



**WHITE PAPER:**

# Engagement of Academic Corporate Relations Officers in University-Industry Centers of Research Excellence

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TABLE OF CONTENTS

EXECUTIVE SUMMARY..... 2

CENTER DEVELOPMENT - CYCLE..... 2

CENTER DEVELOPMENT - ESSENTIAL STAGES..... 3

SUMMARY & CONCLUSION..... 7

CASE STUDIES..... 10

## EXECUTIVE SUMMARY

The funding constraints of the last several years have led universities to re-examine the business models and funding strategies of their academic research enterprise, including the development and long-term sustainability of Centers (see sidebar for definition<sup>1</sup>) of Research Excellence. In this paper, the Network of Academic Corporate Relations Officers (NACRO) organization describes a typical Center development cycle, identifies its five main stages, and examines the role of the corporate relations professional in developing sustainable Centers of Research Excellence.

### Definition of a Center

In the context of this discussion, we define a Center as “an affiliated group of faculty and researchers that:

- Comes together in an organization focused around a topic,
- Produces the intellectual and human capital that derives some benefit, solves some problem, and/or advances the state of the art for a university and society, and
- Works in collaboration with private and/or public sector entities, seeking mutual benefit.”

Academic institutions adapted to the changing funding landscape by looking for ways to increase efficiencies and conserve resources. One result was that research frameworks developed and evolved that allowed like-minded individuals to organize and come together for specific initiatives. These Centers benefited from groups of individuals having the same goals and focused sets of objectives by which to achieve these goals. While many university-based research Centers were historically of an academic nature, this initiative-oriented model has evolved to become attractive for external investment as well.

The most successful Centers have diversified funding portfolios, including robust industry engagement, and benefit from the inclusion of professionals who have a role in development and stewardship of the Center. In this context, we will discuss a high-level Center development cycle and the important roles required of a corporate relations officer (CRO). In the appendices of this document, we present specific case studies.

## CENTER DEVELOPMENT – CYCLE

Over the past two years, NACRO members studied this issue, sharing various perspectives and experiences across the continuum of Center models, including these broad types:

- **Philanthropic Gift:** donation of money for a particular cause
- **University Initiated:** used to feature particular strength or retain/recruit faculty
- **Federal/Government Award:** partner with the U.S. Government to advance an area
- **Economic Development Authority:** directed toward workforce development
- **Industry Driven:** create talent pipeline, build brand association, access university expertise and positively impact the “work” (customer deliverables) of the corporate partner(s)

