March 29-31, 2022 | Atlanta, Georgia

MEETING AT A GLANCE

As our first in-person general conference since 2019, UIDP Face2Face was an opportunity to reconvene and experience a strong sense of community and peer-to-peer collaboration once again. Our theme was, appropriately, *the power of place.* Place is the space where serendipity sparks innovation and collaboration. But place can also convey action. We've learned that meaningfully placing the pieces that enable industry-university partnerships can bring together the people, processes, and technology and set the stage for success. This intentionality and tenacity in relationship building was the focus of the general sessions and breakouts that explored questions, strategies, opportunities, and success stories to inform future partnership journeys.

Sessions focused on practical takeaways for everyone on the university-industry research partnership continuum, including contracting, corporate and university relations, government engagement, and talent development. Two receptions provided opportunities to network and build relationships with colleagues. The conference provided ample opportunity for open discussion on current challenges and contemporary solutions.

UIDP was fortunate to secure expertise from 88 practitioners as presenters and speakers. Conference attendees can download materials from many of the sessions through the UIDP Member Resource Center.

The conference was punctuated by leadership perspectives from the across various sectors. **Erwin Gianchandani, NSF's assistant director for the Technology, Innovation, and Partnerships Directorate,** led a panel discussion on Day 1 that featured **David Thomas, president of Morehouse College; Victor McCrary, vice president for research at The University of the District of Columbia; and Nicolle Parsons-Pollard, interim provost and senior vice president for academic affairs at Georgia State University.** The conference closed with insightful fireside chats. **NSF Engineering Directorate Lead Susan Margulies** shared her vision for research and partnership development, and **Georgia Tech President Ángel Cabrera** offered his take on leveraging impact on the local community through university-industry collaborations.

Georgia Tech was gracious to offer their facilities for this event, and UIDP is grateful to the other institutions and companies who supported this conference generously through sponsorship.

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Day 1 | Tuesday, March 29, 2022

Legislative Update

Presenter: Michael Ledford, Lewis-Burke Associates LLC

University-industry relations continue to grow and rise to the challenge of partnership in unprecedented times. This session provided an update from the president of Lewis-Burke Associates on new and expected regulations and legislation impacting research and development and innovation at large.

Takeaways:
- **With FY2022 appropriations finalized, there is a lot of funding to be obligated in a short period of time.** This includes an increase in most domestic research agencies.
- **Current and emerging legislation around innovation and competitiveness has been fluctuating.** As funding coalesces, there are opportunities for universities and research organizations to receive funding. The [Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Act](#) still requires joint competitiveness legislation from the House and Senate for funding.
- **As CHIPS comes to fruition, next steps are coming into focus.** The next budget request will follow up on current requests including those for the NSF Technology, Innovation, and Partnerships (TIP) directorate.

Advancing Societal Interests through Strategic Collaborations

Presenters: Erwin Gianchandani, NSF; David Thomas, Morehouse College; Victor McCrary, The University of the District of Columbia; Nicolle Parsons-Pollard, Georgia State University

NSF is the funding source for approximately 25 percent of all federally supported fundamental research conducted by America's colleges and universities, and in many fields such as mathematics, computer science and the social sciences, it is the major source of federal backing. New legislation calls for significantly expanding NSF through additional resourcing. This talk previewed NSF's plans pursuant to the legislation, including the new [directorate for Technology, Innovation and Partnerships](#). Following this presentation, a strategically assembled panel of university leaders discussed how partnerships between various parties in the innovation ecosystem can collaborate to advance their goals and advance national interests.

Takeaways:

- **As part of the new [Technology, Innovation and Partnership](#)s directorate, NSF is establishing Regional Innovation Engines** designed to cultivate new regional innovation ecosystems throughout the United States and to address major scientific/technological goals while solving societal challenges. Initial technical focus areas are artificial intelligence, equitable access to health care and education, and critical and resilient infrastructure.
- **From the HBCU perspective, federal innovation funding should be directed to institutions where they are.** HBCUs seek partners that are interested in establishing lasting relationships based on mutual trust and where they play a substantive, rather than a trivial, role.
- **By creating regional innovation hubs in non-urban communities or communities where the technology industry is not already present**, NSF intends to expand innovative R&D throughout the United States and leverage strengths that are largely untapped to advance these key technology areas.

