University Industry
Demonstration Partnership

Why University-Industry Engagement Matters

And what universities should do to make it better

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ASEE Meeting, March 11, 2015

What we will discuss

- What's new at the U-I interface
- Why work with Industry
- The importance of accurately defining the project space

- Intellectual property
- COI - principled partnerships
- Co-location
- COI
- Contract continuum

- IP matters
- ID of strategic partners
- Managing expectations

- Is it true?

What's happening at the U-I interface?

Changing T&P policies *Texas A&M*

Crowdfunding *GaTech – Techstarter*

Easier access/Concierge model
MN Front Door

Express Licenses *Chapel Hill*

Go in Peace Licenses
Carnegie Mellon

Monetize Foreground IP *Iowa State*

Masters Student Contract Program
RIT

Patent Auctions *Penn State*

Student Consulting *Illinois*

Rationale for working with industry

- Faculty run a small business ($250k to >$1M in annual burn)
- Industry funding (even for mundane projects) may be critical for running the business
- Great opportunities for your students
- Increasingly important to government funders (i.e., ERC program)
- Economic Development Mission of many schools

The importance of accurately defining the project space

- Industry works with university researchers in a myriad of ways
  - Some financial
  - Others not
- Industry will engage researchers via:
  - RFPs (Samsung GRO)
  - Unsolicited requests
  - Institution-Institution engagement
  - Research or service
- Industry doesn't seek "best efforts" rather clearly defined deliverables to be met
- Align SOW with budget

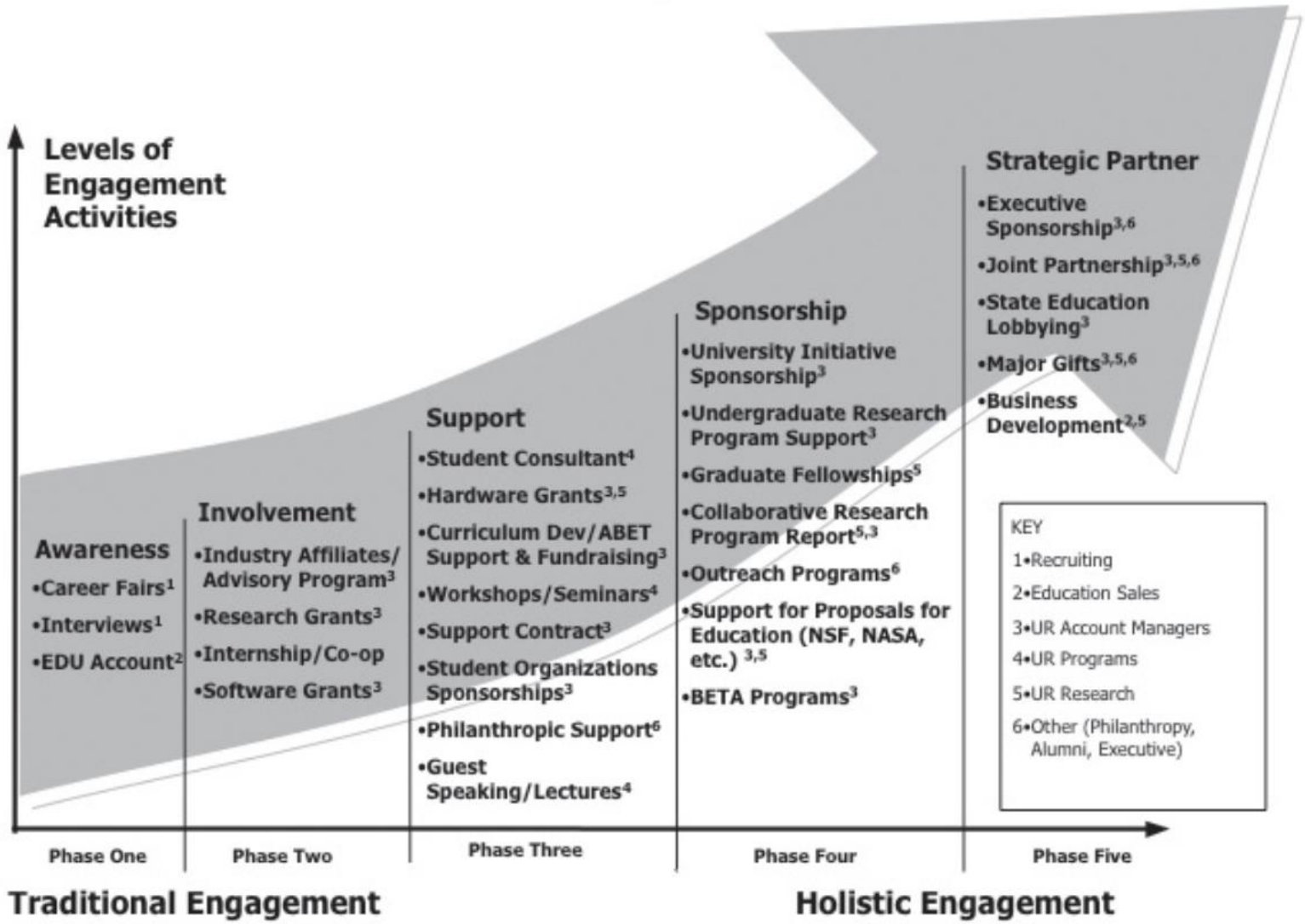
The importance of accurately defining the project space…

