



## **UIDPVirtual 2021 CONFERENCE REPORT**

April 12-16, 2021



Strengthening  
University-Industry  
Partnerships

## CONFERENCE AT A GLANCE

UIDPVirtual 2021 convened more than 1,100 registrants representing 15 countries for a virtual conference bridging five days of curated content. Attendees played an active role watching, listening, and participating via live chat, Q&A and in-app interactive tools. Each day was anchored by a keynote session featuring a national thought leader; UIDP was honored to host NSF Director Sethuraman Panchanathan, as well as Microsoft Partner Research Manager Mary Czerwinski, Mars Advanced Research Institute Vice President Abigail Stevenson, Author and Harvard Distinguished Fellow Vivek Wadhwa, and *Science* Editor-in-Chief Holden Thorp.

UIDP released two new UIDP Guides in conjunction with the conference: [Collaboration Metrics](#) and [15 Effective Practices for Strong U-I Partnerships](#). In addition, several project sessions were offered, many addressing challenges related to the COVID-19 pandemic. These included:

- Corporate Engagement and Affiliate Programs: COVID's Impact
- Finding Serendipity During a Pandemic
- Long-Term Impact of COVID-19 on Corporate R&D Programs; and
- Responding to the COVID Crisis: Rapid Testing & Keeping Students on Campus.

Other project sessions covered a range of topics, from contracting to metrics:

- Training Programs for New Contract Negotiators
- Metrics for Evaluating U-I Partnerships
- Indemnification, Warranties and Liabilities; Maximizing Value Outcomes from Clinical Trials: Patient Involvement
- Data Use Agreements
- Beyond Bargaining: Negotiating Strategically; and
- Tax-Exempt Bonds & Research Contracts.



UIDP was fortunate to secure the services of more than 138 subject matter experts as presenters and speakers. Live presentations have been completed, and conference attendees can download materials and watch all 50 session recordings 24/7—whenever it is convenient for them.

---



---



---

## DAY ONE

### MONDAY – April 12, 2021

#### ***Value Co-Creation in U-I Partnerships in Times of Turbulence***

***Moderator:*** *Tomas Coates Ulrichsen, Cambridge University*

***Presenter:*** *Rafal Dudkowski, iKNOW-WHO*

***Additional Resources:*** [Partnership Continuum](#), [Researcher Guidebook](#)

Partnerships between industry and academia give rise to many ground-breaking innovations. Companies are under pressure to develop innovative solutions in a highly volatile world and launch the latest technologies to generate new value. This can be achieved through strategic collaborations between universities and businesses, which offer cutting-edge research, stimulate co-creation of knowledge, and develop new effective pathways towards commercialization. This session presented collaboration processes of R&D activities in Nordic (Telia) and Swiss (Swisscom) Telecom Companies developing innovative products. It focused on the interactions between individuals, the contexts in which they act, and the ways in which collaborative value co-creation is managed. It also offered insightful case examples of successful R&D co-creation activities and provided a framework to understand why these collaborations were successful. Book: [Managing Value Co-creation in University-Industry Partnerships](#)

#### ***Takeaways:***

- **Co-creation is value created when industry and academia develop collaborative processes that focus on shared goals.** Successful collaborations include a personal interest in the project, a cooperative mindset, and consortia management.
- **Successful collaborations operate within a structured framework of clear project goals, competencies, and a good combination of people.**
- **Numerous constraints from both academia and industry impact collaboration success.** Poor planning and management, inconsistent, inflexible, and regulatory timeframes, lack of cost-benefit analysis and resources, diverging objectives, and cognitive and spatial distance.

#### ***Corporate Engagement and Affiliate Programs: COVID's Impact***

***Moderator:*** *Chris Paschall, Bayer*

***Presenters:*** *Catherine Hasted, University of Cambridge • Karl Koster, MIT*

***Additional Resources:*** [UIDP COVID-19 Report](#)

Catherine Hasted leads the [University of Cambridge's business partnerships team](#), based in the university's strategic partnerships office, working with business partners and colleagues from across the university to cultivate high-impact partnerships.

Karl Koster leads the [MIT Industrial Liaison Program](#), which serves as industry's most comprehensive portal to MIT, enabling companies worldwide to harness MIT resources to address current challenges

and to anticipate future needs. As one of the first (and most successful) corporate affiliate programs, the ILP offers a unique take.

Catherine and Karl shared their thoughts on how the pandemic has impacted academic-corporate engagement, unexpected opportunities that have arisen from this crisis, and where opportunities will arise in the future.

**Takeaways:**

- **Impact on the organization is broad.** Increased health and safety protocols were put into place. This helped to drive strategies and policies. There was a marked reduction in corporate relations due to COVID. Knowing this made an impact on existing relationships and new relationships. Existing relationships were being strengthened, but the development of new ones was slow.
- **There are pros and cons with remote work.** Current infrastructures were able to handle remote work almost immediately. However, communication needed to be increased to make sure everything was being addressed. There was a slight remote employee “drift,” but did not experience any great issues, resulting in no real loss in productivity. Remote work does open a new world to competitive hiring practices; due to the fact that the candidate would not have to be local for consideration.
- **Flexibility is required going forward.** Everyone has to remain flexible. A hybrid environment is still a good option, but it can increase the need to manage work environments differently. A noted effect of a hybrid environment was the increased access to senior leadership within the organization. This came about because no one was traveling. One area of concern was “work environment bias.” Meaning where you work might create a perception of bias or some sort of favoritism.

## ***Fireside Chat with Sethuraman Panchanathan, National Science Foundation (NSF) Director***

**Moderator:** *Carlos Henrique de Brito Cruz, Elsevier*

**Presenter:** *Sethuraman Panchanathan, NSF*

**Additional Resource:** [\*Building stronger bridges between discovery, innovation, and prosperity\*](#)

NSF Director Sethuraman Panchanathan shared his priorities for the future direction of the National Science Foundation and his perspective on the value of public-private partnerships to help the nation remain on the front end of innovation and address our greatest challenges.

**Takeaways:**

- **NSF works in partnerships with numerous directorates to identify and solve comprehensive problems.** These entities are independently capable of innovation however the entities are also working collaboratively on societal issues that need to be addressed.
- **There’s a need to identify and build talent.** There is still a lot of talent out there that is not being tapped across the socioeconomic and geographic spectrum referred to as the “Missing Millions.” This growth needs to begin at the K-12 level and continue through undergraduate and

graduate academic programs.

- **NSF is ready.** NSF is intensely focused with a tremendous amount of intentionality to participate with a strong commitment to unleashing talent and ideas across a broad socioeconomic spectrum. Invitation delivered to attendees to share comments, ideas, and thoughts with NSF, creating a future transformative partnership.

## ***The Perils of Complacency: America at a Tipping Point in Science and Engineering***

**Moderator:** *France Cordova, NSF (Retired)*

**Presenters:** *Neal Lane, Rice University's Baker Institute for Public Policy • Norman Augustine, Lockheed Martin Corporation (Retired)*

**Additional Resource:** [\*The Perils of Complacency: America at a Tipping Point in Science and Engineering\*](#)

The United States has a legacy of leading the world in the technological advances that are fundamental to prosperity, health, and security. But today China, with double digit growth in R&D funding year over year, has surpassed the United States in strategic R&D and education investments. ["The Perils of Complacency: America at a Tipping Point in Science and Engineering,"](#) recently released by the American Academy of Arts & Sciences and the Baker Institute at Rice University, outlines the risks of losing our innovation leadership position and recommends policy changes to change this course. Study co-chairs Norman Augustine, former chairman and CEO of Lockheed Martin and a former Under Secretary of the Army, and Neal Lane, senior fellow in science and technology policy at the Baker Institute and former director of the White House Office of Science and Technology Policy and National Science Foundation, discussed key roadblocks to innovation and the policy changes needed to ensure the United States remains globally competitive.

### ***Takeaways:***

- **The United States faces unprecedented challenges to its global competitiveness.** We need to work closely with our allies as well as recognize the talent within the U.S.
- **The United States has failed to make the necessary investments in R&D and Education.** Although our countries investment in R&D ranks first, the Innovation rank is 8th, in Education the rank is 25th, and the Fraction of Research Funded by Government is ranked 29th.
- **America is at a tipping point in science and engineering.** There are suggested recommendations including boosting federal research by at least 50%, growing STEM numbers and skills across the board, and restoring state funding for their universities

## ***Opportunities to Reduce Improper Foreign Government Influence in Fundamental Research***

**Moderator:** *Tim Stearns, Stanford*

**Presenters:** *Lisa Ide, MITRE • Karen Lee, MITRE • Jodi Simco, MITRE*

**Additional Resources:** [\*MITRE: Risk Approach May Thwart Foreign Threats, Better Federal Info, Support Essential\*](#)

Several American academic institutions and their research staff have been the subject of high-profile federal investigations into improper foreign government influence and non-disclosure of foreign support. The MITRE Corporation conducted interviews with 157 individuals from across government and academia in July and August 2020 to better understand the range of concerns and risks of improper foreign government influence to the integrity of federally-funded fundamental research. This session presented MITRE's findings and recommendations based on those interviews and discussed opportunities to increase the resiliency of the nation's R&D enterprise to improper foreign government influence risk

**Takeaways:**

- **There's a need to strike a balance.** There is a delicate balance of disclosures and reducing risk of improper foreign government influence without deterring talent that exists from other countries; there is a necessity for the diversity of thinking from around the world that breeds innovation necessary for growth in the United States.
- **It is not just a matter of sharing the information.** there needs to be an infrastructure that hosts a framework to synthesize the information and present the risk that exists and how to address/mitigate that risk.
- **Respond to the call to action.** MITRE would love to partner with organizations that have leading practices in this area or want to be a part of the solution. MITRE needs those in the grant community to get involved.