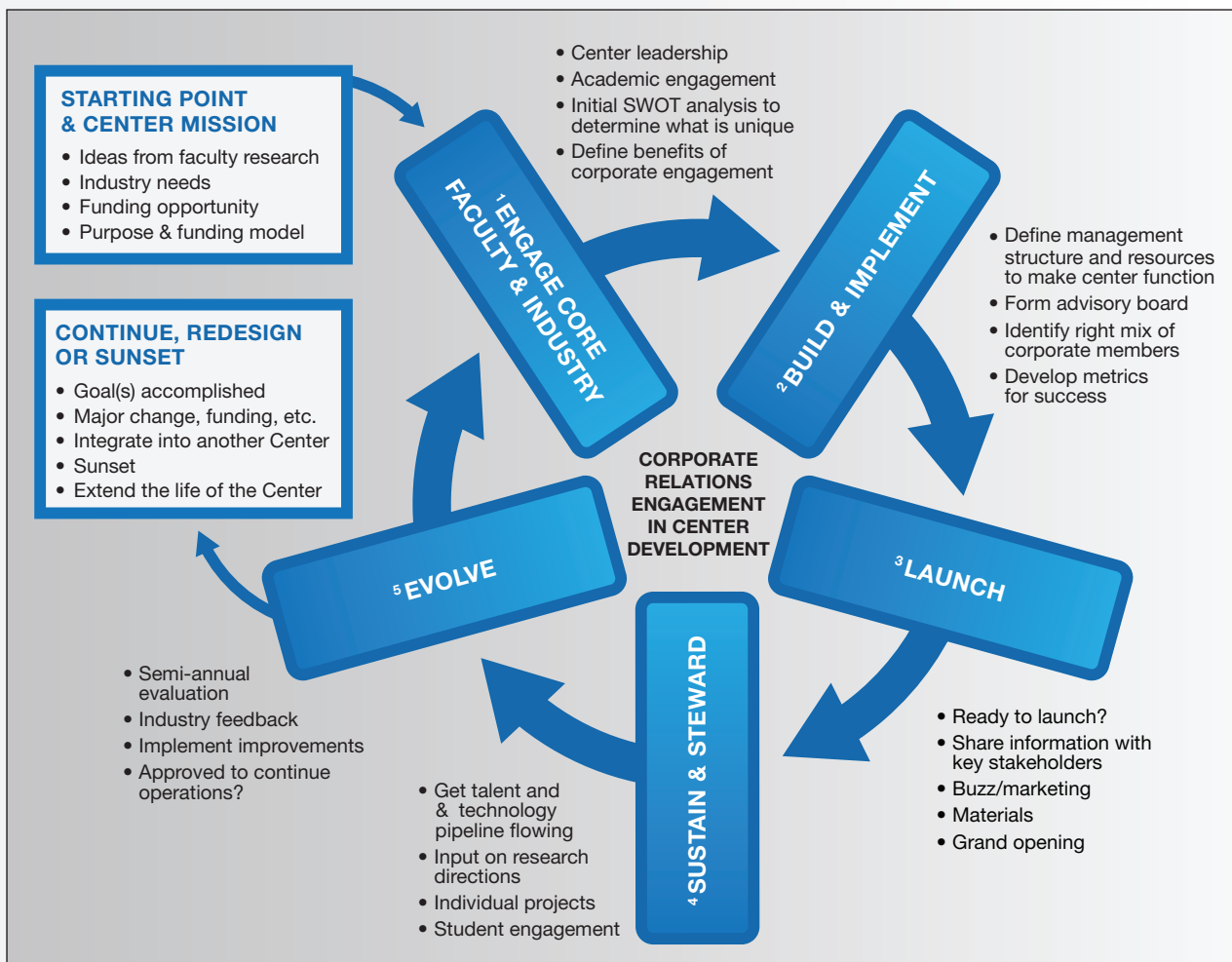
In practice, most Centers will be driven by more than one of these models and will strive for a diversified funding portfolio that includes philanthropic, federal, and industry funding. In those Centers that rely heavily on industry partnerships for success, we propose there is value in engaging a CRO early in a Center’s development to enable a CRO to better articulate a Center’s value proposition to industry.

NACRO defined five common stages of Center development and identified the potential roles and value of the CRO at each stage. We acknowledge some of these stages and the roles of respective parties may not be discrete, and may be shared with one another (see *figure 1*). It is also important to emphasize the value of existing relationships built between university and industry partners, so Center alliances should be viewed through this lens.

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<sup>1</sup> FOOTNOTE from Georgia Institute of Technology Research Center Manual, v.3: *Institute* - an association organized to promote science and education. Institutes usually have an educational component and many award their own degrees or certificates.

*Consortium* - a group of unaffiliated entities that contributes funding for and participate in research to solve a defined problem. They are usually temporary groups assembled to collaborate on a specific research area with defined deliverables and shared rights to those deliverables.



**Figure 1**  
Center Development Cycle

### Five Stages of the Center Development Cycle:

1. Engage core faculty and industry stakeholders
2. Build and implement
3. Launch
4. Sustain and steward
5. Evolve

Within each stage, the role of a CRO may be dependent on the funding model which a Center employs. However, broadly speaking, a CRO's role through this process is to be a voice for both internal and external stakeholders.

Specific roles are discussed in more detail below, followed by four case studies (appendices) of research Centers brought forward by NACRO members from different research institutions.

### CENTER DEVELOPMENT – ESSENTIAL STAGES

While Center development is a varied and organic process, the five stages identified were common to NACRO individuals who previously engaged in Center development. Each stage is discussed from the perspective of an industry-driven research Center model. Since the industry component defines such an essential piece of a university-industry Center, a CRO is ideally brought into the development conversations early to keep a balanced industry-academic perspective during each of the stages. Managing internal and external relationships will be a hallmark skill of the best CROs.

#### 1. Engage Core Faculty & Industry Stakeholders

During the engagement stage of the cycle, the goal is to find and organize key constituents and leaders to help build success for a new initiative. In this initial step, stakeholders are identified and convened in order to develop a framework that will define the scope of a Center's mission. Two important questions to ask at the beginning of conversations include:

- What is the purpose or mission of the Center?
- Is anyone else doing this?