Tools of the Trade: Kentucky's Model for Facilitating Commercialization

Moderator: Laura Collins, North Carolina A&T University
Presenters: Kayla Meisner, Kentucky Commercialization Ventures; Micah Glenn, Kentucky State University

An engine for statewide innovation, [Kentucky Commercialization Ventures](#) (KCV) works with partners across the state, including Kentucky State University, to foster entrepreneurship, tech transfer, and research translation. By focusing on commercializing ideas from Kentucky's public universities and colleges, KCV offers a unique resource to its partners interested in translating IP and research findings to market-ready products. In this session, KCV and Kentucky State University discussed this collaborative model, their partnership, and the lessons learned.

Takeaways:

- **Kentucky Commercialization Ventures (KCV) is the state's science and technology public-private partnership organization and may be a model that can be replicated by other states**. It identifies and amplifies resources to the state's public universities and colleges to transform ideas into services, products, processes, startups, and investments supported by intellectual property.
- **Industry opportunities must match institutional needs.** Each university and HBCU is unique, and the most effective engagement will start when industry meets the university where it is.

- **Limited capacity (e.g., HBCU resources) does not equate to limited ability.** There is a wealth of expertise and dedication to be found on HBCU campuses, but there are also people being asked to do too much. Organizations like KCV can assist faculty through the idea disclosure and opt-in processes in partnership with their institution and helping to manage the process of commercialization.

NSF Convergence Accelerator

Presenter: Doug Maughan, NSF

Douglas Maughan, who leads the NSF Convergence Accelerator, gave an update on the program and provided information on how interested parties (companies, local and state governments, non-profits, and universities) can get involved.

Takeaways:

- **Our nation and society are facing a pivotal moment with climate change, issues around equity, and a need for critical infrastructure.** NSF can respond with a new enterprise to meet the moment by leveraging partnerships, working at pace, and meeting demand from society and the economy. The new NSF TIP Directorate is leading this effort.
- **Topics in the current solicitation are:**
  - Enhancing Opportunities for Persons with Disabilities;
  - Sustainable Materials for Global Challenges; and
  - Food & Nutrition Security
- **The Convergence Accelerator has multiple funding mechanisms.** Researchers and innovators are welcome to apply through traditional NSF solutions and broad agency announcements.

Fireside Chat: Leadership Insights from Diverse Perspectives

Presenters: Darnell Moore, Amazon; Raheem Beyah, Georgia Institute of Technology

As a product of an HBCU, Georgia Institute of Technology's Raheem Beyah shared his insight from roles as a cybersecurity professor and subject matter expert, school chair of electrical and computer engineering, vice president of interdisciplinary research, and now dean of one of the top ranked engineering schools in the world.

Takeaways:

- **The field of engineering is working towards equity.** DEI has to be a part of the engineering curriculum so that systems are designed and built for everyone.
- **Forming a network to support students is important.** Industry support and partnerships with higher education can add to that network.

- **Our nation produces too few African American Ph.D. students in engineering**. Academics, researchers, and industry partners need to encourage and not give up on that population.

From Talent Pool to Research Park/Innovation District

Moderator: Greg King, Georgia Institute of Technology
Presenters: Brian Darmody, AURP; Charles Ross, InBIA; Affan Sheikh, Hayat Brown

Research universities can serve as a linchpin to research parks, regional tech hubs, and innovation districts, but how can HBCUs build on their talent base and engage in the process of creating these systems? A panel of experts discussed current research hubs, the role of incubators and accelerators in creating research parks, and examples of HBCUs currently building innovation spaces around their campuses and linking to corporations.

Takeaways:
- **AURP is a key industry association and resource for research park opportunities**. AURP can help organizations keep up with changes in federal programs that fund research parks.
- **Research parks are useful for "creating cohesions" for great ideas from different disciplines**. Be sure to engage community organizations that may touch, want access to, or be impacted by research parks.
- **Howard received $300 million in federal funding for a research center for health disparities**. Funding leveraged student housing in a research park masterplan and incorporated childcare. Instead of importing prosperity, the aim should be **improving the prosperity of those who are in the community already**.

