Who We Are

The Center for Technology Licensing (CTL) is Cornell University’s technology transfer office. We manage technology for Cornell’s Ithaca campus, Weill Cornell Medical Colleges, Cornell Tech and the New York State Agricultural Experiment Station in Geneva. CTL’s mission is to bring the University’s scientific discoveries, technological innovations, and medical advances to the marketplace for societal benefit and to foster economic development within New York state and across the nation.

What We Do

- Promote beneficial interactions between Cornell researchers and industry.
- Partner with industry to develop Cornell’s technologies and plant varieties into products and services for public good.
- Leverage Cornell innovations to promote entrepreneurial opportunities and regional economic development.

How We Do It

- By marketing, patenting, and licensing innovations from Cornell research.
- By hosting networking events to connect Cornell researchers, industry, and entrepreneurs.
- By increasing awareness on campus of the value of commercializing and protecting Cornell innovations.
GENEVA® Apple Rootstock ‘G.213’
G.213 is a productive dwarfing rootstock resistant to: bacteria that cause Fire Blight; multiple types of fungi; and the Woolly Apple Aphid insect.

Gennaro Fazio, USDA Agricultural Research Service
Terence Robinson, Horticultural Sciences
Herb Aldwinckle, Plant Pathology & Plant Microbe-Biology
James Cummins, Horticultural Sciences

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Analysis Method and Application of Ultrashort Circulating Cell-Free DNA
This is a novel approach that allows for the detection of sub-100bp, ultrashort cfDNA in the plasma. It may allow for non-invasive, multiplex testing for bacterial and/or viral pathogens in the blood, thus advancing diagnosing methods for diseases.

Iwjin De Vlaminck, Biomedical Engineering
Phillip Burnham, Biomedical Engineering

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A Peptide-Based Delivery Template for Combination Therapy
This technology is a self-assembling peptide based drug delivery platform. It can be employed to deliver therapeutics with high specificity and can facilitate delivery of precise drug combination ratios to target sites.

*Benedict Law, Radiology, Weill Cornell Medicine*

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Device and Method for Tongue Exercise
This is a device and method for exercise of the Genioglossus (GG) for treatment of Obstructive Sleep Apnea (OSA). The tongue training device can be used by OSA patients to mitigate symptoms.

*Erik Zavrel, Biomedical Engineering*

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Gene Therapy for α1-antitrypsin Deficiency with AAV Intrapleural Administration

Millions of people are diagnosed with emphysema annually and choose to undergo therapeutic treatment. Currently, this process requires weekly intravenous infusions of α1-antitrypsin. Cornell researchers have developed a novel gene therapy that offers single administration and lower cost.

Stephen M. Kaminsky, Genetic Medicine, Weill Cornell Medicine
Ronald G. Crystal, Genetic Medicine, Weill Cornell Medicine
Dolan Sondhi, Genetic Medicine, Weill Cornell Medicine
Charleen Hollmann, Genetic Medicine, Weill Cornell Medicine

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Fesarius Therapeutics, Inc.

Fesarius Therapeutics is developing engineered tissue scaffold products for the skin and dermal layers. The products are based off the patent-pending microstructure-containing gel scaffold technology developed at Cornell. The acellular skin replacement will aim to benefit those with wounds resulting from burns, plastic surgery, tumor removal, and other forms of trauma.

Brett Spector, CEO, Fesarius Therapeutics, Inc.
Jason Spector, Surgery, Weill Cornell Medicine

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Methods and Pharmaceutical Composition for the Treatment and the Prevention of Cardiomyopathy due to Energy Failure

Friedrich Ataxia (FRDA) is an autosomal progressive recessive neurodegenerative disorder characterized by impaired muscle coordination and hypertrophic cardiomyopathy. This method consists of administering a therapeutically effective amount of vector, comprised of a frataxin (FXN) encoding nucleic acid, to prevent or treat cardiomyopathy.