Not only should only Centers avoid duplicating efforts, but some federal granting agencies require clarification on these questions when a Center applies for awards. A CRO should also work with campus counterparts and bring relevant information, observations, and perspectives to academic leadership, who can assess whether the university has the intellectual capital and assets necessary to create a favorable framework for success.

*The most successful Centers have diversified funding portfolios, including robust industry engagement, and benefit from the inclusion of professionals who have a role in development and stewardship of the Center.*

Defining a Center's metrics for success early on can help identify which industry partners should be approached. Success of a Center can be measured by a variety of factors, including generation of intellectual property, licensing, sponsored research, gifts, student recruitment and placement, Center membership growth and renewals, and impact on society.

**Center Organization and Leadership.** Often, an individual with leadership and business development expertise can successfully lead a Center and ensure it is well organized, managed, and run. Consideration of other types of leadership experience is important as well, since various individuals will have a range of unique know-how that can be leveraged.

Leaders need not be from a university setting, but mindfulness of university interests and values will increase the potential success of the Center. Consulting university leadership at the onset, not only to get university buy-in or approval, but also to ensure the Center is being developed with university and academic policies in mind, helps avoid delays in a Center's launch or complications downstream.

During this time, constituents can also assess how university leadership can best support the success of the Center.

**Academic Engagement.** Researchers are the cornerstone of advancing a Center's research goals and engaging members. It is, therefore, crucial to identify faculty or research staff who will be instrumental to its success. Generally, two main types of faculty emerge at this step – champions for the cause of Center development and individuals who drive data generation to address the questions the Center seeks to answer. It is important to consider engaging both types of faculty.

A Center will benefit from faculty members who can be voices for the Center among their university peers and leaders, as well as be champions for the Center among industry connections.

**Industry Engagement.** It is important to involve industry representatives in the engagement stage to help identify specific areas a Center might want to develop as part of their program. An enthusiastic group of academics may come together to define an area that, while intellectually interesting, may not necessarily have industry relevance *at that particular moment in time*. Thus, a Center may end up being an intellectual powerhouse of ideas and solutions that, because of lack of industry alignment, may not be able to bring about the benefits it seeks to accomplish.

Individuals involved in a Center must be able to make a business case for why a company should invest in a Center. Center members will need to be able to articulate the Center's vision in the context of industry drivers, being mindful that the way the Center is initially presented will likely make its way up to high-level representatives in the company.

**Potential Roles for a CRO.** During this formative time of Center development, a CRO can assist in several ways, including developing the narratives for the alignment of university strengths with business objectives. A CRO can help articulate the value proposition offered by the university and evaluate the proposition with industry partners. This is an iterative process and industry sectors with various drivers will respond differently to diverse value propositions.

Additionally, the CRO can present findings to university and Center leadership, representing both university and industry interests, in order to build internal support. As always, the CRO should demonstrate responsiveness and facilitate timely interactions, modeling the best customer service and stewardship activities.

## 2. Build & Implement

This stage creates a framework to meet a Center's vision and includes clear articulation of the roles of corporate partners and university participants. Center infrastructure is an important consideration and an initial strengths, weaknesses, opportunities, and threats (SWOT) analysis can help to understand resources and needs and lay the groundwork for a sustainable business plan.

This plan can include sources of income, expenditures, membership, and governance. Note that budget and available resources may influence the amount of membership fees and/or the number of corporate members required. CROs can assist in formulating realistic budgets and expectations.

*Because of the crucial nature of faculty involvement, a CRO should be sensitive to how the Center might be built to account for faculty tenure, appointment, promotion, and merit.*

Structuring the Center may be one of the more challenging aspects of the Center development cycle. There will be a plethora of possibilities, as no two Centers are set up in exactly the same way and each will be affected by the respective university-industry relationship landscape. For this reason, many Centers rely on advisory boards consisting of a mix of academic and corporate partners to ensure both parties'

needs are addressed. Ultimately, clarity is needed regarding who has final authority.

**Academic Engagement.** Since research expertise is an important reason why industry engages with a university, faculty members play an important role in setting a Center's research foci. Often, it is a handful of faculty, or even a single member, who is the "lead" for a Center. Because of the crucial nature of faculty involvement, a CRO should be sensitive to how the Center might be built to account for faculty tenure, appointment, promotion, and merit. For example, recognition by academic and administrative leadership will encourage active faculty participation.

