recruitment strategies, and communications strategies and tactics. Following these interviews, a group gathering of all institutions was held via Zoom to brief the findings and engage critical feedback. During this meeting, further surveying of perspectives was performed in real-time. This survey captured views on the effectiveness of communications tools, factors influencing the greater embrace of commercialization on each campus, and to identify groups that exert influence on the success of commercialization efforts.

Third, we interviewed 37 faculty drawn from the nine institutions. A review of the academic literature reveals very few examples of in-depth faculty interviews making this work unique. Faculty were selected based on recommendations from staff at the institution. Each was asked to share their “story” about how they first became involved with Commercialization Activities, what motivated them to consider that path, and whether they thought their experiences would be persuasive to their peers. Then they were asked to reflect on those elements of their institution’s support structure they used and their experiences. Finally, they were asked how they came to learn about those services and how information about those services was communicated on their campus. Our faculty sample purposefully included female faculty to see if we could identify gender-based differences as well as faculty of different ages to ascertain change in perspectives by stage of career.

Detailed information about female faculty involvement in Commercialization Activities was collected. Information on the percentage of female STEM faculty was collected as well as the percentage of lead female inventors engaged in disclosing innovations, obtaining issued patents, licensed technologies and technologies receiving revenue (commercial success). As can be seen in the graph below, there is generally a sharp drop-off in female participation as technology moves from the lab to commercial success, underscoring the need to focus communications, sustain personal relationships and develop programs specifically for female faculty.

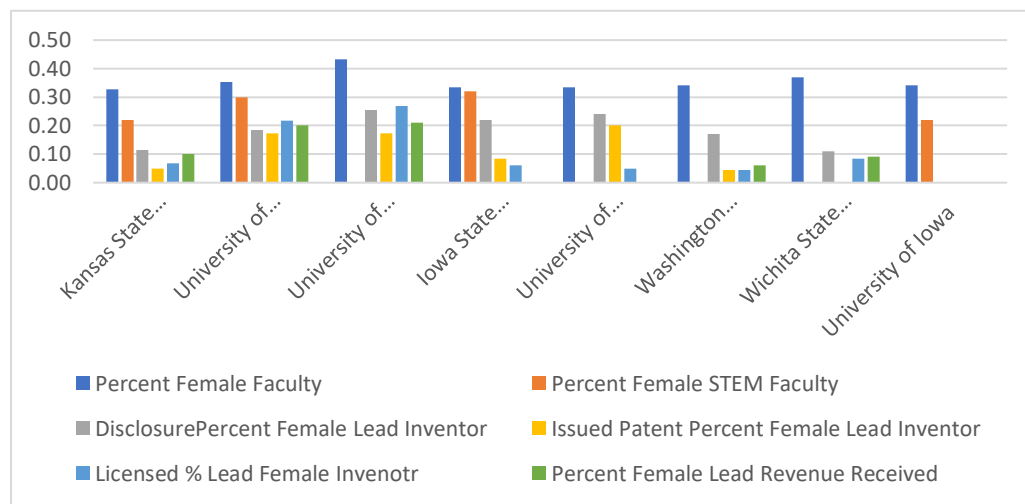
Fourth, institutional representatives from Step 2 responded to the results of the faculty interviews and discussed how those results can lead to changes in communications strategies or tactics and influence programming choices. In an interactive session, the faculty findings were explored and additional reaction and commentary was elicited from institutional representatives with a particular focus on how the faculty observations could lead to changes in programs and communications approaches.

Demographics – Faculty Interviews

	Total Interviews	Female	Male	Icorps	Startup
Iowa State University	4	1	3	1	2
Kansas State University	4	1	3	1	1
University of Iowa	5	1	4	3	4
University of Kansas	4	2	2	1	3
University of Missouri	5	2	3	1	3
University of Nebraska	3	1	2	1	1
University Neb Med Center & Omaha	4	2	2	1	1
Washington State University	5	1	4	1	3
Wichita State University	3	1	2	3	1
Totals	37	12	25	13	19

Faculty Motivations

University faculty and researchers do not begin their professional journeys to become entrepreneurs or work in industry. Most pursue academia specifically because they did not want to enter the business world (or put another way did not see how entering the business world would allow them to do what



they thought they wished to do). Others find academia after having worked in industry and having found an academic career a better fit for their goals. The academic career pathway places emphasis on publication,

research (and funding) and teaching. Commercialization metrics (patents, licenses, start-ups) rarely factor positively into the tenure and promotion process. In many cases, institutional, collegiate or departmental leadership may hold hostile or ambivalent attitudes towards participation in Commercialization Activities. These forces provide powerful disincentives for faculty, particularly those working on securing tenure, to engage with Commercialization Activities. Yet, the faculty stories we encountered suggest this commonly held view may not be true. Twenty-one of the 37 faculty members we interviewed intentionally started down the commercialization path from the onset of their academic careers.

So why do faculty agree to take on the added burdens of patenting and licensing or even the heavier burdens of pursuing ties with industry or forming a start-up? The answers should form the foundation of every university's communications and faculty recruitment efforts. Stressing the themes arising from the array of motivations will produce more effective messaging and tailoring the reasons why Commercialization Activities are important to faculty interests (leverage, impact, resources) will increase the resonance with the intended audience – the faculty.

Thirty-seven faculty who had some involvement with the technology transfer or commercialization process at their institution were interviewed. The findings arising from these interviews require additional validation against more robust samples to determine their generalizability. Despite this limitation, some of the initial findings are consistent across the sample, particularly as it relates to what motivates faculty to undertake Commercialization Activities. Three important features help explain why faculty are motivated to act: impact, mentors, and personal background.

In recounting why they began considering Commercialization Activities, each of the faculty members queried shared some version of the same theme – they all wanted their research to have an “impact”. What impact meant depended on their personal goals and their fields. The figure below includes some of the ways the interviewed faculty described this concept. Each outlined some challenge that led them to the research work they pursued – helping people, confronting an environmental or pollution problem, having a positive impact on patients. At some point, they had all come to the same place – they recognized they would not achieve their goals if they did not also push their work beyond traditional academic pathways and engage the private sector.

Publishing, teaching and research were viewed by all as impactful ends by themselves, but not sufficient to fully address the challenges as the interviewed faculty perceived them. Put another way, traditional academic outputs would not produce the results desired – other steps were needed. Commercialization Activities are viewed as a way for faculty to achieve their goals – to see their work address the problems that motivated it and to see their research used in society.

Some interviewees took this idea a step further and suggested that engaging the private sector was an effective means of advancing their basic research work and thereby furthering their academic career. Companies were the source of additional technical expertise, equipment or materials that would not have been accessible until the faculty had technology of their own that interested the company. That mutual interest frequently leads to additional research work in addition to development of the commercializable technology. Work to further refine the technology to make it more attractive as a commercial product or application oftentimes generated new research questions, which may in turn generate new grant funding. Many noted that pursuing answers to questions arising during technology development would result in them seeking new collaborative relationships with colleagues outside their

discipline. The new interdisciplinary relationships created opportunities for new collaborations and expanded basic research work.

Another observation raised by several interviewees concerned the changing demands of research sponsors. Government and philanthropic sponsors increasingly inquire about how research will be translated from the lab to the next stage of development or ask the researcher how they see the work affecting societal problems, patient care or some other challenge. As a consequence, faculty will have to consider these questions more regularly and those who are best positioned with experience, connections, and approaches should benefit accordingly.

In talking about why faculty should engage with the Technology Transfer Office (“TTO”) or consider forming a start-up, a persuasive approach will stress that these actions can help address the problems that motivated the research in the first place, can help achieve the impact desired, and that the work expands research horizons (resources, partnerships, new questions).

