

NSF Integrative Graduate Education and Research Traineeship

Final Report

Award ID: 0221600

Final Report for Period: 2002 - 2010

Institution: Georgia Institute of Technology

Title: Technological Innovation: Generating Economic Results (TI:GER)

Research Accomplishments

To understand both the research and educational achievements of this IGERT, it is important to understand the overarching integrative multidisciplinary theme. The program developed with the IGERT award, Technological Innovation: Generating Economic Results (TI:GER), was designed to address two critical needs if society is to benefit from technological discoveries: 1) Preparation of a professional workforce with the knowledge and skills needed to facilitate innovation (2) to promote and improve doctoral level research to improve the understanding of how business organizations and economic, regulatory, and legal mechanisms promote or impede innovation. Innovation in this context, thus, goes far beyond invention or discovery and involves a wide range of activities and decisions ranging from the recognition of a need or a problem through research, development, and commercialization to the diffusion and adoption of the inventions by users. The targeted students were doctoral students across programs in science, engineering, management, and economics. The context of research for these PhD programs are quite different, so the specific goals for science and engineering students are framed together and those for the management and economics students are together.

Specific research goals were (R1) to produce science and engineering dissertation research with both scientific and market relevance, and (R2) to encourage management and economic PhD student research on the determinants of technological innovation. All of the students were encouraged to supplement traditional research methods in their respective disciplines with direct observation from multidisciplinary team projects which addressed the intersection of technical, business, and legal aspects of innovation. For students from science and engineering disciplines, the point was for them to explore market and legal issues involved in technology commercialization in the context of the students' doctoral level research. Operationally, this was accomplished by participating on teams with law (JD students) and MBA students, and led the investigation of the legal and economic issues involved in practical application of their research. For the management and economics students, the idea was to expose them to doctoral level research in science and engineering, as well as a broad range of unsolved problems in innovation than those that would be apparent from the usual literature searches. Operationally, this was accomplished by their acting as team resources for the multidisciplinary teams. The basic tenet of the program for all of the doctoral students was that introducing students to issues at the intersection of technology, business, and law before they conduct their disciplinary research will significantly enhance both the scientific contribution of the research and the students' career opportunities.

R1 Programmatic Level Achievements: Fifty seven science and engineering PhD students in this program come from many disciplines across science and engineering, including many areas which are, in themselves interdisciplinary such as bioengineering and biomedical engineering, as well as

more traditional disciplines such as electrical engineering, mechanical engineering. Research in these areas has enormous potential for socially and economically important applications of fundamental research, but realization of this potential hinges on the ability to identify applications and predict market impact, as well as practical issues in transferring research to industry. For science and engineering PhD students, three program achievements stand out. First, the students uniformly reported the program led them to view their research in a broader perspective. From my perspective as a Principal Investigator, this means that the program successfully gave the students a new view of factors to consider, not only in their research as students, but as they progress in academic or industry research.

Second, depending on the year, 20-30 percent of the students discovered new research directions, per se, from their participation in the multidisciplinary teams. As evidenced by select examples in 3 (below), the resulting achievements ranged from discovery of new material properties to discoveries in areas of higher industrial value-added than the original research trajectory. Changes in research direction occurred, for example, when teams found blocking patents in their upfront intellectual property searches, so that the student switched his research in a non-infringing direction. In other cases, market interviews with potential downstream users made the PhD student aware that her/his original research was of less interest to industrial users than originally thought. Third, one of the objectives behind R1 was to potentially speed up and/or increase applicability of doctoral student research. Again, as evidenced by the examples in (3), a number of students were able to license their results and several started companies to allow their results to reach the market in a timely fashion. Not surprisingly, this was more common in the electronics and software areas of research than biomedical, but we do have an example of such in the bioengineering area.

R2 Programmatic Level Achievements. Nine PhD students from management (6) and economics (3) were IGERT fellows. All of these students wrote dissertations related to innovation. Two of the students collected data from the TI:GER teams, contributing to the academic literature on the factors that affect multidisciplinary team function. One of these won a Best Paper in Management prize. The other students derived novel results specifically related to the diffusion of inventions coming from universities. One of the most highly cited and influential result came from the IGERT supported original data collection and suggests that universities contribute much more to industrial innovation than previously thought. Most recently, student research has identified factors affecting nanotechnology productivity of incumbent firms in the semiconductor industry. Prior to this IGERT none of the students in either of these PhD programs conducted research in this area.

Educational Accomplishments

This IGERT project had two educational goals E1 to graduate technically proficient science and engineering PhDs with the skills and multidisciplinary perspective needed to succeed in innovation-related careers, and E2 to expose MBA and JD students to career goals in technology, R&D management, patent, or intellectual property law to the challenges in fundamental research and its commercialization.

Programmatically, this IGERT project has had, and promises to continue to have, exceptional value added for the three targeted graduate education programs targeted (Science and Engineering PhD programs, the MBA, and JD programs). This is evidenced by the result of an external assessment of

perceived student skills (vis a vis a matched control group of students) summarized in Thursby et al. (2009) as well as the institutionalization of the core courses for the TI:GER certificate program created by the IGERT.

A number of achievements stand out. First, a two year graduate certificate program was created in which PhD, MBA, and JD students take three core classes, as a community of students, in issues related to technological innovation. The majority of exercises in each class are completed in multidisciplinary teams and the exercises involve applications of principles learned in the context of the PhD student's research. It is this multidisciplinary team structure which essentially integrates both the cross disciplinary learning and explains the heavy reliance of the research achievements on team functioning. This should be apparent from examples given in 3 below. In their first year, students take Fundamentals of Innovation I and II which are open only to TI:GER students and cover a variety of topics in a typical sequence of activities in technology commercialization. Topics in the first semester include: issues in university-industry technology transfer, an introduction to experimental research methods in science and engineering, identification of entrepreneurial opportunities in technological environments, the role of balanced teams in technology commercialization, legal ways to protect intellectual property (including marks and secrets as well as patents) and how their effectiveness varies across industrial sectors as well as an introduction to capabilities needed to succeed in particular industries. Early in the semester, team selection and teambuilding exercises are a major focus. The major semester deliverables are (i) an intellectual property assignment related to the doctoral student's research, and (ii) a preliminary industry analysis relevant to commercial application of that research. The intellectual property assignment includes a disclosure of an invention the PhD student expects to result from his/her research as well as a search of prior art (all publicly available information related to the inventions claims of originality, which includes patented and non-patented publications). The industry analysis focuses on an industrial application of the research including a justification of the chosen industry as the best initial application of the work. The analysis is based on projected market size and growth, industry trends using tools such as the PEST (Political Economic Social Technological) Model, and an analysis of the competition using Porter's Five Forces Model.

The second semester covers such topics as: licensing vs. venturing, market analysis, entrepreneurial finance including a real options framework, and business association (and securities) law. The key team deliverable is a commercialization plan evaluating alternative strategies for getting research into the marketplace. The plan covers the market opportunity, value proposition, potential target customers and the technology development cycle. In addition to an industry analysis (which often changes significantly from that developed in the first semester) the commercialization plan provides: a product description, recommendations for protection of the intellectual property and the alternatives considered, competitive advantages provided by the technology, potential customers and partners in the market, and financial feasibility which can include a valuation using both discounted cash flow and real option pricing models. Towards the end of the semester a summary presentation of the commercialization plan is made to an audience that includes members of the TI:GER industry advisory board, industry mentors (including entrepreneurs and venture investors) and university faculty members.

Various faculty members from Georgia Tech, including the College of Management, and the Emory School of Law teach the TI:GER innovation course modules. Outside speakers include the leadership of the Georgia Tech Office of Technology Licensing, patent and technology attorneys, venture capitalists, and technology entrepreneurs.

The third core course, Topics in Technology Commercialization, is a capstone structured much like a consulting course. Teams evaluate business opportunities and help develop business plans and strategic licensing plans for early-stage technologies being developed in the Georgia Tech incubator. This work gives students more hands-on experience, not only in the process of technology commercialization, but also in consulting with small businesses. Additionally, depending on the progress (or lack thereof) of the PhD student's research, students build on the work in the first year by either developing a full business plan for technology based on this research, writing an SBIR application, or writing a detailed case study of their team experience.

