COMMISSION FOR A NEW GEORGIA

FINAL REPORT

COMMERCIALIZATION TASK FORCE

GOALS

Provide a framework for assessing and evaluating current practices

- Develop an enterprise-wide structure to raise visibility and accelerate commercialization of research discoveries made in Georgia's universities.
- Develop an enterprise-wide structure to raise the visibility of research discoveries, laboratories and university centers… providing a "facts-based decision" tool.
- Develop a "life-cycle" model which better supports and grows the creation of IP, commercialization activity and company creation from the within the university and moves it into the marketplace.

BACKGROUND & PROCESS

- Gather data and information from previous reports and task forces
- University Research Officers assessment of previous recommendations for consistent themes and findings
- Interviews with University Research Officers to confirm that previous recommendations are still relevant and needed (Vice President of Research, Commercialization staff, Legal Counsel, etc.)
- Present recommendations to Task Force
- Present recommendations to Commission
- Implement recommendations

TASK FORCE MEMBERS

Chair: Rick Ussery
Chair, TSYS

Consulting Partner: Kauffman Foundation

Members
Fred Cooper
Cooper Capital

Steven Fleming
Chief Commercialization Officer, Georgia Tech

David Ratcliffe
President & CEO, The Southern Company

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GA Electronic Design Center, Georgia Tech

Tom Callaway
President & Founder, Life Science Partners

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Chancellor, University System of GA

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Debbie Dlugolenski
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Office of Implementation

University System of Georgia, Intellectual Capital Partnership Program (ICAPP)

Assessment of Intellectual Property Databases
Prepared by: Washington Advisory Group, 2003

1) As part of an IP marketing and management effort, IP databases of both types are essential components. However, they must be augmented by other elements designed to attract and inform both potential licensees and managers internal to the university. The USG universities should each adopt their own database software being careful to retain compatibility with the rest of the USG institutions (utilizing the same software would help). The USG should aid the current effort by the Georgia Technology Transfer Group (GTTG; see Appendix A for description) to establish a compatible system-wide approach.

2) Recognize that IP operations at universities have a systems aspect with publications playing a central role. The USG institutions should each publish accounts of emerging proprietary technology. All four research institutions have such publications, but all could be expanded and directed toward potential licensees, research sponsors, or other sources of funds. When put on the web, there should be links to invention descriptions, which go beyond the U.S. Patent and Trademark Office (USPTO) entries. (Internal activities including industrial liaison, development office, sponsored research, and technology licensing require such an online publication.) Off-the-shelf software such as NASA's *TechTracS* has features required for operations of USG institutions. NASA makes this software available on request.

3) Keeping the systems aspect in mind, the USG institutions should devote resources to:

   - Following the contacts and leads of inventors
   - Satisfying the entrepreneurial desires of inventors and business Innovators
   - General marketing, recognizing that general marketing may be of lesser effectiveness than aiming at targets identified by inventors and innovators
   - Collaborating with business schools to determine market sizes and accessibility

4) Cultivate faculty gatekeepers who are willing to be personal contacts for venture capitalists, investors, and commercial corporate interests. Encourage gatekeepers also to play the role of corporate relations manager. Gatekeepers and relation managers can influence technology decisions within industry. Such decisions could be to relocate a research facility to Georgia, or to fund research, or to make a gift, or to start a company around a license. Engaging research professors with contact persons in industry periodically to build a rapport would serve a major role in generating deals. Consulting with industry (as allowed by university administrations one day a week) has a large secondary value to the university because the professors who consult often gain influence in the firm's decision-making process. A program to promote building relationships is recommended, to be catalyzed by the technology transfer and licensing offices.

5) Adopt best practices that can lead to developing the necessary processes in IP creation and commercialization such as contracting, licensing, and collaboration across all levels of the institution. Develop an institutional memory of research that captures successes, failures, and commercialization outcomes for planning future activities. Also include a technology talent matrix for proposing, planning, and executing research. Such resources are essential in today's competitive world. These should be institutionalized and made available for use in operations and for setting policy.

6) Before publishing information on emerging technologies, including publishing on the internet, recognize that publication of technical details and inventions can preclude granting of foreign patents if publication or disclosure precedes the issuing of the patent in the U.S. Legal review should be solicited and provide guidance before an institution publishes information on patents or copyright.