Motivation – Impact

- **It's the Dream** – to see your work make a difference
- Entrepreneurship/commercialization helps you create a career, you can go from being **one of the pack to having an impact**
- I proactively pick research with commercial potential because it is **more fulfilling** to me
- No other way to **impact the field**
- Only go down this path if you want to **see your research used**
- Commercializing technology **just comes naturally** in my field
- **Customer discovery** drives my research
- If you **just publish**, no one will ever use it
- I love basic science but I **HAVE TO have an impact**

A second factor is the existence of an early career mentor with positive views about Commercialization Activities. Fifteen of 37 faculty interviewees mentioned the prominent role of an individual who encouraged them to see Commercialization Activities in positive light. These advisers or senior faculty members would themselves be engaged with industry or the TTO or start-up support and involve their protégés in those activities allowing them to gain valuable first-hand experience. Others were just aware that their

mentors were involved in such efforts and the positive association of their mentor’s experiences stuck with them as they began their own careers. The mentors shaped their thinking about working with the private sector and the benefits it can bring. Mentor experiences also offered early introduction to the Commercialization Activities support structure as they saw their mentors use those services with some of our interviewees directly participating in those efforts.

A third factor influencing desire to pursue commercialization rises from personal background. A number of our interviewees had experiences prior to the start of their academic careers that were cited as positively orienting them towards pursuing commercialization. For some, it was that they had entrepreneurial families, friends or associates whom they admired and whose experiences gave the faculty familiarity and comfort with the business world. Several others had worked in industry prior to starting their academic careers and noted they were familiar or comfortable with how industry operated and knew they may use their relationships and knowledge to advance their research. Recognizing these

background characteristics can help Commercialization Activities organizations to better target likely prospects.

Key Observations: Trust, Information, and Uniqueness

The significance of trusted relationships, the provision of reliable and accurate information, and access to unique experiences were other factors mentioned during the faculty interviews as influential in their decisions to interact with Commercialization Activities.

The role of Commercialization Activities personnel as confidant, motivator, and friend and how those relationships engendered a climate of trust is an important factor in getting faculty to move towards Commercialization Activities. Numerous interviewees noted that their first forays into patenting, licensing or start-up efforts were facilitated by individuals who they trusted and whom they believed would provide them good advice. These individuals also encouraged the faculty to continue on when obstacles arose, or they failed. These relationships do not form overnight; they are the product of regular interaction in formal and informal settings and may take time to develop, solidify and evolve. Once formed, they become productive assets in advancing commercialization outcomes because the researcher and the Commercialization Activities personnel know each other, are not fearful or suspicious of each other, and believe that each other have their best interests in mind.

Related to trust is confidence that the Information possessed by the Commercialization Activities personnel is useful. These individuals typically has a broader view, or at least a different view, of the players in a technical field, knowledge about technical trends, capabilities, resources, and opportunities. Accessing that knowledge base is desirable for the faculty member looking for their research to have impact or one who is pursuing external relationships to help advance their work. Therefore, it is incumbent on the TTO and commercialization offices to prioritize their own learning and network building so when called upon to fulfill this need, they do so credibly. Because in doing so, Commercialization Activities personnel become a desired relationship and one the faculty will return to because value is found in engaging with them. This knowledge base and network are key assets. Any awareness-building effort should highlight and emphasize them and how they can benefit the individual faculty.

Not every faculty member will come forward on their own. Some are self-motivated and may have long known they were going to pursue Commercialization Activities. Many others, perhaps even a preponderance of university faculty, will require persuasion to begin their journey. Unique experiences and engaging activities help to introduce key concepts to these faculty and attract them to learn more. Many interviewed faculty mentioned seminars, recognition events, orientations, or talks at their institution that helped expand their networks, introduced them to internal or external stakeholders, and provided useful information about technical, legal, regulatory or business matters. For Commercialization Activities, these formal and informal events form a comprehensive calendar of engagement opportunities where key messages are shared, prospects identified and cultivated, champions recognized and highlighted, and campus partnerships exercised and leveraged. Additionally, they allow external stakeholders (alumni, local or national businesspeople, government officials, philanthropic donors) connections to the faculty. Each of these connections and each of the activities

provide information, extend networks, and position Commercialization Activities as the central unifying element in providing both.

These activities allow relationship building, trust, and information exchange to develop at the pace desired by the faculty member. These activities reinforce the knowledge and network assets of Commercialization Activities staff and help keep them ‘front of mind’ so long as the calendar is sufficiently active, attractive and well marketed.

Communications Approaches and Techniques

Communicating why technology transfer benefits the individual researcher as well as the institution and how to take advantage of the services available to a researcher presents significant challenges to the Commercialization Activities. The content matters. Messages have to balance between being tailored and general. They have to be persuasive and motivate while also conveying details. They also have to be delivered with the appropriate frequency and timing and presented through the correct media at the correct time. The dual surveys supported by this work reveal areas of opportunity to improve the efficiency of communications with faculty, but more importantly they show how the content of those messages can be modified to resonate more effectively with the target audience. The same communications challenges are confronted by offices that oversee start-up formation with those organizations facing the additional challenge of persuading faculty that starting and running a company is something they can do successfully.

The communication toolkit is critical to success but frequently is under resourced, under examined, and overlooked. Organizations tasked with promoting technology transfer or start-up development lack access to communications professionals to help craft these messages and determine timing and distribution channels. Instead, the most easily accessible (and cheapest) tools are most routinely used with content developed by individuals whose professional focus is not marketing or communications. Not surprisingly then these efforts often produce poor results – low reach, poor engagement, meager attendance, and insufficient responses.

Two institutions have marketing/communications professionals in their office responsible for all social media, videos, press releases etc. Both institutions indicated this was the most important hire they have made for their office in recent years.

Faculty interviews highlighted the importance of storytelling in communications strategies. Pieces detailing others’ experiences serve numerous purposes. They serve as sources of inspiration and motivation by documenting how others successfully navigated the commercialization pathway and illustrating the positive impact arising from those efforts. Not every story has to focus on success – discussion of how others managed setbacks or obstacles is equally important because they better reflect the reality of the innovation and commercialization process where failures happen, obstacles arise, and challenges have to be overcome. Telling stories about how others faced those challenges can serve as uniquely impactful motivational elements of a communications strategy.

Not every story should focus on high impact outcomes either, faculty told us. While the super successful patent or start-up is inspirational, they also are highly improbable. Stories that focus on “singles” or

smaller successes rather than those “home runs” are more relatable and likely provide meaningful lessons to draw from.

When possible, the stories used by Commercialization Activities organizations should draw from the experiences of faculty at their own institution. Learning that Professor X, Y, or Z at “my” institution had done something was judged more influential and more likely to attract attention than examples drawn from other institutions. Success stories in a specific technical field from other institutions would attract attention and should be part of the Commercialization Activities information-gathering role. That

information is better received when shared on a targeted basis to those faculty that “need” or “should” know about it rather than having it as part of the general storytelling approach. The one caveat to this conclusion is if the individuals involved in the other institution’s story have some tie or link with your institution, then the story is worth highlighting as it falls close to the “my” institution criteria.

What unites the storytelling approach is relatability. Stories provide information, guidance, direction, and inspiration in ways that are relatable to the target audience. Faculty can see themselves in those stories and consider how they may have addressed the situations described. Further, the stories illustrate how the tools, techniques, programs, and services offered by Commercialization Activities organizations can help, detail how they help, and reinforce how they can be accessed.

Consequently, the interviews show that communications plans should focus greater effort on identifying the stories at your institution, documenting them, and then weaving the messages about programs, activities, or other guidance into those stories. Doing so embeds the messages in content more likely to be read or watched by the intended audience.


How these stories should be shared presents tactical challenges to Commercialization Activities organizations. Email is the principal communications tool used and it is used for no reason other than convenience, interviews with staff revealed. Mass emails are used to send invitations to events and convey information about process. They are the tool of choice because it is guaranteed to put information in the inbox of the targets, is cheap and easy to use. Most institutions have email tools that allow the sender to target specific departments, entire colleges, and the entire institution. To no one’s surprise, for the recipient mass emails frequently are overlooked and ignored creating an unfortunate conundrum for the sender. The tool that is the easiest to use may not actually work.