***Collaborating with Pfizer: Advancing Innovative Emerging Science***

**Moderator:** *Jennifer Lodge, Washington University, St. Louis*

**Presenters:** *Gerald Shipps, Pfizer • Joel Klappenbach, Pfizer*

[Pfizer's Centers for Therapeutic Innovation](#) (CTI) are transforming the traditional model of drug discovery by partnering with leading academic investigators to jointly translate science into potential clinical applications across Pfizer's core therapeutic areas. Using the depth and breadth of the Pfizer enterprise, we accelerate concepts into viable therapies with breakthrough potential for patients. Since its inception in 2010, CTI has kicked off nearly 100 projects and advanced seven programs to the clinic. Our current Call for Proposals, launched March 22, seeks partnering opportunities for novel targets across Pfizer's core therapeutic research areas and emerging scientific areas.

**Takeaways:**

- **Leverage external innovation.** Pfizer seeks to harness external innovation to continue bringing breakthrough therapies to patients.
- **There's a range of research partnership types.** Pfizer has many ways to partner with researchers including therapeutic co-development, direct collaborations, equity investment, and licensing.
- **Consider co-discoveries.** Pfizer's Centers for Therapeutic Innovation (CTI) is an academic drug co-discovery organization with over a decade of successful collaborations.

## ***Training Programs for New Contract Negotiators***

***Moderator: Elizabeth Adams, Princeton***

***Presenters: Sophia Herbert-Peterson, Georgia Tech University • Dana Rewoldt, Iowa State University***

***Additional Resources: [UIDP Contract Accords](#), [UIDP Researcher Guidebook](#)***

Negotiating industry-sponsored research agreements requires skills not commonly taught in formal undergraduate training. Many companies and universities hire talented individuals to meet their workforce needs and then "train them up" using common approaches such as direct mentoring with an experienced colleague or providing access to custom built programs using prior materials (such as the UIDP Contract Accords) and institution-specific information. This session discussed practical approaches used by UIDP members and engaged participants about their strategies on how to tackle this challenge.

### ***Takeaways:***

- **Fundamental training for new contract negotiators includes use of UIDP resources, UIDP Contract Accords and UIDP Researcher Guidebook.** Research Administration requires extensive training and development and is crucial to success. Experienced talent in the field is limited.
- **Both universities integrate training resources from associations as well as local level templates, SOPs and best practices across all types of agreements.** A multi-phase approach over several months provides procedural knowledge, legal and regulatory limitations and risk parameters unique to universities. Video presentations and a detailed manual aid in the successful transition to contracting know-how and negotiation skills.
- **The pandemic challenge has affected training.** The constant chatter and discussion are non-existent. Remote work limits the spontaneous message for advanced training. Sufficient messages are limited, and institutions are more dependent on their organization's specific resources for continued development.

## ***NSF Convergence Accelerator: An Example of Government Innovation***

***Moderator: Tricia Bergman, University of Kansas***

***Presenter: Doug Maughan, NSF***

***Additional Resources: Current solicitation links: Academics researchers can learn more by referring to the [NSF-21-572 solicitation](#). Industry researchers can learn more through a [Broad Agency Announcement solicitation](#).***

The National Science Foundation (NSF) launched the [NSF Convergence Accelerator](#) in 2019 as a new organizational structure to accelerate the transition of use-inspired convergence research into practice in areas of U.S. national importance with the guiding rationale that to deliver progress on scientific and societal challenges, multiple kinds of partners and stakeholders must be involved, including researchers and the ultimate users of research products. Doug Maughan described the progress to date and provided the plan and strategy for the Convergence Accelerator going forward. Most importantly he discussed how UIDP partners and attendees can get involved with NSF's Convergence Accelerator.

### ***Takeaways:***

- **Understand the C-Accel goals.** They are to look at different innovation models that can be considered for funding and examine how they engage with partners outside of the academic community. Participants are delivering solutions including software/hardware/prototypes, and in every case, there are multiple parties involved.
- **Respond to the current solicitation.** There is a call out to the community asking for large-scale topics that the government should be funding; the submissions are evaluated and about a dozen are selected for additional workshops, leading to a solicitation, followed by a competition for phase 2.
- **Explore the two new initiatives. They include:** (1) Network Blue Economy which is looking to create innovative tools and techniques that focus on ocean resources. (2) The second is Trust and Authenticity in Communication Systems covering technologies/capabilities that are needed for the everyday user.

### ***Leveraging Data for Strategic Partnerships***

***Moderator: Mark Ortiz, Sony***

***Presenters: Kara Moore, Rutgers, The State University of New Jersey • Sacha Patera, Rutgers The State University of New Jersey***

Corporate intelligence is about gathering information to help organizations make informed decisions for their key corporate partners. The session showcased how Rutgers University Corporate Engagement Center is utilizing intelligence to be more strategic and effective in their research partnerships. It included an overview of the components for creating corporate dashboards, tools to determine internal strengths and opportunities, resources to identify corporate initiatives that align with your campus programs and creating scorecards to understand industry impact across all companies with weighted metrics.

#### ***Takeaways:***

- **Internal intelligence should be part of the corporate engagement team** focused on simple to comprehensive partnerships. When housed in a single department, there is a cohesiveness of efforts.
- **Partner with business librarians and prospect researchers.** These individuals can source relevant data that can provide insights into who is working in what space and what alumni may be engaged. This data can help to start initial conversations that lead to strategic partnerships.
- **Data improves conversations and accelerates partnerships.** Organize your information for analysis using web-based intelligence tools, such as Factiva, that are scrubbed to ensure quality information. LinkedIn Sales Navigator also provides a good degree of search flexibility. This is a particularly good platform for alumni outreach and engagement.

### ***Establishing, Maintaining and Growing HBCU-Industry Relationships***

***Moderator: Arturo Pizano, Siemens***

***Presenters: Valinda Kennedy, IBM • Deborah Stokes, Dell • Nikhil Fernandes, Dow Chemical Company***

There have been a number of recent, high-profile collaborations announced between companies and historically black colleges and universities (HBCUs). This interactive session presented the results from a recent UIDP survey on this topic and shared insights from company representatives managing HBCU engagement for their firms.

**Takeaways:**

- **Industry supports HBCUs.** Industry is very engaged in support of HBCUs to sustain and improve partnerships. Fellowship and resource availability in HBCU is well established and continues to grow.
- **Explore how to engage with HBCUs.** Don't limit your selection. Attempt to provide the same information to all the universities. Feedback from schools can help industry partners determine the best way to support them and develop partnerships that drive continued development. It's important to develop long-term relationships that drive shared vision.
- **HBCUs can face many challenges.** Usually smaller universities, they can face limited resources, and time and availability of students. Industry needs to be efficient when engaging the university to help build a flexible and dynamic environment that produces value added results for both parties.

## ***Student-Industry Engagement Strategies for Success***

**Moderator:** *Monique Turrentine, Duke University*

**Presenter:** *Robert Ashcraft, Samsung Research America*

**Additional Resources:** [Five Ways to Nail Industry Presentations](#), [Industry Sponsored Capstone Projects](#), [Industry Internships for Ph.D. Candidates](#)

Students play a critical role in university-industry partnerships and are often called upon to share the results of their work with company sponsors. This session shared some practical tips on how to maximize the benefit of these presentations.

**Takeaways:**

- **Samsung interacts proactively, formally and informally, with universities in the US and globally.** Casual interactions take place with students at poster sessions, conferences, and campus events. Formal interactions typically involve professors in a presentation style event where they are better positioned to answer questions. When research is sponsored, a project review meeting is also conducted. More opportunities at the graduate level than the undergraduate level. Degree completion is not always as important as skill attainment, particularly in areas where there is competition to hire the best talent.
- **Learn the Do's and Don'ts of a poster session, as this is likely the first opportunity for interaction with a company.** Communicate clearly and concisely, assess audience, don't exaggerate, and don't be afraid to ask the level of knowledge of the person you are making contact with regarding the content area.

- **Students are hired into roles for various reasons:** Technical ability and strategy/business sense, the ability to solve problems, learn new things and take on something new successfully are key factors. Employers look for someone who is adaptable, can break down a problem, identify critical bottlenecks, push research forward, and can overcome adversity.

