

Survey of Biotech Industry in Chicagoland

The Biotech industry in the Chicagoland area is robust. For this article, I will be counting all companies and clusters that file themselves under the designation of biotechnology, biopharmaceuticals, medical devices, and life sciences. Chicago, the United States' third largest city, hosts some of the world's largest multinational life science entities, with the highest concentration of any city inside the Midwest. The city is home to 140+ centers. Additionally, the city has a large presence of entrepreneurs who are leaving a mark in the pharmaceutical, biotech, and medical device niches.

Not all signs are bright in the life sciences in Chicago. Recent major acquisitions of Illinois companies reduced the number of large companies and related employment in the state. The increase in commercialization activities at Illinois universities and the growth in the number of R&D stage companies will drive the future expansion of the Illinois life sciences industry¹.

The largest growing sector in life sciences is certainly digital/e-health platforms. As hospitals are nearing capacity in lieu of COVID-19 pandemic, telehealth is on the rise. This is also the sector with the most early-stage startups. There are a variety of new platforms being brought into use.

Medical Devices

Medical devices/technology sector consists of companies engaged in the research, development, and manufacturing of healthcare products and devices used to improve the quality and efficiency of healthcare, increase the availability of minimally invasive treatments, reduce costs, and shorten hospital stays and rehabilitation time². The segments of the medical technology industry include: the manufacturing of dental, surgical, and medical equipment and supplies; electromedical and electrotherapeutic apparatus; analytical laboratory instruments; measuring and controlling devices; automatic environmental controls; and ophthalmic goods³.

According to a World Business Chicago report on data from Moody's Analytics, Chicago hosts nearly 3,000 biomedical science and engineering graduates annually, emerging from the city's prestigious universities such as Northwestern University. Chicago has a high-quality talent pipeline that creates an appealing environment for medical manufacturers.

Additionally, advanced manufacturing thrives in Chicago. Outside of the city are the Argonne National Laboratory and Fermilab, together making up the highest concentration of accelerator experts in the world. Accelerator research supports many medical device innovations, such as superconducting wire in MRI magnets⁴.

¹ 2019 iBio State of the State

² Moody's Analytics, "Medical Technology". World Business Chicago.

³ Ibid.

⁴ Ibid.

The city is home to some of the titans of the medical device industry, such as Abbott, AbbVie, and Baxter. Consequently, the city also hosts numerous MedTech trade associations. Chicago's **medical device associations** include:

- **American Medical Technologists Association** (Rosemont, IL) ~60,000 members, focused on health professionals www.americanmedtech.org
- **Clinical Engineering Association of Illinois** (Lisle, IL) Regional professional society supporting healthcare organizations www.ceaiweb.org
- **Illinois Biotechnology Industry Organization** (Chicago, IL) Industry association, 500+ members www.ibio.org
 - **iBio** is an organization for life science entities (companies, startups, medical professionals, scholars) to network and share expertise. The group produces an annual “state of the state” life science report which I used for this report and will attach.
- **American Medical Association** (Chicago, IL) Over 200,000 members www.ama-assn.org/ama
- **American College of Surgeons** (Chicago, IL) Over 80,000 members

There are also numerous trade shows (on hold due to Covid-19) in Illinois devoted to the medical device industry including:

- **MedCity INVEST** (Chicago, IL) Premiere national healthcare investing conference based in the Midwest www.events.medcitynews.com/invest/ I have subscribed to their newsletter. Offers interesting intelligence as to where investment is going in biotechnology.
- **DIA (Drug Information Association)** (Chicago) 7,000+ leaders and innovators from industry, academia, regulatory and government agencies www.diaglobal.org/en

Many of the most prominent MedTech companies in Chicago are not exclusively involved in the MedTech field but are involved in the full spectrum of biotechnology. The life science landscape in recent years in Chicago has shown a trend of mergers and acquisitions by some of the largest firms, many of which already have a robust international presence. Some prominent companies, listed from largest to smallest by employee count, are:

- **Abbott**, 7,977 employees. Present in Abbott Park, Illinois.