With regard to institutionalization, all three core classes have been added to the Georgia Tech permanent course catalogue. Furthermore, Georgia Tech has agreed to fund the continuation of the program for 5 years beyond the IGERT grant end date. Operationally this means that the Provost's office has agreed to supply stipends for 10 doctoral students to participate in the program each year along with the College of Management supplying scholarships for MBA participation and funding for staff support over the period. The TI:GER program is a part of the Georgia Tech capital campaign, with the idea being that by year 5 the program will be self supporting.

Second, the Principal Investigator leveraged the IGERT award to obtain funds from the Kauffman Foundation to support the TI:GER faculty to write a text for use in Fundamentals of Innovation I and II. This text has an exceptional value added, not only for the Georgia Tech/Emory TI:GER but also for the community at large. One of motivating factors behind the IGERT proposal in 2002 was that PhD students (and graduate students in general) represented an underserved population in terms of innovation education. This was a severe problem because these are the students who once they graduate are destined to operate either as inventors or facilitators and managers in innovation. There were several roadblocks to providing such an education—one being the institutional difficulties providing multidisciplinary education---but the other was a lack of curriculum materials appropriate for the targeted students. In particular, these students come from disparate backgrounds and rarely have knowledge of fundamental principles of disciplines other than their own. To be more specific, science and engineering students are unlikely to have taken courses in law, economics, or business. Similarly, the law students may not have studied business or economics, and business students are unlikely to have taken law courses. This presents challenges for both course delivery and curriculum materials. One solution would have been to require students to take background courses in the other disciplines but, as outlined earlier, this is rarely feasible for graduate students. The approach we took was to produce a text, which has not only benefited our students, but those at other institutions. A third major achievement, enabled by the Kauffman Grant, has been the development of multiyear workshops for faculty from other research universities on the TI:GER curriculum.

A fourth major achievement is the creation of the Roundtable on Engineering Entrepreneurship Research (REER) workshop. The REER's purpose is to bring together leading scholars from a variety of disciplines to exchange research on technology entrepreneurship. Among the topics of interest are the commercialization of technology developed from industrial or university research, as well as the university/industry interface, organizational forms (e.g. incubators, venture firms, banks, associations, industry groups), and legal and regulatory factors in technology entrepreneurship. The REER has been held 7 times since the inception of the IGERT project, and in keeping with the goal of promoting doctoral student research among management and economics PhD students has had a student session which supported the participation of 28 doctoral students.

Major Trainee Accomplishments

Numerous trainee examples support the three overarching research achievements described in part one.

The first achievement is that many trainees begin to view their research in a broader view which leads to new experiments and discoveries for pursuing different applications. Described below is an example of the first achievement of how the trainee in polymer and fiber engineering viewed her research in a broader perspective. While undergoing the process of electrospraying polymer onto linerboard facings of pulp and paper corrugated containers her preliminary findings discovered sorption of moisture vapor under refrigeration conditions was greater among the electrosprayed than even untreated paper. This work was being pursued as an alternative to current processes for waterproofing similar containers used to transport nondurable food crops. This suggested the ability to achieve barrier selectivity, preferring the transport of water vapor while inhibiting liquid water. These results pose potential for preserving food and other plant crops requiring moist air. Her exploration of the marketability concepts learned in the TI:GER program provided this broader perspective leading to new research results.

Another similar experience involved a PhD student who was working with high performance polymer nanocomposites for processing the material and characterizing the composite for aerospace applications. Initially the focus for these nanocomposites was for optimizing thermal and mechanical properties, to understand the temperatures in which the material could operate and how strong it could be. Through the industry interviews required for the TI:GER program, the student discovered a critical issue in the aerospace industry called Structural Health Monitoring (SHM) for monitoring the health and integrity of an aircraft. Current SHM methods cause a significant amount of costly downtime. However, the certain electrical properties of nanocomposites that are not present in traditional metal or polymer composites can be used as indicators of damage. The PhD's work now has a heavy focus on understanding these properties to define an alternative SHM mechanism.

The second achievement mentioned in section one involves students discovering new research directions from their participation in multidisciplinary teams. Frequently trainee research projects involve materials or technologies that can be applied in numerous applications and multiple industries. With this type of platform technology generally the student's research focuses on one application to produce the desired experimental results to form their proof of concept. With the TI:GER curriculum they are taught to look at the marketability of their application to ensure that there is a true need for the solution created. The program encourages their multidisciplinary teams to scope numerous applications and to look at issues related to marketability. This industry and market research often leads them back to the laboratory to add experiments on features required for a different application. Below are examples: ? A trainee project centered on shape memory polymers has the potential to be applied in numerous markets. The research is based in the Department of Material Science and Engineering and is centered on shape memory polymers and their acoustic properties. Shape-memory polymers (SMPs) have the ability to be deformed from a set shape, stored in a temporary shape and return to this "remembered" shape upon reheating to a set temperature. The shape memory effect is an entropy-driven phenomenon that causes materials to "remember" their original shape. The chains between the cross links untangle rapidly above the glass transition temperature of the polymer, causing mechanical deformation when a stress is

applied. To achieve the shape memory effect, this stress must be applied above this critical temperature, facilitating an unwinding of the chains of the cross-linked polymer and allowing the initial deformation. As the material cools, stereo-chemistry dictates new intermolecular interactions and locks the material into a new shape. When the material returns to a state above or near the critical temperature, random vibrations shepherd the material back to its unstressed, minimum free energy shape. SMPs have primarily been used in high cost, niche markets, such as in the field of biomedical implants, due to the high direct costs associated with them. The initial application focused on plastic bottles, however the high costs involved in their manufacturing of the new polymer material eliminated this market. The team's market research determined that there would be a limited cost advantage to justify such a radical change in the bottle formation. They then pursued a new market opportunity for developing a tightly sealed earpiece for use in headsets and hearing aids to provide a more comfortable and closely sealed fit. Since manufacturing costs would also impact this market opportunity their research took on new dimensions causing them to find unique manufacturing processes to eliminate some of the cost barriers to market. This path also added new dimensions to do additional research on the material's noise dampening ability. Both the manufacturing process and the noise dampening research led to new research publications and patent application for the new process.

? As an example, a trainee in Human-Computer Interaction (HCI), had a research project involving collaborative multimedia authoring and tagging (i.e. social media), and information visualization of video content. It does this by providing a semi-structured manual analysis system for a video, its transcript, and its annotations allowing for detailed tagging of quality issues such as validity, relevancy, and bias. The discussion arising from this complex interplay of tagging, commenting, and sourcing leads to a better contextualized and more comprehensive video for users. Additional experiments to ensure its ability to scale for real applications, such as video content used by bloggers and journalists, to analyze the quality of online political video and then aggregate and share these analyses.

? Another example is a doctoral student in electrical and computer engineering whose research is on the development of indoor localization systems, which can be thought of as "indoor GPS". Since the signal from GPS satellites is very weak and easily blocked by building walls and ceilings, an alternate way of determining location indoors is needed. This usually consists of generating an RF signal inside the building and using some feature of this signal (amplitude, angle of arrival, time of arrival) as a feature to determine location. In order to produce enough information in the signal to determine location, usually numerous RF emitters are required throughout the space. This student's research is on techniques to minimize the amount of equipment needed for these types by reusing existing infrastructure. The current project he is doing uses the existing in-wall electrical wiring of a building to distribute the RF signal needed for localization.

The following quote is his answer to the question "how has TI:GER affected your research?" "The program has definitely had an impact on the direction of my research. I see problems not just as research questions now, but from the perspective of an end-user or customer for this type of system. This has driven me towards some questions that I might not have pursued before, such as how to maintain the accuracy of indoor localization systems over time without requiring user intervention for calibration."

The third achievement involves research changes that either increasing the applicability of the research or speed up the process. Some examples follow: ? Initially a PhD student focused on developing software tools to aid the fuel cell industry without much input from industry. His initial

software tool, focused only on the various physical phenomena (i.e. electrochemistry, heat transfer, and mechanics of materials). However, after conducting market research and listening to the needs of potential consumers related to modeling and design, his team discovered that insights on certain physical phenomena (e.g. transient heat transfer inclusive of radiation) were more important than others and that a tool that indicated the economic impact of the technical innovation was needed. Based on this he changed the path of his research in two ways. First, by focusing on the radiation impact in SOFCs and abandoning the stress analysis portion of the research. Secondly, by adding a system analysis aim to his dissertation wherein he demonstrated the cost saving (or increase) of modifying components of the SOFC and/or the balance of plant. These changes have directly impacted the research resulting in a more marketable product.