Students and Contracting Considerations

Moderator: Jilda Garton, UIDP
Presenters: Xiquan Cui, the Home Depot; Paul Lowe, Kansas State University

A variety of modalities are available for companies to work with students. A company may indirectly fund a student's experience by sponsoring a research project in a lab where undergraduate or graduate students working. Alternatively, a company may engage more directly with students through a capstone course or an internship. This session provided an overview of the key takeaways from UIDP's recent work on contracting issues involving students.

Takeaways:
- **Helping practitioners who work with students** in research is a key challenge (payment, insurance, IP, etc.).

- **The overarching goal is to help students in their learning experiences** by collaborating with companies/industry.
- From the university side, **a concierge approach is needed** so industry can easily engage with the university and its students.

Strengthening the STEM Teacher Workforce through Strategic Partnerships

Moderator: Kory Hawkins, Microsoft
Presenters: Jacquita Henderson, Clark Atlanta University; Valeisha Ellis, Spelman College; Michael Marder, UTeach; Kimberly Hughes, UTeach

A strong STEM workforce begins with the preparation of excellent K-12 STEM teachers. Attendees engaged with current data on STEM teacher shortages, what is known about the efficacy of university-based teacher preparation programs like UTeach, and a discussion of the critical role that HBCUs can play in strengthening STEM teaching and learning.

Takeaways:
- **UTeach is a specialized program dedicated to recruiting and retaining secondary education STEM teachers.** Its mission is to focus on solutions to the STEM teacher shortage. The national program (49 universities in 23 states) functions with a community of practices where teachers can collaborate and network to solve problems.
- **The number of STEM teachers in the United States has been declining.** Fewer teachers in STEM impacts recruitment of both STEM students in higher education and future STEM teachers. STEM teachers fill the pipeline needed to close the technology gap we face in recruiting for the workforce as well as the research and innovation enterprise.
- **A reason for declining numbers of STEM teachers is that universities are pulling back on their commitment to** prepare **students to teach**. HBCUs, along with other institutions of higher learning, have a critical role to play in strengthening programs that develop tomorrow's STEM teacher workforce.

Research Intelligence Tools for Building Partnerships, Narratives, and Enterprises at HBCUs

Moderator: Kathy Lynch, Yale University
Presenters: Daniel Calto, Elsevier; Art Ellis, Elsevier; Sherine Obare, North Carolina A&T University and UNC Greensboro

Research intelligence tools can provide valuable insights from global bibliometric databases. This session highlighted HBCU institution collaborations – individually and in aggregate – with regional, national, and

international academic institutions and with industrial partners through their joint scholarly publications. The significant contributions that HBCUs make to the United Nations Sustainable Development Goals (SDGs) through their scholarly outputs were presented. These research contributions can be used to create compelling narratives for securing additional resources for HBCUs from a broad range of funding sources and to communicate the societal impact of research conducted at these institutions. This can lead to new opportunities and potential partners for HBCUs to enhance and grow their research enterprises.

Takeaways:
- **There is a need to change the narrative on reviewer bias in publication**. Knowing some of the data and processes underlying citation visibility may be useful for institutions to leverage.
- **Joint publication with a corporation raises visibility for the institution**. The average number of citations of a paper written with a corporate and academic authors is 2.2 times the average. Only 4.7% of all papers have joint authorship. This decreases dramatically with HBCUs (2.8%), so there is ample opportunity to increase joint authorship and increase citations.
- **Elsevier has an internal intelligence tool that can be used by staff and research leadership to drill into what faculty are doing**. It can be used to engage alumni, identify and connect with companies, etc. The tool can provide information about:
  - Who your faculty is partnering with, both internally and externally;
  - New centers and new institutes being developed;
  - New funding proposals and opportunities for research; and
  - Opportunities for international collaboration.