Commission for a New Georgia

Strategic Industry Task Force Recommendation, 2004

Establish a statewide, centralized commercialization center to be the central point of contact for identifying available research, commercialization opportunities and appropriate points of contact.

Scholars Think Tank Session, 2004

Background: On 24 August, 2004, Governor Perdue met with Georgia Research Alliance Eminent Scholars and Georgia Cancer Coalition Distinguished Cancer Clinicians and Scientists at the Governor's Mansion for a Scholars Think Tank Session. These top researchers in the state were invited to provide their expertise as part of the Governor's Commission for a New Georgia strategic initiative. Through a series of discussions facilitated by faculty from the Carl Vinson Institute of Government at the University of Georgia, assisted by staff of the Office of Planning and Budget, they presented their assessment of the current research environment, the possible future direction of research that the state should anticipate and support, and how research could be translated into the economic development of the state.

Besides just more money, what could make Georgia a better location for your continued success?

The collaboration that already occurs among institutes and agencies in Georgia needs to improve. Institutional rivalries get in the way, and there is no formal process for regular meetings or interaction. High speed communication and a more integrated information system that could be shared by all researchers would help leverage intellectual capital. Long term intellectual capital depends on the educational system in Georgia. The K-12 system needs to be improved, especially in the areas of math and science. The best students need to attend Georgia institutes of higher education instead of leaving the state. In addition to the students here, graduate students need to be recruited from outside Georgia. Money is an issue: to retain the best teachers and graduate students, to keep labs up-to-date, to allow researchers to do research rather than trying to raise more of it.

GRA and GCC were established in part to improve Georgia's economic development future. How can our lab-to-market commercialization efforts be improved and results produced?

Collaboration, communication and partnerships are the major avenues for improving commercialization of research. Continued support from the state is also necessary. Institutes need to collaborate with each other to come up with new ideas in their fields and with other disciplines. Institutes need to collaborate with and partner with private companies, helping the companies expand and bringing researchers' ideas to the marketplace. Conferences and symposiums would allow researchers to communicate their ideas to researchers and others in the private sector. Marketing needs to improve. The benefits of the research being done needs to be communicated to the general public in Georgia and outside the state. Funding needs to be increased for getting the new ideas to market, and the policies governing use of current funding need to be streamlined. Institutes need to be able to provide more technology transfer assistance; they need to be able to hire people with expertise in commercializing research.

Comments and Suggestions:

- Website for scientists to find out what research is being done in Georgia
- Encourage present companies and startups to work with universities and tap into their infrastructure
- Conduct a meeting inviting scientists/clinicians who have a patentable idea or patient to interact with pharmaceutical companies or donors
- Lack of a good business model to think about commercialization; training for scientists in business model, pairing up with business
- Promotion of research among institutions and industries
- Need to have all parties at the table; cannot exclude people
- Another way to transfer research is collaboration between existing companies and researchers to improve current company operations; create successful expansion
- Better funding for process and licensing
- Better support from institutions; technology transfer groups need more talent and experience so they will not slow down commercialization efforts
- Proactive effort to promote commercial activities of eminent scholars
- Scientists need to know what is "commercially developable": create an implementation team to help researchers with this. Don't make researchers spend almost half their intellectual energy away from the research itself
- Stimulate interdisciplinary problem-focused collaboration
- Develop ways to bundle discoveries and IP across universities to enhance commercial value
- Efficient help with planning, including business models
- Increase collaboration between institutions
- Matchmaking between IP and resources
- Promote industry: academic institute networking
- Encourage the tech transfer by all means, e.g., establishment of company by researchers
- Create a streamlined "patent" filing and registration agency to foster and protect innovations from Georgia

Commercializing University Innovations: Alternative Approaches

By Robert Litan, Lesa Mitchell, E.J. Reedy, May 2007

Abstract

With the passage of the Bayh-Dole Act of 1980, the federal government explicitly endorsed the transfer of exclusive control over government-funded inventions to universities and businesses operating with federal contracts. While this legislation was intended to accelerate further development and commercialization of the ideas and inventions developed under federal contracts, the government did not provide any strategy, process, tools, or resources to shepherd innovations from the halls of academia into the commercial market. And more than twenty-five years later, it is clear that few universities have established an overall strategy to foster

innovation, commercialization, and spillovers. Multiple pathways for university innovation exist and can be codified to provide broader access to innovation, allow a greater volume of deal flow, support standardization, and decrease the redundancy of innovation and the cycle time for commercialization. Technology Transfer Offices (TTOs) were envisioned as gateways to facilitate the flow of innovation but have instead become gatekeepers that in many cases constrain the flow of inventions and frustrate faculty, entrepreneurs, and industry.

