

The Center for Life Science Enterprise presents an

SBIR WORKSHOP

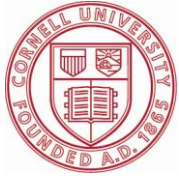
A small business innovation research workshop for growing
knowledge- based small enterprises

Tuesday, January 19, 2010 (half day)

Location – Weill Hall 226

Today's *SBIR WORKSHOP* brings current information and practical advice to faculty, students and postdocs interested in diversifying their portfolio of research dollars coming in. Small and emerging knowledge-based businesses will connect with resources available on campus and regionally. Participants will learn how the Small Business Innovation Research program differs from traditional NSF, NIH, or other agency funding and how it can help their pursuit of starting a company and funding research that has commercial potential. Hear success stories from companies involved in research partnerships with academic faculty. An overview of the latest program developments at the national level will be provided. Speakers and discussions will be focused on past undertakings and partnerships as well as wrinkles you might expect to encounter. A topical lunch will allow for further connections to on-campus and regional resources.

time	event	speakers
8-8:30 am	Registration and continental breakfast	Networking
8:30-8:40 am	Welcome and Introductions	Susi Varvayanis , Center for Life Science Enterprise
8:40-9:00 am	Success Story from the field Q&A	Joshua Cross , CEO and co-founder of Veratag
9-10:30 am	Overview of the SBIR/STTR programs Q&A	Marcene Sonneborn , Central New York Technology Development Organization (TDO) Upstate Regional SBIR Specialist
	-Break-	Meet speakers, resource experts & other attendees
10:45-11:45	Protecting Your Rights to Intellectual Property under the SBIR/STTR Program Q&A	Jacob N. (Jesse) Erlich , Partner, Intellectual Property/SciTech, Burns & Levinson LLP
11:45-12:05	Success Story from the field: Building the business one phase at a time, and leveraging other resources Q&A	Gary Harman , Professor, Horticultural Sciences, Cornell University College of Agriculture and Life Sciences, NYS Agricultural Experiment Station, and Entrepreneur
12:30-1:30 pm	Closing remarks & light lunch	Topical resource experts available for consultation



Cornell University
Center for Life Science Enterprise



About the Center for Life Science Enterprise

The Center for Life Science Enterprise at Cornell University emphasizes technology, people, and research involved in the life sciences. The Center marries the diversity, discovery, and knowledge base of Cornell with the jobs, innovation, and impact of New York State businesses. The result is a diverse portfolio of projects and expertise that positively impacts human and animal health, agriculture, and the environment, and leads to economic growth and job creation in New York.

The Center for Life Science Enterprise works mainly with small to mid-sized companies, with an emphasis on startup or emerging companies. In addition to funding collaborative research, the Center for Life Science Enterprise offers a variety of services for industrial researchers and entrepreneurs. The Life Sciences Core Laboratories Center (see <http://cores.lifesciences.cornell.edu>) provides access to and training in specialized technologies, applications, and instrumentation that many small to medium sized companies are unable to afford.

The Center for Life Science Enterprise assists in all aspects of entrepreneurial activities, from the creation and growth of a start-up business, to business planning in general, to assistance with finding the resources to meet companies' individualized needs.

Contact **Susi Varvayanis** at biotech@cornell.edu with questions.

Joshua Cross, Ph.D

CEO and co-founder of Veratag

Josh is a co-founder and CEO of Veratag, a provider of MEMS-based, biometric-like microchips for authentication applications. Before starting Veratag, he was a part of the Craighead Research Group at Cornell University and performed development work that helped create Veratag's technology platform. He received a Ph.D. from Cornell University's Applied Physics Department with expertise in micro and nano-fabrication, microelectromechanical systems (MEMS), analytical biology applications of nanotechnology, and with a minor in Business from the Johnson Graduate School of Management. He has numerous scientific publications in the area of applied nanotechnology, and currently sits on the industrial advisory board of the UC Berkeley Sensors and Actuators Center.



Marcene S. Sonneborn

SBIR and Business Development Specialist



Marcene S. Sonneborn is the [Small Business Innovation Research \(SBIR\)](#) Specialist for the Central New York Technology Development Organization (TDO). The TDO's SBIR/STTR program covers a 24-county region.

In this capacity, Marcie conducts workshops around the region for companies interested in federal technology programs including SBIR, Small Business Technology Transfer Research (STTR), the Advanced Technology Program (ATP), and others. She also provides one-on-one assistance to companies and entrepreneurs to help them to coordinate the proposal preparation process. She reviews proposals for her clients prior to submission, and assists them when they are preparing their SBIR project budgets. She also uses the NYSTAR (New York State Office of Science, Technology and Academic Research) network to provide expertise to clients from across New York State if capabilities are not available within the client's region.