Improving DEI Representation along the Entrepreneurship Pipeline

Moderator: Christine Gemelli, Raytheon Technologies
Presenters: Ranulfo Allen, Activate; Philip Loew, Activate; Raghupathy Sivakumar, Georgia Institute of Technology; Craig Green, Carbice Carbon

The Activate Fellowship provides a secure path for scientists and engineers to reinvent the world by bringing their breakthrough research to market. Activate is committed to making the Activate Fellowship more representative of the nation's race and gender diversity. As a part of its strategy to increase representation of underrepresented minorities in science entrepreneurship, Activate is introducing a pre-doctoral fellowship program in which undergraduate STEM students are exposed to entrepreneurship by working directly with fellows in their companies. With a panel composed of representatives from regional expansion, recruiting, and mentorship teams, this session brought awareness to this new endeavor in addition to other efforts to improve DEI representation along the entrepreneurship pipeline.

Takeaways:

- **Entrepreneurship as a career option needs to be introduced earlier in school.** Introducing students to entrepreneurship earlier on in the pipeline—as early as freshman or sophomore year—can have a tremendous impact on what they decide to do after graduation.
- **Fundamental science taught in schools is best supplemented by experiential learning.** The proposed Translational Research Program by Activate allows students and recent graduates to apply what they learned by working closely within one of its startup companies.
- **Many current internships for students and recent graduates are too short and, at times, at the surface level.** Activate's proposed year long program- along with a stipend and a network of mentors and additional resources- may be two critical value adds that current internships do not provide enough of.

Day 2 | Wednesday, March 30, 2022

Building an Innovation Ecosystem Outside Urban Areas

Moderator: Theresa Mayer, Purdue University
Presenters: Jim Martin, Mississippi State University; Kyle Tschepikow, University of Georgia; Tricia Bergman, University of Kansas

This presentation provided an overview of structuring innovation district initiatives, using the University of Georgia's Innovation District Initiative as a springboard for discussion. The session paid particular attention to the unique challenges of building university innovation infrastructure and culture in a small-to-medium-sized college town.

Takeaways:

- **One strategy for engaging industry partners is offering low-stakes, high-reward collaboration opportunities.** Opportunities like student engagement through industry connections not only grant corporate partners immediate ROI, but also the chance to evaluate the value proposition over time.
- **Create an ecosystem to support growth and solve real problems.** Strong holistic partnerships across industry, university, government agencies, and even community colleges are key and will help executives understand how these ecosystems align with organizational priorities.

- **Universities must possess specific plans to attract industry, especially when they aren't in their backyard.** When partnership builders recognize their own university culture, take stock of the current environment, and develop a road map, they may leverage these elements to engage a community of stakeholders.

Bayer's Strategy for Engagement

Presenter: Imran Nasrullah, Bayer

Committed to addressing complex challenges across the globe, Bayer is dedicated to engaging with external partners to solve diverse problems. This session discussed opportunities and channels for academic engagement with Bayer in pharmaceutical research.

Takeaways:
- **Bayer leverages a [range of collaboration mechanisms](#) for university-industry research collaboration and early-stage entrepreneurs to get valuable mentoring**. This is both a means to "pay it forward" and to build and sustain the innovation ecosystem.
- **Bayer's collaboration approach is to access great science everywhere.** In terms of early-stage innovation, collaboration with industry is a means for entrepreneurs to gain mentors in industry. For industry, it's an opportunity to work with promising researchers and entrepreneurs and communicate its research needs directly so everyone benefits.
- **Bayer is building a mentoring program,** working with early-stage entrepreneurs who have left the university and need experiential knowledge in running a company and getting a drug to market. At the start of the program, the principal investigator sends five questions they want to ask and can't get answers to by other means. Examples of mentoring streams include:
  - Regulatory affairs mentoring for early-stage companies that are preparing to go to the FDA for approval;
  - Center for Regulatory Affairs Think Tank for those interested in asking regulatory experts questions about FDA processes;
  - CEO roundtables for early-stage CEOs to talk to peers and providing an opportunity for Bayer to show them how the company can help;
  - Innovation prizes offer opportunities for easy-stage co-location for lab space.
  - Micro funding opportunities provide $50-$100,000 to fund an interesting idea that could become a research project. This is also a way to accelerate the process a company must take to get through key experiments. Bayer provides an internal representative to assist in bringing ideas forward.