? Another PhD student developed a computer vision software algorithm which was very sensitive to movement. Initially the team targeted the automotive industry to integrate the software into a smart air bag product. After the team's market research they determined that this feature had limited marketability and changed their direction. The new path integrated his computer vision algorithms into a medical device designed to significantly improve the process of wound area measurement. After capturing an image of the wound the device immediately processes the image and reports the area of the wound. By using a computer vision approach, the device removes the factor of human error and greatly improves the repeatability of the measurement. Having a precise repeatable measurement is crucial in quickly determining if a wound is responding appropriately to interventions and allows wound care to be adapted if healing does not begin. This trajectory resulted in a purchase of the rights to the intellectual property by a small local investment company who has found a licensee to market this product.

? The shape memory polymer research described above has resulted in a company formation with the original team members as the principals. They have secured \$75,000 in grants from the Georgia Research Alliance, were awarded \$100,000 National Science Foundation Phase I SBIR grant in late 2009. These grants will allow them to continue the research beyond the proof of concept and experimental stages into a marketable product in the near term.

? A 2009 graduate of the TI:GER was selected as one of 13 out of 115 applications, leading scientific postdoctoral researchers by the Ewing Marion Kauffman Foundation to enter the first class of Kauffman Postdoctoral Fellows program. The program mission is to teach the Fellows how to become scientist-founders and serve as a springboard into the market, helping these innovators fulfill their potential. This trainee has already formed a company and this highly competitive fellowship will help support his efforts to take his discoveries in biomedical engineering from the lab to the market.

Below are examples meeting one of the educational goals discussed in part 2 which is to graduate technically proficient science and engineering PhDs with the skills and multidisciplinary perspective needed to succeed in innovation related careers. ? An example of TI:GER meeting this goal involves two of the PhDs in the Electrical and Computer Engineering (2007 and 2009 class) are currently employed by McKinsey, a prestigious management consulting company as technical consultants. Both graduates report that their TI:GER curriculum uniquely qualified them for these coveted positions in the firm where they will perform due diligence on small technology companies for mergers and acquisitions by larger firms and vet technology projects for funding opportunities.

? Another example is from a company called Accelereyes whose CEO is a 2008 TI:GER PhD graduate. During his tenure in the TI:GER program this Electrical and Computer Engineering PhD candidate's team explored many avenues for commercialization of his technology. The team won

numerous business plan competitions at Georgia Tech and across the US. The education they received in the program accelerated their ability to explore and subsequently reject a multitude of market opportunities before settling on a very successful path. Last year they won a state wide business launch competition and received \$100,000 from the Georgia Research Alliance along with \$250,000 of in-kind services. They are considered one of the most successful new start ups in the Atlanta community and are currently in residence at the nationally recognized ATDC, Georgia's start up incubator. They have 14 employees and have just received a round of investment capital.

Accomplishments from the International Component

This cohort of IGERT projects did not have an international component. Nonetheless, we can report that in 2005 we put together a team of students (two biomedical engineering PhD students, an MBA, and a JD student) who conducted a project in Argentina. The inventor had two US patents on large molecules and was interested in student assessment of worldwide market opportunities.

IGERT Project Personnel and Trainees

Principal Investigator(s)

Name: Marie C. Thursby

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Co-Principal Investigator(s) or Trainee/Associate Advisor(s)

Name: Margo A. Bagley

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006

Role in Project: Trainee/Associate Advisor

Name: Margi Berbari

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Role in Project: Trainee/Associate Advisor

Name: Terry C. Blum

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008

Role in Project: Co-PI

Name: William J. Carney

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008

Role in Project: Co-PI and Trainee/Associate Advisor

Name: Carolyn D. Davis

Project Years Active: 2004-2005, 2005-2006, 2006-2007

Role in Project: Trainee/Associate Advisor

Name: Alan D. Flury
Project Years Active: 2002-2003, 2003-2004, 2007-2008
Role in Project: Trainee/Associate Advisor

Name: Ben Hill
Project Years Active: 2007-2008
Role in Project: Trainee/Associate Advisor

Name: Kathleen Kurre
Project Years Active: 2007-2008
Role in Project: Trainee/Associate Advisor

Name: Anne Rector
Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010
Role in Project: Trainee/Associate Advisor

Name: George Shepherd
Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008
Role in Project: Co-PI and Trainee/Associate Advisor

Name: Anderson D. Smith
Project Years Active: 2003-2004, 2004-2005, 2006-2007, 2007-2008
Role in Project: Co-PI

Name: William J. Wepfer
Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008
Role in Project: Co-PI

Trainees

Name: Ibrahiim Z. Bayaan
Total number of months funded: 21
Project Years Active:
2004-2005 Project Year - Trainee supported for 9 months
2005-2006 Project Year - Trainee supported for 12 months
2006-2007 Project Year - Trainee supported for 0 months

Name: Bryan F. Bell
Total number of months funded: 21
Project Years Active:
2004-2005 Project Year - Trainee supported for 9 months
2005-2006 Project Year - Trainee supported for 12 months
2006-2007 Project Year - Trainee supported for 0 months

Name: Pamela Bowlan
Total number of months funded: 18
Project Years Active:
2007-2008 Project Year - Trainee supported for 10 months
2008-2009 Project Year - Trainee supported for 8 months

Name: Lynn A. Capadona

Total number of months funded: 5

Project Years Active:

2002-2003 Project Year - Trainee supported for 5 months

Date Ph.D. Received: 05/2004

Name: Jeffrey M. Caves

Total number of months funded: 9

Project Years Active:

2006-2007 Project Year - Trainee supported for 9 months

Name: Christopher R. Clark

Total number of months funded: 21

Project Years Active:

2004-2005 Project Year - Trainee supported for 9 months

2005-2006 Project Year - Trainee supported for 12 months

2006-2007 Project Year - Trainee supported for 0 months

Name: Isaac P. Clements

Total number of months funded: 21

Project Years Active:

2006-2007 Project Year - Trainee supported for 9 months

2007-2008 Project Year - Trainee supported for 12 months

Name: Luis Jose Cruz-Rivera

Total number of months funded: 9

Project Years Active:

2004-2005 Project Year - Trainee supported for 9 months

Date left the IGERT project: 08/2005

Left IGERT with a terminal master's degree: No

Reason for stopping the pursuit of the Ph.D.:

Name: Cleon E. Davis

Total number of months funded: 17

Project Years Active:

2002-2003 Project Year - Trainee supported for 5 months

2003-2004 Project Year - Trainee supported for 12 months

Date left the IGERT project: 05/2004

Left IGERT with a terminal master's degree: No

Reason for stopping the pursuit of the Ph.D.:

Name: Tracy A. Denison

Total number of months funded: 18

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months

2008-2009 Project Year - Trainee supported for 8 months

Name: Nicholas A. Diakopoulos

Total number of months funded: 18

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months
2008-2009 Project Year - Trainee supported for 8 months

Name: Tarek Elshazly

Total number of months funded: 17

Project Years Active:

2002-2003 Project Year - Trainee supported for 5 months

2003-2004 Project Year - Trainee supported for 12 months

Date left the IGERT project: 04/2004

Left IGERT with a terminal master's degree: No

Reason for stopping the pursuit of the Ph.D.:

Name: Virginia K. Emery

Total number of months funded: 5

Project Years Active:

2002-2003 Project Year - Trainee supported for 5 months

Date left the IGERT project: 05/2004

Left IGERT with a terminal master's degree: No

Reason for stopping the pursuit of the Ph.D.:

Name: Marco G. Fernandez

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months

2004-2005 Project Year - Trainee supported for 12 months

2005-2006 Project Year - Trainee supported for 0 months

2006-2007 Project Year - Trainee supported for 0 months

Name: James C. Ford

Total number of months funded: 18

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months

2008-2009 Project Year - Trainee supported for 8 months

Name: Elizabeth D. Gadsby

Total number of months funded: 9

Project Years Active:

2002-2003 Project Year - Trainee supported for 5 months

2003-2004 Project Year - Trainee supported for 4 months

Date Ph.D. Received: 12/2004

Name: William P. Galle III

Total number of months funded: 18

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months

2008-2009 Project Year - Trainee supported for 8 months

Name: Christopher V. Gemmiti

Total number of months funded: 9

Project Years Active:

