## Southern Tier

| | Regional totals | % of total in region | Independent Sector state totals |
|---|---|---|---|
| No. of Independent Sector institutions | 4 | | 145 |
| **Degree Productivity** [1] | | | |
| Bachelor & graduate degrees, Independent Sector | 8,574 | 69% | 127,073 |
| Bachelor's in engineering | 649 | 78% | 3,082 |
| Bachelor's in mathematics | 54 | 43% | 856 |
| Bachelor's in physical sciences | 105 | 64% | 884 |
| **Economic Impact** [2] | | | |
| Employees | 32,654 | | 360,158 |
| Economic impact (millions) | $4,779 | | $54,296 |
| Payroll (millions) | $2,026 | | $19,576 |
| Capital construction (millions) | $229 | | $1,637 |
| Student/visitor spending (millions) | $237 | | $3,925 |
| **Quality Measures** | | | |
| 2010 National Merit Scholars entering college [3] | 61 | | 355 |
| Doctoral/Research Universities (Carnegie Classification) [4] | 1 | | 18 |
| Association of American Universities member [5] | 1 | | 4 |
| U.S. News Top 50 Universities and Liberal Arts Colleges [6] | 1 | | 13 |
| Nobel Laureates [7] | 24 | | 135 |
| National Academy of Sciences members [8] | 34 | | 160 |
| **Proven Expertise** | | | |
| Licensing income [9] | $5,100,407 | | $347,706,425 |
| Start-up companies formed [9] | 3 | | 46 |
| Licenses executed [9] | 23 | | 172 |
| Total active licenses [9] | 450 | | 1298 |
| New patent applications [9] | 129 | | 615 |
| U.S. patents issued [9] | 73 | | 304 |
| National Science Foundation FY2009 [10] | $672,497,000 | | $3,009,877,000 |
| National Institutes of Health FY2009 [11] | $71,319,344 | | $1,297,720,896 |

Sources:

1. New York State Education Department, Office of Research and Information Services. Degrees granted are public and Independent Sector, 2008-09.
2. Center for Governmental Research, January 2011.
3. The National Merit Scholarship, http://www.nationalmerit.org/nmsp.php#entryreq
4. The Carnegie Classification, http://classifications.carnegiefoundation.org/
5. Association of American Universities, http://www.aau.edu/
6. U.S. News university and college rankings, http://colleges.usnews.rankingsandreviews.com/best-colleges
7. Nobel Laureates through 2010.
8. National Academy of Sciences, http://www.nasonline.org/site/PageServer?pagename=MEMBERS_Main
9. Association of University Technology Managers, FY2009, http://www.autm.net/Home.htm
10. National Science Foundation, College and University R&D FY2009, data file.
11. National Institutes of Health, http://report.nih.gov/award/trends/State_Congressional/StateOverview.cfm