Fortunately, there are a few options that can increase the probability of an email message rising above the clutter of a full inbox. As Commercialization Activities organizations contemplate use of email as an information distribution they are encouraged to:

Communication Toolkit I


Storytelling

- ✓ Stories inspire and motivate
- ✓ Success and failures
- ✓ Large and small obstacles
- ✓ Home runs and singles
- ✓ From “my” institution




Methods

- ✓ No one communication tool stood out – know your institution
- ✓ Mass email was discouraged, unless it was personalized or a respected Newsletter
- ✓ Posters or flyers in common areas
- ✓ Video boards



- Find a Trusted Messenger** – Faculty are more likely to pay attention to an email that comes from someone they know (a colleague) or university/departmental leadership (chair, dean, etc) over the same message sent from an organizational account or administrator. The content of the message may be exactly the same, but who it comes from makes a difference in standing out in a full inbox. Enlisting the help of the Trusted Messenger is an extra burden on the Commercialization Activities organizations, as those individuals have to be recruited and persuaded to lend their name to the message.

Communication Toolkit II




Messenger

- ✓ The messenger matters.
- ✓ Use champions and leaders for
 - ✓ Invitations
 - ✓ Calls to action
 - ✓ Introductions

Piggyback

- ✓ Place content in other respected publications or distribution channels
 - ✓ University daily updates
 - ✓ College/department publications
 - ✓ Grant opportunity communications
 - ✓ Any respected internal/external channel



Be selective – focus on **MUST HAVE** content

- Use Action Oriented Messaging** – Messages that have action items or calls to act attract attention over passive messaging. Such messages convey urgency driven by opportunity (access to resources, networking opportunity) with a time deadline (opportunity expires at a date/time certain). The tag line for the message needs to encapsulate or tease the call to action. When combined with the Trusted Messenger, a message with a strong sense of action or urgency cuts through the noise.
- Target to the Individual** – A message directed to the recipient has greater appeal over a generic message. Using merge techniques to insert the name of the recipient into the body of the message offers a simple touch of personalization to differentiate the content for a general push. More sophisticated merge options allow for alteration of content in the body of the message if the underlying database contains such individual level details. Otherwise, hand alteration to convey that personal touch is recommended, even if only for a targeted group when sending a mass email. Put another way, editing the body of a message to address it to an individual and adding a line or two explaining why the content is relevant to them specifically makes a message stand out.

A complementary approach arising from the faculty interviews is to leverage others' communication channels by inserting content into their messages, newsletters, or other outputs. University-wide emails/digests, departmental communiqués, college magazines, newsletters, or emails all are distributed on a regular basis. Having content in these vehicles provides reinforcement to any direct communications sent by the Commercialization Activities organizations and adds a layer of credibility to the message by signaling that the publisher of the leveraged product endorses the activity. There is a degree of mass marketing to some of these publications which is why they represent a complementary approach; they can not be relied upon on their own to convey desired information.

Some faculty interviewees noted there are communiqués that always get read – funding opportunities and award notifications. Commercialization Activities organizations are encouraged to develop awareness of these kinds of publications and begin a dialogue with their publishers concerning opportunity to leverage them to convey notices pertinent to commercialization (available resources such as I-Corps, SBIR/STTR competitions, or gap/internal funding) or notices of successful outcomes (such as patents awarded, license commitments, start-up developments). Doing so helps to raise awareness of the specific opportunities and accomplishments while also signaling to faculty that these actions are important and worthy of note.

While email will remain a crucial tool, there are numerous other channels that can be used for selective purposes and which can serve as complements and reinforcement. Use of video boards and flyers in common areas can convey event information which might “catch the eye” when individuals transit through those areas. As the storytelling approach incorporates video elements, the video boards are effective tools to disseminate those videos. Creative use of video to convey event information also is recommended – enlisting a faculty champion or department head to briefly explain what an event is and why others should participate will capture attention in a way that static information does not.

In considering the tactical tools to employ, the conclusion arising from the dual interviews is clear – no one method is sufficient by itself. A comprehensive communications approach is needed and executing such an approach is not done haphazardly. It requires awareness of the availability of communications assets, relationships with the publishers of those assets, commitment to redundancy (no single message is sufficient by itself), development of trusted messengers, and use of multiple mediums to carry those messages.

Strategies

Drawing from the assessments of programs and interviews with faculty and Commercialization Activities staff, a series of operational approaches to aid the identification, recruitment, and continued socialization of faculty becomes clear. What follows is a summary of activities that Commercialization Activities organizations can consider for use their institutions. For the institutions considered, the table below details which institution supports activities across the areas identified as particularly worth consideration. As each of these actions is discussed, relevant examples of programs are offered to illustrate how the activity has moved from plan to action.

The approaches rely on two important success factors identified: the influential role of “champions” and the persuasiveness of storytelling. Champions are inside advocates for the mission of technology transfer and commercialization. Oftentimes they are faculty who have successfully engaged those processes and found them to benefit their goals (advancing research, impacting a problem, revenue generation). But champions also can be university administrators, department chairs, or collegiate leadership. These individuals become “champions” when they begin to actively assist the programmatic or communications mission of the TTO or related organizations. They may agree to serve as Trusted Messengers, sit for interviews about their “story,” mentor students or other faculty as they engage with Commercialization Activities amongst other roles. In the recommended actions that follow, the more an institution’s champions are involved, the greater the utility of the efforts.

Storytelling also serves key purposes. Inspiration, motivation and encouragement are critical in the early stages of a faculty member’s commercialization or technology transfer journey. The experiences of others, particularly when they illustrate why this path was chosen and how following this path helped

	Iowa State	Kansas State	University of Iowa	University of Kansas	University of Missouri	University of Nebraska	Washington University	Wichita State
Faculty Recruiting	No	Minimal	Sometimes	Minimal	No	Yes informal	No	Sometimes
Orientation	Not since Covid	Yes	Yes	Minimal	Minimal/No	Yes	Minimal	Yes
Department Meetings	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Networking Events	No	Yes	Yes	Yes	No	Yes	No	Yes
Regular Contact	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Recognition Event	Not since Covid	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Champion/Mentor	No	No	No	No	No	Yes	No	No
Storytelling	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* Yes indicates activity but each institution acknowledged much more could be done in many of these areas

the subject of the story, can reinforce the decision to proceed and help sustain that decision when challenges arise. Stories also help the broader mission of communicating why and

how Commercialization Activities benefit the institution and the academic mission. Incorporating these illustrations into communications campaigns offer meaningful and compelling content tuned to the interests of the campus community.

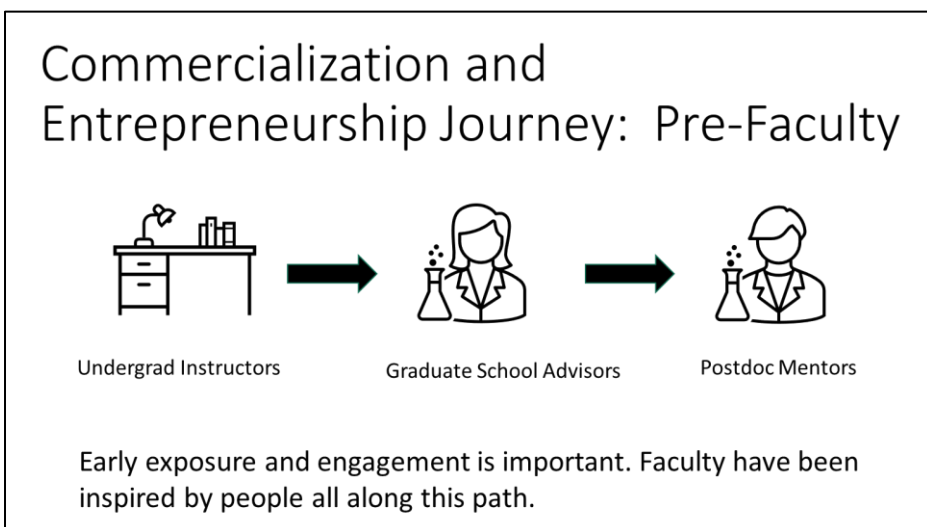
The assessment and interviews reveal two other factors that warrant recognition at the outset. First, the patience and persistence is needed when evaluating any of these actions. Results will take time to present themselves because at the core these activities are designed to build relationships. No one event or single communications will appreciably change outputs. Second, failure is acceptable. Each activity offers the chance to learn and evolve. Those lessons can be applied to future actions, but just because a program or activity did not work once does not mean it won't work in the future. For each activity, best practice would set criteria, measure what is done, and evaluate those activities all the while recognizing that because these are relationship building activities the ability to measure is limited, incomplete, and at best a proxy.