**Industry Engagement.** In order to have meaningful engagement with industry, the benefits of partnering with a Center should be tied to company metrics. Understanding each company's return on investment as a result of the partnership and how this can be built into a Center is essential.

There are different models for corporate engagement with a Center and industry partners may have valuable suggestions. For example, Centers will often have member programs offering tiers of benefit based on the type of membership (e.g. affiliate vs. full member). Corporate members may be willing to contribute more funds, and in turn, have greater access to resources, services, or technology developments. Important to all of these discussions are the contractual principles of the university on matters including publication and indirect costs rates, with which industry may not be familiar. All of these concerns can be addressed through open and early communications with each corporate partner.

**Potential Roles for a CRO.** The Build and Implement stage of a Center is a key time to involve a CRO who can articulate the value proposition and mutual benefits for the university and industry stakeholders. A CRO plays a critical role in helping university and corporate partners set realistic expectations and define metrics of success for the respective parties. Some specific deliverables include:

- Identify a Center's value proposition
- Draft an industry letter of intent to support a Center
- Provide business plan development assistance with respect to industry partnerships
- Advise a Center on how to leverage existing university-industry partnerships
- Serve as liaison and facilitator of communications between university contractual/administrative offices, a Center, and industry members
- Track agreements for timely execution
- Demystify university contracting processes and principles to prospective industry members
- Market a Center to corporate contacts
- Establish an initial advisory board

The deliverables to which a CRO contributes will depend on many variables, including internal organizational relationships and the nature of the relationship between a company and a university. Once both parties' expectations are understood, a CRO can work to facilitate the process prior to formal launch of the Center. In an ideal situation, a Center is built with projects in mind, ready to hit the ground running upon launch.

### 3. Launch

The aim of the Launch stage is to communicate a unified message. Because there is much excitement and optimism surrounding any launch, it is best to bring corporate partners on board in time to coincide with the opening of a Center.

*A good entrée will speak well for the Center, faculty, and industry members, along with the CRO.*

While most Center launches are well-received and meet with excitement and optimism, a Center's reputation can be harmed if it takes too long to bring corporate partners to the table and projects to fruition.

Some agreement negotiations can take 6-18 months to finalize, so the launch date and activities should take this into account. Having the first two stages well developed and potential projects in mind or underway will ensure a strong launch.

**Academic Engagement.** Researchers can help spread the word to peers and partners about a Center. Prior to launch, they can also act as liaisons to their departments and colleagues and garner internal support to host a launch event. If talent pipeline is important to the industry partner, it may be beneficial to highlight the excellence of students through research posters and presentations.

**Industry Engagement.** As part of the preparation for launch, industry partners may wish to weigh in, tour the space, and even address a Center's university constituents. Corporate members may wish to capitalize on the goodwill generated by the launch via joint press-releases or announcements. This will require coordination between the university and industry communication contacts to ensure language meets the needs of both parties.

**Potential Roles for a CRO.** During the Launch stage, a CRO can help determine the critical mass of companies needed going into launch and can play a role in managing expectations between the Center and the companies involved. Specifically, a CRO may assist in the following ways:

- Communicate between industry and Center leaders
- Plan and coordinate events surrounding the launch, including logistics
- Identify speakers
- Develop guest lists, including VIPs from selected companies, friends of the university, government/community organizations representatives, students, and members of the community at-large

### 4. Sustain & Steward

Once a Center has been created and launched, and a certain number of projects initiated, it might appear the bulk of the work is done. However, now is the time to begin thinking about finding new support and renewing sources of revenue.

Broadly, sustaining and stewarding a Center involves ensuring resources are being used effectively, mutually agreed-upon goals are being met, and that member voices are being heard through a defined and articulated process. A significant goal is to keep current projects on track and new projects in the pipeline. In order to be self-sustaining, parties must feel they are deriving value from allocating their time and resources to Center involvement.

**Academic Engagement.** A key element is maintaining faculty engagement and clear communication of the impact of their work through a Center. Faculty must see the relevance of their research in a Center. Faculty members have a distinct set of metrics for success within an academic setting, if they wish to continue advancing their careers.