CONTRACT ACCORD 1

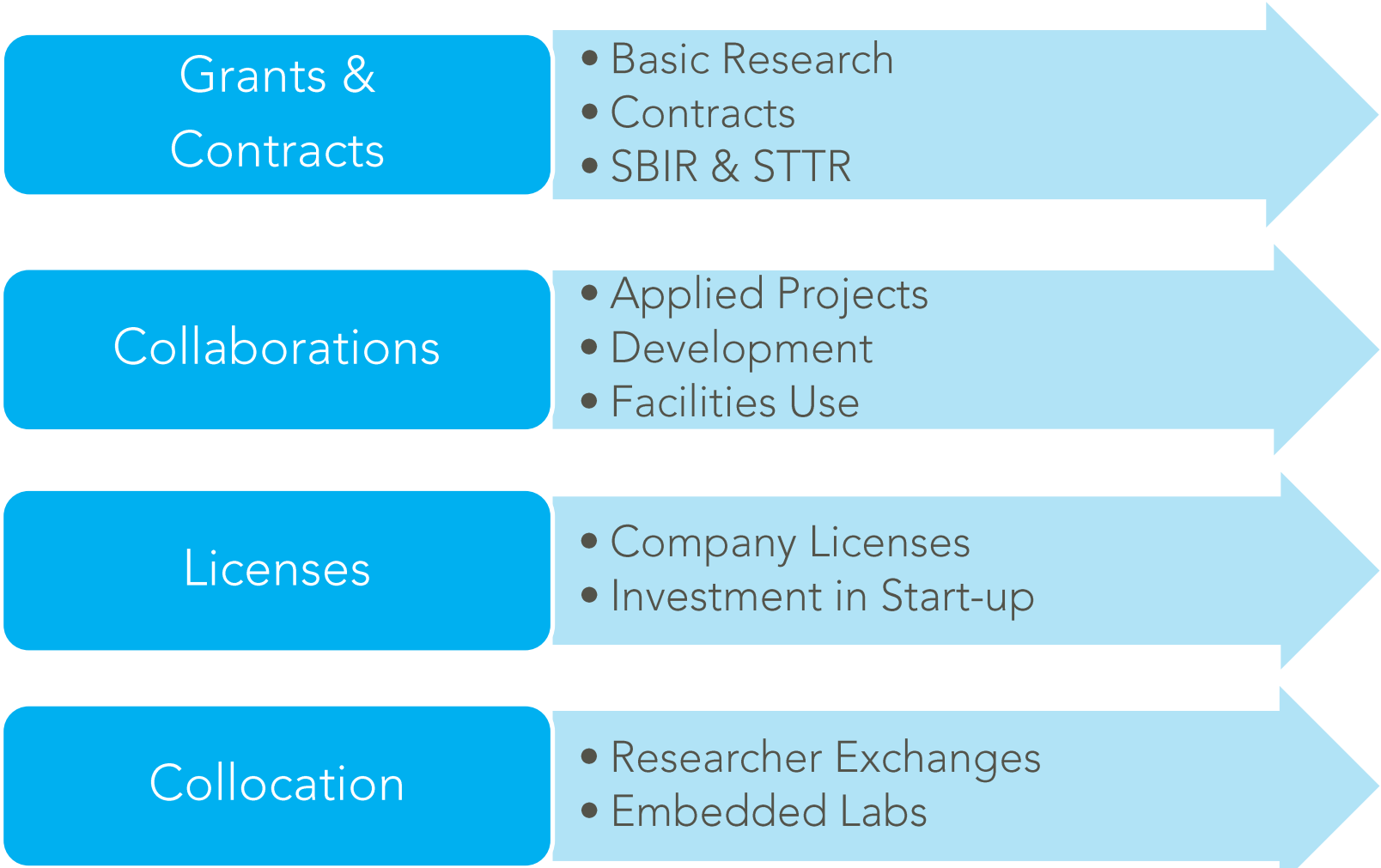
STATEMENT OF WORK defines the **WHO, WHAT, WHEN, WHERE, WHY and HOW** of the project effort, governing and providing direction for the conduct of research

Know the difference between SOWs for industry vs gov't proposals

REMEMBER:
UNDER PROMISE & OVER DELIVER



Why does it matter? It's all about relationships!