# Independent Sector: Centers of Research, Innovation, and Economic Development Southern Tier

| Institution | Center | Description | Category |
|---|---|---|---|
| Cornell University | Center for Life Science Enterprise | Biotechnology. | Centers for Advanced Technology |
| Cornell University | Future Energy Systems | Renewable energy. | Centers for Advanced Technology |
| Cornell University | Kevin N. McGovern Family Center for Venture Development in the Life Sciences | The Innovation Development and Economic Applications (IDEA) Center will be open to faculty, staff and students interested in developing their technologies. The center will supply know-how for every phase of moving an idea from the lab to the marketplace. Services will include access to state-of-the-art equipment and space, marketing and guidance from business experts for writing business plans, negotiating intellectual property concerns and identifying venture capital and other sources of funding. | Incubator |
| Cornell University | Cornell Center for Materials Research (CCMR) | The Cornell Center for Materials Research (CCMR) as part of the NSF's Materials Research Science and Engineering Centers (MRSEC) program. CCMR's mission is to advance, explore and exploit the science and engineering of advanced materials. Current research is the study of materials purposefully structured at the nanoscale (near-atomic dimensions). | National Science Foundation |
| Cornell University | The Cornell NanoScale Science & Technology Facility (CNF) | The Cornell NanoScale Science & Technology Facility (CNF) is a national user facility that supports a broad range of nanoscale science and technology projects by providing state-of-the-art resources coupled with expert staff support | National Science Foundation |
| Cornell University | Nanobiotechnology Center (NBTC) | The Nanobiotechnology Center (NBTC), a National Science Foundation, Science and Technology Center is characterized by its highly interdisciplinary nature and features a close collaboration between life scientists, physical scientists, and engineers. | National Science Foundation |
| Cornell University | The Plant Proteomics-Metabolomics Facility at Cornell University | Biotechnology. | School-based Center |
| Cornell University | Cornell Center for Technology Enterprise & Commercialization (CCTEC) | The Cornell Center for Technology Enterprise & Commercialization (CCTEC) is Cornell University's technology transfer office. Its goal is to support Cornell's land-grant mission and to promote public good by connecting Cornell technology to industry and business development efforts. | Technology Transfer |

## Southern Tier

**Below are just a few examples of how independent (private, not-for-profit) colleges and universities nurture startup companies, provide valuable expertise to private sector businesses, and harness intellectual property that helps to generate new products and ideas that create economic vitality throughout the State.**

*Start-Up Companies/Licensees*

Adenios, Inc. is working to improve treatment for multiple central nervous system diseases. The company licenses technology from **Cornell University** in hope to find new ways to control the permeability of the blood brain barrier.

ADispell, Inc. focuses on creating solutions that address Alzheimer's disease and other neurodegenerative disorders. ADispell works on the campus of **Cornell University** and has licensed the rights to commercialize novel technology uncovered in the laboratories of Professor George Hess that has exciting promise as potential drug products that halt, and perhaps reverse, the brain deterioration caused by Alzheimer's disease.

Agricultural Modeling and Training Systems, LLC, produces software that makes dairy and meat production more efficient and reduces potential negative environmental impacts of the production process. The company is based on the systems and technologies of the **Cornell University** based Ruminant Nutrition Modeling Group.

Animal Ultrasound Services, Inc. is the industry's leading developer and supplier of complete systems for the computerized evaluation of ultrasonic images of live animals and carcasses. The AUSKey® image analysis software is the key component of both AVT® (Animal Value Techno- logy) and CVT® (Carcass Value Technology) systems that AUS uses. These systems were developed at **Cornell University**.

BinOptics Corporation develops and manufactures photonic chips for optical transceivers and other applications in the telecom, datacom, and optical storage markets. The key technological inventions for the BinOptic's products were made at **Cornell University** in 2000.

BioWorks, Inc. sells environmentally friendly responsible products for insect and foliar disease control. BioWorks' founding inventions were created at **Cornell University**'s Geneva campus. BioWorks has a license from the Cornell Research Foundation for the company's primary products.

**Definitions:**

Start-Up Companies – A new company created at a college or university.

Start-Up Companies/Licensees – A new company created to commercialize and take to market an innovation(s) arising from college and university R&D.

Research Partnerships – Public-private partnerships between a college or university and a private company.

Licensees – Companies licensing R&D technologies.

BZL Biologics, Inc. is a clinical stage company working to commercialize antibody based therapeutics and imaging agents for prostate cancer. The intellectual property used in BZL Biologics, Inc. research has been licensed to the company by **Cornell University**.

Coferon, Inc. is working with **Weill Cornell Medical College** to develop orally active drugs that reach currently "undruggable" targets. Their platform consists of molecules that have the ability to permeate cell membranes and then once inside, assemble to become larger molecules.

Databeast Inc. provides dataComet-Secure, a secure terminal emulation product for the Macintosh OS X platform. Databeast's clientele ranges from individuals to academic institutions, corporations, and government agencies. The company's founder is a former **Cornell Univeristy** staff member. Databeast provides Cornell with updated versions of dataComet-Secure for Macintosh computers distributed through Bear Access.

