CORNELL ENGINEERING COLLEGE COUNCIL INDUSTRY ENGAGEMENT TASK FORCE

OCTOBER 25, 2019

INDUSTRY ALLIANCE TASK FORCE

PURPOSE: Provide input to Dean Collins and the Cornell College of Engineering on ways to increase research funding from Corporations and the Private sector

Three Sub teams:

Cornell Existing Practices: Elissa Sterry, Alec Gallimore, Dmitri Shklovsky, Molly Tschang

Industry Perspective: Lisa Walker, John Balen, Deb Kemper, James Hale, Avi Mehrotra, Sam Ramos

Peer University Practices: Bill LaFontaine, Tony Satterthwaite, Howard Morgan, David Perez, Ken Goldman

Data Collected via phone interviews and visits

Initial findings and recommendations complete

Conference call with Dean Collins for more in-depth discussion

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FINDINGS- FROM FACULTY

○ The faculty embraces Cornell's fundamental research identity but desires more corporate engagement

○ Improving culture for corporate engagement

   ❑ Gone from "hostile" to "friendly clueless"

○ Corporate engagement remains a major challenge

   ❑ Issues with IP, support for faculty-industry interactions

   ❑ Lack of visibility, incentives, messaging from the top

○ Ithaca seen as a barrier to some- Cornell Tech underutilized for the Ithaca campus

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RECOMMENDATIONS- FROM FACULTY

○ Creation of a centralized department/center across Cornell Engineering with the sole purpose of engaging with industry
  - ❑ Collaboration and exchange of ideas among faculty on their individual work with industry
  - ❑ One stop shop for all incoming and outgoing communications with industry
  - ❑ Educate industrial partners on CU capabilities
  - ❑ "CRM" system to track relationships with companies that creates sustainability
  - ❑ Being proactive in identifying industry trends, matching them up with CU capabilities and proactively reaching out and seeking projects
  - ❑ Cornell Tech should be part of the process due to its location

○ Needs to be a mechanism in place to be able to incentivize and evaluate faculty on a regular basis on their collaboration with industry
  - ❑ Encourage each Department to establish a goal for industrial relevance

○ Keep encouraging the IP department to be as flexible as possible

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STRENGTHS- FROM INDUSTRY

○ Engineering departments are held in high esteem and students are highly regarded
  ❑ Students are energetic, smart & hard working; great hires

○ Viewed as a top engineering program: "...best in the Ivies"

○ Recruiting at Cornell a priority – the students perform well at their companies
  ❑ The opportunity to strengthen a company's presence through supporting R&D is viewed as an asset to assist with recruiting

○ Faculty, PhD & MENG sponsored projects are successfully providing benefits and augmenting corporate R&D efforts, including new products
  ❑ Once engaged, everyone provides high value

○ It has been getting easier to work through IP issues with Cornell as compared to the past
  ❑ Pleased to see renewed focus on IP
  ❑ IP not always a stumbling block but can be too time consuming while accommodating each partner's legal process

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AREAS FOR IMPROVEMENT- FROM INDUSTRY

- ○ MIT, Berkeley, Penn State and Purdue are generally viewed as embracing more corporate friendly practices

- ○ MENG students may need more faculty assistance and guidance so they are not "Lone Rangers" with corporate relationships

- ○ Difficult to easily navigate areas of Cornell's expertise for potential opportunities and synergies
  - ❑ Unless you are deeply familiar with Cornell, it is unclear where the areas of expertise and research initiatives reside
  - ❑ Companies navigate the internet to find Cornell synergies/opportunities which can be time consuming and ineffective
  - ❑ Corporate technology fair and symposium invitations have been ignored by Cornell while other universities send multiple representatives

- ○ No single relationship contact between Cornell and Companies to "open doors", learn about each other or invest for the long term
  - ❑ PR and marketing can be stronger and far more visible
  - ❑ Help to provide a 360° view of Cornell by embracing all corporate touch points (research, administration, faculty, students & alumni)

- ○ Professors are not naturally outward focused especially with corporate relationships
  - ❑ Proactively embracing potential corporate networking opportunities would be very helpful
  - ❑ Adopting a more business professional versus academic mindset would be very helpful when working with corporate partners

- ○ Avoid being mired on the "wrongs & failures of the past" and embrace the potential of future opportunities

- ○ Location can be a challenge – it is harder to conduct joint reviews, build relationships in Ithaca than other urban campuses so leverage Cornell Tech whenever possible

- ○ Cornell is "hunting rabbits, not elephants," e.g. too many smaller, one off projects, versus multi-year, $100,000+ relationships

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RECOMMENDATIONS- FROM INDUSTRY

PROCESSES
- Learn from and implement the benchmarked corporate research best practices as compare against our own practices
- Update strategic plan placing a higher priority for corporate partnering

RESEARCH
- Adopt a business development & application engineering mindset toward business partner activities to make interactions more effective and not over burden both faculty and partners
- Re-evaluate the culture surrounding corporate research partner opportunities vs the government research mindset

AWARENESS & ACCESSIBILITY
- Adequately staff and resource corporate relationship office while encouraging a proactive, business savvy culture
  - Consider opening a business reception center to cornerstone activities and interactions
- Document, organize and market research areas of expertise for more efficient partner discovery and navigation
  - Significantly increase marketing and communications
- Identify corporate partners that are ideally suited for current research activities
  - Proactively target these companies with technical capability
  - Understand geographic challenge and proactively target companies is similar situation or with ease to Cornell
  - Invest in the relationship (versus the project)

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FINDINGS- BENCHMARKING PEER INSTITUTIONS (Influenced by Georgia Tech, Michigan, MIT, Notre Dame, Purdue)

- Long standing organizations managing day to day corporate engagement (project selection, faculty engagement) are essential for long term success.

- Streamlined frameworks (contracts/programs) yield quick turnarounds & corporate satisfaction

- Industrial spend at Engineering Colleges range from tens of millions to hundreds of million / annum.

- Small number of Industry Partners drive large fraction of spending. Industry partners are looking for different things – segmenting and targeting is necessary.

- Successful institutions have facilities and time (meeting, demo, teaching space) for University – Industry interactions.

- Programs for educating / encouraging faculty to engage industry starts with early career engagements and continues over time.

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RECOMMENDATIONS- BENCHMARKING PEER INSTITUTIONS

- Build out Office for Industrial Relations
  – Focus on Faculty participation & opportunity management

- University Wide – Industry Engagement Center
  – Essential for long term interactions & cross University relationships.

- Set income objective of Michigan-like industrial income streams
  – Several years to steady-state performance.

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