Inspiration is an essential feature of innovation. Inspiration becomes motivation. Motivation drives dedication. Dedication begets ingenuity, creativity, and focus. All these descriptors are applicable to the university innovator. What separates those who elect to pursue commercialization as a pathway to bring their ideas forward from those who follow more traditional academic paths are different motivational elements – the presence of a peer, a mentor, or a family member who has a business background or the individual themselves may have worked in industry before pursuing an academic career and/or the desire to see their solution/ideas/technologies used to solve the challenge that inspired them in the first place. Forty percent of the interviewees unprompted specifically named an individual that influenced their decision to engage in Commercialization Activities. All of the faculty “stories” alluded to or otherwise referenced people that influenced, supported, and motivated them along the way. This support is a critical success factor both for the outcomes of the commercial effort but also is related to how the faculty member perceives their experience regardless of the practical outcome.

As universities examine commercialization and technology transfer programs and their effectiveness at motivating faculty to embrace these opportunities having a better understanding of the backgrounds and motivations of faculty is an important starting point. With that information in hand, the approach to an individual faculty

member changes and becomes more tailored to their personal experiences and, with a knowledge of why they research what they do, the messaging to that individual can illustrate how and why pursuing commercialization options can help them to achieve their goals. Furthermore,

recognizing exposure to commercialization options as an undergraduate or early in graduate school can inform creation of new initiatives designed to expose students across an array of technical fields.



ACTION: Maintain a Comprehensive Database. Creating a database of prospects and clients is not unique. Each institution has some maintains something along these lines to track interactions. Some are informal lists of contacts while others are more comprehensive. The recommendation arising from this work calls for more comprehensive collection of information on background of the individual faculty member as well as ongoing tracking of engagements and communications with them over time. Such an approach may be similar to what an institution’s development office may use to track relationships with alumni or similar to customer databases used commercially. In the end, how the information is housed is secondary to the main point, which is that investment in information on background and engagements can be very useful in tailoring and targeting messages to faculty by Commercialization Activities organizations.

ACTION: Gather Background Intelligence About Faculty. Developing a clearer picture of the backgrounds, prior professional experience, and mentors of faculty can yield very useful information for tailoring messaging to that individual and serve as a useful screening tool for identifying prospects to cultivate. At any institution development of this kind of database will take time and may even seem insurmountable given the number of faculty and resources available for the task. Recognizing these limitations, design a pilot that targets a particular department or unit (perhaps one where there already are regular engagements) and begin building this database there.

- **Examine the CV.** The CV offers introductory biographical information that can be used to populate your database. Capture where faculty were educated, when, whom they worked with, and what other professional experiences they have had. This is basic information becomes the foundation for further interpretation, but also has use independently as patterns may be revealed as more individuals are added to the dataset (such as, the identification of a particular mentor or a training program).

- **Capture the Motivation.** With the basic biography in hand, interview the target(s). For this work, we spent 30 minutes discussing this and other subjects with faculty. The conversation need not be long, can be incorporated into other discussions that may be planned with them and can be couched as “getting to know them better” and as a way to “better understand their work.” The purpose is to probe their background to reveal the experiences and individuals that may shed light on prior exposure to Commercialization Activities and to explicitly inquire about what motivates them to do the work they do and how they see their work being used in the future. For prior exposure, the method employed in this study was to ask open ended questions about their story (“How did you get here?”, “Why did you first start working in X field?”, “Who were important influences on your work?” or “Who were significant mentors for you?”) with targeted follow-up depending on the answers.

As they tell their story their motivations may reveal themselves without explicit prompting. If clues as to why they focus on where they do come up in the context of relaying their background, use those tidbits to inquire further (“How do you see this work being used?”, “How would you describe your work to a non-scientific neighbor or family member?”, “Who benefits from the success of your work?”).

Take these answers and append them to the biographical record created.

- **Assessments, Pattern Spotting, and Messaging.** Individuals who have worked with mentors that are known to have strong interest in Commercialization Activities, have worked in industry, or have family or friends that are entrepreneurial are prime candidates for further cultivation. These individuals have experiences that provide them reference points at a minimum and likely direct positive involvement with commercial activity. Messaging with these individuals should be different than that employed with faculty lacking this familiarity with business activities.

Individuals who expressed their motivations as “wanting to make a difference”, “having to have an impact” on people or society, or “seeing their work used to address the problem” are targets to follow and cultivate further even if they lack the background connections to commercial activity. These individuals already are oriented towards seeking practical application of their work even if they lack the knowledge or skill for how to make that happen. Such individuals may see engagement with the university’s technology transfer or commercialization office as a welcome and critical partner to achieving their goals.

- **Continuous Updating.** Views may change over time as research evolves, interests change, or new experiences come to pass. Keeping the dataset updated by inquiring about and then recording changing motivations, goals, networks, or experiences will help evolve the tailored messaging to that faculty member. As opportunity arises, understanding why those changes occur can provide useful information to shape the relationship with that individual.
- **Leverage Others.** Partnerships with other campus entities that track or manage grant activities can provide unique access to information about faculty interests and capabilities and provide outreach and engagement opportunities. At the University of Iowa, for example, the TTO works with the university’s Division of Sponsored Programs (DSP), the organization that must approve

any grant application from UI faculty, to identify faculty working in the TTO's areas of interest. A slightly different dataset is mined at Iowa State, where a faculty member reported using searches of filed non-disclosure agreements to identify other faculty with interest in working with industry. Grant approval or management offices can provide information about who on campus is or has been seeking opportunities in specific technical fields or who is or has been applying for grants with high translational elements. The faculty interviews suggest they increasingly have to consider translation matters in replying to federal grants. Commercialization Activities can use this information to target individuals for follow-on conversations using the grant activity as an introduction or, if timing allows, reach out to offer assistance in answering the translation elements of the grant by helping to connect them with external stakeholders or even simply to think through the response. Both actions are facilitated by strong working relationships with the grants offices.

ACTION: Early Exposure. Exposure to Commercialization Activities as an undergraduate or graduate student provides important, typically positive references that can be used to engage faculty with similar activities later in their careers. As such, encouraging, creating, or expanding opportunities for undergraduate and graduate students (particularly in the fields of greatest interest) to obtain these experiences ought to be a priority. These actions can take several forms.

- ***Providing Resource Support for Identified Champions.*** Encouraging and then resourcing established champions of Commercialization Activities directly (one institution surveyed provides 5-10% salary support to select faculty) or indirectly by subsidizing students to assist them with their own efforts offers the most direct and consequential method to expose students (and faculty) to these activities. The champion provides mentorship and practical experience which creates the underlying conditions known to motivate individuals later in their career and shape the way they view uses of scientific and technical work. For the champion, the additional assistance may aid their own work, producing demonstrable outcomes for the university, while also serving as a signal to their peers that Commercialization Activities are important and valued by university leadership.

Resources may be institutional and potentially significant if the mission has the attention and support of university leadership. Even modest support (picking up portions of student support, offering discretionary funds for specific use, or marshaling third party resources through direct contributions or network building opportunities) can be useful in direct expansion of student engagement with the champions and signaling to students and others the unique opportunities that exist when one engages with a champion.