DNANO Systems, LLC, commercializes P-Gel, a new protein-production platform that uses hydro-gel to produce proteins efficiently and economically. P-Gel can cut product costs by an estimated 20 times over conventional protein-producing techniques. DNANO's technology is based on a number of inventions from **Cornell University** involving DNA amplification mediums and techniques.

e2e Materials, LLC is a clean technology company that produces petroleum-free, biodegradable composites out of soy proteins using a method that was developed at **Cornell University**.

Etron Inc. develops, manufacturers, and markets microcomputer control systems for dairy farms. Etron's control system is based on a **Cornell University** invention for a variable-speed drive controller which optimizes vacuum level control in both milking and clean-in-place system washing phases. The apparatus significantly reduces electrical energy usage and cost.

Ezra Pharmaceutical, Inc. is dedicated to developing novel preventative therapeutics for diabetic complications. Ezra Pharmaceutical, Inc. is taking advantage of recent biomedical breakthroughs at **Cornell University** and leveraging global connections to bring to market innovative therapeutics for diabetic complications with the hope of changing the paradigm of diabetes management.

Glycobia, Inc. is committed to developing human therapeutics by linking the simplicity of bacteria with the sweetness of glycosylation. The company licenses the technology needed for such endeavors from **Cornell University**.

**Definitions:**

Start-Up Companies – A new company created at a college or university.

Start-Up Companies/Licensees – A new company created to commercialize and take to market an innovation(s) arising from college and university R&D.

Research Partnerships – Public-private partnerships between a college or university and a private company.

Licensees – Companies licensing R&D technologies.

Hybrid Silica Technologies Inc. (HST) commercializes C Dots, fluorescent nanoparticles that approximate the brightness and size of quantum dots without the toxicity. Hybrid Silica's founding technology is based on a fluorescent nanoparticles platform that was developed at **Cornell University**. A faculty member of the Department of Material Science and Engineering and a Ph.D alumna developed the enabling invention.

iFyber, LLC is a materials science company advancing coating technologies used to functionalize natural and synthetic fibers in the industrial, medical, military and consumer markets. iFyber's methods of applying uniform, functionalized coatings developed from technologies at **Cornell University**.

InFlora, Inc. is commercializing a collection of unique woody ornamental plants developed at **Cornell University**.

Jodange provides a web-based service called Top of Mind™ that synthesizes the exploding volume of digital information and tracks it over time. Much of the technology developed by Jodange was leveraged from research on sentiment analytics done at **Cornell University**.

Kionix, Inc. (www.kionix.com), headquartered in Ithaca, designs and manufactures micro-machines using deep silicon etching techniques. Its current and future products include inertial sensors, microfluidic devices, and high-density data storage devices for use in the automotive, consumer products, and data storage industries. Kionix holds exclusive licenses to a range of micro-machining and related technologies developed at **Cornell University**, which holds an equity stake in the firm.

Lucerna, Inc. is a biotechnology research company focused on developing and commercializing nucleic-acid based fluorescent sensors for Point-of-Care therapeutic diagnostics and environmental biomonitoring. **Cornell University** licenses the technology used by Lucrna.

MADathletic, Inc. was founded in 2010 with the goal of improving safety within the football community. With a team of coaches, former professional athletes, engineers, and MBAs, MADathletic, Inc. has the necessary tools to deliver successful products. Currently based in Ithaca, NY, MADathletic, Inc. has deep roots at **Cornell University** and has been able to leverage the university's expertise.

Medeor, Inc. is commercializing software developed at **Cornell University** that measures organs and tissues from medical images for the Chinese market.

Mezmeriz uses carbon fiber MEMS (microelectromechanical system) technology developed at **Cornell University** to make a high-definition projector that is the size of a

**Definitions:**

Start-Up Companies – A new company created at a college or university.