Beyond Financial Conflict of Interest

Moderator: Melissa Getz, UIDP
Presenter: Jeffrey Waldin, InfoEd

Universities and university employees are encouraged to engage with industry. While most are aware of requirements for reporting potential financial conflict of interest, there is growing recognition of other areas where it is important to know about outside activities and relationships.

Takeaways:
- **Societal impact and broader community should be the focus of research partnerships.** Integrity of process is essential.
- **To support productive understanding, information on relationships should be collected including why and when they occur.** When noting this context, focus on conflicts of interest, such as the network of professionals outside of your organization who have access to your ideal clients, start-ups, material support, and travel. Contextual information may also include foreign activities or partnerships tied to foreign headquarters.
- **Focusing on the financial component may cause partners to miss other aspects of the relationship**. Process needs to be broad and aligned to all aspects of COI. Although different business groups may need discrete pieces of information to fulfill reporting requirements, keeping all the COI information gathered by an organization on a single, accessible platform that all relevant business units can access paints a fuller picture and helps connect the dots.

Strategies for Managing Confidential Information

Presenters: Shandra White, Northwestern University; Yogesh Sharma, Novartis; Pete Ellingson, Procter & Gamble; Terry Grant, University of Washington

This session provided an opportunity for players across the partnership continuum to weigh in on managing confidential information. University and industry representatives shared their perspectives and goals while also touching on confidentiality terminology and strategies for protecting critical information.

Takeaways:
- **Initial conversations between parties should not involve confidential information.** Calibrate when to share confidential information.
- **Only use confidential disclosure agreements (CDAs) when necessary.** Many discussions don't involve information that requires an agreement.
- **Be clear, be specific, and be careful.** Set a narrow scope and communicate what your expectations are down the line.

Industry-Government Joint Solicitations

Facilitator: Tony Boccanfuso, UIDP
Presenters: Chris Ramming, VMware; Gaby Cruz Thompson, Intel Corporation

To ensure that university research will have meaningful applications downstream, government funding agencies are increasingly requiring industry involvement in grant applications. In more limited instances, companies are coordinating with government funding agencies to co-fund NSF grants. This session discussed the instances where NSF and a large company co-funded a solicitation, the mechanisms used, and the preferences companies have around involvement in government funded research.

Takeaways:
- **Companies will need to make a substantial investment** into creating the solicitation and selection process. The value from these efforts must then be clearly articulated internally.
- **If IP is an issue, evaluate whether the topic makes sense to do at a university with government funding.** It's wise to select topics that are precompetitive or address large societal issues.
- **Consider the review process.** The company can be involved in selection, but it is both financially and time intensive to do so. For lower investments, companies may allow NSF to do all the selections.

Contracting Fundamentals for Non-Contracting Professionals

Facilitator: Michael Salter, Georgia Institute of Technology
Speaker: Sarah Emerson, Georgia State University

Sponsored research agreements (SRAs) impact everyone involved in U-I collaboration. This session provided attendees with an overview of what team members outside of corporate contracting should expect and insights into how common contracting issues may affect roles across the partnership continuum.

Takeaways:
- **Sponsored research agreements synthesize** the perspectives of both the university and the industry.
- **Critical elements include clear processes, procedures, forms, and communication** aligned to the mission.
- **It's important to bring a cooperative spirit, clarity, and good faith** to the process of SRA development. This will allow the university and industry to meet in the middle and conduct quality work.

Challenges and Progress in Cybersecurity Maturity Model Certification (CMMC) for Research Universities

Presenters: Daniel Noneaker, Clemson University; James Weyhenmeyer, Auburn University; Tony Novara, Auburn University; Shannon Price, Auburn University; Irene Goan, H2L Solutions Inc.

The topic was introduced with an overview of the [CMMC](#) requirements, levels, and timelines and their relationship to the academic research enterprise. In the expert-led breakout session that followed, presenters explored objectives, challenges, and successes in achieving CMMC certification in higher-education institutions. The impact of the CMMC on IT and research administration policies and procedures, institutional resource allocation, and interactions with government, industry, and other funding sources and partner organizations were examined. An anticipated outcome for participants is the identification of effective approaches that can be widely utilized across institutions.