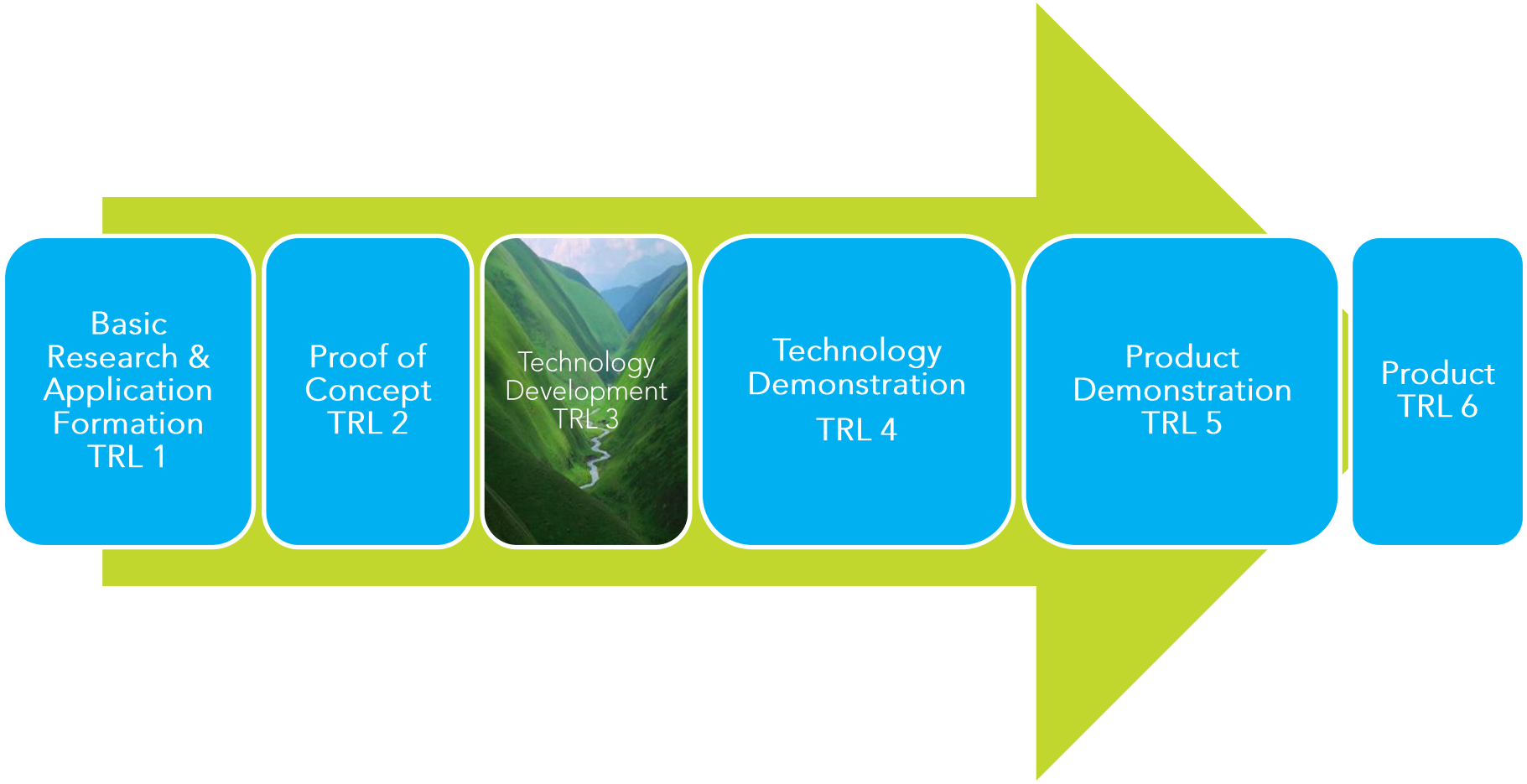


Focus on sponsored research

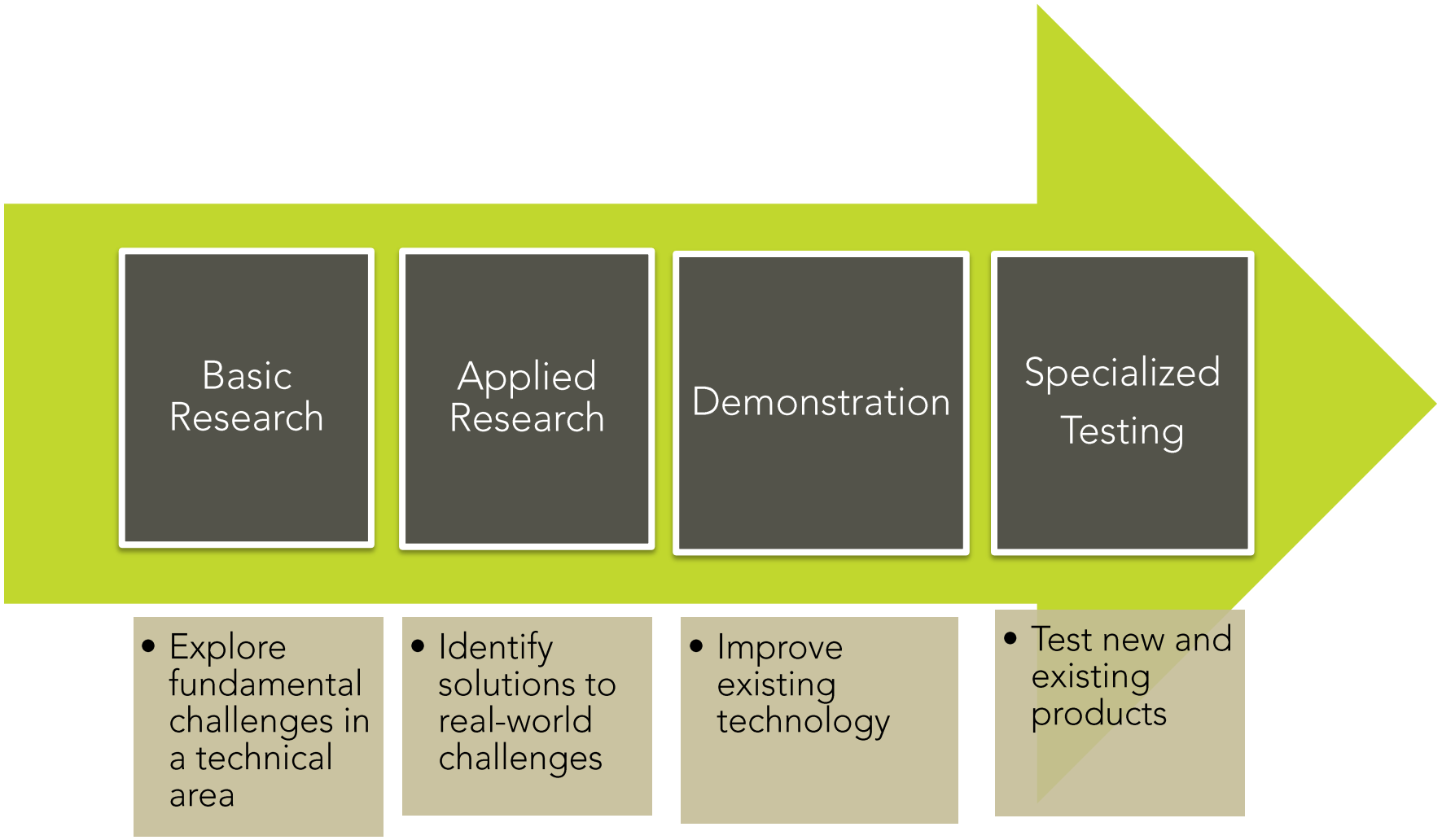
The agreements that support engagement between a university and a company vary across the technology development continuum.

Intellectual property terms may reflect the ongoing rights of the parties to background technology, licensed technology, and new technologies that improve existing technologies.

The Technology Development Continuum



Georgia Tech's Contracting Continuum



Georgia Tech's Contracting Continuum

GEORGIA TECH INDUSTRY CONTRACT CONTINUUM

When Georgia Tech collaborates with in via a **Basic Researc** agreement, the indu partner has the opp to license the result These early collabo are often the found new products that s business growth for company.

Under an **Applied Re** agreement, the comp defined fee to gain ac that is generated duri project. The company rights for exclusive ac IP for a specified perio within a defined field This enables industry develop and launch a with very low risk, gair mover advantage. Aft exclusivity period is o company can 1) exten exclusive rights or 2) c non-exclusive license.