Start-Up Companies/Licensees – A new company created to commercialize and take to market an innovation(s) arising from college and university R&D.

Research Partnerships – Public-private partnerships between a college or university and a private company.

Licensees – Companies licensing R&D technologies.

matchbook. The company is building a prototype of the Mezmeriz technology, which will ultimately lead to a projection system that can be embedded into any mobile device, including phones and video players.

MiTeGen LLC develops, manufactures, and distributes microfabricated tools for crystallization and molecular structure determination of proteins, viruses, and pharmaceutical compounds and for manipulation and measurement of small, fragile samples. A faculty member and graduate students in **Cornell University's** Department of Physics developed MiTeGen's founding technologies. MiTeGen makes extensive use of the Cornell's NanoScale Science and Technology Facility (CNF) and the Cornell High Energy Synchrotron Source (CHESS) in developing its products.

The goal of Novita Pharmaceuticals is to translate the new fundamental discoveries of mechanisms of tumor metastasis into the first-in-class drugs for preventing and treating cancer metastasis. Novita licenses technology from **Cornell University**.
Novomer develops two types of "green," biodegradable polymers that are less polluting than traditional plastics. The first is made using carbon dioxide, and the second is made using carbon monoxide. Novomer's method uses catalysts developed at **Cornell University** to develop polymers whose feedstocks contain between 30 and 50 percent carbon monoxide and carbon dioxide.

OptiGen® LLC is a private genetic service company that provides testing for certain inherited diseases to owners of purebred dogs, breeders, and their veterinarians. The initial testing services of OptiGen were based upon the discoveries made by faculty members of Cornell's Baker Institute of Animal Health. The company's core tests for eye diseases in purebred dogs were developed at **Cornell University**. The company uses licensed Cornell technology and continues to pursue research interactions with the university.

Orthogonal, Inc. is developing environmentally safe, high performance fluorinated photoresists to make "organic," or carbon based electronics on the same machinery manufacturers use to make silicon-based electronics. Orthogonal licenses the technology needed for their developments from **Cornell University**.

Prendismo, LLC is home to the world's premiere collection of digital video content on business, leadership, and entrepreneurship. Prendismo arose from the eClips project at **Cornell University** and the Cornell Center for Technology Enterprise (CCTEC).

Reparo Therapy, Inc. is developing DNA repair-enhancing ingredients and products to treat or prevent cancers caused by UV or chemical carcinogens. Reparo licenses technology from **Cornell University** in order to make improvements on their research.

**Definitions:**

Start-Up Companies – A new company created at a college or university.

Start-Up Companies/Licensees – A new company created to commercialize and take to market an innovation(s) arising from college and university R&D.

Research Partnerships – Public-private partnerships between a college or university and a private company.

Licensees – Companies licensing R&D technologies.

Terrenew LLC manufactures low-cost environmental products and methods for cleaning up environmental contaminants. OilMaster and MetalMaster emerged at **Cornell University** from concepts of the physical and chemical structure of various agricultural waste products, including composts and plant and animal wastes.

Widetronix Semiconductors Inc. has developed a revolutionary materials solution for silicon carbide (SiC) wafers that significantly improves the manufacturability of reliable, lightweight, and highly efficient transitors and diodes. Widetronix's SiC growth technology is based on key research conducted at **Cornell University**. A Cornell faculty member of the School of Electrical and Computer Engineering and a Johnson Graduate School of Management alumnus founded the company.

ZetrOZ™ is revolutionizing the ultrasound industry by introducing proprietary generator technology that is more efficient, more portable, and more economically viable than any ultrasound generator presently available. The technology was developed at **Cornell University**.

**Definitions:**

Start-Up Companies – A new company created at a college or university.

Start-Up Companies/Licensees – A new company created to commercialize and take to market an innovation(s) arising from college and university R&D.

Research Partnerships – Public-private partnerships between a college or university and a private company.

Licensees – Companies licensing R&D technologies.