Takeaways:

- **Cybersecurity Maturity Model Certification is important to implement on campus** because of the many cybersecurity challenges implicit to technology used in labs, classrooms, offices, etc. Universities should note that there is a cost attached to implementation. Additionally, CMMC moves research institutions towards ensuring technical and ethical standards in order to accommodate DOD oversight. This is necessary for campuses doing industry work.
- From a compliance or implementation standpoint, **institutions can subcontract out and manage services to assist with certification, or they can do it all.** There are advantages and disadvantages to each option, but there is no turnkey, cloud-based contractor that can do the whole thing.
- **A key learning is to select a trusted company** to assess the current status of affairs and make recommendations. For example, CMMS 2.0 presents a tiered model of certification. It follows levels of cybersecurity standards that align with type and sensitivity of controlled unclassified information.

Creating and Engaging Industry-Based Academic Focused Teams

Moderator: Robert Nobles, Emory University
Presenters: Chris Ramming, VMware; Nerissa Draeger, Lam Research; Wendi Yajnik, Novartis

Most companies that have a business focus on research and innovation view external collaborations as a key part of their overall strategy. In a recent survey, 78% of respondents expected to increase or maintain contracts with academia. This session discussed typical business expectations, motivations, and approaches for creating a university-facing research engagement team within a company and highlighted strategies for universities to optimize engagement with these teams.

Takeaways:

- **No "playbook" exists for how industry engages with academics.** There are differences across industry sectors; high-tech software and pharma all have different goals and missions when it comes to U-I partnerships.
- **Resources and team structures reflect each company's goals and priority areas.** These range from business units to central funding, the CFO, or the president.
- **Evaluating success and failures reflects what university-industry partnerships are all about.** Lam Research utilizes a three Rs approach to academic engagement: research, recruiting, and reputation.

Cross-Sector Collaboration through the Engineering Research Visioning Alliance

Presenters: Jaime Camelio, University of Georgia; Jennifer Carinci, ERVA

Diverse participation—including different backgrounds, voices and ideas—is vital to identify emerging trends and efficient solutions. That's why NSF launched the Engineering Research Visioning Alliance (ERVA), a partnership among the Big Ten Academic Alliance, the EPSCoR/IDeA Foundation and UIDP. ERVA is charged with identifying bold and transformative future engineering research directions and convenes, connects, and catalyzes the engineering community to develop solutions that improve the human condition. This session discussed the many ways organizations can get involved in ERVA.

Takeaways:

- **ERVA is a platform for multi-stakeholder visioning conversations** to "look around the corner" to identify fundamental research and solve society's most vexing problems.
- **ERVA employs through a network of networks** to engage diverse voices, including a "brain trust" standing council, 21 affiliate partners, and three core partners.
- **Visioning events convene thought leaders and experts based on thematic content**. A mini-visioning session was held to collect ideas for future visioning themes.

Day 3 | Thursday, March 31, 2022

Procter & Gamble and External Partnerships

Moderator: Tony Boccanfuso, UIDP
Presenter: Pete Ellingson, Procter & Gamble

For more than 20 years, Procter & Gamble has worked to build its open innovation success rate through a variety of R&D opportunities. This session presented P&G's approach to external research partnerships, its views on triple helix frameworks, and its goals for future engagements.

Takeaways:

- **P&G continually evolves how it innovates**, from student engagement to joint development with a P&G competitor.
- **European models for collaboration with governments** would be worth evaluating for implementation in the United States.
- **P&G has introduced new avenues to engage in meaningful ways with students**. For example, weekend sessions that present a problem to a group of students (local or remote) to get their opinions on impact of the problem and possible solutions raises student interest and brand awareness.

Corporate Community Engagement and Anchor Institution Collaboration for Improved Outcomes

Moderator: Mark Nolan, Georgia Institute of Technology
Presenters: Alan Anderson, Emory University; Chris Burke, Georgia Institute of Technology; Yvonne Whitaker, NCR Foundation; Ashley Jones, Microsoft

During the pandemic and the recent civil unrest that highlighted inequalities, many companies committed to doing more in their local communities and some are connecting with local universities as anchor institutions. Anchor institutions are large, usually nonprofit organizations tethered to their communities, like universities. This panel highlighted examples of new ways of collaborating with a goal to increase their local impact, whether that is K-12, mobility, diversity, economic development that is inclusive of the citizens and neighborhoods that typically are left behind.

