

BIOLOGISTICS INDUSTRY MAKING A DIFFERENCE IN KENTUCKY

November 18, 2019



BIOPHARMACEUTICAL

RESEARCH, MANUFACTURING & DISTRIBUTION

- **America's biopharmaceutical companies are creating innovative new treatments to combat the diseases that impact many Kentucky families.**
- These medicines address diseases once thought untreatable, saving and prolonging lives.
 - Currently, there are more than 250 biotechnology health care products and vaccines available to patients, many for previously untreatable diseases
- America's biopharmaceutical companies contribute more than 811,000 jobs and \$1.1 trillion in economic output
- Examples of these companies include:
 - Large Companies
 - Amgen, Genentech, Johnson & Johnson and Pfizer
 - Innovative Startups
 - Bexion, Appelis, Petides International and Kentucky Bioprocessing



INNOVATION = NEW CURES

- **America's biopharmaceutical research companies are developing innovative and bringing to market innovative new cures.**
 - Our companies are developing new medicines to treat everything from cancer to heart disease. These medicines bring new hope to those suffering from chronic disease.
- Biopharmaceutical companies are working with the Kentucky healthcare system to find cures for the hardest to treat conditions
 - 886 Clinical Trials
 - 15,575 Participants
 - \$113 million investment
 - \$252 million economic impact



INNOVATION ALSO = JOBS

- **America's biopharmaceutical industry is vast and complex, with a wide variety of jobs in various sectors.**
 - The biopharmaceutical industry supports jobs in research, manufacturing, distribution, sales and many other fields across the country, including right here in Kentucky.
- The biopharmaceutical economic impact in Kentucky
 - 14,030 jobs
 - 1,212 companies
 - \$72,151 average salary
 - \$188 million in NIH research funding
 - \$169 million in venture funding
 - \$4.9 billion in economic output



KENTUCKY'S UNIQUELY CRITICAL ROLE

- **Kentucky plays a unique role in America's biopharmaceutical supply chain, thanks to its central location and strong logistics industry.**
- As innovation creates medications to treat rare diseases, the medications become more complex, requiring special expertise and handling.
- Getting complex medications from the manufacturer to the patient is where Kentucky fits into this important process.
- **Kentucky is THE hub for packaging and distributing medications to patients across America and the globe.**
- Without the biologistics ecosystem in Kentucky, patients would not receive their medications when and where they need them.
- **Kentucky Delivers Medicines to the World**



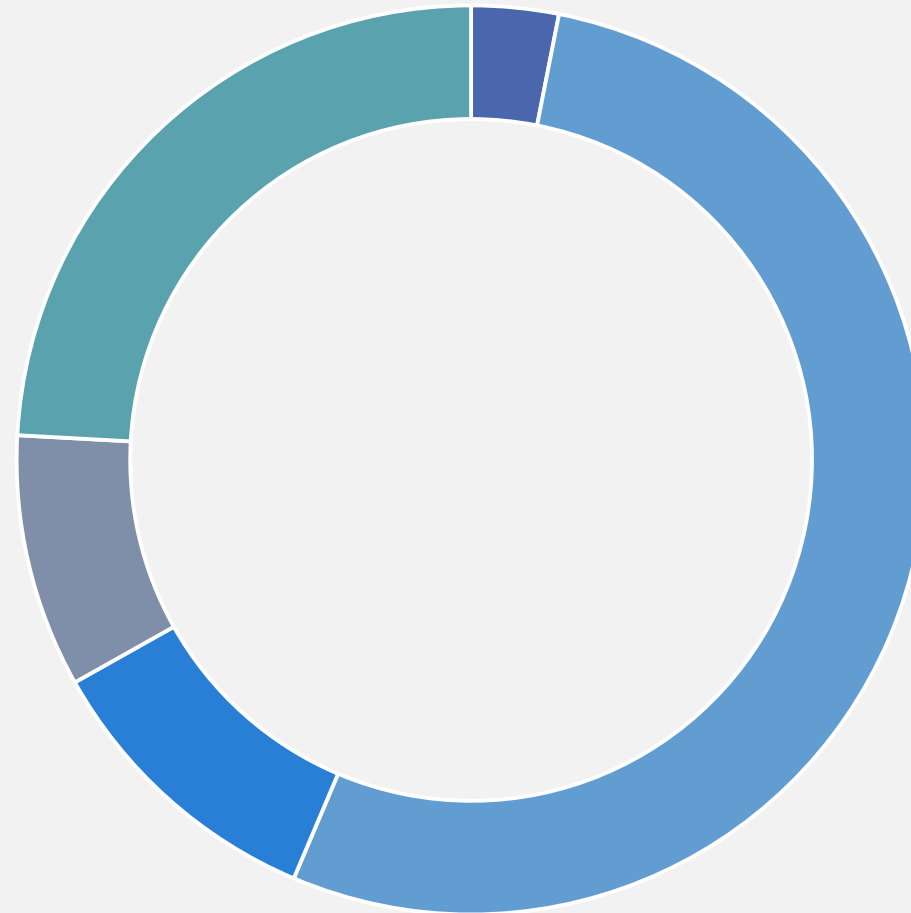
BIOLOGISTICS: A CORNERSTONE OF KENTUCKY'S ECONOMY

- **Biologistics is the often-unrecognized but absolutely critical piece of Kentucky's leading position in the world of logistics.**
- Biologistics is important for patients across the globe and the work being done in Kentucky ensures patients receive life-saving medications every day.
- Biologistics also boosts Kentucky's economy:
 - 1,200 individual business establishments across the Commonwealth
 - 14,000 jobs for Kentuckians (increased 8.6% since 2016)
 - \$72,151 average annual wage
 - \$169 million in venture capital investments (2014-2017)