- ***Highlighting Existing Entrepreneurial Education Programs.*** Working with academic college/departments to either urge or require their students to complement their technical educations with entrepreneurial training offers another means of exposing students to commercial experiences early in their academic careers. Such programs may be generic entrepreneurial training efforts offered elsewhere on campus or the academic college/department increasingly may develop their own tailored experience. The commercialization and technology transfer groups can seek to participate in that program, raise awareness with external networks of these programs, and encourage outside parties to

participate with and support said programs to provide them with additional financial, mentor and network resources. Start-up schools, venture schools, biz labs, pitch competitions, and related efforts are found across each of the surveyed institutions. These programs are focused on students, but institutions with strong graduate programs can leverage these offerings to help expose graduate students to these concepts. The Iowa State University CyBIZ Lab provides the opportunity for cross-functional teams of undergraduate and graduate students to work on business and organizational projects. Students gain hands-on experience working to solve real business problems, and companies and organizations receive potential solutions to business issues from a perspective outside the company. For faculty specifically, most of the surveyed institutions participate in the National Science Foundation's I-Corps program or have programming similar to it. Many of the interviewed faculty reported having participated in these programs and having had positive experiences. These programs often serve important gateway functions for Commercialization Activities as successful completion of them signals a seriousness of purpose by the participating faculty.

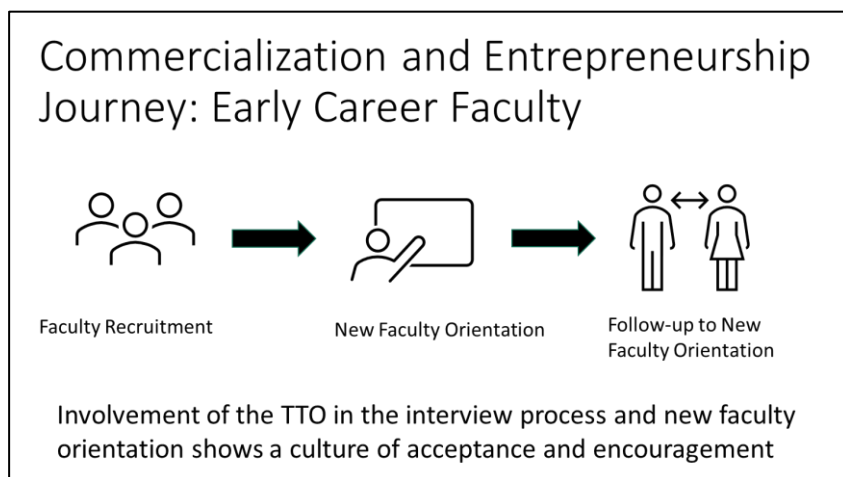
- ***Offering Training to Undergraduate and Graduate Students.*** Designing a training program specifically for undergraduate and graduate students in technical programs that exposes them to the basics of university technology transfer motivations, protocols, and opportunities for support of commercialization efforts can provide an early introduction to the university's support system for faculty innovators. The goal is to initiate the education process and plant a marker in the young scholar's mind that they may reference at a future point. Such a program can be designed and hosted in partnership with an academic unit (with them providing the marketing and space to make the experience convenient and attractive to the target audience). For Commercialization Activities, the effort can be couched as a service to the academic partner and likely involves little effort beyond the time to provide the briefing and refreshments to attract the students. Such programs can be held over several weeks time, periodically throughout an academic year, or stretched over a longer term. Another model suggests positioning the program as a summer fellowship targeting incoming graduate students as they often have "free" time before starting a new academic program. The intensity of the desired experience and maturity of the effort on campus should dictate the timing choice. An effort just starting out is better positioned as a summer program or some other break in the academic calendar to avoid conflicts with other academic obligations. As the effort matures, more intensive opportunities become supportable. Modest stipends will help attract attention, but are not necessary. The University of Nebraska has a well-developed program. Targeting 7-12 graduate students (law, technical fields) that make a year-long commitment, the students perform market analysis, patent searches, and technical assessments. These students perform valuable research for NuTech (University of Nebraska TTO) while also extolling the opportunities available to their peers and faculty in their departments.

Capturing the attention of faculty early in their career positions Commercialization Activities in an advantageous position. Participation in faculty interviews and first year/follow-up orientation activities offer strong initial signals to all faculty that involvement in Commercialization Activities is accepted, encouraged, and supported by the department and university. Being part of the academic's career progression from the very start also initiates long-term relationship building and evolutionary education and awareness activities.

Relationship building is an underappreciated but most significant factor in encouraging faculty to see Commercialization Activities as a viable path to achieve their goals. From one perspective, relationship building activities may seem unproductive because they do not immediately translate into measurable outputs for the Technology Transfer or Commercialization Offices. But, the faculty experience suggests ongoing casual interactions, open discussion about the status, direction, and implications of their research, and general information exchange between an individual faculty member and commercialization staff contribute significantly to nurturing and encouraging faculty. This process rightly begins with the interview and orientation stage.

For an institution that increasingly sees Commercialization Activities as important elements of its faculty retention, external corporate or government engagement, or research efforts, querying faculty interest during their recruitment and then emphasizing the support structure available to them during their earlier years on campus will help to shape and reinforce positive association with the mission for the newly hired faculty as well as their more established colleagues.

ACTION: Faculty Recruitment. By incorporating questions about faculty attitudes towards Commercialization Activities into the interview process, an institution signals to that individual prospective employee and also to all faculty, staff and students that the institution values and prioritizes



commercialization efforts. Such a move offers explicit recognition that participation in these efforts is supported and expected. Even for a campus or department that may not have fully embraced this attitude, TTO participation in the interview process provides the prospective faculty member with critical information about how they would be supported and the

assets or resources they can draw upon should the need arise. Such support systems are competitive features in the decision making process.

- **Provide Engagement Opportunities During the Faculty Recruitment and Interview Process.** The interview and visit/tour of the campus that might accompany recruitment offer opportunities for the prospect to engage formally or informally with commercialization and technology transfer personnel. During these visits, the prospect typically meets with multiple stakeholders and is shown a variety of resources that would be available to them. Adding a commercialization/technology transfer component to these visits would allow those programs to gain critical early insights into the mindset and research interests of prospective faculty, allow the candidate to explore that support structure if it is of interest to them coming in, and begin the awareness-building process for those who may not know if their work will lead to such outcomes. One type of engagement can take the form of formal participation in an interview either by an official from the TTO or related organization or by those entities offering questions to be asked by a third party. Perhaps even more useful is participation in the tours or interpersonal meet-and-greets that usually accompany a recruiting visit.

Situating the TTO or related office here allows for meaningful interaction without inserting commercialization matters into the formal interview.

Despite the clear benefits to early engagement, few institutions allow Commercialization Activities personnel to participate in interviews or other recruiting activities. Only one of eight institutions is regularly asked to participate in faculty recruitment/interviews. This was accomplished by working with the Dean and Associate Dean for Research in the key colleges. The TTO generally meets once a lead candidate has been identified and serves as a resource for the interviewing faculty to understand the support system that is available and also provides early relationship building for the TTO. Three others participate occasionally, when the faculty member being recruited requests to meet with the TTO.

ACTION: Participate in New Faculty Orientation and/or Other Faculty On-Boarding Activities. Once a hire is made, the new employee participates in a number of educational and socialization activities designed to provide them with information about processes and resources on their campus. TTO and related offices should participate in any formal on-boarding processes as available and, if they are not able to, consider structuring their own programs so as to make a “first” impression on new faculty. Four of eight institutions participate regularly in new faculty orientation and felt their presence was welcomed and important. The other three had minimal involvement and felt their presence at orientation was tolerated at best. Despite this resistance, the opportunity to make a first impression is too important to pass up. This opposition can be managed by tailoring messaging towards the inspirational elements of the Commercialization Activities mission, which firmly plants the effort within the overall mission of the institution.