Ronald G. Crystal, Genetic Medicine, Weill Cornell Medicine
Patrick Aubourg, French Institute of Health and Medical Research
Helene Monique Puccio, French Institute of Health and Medical Research
Pierre Bougneres, French Institute of Health and Medical Research

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Gene Therapy for Late Infantile Neuronal Caroid Lipofuscinoses (also known as CLN2 Disease or Batten Disease)

Late Infantile Neuronal Caroid Lipofuscinoses (LINCL), more commonly known as Batten Disease, is an inherited and fatal disorder that affects the nervous system. Studies on the disorder have led researchers to develop a gene therapy, utilizing AA Vrh.I OcuhCLN2 for direct administration to the brain of children with LINCL in hopes it will slow down or halt progression of the disease.

Ronald G. Crystal, Genetic Medicine, Weill Cornell Medicine

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Microalgae for Fish-Oil Enriched Chicken Meat
A sustainable, low-cost method of ensuring more fish oil in western diets is through the addition of defatted microalgae in chicken feed. Studies have demonstrated dose-dependent increases in fish oil in breast and thigh meat of chickens fed defatted microalgae in their diets. In fact, consuming 200 gms of this breast meat would supplement up to 35 mg of fish oil to the diet.

Xin Gen Lei, Animal Science

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Novel Synthetic & Biodegradable Surgical Adhesive & Tissue Sealant
A novel dihydroxyacetone (DHA – accepted by FDA for human ingestion) based polymer has proven safe and effective in rat models of (i) hemorrhage by significantly reducing bleeding times and blood loss compared to a commercially available product and (ii) breast removal surgery by reducing fluid accumulation post-surgery by greater than 95%.

David Putnam, Biomedical Engineering
Peter Zawaneh, Chemical and Biomolecular Engineering
Jason Spector, Surgery, Weill Cornell Medicine

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**ReconnectNEURO, LLC**
ReconnectNEURO is a Cornell startup focused on the treatment of cognitive impairment through the use of deep brain stimulation methods. The stimulation systems work to increase consciousness in patients who are minimally conscious or who have reduced capacity due to trauma, stroke, or other diseases.

*Nicholas D. Schiff, Neurology, Weill Cornell Medicine*

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**Repairogen®, Inc.**
Repairogen is developing new compounds that reduce UV-induced skin damage, reduce skin aging and reduce the development of skin cancer.

*Frank Borchetta, CEO and President, Repairogen®, Inc.*
*Michael Boice, Chief Scientific Officer, Repairogen®, Inc.*
*Pengbo Zhou, Pathology & Laboratory Medicine, Weill Cornell Medicine*

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Super Natural Killer Cells that Target Cancer Cells in the Tumor Draining Lymph Nodes

Previously, in an earlier poster it was shown that leukocytes functionalized with decorated liposomes can capture and kill circulating tumor cells in blood. The current work demonstrates that human natural killer cells with decorated liposomes can enhance their therapeutic potential by preventing the lymphatic spread of a subcutaneous tumor in mice. This approach can be used to kill cancer cells within the tumor draining lymph nodes to prevent the lymphatic spread of cancer.

Siddarth Chandrasekaran, Biomedical Engineering
Maxine F. Chan, Biomedical Engineering
Michael R. King, Biomedical Engineering

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SFM as Predictive Biomarker for Determining Response to TOP1-Directed Chemotherapy

Topoisomerase I (TOP1) is the target of many anti-tumor, chemotherapeutic agents. Cornell inventors discovered that tumor cells expressing high levels of CUL4B are resistant to TOP1-directed chemotherapy drugs. Therefore, CUL4B can serve as a predictive biomarker to identify patients that will be either resistant or responsive to treatment with a TOP1-directed chemotherapeutic agent.

Pengbo Zhou, Pathology & Laboratory Medicine, Weill Cornell Medicine

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System and Methods for MR Microscopy and Pathological Analysis of Resected Tissue

Histopathology is commonly used in the assessment of various types of cancer including breast cancer. This invention provides an alternative system, Magnetic Resonance Microscopy (MRM), which may accelerate pathological analysis while reducing sampling error.