Marcie also provides technical and business development assistance to TDO clients, principally in the areas of research and development, technology transfer and commercialization, intellectual property protection and licensing agreements, technology-business organizational planning, management team development, and strategic marketing. She has prepared clients to make presentations to venture capitalists and to participate in venture capital forums.

Marcie's specialty is marketing and strategic planning for technology-based and emerging growth companies. She has her MBA from the SU School of Management and received her degree in the Innovation Management Program, with emphasis in marketing and finance. Marcie is an adjunct faculty for the SU School of Management Entrepreneurship and Emerging Enterprises Program, teaching both a classroom-based and a distance learning course.

In October, 1997, Marcie was a recipient of the Tibbetts Award from the U.S. Small Business Administration. This award is given for economic impact of technological innovation, business achievement and effective collaborations, and effective state and regional impact and support.

Marcie also has published articles on technology management, wrote an assessment workbook for "Taking Your Business Online," and a chapter on the marketing of financial services for a textbook which was published in Eastern Europe. She has participated as the marketing representative on a management team for management training programs in Eastern Europe. She also has worked in marketing research and survey design, including participation on a subcontract to a Fortune 50 company designing and developing technology products for the 21st century.

Jacob N. (Jesse) Erlich

Jacob (Jesse) Erlich is a Partner and member of the Intellectual Property / SciTech, Government Contracts and Science & Technology Groups of Burns & Levinson LLP of Boston. Mr. Erlich also served as Chief Patent Advisor for the United States Air Force.

Mr. Erlich represents a wide array of clients such as universities and small and large technology companies in diverse technological fields. He provides advice on patents and other forms of intellectual property, licensing and government related matters and is also involved with the preparation and prosecution of patent applications (U.S. and foreign).

He has contributed to numerous publications in the fields of intellectual property and technology transfer, and Mr. Erlich has co-authored a book entitled, *Technology Development and Transfer - The Transaction and Legal Environment*, and is a contributing author to *2000-2009 Licensing Update*, as well as *Valuation of Intangible Assets in Global Operations*.

Mr. Erlich is a graduate of Worcester Polytechnic Institute and earned his J.D. from Georgetown University Law Center. He is admitted to practice law in Massachusetts, the District of Columbia and is admitted to practice before the Supreme Court of the United States. He is a registered patent attorney with the United States Patent & Trademark Office and the Canadian Patent Office and earned the Certified Licensing Professional (CLP) credential in 2008.

Mr. Erlich serves on the Board of Directors of the National Defense Industrial Association (NDIA), New England Chapter as well as on the Advisory Council of the National Institute of Justice, a research agency of the United States Justice Department. He is a member and past President of the Boston Patent Law Association and was listed in *Who's Who in American Law* and *Who's Who in Intellectual Property* and has recently been selected as the 2009 recipient of the Federal Laboratory Consortium (FLC) Technology Transfer's Outstanding Service Award. Mr. Erlich was once again selected as a Massachusetts Super Lawyer. This selection of attorneys is based on a poll and internal research done by *Law & Politics Magazine* and reviewed by an independent blue ribbon panel of their peers. Listed attorneys and finalists consist of the top 5% of attorneys in Massachusetts.



Gary E. Harman

Professor, Horticultural Sciences, Cornell University College of Agriculture and Life Sciences, NYS Agricultural Experiment Station

E-Mail: geh3@cornell.edu

1970 **Ph.D.** Plant Pathology, Oregon State University

1966 **B.S.** Botany, Colorado State University

Division of Effort - Research-100%, Biological control and biological plant productivity enhancement, fungal and plant molecular biology, biological remediation of pollution, uses of enzymes for commercial processes. A major focus is entrepreneurial translation of basic research to commercial reality.



Program Overview

Recent research of plant-microbe interactions in this lab and elsewhere have changed fundamentally our view of interactions between the fungi in the genus *Trichoderma*, other microbes and plants. These organisms have long been known as biocontrol agents and strains developed in this lab are widely sold commercially for these purposes. They induce systemic resistance to diseases in a wide variety of plants, enhance root and plant growth, and confer resistance to abiotic plant stresses. Proteomic research indicates that they dramatically change the plant proteome and the plant-microbe interaction is strongly influenced by plant genotype, at least in maize. We intend to discover the basis of these changes through examination of changes in the fungal and the plant gene expression and proteome. These basic findings are being immediately translated to agricultural practice through associations with two companies who are funding and cooperating with applied aspects of this research. Through cooperative grants and coordinate research, improvements in delivery and application systems are being directly developed.