Takeaways:

- **An anchor institution   such as a hospital or university is a critical contributor--especially since it is not going to move from the community and can withstand economic downturns.** The anchor institution can be a game changer in its community*.*

- **Anchor institutions should have an intentional community engagement strategy.** This concept is fairly new (past 5-10 years). The institution or company needs to listen and spend time with the community to understand what it needs. Programs and strategy should support and improve economic mobility in the local community.
- **Community engagement programs should focus on education and entrepreneurship.** Examples include investing in small businesses, microenterprise programs, teaching entrepreneurship, and college readiness programs for high school students.

Underwriters Laboratories and Northwestern University Partnership Discussion

Moderator: Kelsey Evans, UT Austin
Presenters: Chris Cramer, Underwriter's Laboratories; Jim Bray, Northwestern University

To help examine artificial intelligence (AI) systems and evaluate their impact, Underwriters Laboratories Inc. and Northwestern University are forming a research hub that seeks to better incorporate safety—defined expansively—into this fast-growing technology. This session presented an overview of Underwriters Laboratories, the novel approach and future opportunities in this research hub structure, and how each institution foresees leveraging lessons learned for future engagements.

Takeaways:
- **The Digital Intelligence Safety Research Institute (DISRI) at Underwriters Laboratories is supporting a new three-year partnership with Northwestern University**. Northwestern will host, and the two institutions will jointly lead, the research and operations of the Center for Advancing Safety of Machine Intelligence (CASMI). The partnership aims to bring together and coordinate a wide-ranging research network focused on maximizing machine learning's benefits while recognizing and averting potential negative effects.
- **Complex problems require collaborative, interdisciplinary approaches.** No one researcher, department, institution, or company can solve big problems alone.
- **Cooperative agreements are a promising area of possibility for university-industry partnerships.** These agreements, an alternative to targeted sponsored research grants, allow for collaborative, exploratory approaches that can later be refined and scaled.

Industry Perspective on Consortia

Moderator: Jilda Garton, UIDP
Presenters: David Tucker, Kimberly-Clark Corporation; Woj Wrona, Merck Sharp & Dohme Corp.

The right approach for setting up a precompetitive research consortium varies based on industry sector and the intended goals of the consortium. Industry representatives from different sectors shared their perspectives on what makes an effective university-hosted consortium and how the design of a consortium influences the value proposition for participation.

Takeaways:
- **Consortium expectation setting is very important at the start.** Questions to ask may include: What is the consortium meant to be? Who benefits? What is and what is not the consortium? Is it a multi-party contract or is it a subscription membership?
- **Project management should be a best practice built into the consortium.** Universities should understand how important project management and infrastructure is to industry.
- **The definition of pre-competitive IP can mean different things to different industries.** Pre-competitive IP can mean basic research in certain cases, but all parties should agree to and understand what they control when they put research results, data, etc. into a consortium and what they control in terms of output and IP. There should be clear understanding of what "pre-competitive IP" means among all collaborators.

Strategies for Engaging Industry in Government-Funded Research Projects

Moderator: Kristina Thorsell, UIDP
Presenters: David Mongeau, University of Texas San Antonio; Cathy Fore, ORAU

Increasingly, government solicitations require some degree of industry involvement. For some projects, companies supply letters of support or agree to serve on an advisory panel. Other projects may require much deeper corporate involvement such as funding, supplying novel materials, or in-kind contributions. This session explored the myriad ways that companies can participate in government funding opportunities and will identify common challenges to corporate participation such as timelines, IP, confidentiality, and reporting requirements.

Takeaways:
- **Don't wait so long to bring in industry**. Engage partners early in the process so they can meaningfully shape and develop the project direction.
- **Train faculty** who may be involved in projects on the meaning of partnerships and engagement.

- **Build strategic partnerships first** so the relationship and project is ready to leverage when government project solicitations are issued.

Careers at the U-I Interface: Transitioning between Sectors

Moderator: Sandy Mau, UIDP
Presenters: Terry Grant, University of Washington; Dennis Fortner, Carnegie Mellon University; Mary Shirley-Howell, HudsonAlpha

Many people within the UIDP community transition between sectors over the course of their careers. This panel offered attendees an inside look at the similarities and differences between industry, university, and nonprofit positions. All of the panelists had experience in at least two different sectors at the heart of university-industry collaboration.