The D offers advan prope partne introdu Demonstration project, the company shall have exclusive rights to any improvements at no additional cost. For companies that have licensed a Georgia Tech innovation, any improvements to the licensed IP shall be incorporated into the terms and conditions of the original licensing agreement.

The **Specialized Testing** agreement also offers a straightforward intellectual property policy for industry partners. The sponsoring company will own all test results.

Georgia Tech's Contracting Continuum

GEORGIA TECH INDUSTRY CONTRACT CONTINUUM

Basic Research

Explore fundamental challenges in a technical area

As one of the nation's top research universities, Georgia Tech is committed to conducting basic research that advances our fundamental understanding of the world. This form of research is typically driven by scientific questions that lay the foundation for technological progress.

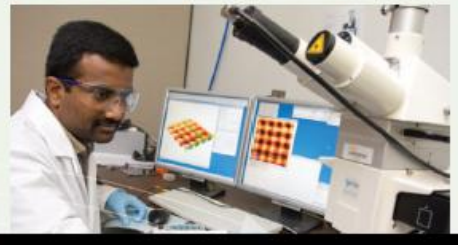
When Georgia Tech collaborates with industry via a **Basic Research** agreement, the industry partner has the opportunity to license the resulting intellectual property (IP). These early collaborations are often the foundation for new products that spur business growth for a company.