- **AbbVie**, 6,826 employees – scientific focus in the areas of oncology, immunology, neuroscience, virology, and eye care.
- **Baxter**, 4,405 employees
- **Siemens Healthcare**, 3,765 employees,
- **Medline Industries**, 2,638 employees
- **Cardinal Health**, 1,426 employees, pharmaceuticals and medical devices.



- **Hospira**, 1,350 employees (recently acquired by Pfizer)

Fast growers:

- **Exicure** – does work on neurodegenerative diseases, currently developing the drug XCUR-FXN, which advanced into IND-enabling studies in Q4 2020.
- **Tempus Labs** – has the world’s largest library of clinical and molecular data. Labs in Chicago and Atlanta. High-level diagnostic technology. Their clinic-genomic database enables accelerated drug development. Applying artificial intelligence into the realm of healthcare.



The culture of large mergers and acquisitions and the dominance of large companies in the local life science industry, combined with the presence of plenty of small-scale startups, as well as many experts and R&D talent coming from local universities, creates ample opportunity for innovation and collaboration in life sciences in the Chicago area. The universities provide research, science, and a talent pool; the startups engage in their own experimental R&D and entrepreneurship, for which they are seeking to gain large investments from (usually) some larger corporations, such as AbbVie, Abbott, etc. or from venture capital.

It is worth noting that many of these large companies are multinational players.

Biopharmaceuticals

Biopharmaceutical entities are common in Chicagoland and major entities extend across state lines into greater region which includes parts of Indiana, Michigan, and Wisconsin.

- **Pfizer**: Present in Skokie, Illinois and Lake Forest, Illinois. Pfizer also has large distribution facilities in Kenosha, Wisconsin and Kalamazoo, Michigan, from which it is distributing its famous COVID-19 vaccine nationally.
- **Abbott** – present in Belgium and throughout Europe. This is Chicago’s largest biotech company
- **AbbVie** – started in 2013 as a spinoff from Abbott. Present in Belgium, Germany, Italy, and Ireland.
- **Baxter** – global healthcare, medtech, and pharmaceutical behemoth.
- **Fresenius Kabi** – Infusion, transfusion, clinical nutrition specialties. Global company with a presence in Europe.
- **Horizon Pharma** – US/Canada healthcare company. About a dozen treatments for various diseases, including gout, are currently in their pipeline.
- **Lundbeck** – taking pharmaceuticals to neuroscience. Chosen as one of the “best places to work” by the Chicago Tribune. Global presence, including Belgium.
- **Takeda** – locations in Lisle, Illinois and Bannockburn, Illinois. Globally recognized Japanese firm with a presence in Belgium.
- **Assertio** – engages in targeted acquisitions, in-licensing partnerships, commercialization partnerships, and other investments and partnerships with developers of late-stage and approved medications across all therapeutic areas. Present in Lake Forest, Illinois.

- **Athenex** – present in Chicago but HQ is in Buffalo, New York. Notably, this company’s presence in Europe is limited to the United Kingdom.
- **TerSera** – pharmaceuticals with a specialty in the therapeutic areas.
- **Astellas** – pharmaceutical products, injectable and tablets.
- **Xeris Pharmaceuticals** – Injectables

Biotechnology R&D Clusters

Chicago is a center for novel research and development in the biotechnology field, with a vibrant environment facilitating the growth of startups. \$795.9 million worth of venture capital invested in health companies 2011-2016. The city is home to 494 research and development establishments, with 17,897 employees. Between 2010 and 2016, 142 health startups were founded. Nonetheless, according to iBio’s state of the state report, Illinois has a noteworthy **lack of pre-existing laboratory space**.

- **Matter:** a self-described “healthcare startup incubator community nexus and corporate innovation accelerator. Together, we are mobilizing a community of entrepreneurs, industry innovators, scientists and clinicians committed to improving health and care for every patient.” Matter facilitates the collaboration between corporations and startups, matching companies with innovative startups that can help their business. The organization features two separate portals: one for startups and one for corporations, with the goal of creating complimentary matches between the two.