## ***Industry Engaged Universities — Strategies for Integration, Service, and Success***

**Moderator:** *Cynthia Mahler, Boeing*

**Presenters:** *Randy Hall, University of Southern California • Jimena Villarreal Chapa, University of Southern California*

**Additional Resource:** [Comparing Internal Structures](#)

This session reported on strategies used by UIDP university members to engage industry in research, economic development, education, and healthcare. A framework was presented for comprehensive engagement across of spectrum of activities that offer mutual benefit, addressing the attitudes, services, and structure for successful outcomes. Panelists described roles and strategies for university leadership, industry engagement offices, other administrative units, schools, departments, centers, and faculty.

### ***Takeaways:***

- **A comprehensive discovery approach** was used to define collaboration, assess how collaboration is achieved, and what the strategies to success are. Five areas identified by university members to engage industry are: research, economic development, education, clinical, and auxiliaries and administration.
- **Positive characteristics of a strong engagement strategy** are attitude, experience and capabilities, service, attributes.
- **Industry-engaged universities** are multi-dimensional and never fully integrated as a single office. Industry and university priorities are similar and include mutual benefit, proactive concierge, and aligned policies.

---

## **DAY TWO**

### **TUESDAY – April 13, 2021**

## ***Advancing Breakthrough Science Through Academic Collaborations***

**Moderator:** *Robert Giezendanner-Thoben, EPFL*

**Presenter:** *Wendi Yajnik, Novartis*

**Additional Resources:** [Academic Partnerships & External Innovation](#), [NIBR Global Scholars Program](#)

As Novartis' innovation engine, the [Novartis Institutes for BioMedical Research](#) (NIBR) recognizes that discovering life-changing medicines requires open collaboration with academic partners. External Innovation (EI) leads NIBR's efforts to open the framework with academic institutions. In 2019, EI began building strong relationships with premiere academic institutions through the engagement of their technology licensing, business development, and venture offices (TLO). More recently, Novartis launched the NIBR Global Scholars Program (NGSP), which is designed for academic investigators to gain funding for breakthrough science not covered by traditional grant support. Selected scholars receive up to \$1 million (USD) over a three-year term and are partnered with an NIBR drug-hunting expert in the specific area of the research proposal.

**Takeaways:**

- **Explore a new perspective.** Industry is bringing in academic professionals to have a different perspective in working with and doing business with academia; industry and academia are learning about each other's cultures, how far you can go on a deal, and what is acceptable/not acceptable.
- **Focus on translation.** If you share the vision early on, and you have a scientific expert that is guiding the project, it is much easier to think about translation. Novartis makes a three-year commitment with their programs, providing significant funding and an investment for the long term which helps to translate the science.
- **Educate future scientists.** Novartis has training programs that begin from K-12, where students visit industry labs and learn about research projects/gene therapy; there are also 10-week paid internship programs for college students to work with the functional areas; diversity and inclusion program that supports students pursuing advanced academic programs; post doc program with a Discovery track (fundamental discovery science) and an Innovation track (platform technologies).

**Value Creation Through Open Innovation at PPG**

**Moderator:** *Cynthia Sweet, University of Pittsburgh*

**Presenter:** *Sharon Feng, PPG Industries*

[Innovation at PPG](#) focuses on developing technological solutions for unmet needs in the markets we serve and creating value for our customers. PPG does this through strategic partnerships with academic institutions, government agencies, and private entities. Through these partnerships, PPG leverages the cutting-edge research capabilities among partner institutions and creates value for all engaged partners with speed and efficiency. In addition, it develops a robust talent pipeline that helps to sustainably propel PPG's global innovation machine. This session included success factors and stories.

**Takeaways:**

- **Connect with academia.** PPG wants to partner with universities to access the talent pool coming into the workforce; also, important to make connections with faculty and researchers to partner with and collaborate on cutting edge research projects to spark organic growth within the company. They also value relationships with government agencies to bring innovation to these U-I partnerships.
- **Use the keys to successful university partnership.** Goals and visions need to be aligned, partner needs to be easy to collaborate with and on the same project time frame, workable IP terms

must be agreed upon, and faculty must be adaptable to an industrial research model (customer minded/communication cadence).

- **Leverage opportunities from the PPG Foundation.** PPG just announced a \$20 million-dollar, five-year investment that is concentrated on programs that encourage further progress in programming for underrepresented populations.

## ***Partnering and Collaborating with GSK***

**Moderator:** *Paul Van Dun, KU Leuven Research & Development*

**Presenter:** *John Wilson, GSK*

GSK is one of the world's largest pharmaceutical and vaccines companies. It collaborates with more than 100 academic institutions worldwide to push forward innovation, discover new drugs and vaccines, and understand the diseases that affects us all. GSK looks to partner with academic institutions at all levels and would like to help universities discover how best to establish partnerships.

### ***Takeaways:***

- **The main focus is developing the science.** The science is driving the technology coming from academic centers.
- **GSK has 6 main focus areas:** oncology, HIV, infectious diseases and global health, immuno-inflammation, respiratory, and vaccines.
- **Partner with GSK.** Connect with John Wilson, Academic Liaison Director, [john.wilson@gsk.com](mailto:john.wilson@gsk.com). Initial outreach can be as simple as a 1-pager / 5 min elevator speech. He can work to connect you with the correct department to further explore opportunities.

## ***UW-Madison's Promoting Industry Collaboration Internal Grants Initiative***

**Moderator:** *Bryan Haynes, Kimberly-Clark*

**Presenter:** *Steve Ackerman, University of Wisconsin, Madison*

**Additional Resource:** *UIDP Guide, [PhD-Internships in Industry](#)*

[The Office of the Vice Chancellor for Research and Graduate Education](#) (OVCRGE) at UW-Madison is launching a new funding initiative to facilitate research partnerships and graduate student internships in collaboration with the private sector. The goal is to encourage collaboration with industry by researchers, stimulate innovative thinking among graduate students, and promote translation of fundamental research. Awards ranging from \$50,000 to \$200,000 are offered to support the university costs of the research project and/or placement of an advanced graduate student in an internship related to their dissertation work at the company. Projects will be selected to start in July 2021. Steve Ackerman discussed the motivation for this initiative, the complexities encountered in implementing this sort of grant program using institutional funds and plans for assessment of outcomes.

### ***Takeaways:***

- **The over-arching goal of the University of Wisconsin-Madison's Office of the Vice Chancellor for Research and Graduate Education (OVCRGE)** is to address the complex challenges of the university's broad research enterprise and support the needs of graduate education across campus, in a thoughtful and collaborative manner, all while providing strong leadership and clear vision in the constant pursuit of research and graduate education excellence.
- **Explore the [Promoting Industry Collaboration Initiative \(PICI\)](#).** Develop, build and promote collaborations between UW-Madison and the private sector, address solutions to complex social, environmental, and economic challenges that are best addressed via collaboration between universities and industry, and internships for Ph.D. students.
- **Changes have been made to support industry partnerships.** Research and Sponsored Programs (RSP) and Institutional Review Boards (IRBs) have been administratively moved to the OVCRGE to be more responsive to the needs of the industry research collaborations. This simplified structure has been implemented for working with corporate sponsors as it relates to intellectual property (IP).

## ***Keynote | Using Technology for Health, Wellbeing and Empathy***

***Moderator: Elizabeth Klonoff, University of Central Florida***

***Presenter: Mary Czerwinski, Microsoft***

How can we create technologies to help us reflect on and change our behavior (if needed) and improve our health and overall wellbeing, both at work and at home? In this talk, Mary Czerwinski described the last several years of work the Microsoft research team has been doing in this area. It has developed wearable technology to help families manage tense situations with their children, mobile phone-based applications for handling stress and depression, as well as automatic sensing systems for tracking wellbeing over time. Microsoft's latest focus agents can help with planning and focus and recommend good times to take a break at work. The overarching goal in all of this research is to develop intelligent systems and agents that work with the user so that they can maximize their goals and improve their wellbeing over time.

### ***Takeaways:***

- **Current research focuses on affective computing.** This tries to understand personalized human emotions to design systems that are more empathic and humane. Signals about users are collected in a virtual environment. Camera: Presence and Motion (head pose, nods). Physiology: (heart rate). Audio: (language sentiment). Expressions (head gestures, facial expressions). Peripherals (mouse, keyboard, touch).
- **Meeting Coach is a system used to record meeting and uses human signals for analysis to evaluate the individual performance during the meeting.** Data is used to improve future meetings and identify stress, how active were you, what was your sentiment, positive or negative, did sentiment change, did meeting change, was there dissent. Data is used to also improve future meetings for effectiveness. Effective meetings are highly correlated with inclusive meetings.
- **User needs to be in control of data.** Focus, develop stress coping skills, identify moments that are good for your health and well-being. Pocket Skills app developed for use in the mental health community to provide immediate access to DBT therapy online.

## ***Finding Serendipity During a Pandemic***

***Moderator: Roger Vanhoy, Illinois***

***Presenters: Chris Hewitt, BASF • Jacqueline Serviss, Lockheed Martin, Canada • Jeff Schley, Aramco***

With in-person interactions being limited, the opportunities for serendipity have also been restricted. During this session, corporate representatives shared how they found new university partners or new collaborations with existing partners despite the limitations imposed by the pandemic.