Applied Research

Identify solutions to real-world challenges

The Applied Research agreement enables Georgia Tech researchers to help industry partners explore the viability of a technology and overcome practical challenges.

Under an **Applied Research** agreement, the company pays a defined fee to gain access to IP that is generated during the project. The company obtains rights for exclusive access to the IP for a specified period of time within a defined field of use. This enables industry partners to develop and launch a product with very low risk, gaining a first-mover advantage. After the exclusivity period is over, the company can 1) extend the exclusive rights or 2) convert to a non-exclusive license.



Demonstration

Improve an existing technology

For industry partners working on product development, the Demonstration agreement enables Georgia Tech researchers to help a company improve existing technology.

The **Demonstration** agreement offers a straightforward and advantageous intellectual property policy for industry partners. Simply put, when a company introduces background IP under a Demonstration project, the company shall have exclusive rights to any improvements at no additional cost. For companies that have licensed a Georgia Tech innovation, any improvements to the licensed IP shall be incorporated into the terms and conditions of the original licensing agreement.

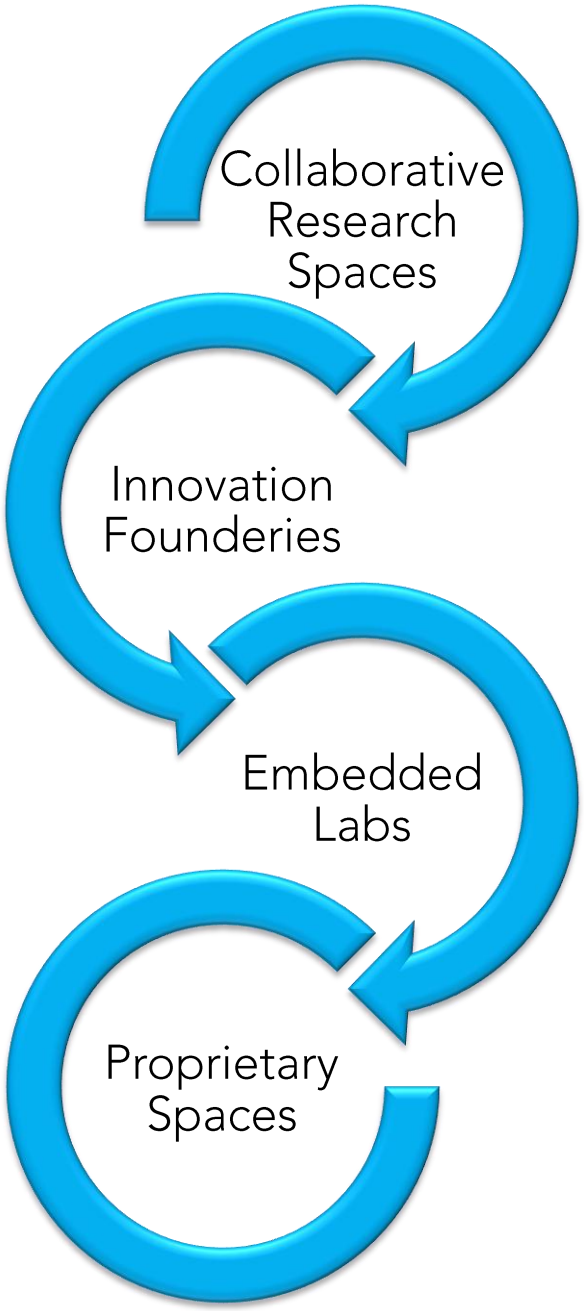
Specialized Testing

Test new and existing products

Georgia Tech offers expertise and state-of-the-art equipment that can be leveraged in the final stages of development to test products and help a company ensure that they are market-ready. The Specialized Testing agreement provides a cost-effective and secure way for companies to access this equipment without making a large capital investment. This work is often instrumental in enabling a successful product launch.

The **Specialized Testing** agreement also offers a straightforward intellectual property policy for industry partners. The sponsoring company will own all test results.

Then there is the real estate!