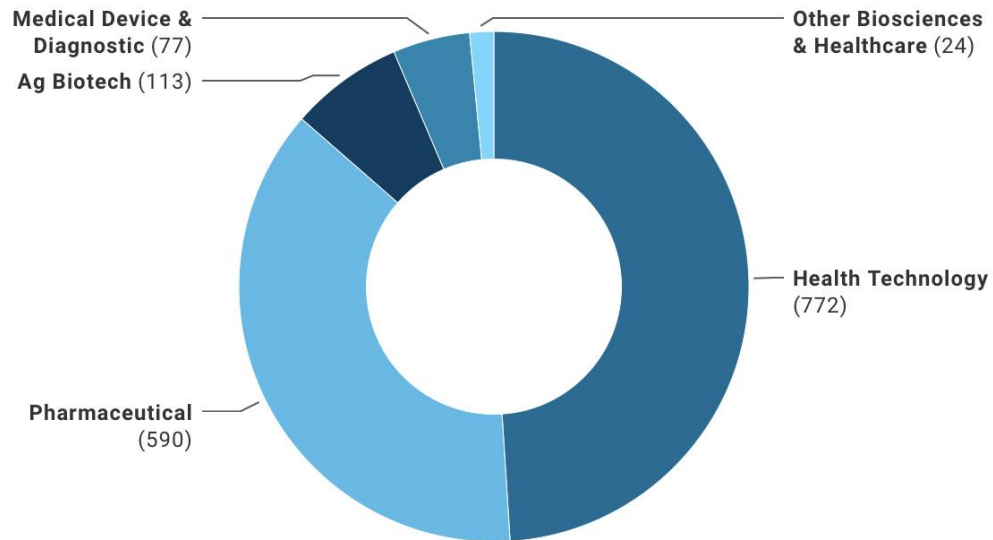
- **Helix 51:** affiliated with Rosalind Franklin University, Helix 51 Incubator is the newest bioscience incubator in Chicago for start-ups, early-stage companies, and international companies looking for a “soft landing” in this major Midwest life science hub, located in Lake County, Illinois, just north of Chicago. The Helix 51 incubator offers over 5,500 square feet of lab office, and conference space.
- **“The Incubator”** (Evanston): High quality lab space for the lab-based startup under the most flexible terms available in the Chicago area. It is a not-for-profit business incubator dedicated to supporting the growth of early-stage technology. Client directory : <https://www.theincubator.com/client-directory>
- **INTERSECT Illinois Life Sciences:** focused on bringing business investment *into* Illinois, but still interesting to look into as it hosts some of the region’s major companies.



- **iBio:** a cluster of life sciences companies and other institutions. This would be an interesting opportunity for BIOWIN to pursue. This is one of Chicago’s most important clusters for biotechnology, besides MATTER.
- **Portal Innovations LLC:** premier venture development engine that bridges scientific ideation in the life sciences, MedTech, and bioinformatics through commercial proof of concept by delivering seed capital, specialized equipment, and lab space to high-potential early stage companies – again, this is a small incubator focused on facilitating innovation and growth from local start-ups.

Life Sciences Investment by Segment

FY 2016, (\$ Million)



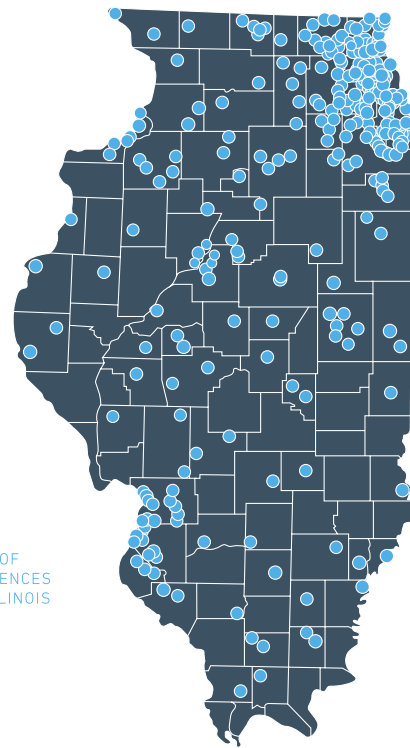
Source: TECOnomy State Biosciences

Figure from the iBio State of the Industry report, 2019. Medical device investment is negligible compared to pharmaceuticals and health technology. Health technology, which includes AI and data-driven firms, is growing rapidly.