### ***Takeaways:***

- **Each speaker recounted an impact from the pandemic** on their collaborations while organizations also had to keep health concerns as a priority. The process to re-tool was a lengthy one and required new approaches to engagement. There was recognition of a friends of friends' approach to build network and trust.
- **Key pillars to intentional serendipity for more productive and efficient conversations** include good communication, well-developed game plan, respect for others by asking for input and questions, limit the complexity, adaptability, flexibility, effective facilitators, and trust.
- **Returning from the pandemic brings its own challenges.** Travel will be limited, and more colleagues will be involved virtually due to travel reductions. The challenge will be to manage those in the room with those who are remote (monitor conversations). Although virtual meetings can be more productive and efficient, they continue to require intentionality. Competition is great so on-site visits may be necessary. The two most important partnership characteristics are transparency and mutual understanding, which are difficult to communicate and demonstrate virtually.

## ***Metrics for Evaluating U-I Partnerships***

***Moderator: Pete Poorman, University of Texas, Dallas***

***Presenters: Spike Narayan, IBM • Evelyne Viegas, Microsoft • Robert Garces, EMD Serono***

***Additional Resources: [UIDP Collaboration Metrics](#)***

Over 100 different metrics that can be used by companies and universities to evaluate their partnerships with each other are highlighted in the UIDP Metrics Quick Guide. This session featured three different corporate perspectives on how they select and use metrics. For university representatives, this was a unique opportunity to hear about what companies look for in a high-quality partner. For companies, this was a chance to hear other corporate perspectives.

### ***Takeaways:***

- **The evaluation metrics used will vary from project to project.** Some metrics to consider are number of publications, known grants, and patent approvals. Do not limit your evaluation to just metrics. Responsiveness to communications can be a key indicator of level of commitment.
- **Student engagement has changed.** Newer employees are not interested in working in lab alone. They want a more collaborative environment, working with a team, focused on creating for the greater good of society.

- **Consider supporting students during entire duration of Ph.D. program.** This builds a much stronger relationship, and the student may stay more engaged with the company.

### ***PTIE Update: Adoption of Recommendations to Recognize I&E in P&T***

***Moderator: Terri Shelton, UNC Greensboro***

***Presenters: Rich Carter, Oregon State University • Karl Mundorff, Oregon State University***

Updated on the progress of the [Promotion and Tenure, Innovation Entrepreneurship](#) (PTIE) working group in gaining adoption of the summit's unanimously approved recommendations. Learned about progress made, challenges faced, and the latest publications.

#### ***Takeaways:***

- **PTIE is a new perspective.** This is a way to be more inclusive of faculty that are seeking to make impacts that transcend beyond the traditional publications and grants model. Focus is on broadening the bar to be more inclusive in teaching/research/service.
- **Collection of indicator data includes:**
  1. Intellectual Property – focusing on a variety of issues
  2. Sponsored Research – through traditional grants, from a company/federal agency
  3. Use and Licensing – could be non-profits that benefit from the created data
  4. Entity Creation – startup companies/creation of foundations, non-profits, community group
  5. Community Engagement – serving on university group that focuses on I&E efforts
- **The movement is gaining momentum.** To succeed, there's a need for both a lower-level swell of support as well as top-down leadership in the ideal scenario. Large- and small-scale surveys are helpful in this regard to collect supporting data. Need to have three important conversations: understanding each other's positions, then transition into more meaningful discussions, and finally ending with in-depth discoveries.

### ***NSF INTERN Program: The User's Perspective***

***Moderator: Gisela Lin, UC Irvine***

***Presenters: Kirt Fuller, Oregon State University • Lancy Lin, UC Irvine • David L Yang, DanaHER***

***Additional Resources: [NSF, CADMIM Fund Graduate Student Internships, PhD candidate gaining industry experience via NSF INTERN grant](#)***

In 2017, the NSF launched the [INTERN](#) program as a way to introduce graduate students to non-academic career experiences. To date, more than 800 students have participated. This session discussed the operational and strategic aspects of the program and feature perspectives from a diverse set of speakers who have first-hand knowledge of the inner working of the program.

#### ***Takeaways:***

- **There are mutual benefits from the NSF INTERN program.** Universities, industries, and government labs all reap benefits from the intern program, as well as international students. They are discovering that intern training is complimenting a student's knowledge, experience, and future decisions around a discipline area.

- **Benefits of participation are great.** This program provides students with real world experience prior to graduation and affords companies/government labs access to skilled interns paid by NSF.
- **Best practices from program veterans abound.** Practices in logistics and contracting were reviewed during the session. NSF has been able to build great partnerships with the universities. Students become familiar with how intellectual property is handled and secured in various environments.

### ***Long-Term Impact of COVID-19 on Corporate R&D Programs***

***Moderator: Seth Zonies, Johns Hopkins University***

***Presenter: Marina Bulova, Schlumberger***

***Additional Resources: [UIDP COVID-19 Report](#)***

COVID-19 has had a tremendous impact on companies, upending R&D programs for many UIDP member organizations. This session provided insights into how one company has been impacted and what is expected to occur going forward.

#### ***Takeaways:***

- **Schlumberger is a large, global company whose collaborations are extensive, with over 400 universities from multiple countries.** Before COVID, their R&D centers established relations with universities in their geographic region. COVID's impact limited their in-person contact, reduced access to students and forced them to look at universities through a different lens.
- **A range of factors changed interactions with collaborators.** Interactions are more purposeful; use of an Elsevier tool to find the proper calibrations to prescreen and evaluate usefulness to collaborate with a particular group, interview cycle is longer, worked with universities to change curriculum to tie into industry needs, reviewing opportunities to work with government, greater tech development needed.
- **Work will continue to include remote interactions, but a hybrid model will likely evolve.** Operations will vary based on the country; some are slower than others to respond to pandemic. Visit after the virtual pre-screen process to visit and assess lab capabilities and determine the energy behind the collaboration.

### ***Esports: What Will it Take to Build a Roadmap for U-I Collaboration?***

***Moderator: Anne O'Donnell, UC San Diego***

***Presenters: Kurt Melcher, Intersport • Mark Deppe, UC Irvine • Sierra Reid, Intel Corporation***

Collegiate esports is a growing, billion-dollar industry with enormous potential for university-industry partnership development. But there are more questions than answers around how best to navigate collaboration. Pockets of innovation are mostly student-led, without a collaboration framework to link hardware and peripheral companies to software and game developers, game publishers, streamers, and broadcasters. This panel examined the unique challenges for connecting this burgeoning and disparate industry with compelling research areas like human performance, defense and security, privacy, EDI

issues for players and audiences, technology advances and ethics. The panel refined the questions yet to be answered around how companies engage in sustainable partnerships, ideas for compliance and licensing, and how to balance the personal brands of athletes, game products and companies with the university's research and community identity.

**Takeaways:**

- **The numbers point to growth.** According to League of Legends, 47% of students that are involved with esports on college campuses do not participate in any other traditional campus activities such as athletics/Greek life etc.; 65% involved with esports are from a STEM major (a student population which universities are battling to secure for their campuses); 74% of these students have over a 3.0 GPA.
- **Getting started takes leadership support.** Initiating an esports program in a university setting takes support from campus leaders; the two biggest challenges—money and space—need to be overcome to move forward. Some programs link their program with campus research through symposiums/conferences/grants. Faculty support and corporate interest in the esports program are in constant state of flux.
- **Making inclusion a priority.** Work needs to be done to make esports a more welcoming, inclusive space; all-women leagues/programs need to be created and Title 9 needs to step in and level the playing field for men and women (scholarships, etc.). Universities are striving for inclusion excellence, but it is difficult to achieve in current environment. Universities need to think about how they can create opportunities for women and underrepresented minorities right now.

---

## DAY THREE

### WEDNESDAY – April 14, 2021

#### ***The Role of U-I Partnerships in Addressing Diversity and Inclusion Efforts***

**Moderator:** *Mary Juhas, The Ohio State University*

**Presenters:** *Isaura Gaeta, Intel Corporation • Levi Thompson, University of Delaware • Chakka Manning, Lockheed Martin Corporation*

For decades, corporations have invested substantially to build and sustain an inclusive workforce with representation from diverse groups. Strategic partnerships with universities and diversity-inspired professional societies help improve the pipeline and expanded networks. Employee Affinity Groups effectively engage mentors and build peer networks. Similarly, universities have created and supported student organizations that focus on underrepresented groups. Unfortunately, despite the hard work and coordinated efforts through internships and alumni/alumnae outreach, the proportion of underrepresented groups in the STEM workforce has not increased appreciably over the past 20+ years.

Moreover, underrepresentation in leadership reflects the inability to retain and develop talent. This panel featured three experienced engineering leaders from industry and academia who have achieved great distinction in their technical careers while maintaining active engagement as strong proponents of advancing diversity, equity and inclusion. This session explored the opportunities, challenges and thoughts on building a more diverse post-pandemic workforce.