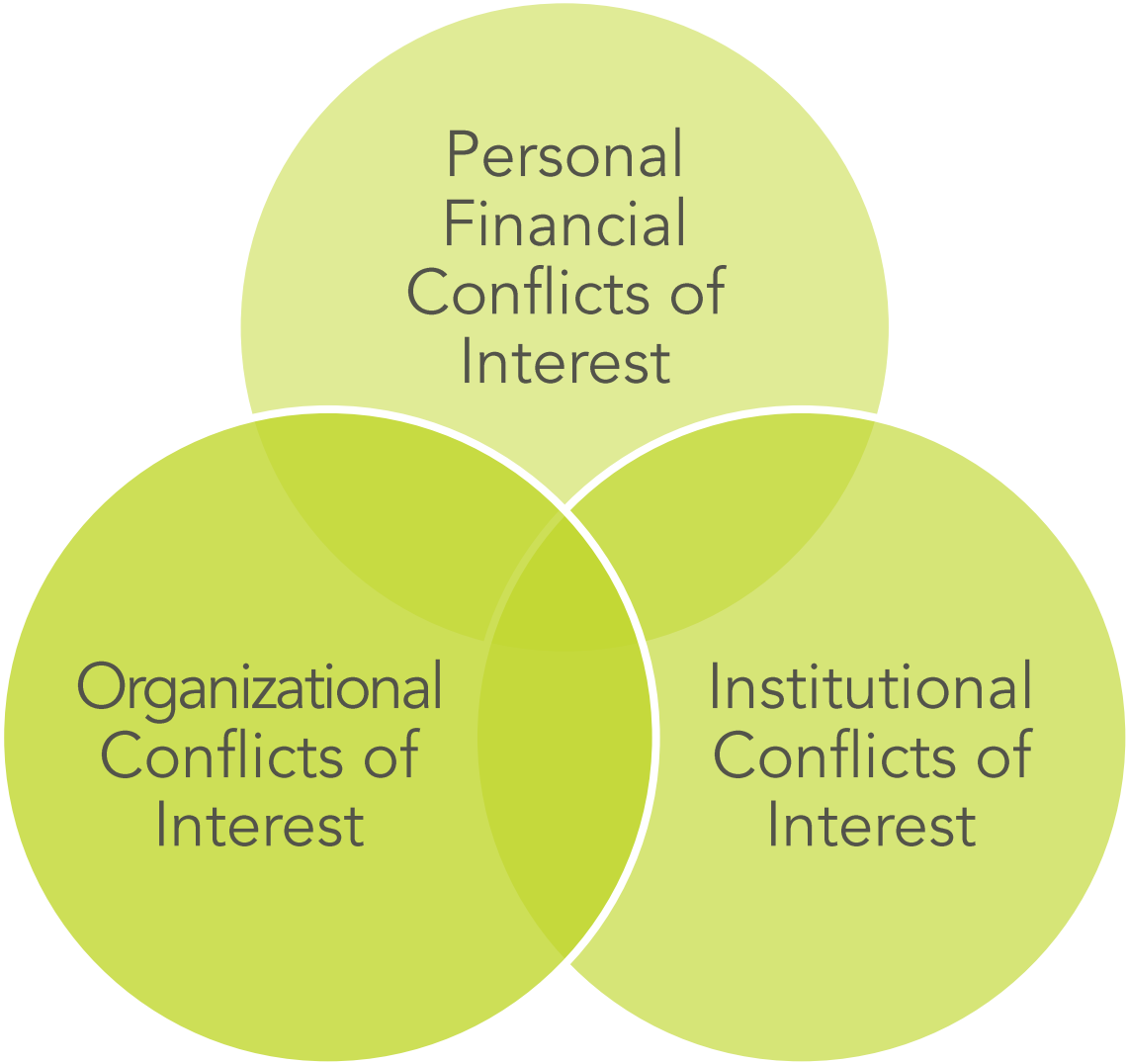


But it's more than just a lease. . .

- Open collaboration
  - Student engagement
  - Non-proprietary
  - Pre-competitive

- Company space
  - Proprietary research
  - Administratively more difficult (but generally possible)
    - Private inurement
    - Tax exempt bonds
    - State Institutions
  - Internship Opportunities for students
  - Incubators

NOTA BENE: Visitors on Campus



Conflict of interest

What is required and why it matters in engineering research with industry

What

- Written annual disclosure
- Potential conflicts in design, conduct or reporting must be reduced, eliminated, or managed
- Travel, consulting, etc.

Why it matters

- Transparency
- Objectivity
- Proper use of university resources
- Industry must also meet federal regulatory requirements