2004-2005 Project Year - Trainee supported for 9 months
2005-2006 Project Year - Trainee supported for 0 months
2006-2007 Project Year - Trainee supported for 0 months

Name: Jeff Gross

Total number of months funded: 12

Project Years Active:

2005-2006 Project Year - Trainee supported for 12 months
2006-2007 Project Year - Trainee supported for 0 months

Name: Nimisha Gupta

Total number of months funded: 21

Project Years Active:

2005-2006 Project Year - Trainee supported for 9 months
2006-2007 Project Year - Trainee supported for 12 months

Name: Matthew J. Higgins

Total number of months funded: 12

Project Years Active:

2003-2004 Project Year - Trainee supported for 12 months

Date Ph.D. Received: 08/2004

Name: Dimitri O. Hughes

Total number of months funded: 21

Project Years Active:

2006-2007 Project Year - Trainee supported for 9 months
2007-2008 Project Year - Trainee supported for 12 months

Name: Ryan W. Johnson

Total number of months funded: 5

Project Years Active:

2002-2003 Project Year - Trainee supported for 5 months

Date left the IGERT project: 05/2003

Left IGERT with a terminal master's degree: No

Reason for stopping the pursuit of the Ph.D.:

Name: Ericka N. Johnson Ford

Total number of months funded: 18

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months
2008-2009 Project Year - Trainee supported for 8 months

Name: Brad A. Kairdolf

Total number of months funded: 21

Project Years Active:

2006-2007 Project Year - Trainee supported for 9 months
2007-2008 Project Year - Trainee supported for 12 months

Name: Yash M. Kolambkar

Total number of months funded: 10

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months
2008-2009 Project Year - Trainee supported for 0 months

Name: Kelli F. Lanier

Total number of months funded: 12

Project Years Active:

2007-2008 Project Year - Trainee supported for 12 months

Name: Shawn M. Lankton

Total number of months funded: 18

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months

2008-2009 Project Year - Trainee supported for 8 months

Name: John Melonakos

Total number of months funded: 21

Project Years Active:

2006-2007 Project Year - Trainee supported for 9 months

2007-2008 Project Year - Trainee supported for 12 months

Name: Gregory M. Mocko

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months

2004-2005 Project Year - Trainee supported for 12 months

2005-2006 Project Year - Trainee supported for 0 months

2006-2007 Project Year - Trainee supported for 0 months

Name: Bryan Morris

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months

2004-2005 Project Year - Trainee supported for 12 months

2005-2006 Project Year - Trainee supported for 0 months

2006-2007 Project Year - Trainee supported for 0 months

Name: Ashley W. Palmer

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months

2004-2005 Project Year - Trainee supported for 12 months

2005-2006 Project Year - Trainee supported for 0 months

2006-2007 Project Year - Trainee supported for 0 months

Name: John K. Perng

Total number of months funded: 18

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months

2008-2009 Project Year - Trainee supported for 8 months

Name: Matt N. Rhyner

Total number of months funded: 21

Project Years Active:

2005-2006 Project Year - Trainee supported for 9 months

2006-2007 Project Year - Trainee supported for 12 months

Name: John M. Richardson

Total number of months funded: 21

Project Years Active:

2005-2006 Project Year - Trainee supported for 9 months

2006-2007 Project Year - Trainee supported for 12 months

Name: William Rooker

Total number of months funded: 5

Project Years Active:

2002-2003 Project Year - Trainee supported for 5 months

2003-2004 Project Year - Trainee supported for 0 months

Date left the IGERT project: 05/2003

Left IGERT with a terminal master's degree: No

Reason for stopping the pursuit of the Ph.D.:

Name: Laura E. Rowe

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months

2004-2005 Project Year - Trainee supported for 12 months

2005-2006 Project Year - Trainee supported for 0 months

2006-2007 Project Year - Trainee supported for 0 months

Name: Paul D. Salo

Total number of months funded: 21

Project Years Active:

2005-2006 Project Year - Trainee supported for 9 months

2006-2007 Project Year - Trainee supported for 12 months

Name: Todd H. Stokes

Total number of months funded: 21

Project Years Active:

2006-2007 Project Year - Trainee supported for 9 months

2007-2008 Project Year - Trainee supported for 12 months

Name: Sean P. Sullivan

Total number of months funded: 21

Project Years Active:

2004-2005 Project Year - Trainee supported for 9 months

2005-2006 Project Year - Trainee supported for 12 months

2006-2007 Project Year - Trainee supported for 0 months

Name: Luke Ulrich

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months
2004-2005 Project Year - Trainee supported for 12 months
2005-2006 Project Year - Trainee supported for 0 months
2006-2007 Project Year - Trainee supported for 0 months

Name: Leslie H. Vincent

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months
2004-2005 Project Year - Trainee supported for 12 months
2005-2006 Project Year - Trainee supported for 0 months
2006-2007 Project Year - Trainee supported for 0 months

Name: Walter E. Voit

Total number of months funded: 24

Project Years Active:

2007-2008 Project Year - Trainee supported for 10 months
2008-2009 Project Year - Trainee supported for 8 months
2009-2010 Project Year - Trainee supported for 6 months

Name: Christopher B. Williams

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months
2004-2005 Project Year - Trainee supported for 12 months
2005-2006 Project Year - Trainee supported for 0 months
2006-2007 Project Year - Trainee supported for 0 months

Name: Sebastien J. Wolff

Total number of months funded: 21

Project Years Active:

2003-2004 Project Year - Trainee supported for 9 months
2004-2005 Project Year - Trainee supported for 12 months
2005-2006 Project Year - Trainee supported for 0 months
2006-2007 Project Year - Trainee supported for 0 months