"When you ask 'Where are tomorrow's ideas?' they are things you and I would look at and say, 'That's not going anywhere. That's worthless.' " - William R. Brody, president of Johns Hopkins University (in Holstein 2006)

U.S. universities today are not only competing with other U.S. institutions for collaborative relationships with industry, they are both collaborating and competing within a global economy. Our institutions must continue to be leaders in research, the advancement of innovation, and the commercialization of our ideas in order to remain competitive.

The majority of university-industry agreements relate to technologies that are many years away from being commercialized (Jensen and Thursby 2001), and universities cannot take on the burden of forecasting uncertain commercial returns. This function is best performed by the private sector. In the end, society will be best served by a knowledge transfer system that encourages interactions between universities and industry but also inspires each party to capitalize on its relative advantage – with universities focusing on discovery and entrepreneurs devoting their efforts to commercialization.

This discussion of how innovations are transferred from universities to industry is an important part of the national conversation about U.S. economic competitiveness. We are now at a critical time in which the incentives of some universities (or specific officials within the universities) may lead to the codification of a system that would inhibit rather than promote commercialization of technological breakthroughs. We have argued that the most important way to avoid this outcome is to refocus university administration away from the historic "patent-licensing big hit" model to one or more "volume models" that concentrate on the number of and the speed with which university innovations are sent out the door and into the marketplace. These models will include open source collaborations, copyright, non-exclusive licensing, and a focus on developing the social networks for graduate students and faculty to commercialize all types of innovations.

The federal government, as the funding source for university-based research, is in an ideal position to encourage experimentation with these—and other—alternative arrangements. At a minimum, the government can help educate universities regarding the importance of providing a more fluid environment that will allow for more rapid commercialization of ideas developed by students and faculty. More ambitiously, agencies of the federal government can condition their research grants on university demonstrations that they are experimenting with and using multiple pathways to provide competition or to advance innovations into the commercial market.

The theme of the recommendations above generally concludes that our research university system would benefit from additional enterprise-level organization. It's important to note that our current system has had successes and that the task forces goal is to enhance and optimize our current independent system into an organized enterprise wide innovation system.

University of Georgia

Attendees Terence McElwee, General Counsel
Sohail Malik, Director of the Technology Commercialization Office
Margaret Wagner Dahl, Director of Incubation
Dr. David Lee, VP of Research

Themes and Suggestions

- Support for the concept of shared web-based IP marketplace
- Should be managed with "top shelf" staff
- Support for sharing "protected" IP with Universities
- Process should go beyond database
  - Create ecosystem
  - Provide first-stop proactive "external marketplace"
  - Provide first-stop "industry liaison" marketing activities
  - Provide "fresh look" into the USG research system
- Support of general sharing of commercialization process best practices

Georgia Institute of Technology

Attendees Stephen Fleming, Chief Commercialization Officer
Mark Allen, Senior Vice Provost for Research and Innovation

Themes and Suggestions

- Governor should host patent creator event annually
- Support the concept of shared web-based IP marketplace
- Endorse license model which encourages license volume vs. potential revenue – "lots of singles vs. home runs"
- Support sharing "protected" IP with Universities
- IP needs better exposure
- Standardized contracting = yes

Medical College of Georgia

Attendees Frank Treiber, VP of Research
Charles Nawrot, Associate VP of Technology Transfer & Economic Development
Jonathan Glosby, Innovation Center manager
Annie Hunt Burriss, Presidents Office

Abhijit Afzalpurkar, Interim Dir. Office of Technology Transfer

Themes and Suggestions

- Support the concept of shared web based IP marketplace
- Support for sharing "protected" IP with Universities
- Consider establishing Bridge Funds
- Create Faculty incentives
- Create support mechanisms to foster TTO interactions
- Enhance recruitment of retention of tech-transfer personnel