Developing contractual frameworks, such as master agreements, can stimulate and enable a greater number of collaborations between faculty and existing industry partners. With this in mind, faculty must not perceive interacting with a Center as cumbersome or difficult, but rather as a worthwhile use of their time, especially when it comes to industry partnerships. Many faculty members are passionate about their research and would much rather be involved in furthering Center projects than waiting for a contract to be negotiated.

**Industry Engagement.** In order for a Center to be sustainable and to grow corporate support, partners will want to see measured success as a result of their engagement. As a company's business and research priorities change, sometimes very rapidly (because of a merger, for example), it is important for a Center to maintain regular and open lines of communications with corporate partners so there is an opportunity to respond to new corporate needs as appropriate. Aside from phone or e-mail, methods to communicate evolving industry needs can include routine surveys, memoranda, and regular board meetings.

**Potential Roles for a CRO.** Specific ways for a CRO to contribute include:

- Work with both industry and faculty members to develop stewardship plans
- Generate reports that include qualitative and quantitative data
- Secure new corporate partnerships

Conversations that address how success will be measured for all parties, who will steward relationships, and to what extent stewardship is required, will be valuable in monitoring how resources have been utilized and help secure continued support.

## 5. Evolve

Regular review of a Center's mission, activities, assessment of Center interests, and alignment with industry needs is a normal part of a Center's evolution. During this time, it may become apparent that a shift or realignment in Center priorities is necessary. The question then becomes when and how to extend, continue, renew, or sunset the Center. A question as important as this should bring both industry and university stakeholders to the table together.

**Industry and Academic Engagement.** The natural evolution of a Center is an integration of faculty interests and sponsor priorities. Regular review is required to determine if a Center should be extended or if modifications should be made. A Center may merely need to change its focus, or implement suggested improvements. As long as Center leadership and researchers are willing and open to discuss these changes, industry sponsors are likely to continue to work with the Center. However, some changes may call

*Whether or not a campus has a formal corporate relations office or capacity, awareness of the Center development cycle and the respective business development roles is crucial.*

into question whether or not the Center has outlasted its original intent or if it may be time to integrate into a larger institute or campus unit. Alternatively, if the Center has accomplished its goals, sunseting may be the reasonable outcome.

In any case, it is advisable for Center leadership to consider all possible scenarios ahead of time, including where decision authority rests for larger changes. This allows administrative and support staff who were hired specifically for the purpose of running a Center to plan accordingly.

**Potential Roles for a CRO.** The roles of a CRO in the Evolve stage continue to be as a liaison, communicator, and joint broker of the interests of the university and industry stakeholders. Specific responsibilities may include:

- Bring qualitative and quantitative data to the evaluation or formal review
- Participate in discussions of alternate funding models, including transitions to private-based or government funding
- Communicate any Center evolutionary changes to industry partners, being mindful of the comprehensive relationships on campus

## CASE STUDIES

Appended to this paper are examples of university Centers with industry involvement in various stages of the Center development cycle. An overview of each Center is given, as well as a description of how a CRO was involved. Select aspects of the Cycle are highlighted in each case study, but each Center went through each stage of the Center development cycle detailed in this document.

## SUMMARY & CONCLUSION

Efficient and effective Centers of Research Excellence are one way to jointly capitalize on the intellectual and human capital from industry and academic researchers. However, the development of a successful Center is complex and not a trivial endeavor. Centers looking for longevity and sustainability will benefit from developing a comprehensive and compelling business plan that includes a diversity of stakeholders from the university, donors, federal funders, and industry. For this reason we propose that a Center has much to gain from engaging a corporate relations officer early in the Center development cycle.

To those with limited experience, Center development may seem like an overwhelming prospect. Even to a veteran CRO, Center development can be a challenging experience if a CRO is brought into the process mid-stream with little background or Center history in which to contextualize the challenge.

In such a case, an understanding of the Center Development Cycle and the stage in which the Center finds itself can be instrumental to the CRO.



By breaking the process into discrete stages and thinking about the various roles industry, academia, and CROs might play in each of these steps, a CRO can more easily analyze the issues and propose action plans. Whether or not a campus has a formal corporate relations office or capacity, awareness of the Center development cycle and the respective business development roles is crucial. In addition, the CRO can leverage existing relationships built with industry over the long-term.