Associates

Name: Andrew Adams

Project Years Active: 2008-2009, 2009-2010

Name: Eileen M. Adams

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Jaimie Anderson

Project Years Active: 2008-2009, 2009-2010

Name: Scott Anderson

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Irene Anestis-Richard

Project Years Active: 2008-2009, 2009-2010

Name: Nick J. Ayres

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Daniel Baker

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Steven Balcof

Project Years Active: 2008-2009, 2009-2010

Name: Tracy Barton

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Brian Baum

Project Years Active: 2008-2009, 2009-2010

Name: David Beck

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Amy Beyer

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Lisa Beyer

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Brian Boone

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Elke H. Braeutigam

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Bradley M. Burman

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Christy M. Cantwell

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Natalie Christensen

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Ray Cirone

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Ian C. Clarke

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Meadow Clendenin

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jacob Cohen

Project Years Active: 2008-2009, 2009-2010

Name: Carrie Coker

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Michael Considine

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Shari J. Corin

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: John D. Costa

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Truman J. Costello Jr

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Kristina Crockett

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Joshua A. Davis

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Betty DeLos Reyes

Project Years Active: 2008-2009, 2009-2010

Name: Marco Desousa

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Richard Driftmeier

Project Years Active: 2008-2009, 2009-2010

Name: Anurag Dugar

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: P B. Duncan

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: William J. Dunlay

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Matt d. Durell

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Roshal L. Erskine

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Janel Fadrigio

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Nathan L. Feld

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Ken S. Franklin

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Anne Fuller

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Richard H. Gaddis

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Mark E. Galvez

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Carey Gaughan

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Chris Gentry

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Kristin Gerdelman

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Dev A. Ghose

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Crystal Gilpin

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Kimberly R. Gordon

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Drew V. Greene

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Angela M. Gulino

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jyoti Gupta

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Swasti Gupta-Mukherjee

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Laura Hall

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Nova Harb

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Justin Harper

Project Years Active: 2008-2009, 2009-2010

Name: Justin D. Helsby

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Shannon C. Hook

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Nedra Howard

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Sara J. Howell

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Laura S. Huffman

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: James H. Hutchinson

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Aakash B. Jariwala

Project Years Active: 2008-2009, 2009-2010

Name: Amit S. Jariwala

Project Years Active: 2008-2009, 2009-2010

Name: Meliss Johnson

Project Years Active: 2008-2009, 2009-2010

Name: Richard Jucks

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Michael Kang

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Payal Keshvani

Project Years Active: 2008-2009, 2009-2010

Name: Fawad Khan

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: James Kim

Project Years Active: 2008-2009, 2009-2010

Name: Sandra Kim

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Adam Klein

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Rishi Kotiya

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Jennifer Kwon

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Alden K. Lee

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jeong-Ah J. Lee

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Sharon Lee

Project Years Active: 2008-2009, 2009-2010

Name: Amanda K. Leech

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jennifer Liotta

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jason M. Litowitz

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Michelle Louie

Project Years Active: 2008-2009, 2009-2010

Name: Jessica Lunney

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Vivian Luo

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: J R. MacKenna

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: David Madden

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: David Magier

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Sonette Magnus

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Kristie Mahone

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Rohan U. Mandrekar

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Shelly E. Manning

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Adam Martinez

Project Years Active: 2008-2009, 2009-2010

Name: Adam Masarek

Project Years Active: 2008-2009, 2009-2010

Name: Yoshi Matsuzawa

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Brett Matthews

Project Years Active: 2008-2009, 2009-2010

Name: Patricia A. Mazini

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: James F. McDonough

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Meghan K. McIntee

Project Years Active: 2008-2009, 2009-2010

Name: Douglas McKay

Project Years Active: 2008-2009, 2009-2010

Name: Christopher C. Meeks

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Rohit Merh

Project Years Active: 2008-2009, 2009-2010

Name: Ivan I. Mihailov

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Jawad B. Muaddi

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Mikey Mulford

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jeffrey Murray

Project Years Active: 2008-2009, 2009-2010

Name: Deepa Nayini

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Matt Nesbitt

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Christopher C. Nygren

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Michael S. Owens

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Anil Patel

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Nikhil Patel

Project Years Active: 2008-2009, 2009-2010

Name: Elizabeth Patz-Skola

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Ryan M. Payne

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Blake Perdue

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: John Phelps

Project Years Active: 2008-2009, 2009-2010

Name: Chris Picket

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Barclay Pollard

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Horace R. Priester

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jozef Purdes

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Zhe Qu

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Tom Rafferty

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: John W. Ramseur

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Sam B. Ransbotham

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Linda Ray

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Arvind R. Reddy

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Gavon A. Renfroe

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jack C. Roberts

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: R Q. Robinson

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Daniel Rollman

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Katie Rose

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Nancy Rosenberg

Project Years Active: 2008-2009, 2009-2010

Name: Aaron J. Rugh

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jihan A. Rush

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Kankindi Rwego

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Benay Sager

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Piyush Saggi

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Kamran Salour

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: William R. Samuels

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Michelle R. Schlea

Project Years Active: 2008-2009, 2009-2010

Name: Christopher M. Scott

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jordan C. Scott

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Jill V. Segal

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Stephen P. Selfridge

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Adam Severt

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Christopher Shen

Project Years Active: 2008-2009, 2009-2010

Name: Greg Sheridan

Project Years Active: 2008-2009, 2009-2010

Name: Tim Shippy

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: David L. Silver

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jarrett Silver

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jake Sisley

Project Years Active: 2008-2009, 2009-2010

Name: Edward Sloan

Project Years Active: 2008-2009, 2009-2010

Name: Bernis N. Smith

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Antoinette South

Project Years Active: 2008-2009, 2009-2010

Name: Shaina Stahl

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Joseph Staley

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: John L. Stallworth

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jeff H. Stewart

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Ree'L Street

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Andrew Strickland

Project Years Active: 2008-2009, 2009-2010

Name: Erich Stuntebeck P. Stuntebeck

Project Years Active: 2008-2009, 2009-2010

Name: Edward Sumner

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Sohel Surani

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Dominika D. Szreder

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Elizabeth Thomas

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Khalil Thomas

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Wayne Thompson

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Puja Vadodaria

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Andres Velarde

Project Years Active: 2008-2009, 2009-2010

Name: Varadraj N. Vernekar

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Mark J. Wakim

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Robert R. Walling III

Project Years Active: 2007-2008, 2008-2009, 2009-2010

Name: Brandon Walts

Project Years Active: 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Ashley H. Wilkes

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Branston Williams

Project Years Active: 2008-2009, 2009-2010

Name: Jamal Wilson

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Calvin Wingfield

Project Years Active: 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Ryan Witkowski

Project Years Active: 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Stephen Yang

Project Years Active: 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Name: Jonathan Ziglar

Project Years Active: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010

Publications, Presentations, and Patents

Journal Articles in Refereed Publications

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Anderson, Scott. (2005) What Trust is in These Times? Examing the Foundation of Online Trust, *Emory Law Journal*, 54, na.

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Chaikof, EL. (2006) The Evolving Impact of Nanotechnology and Microfabrication on Stent Design, *Journal of Vascular Surgery*, 44(6), 1363-1368.

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Davis, Carolyn D. and *Vincent, Leslie H. "University Technology Transfer and Teams: A Study of Conflict, Climate and Market Strategy Formulation." Paper presented at Academy of Management Annual Meeting, Atlanta, GA, USA. August 14, 2006, Academy of Management.

Davis, Carolyn D. and *Vincent, Leslie H. "University Technology Transfer: Functional Diversity and Climate for Innovation in Teams Focused on Opportunity Recognition." Paper presented at Babson-Kauffman Entrepreneurship Conference, Wellesley, MA, USA. June 14, 2005, Babson College, Kauffman Foundation.

*Gemmiti, Christopher V. and Gulberg, R E. "Fluid Flow Specifically Increases Type II Collagen and Tensile Mechanical Properties in Bioreactor-Grown Tissue-Engineered Articular Cartilage." Paper presented at Regenerate Conference, Atlanta, GA, USA. June 01, 2005, Regnerate Conference.

*Gemmiti, Christopher V. and Gulberg, R E. "Flow-Mediated Conditioning of Cartilaginous Tissues In Vitro." Paper presented at BMES 2005 Annual Meeting, Baltimore, MD, USA. September 01, 2005, BMES.

Peister, A; *Gemmiti, Christopher V.; Delo, D M.; Soker, S; Atala, A; and Gulberg, R E. "Amniotic Fluid Stem Cell Differentiation Into Osteoblasts And Chondrocytes." Paper presented at 52nd Annual Orthopaedic Research Society, Chicago, IL, USA. March 01, 2006, Orthopaedic Research Society.

*Gemmiti, Christopher V.; Kolambkar, Y M.; and Gulberg, R E. "Bioreactor-Mediated Fluid Flow Modulates Collagen Content And Mechanical Properties Of Tissue-Engineered Cartilage." Paper presented at 52nd Annual Orthopaedic Research Society, Chicago, IL, USA. March 01, 2006, Orthopaedic Research Society.

*Bell, Bryan F.; Majdi, N; Jo, H; Wieland, M; Schwartz, Z; and Boyan, B D. "Osteoblast Response to Surface Microtopography is Modulated by Caveolin-1." Paper presented at 31st Annual Meeting of the Society of Biomaterials, Pittsburgh, PA, United States. April 26, 2006, Society of Biomaterials.

*Bell, Bryan F.; Majdi, N; Jo, H; Wieland, M; Schwartz, Z; and Boyan, B D. "Osteoblast Response to Surface Microtopography is Modulated by Caveolin-1." Paper presented at 52nd Annual Meeting of the Orthopaedic Research Society, Chicago, IL, United States. March 19,

2006, Orthopaedic Research Society.

Wang, L; Olivares-Navarrete, R; *Bell, Bryan F.; Majdi, N; Wieland, M; Turner, J; Cochran, DL; Boyan, B D.; and Schwartz, Z. "Integrin $\alpha 1$ Silencing Alters Osteoblast Response to Substrate Microtopography and $1\alpha,25(\text{OH})_2\text{D}_3$." Paper presented at 27th Annual Meeting of American Society for Bone and Mineral Research, Nashville, TN, United States. September 23, 2006, American Society for Bone and Mineral Research.

*Rhyner, Matt N.; Duan, H W.; Kairdolf, B A.; and Nie, S M. "Development of Diagnostic and Therapeutic Nanoparticle Agents Using Amphiphilic Polymers." Paper presented at Frontiers in Cancer Nanotechnology, Braselton, GA, USA. April 02, 2007, .

*Rhyner, Matt N.; Smith, A M.; Agrawal, A; Ansari, D; Gao, X; Sathe, T; Ruan, G; Li, Y K.; and Nie, S M. "Biomolecular Engineering and Nanotechnology for Translational Cancer Research." Paper presented at Winship Cancer Institute Symposium, Atlanta, GA, USA. September 15, 2003, .