THE NUMBERS TELL THE STORY: JOBS

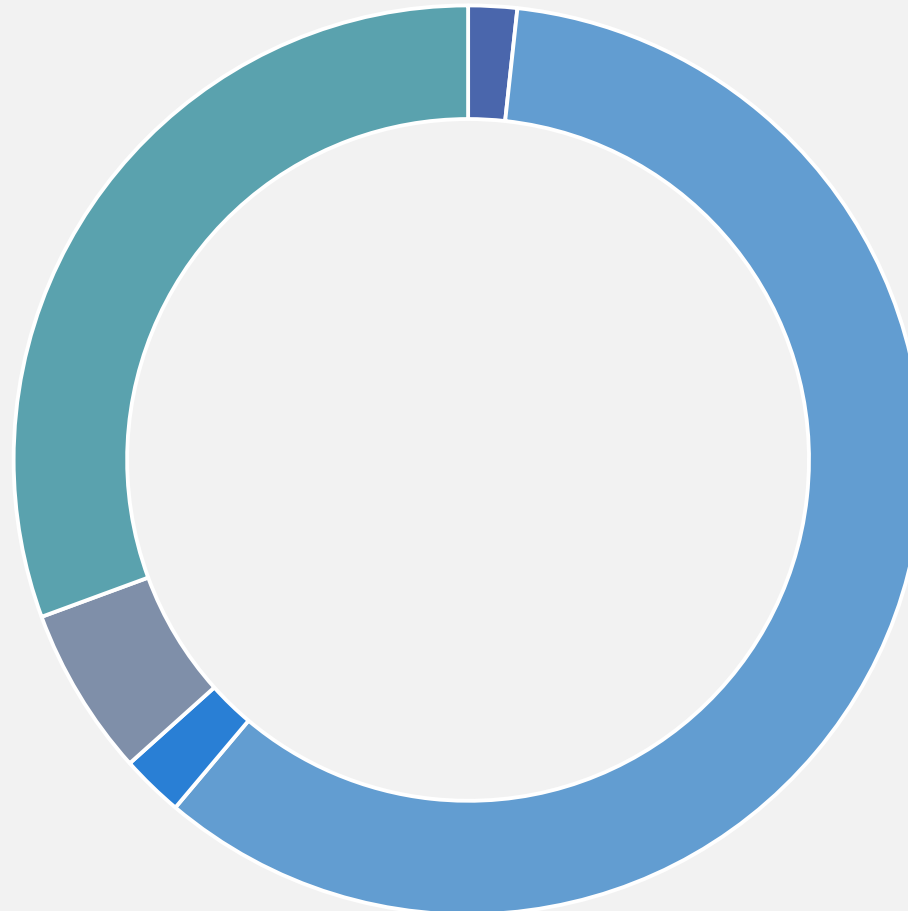
- Feedstock and Industrial Biosciences:
435
- Bioscience-Related Distribution:
7,475
- Drugs and Pharmaceuticals:
1,470
- Medical Devices and Equipment:
1,264
- Research, Testing, and
Medical Laboratories:
3,386



- Feedstock and Industrial Biosciences
- Bioscience-Related Distribution
- Drugs and Pharmaceuticals
- Medical Devices and Equipment
- Research, Testing, and Medical Laboratories