Georgia State University

Attendees Robin Morris, VP of Research

Joseph Gilbert, Director of Technology and Commercial Development Programs

Cynthia Hall, Assistant Legal Advisor

Themes and Suggestions

- Support the concept of shared web based marketplace but suggested that a broader description of some specific Centers or Institutes be included
- Faculty incentives are needed, there isn't any incentive for them to work with Companies vs. Federal Labs
- Support graduate students abilities to foster new company creation

General University observations

- *Organize*……. An Enterprise approach makes sense to each of the Universities
- *Analyze*……... Each feel that data sharing and analysis will increase output
- *Review / Optimize*….. We will need to continually review and optimize the new system
- *Manage / Promote*…. This will become our management and promotion platform

RECOMMENDATION 1

Georgia's University System should invest, provide and maintain a standardized enterprise-wide innovation management software system to its research universities, which

- Provides an "Open Innovation" ecosystem for technology-driven engagement within the research university environment, as a basis for additional university investment and technology-based economic development.

  The following criteria were recommended by the National Governors Association report, *Innovation America, Investing in Innovation*, and represent an excellent well thought-out starting point. Overall our system should capture/provide the relevant data which will become the foundation for enterprise-level Research and Development policy, strategy and investments:

  - Research / Development
    - Federal grants received
    - New R&D facilities formed
    - World-renowned talent hired
    - Corporate sponsored contracts
    - Research presented and cited
    - U.S. Patent applications
    - Research rankings improved
  - Development / Start-up
    - Industrial interactions
    - Industrial collaborations
    - Invention disclosures
    - Licenses or options
    - U.S. patents issued
    - Venture investment formed
  - Start-up / Growth
    - New companies formed
    - Industry concentration increased
    - Companies retained / attracted
    - Graduate students hired in state
    - Old industry transformation activity
    - New Industry specialization activity
    - "State Dividend" realized… S&T applied to real and immediate concerns of residents (reduced air pollution, access to top medical care, etc.)

- Provides an online proactive “external marketplace” for licensing / economic development for each research university individually which when combined will also provide a single consolidated external marketplace for “Georgia’s” research universities.
- Provides an online “internal system marketplace or exchange” for each research university which can be shared on campus and with other universities in the system.

RECOMMENDATION 2

Develop an enterprise-wide structure which recognizes the importance of innovation within the University System within three specific areas: 1) at the specific University where innovation occurs, 2) by its faculty and 3) within its specific laboratories.

- Evaluate the addition of a new merit criteria: faculty innovation
- Governor hosts annual ‘innovators award” recognition event(s)

RECOMMENDATION 3

Create system-wide vehicle to promote and integrate “best practice” education and process improvement within the research universities.

- **Design programs to support faculty, staff and graduate students**
- **Focus on specific vertical strengths tied to research funding**
- **Bring together global experts within the vertical strength areas**
- **Provide enterprise-level “best practice” build-out of current thinking and process**

Initial focus areas:

- Licensing
- Contracting
- Commercialization
- Incubation
- Entrepreneurship

RECOMMENDATION 4

Establish a governing body at the enterprise level to manage the development of an “open innovation” system which

- Enables a “best practices” system to flourish
- Aggregates the Universities into a “Georgia” R&D product
- Creates a State culture that values innovation
- Allows for and manages “data driven” investment decisions

Staff suggested governing body: repurpose and expand the current Centers of Innovation Board of Directors to act at the enterprise level; create new “operationally” oriented Centers of Innovation board.

RECOMMENDATION 5

Establish at the enterprise level an ongoing marketing program which creates and leverages enterprise data into "a Georgia marketplace".

This new "marketplace" should become a key element of the states marketing focus to organizations which are trying to leverage/access university intellectual property, researchers, laboratories and specific university centers. This marketing channel can be packaged and repackaged into specific niche strategic industry marketplaces or into a more general environment as needed.

**The Governors Office of Implementation will assist with the implementation of these recommendations.*

APPENDIX

Innovation America, A Final Report, National Governors Association, 2007

Innovation America, Investing in Innovation, National Governors Association, 2007

Commercializing University Innovations: A Better Way, Robert Litan, Lesa Mitchell, E.J. Reedy, 2007