ILLINOIS' VIBRANT BIO SCIENCES CLUSTER

TOP 50 BIO SCIENCE COMPANIES BY REVENUE

ABBOTT | ABBVIE | AKORN | AKZO NOBEL |
 ALDRIDGE ELECTRIC | AMERICAN CHEMET |
 BAXTER | BIG RIVER RESOURCES |
 CABOT MICROELECTRONICS | CARUS |
 CURRAN GROUP | DANAHER | ECOLAB |
 FRESENIUS | GOLDEN GATE CAPITAL |
 H.I.G. CAPITAL | HILL-ROM | HOLLISTER |
 HONEYWELL | HORIZON | HA INTERNATIONAL |
 INTERNATIONAL GENERAL ELECTRIC | KIK |
 K+S | MACANDREWS & FORBES | MAT |
 MEDLINE | MONTAGU | NEWELL |
 NICHII-IKO | NOVARTIS | NOW HEALTH |
 OIL-DRI | PACIFIC ETHANOL | PFIZER |
 PLZ AEROSCIENCE | RENAISSANCE |
 ROYAL ADHESIVES & SEALANTS |
 SCHOLLE | SHIRE | STEPAN |
 SUNSTAR | TAIYO NIPPON SANZO |
 TAKEDA | TURTLE WAX | VEE PAK |
 VVF | YOUNG INNOVATIONS |



LOCATIONS OF
ALL BIO SCIENCES
FIRMS IN ILLINOIS

FAST FACTS

100+
BIOPHARMA
FIRMS

AT THE CORE OF A
BIOPHARMA CLUSTER
THAT OUTSCALES
CALIFORNIA &
THE EAST COAST

OVER
592K
EMPLOYED

 [INTERSECTIllinois.org](https://www.intersectillinois.org)

Location of all bio sciences firms in Illinois⁵ :

⁵ INTERSECT Illinois Life Sciences

Universities

Universities are “the driving force of research and innovation in the life sciences in Illinois,” according to the iBio 2019 state of the state report. The Illinois Science and Technology Coalition reports that Illinois has seen a 135% increase in startup companies launching from Illinois universities in the last five years.

The state’s universities are the center of most clinical trials.

- **University of Illinois at Chicago School of Biological Sciences**’ research arm hosts around two-dozen faculty members that specialize in research in the life sciences on a wide variety of topics.
- **University of Chicago Medicine** – an integrated academic and community health system at the world-renowned university in the Hyde Park neighborhood. Comprises of the University of Chicago Medical Center, the Pritzker School of Medicine, the Biological Sciences Division, and Ingalls Memorial, a community-based hospital and outpatient facility in Harvey.
- **University of Illinois at Urbana-Champaign** – this state university came into the spotlight this year when faculty developed a highly-effective Covid-19 PCR test that uses saliva instead of the usual nasal insertion. The test has been administered to students and staff since the beginning of Fall semester 2020. Today, the test is being sold to several universities and companies around the country at a price range between \$20-\$30 per test⁶. The Illinois PCR tests are facing increased demand and are currently awaiting an expected approval at the Federal level from the U.S. Food and Drug Administration.
 - **Shield T3** is the organization formed by the University of Illinois to expand the saliva-based test developed at the University.
- **Northwestern University (Feinberg School of Medicine)**

AWEX Chicago - January 2021

⁶ <https://dailyillini.com/covid-10/2021/01/05/how-sensitive-is-the-ui-covid-19-test-test-developers-explain/>