**Takeaways:**

- **Accountability among constituencies is vital.** In order to expand and strengthen the pipeline of diverse groups pursuing STEM careers, *higher education must be accountable to corporations* that they will prioritize DEI efforts and prepare large cohorts of students from underrepresented groups to launch successful careers. Similarly, pre-K-12 education must be accountable to higher education in the same manner.
- **Internships are effective in preparing students for transition and introduction to the corporate culture.** Unconscious bias embedded in some corporate cultures can evolve into deal-breakers that drive women and URM's away from thriving careers. Internships are vital to establish bidirectional communication flow that helps companies examine their own cultures while providing students with an immersive experience before graduation. Internship experiences must be robust through the end of the pandemic era.
- **Embrace the virtual option as a tool to build and maintain momentum of the U-I partnership.** Now that the virtual platforms are well developed globally, it's a good time to maximize the benefits of a hybrid model going forward to underpin U-I partnerships.

### ***Talent Sourcing During a Pandemic: Lessons Learned***

**Moderator:** *Summer Salazar, University of Texas*

**Presenters:** *Lauren Casa, JPMorgan Chase • Jenna Suckow, Corteva • Shalonda Trent, Booz Allen Hamilton*

The past year has created unique challenges and opportunities when it comes to recruiting talent. In this session, industry representatives shared their perspectives and experiences and what they see as likely changes going forward.

**Takeaways:**

- **Talent sourcing has gone through a continual evolution during the pandemic.** There has been increased use of virtual hiring methods, with different platforms being used for the many facets of the sourcing and hiring process. This has increased the ability of recruiters to reach larger and more diverse campuses.
- **Opportunities abound.** With traditional recruitment, students typically do not have the opportunity to be exposed to senior leaders. However, in a virtual environment, these executives are more accessible and can contribute to the recruitment process more actively. A hybrid approach will most likely be desired going forward to capitalize on this opportunity.
- **Challenges of recruiting during a pandemic remain,** such as not able to effectively convey the culture of organization, no face-to-face opportunities like in-person recruitment fairs offer, and the move to virtual internships.

## ***Keynote: Innovating in an Era of Exponentially Advancing Technologies***

***Moderator: Brad Lukanic, CannonDesign***

***Presenter: Vivek Wadhwa, Distinguished Fellow, Harvard Law***

The momentum of tech innovation has vastly accelerated, enhancing every sector's capability to initiate new development efforts and produce even more products, services, and solutions to our pressing challenges. The R&D response to the COVID-19 pandemic illustrates the rising potential of exponentially advancing technologies, but it's just a precursor of what's to come. This session explored the types of changes on the horizon and how entire industries will be disrupted—while new ones are created.

### ***Takeaways:***

- **Convergence of basic advances is disrupting industries.** Business leaders need to imagine how multiple technologies coming together can produce exponential change in their industries. Life itself is on an exponential path. Innovation will come unexpectedly.
- **Universities, by and large, aren't taking advantage of innovation potential.** Cross-disciplinary work is the future, but it's not the norm in universities. PhD students should get more attention because they're the source for new ideas. Knowledge commercialization could be made easier with bolder licensing agreements. This will unleash huge financial potential and benefit the public good.
- **The United States is now a smaller player in global innovation.** There are brilliant people everywhere. It is possible to produce world-changing innovations at low cost in one's home lab. Other countries are taking advantage of America's knowledge-creation and openness.

## ***Technology Transfer and Overall U-I Partnerships***

***Moderator: Manjula Donepudi, Pfizer***

***Presenters: Alan Bentley, Vanderbilt University • Karin Immergluck, Stanford University • Sean Flanigan, KAUST • Mark Weber, McGill***

***Additional Resource: [UIDP Comparing Internal Structures Guide](#)***

In addition to licensing patents and know-how, university technology transfer offices have traditionally played an important role in overall university-industry collaborations. Recently, many universities have developed comprehensive corporate engagement strategies and created dedicated offices in the research or advancement areas. This session featured three leading university TTO directors who shared their perspectives.

### ***Takeaways:***

- **Industry collaboration must be grounded.** It's important to understand real-world problems to be able to apply the cutting-edge research.
- **Corporate engagement needs a place in the organizational chart.** It is helpful to have corporate engagement officers under one function/department with a formal structure.

- **Challenges remain.** Aligning interest of different departments, agreements are no longer boiler plate and require greater detail, there is a push on the industry side to do more with less, and a need to align researcher and industry partners' interests.

## ***Maximizing Value Outcomes from Clinical Trials: Patient Involvement***

***Moderator: Laura Erker, OHSU***

***Presenter: Jeff Southerton, Azenova, LLC***

Clinical trial designs frequently fail to accommodate the challenges that participants may experience because of their condition, leading to poor participant recruitment and retention. Additionally, trial recruitment is often unrepresentative of the real-world population, particularly with regard to minority groups. Some organizations in Europe have attempted to address the issues by providing training to enable patients to engage in clinical research more effectively (e.g., EUPATI). Others are creating opportunities for all stakeholders, including patients, to connect (e.g., the Patient Engagement Open Forum). To advance patient engagement and patient access further will require collaboration between all stakeholders in the medicine research, development and delivery ecosystem to rethink the way clinical trials are approached. UIDP is uniquely positioned to lead in this space given its focus on areas of need, open discussion, collaboration and getting to outcomes more quickly.

### ***Takeaways:***

- **Clinical trial design** is very challenging due to many externals that can affect the design. Participation is affected due to conditions, race, or just the lack of wide communication of the trial.
- **We're finding ways to move forward and learn:** Patient access to the trials is very important. There is evidence that hospitals are affected by COVID and it degrades their ability to gain participation. They are finding they have to utilize other means to recruit more diverse groups.
- **Companies need tools to handle clinical studies.** They should have some sort of cooperativeness. Communication is key to get these studies done effectively. They must have a good foundation. They struggle with how to communicate to patients when they don't understand the process. They are now helping to train the patients in the study so they can communicate information back to the study doctors.

## ***Indemnification, Warranties and Liabilities***

***Presenters: Elaine Brock, UIDP • Robin Beach, University of Illinois, Urbana-Champaign***

***Additional Resources: [UIDP Contract Accords](#)***

Universities and sponsors often hold opposing expectations regarding indemnification. This session explored strategies for bridging the gap. Target outcomes include understanding common law indemnification and the ways in which statutory law may alter rights and obligations, common issues that arise in boilerplate clauses, key issues from the university's perspective, and potential solutions to managing extraordinary risks.

### **Takeaways:**

- **There's a difference between duty to indemnify vs. duty to defend.** Duty to defend is the obligation to provide a defense to a covered claim. The duty to defend does not depend on the outcome of the claim. The duty to indemnify is triggered when the outcome of a covered claim is adverse. These separate and distinct obligations incur different expenses for the indemnitor and should be clearly addressed in the contract.
- **Negotiation Pain Points remain:** The university seeks to have the company (and affiliates if appropriate) indemnify the university for the company's use of results, IP, and deliverables. Universities push back on "warrants" because of implied indemnification. Companies want liability capped at the amount paid to the university for the project.
- **Understand explicable law.** There is a difference between to the extent prohibited by explicable law to the extent allowed by explicable law; most companies will change it to the extent not prohibited by explicable law, while most universities should state it in the affirmative – to the extent allowed by law.

## **UIDP Resource Center: Maximizing Your Membership**

**Presenters:** *Morgan Jones-King, UIDP • Kristina Thorsell, UIDP*

Since its founding, UIDP has worked with its member representatives to identify strategies for increasing the ROI from university-industry partnerships. UIDP products take many forms, and this session will provide an overview for new and veteran members to learn more about these [resources](#) and how best to access them.

### **Takeaways:**

- **UIDP resources are growing.** UIDP has numerous resources available for members to help them navigate developing partnerships and research. Recently UIDP has developed new information focused on workforce development and student engagement. This is a newer area for UIDP and is a very engaging resource for industry and universities.
- **Triple Helix resources support better partnerships.** Engagement is not about lobbying but about Triple Helix opportunities. This resource is in sync with the National Science Foundation regarding how to develop better government partnerships within research.
- **UID has new resource types:** Podcasts and One-Minute surveys are resources that further the outreach and expand UIDP's ability to assist members with all their needs within whatever environment they operate.

## **Students and the University-Industry Engagement Endeavor**

**Moderator:** *Melissa Erekson, Penn State University*

**Presenters:** *Karen Thole, Penn State University • Nathan Hartman, Purdue University • Jeff Gleeson, Lockheed Martin Corporation • Atul Kohli, Pratt & Whitney*

Companies partner with universities seeking both talent and research; combining the two can lead to a deeper engagement for the company and a differentiated student body with highly sought-after skills. Participants heard from two universities about successful research partnerships that included students.