- **Tailor Messaging.** Understanding the perspectives of the new hire at this time is important in shaping how the Commercialization Activities communicates with them and what information is passed at that time. The priorities of a new hire, particularly a young professional, range from better understanding the expectations of their department and how they advance their career to the mechanical (how do I do X, Y or Z?). Detailed messaging about the technology disclosure, licensing, or start-up support process at this time will not match with their needs or priorities.

Messaging should stress the impact that research can have on problem solving, provide examples of peers who have pursued commercialization and offer testimonials of their experiences and how it has benefited their research, note the growing importance of translational activities to government and philanthropic funders, and close with a high-level introduction to the detailed process of disclosure, licensing, patents, or start-ups.

- **Participate in Formal Orientation Programs.** Most institutions host formal orientation programs and provide information to all new hires regardless of their technical fields or collegiate or departmental affiliation. Participation in these programs allows Commercialization Activities to leave an impression on a wide audience and reach faculty in disciplines that may otherwise not be a focus of their subsequent efforts. Faculty that choose to engage with Commercialization Activities at

this time are self-identifying their interest in learning more and become candidates for follow-on conversations. For those instances where participation is not allowed, Commercialization Activities can work with their Champions and targeted departments/colleges/programs to arrange meetings and engagements with new faculty or graduate students.

- **Create Independent Programming Focused on New Faculty.** A single orientation event or even a few such events by themselves are not sufficient. As noted, faculty needs at this time likely do not prioritize technology transfer or commercialization and the offices should recognize this and structure a complementary approach. This approach can take several forms.
- **Host Department-Focused Events.** Informal, physical gatherings targeting key departments or technical areas of high priority to Commercialization Activities where new faculty engages with identified Champions is one approach. These events begin two important processes. One is awareness-building of the role translational activities can play in advancing the goals of the individual faculty member. By having the Champions present and introducing their experiences, the new faculty begin their careers at the institution with strong positive associations to technology transfer and commercialization. Participation of the Champions and/or other senior faculty or administrators also signals that those individuals value the mission and their relationships with Commercialization Activities personnel. The other outcome of these social events is to introduce the new faculty to key personnel in the TTO and related offices. Development of personal relationships between faculty innovators and the Commercialization Activities personnel contributes directly to success by establishing trust which, in turn, increases information exchange and transparency about the direction of research and confidence in advice about proceeding towards disclosure, licensing and other pathways. The subject matter of the events can be informational (focused on some shared topic of interest) or purely social. A comprehensive calendar will offer some of both so as to sustain the widest possible appeal.
- **Develop Testimonial and Informational Videos.** Face-to-face meetings and social events are powerful tools, but not all will avail themselves of those opportunities or see them as productive engagement pathways. Even for those who participate, having additional resources available to further reinforce messages is advantageous. Video, posted on-line and formatted to be easily shareable, is an effective means to communicate key themes, introductory details about process and services, and next steps. By their nature, these videos are consumable at the leisure of the faculty member while also deployable in targeted circumstances (for presentations, classes, seminars or other gatherings).

Regular contact with all faculty is necessary to ensure that information about why and how to engage with the technology transfer or commercialization process is easily available and top of mind when needed. This contact can take many forms and, indeed, should take many forms to ensure that the information resides in as many different information pathways as possible. The strategy is labor and resource intensive requiring investments in activities that may not directly bear positive results but they are important to changing, establishing, and sustaining cultural change within departments, schools, and across the campus. The regular contact strategy is a mix of group and individual gatherings. Some may

be sponsored or organized directly by Commercialization Activities, but partnerships with other entities on campus provide opportunities to leverage the networks and resources of others.

At its most fundamental, the regular contact strategy builds trust and familiarity among the participants. Faculty considering commercialization begin to look for information when they desire to do so. Having routine opportunities for them to intersect with Commercialization Activities makes it easy for them to pose questions, gather information, or simply identify a person they can start a conversation with.

These activities, and the associated communications and marketing efforts that accompany them, also serve as an intelligence gathering exercise enabling Commercialization Activities to use the ongoing contact with faculty concerning the activities themselves to gather information and insight about the faculty's work, motivations and priorities.

For each event, a communications and marketing effort is required. Invitations, pre- and post-event publicity, and individual follow-up all are component activities. By taking a comprehensive approach, Commercialization Activities can recognize maximum value from the regular contact events by providing itself with a host of information products -- case studies, testimonials, earned media – that document and demonstrate the commercialization experience and its impact. These information products are reusable and deployable in other circumstances, extending the utility well beyond the individual event or activity from which they were originally derived.

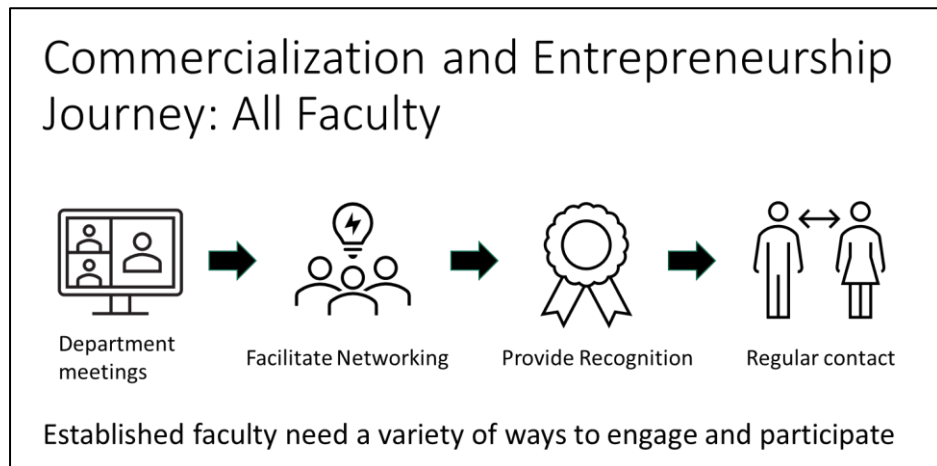
ACTION: Year 2 and Beyond Outreach. The first years of a new faculty member's time typically is focused on a rush to perform research, publish, secure funding, and position themselves for tenure. With the passage of time and the opportunity to establish lines of research and perhaps disclosures, passing along information about the licensing, patent or start-up support structure may become of greater interest as confidence in their position has increased. It is at this point where having established personal relationships with these faculty can begin to bear fruit as they already are familiar and comfortable with Commercialization Activities staff. It behooves the offices to have informational materials and outreach approaches tailored to the unique needs of early career faculty.

- **Create Tailored Information Campaign.** Recognizing that faculty in this position are looking for ways to demonstrate the impact of their research and may be searching for new partners or sources of support, a concerted and targeted information campaign that explains how Commercialization Activities can help them to achieve their goals and details the steps they can take to activate help and resources can be particularly influential. Implementation steps ideally begin face-to-face as an outgrowth of the regular interactions that already are supported, but must also be complemented with electronic dissemination of informational materials (a combination of video and written) and in select cases by providing hard copy. Utilization of multiple channels is recommended to reinforce the messages and cut through the noise of everyday communications.
- **Select Gatherings of "Like" Faculty & Complement With Topic Specific Discussions.** Employment of "invitation-only" gatherings featuring key external stakeholders and faculty champions focused on this group of faculty helps to reinforce two messages. One is that the TTO and related offices can mobilize key external resources and individuals that may prove helpful to the faculty member. The other is to reinforce the positive experiences that other more senior faculty have had in working with the TTO or pursuing commercialization. The combination is intended to inspire confidence in

the innovation support system and generate interest in exploring Commercialization Activities at this pivotal point in their career. Kansas State University’s Working with Industry Bootcamp offers a particularly interesting model. Discussions focus on explaining how to work with industry touching on how grants and contracts work, intellectual property issues, managing relationships, setting boundaries, and keys to successful partnerships. The programming can be run together as an integrated program or provided over time, but another key variation KSU has added is to continue to gather the cohort of participants from time to time (adding in new participants as new Bootcamps finish) to facilitate informal relationships and address new questions or topics.