Gupta, Jyoti. "Microneedles for Minimally Invasive Transdermal Drug Delivery." Paper presented at Drug Delivery 2007, San Diego, CA, USA. June 06, 2007, .

*Rhyner, Matt N. "Bioconjugated Nanoparticles for Molecular Imaging and Drug Delivery." Paper presented at Controlled Release Society Conference, Long Beach, CA, USA. July 07, 2007, .

Conference Presentations

Stuntebeck, E.* (2006). MERIT: Mesh of RF Sensors for Indoor Tracking. IEEE Conference on Sensor and Ad Hoc Communication and Networks. Reston, Virginia.

Stuntebeck, E.* (2008). HealthSense: Classification of Health-related Sensor Data through User-Assisted Machine Learning. Workshop on Mobile Computing Systems and Applications. Napa, California.

Stuntebeck, E.* (2008). Wideband PowerLine Positioning for Indoor Localization. International Conference on Ubiquitous Computing. Seoul, Korea.

Kolambkar YM, Bajin M, Garcia AJ, Bellamkonda RV, Hutmacher DW, Guldborg RE (2009), Nanofiber Structure and Composition Modulate Human MSC Migration and Osteogenic Differentiation. Podium presentation at the 55th Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV

Kolambkar YM*, Dupont KM, Huebsch ND, Mooney DJ, Hutmacher DW, Guldborg RE (2009), Effect of Nanofiber Mesh Design on BMP-mediated Segmental Bone Defect Repair. Podium presentation at the 55th Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV

Kolambkar YM*, Dupont KM, Mooney DJ, Hutmacher DW, Guldborg RE (2008), Repair of Segmental Bone Defects Using Electrospun Nanofiber Meshes. Podium presentation at the 2008 Tissue Engineering and Regenerative Medicine Conference and Exhibition, San Diego, CA

Denison, TA.* Schwartz, Z. Boyan, BD. (Mar. 2009). Fluid Shear Stress Modifies Gene

Expression in
Growth Plate Chondrocytes. Abstract and Poster Presentation - Hilton Head Tissue
Engineering
Conference. Hilton Head, SC.

Schlea, M.R.*, Brown, T.R., Bush, J.R., Criss Jr., J.M., Mintz, E.A., Shofner, M.L. (2008).
Dispersion control and characterization in multi-walled carbon
nanotube/phenylethynyl-terminated imide composites. North American Thermal Analysis
Society Conference, Atlanta, August 18-20. Poster.

Schlea, M.R.*, Brown, T.R., Bush, J.R., Criss Jr., J.M., Mintz, E.A., Shofner, M.L. (2008).
Dispersion control and characterization in multi-walled carbon
nanotube/phenylethynyl-terminated imide composites. Society of Plastic Engineers Regional
meeting, Atlanta, October 20. Poster.

Schlea, M.R.*, Brown, T.R., Bush, J.R., Criss Jr., J.M., Mintz, E.A., Shofner, M.L. (2008).
Dispersion control and characterization in multi-walled carbon
nanotube/phenylethynyl-terminated imide composites. WaterCAMPWS Annual meeting,
Atlanta, November 3. Poster.

Conference Presentations

Unpublished contribution to a symposium

Fuller, A.W. (2007, June). Dynamic model of strategy formation. Atlanta Competitive
Advantage Conference (ACAC) conducted at Emory University, Atlanta, GA.

Fuller, A. W. (2007, October). The effect of faculty founders on new technology venture
performance. Technology Transfer Society hosted by UC Riverside at Palm Desert, CA.

Gupta, J.*, & Prausnitz, M.R. (2007, June). Microneedles for minimally invasive transdermal
drug delivery. Drug Delivery 2007 Meeting, San Diego, CA.

Gupta, J.*, Gill, H.S. Andrews, S.N. & Prausnitz, M.R. (2007, August). Kinetics of skin
resealing after insertion of microneedles in human subjects. Invited podium presentation at
the Barrier Function of Mammalian Skin Meeting, Gordon Research Conferences, Newport,
RI.

Thursby, J.G., Fuller, A.W., & Thursby, M.C. (2007, August). U.S. Faculty Patenting: Inside
and outside the university. Academy of Management Conference, Technology and Innovation
Management section, Philadelphia, PA.

Unpublished paper presented at a meeting

Bowlan, P.*, Gabolde, P., & Trebino, R. (2007). Completely characterizing focusing ultrashort pulses in space and time. Paper presented at Ultrafast Optics, Santa Fe, NM.

Bowlan, P.*, Gabolde, P., & Trebino, R. (2007). Directly measuring the spatio-temporal electric field of ultrashort pulses in and near a focus. Paper presented at the American Chemical Society National Meeting, Boston, MA.

Bowlan, P.*, Gabolde, P., & Trebino, R. (2007, June). Directly measuring the spatio-temporal electric field of ultrashort pulses in and near a focus. Paper presented at the Conference on Lasers and Electro-Optics/Europe, Munich, Germany.

Bowlan, P.*, Gabolde, P., & Trebino, R. (2007, May). Measuring the complete spatio-temporal field of focused ultrashort laser pulses for multi-photon microscopy. Paper presented at the meeting of Microtechnologies for the New Millennium, Gran Canaria, Spain.

Bowlan, P.*, Gabolde, P., & Trebino, R. (2008, March). Measuring the spatio-temporal field of focusing ultrashort pulses. Paper presented at the Biomedical Optics (BIOMED) at Optics and Photonics Congress, St. Petersburg, FL.

Bowlan, P.* & Trebino, R. (2007, August). Measuring ultrashort pulses at a focus in space and time. Paper presented at the Southeast Multiphoton confocal User Group Meeting and Workshop, Atlanta, GA.

Capra, C. M., & Lanier, K.*, (2007, October). The Evolution of Trust and Cooperation. Paper presented at the ESA North American Meetings, Tucson, AZ.

Capra, C. M., Lanier, K.*, & Meer, S. (2007, September). Attitudinal and behavioral measures of trust: A new comparison. Paper presented at the IAESS Savannah Meeting, Savannah, GA.

Capra, C. M., Lanier, K.*, & Meer, S. (2007, October). Attitudinal and behavioral measures of trust: A new comparison. Paper presented at the ESA North American Meetings, Tucson, AZ.

Capra, C. M., Lanier, K.* , & Meer, S. (2007, November). Attitudinal and behavioral measures of trust: A new comparison. Paper presented at the SEA Meeting, New Orleans, LA.

Capra, C. M., Lanier, K.* , & Meer, S. (2008, March). Attitudinal and behavioral measures of trust: A new comparison. Paper presented at the IMEBE Meeting, Allicante, Spain.

Clements I.P.* , Lu X., Chung A., Kim Y.T., English A., & Bellamkonda R.V. (2008, September). 3D Guidance scaffolds for peripheral nerve regeneration: Effects of scaffold surface area. Paper presented at the annual fall meeting of the Biomedical Engineering Society, Los Angeles, CA.

Ford, E. N. J.* , Popil, R., Adams, R., Erskine, R., Howell, S., & Kumar, S., (2008, March). Investigation of electrospun composites for water resistant linerboard, paper presented at the meeting of the Material Research Society.

Higgins, M. J.* , & Graham S., (2007, August). The impact of patenting on new product development in the pharmaceutical industry, Paper presented at the meeting of the Academy of Management, Philadelphia, PA.

Higgins, M. J.* , & Adegbesan, T., (2007, August). The intra-alliance division of value created through collaboration, Paper presented at the meeting of the Academy of Management, Philadelphia, PA.

Higgins, M. J.* , & Graham S., (2008, January). The management of new product development in the pharmaceutical industry, Paper presented at the meeting of the American Economic Association, New Orleans, LA.

Luther, K., & Diakopoulos, N.* (2007, June). Distributed creativity. Paper presented at the Creativity and Cognition Workshop on Supporting Creative Acts Beyond Dissemination, Washington, DC.

Rhyner, M. N.* (2007, July). Bioconjugated nanoparticles for molecular imaging and drug delivery. Paper presented at the Controlled Release Society Conference, Long Beach, CA.