**Takeaways:**

- **Pratt & Whitney and Penn State University partnered with the Department of Energy** to create a turbine lab with unique capabilities and features. Both parties agreed that student involvement was key for this project and incorporated high school/college/graduate students doing hands-on projects in the lab. This student-focused approach is different than other turbine labs across the country.
- **Collaboration between Purdue University and Lockheed Martin Corporation** started with an industry consortium project; they have been working closely together for about 5 years and are tier 1 members of MXD. Purdue has a Digital Enterprise Center that attracted Lockheed Martin because it was an interesting niche; the center was grooming the types of unique/talented employees that Lockheed Martin is seeking. Lockheed Martin became industry members of the Digital Enterprise Center and participates in an industry advisory council, sharing relevant research topics and meeting monthly with the students to learn about progress in the research areas.
- **There are many ways that companies can engage with universities.** The company has to select the right university and the timing and project type have to be in alignment with industry needs; there are also learning studios where students are engaged on problem sets that have been offered up by a company; the university can also set up work experience studios for upper-level students that run as a “mock company” with industry supplied problems.

***Unlocking Innovation Through Diversity and Collaboration***

**Moderator:** *Harley Johnson, University of Illinois Urbana-Champaign*

**Presenter:** *Nerissa Draeger, Lam Research*

**Additional Resources:** [Lam’s University Engagements: Innovation Through Collaboration, Building on the Momentum of Our Inclusion and Diversity Initiatives, Together, We Gave: COVID-19 Outreach, UIDP Guide, Industry Sponsored Capstone Projects, UIDP Guide, Comparing Internal Structures Guide](#)

Collaborations help Lam Research to accelerate innovation, increase our speed to solution for our customers, and realize our technology vision. Lam engages with a wide variety of global universities to fill research gaps, gain access to specialized facilities, and partner with top experts in the field. Increasing the diversity of these relationships fuels our technology and talent pipelines.

**Takeaways:**

- **Lam’s perspective on academic engagement is multi-faceted.** Use academic engagement to fuel technology and talent pipelines. Research collaborations helps to accelerate innovation, increase speed to solution, and realize technology vision. Use collaboration to fill research gaps, gain access to specialized facilities, and able to partner with topic groups in the field.
- **Lam’s culture is collaborative, not transactional, and focuses on relationship building and co-development across research and recruiting.** Tech transfer is not a simple handoff. Bottoms up culture; researchers often initiate new proposals.
- **Lam is intentional its approach to creating diversity among their partnerships.** They are the voice in the room stating the importance of diversity as studies have shown greater diversity leads to greater innovation and successful businesses. Their partnership with universities provides funding: support, fellowships, and activities to underrepresented groups, connectivity:

relational not transactional, and Opportunity: internships

## DAY FOUR

**THURSDAY – April 15, 2021**

### ***Partnering at Pace in a Global Health Emergency***

***Moderator: Edward Jones, Houston Methodist Research Institute***

***Presenters: Phil Clare, University of Oxford • Adam Stoten, Oxford University Innovation***

Oxford University quickly emerged as a frontrunner in the international race to develop effective countermeasures to halt the pandemic, with programmes including vaccines, diagnostics and remote healthcare monitoring. In this session, two members of the team that supported the establishment of the university's agreement with AstraZeneca and other pandemic-related innovation partnerships reflected on why Oxford was able to respond so rapidly and discuss the challenges—and benefits—of partnering at pace to build partnerships which put global equitable access at their heart.

#### ***Takeaways:***

- **University of Oxford was a frontrunner in the race to develop diagnostics and a vaccine for COVID through a mission critical collaboration with AstraZeneca.** They realized the severity of the situation early, identified multiple challenges, gathered to identify solutions, and developed guidelines for expedited access to COVID-19 related IP.
- **Research and diagnostic testing were developed with a sense of urgency and speed.** They ensured that vaccine is cheap and available globally, created as a social enterprise not a money maker, manufacturing process developed alongside research, and like-minded partnerships, sharing of resources and trust.
- **The global crisis gave us knowledge previously unknown.** Commonality of purpose, increased goodwill, clear sense of priorities, change of the risk equation.

### ***COVID-19, Graduate Students, and Industry Projects***

***Moderator: Rick Tankersley, University of North Carolina at Charlotte***

***Presenters: Barclay Satterfield, Eastman Chemical Company • Chris Feuerstein, L3Harris Technologies***

• ***Heather Nachtman, University of Arkansas***

Many industry-sponsored research projects provide critical support to graduate students who serve as research personnel on these awards. The pandemic dramatically affected how many of these projects, with some labs shut down or strict limitations placed on access. In fact, rarely invoked force majeure clauses were used by some schools. This session discussed the practical effect of the pandemic on how companies and universities worked to support these students during unprecedented times.

#### ***Takeaways:***

- **The COVID-19 shutdown had an immediate impact on graduate education and industry research projects.** Theoretical work was conducted at home, travel was curtailed, therefore no

face to face meetings, deadlines shifted, funding was postponed, and labs were closed or had reduced occupancy.

- **Financial impacts:** Provide institutional support or adjust grant as needed based on progress of degree completion, productivity lower while project portfolio continued to increase, Graduate applications decreased.
- **Emotional impacts:** Students feeling disconnected from universities, their partners, and research groups, they continued connection virtually with stakeholders and got a sense of “we are all in this together,” learned the importance of continuity, and Grad students were considered essential workers which left many feeling uncomfortable.

## ***Keynote - From Science to Innovation: The Mars Way***

***Moderator: Justin Siegel, UC Davis***

***Presenter: Abigail Stevenson, Mars Advanced Research Institute***

Major companies cannot thrive or even survive today without accessing the best scientists and science, while creating an innovation process to turn that science into products, processes, and services.

The [Mars Advanced Research Institute](#) (MARI) connects Mars with emerging science and technologies from universities and national labs across the world to spark innovations that help advance the business and positively impact society. MARI has been strategically set up within Mars as a team of scientific experts who are constantly scanning beyond the horizon for new and exciting technological and scientific solutions. They work across diverse fields such as sustainability, health and wellness, food safety and computational science to bring new transformational opportunities to life.

In this session, Abigail Stevenson offered concrete examples of how MARI enables Mars to access the best science, developing solutions that help transform the business, the industry and society for the better. MARI helps the corporation convert that science into innovations, many of which provide benefits beyond the bottom line for society as a whole.

### ***Takeaways:***

- **Mars is a privately held global confection and food company that takes a long-term view.** First Mars institute was located in UK and focused on pet care. In 2015 global food safety center started in Beijing. Mars science is segmented. Partnerships are key to success.
- **Mars and UC Davis have a 50+ year relationship that has deeply influenced academic careers through scientifically interesting challenges.** Both organizations are big and complex. The Mars Advanced Research Institute focuses on strategic long-term relationships to address biggest challenges. Invest in areas that are core to the future of the business. Vibrancy of colors is an example focus, as it is critical to brand.
- **Real solutions to industrial challenges come from deep understanding of actual challenges.** Mars will always enable publication for progression of science and to help human health globally. UC Davis students have benefited from placements at the Beijing global food safety institute.
- **Sustainability and innovation are coming together.** Mars is working across its supply chains

across products and services, from field to fork. The packaging footprint is being addressed to transform the approach. There is a need to create truly new solutions with recycling and thinner packaging. Mars works within supply chains for its principal crops.

## ***Responding to the COVID Crisis***

***Moderator: Debra Summers, UC Berkeley***

***Presenter: Jay Walsh, University of Illinois***

Rapid Testing was a cornerstone of how many organizations responded to the COVID crisis. This panel will highlight two approaches that were taken to roll out rapid testing protocols. Jay Walsh, University of Illinois, discussed the rigorous testing procedures that were used to both understand the spread of the virus and to contain it. Then, Sonia Sennik, University of Toronto, discussed the unique partnership that the University of Toronto formed with major airlines to conduct rapid screening and allow the economy to reopen.

### ***Takeaways:***

- **Fast/frequent testing can help mitigate the spread of COVID-19 in a large community.** SHIELD is a comprehensive testing plan to achieve on campus requirements. Good planning does make a difference.
- **If the University of Illinois system did nothing, we would have had over 30,000 infections within the first semester.** We found that our models would produce results to mitigate infections. Frequent testing and masking have been the best results. However, it took the unified effort from the students, university, and the larger community to allow this plan to mitigate infection.
- **Use of apps was a key strategy.** The app notified students if they tested positive or negative. It was also utilized to help control access to university assets. Furthermore, the community learned that is app was being used and then took up the use to control access to civil and social establishments. This showed positive results.

## ***Data Use Agreements***

***Presenters: Elaine Brock, UIDP • Paul Lowe, Kansas State University***

***Additional Resource: UIDP [Contract Accord: Data](#)***

Data use agreements have become critical in facilitating university-industry collaborations as data analytics, data science, and the use and manipulation of data sets is vital to university-research. Join us for a discussion of the issues associated with negotiating data use terms in research related agreements, particularly, data use agreements. This advanced session explored the issues, challenges, and possible approaches to these terms, including applicable laws and regulations.

### ***Takeaways:***

- **[UIDP Contract Accord 14](#)** provides the key principles in the development of Data Use Agreements from both industry and university perspectives. CA 14 is the first step to review a framework and the visualization of the agreement.
- **Data is a big deal.** Data issues are multiplying and changing. Data is often complicated by privacy considerations, social media, convenience and reliance on data solutions and the ability to interconnect data from various sources.
- **When using human data, consent and consistency with terms of the agreement is critical.** De-identification plus is not a solution to all data sets. GDPR Anonymization is a higher standard than common rule as data cannot be identified.