Given the various drivers of Centers that exist, there is no single formula to prescribe how to establish the “perfect” Center. These guidelines and suggested best practices are from CRO peers who have experienced the process first-hand, as highlighted by the case studies. As the university and industry collaborative landscape evolves, it is possible standard Center models will evolve as well.

Ultimately, the role of a CRO will be to stay apprised of these developing changes, and to act as a broker for both the university and industry, in order for maximal mutual benefit to be derived from these collaborative interactions.

**About the Network of Academic Corporate Relations Officers (NACRO).** NACRO began in 2007, when a small group of corporate relations officers noted the shift in how corporations interact with universities, moving beyond corporate philanthropy to seeking a better understanding of a return on investment and wanting deeper collaboration with academia.

*“NACRO’s atmosphere naturally facilitates collaboration between higher education and industry.”*

*Tony Denhart, GE University Relations Manager and NACRO Industry Affiliate Member*

Since then, NACRO has grown to over 400 paying members as of 2015, including members from 55 of 62 Association of American Universities (AAU). NACRO has members predominantly from the US, but also has 33 members from Africa, Australia, Canada, France, Germany, Saudi Arabia, Slovakia, Spain, and the United Kingdom.

NACRO also offers academic and industry affiliate memberships. NACRO seeks to be the universally recognized leader in academic corporate relations. Our long term goal is to engage members and industry in settings that allow for open discussion while sharing best practices with peers.

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## APPENDIX 1

### Agile Research Centers at

### University of California San Diego

[jacobsschool.ucsd.edu/faculty/research\\_inst.sfe](http://jacobsschool.ucsd.edu/faculty/research_inst.sfe)

**Overview.** The Agile Research Centers, a relatively new concept at UC San Diego since 2014, are “agile” because they can be set up quickly, are highly responsive to industry needs, and are nimble enough to change course as research challenges and opportunities shift. Each Center is to be built around a coordinated research endeavor created by a group of faculty and have a dedicated technology translation plan.

Industry-sponsored Agile Research Centers promote cross-departmental collaborations focused on research themes inspired by industry challenges and opportunities. These Centers place a spotlight on UC San Diego’s unique strengths, foster deeper collaborations, and strengthen the position of the Jacobs School of Engineering for larger collaborative opportunities and commercialization to benefit partnerships and serve society.

The aim is to establish two to three new Centers every year for the next three to four years, coupled with an increase in faculty from 200 to 250. The response to this model where the Dean of the College of Engineering funds the marketing, business development and Center management has been tremendous, with five new Centers established in the first six months. It has clearly answered a need for faculty collaboration with industry partners.

**Structure.** The framework for industry engagement is similar to that of the traditional National Science Foundation Industry/University Cooperative Research Center (NSF I/UCRC) membership model. An Agile Research Center is defined as two or more faculty members from various disciplines who collaborate to be highly responsive to industry needs for innovation and talent.

Some of the mutual university-industry benefits of these Centers include the ability to spawn innovation with industry, launch startups, seed graduate student fellowships, fast-track agreements, recruit new faculty talent with corporate collaboration, establish visiting industry fellows, leverage federal funding of larger initiatives, and/or encourage membership in the Corporate Affiliates Program.

**Cycle.** Given the state of these Agile Research Centers, most of the proposed Centers are in the Engage stage at this time, with the Center for Wearable Sensors and the Center for Visual Computing currently in the post-Launch stage.

**Corporate Relations Role.** Within these Centers, the CRO’s role is developing corporate partnership strategy and opportunities, creating a relevant business model, building an engagement and marketing strategy, collaborating with the Associate Dean of Research in identifying faculty teams who would like to form Centers, and promoting the Centers to corporate partners.

In addition, the CRO works to position and establish a business process and finalize the official paperwork. Where appropriate, the CRO does follow-up, analyzes growth opportunities, prepares project/contract renewals, and takes advantage of opportunities to broaden the partnership. The CRO also works with events staff to host purposeful research reviews that highlight the work in the Center, and helps define and steward the Board of Advisors for each Center.

**Lessons & Outcomes.** Throughout this process, it is important to develop a clear innovation ecosystem, highlighting the CRO business development resources and abilities, and providing a clear sense of the multiple entry points where industry can be involved, allowing the partnership to benefit from each step.

It is imperative to have a strategy that shows how the Center will engage and ultimately be self-supporting after a certain period of time through either a large U.S. government grant (e.g. ERC), sustaining corporate partners, or commercialization/start-up investment returns.