Trichoderma spp. also produce enzymes that degrade environmental pollutants such as cyanide and polyphenolic compounds. The abilities of these fungi to enhance root development, plant growth and uptake of materials from soil are expected to enhance phytoremediation. Thus, there are numerous applications to alleviation of pollution of soil and water. Several demonstration/proof-of-concept trials are underway to examine these capabilities in the US and in Europe, including arsenic removal from the future site of the Cornell Venture Center in Geneva.

These fungi also produce other enzymes that of interest. We are developing systems using synergistic mixtures of fungal and bacterial chitinases for production of the nutraceutical N-acetylglucosamine, which has value for treatment of inflammatory bowel disease, including Chron's disease, osteoarthritis and ulcerative colitis. The technology has been fully developed at the lab scale and we expect scale-up to begin in 2004, probably in a facility located in Geneva.

There are two primary goals of the remainder of my career at Cornell, as follows:

1. To understand the interactions between *Trichoderma* spp., plant and pathogenic microbes, and
2. To translate most of the technology developed in my laboratory over the past 30 years to commercial reality.

Entrepreneurial roles

Gary Harman, cont'd.

BioWorks, Inc., Geneva, NY markets biological products for control of plant diseases and increased plant productivity.

- Co-principal inventor.
- Consultant in development of proprietary technology.
- Cofounder.
- Various management roles including Acting CEO.

Phytobials, LLC and LTD; sister companies in the US and Europe that intend to become the principal global provider of unique, low cost, and green microbial-plant remediation systems.

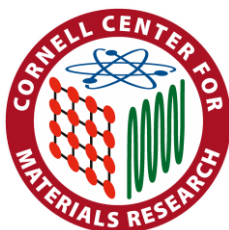
- Co-principal inventor
- Cofounder, with responsibilities for securing funding, arranging for collaborations with other academic and corporate partners and providing major input into company structure and the business plan.

Advanced Biological Marketing, a company that markets and produces microbial products for the row crop (e.g., maize and soybeans) market.

- Inventor of key technologies
- Consultant

Biomarinex, a company that is seeking to market N-acetylglucosamine as a nutraceutical.

- Co-principal inventor
- Consultant, including assistance in obtaining Ontario County and NYS funds to match those provided by the Canadian government



About the Cornell Center for Materials Research (CCMR)

CCMR is a National Science Foundation and New York State funded interdisciplinary center at Cornell University whose mission is to advance, explore and exploit the forefront of the science and engineering of advanced materials. This objective is pursued through fundamental experimental and theoretical studies of the assembly and processing of nano-materials and of their resulting behavior, educational outreach, and collaborations with industry. The key focus of the CCMR Industrial Partnerships Program is to build value collaborations between industry and the broad materials expertise of CCMR faculty. With research projects from over 100 faculty members covering 10 different departments, mutually beneficial relationships with industry are accomplished through a variety of activities including joint research projects, symposia and short courses. The Industrial Partnerships team assists, supports and facilitates relationships between industry and CCMR faculty ensuring lasting collaborations. NY state small businesses can benefit from targeted programs including matching funds for projects conducted with the help of Cornell faculty members.

SPONSORED BY: the Cornell Center for Materials Research (CCMR) Industrial Partnerships Program, the NY State Foundation for Science, Technology and Innovation (NYSTAR) and the Cornell University Center for Life Science Enterprise



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IN COLLABORATION WITH: the Central NY Technology Development Organization (TDO), Cornell Center for Technology, Enterprise and Commercialization (CCTEC), Engineering Research & Graduate Studies, Tompkins County Area Development (TCAD), KensaGroup, and the Agriculture and Food Technology Farm



CCTEC CORNELL CENTER FOR TECHNOLOGY
ENTERPRISE AND COMMERCIALIZATION



To find solicitations go to the SBIR Gateway: <http://www.zyn.com/sbir> or to: <http://www.sbir.gov>

SBIR GRANT WRITING TIPS:

Outline the story you want to tell to the agency: You have a BIG problem; if you don't solve it you're in deep trouble. We have an innovative solution but it is RISKY. For \$100k we can prove that it works and that it will SOLVE your problem. No one is as qualified as we are to implement this solution; and by the way, when developed into a product this idea will sell like hotcakes.

Recommended proposal component maximum page lengths and some suggestions for key parts:

- cover sheet: 1
- abstract: 1
- significance: 3 ("the R&D we are proposing is to demonstrate the feasibility of..." then "our innovation is relevant to the agency subtopic on ___ in that we propose to..." then your theme "x problem is limiting x" then your innovation "our approach is innovative because no one has ever tried to incorporate...")
- objectives 1 (determination of feasibility should be one of them)
- work plan: 4 to 6 (relationship of tasks to objectives, tasks to conclude feasibility, timeline, how and by whom each task will be done)
- related work: 2
- key players: 5
- future R&D: 1
- commercialization: 2
- references: 1
- cost proposal: 2

=total: 23 to 25 pages