Douglas J. Ballon, Radiology, Weill Cornell Medicine

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Physical Sciences

Amino Acid-based Biodegradable Biomaterial Platform Technology for Human Body Repair and Reconstruction

Novel biodegradable polymers exhibit unique features and biological characteristics that make them ideal for use in human body repair and reconstruction. Research using these structures has introduced applications for nano medicine and drug delivery, 3D tissue, burn treatment, and coating for wound closure.

CC Chu, Fiber Science and Apparel

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A Stable Room-Temperature Sodium-Sulfur Battery

High-energy and inexpensive rechargeable battery systems based on earth-abundant materials are important for both mobile and stationary energy storage technologies. This invention provides a room-temperature, rechargeable Na-S battery as an alternative to those currently on the market.

Shuya Wei, Chemical and Biomolecular Engineering
Lynden A. Archer, Chemical and Biomolecular Engineering

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Ecolectro, Inc.

Ecolectro develops novel thin films for use as alkaline anion exchange membranes (AAEM) for fuel cells which offer major improvements to the performance and durability of fuel cells, filling the ongoing and unmet need for conductive and solvent processable ionomers. Ecolectro’s fuel cells containing AEEMs reduce costs, conserve fuel, and maintain efficiency.

Gabriel Rodriguez-Calero, CEO, Ecolectro, Inc.

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GrokStyle, LLC

GrokStyle is a Cornell startup founded on home owners’ and consumers’ interest in visualizing ideas for interior design. By using a distance metric for visual search, Grokstyle aims to provide interior design enthusiasts with an automated tool for design suggestions and ideas.

Sean C. Bell, Computing and Information Science

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Mindless Computing/Emotion Regulation
The concept of Mindless Computing allows the development of technologies to improve our behavior and feelings without requiring our explicit attention and effort. Based on this concept, Cornell researchers devised two technologies: EmotionCheck and MindlessPlate. EmotionCheck is a wearable device that can help individuals to lower their anxiety by manipulating their heart rate awareness. MindlessPlate influences people’s perception of the amount of food on a plate by using an optical illusion, which can help individuals to eat less without their awareness.

Tanzeem K. Choudhury, Computing and Information Science
Alexander Travis Adams, Computing and Information Science
Jean Marcel dos Reis Costa, Computing and Information Science
Malte Jung, Computing and Information Science

On-The-Fly Print
3D printing has gained considerable attention in the recent years and continues to offer opportunity for advancement. WirePrint software was developed for generating and 3D printing low fidelity wireframe previews of designed objects -- to scale and at high speed. On-The-Fly Print allows users to check a wireframe preview while designing the 3D model by removing that partial physical print from the printer.

Huaishu Peng, Computing and Information Science
Rundong Wu, Computing and Information Science
François Guimbretière, Computing and Information Science

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Scalable Manufacturing Techniques for Soft Robotics Applied in Biomedical Implants and Orthotics

Through the use of soft materials, mechanical design, and novel fabrication, comes advances in soft robotic devices. The development of a novel optical sensor and method of embedding the sensor within a soft actuator offers potential for use in wearable orthotics and soft robotics.

Robert Shepherd, Mechanical and Aerospace Engineering
Huichan Zhao, Mechanical and Aerospace Engineering

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Suntomics, Inc.
Suntomics focuses on a green and efficient process for soil treatment. This soil treatment is enabled by a low cost, wireless, self-powered solar tile system that allows soil solarization to be efficiently performed.

Amit Lal, President, Suntomics, Inc.
Electrical & Computer Engineering

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Smartphone Enabled Mobile Health
It is estimated there are 250 million smartphones in use in the US. Cornell researchers are developing systems that can exploit the ubiquity of smartphones for personalized monitoring of important elements of blood chemistry, like vitamins and micronutrients. The system exploits a series of microfluidic components, photonic technologies, and standard smartphone capabilities to analyze the content of a blood sample taken from a finger stick (or other bodily fluids). The system is comprised of a reusable accessory that contains the optical interrogation infrastructure, and a consumable chip, that accepts the sample, processes it, and conducts the detection assay. Analysis results are displayed to the user via an on-board app, compared with optimal levels, and recommendations provided regarding any treatments.

David Erickson, Mechanical and Aerospace Engineering

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