ACTION: Department Meetings. A foundational activity is regular participation in departmental and other pertinent college or school meetings. These meetings provide maximum leverage and guarantee of reaching the targeted audience because they are convened by a third party and are events that all members of the

group must attend. Participation in these events likely is on a set schedule at least once every two years. This best practice is performed by all eight of the interviewed institutions. The content presented varied by institution and ranged from



primarily an introduction to new staff and what the office is responsible for, to education on processes to information on why working with the office can help further your research/career.

- **Develop Tailored Messaging.** Messaging is tailored to the audience and must evolve as exposure to the audience changes, but, in general terms, because the amount of time available at these meetings will be short, the approach should be to stress “why” Commercialization Activities can help and introductory detail about how to seek additional information. As exposure to a particular group becomes routine, incorporating specific references or examples of activities directly related to that group becomes possible. Such references to efforts by peers personalizes the content and is liable to pique the interest of others who naturally are curious about the activities of their colleagues and how they might also benefit from similar experiences. The University of Missouri has developed Parts 1 & 2 of a three-part, 10-15 minute presentation series for departments, with the intention to deliver all three parts in a 3-5 year period to each stem department. Part 1 focuses on how partnering with the TTO can increase faculty success – increase engagement with industry, lead to new funding opportunities, coexist with publication, and increase a faculty members ‘profile’. Year 2 focuses on how to get your technology to “yes”, meaning what factors make a technology attractive to patent and license to industry. Year 3 will focus on the different paths to commercialization and how faculty can be involved in traditional licensing or startup formation.

- **Leverage Champions.** Regular participation in departmental meetings provides another opportunity to engage with identified Champions. These individuals may be the one who extended the invitation for Commercialization Activities to appear at any particular meeting (because the Champion has assumed a leadership role in their group or worked internally with the group's leaders to promote the appearance) or they could be one of the examples used as an illustration during the presentation.

ACTION: Facilitate Networking. These networking events take many forms and no single event is sufficient in and of itself. Some are large group conference/speech undertakings, others have a more focused audience and topic designed to encourage concentrated discussion and another set is entirely social in nature. A diverse calendar that offers regular opportunities is optimal. Providing the means through which faculty can engage with others on topics of shared interest reinforces several positive associations with Commercialization Activities. Foremost, they demonstrate that Commercialization Activities is an organization that provides access to valuable information and/or opportunity to connect with internal or external persons of interest. Pre-covid most institutions hosted some type of networking activities. However, only four of eight resumed these in 2021. These take on a variety of forms including: Topically oriented brown-bag lunches (lunch-n-learn); Entrepreneur showcases; formal Recognition events and Happy hours with and without short formal programming. The format varies greatly. Some have beer and wine, while others do not. Some have a featured speaker (short, not more than 20 minutes) others do not. Some have an agenda or a technology focus – others do not. The common theme is food and conversation – the most important element is to provide an atmosphere that encourages conversation and ‘cross pollination’ of ideas. These networking events build relationships and trust, which are the foundation of successful Commercialization Activities.

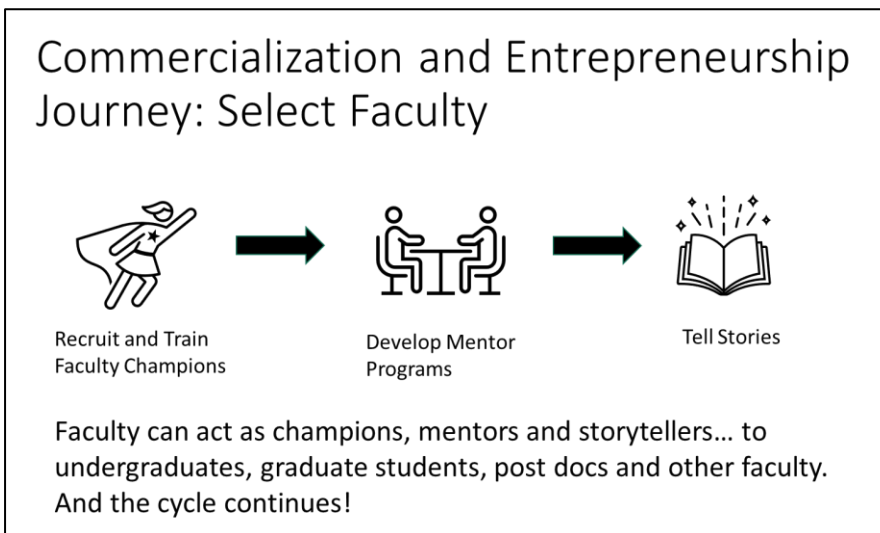
- **Support Informational Seminar Series.** Events structured around specific topics such as licensing, patenting, start-up formation, drafting SBIR/STTR applications, sources of financing, regulatory burdens, patent literature trends or other challenges are opportunities for learning and engagement. In particular, with the increasing importance of translation plans to grant funders, the faculty interviews indicate that Commercialization Activities organizations are well-positioned to help faculty think through how best to reply to those demands. Any series ought to be hosted on a routine basis to create a sense of consistency and dependability but doing so demands that Commercialization Activities manage its own expectations for attendance at any single event. These are not large group gatherings, and some may attract only a handful of people. Consequently, cost management will be an ongoing concern. However, those nominal expenses are balanced against the reputational benefit that accrues to Commercialization Activities as the series is established and awareness builds. Commercialization Activities may seek to partner with other entities with shared interests either in entrepreneurship generally or the specific topics (for example, the law school may wish to participate in a patenting discussion whereas the business school may find value in all the intended programs). Speakers may come from on campus, the local or alumni business community, or invited subject matter experts. Varying speakers over time injects new perspectives into an otherwise routine calendar.
- **Host Occasional Social Networking Events.** Faculty innovators typically are seeking information when they are considering Commercialization Activities. If the innovator is inexperienced, they may be seeking guidance, “how-to” or “what’s next” details, or inspiration and re-assurance. Faculty with

more experience with Commercialization Activities may still look for that type of information, but they also may be seeking collaborators or expanded connections in the private sector that may be useful. For either end of this spectrum, networking events offer opportunities for individuals to form connections and exchange information in an informal setting. They serve as a productive complement to formal seminars, department meetings or recognition events largely because they have minimal agenda and lack formality. Commercialization Activities may serve as the initial catalyst to launch the effort and will have to exercise its network, particularly in the private sector, to extend invitations to ensure a “good” mix of people participate. Partnerships with other campus entities or local economic development organizations can help expand awareness and reduce resource burdens. Furthermore, Commercialization Activities personnel should be expected to need to “work the room” as the series gets established by making introductions and stimulating conversations. Light programming may help build attendance and stimulate conversation, but the overall intent of this action is to encourage interpersonal interactions so programming should be kept to a minimum. Programming examples may be brief remarks by an alumni businessperson, policy maker, journalist, or other faculty on topics that concentrate on the intersection of technology and business. Ideally these are gatherings of like-interested individuals from a variety of academic disciplines that come to value the events not only for the information they acquire while there but more so for the camaraderie, encouragement, and support they receive from the interactions with their peers.