## APPENDIX 2

### Water & Energy Sustainable Technology (WEST) at the University of Arizona [west.arizona.edu](http://west.arizona.edu)

**Overview.** WEST is a collaborative effort between The University of Arizona (UA) and Pima County, expected to begin operations in 2015. Directly tied to Pima County's new state of the art reclamation facility, WEST will focus on the research and development of water treatment technologies, contaminant monitoring tools, and energy minimization and production.

The 23,000 square foot WEST facility will also offer test and evaluation services, workforce development courses, a real-time sensor lab, high-bay space, and community education programs.

**Structure.** Using existing I/UCRC funding by NSF and industry members, Water and Environmental Technology (WET) will occupy the new WEST facility. The Corporate Relations Office proposed four levels of membership for WEST on a sliding sponsorship scale: founding member, member, associate member, and individual member.

Founding members will be selected from each sector of the water- energy industries and will be limited to 5-10 members. A final benefits matrix is to be determined by the College and Office of Research leadership.

**Cycle.** All Cycle stages were considered in the original proposal and throughout the additional plan creation. WEST is currently focusing most of its attention on the Build/Implement phase.

**Corporate Relations Role.** Industry partnership is critical to the self-sustainability strategy of WEST. The Corporate Relations Office created an industry engagement plan that included recommendations on a membership model involving national and global industry partners, municipalities, NGOs, and academic institutions.

The plan also contained detailed content about the research, contract services, and training to be provided at WEST and matched specific partners to each activity. Finally, the plan included recommendations for Center staff and 360 marketing considerations.

Once the industry engagement plan was complete, the CRO created a financial model for WEST to demonstrate how the Center could be self-sufficient. Working with the co-directors, the Corporate Relations Office created an income statement for WEST with a 5-year outlook.

The model included income information based on the membership plan and concrete support from the colleges and business affairs. It also projected research awards based on historical analytics, philanthropy, service, and training.

Operational expenses outside of F&A were also considered. The model reflected a positive cash flow in WEST's second through fifth years, which will be re-invested into the Center.

The goal of this effort is for the co-directors/college administrators to incorporate content from the industry engagement and financial plans into the existing proposal to gain official Center approval.

In addition to Center approval, the vision is for WEST to implement the Corporate Relations Office plans and recommendations into its daily operations.

**Lessons & Outcomes.** Through all efforts, the CRO gained a deeper understanding/appreciation of:

- Movement of funds through the university and differing overhead rates depending on the activity
- Challenges inherent in bringing in other parties after proposal submission and during Center construction. Additional partner needs may not have been addressed in the original proposal
- How to tailor value propositions for various audiences
- How to communicate and set expectations for an exit point from the Center development cycle



## APPENDIX 3

### Seed Central at University of California Davis [seedcentral.org](http://seedcentral.org)

**Overview.** Seed Central was launched in 2011 as a collaborative effort between the UC Davis Seed Biotechnology Center (an academic unit on campus) and SeedQuest® (a global information service company for seed professionals).

Formally a non-profit organization, the purpose is to mobilize the research, educational, and outreach resources in partnership with the seed and biotechnology industries to facilitate discovery and commercialization of new seed technologies for agricultural and consumer benefit.

Industry partners pay annual membership dues and can sponsor events to cover expenses. Additional members include educational institutions, government, and economic development partners from the region.

**Structure.** Seed Central holds monthly networking events showcasing keynote speakers for members and campus representatives to interact and share ideas. These events provide an opportunity for industry, faculty, staff and students, along with regional partners, to discuss topics of interest and challenges in the field. Arising from these close interactions was the idea to provide a framework for collaborative research in partnership with UC Davis expertise.

A Corporate Affiliate Partnership Program (CAPP) was added in 2012. The Plant and Seed Sciences CAPP provides a unique mechanism for industry members to form research consortia, consisting of two or more corporate entities that pool their funding for a specific project. The benefits to the companies include reduced indirect costs relative to sponsored research and opportunities for co-exclusive licensing of intellectual property that may result.

The CAPP has been shown to work well in precompetitive areas of research, such as genomic sequencing. Members' projects are tracked throughout the University process to ensure smooth transactions. Certain members may also be contacted when CAPP projects arise to solicit their interest in participation.