### ***Beyond Bargaining: Negotiating Strategically***

**Moderator:** *Laura Demarse, North Carolina State University*

**Presenters:** *Jonathan Hughes, Vantage Partners • Ben Siddall, Vantage Partners*

**Additional Resource:** [What's Your Negotiation Strategy?](#)

University-industry collaborations are complex. Success requires creative deal-making, as well as ongoing negotiations as partners navigate challenges and changes through the lifecycle of collaboration. During this interactive session, the speakers will expand on the ideas outlined in last year's Harvard Business Review article, "What's Your Negotiation Strategy" using case studies and small group discussions. Topics included:

- Looking beyond immediate counterparts to assess if and how to involve other constituencies.
- Rethinking the scope and timing of negotiations.
- Analyzing connections across multiple negotiations.
- Creatively shaping the process and framing of negotiations.
- Avoiding binary thinking that can limit creativity and lock counterparts into zero-sum postures.

#### ***Takeaways:***

- **Internal/external dynamics can cause roadblocks.** There are so many internal and external dynamics between industry and universities, it can cause a huge issue with trying to develop effective negotiations. Mitigation and value added objectives is the real focus.
- **Challenge remain.** Time is a huge challenge. Culture and the ability to react quickly definitely affect the overall negotiation. Industry is generally faster at responding to negotiations.
- **Bargaining should be cooperative.** Plan to be cooperative, not rigid. Value is the goal, not a single-sided win.

### ***Introducing the NSF Engineering Research Visioning Alliance***

**Moderator:** *Dorota Grejner-Brzezinska, The Ohio State University*

**Presenters:** *Charles Johnson-Bey, Booz Allen Hamilton • Edl Schamiloglu, University of New Mexico • Barry Johnson, University of Virginia*

**Additional Resource:** [Video: What is ERVA?](#)

America's economic competitiveness is tied directly to the pace of scientific and technological discovery, which requires sustained, long-term support as well as agility. To help the United States stay at the forefront of research and innovation - and maintain its leadership in the global economy - the [NSF Directorate for Engineering](#) launched the [Engineering Research Visioning Alliance](#) (ERVA) - the first engineering research visioning organization of its kind. The [Big Ten Academic Alliance](#), the [EPSCoR/IDeA Foundation](#), and [UIDP](#) were selected to create and manage this alliance. During this session, the PI and Co-PIs shared how you and your organization can contribute to this important endeavor.

**Takeaways:**

- **Success is measured through many factors.** Success of ERVA will result in producing innovative programs that NSF generates to stimulate research activities in emerging areas; cultivating a diverse and inclusive group of students and work force participating in the research, developing their talent; communicating on behalf of the engineering community with a single voice of emerging research activities.
- **ERVA will help the United States stay at the forefront of innovation.** This initiative will identify and develop new/high impact engineering research directions. It will also help the engineering community to solve challenges and improve daily life. The visioning efforts within this alliance will play a critical role in identifying opportunities that can be translated to provide a real-world, positive impact on society.
- **There is room for everyone in the ERVA community.** This is not just an academic exercise; from the industry side they can join the table to discuss the application of the science. Visit the ERVA website and sign up as a champion or inquire about joining as an affiliate partner.
  - **Website:** <https://www.ERVAccommunity.org>
  - **Twitter:** @ERVAccommunity
  - **Hashtag:** #ERVAccommunity
  - **Email:** [info@ervacommunity.org](mailto:info@ervacommunity.org)

**Tax-Exempt Bonds & Research Contracts**

**Moderator:** *Kevin Byrne, TUFF*

**Presenters:** *Terri Finister, Murray Barnes Finister • Jilda Garton, UIDP • Matt Owens, AAU*

Bond financing: What to know and what is new. Explore when, why, and how tax-exempt bond financing of research facilities can have an impact on the terms and conditions of research agreements. This session discussed the safe harbors that allow academic and industry research engagement to proceed and look at emerging topics in bond financing.

**Takeaways:**

- **Tax exempt bonds are good for qualified public purpose.** The benefit is it can be used for exempt activities or by state/local government.
- **There is very limited qualified private business use.** A bond can be taxable if not used correctly. It is very important that it is analyzed correctly.

- Certain research facilities may need to be moved to non-bond-financed facilities to stay compliant.

## ***Bayer Case Study: Leveraging an Open Innovation Platform to Streamline Collaboration***

**Moderator:** *Kevin Leland, Halo*

**Presenter:** *Phil Taylor, Bayer*

**Additional Resource:** *UIDP Guide, [Comparing Internal Structures](#)*

Enabling more academic-industry collaboration is critical to realizing the full potential of open innovation, but obstacles remain. In this session, Halo CEO Kevin Leland introduced a case study presented by Bayer Open Innovation Lead Phil Taylor that demonstrates how the innovation platform supported Bayer's Grants4Ag program by streamlining connections between scientists, university administrators, and industry.

### ***Takeaways:***

- **Open innovation drives research and development strategy.** This case study demonstrates how the innovation platform, Halo, supported Bayer's Grants4Ag program by streamlining connections between scientists, university administrators, and industry.
- **There are platforms like Halo that help publicize, simplify, and make the process more efficient.** Using a platform can provide greater opportunities with a defined process and scientific value.
- **Halo is used by Bayer** and allows for users to submit proposals, view proposals, and facilitate collaboration.

## ***Public-Private Partnerships to Advance the Nation's Innovation Ecosystem***

**Moderator:** *Theresa Mayer, Purdue University*

**Presenter:** *Erwin Gianchandani, NSF-CISE*

**Additional Resources:** [NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon, Boeing, National Science Foundation announce partnership for workforce development and diversity in STEM](#), [NSF/VMware Partnership on the Next Generation of Sustainable Digital Infrastructure \(NGSDI\) \(nsf20594\)](#), [NSF/Intel Partnership on Machine Learning for Wireless Networking Systems](#)

Since its founding in 1950, the National Science Foundation (NSF) has sought “to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.” NSF-funded research has advanced foundational, exploratory research, like the detection of gravitational waves validating Einstein’s general theory of relativity, as well as use-inspired, translational research, like the page-rank algorithm that became the basis for Google. Many of these advances have involved deep and persistent collaborations spanning government, academia, and industry. This session described how NSF is prioritizing strategic partnerships with other agencies, the private sector, and international funders to enhance the synergies between exploratory and translational research and to meet today’s societal grand challenges—unleashing new industries, improving the services that

---

communities deliver to their residents, and advancing higher education to meet the needs of tomorrow's workforce.

**Takeaways:**

- **Direct partnerships occur when entering into a partnership with other agencies and the private sector.** These partnerships can help to shape the direction of the research based on shared expertise. A partnership accelerates research to become more translational.
  - **Catalyzed partnerships are when NSF supports researchers/students through other agencies but is not in a direct partnership with the agency.**
  - **It's important to provide opportunities to students earlier in their education.** If given the opportunity to gain practical experience, it can help them to become savvy leaders in their future careers.
- 

## DAY FIVE

FRIDAY – April 16, 2021

### ***Invention Disclosure: A New Elsevier Journal for the Technology Transfer Community***

**Moderator:** *Vincie Albritton, Clemson University*

**Presenters:** *Max Dumoulin, Elsevier • Caroline Moors, Elsevier*

**Additional Resources:** [Elsevier – At a Glance](#), [Invention Disclosure](#)

Elsevier is launching a new [Open Access journal, "Invention Disclosure,"](#) which provides an outlet to easily share and advertise academic inventions. It allows tech transfer offices to prospect for partners, researchers to publish and track citations, and university research offices to understand how translational research finds its way into society, bridging the gap between the scientific discovery process and the commercialization of research.

During this session, publishers Caroline Moors and Max Dumoulin explained the concept and seek attendee feedback about how this journal can provide maximum value to the user community. It was also shared how you can participate and benefit from this journal.

**Takeaways:**

- **There are many audiences targeted.** The journal is free and it is hoped that the community will share and collaborate. Elsevier wants to gain the attention of a global community.
- **This is a non-traditional journal based solely on inventions.** It is not a research journal, but it can be coupled with other research or journals for enhancement.

- **The journal will showcase many inventions.** It will be seen globally. Researchers will gain the benefits of the articles on the inventions. Universities will see the impact of the research they are conducting.

## ***Anchoring an Ecosystem: The Private/Public Collaborations Redefining Innovation in San Antonio***

***Moderator: Taylor Eighmy, University of Texas, San Antonio***

***Presenters: Shawn Farrell, University of Texas, San Antonio • Bobby Blount, MITRE • Jenna Saucedo-Herrera, San Antonio Economic Development Foundation • Manny Pelaez, San Antonio City Council, District 8***

Join UT San Antonio President Taylor Eighmy—the 2019 Dealmaker of the Year, San Antonio Business Journal—as he moderates a panel of public and private collaborators who worked with the University of Texas at San Antonio (UTSA) to launch a School of Data Science (SDS) and the [National Security Collaboration Center](#) (NSCC) and house them in a new, state-of-the-art, six-story building in downtown San Antonio. As the first phase of UTSA’s Downtown Campus expansion, the SDS/NSCC will anchor UTSA to San Antonio’s prospering high-tech corridor and serve as a catalyst for economic, workforce, and community investment. Eighmy and his guests discussed best practices and key learnings for how universities, local government, and industry can work together to fundamentally reshape a community’s workforce and its economy.