Northrop Grumman Today

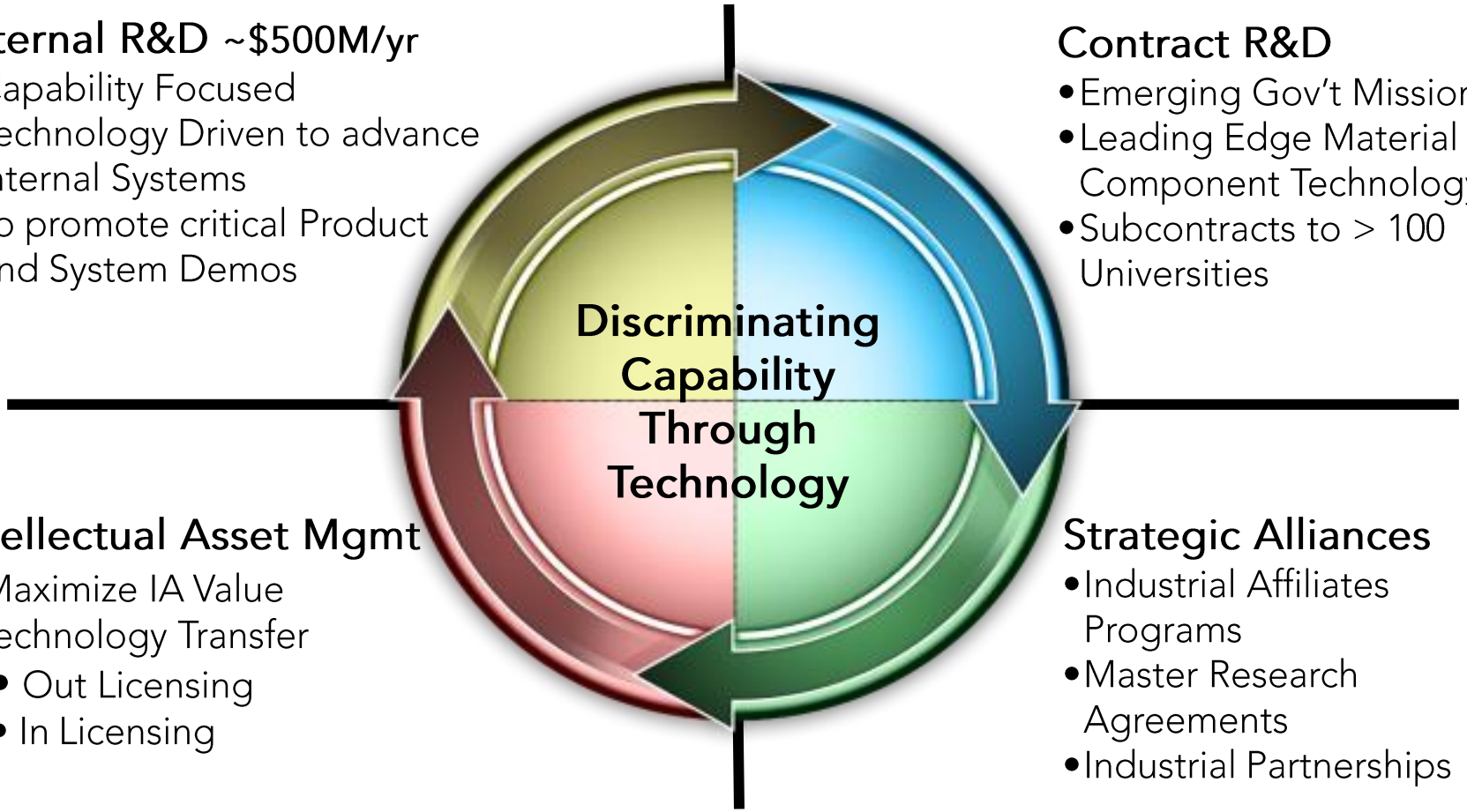
- Leading global security company
- $24.7 billion sales in 2013
- $36.2 billion total backlog
- Leading capabilities in:
  - Unmanned Systems
  - Cyber
  - C4ISR
  - Logistics

Focus on Performance

Engagement / Promotion of R&D

Internal R&D ~$500M/yr
- Capability Focused
- Technology Driven to advance internal Systems
- To promote critical Product and System Demos

Contract R&D
- Emerging Gov't Missions
- Leading Edge Material and Component Technology
- Subcontracts to > 100 Universities