Stokes, T.H.* & Wang, M.D. (2007, September). nanoDRIVE: Nanotherapeutic drug response integrated visualization environment. Paper presented at the meeting of the Biomedical Engineering Society (BMES), Hollywood, CA.

Thursby, M. C. (2007, November). From bench to bedside: Pedagogical opportunities for technology transfer. Paper presented at the CIMIT Innovation Congress, Boston, MA.

Thursby, M. C. (2007, July). In or out? Faculty research and consulting. Paper presented at

the NBER Summer Institute, Boston, MA.

Thursby, M. C. (2007, September). Public sector science and intellectual property: What do we know? Paper presented at the European Summer School on Industrial Dynamics, Dubrovnik, Croatia.

Thursby, M. C. (2007, June). The nanotech vs. biotech revolutions: Sources of productivity in incumbent research. Paper presented at the Joint Wharton Heritage Chemical Foundation Conference on Social Studies in Nanotechnology. Philadelphia, PA.

Thursby, M. C., Jensen, R., & Thursby, J. (2007, October). In or out? Faculty research and consulting. Paper presented at the Technology Transfer Society Meetings, Palm Desert, CA.

Thursby, M. C., & Thursby, J. (2007, September). In or out? Faculty research and consulting. Paper presented at Conference on Firms in the Innovation Process: Research Institute in Industrial Economics, Waxholm, Sweden.

Thursby, M. C., & Thursby, J. (2007, September). In or out? US faculty patenting. Paper presented at the European Summer School in Industrial Dynamics, Dubrovnik, Croatia.

Thursby, M. C., & Thursby, J. (2007, July). R&D site location: Healthcare vs. other. Paper presented at the BioPharma PreConference NBER, Boston, MA.

Trebino, R., Bowlan, P.*, & Gabolde, P. (2007). Measuring everything you've always wanted to know about an ultrashort pulse, but thought couldn't be done. Presentation at Frontiers in Optics, San Jose, CA.

Trebino, R., Gabolde, P., Bowlan, P.*, & Akturk, S. (2007, October). Everything you've always wanted to know about an ultrashort pulse, but thought was immeasurable. Paper presented at the Lasers & Electro-Optics Society Annual Conference, Lake Buena Vista, FL.

Trebino, R., Gabolde, P., Bowlan, P.*, & Akturk, S. (2008, January). Everything you've always wanted to know about an ultrashort pulse, but thought was immeasurable. Paper presented at the Society of Photo-Optical Instrumentation Engineers, Photonics West, Lasers and Applications in Science and Technology, San Jose, CA.

Poster session

Denison, T.A.*, Doroudi, M., Schwartz, Z., & Boyan, B.D. (2008, March). The effect of shear stress on growth plate chondrocytes. Poster session presented at the 12th Annual Hilton Head Workshop - Regenerative Medicine: Advancing to Next Generation Therapies, Hilton Head, SC.

Denison, T.A.*, Koch C.F., Schwartz, Z., & Boyan, B.D. (2007, November). Inorganic phosphate modulates 24,25(OH)₂D₃ Sensitivity in Chondrogenic ATDC5 Cells. Poster session presented at the 9th International Conference on the Chemistry & Biology of Mineralized Tissues, Austin, TX.

Ford, E. N. J.*, Jagannathan, S., Popil, R., & Satish Kumar, S. (2008, May). Electrohydrodynamic spraying for breathable water resistant containerboard packaging, Poster session presented at the TAPPI Paper Con.

Ford, E. N. J.*, Popil, R., & Kumar, S. (2008, March). Water contact and transmission properties of electrosprayed coatings, Poster session presented at the Georgia Tech Technical Symposium GT², Atlanta, GA.

Gupta, J.*, Gill, H.S., Andrews, S.N., & Prausnitz, M.R. (2007, August). Kinetics of skin resealing after insertion of microneedles in human subjects. Poster session presented at the Barrier Function of Mammalian Skin Meeting, Gordon Research Conference, Newport, RI

Gupta, J.*, Gill, H.S., Andrews, S.N., & Prausnitz, M.R. (2007, August). Kinetics of skin resealing after insertion of microneedles in human subjects. Poster session presented at Trailblazing the Skin Frontier Meeting, Washington, D.C.

Gupta, J.*, Felner, E.I., & Prausnitz, M.R. (2007, October). An *in-vivo* study of microneedle-based insulin delivery in human diabetic subjects. Poster session presented at the 7th Annual Diabetes Technologies Meeting, San Francisco, CA.

Kairdolf, B.A.*, & Nie, S. M. (2007, September). Nonspecific binding problems of Quantum Dots and implications for tissue staining. Poster session presented at the annual meeting of the Society of Molecular Imaging, Providence, RI.

Kairdolf, B.A.*, & Nie, S. M. (2008, March). Minimizing nonspecific cellular binding of quantum dots with hydroxyl-derivatized surface coatings. Poster session presented at the annual meeting of the Emory-GT Frontiers of Cancer Nanotechnology Symposium, Pine Mountain, GA.

Conference Presentations Pre 2005-2006 Reporting Period.

Unpublished contribution to a symposium

Davis, C. E.* (2005, March). Neural modeling, genetic optimization, and in-situ monitoring of a polymer dielectric cured using variable frequency microwave processing. NSBE: Tech Talk. Boston, MA.

Davis, C. E.* (2003, February). Optimization of variable frequency microwave curing using genetic algorithms. Georgia Tech Graduate Technical Symposium. Atlanta GA.

Unpublished paper presented at a meeting

Flury, A., Kirkman B., Shalley, C., Thursby, M., & Vincent, L.* (2004, March). Technological innovation: Generating economic results: An Immersion approach to graduate education in engineering. Paper presented at the National Collegiate Inventors and Innovators Alliance, San Jose, CA.

Higgins, M. J.*, & Rodriguez, D. (2002, November). The outsourcing of R&D through acquisition in the pharmaceutical industry. Paper presented at the meeting of the Southern Economic Association, New Orleans, LA.

Higgins, M. J.*, & Rodriguez, D. (2003, November). The outsourcing of R&D through acquisition in the pharmaceutical industry. Paper presented at the meeting of the Southern Economic Association, San Antonio, TX.

Higgins, M. J.*, Stephens, P., & Thursby, J. (2004, December). Capitalizing the human capital of university professors: The case in biotechnology. Paper presented at the Roundtable for Engineering Entrepreneurship Research Conference, Atlanta, GA.

Thursby, M. C. (2003, April). Framing the Bay-Dole Debate: Major Policy Issues. Presentation at the AAAS Science & Technology Colloquium.

Thursby, M. C. (2004, October). Shirking, sharing-risk, and shelving: The role of university license contracts. Paper presented at the NBER Entrepreneurship Workshop.

Thursby, M. C. (2003, June). University licensing under Bayh-Dole: Issues and evidence. Paper presented at the HBS-MIT Sloan Open Source Software Conference, Boston, MA.

Thursby, M. C., & Jensen, R. (2003, May). The academic effects of patentable research. Paper presented at the NBER Higher Education Meeting.

Thursby, M. C., & Jensen, R. (2002, September). The kept university: What are the academic effects of university patent basic versus applied research: Incentives. Paper presented at the EARIE Meetings.

Thursby, M. C., & Thursby, J. (2003, March). Bayh-Dole & university technology transfer policies. Paper presented at the AAAS Meeting on University Technology Transfer Policies.

Thursby, M. C., & Thursby, J. (2005, February). Pros and cons of faculty participation in university licensing. Paper presented at the Kauffman and University of Arizona Meeting on the Implications of Technology Transfer Research on Entrepreneurship Education, Tucson, AZ.

Thursby, M. C., & Thursby, J. (2003, November). Risk, moral hazard and adverse selection in university licensing. Paper presented at the Roundtable for Engineering Entrepreneurship Research, Atlanta, GA.

Thursby, M. C., Thursby, J., & Dechenaux, E. (2005, June). Shirking, sharing-risk, and shelving: The role of university contracts. Paper presented at DRUID, Copenhagen, Denmark.

Thursby, M. C., Thursby, J., & Dechenaux, E. (2004, April). Shirking, sharing-risk, and shelving: The role of university contracts. Paper presented at the International Industrial Organization Conference, Chicago, IL.

Thursby, M. C., Thursby, J., & Dechenaux, E. (2005, April). Shirking, sharing-risk, and shelving: The role of university contracts. Paper presented at the NBER Higher Education Meeting.