### ***Takeaways:***

- **UTSA San Antonio has evolved into an ecosystem.** UTSA is not a small university anymore and is a part of the cutting-edge innovation within the city. UTSA is actively engaged with the city leadership and exceeds all expectations in help to develop the city future. UTSA work conducts diverse innovation that supports city planners, industry and government.
- **The larger partnership team is perceived as family.** They have figured out how to partner and speak with one voice in support of all efforts. It is really all about unified alignment.
- **The future relies on people and planning.** The idea of an ecosystem is that it has a value-based system and is not just transactional. Bold changes are preferred, and people are the core investment to the plan and the future of development.

## ***How U-I Partnerships Advance Social Science Research and Address Societal Needs***

***Moderator: Ted Knight, University of Maryland***

***Presenters: Chris Taylor, Cardiff University • Leanne Trujillo, Twitter***

Social science research and its outcomes can have an impact in many disciplines and market sectors. This session highlighted a few case studies and raise current issues most impacted by university-industry collaborations.

**Takeaways:**

- The [Twitter API](#) is a programmatic way to interact with Twitter. It provides developers (and the end-users of their solutions) with the ability to learn from and engage with the conversation on Twitter. The Academic Research product track provides access to the full archive of public Twitter data for free, higher level of initial access, more precise filtering capabilities, and new technical guides.
- Researchers can apply for [Twitter API Academic Research](#) access. Researchers affiliated with an academic institution or university as a master's student, doctoral candidate, post-doc, faculty, or research-focused employee. Those with a clearly defined research objective, specific plans for how they intend to use, analyze, and share Twitter data from their research. Those using this product track for non-commercial purposes.
- [Cardiff University sbarc/spark](#) encompasses 2,800m<sup>2</sup> of lettable units, including 500m<sup>2</sup> of lettable wet labs and 300m<sup>2</sup> of co-working area designed to increase the successful translation of research and innovation processes into new and improved commercial products, processes and services. Social Science Research Park includes co-location of all the university's major social science research centers and institutes alongside research collaborators from the private, public and third sectors working together with the aim of addressing major societal challenges.

**Keynote: Reflections on 30 Years at the Nexus of R&D Collaboration**

**Moderator:** *Cristine Cooper, Facebook*

**Presenter:** *Holden Thorp, American Association for the Advancement of Science*

**Additional Resource:** [An Opportunity to Improve Innovation](#)

Holden Thorp has been a co-founder of two biotech companies (one went bankrupt and the other created a drug for which an NDA is about to be submitted), is a venture partner, and has overseen tech transfer operations at two research universities. From this unique vantage point, he shared his views on current challenges to collaboration and how to increase the rate and frequency of translating research discoveries into the products and services that benefit society.

**Takeaways:**

- **Open Access is changing publication business models.** Our approach is to have both open and traditional subscription model. The problem with open access is charges to authors and costs to America as producer of scholarship.
- **The prospect of more funding for research is exciting.** The focus should not be too heavily focused on use-inspired research. Thorp would rather see the United States invest in fundamental research as it is always a good investment. There's not a need to have a special agency to oversee all of science, and the United States should let outstanding individuals run its agencies.
- **Tech transfer needs realistic expectations.** Major wins are rare, and no one should count on huge income. There needs to be realistic view of the wording for agreements, as the legal terms are important. It was beneficial not to recoup patent costs incurred so far, going backward. We need to avoid adversarial negotiations.
- **There is a need to develop entrepreneurial management talent.** Of the top 30 universities in R&D funding, about 10 are in places that have seen substantial economic activity. Another 20 are not in such communities. We need to develop culture, processes and people to create economically

successful universities in those communities. Just creating an innovation park is insufficient, as it takes time to create the culture within the university, for which recruiting existing companies can help.

### ***Partnering with Johnson & Johnson***

***Moderator: Neil Weissman, Georgetown University***

***Presenter: Sean Evans, Johnson & Johnson***

The session provided an overview of how Johnson & Johnson engages universities and academic spinouts.

#### ***Takeaways:***

- **J&J Innovation has created a business model that brings the two sides of the partnership equation together** to support the innovation journey at every stage from research to product; they can connect innovators to resources and expertise to meet their needs. There are 13 life science incubators throughout the world that provide physical incubation space and resources such as service providers/introduction to investment groups. Innovation centers are anchored throughout the globe to help with sourcing innovation within their immediate ecosystems and serving as a transactions group. JJDC is the strategic venture capital arm of the organization and the final component is the Business Development team which serve as the late-stage partners.
- **J&J Innovation recognizes the importance of collaboration.** It mobilizes numerous opportunities for crowd sourcing new ideas by highlighting specific needs, activating ideation, and encouraging entrepreneurs to pursue solutions for these needs, they are contributing to a pipeline of potential solutions for tomorrow.
- **Collaborate with J&J.** Important links for additional information:
  - Email: [ijninnovation@its.jnj.com](mailto:ijninnovation@its.jnj.com)
  - Twitter: @JNJinnovation
  - Website: [www.jnjinnovation.com](http://www.jnjinnovation.com)
  - Technology Grants: <https://ilabs.jnjinnovation.com/quickfire-challenges>
    - Submit your technology (companies): <https://jji.jnjinnovation.com/jji>
    - Student opportunities: <https://www.careers.jnj.com/students>
    - J&J Covid Resource: <https://www.jnj.com/covid-19>

### ***Renewing American Innovation***

***Moderator: Dawn Tilbury, NSF***

***Presenters: Walter Copan, Renewing American Innovation Project • Andrei Iancu, Renewing American Innovation Project***

***Additional Resource: [CSIS Launches Renewing American Innovation Project](#)***

A major new project has been launched at the [Center for Strategic and International Studies](#) called “Renewing American Innovation.” The intent of this effort is to illuminate the key policy and legislative issues essential to advancing U.S. innovation, intellectual property and technology transfer, increasing

---

diversity and inclusion in invention and entrepreneurship, strengthening standards leadership, and global competitiveness.

The project co-founders, Walter Copan, former director of the National Institute of Standards and Technology, and Andrei Iancu, the former director of the U.S. Patent and Trademark Office, provided insights into the project and its workstreams and how interested parties may engage.

**Takeaways:**

- **The United States is facing unprecedented competition.** It is no longer the world's undisputed innovation leader, although the nation is very strong. Over the past few decades, the U.S. proportion of gross national product has not kept up and so there are new opportunities for increasing investments in science and technology. The United States is #11 globally according to a recent Bloomberg study, with China gaining at #16. The R&D intensity in key technology sectors currently is not keeping pace with our economic growth and opportunity.
- **A future-focus is required.** There are some opportunities within the United States to experiment with some new approaches that will support the buildout of innovation ecosystems. These are important conversations to have; to be enlightened by what the nation has learned, to be true to Constitutional principles, to understand the importance of broader participation in the innovation ecosystems of the future.
- **Success will inspire great things.** A successful implementation of policy across the nation will inspire innovation, effective investment, the buildout of the American workforce, and a close collaboration with policy makers to ensure that the right decisions will be made for the future. Public awareness needs to be raised about the importance of innovation to the American way of life and to the importance of bringing innovation and intellectual property to as many Americans as possible. Success means they are delivering this message in a consistent manner and that they keep engaging in the community in collaborative efforts to improve America's innovation ecosystem.

**UIDP thanks Elsevier & LAM Research for their financial support of this event**



The UIDP Virtual 2021 conference report is not intended to be a detailed record of the entire proceedings. Contact UIDP at [info@uidp.net](mailto:info@uidp.net) if you have any questions or comments on this report.

**About UIDP**

UIDP is a solutions-oriented forum where academic and industry representatives find better ways to work together. Our membership, comprising top-tier innovation companies and world-class research universities, 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. Learn more at [uidp.org](http://uidp.org).

**JOIN US**



**September 13-17, 2021**

UIDP materials, which include publications, webinars, videos, and presentations, reflect an amalgamation of the experiences and knowledge of those who participate in UIDP activities. The views and opinions expressed in UIDP materials do not necessarily reflect the official policy or position of any individual organization. At no time should any UIDP materials be used as a replacement for an individual organization's policy, procedures, or legal counsel. UIDP is not a lobbying organization, and UIDP materials are not intended to influence government decisions.

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of UIDP. Additional written permission may be granted to members, non-members, and/or participants in certain UIDP events. Additional permissions can be found in the UIDP materials to which they pertain.

For permission requests, write to UIDP at 1705 Richland Street, Suite G, Columbia, SC 29201.  
Copyright © 2021 by University Industry Demonstration Partnership (UIDP)