Takeaways:
- **A career path in university-industry engagement is dependent on serendipity as much as careful planning.** Sometimes a change is not sought but becomes necessary because of changing circumstances. Familiarity with the other sector (industry, university, or government) is an asset. Being flexible and open to new opportunities is important during the job search.
- **Who you know is critical when making a career transition.** Develop a network of people who know your strengths and can translate them into skill sets that are valuable across sectors. The majority (77%) of UIDP members responding to a survey about cross-sector career changes said they looked to their professional network to identify new opportunities.
- **Important elements of success for cross-sector career changes are agility, curiosity, scientific background, and desire to continuously learn.** Translatable skills include strong interpersonal skills, communication, networking, and general business skills.

NSF's Role in Advancing National Opportunities in Engineering

Presenters: Dorota Grejner-Brzezinska, The Ohio State University; Susan Margulies, NSF

NSF's Directorate for Engineering provides investments in research that enable critical breakthroughs and advance new opportunities. In this fireside chat, Susan Margulies, the lead of the National Science Foundation Engineering Directorate, shared directions for future initiatives and opportunities to advance multi-sector partnerships.

Takeaways:

- **NSF Engineering has the power to convene partnerships among parties that don't usually sit together.** It is also able to engage engineers to develop sustainable systems to scale other NSF research outputs.
- **Partnerships are critical to NSF Engineering to innovate and catalyze its mission**, which is "transforming our world for a better tomorrow by driving discovery, inspiring innovation, enriching education, and accelerating success." Some of the mechanisms to partner with industry include:
    - INTERN program, (Non-Academic Research Internships for Graduate Students
    - Industry-University Cooperative Research Centers (IUCRCs)
    - Engineering Research Centers (ERCs)
- **Diversity in engineering involves work now to engage the "missing millions" who are in the K-12 pipeline.** Democratizing engineering to make engineering more accessible is one approach. Broadening participation itself is a research topic or project. Inclusive mentoring hubs are another NSF-funded approach to build diversity in engineering.

Fireside Chat: Leveraging Impact Through Strategic University-Industry Collaborations

Moderator: Arturo Pizano, Siemens Presenter: Angel Cabrera, Georgia Institute of Technology

The Georgia Institute of Technology has a proud legacy of working with the private sector to identify collective needs and coordinate high-impact collaborations that have had a transformative impact on academics, research, student success, economic development, and community welfare. To close out this year's conference, Georgia Tech President Ángel Cabrera had a conversation with Arturo Pizano, head of the University Relations Program of Siemens Corporation, Corporate Technology, and discussed the power of university-industry partnerships to realize shared values for the public good.

Takeaways:

- **Transforming midtown Atlanta into a thriving innovation hub took significant foresight and strategic planning** to create an ecosystem where industry would want to locate. Innovation labs initially got the momentum going, but it took intentional, innovative engagement with companies to bring them in.
- **Key success themes** for building the downtown innovation district included:
    - Amplify impact to reach more people;
    - Champion innovation and entrepreneurship with intentional programs designed to enable and equip; and
    - Proactively work to diversify the workforce in tech.

- **CODA** is a recent example of intentionality in catalyzing innovation. It is a privately developed facility that leased two floors to Cisco for a talent and collaboration center. CODA has 30 quick-turn research projects in its current portfolio with Georgia Tech to accelerate innovation while attracting talent.

Special thanks to Georgia Tech for use of the Global Learning Center for this event. We are grateful to all the institutions and companies that supported this conference.

Mark your calendar and make plans to join us at our fall conference!

UIDP Austin 2022
Sept. 13-15, 2022 | The University of Texas at Austin

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About UIDP
UIDP is a solutions-oriented forum where academic and industry representatives find better ways to work together. Our membership, comprising top innovation companies and research universities around the world, identifies issues affecting university-industry relations and seeks new approaches to partnership and collaboration. Together, we produce tools and resources to help members make a greater impact. We don't just talk about problems. We solve them.