**Cycle.** Having already established a framework for interaction, Seed Central is currently in the Sustain and Steward stage, examining ways to expand membership and meet the needs of current members.

**Corporate Relations Role.** While the corporate relations (CR) team has been involved since the inception of Seed Central, the office played an integral role during the Build and Implement stage of the CAPP by:

- Bringing the opportunity to the table following the formal launch of Seed Central,
- Assisting in drafting the framework for the overall program, and
- Facilitating the approval process with the needed offices on campus.

The CR team continues to contribute to the Sustain and Steward stage by making industry aware of the CAPP opportunity and connecting partners to each other. In addition, the team regularly attends the Seed Central networking events and provides assistance to industry members, including coordinating campus meetings for corporate partners based on their interests.

**Lessons & Outcomes.** Through Seed Central, our faculty members and students have gained exposure to industry members and their corporate interests throughout the region, and even internationally. Specific to the CAPP, while the framework of engagement for new projects has not significantly evolved, university staff have gained an increased understanding of the needs of both industry partners and faculty members.

This has greatly streamlined and improved communication between points of contact from sponsored programs, technology transfer, business contracts, and corporate relations. Strong leadership support from the College of Agricultural and Environmental Sciences has been instrumental in Seed Central's success. By bringing together groups of companies around a common idea/goal, Seed Central has been able to facilitate projects that may not have happened otherwise.

## APPENDIX 4

### Center for Collaborative Research on Intelligent Natural Gas Supply Systems (CCRINGSS) at Penn State

**Overview.** Meeting with Penn State leadership, Jeff Immelt, Chairman and CEO of GE, challenged the campus to develop a solution that would assist GE in their innovation of the supply chain as it relates to Natural Gas. CCRINGSS was born as a result of this challenge and allows GE to see where unique Penn State strengths lie and how they can assist GE with future innovation.

The Center will enable the study of pre-competitive industry-wide issues, as well as act as a mechanism for sponsored research projects specific to GE. Penn State and GE have envisioned the Center to be an industry-wide collaboration as other corporate partners will be invited to participate as the Center evolves.

**Structure.** CCRINGSS leverages the combined expertise of faculty across four academic colleges (Smeal College of Business, College of Earth and Mineral Sciences, College of Engineering, and College of Information Sciences and Technology), multiple existing Centers and institutes across the university system, and administrative and service units. Efforts are aligned with Penn State's educational mission, contributing to the development of tomorrow's workforce.

Key aspects of the Center include:

- Integrated expertise – tapping into the intellectual capital of four separate colleges
- Systems-level approach – developing and evaluating innovative and potentially disruptive technologies for natural gas production
- Leveraged investment – extensive ongoing funded research and specialized facilities
- Institutional commitment – top-level engagement in Center management and sustainable funding
- Access and stakeholder engagement – researchers and external stakeholders collaborate through workshops, internships, and showcases
- Student/workforce access – large population of undergraduate and graduate students for internships, fellowships, and potential employment
- Dissemination of education, training, and knowledge – graduate certificate programs, specialized training courses, workshops, and showcases related to natural gas technologies

Center activities will be managed by the Center Director and the Managing Committee, consisting of the associate deans for research for each college and the research directors for the Center for Supply Chain Management, and the Institute for Natural Gas and Research.

**Cycle.** A 23-month Engage/Build process took place before the September 24, 2014 launch. Initial areas for collaboration were defined by the managing committee and representatives from GE. As part of the Sustain and Steward stage, GE committed up to \$10M over five years.

Penn State anticipates additional funding will be secured from other sources, including corporate partners and government agencies.

A goal is to transition from the start-up investment from GE, to make CCRINGSS self-sustainable through a mixture of revenue streams including donations, sponsored research, government contracts, professional development courses, and other engagement activities.

**Corporate Relations Role.** The top three roles of the corporate relations officer during this process were to be the point of contact for the endeavor, to manage the process by connecting the dots between involved parties, and strategize across individual colleges with development colleagues to provide a new multi-disciplinary approach.

**Lessons & Outcomes.** Four areas emerged that are worthy of study for future Center development:

- Need for strategy planning from day one
- Invite interested parties from across the university to participate
- Encourage open and candid conversations between sponsor and institution
- Corporate relations evolution as it relates to working to satisfying industry needs/requirements