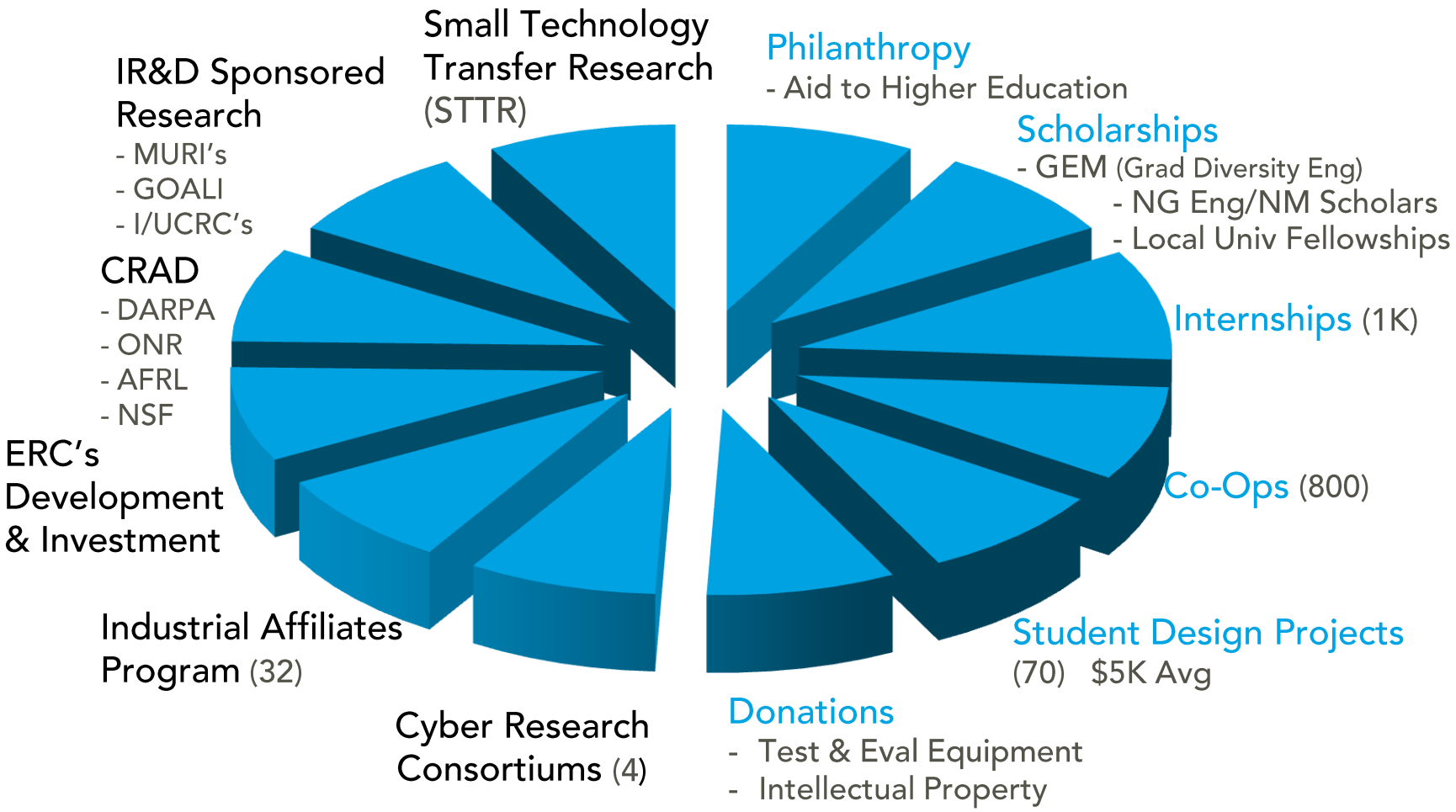


Intellectual Asset Mgmt
- Maximize IA Value
- Technology Transfer
  - Out Licensing
  - In Licensing

Strategic Alliances
- Industrial Affiliates Programs
- Master Research Agreements
- Industrial Partnerships

Research activities are critically important to seed early stage technology focus areas, build select technology platforms and help create future technology discriminator positions.

Higher Education Support Activities



Considerations for aligning with the right university partner

Most favored (Research) Partners:

- Conduct broad-based research aligned with NG business interests
- Have a strong and engaged champion with experienced business acumen
- Can agree to essential elements of a Term Sheet within a reasonable time
- Actively pursue CRAD (Cooperative Research) with Government R&D agencies

Key points regarding IP

Pre-publication Clearance

- Company needs 45-day window to review research results before publication, with additional time necessary to begin the patent filing process

Patents/IPR

- University (or both parties jointly) may own patent(s) resulting from the research. However., as quid pro quo, company expects to obtain an automatic NE right to FIP developed under contract
- An "Option Period" to negotiate an exclusive license in our field of use with right to sublicense

Costs/Fees

- Patent filing and prosecution costs should be included as part of a license fee, not collected separately
- Royalties on the commercial sale are standard practice, attributable to the end licensed product and paid commencing upon the first product sales by NG

Managing Contractual Expectations

- Company recognizes that all research conducted is based on "Best" or "Reasonable" efforts, however expectations of deliverables should be narrowly defined
- Company will always support an adequate cure period in case of breach
- Company recognizes that access to Background IP is separate and distinct from Foreground IP development
  - available pending no other encumbrances via negotiation of a separate license with similar terms
- Provisions should allow each party independent ownership of Improvements they make
- Company will always want the first right to enforce "potential infringement" for an Exclusive License to university innovation (recommend the 75/25 rule for reimbursement)

Key takeaways

- As a Large company in the rather narrow Defense & Aerospace market, technology plays a key role in discriminating one player from the next
- In 2013 we engaged with over 100 separate Universities with the bulk of the spending targeted to a Top 15 highly aligned group
- Owning and filing publically on Intellectual Property is not a motivator to NGC for enhancing University engagement activities
- A primary driver for NG in selecting partners is the relevance of work our University partners do with Government R&D organizations
- There is a significant internal effort ongoing now to better align NG's HR and Research activities as "One NG"

Is it true?

Companies work with universities so they can get access to our great ideas and hire our students

Companies want detailed budgets that describe fringe benefits, tuition costs, and indirect costs

The median size of an industry award is over $150K

Companies only work with (and hire from) the elite schools

Universities *cannot* negotiate license terms up front when receiving an industry contract

Companies want to get rights to my IP

Industry funding is less competitive than federal funding

Companies don't want me to publish

Mark your calendars!

UIDP 20

Purdue

March 31 – April 2

University Industry
Demonstration Partnership

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