Vincent, L.H.*, Bharadwaj, S. G., & Challagalla, G. N. (2003, August). A meta-analytic review of antecedents and consequences of innovation. Paper presented at the American Marketing Association Summer Educators Conference, Chicago, IL.

Poster session

Davis, C. E.*, Hong, S., Setia, R., Pratap, R., Brown, T., Ku, B., Triplett, G., & May, G. S., (2004, June). Neural network simulator for semiconductor manufacturing applications. Poster session presented at the GEM Future Faculty and Professionals Symposium. Las Vegas, NV.

Sung, T., Davis, C. E.*, May, G. S., Bidstrup-Allen, S. A., & Kohl, P. (2003, September). Low temperature variable frequency microwave curing of polymer dielectrics. Poster session presented at the IAB Meeting. Packaging Research Center. Atlanta, GA.

Davis, C. E.*, & May, G. S., (2001, September). Modeling and control of microwave curing. Poster session presented at the Interconnect Focus Center, Advisory Board Meeting. Atlanta, GA.

Outreach Activities

Title: Article in a biotechnology trade publication

Media Outlet/Organization: Genetic Engineering and Biotechnology News

Activity Date: 05/08/2008

Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in a medical news publication
Media Outlet/Organization: Medical News Today
Activity Date: 05/11/2008
Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in an independent electronic news organization
Media Outlet/Organization: Huliq.com
Activity Date: 05/09/2008
Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in an online comprehensive source of photonics information
Media Outlet/Organization: Photonics.com
Activity Date: 05/12/2008
Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in an online encyclopedia/resource
Media Outlet/Organization: Azo Optics
Activity Date: 05/09/2008
Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in an online forum for science, industry, and economy
Media Outlet/Organization: Innovations Report
Activity Date: 05/09/2008
Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in an online resource for professionals in photonics industry
Media Outlet/Organization: Photonics Online
Activity Date: 05/13/2008
Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in an online science magazine
Media Outlet/Organization: Science Daily
Activity Date: 05/08/2008
Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in an online science news source

Media Outlet/Organization: Physorg.com

Activity Date: 05/08/2008

Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article in an online science news source

Media Outlet/Organization: Science Centric

Activity Date: 05/09/2008

Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article on website containing nanotechnology & nanoscience resources

Media Outlet/Organization: Nanowerk

Activity Date: 05/08/2008

Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Article on website providing information for nanotechnology & research

Media Outlet/Organization: Nanotechwire.com

Activity Date: 05/08/2008

Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Hosted Roundtable for Engineering Entrepreneurship Research

Media Outlet/Organization: Scholars researching technological innovation

Activity Date: 11/09/2007

Description: Marie Thursby organized a conference bringing together leading scholars from a variety of disciplines to exchange research on technology entrepreneurship. Thirty individuals from five countries presented and discussed work and networked.

Title: Inside Georgia Tech's TI:GER Program

Media Outlet/Organization: StartUpLounge

Activity Date: 02/10/2008

Description: StartUpLounge is a venue for new companies and investors. Kathleen Kurre was a guest on one of their podcasts talking about TI:GER and entrepreneurship at Georgia Tech.

Title: Kauffman TIGER Workshop

Media Outlet/Organization: Multiple Institutions Including Harvard, MIT, Michigan, Arizona, Duke, and Berkeley faculty

Activity Date: 02/09/2007

Description: This was a 1.5 day seminar for faculty from other institutions focused on the benefits and challenges of the NSF IGERT TIGER. Thursby and student teams as well as faculty participated

Title: Magazine Article Publication

Media Outlet/Organization: Fortune Small Business

Activity Date: 04/09/2008

Description: Richard Gaddis, Kristina Crockett, Laura Huffman, Brad Kairdolf, and Eric Galvez were featured in an article about the 2008 Rice Business Plan Competition.

Title: Magazine Publication

Media Outlet/Organization: R&D Magazine

Activity Date: 05/12/2008

Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Periodical Publication

Media Outlet/Organization: National Science Foundation News

Activity Date: 05/08/2008

Description: Pam Bowlan's research on a device to directly measure complex ultrashort light pulses at and near focus was highlighted in an article.

Title: Professional Conference Presentations

Media Outlet/Organization: Georgia Life Sciences Summit 2007

Activity Date: 10/03/2007

Description: TI:GER teams gave poster presentations, and Matt Rhyner and Nimisha Gupta spoke in general sessions.

Title: Story on CNN Headline News

Media Outlet/Organization: CNN Headline News

Activity Date: 11/17/2007

Description: Joyti Gupta's research on a microneedle flu vaccine was highlighted on CNN. The video clip can be reached via the following link:
<http://warehouse.icpa.gatech.edu/microneedles-11-07.wmv>

Title: Syzygy- Walter Voit

Media Outlet/Organization: Congressional Special Session

Activity Date: 01/28/2009

Description: ? Congressional Special Session ? 1/28/09 o Walter Voit of Syzygy presented for the Higher Education Subcommittee

Title: Team Accelereyes

Media Outlet/Organization: Podcast Feature

Activity Date: 11/05/2008

Description: ? Team Accelereyes - Podcast Feature o John Melonakos, CEO of Accelereyes o Featured in podcast produced by Startup Lounge 11/5/2008

Title: Team AccelerEyes
Media Outlet/Organization: webinar
Activity Date: 02/05/2009
Description: ? Team AccelerEyes ? webinar o Using Jacket and GPUs to speed up MatLab - Inside HPC ? February 5, 2009

Title: Team AccelerEyes
Media Outlet/Organization: News Release
Activity Date: 01/30/2009
Description: ? Team AccelerEyes ? News Release o AccelerEyes Announces Jacket v1.0, DE Online ? January 30, 2009

Title: Team CartiMesh
Media Outlet/Organization: Magazine Article Publication
Activity Date: 09/24/2008
Description: Yash Kolambkar, Ivan Mihailov, Anil Patel, and Jordan Scott were featured in an article about their presentation at the Georgia Life Sciences Summit 2008

Title: Team CartiMesh
Media Outlet/Organization: Magazine Article Publication
Activity Date: 10/02/2008
Description: Medical Devices Daily: ?CartiMesh may be next best knee repair on the horizon?, October 2, 2008, Vol.12, No.192, Page 1

Title: Team CartiMesh and DiagNano
Media Outlet/Organization: Professional Conference Presentations
Activity Date: 09/24/2008
Description: ? Teams CartiMesh and DiagNano - Professional Conference Presentations o Georgia Life Sciences Summit 2008 presented in general sessions

Title: Team Diagnano
Media Outlet/Organization: Magazine Article Publications
Activity Date: 09/24/2008
Description: Richard Gaddis, Kristina Crockett, Laura Huffman, Brad Kairdolf, and Eric Galvez were featured in an article about their presentation at the Georgia Life Sciences Summit 2008

Title: Team Diagnano
Media Outlet/Organization: Magazine Article Publications
Activity Date: 10/03/2008
Description: Medical Devices Daily, DiagNano?s quantum dots offer more accurate disease detection, October 3, 2008, Vol. 12, No. 193

Title: Team Diagnano

Media Outlet/Organization: Magazine Article Publications

Activity Date: 06/01/2008

Description: Emory Lawyer, Summer 2008, TI:GER teams win big in recent competitions

Title: Team MudTadpole

Media Outlet/Organization: News Release

Activity Date: 09/05/2008

Description: ? Team MudTadpole Pam Bowlan ? News release o Measuring everything there is to know about an ultrashort laser pulse o September 5, 2008, SPIE Newsroom

Title: Workshop on Graduate Education in Technology Commercialization

Media Outlet/Organization: Law, Business, and Engineering faculty from multiple universities

Activity Date: 04/17/2009

Description: Marie Thursby, Anne Rector, and other participating TI:GER faculty presented teaching notes and best teaching practices from their respective chapters in Advances in the Study of Entrepreneurship, Innovation and Economic Growth, Volume 18

Title: Workshop on Graduate Education in Technology Commercialization

Media Outlet/Organization: Law, Business, and Engineering faculty from multiple universities

Activity Date: 05/02/2008

Description: Marie Thursby, Margi Berbari, and Anne Rector presented details of our program and encouraged participants to share best practices from their interdisciplinary programs. Faculty from other schools also presented details of their programs.

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