- ***Participate in Recognition Events.*** Recognition events demonstrate institutional commitment and administrative support for the technology transfer and commercialization mission. Seven of Eight institutions have continued their recognition events even during covid, all virtually and now starting or hoping to return to in-person. Handing out patent plaques is a common element of these events. Washington University has a series of buttons they hand out as a faculty member progresses down the path from disclosure to patent, license, sales/startup. These events may be held independently by the TTO and related organizations, but greater leverage and exposure is had when done in partnership with the Research Office or other gathering where faculty are recognized for their achievements. In this way, the awards and other recognition bestowed for commercialization efforts are held in the same light as others. Commercialization Activities should strive to create award categories (start-up of the year, faculty innovator, grad student innovation, etc), and introduce once there is sufficient activity on campus to prevent a run of repeat winners, or only offer them every-so-often. The driving notion behind the appeal of Recognition is that the award is meaningful and will be “worth” receiving by those honored. A broad communications campaign should accompany a Recognition event not only to advertise the event, but also to tell the story of the honoree through different media that can be used in other circumstances. For example, a short video explaining why they are being recognized has utilities separate from the event.
- ***Use Targeted Focus Groups.*** Focus Groups potentially are a useful way to explore and test communications approaches and techniques, obtain feedback on programmatic changes or new activities, and solicit views and opinions of targeted audiences to better shape outreach or programs. Bringing together distinct stakeholders to engage in these kinds of conversations provide important insights and also help to reinforce relationships. By inviting individuals to participate and through explaining why they were asked to participate, Commercialization Activities signals to those

individuals that their perspectives are valued and that they are important to future success. Involvement of this type deepens their ties to Commercialization Activities and further establishes trust and familiarity. Use of this approach is by nature episodic and as needed. They are particularly useful in the pre-planning stages of marketing or program development or can be used as check-ins to ascertain whether ongoing activities are having the desired impact.

While Commercialization Activities will want to support strategies that reach all faculty, a separate line of activity is needed to cultivate the Faculty Champion. The Faculty Champion serves as an



advocate for Commercialization Activities generally and for working with them, as mentor to other faculty providing them with advice and guidance, and as an example to others where their experiences serve to positively reinforce why commercialization can be impactful and that obstacles can be

overcome. The identification of these individuals and cultivating them into these de facto leadership roles is a critical factor influencing the overall success of commercialization and technology transfer programs. Trusted relationships are foundational to success. Faculty interviews frequently mentioned the role of mentors and other faculty serving as direct or indirect guides on their own journeys.

ACTION: Recruit and Train. Identifying the pool of Faculty Champions is a straightforward undertaking. They are the individuals most actively engaged in Commercialization Activities with great enthusiasm for the effort. To some extent, everyone in this pool is a ‘champion’ and should be cultivated as such because the more voices stressing positive messages the better. But, investment of additional resources and the prioritization of who is emphasized first warrant consideration of other criteria.

- **Identify the Pool of Prospects.** Commercialization Activities staff should set aside time at least annually to discuss internally who they believe are best suited for these roles. Faculty will flow into the pool as their research and interests evolve and some may flow out as their interests change. Outreach with existing Champions and department/college leadership to obtain their input is recommended as a means to both enlist their aid in recruiting the prospect and to solidify their engagement with the subsequent campaigns and other use of “their” faculty colleagues.
- **Persuade and Recruit.** Persuading the prospects to participate is the next step. If the prospect has a Commercialization Activities staff person that they have a strong relationship with that individual

may be the appropriate party to broker the conversation. Commercialization Activities leadership or college/departmental leaders or other Faculty Champions also can be helpful in stressing why the role is important and why that individual is well suited to help. Guiding these conversations should be a planned set of actions and activities that provide the prospect with details about the role they are asked to fill, notional time commitments, why the role is important, and how it contributes to overall mission as well as their own goals. Preparing these plans will help Commercialization Activities staff in thinking through how they can use an particular champion, the stakeholders internally and externally that will benefit from interacting with them, and managing available resources for story telling.

- **Maintain a Training Effort.** Once agreement to help is secured, the prospective champion should go through a “training” program. Commercialization Activities will want to spend time providing them with talking points and explanations about the commercialization mission, why it serves individual academicians goals along with aiding the institution and society, what programs are available for researchers, and how they are best accessed. Familiarity with those details will make the champion a more effective advocate particularly when flavored with their personal experiences. Washington University maintains a Faculty Fellows program where two faculty are directly supported in exchange for them serving as an advocate and source of information about technology transfer.

ACTION: Mentor Programs. The Faculty Champion will play numerous roles in advancing the commercialization mission, but a most significant undertaking is their interactions with other faculty and graduate students. When first considering whether or not to pursue Commercialization Activities, faculty are very likely to seek advice from others in their department or network. These people are familiar with some degree of existing connection to each other (and, in many cases, deep connections). For students, the Faculty Champion can directly channel their participation into Commercialization Activities and/or share observations about the why’s and how’s as they work together on other projects. Nature vs. nurture also played an important role in the faculty decision to engage in Commercialization Activities. Twenty-one out of thirty-seven faculty interviewed indicated that they “knew” they wanted to engage in Commercialization Activities when they started their faculty career. However, sixteen of them indicated this was either not their intent, or they didn’t really know anything about how to engage in Commercialization Activities when they started and needed to be ‘nurtured’ along the way. Fifty-eight percent of the female faculty were in the ‘nurture’ category, and 36% of the males. This is good news – it means that there is a pool of faculty that is willing to engage; they just have to be found! It also underscores the need mentioned earlier to intentionally target and cultivate interest by female faculty. There are few instances of intentional mentor development programs for faculty, but many campuses have mentor programs focused on other areas, particularly undergraduates. At the University of Iowa, for example, the business school is investing in a formal mentor identification and training effort drawing on alumni and friends to serve their entrepreneurial education mission. Discussion is already underway about how to further leverage this service for others.

ACTION: Story Telling. Story Telling is multi-phased. It involves first the compilation and persuasive recounting of the experiences of the Faculty Champions. The stories are recorded using a variety of different media (written recounts (longer form and press release), video interviews or documentary style, posters or banners, other advertisement styles) allowing the retelling of the story in various ways for various audiences. Once prepared it is incumbent on Commercialization Activities to tell the stories.

The second phase therefore is planning and execution of marketing campaigns to share the stories. Doing so raises the profile of the commercialization mission, increases the visibility of Commercialization Activities, and highlights the accomplishments and personal profile of the Champion. All interviewed institutions use a form of storytelling. Two institutions have a marketing/communications professional in their office responsible for all social media, videos, releases etc. Both institutions indicated this was the most important hire they have made for their office in recent years.

- **Compile Stories.** Compiling the stories and translating into the various forms of media often requires skills residing outside Commercialization Activities, but only Commercialization Activities will have the in-depth personal relationship with the Champion and the knowledge and experience needed to provide context and depth to the stories. Consequently, it falls to staff to identify the stories, keep account of developments, and track actions. For those without internal communications and marketing staff, outside assistance will prove helpful to translate the details into compelling narratives and visuals across the desired media. Those potential resource limitations suggest necessary trade-offs between pursuing one Champion's story in depth or perhaps preparing snippets illustrative of many experiences for multiple Champions with the goal of providing additional detail and elaboration in future years. How Commercialization Activities plans to use the information will help guide the level of detail necessary at any given time. At a minimum, the information must inspire and motivate, demonstrate how obstacles were met and overcome (or worked around), and what was achieved.
- **Seek Leverage to Help Prepare the Materials.** Preparing the collateral materials offer opportunities to seek leverage from other campus partners. Marketing students, alumni offices, or university central communications all may find value in the stories Commercialization Activities is looking to tell. Soliciting their support in preparing the collateral materials can help defray expenses and find partners in sharing the stories internally and externally.
- **Plan a Campaign.** Finally, the stories must be told. One alumni magazine story or university press release or YouTube video is not enough. No matter how successful the first use of a story is, there are always stakeholders who didn't see it, don't remember it, or who could be excited again by re-exposure. By preparing the story to be re-told in a variety of different ways and in different media, Commercialization Activities lessens the risk of falling into the trap of one-time use. In preparing a story telling campaign, leaders must see the campaign as a series of connected actions that work in concert to support the goal of awareness building. The Dare to Discover campaign supported by the Office of Research at the University of Iowa is a particularly interesting example of a campaign to highlight research accomplishments. The campaign profiles individual faculty or graduate students by telling their stories virtually, marketing the general effort, leveraging alumni publications, and most interestingly, securing public awareness by creating street banners of the individuals being recognized that are posted throughout the downtown/campus area.
- **Provide Talking Points to Senior Leaders and the Faculty Champion.** Commercialization Activities staff, senior university or department leadership, and even the Faculty Champion should well versed in the key talking points so they can comfortably and effectively recount them in person-to-person settings.