THE NUMBERS TELL THE STORY: INFRASTRUCTURE

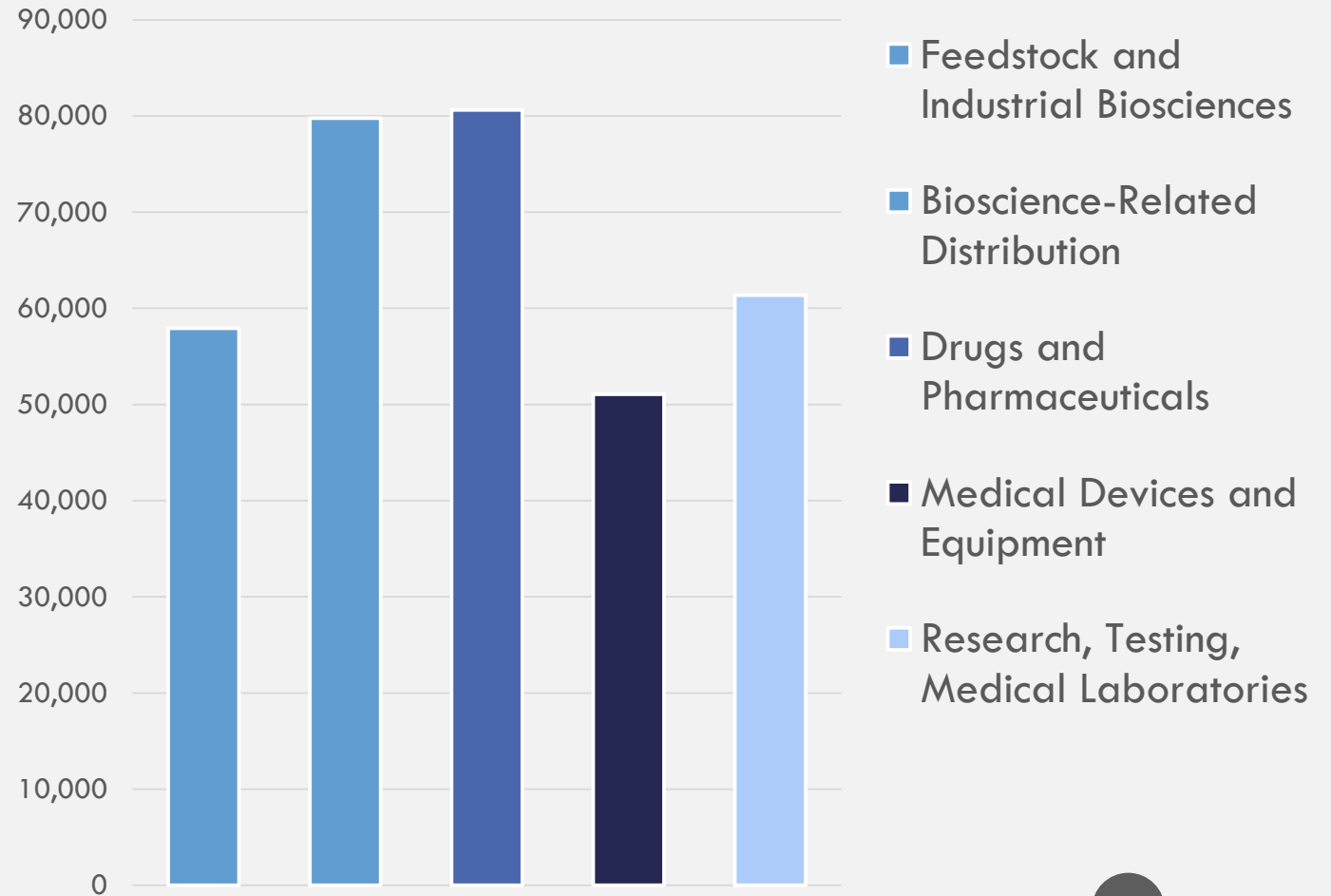
- Feedstock and Industrial Biosciences:
21
- Bioscience-Related Distribution:
720
- Drugs and Pharmaceuticals:
27
- Medical Devices and Equipment:
73
- Research, Testing, and
Medical Laboratories:
371



- Feedstock and Industrial Biosciences
- Bioscience-Related Distribution
- Drugs and Pharmaceuticals
- Medical Devices and Equipment
- Research, Testing, and Medical Laboratories

THE NUMBERS TELL THE STORY: WAGES

- Feedstock and Industrial Biosciences:
\$57,912
- Bioscience-Related Distribution:
\$79,762
- Drugs and pharmaceuticals:
\$80,634
- Medical Devices and Equipment:
\$51,064
- Research, Testing and Medical Laboratories:
\$61,361



UPS GLOBAL LOGISTICS – HEALTHCARE SECTOR



Warren Olson



WHY KENTUCKY FOR UPS HEALTHCARE

- **Over 1.7M** square feet of healthcare-compliant warehouse space
- **5** buildings in our healthcare campus
- **Over 20** years serving healthcare and life sciences manufacturers
- **Over 1,000** employees trained in healthcare logistics
- **Over 450,000** in new square footage opening in 2020...
- ...**Adding 200+** new jobs



Accredited as a 3PL by the National Association of Boards of Pharmacy[®] in the Verified-Accredited Wholesale Distributors[®] (VAWD[®]) program

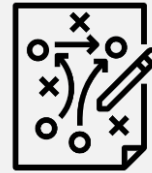


IN KENTUCKY, OUR CLIENTS LOOK TO THE GEOGRAPHIC ADVANTAGES AS WELL AS OUR EXPERIENCE IN HEALTHCARE WAREHOUSING



Facility Overview

- Over 1.7 million square feet of dedicated Healthcare space, including temperature and humidity controlled options – expanding to 2.2 million square feet in 2020
- Validated climate and humidity control for 20c – 25c and less than 60% relative humidity
- FDA and Kentucky Board of Pharmacy Registered and Compliant
- Distribution of pharmaceuticals, medical devices, biopharma, and medical equipment



Strategic Advantages

- Less than three miles from Worldport, UPS's automated, international all-points air hub
- Orders shipped as late as 1 a.m. for UPS Next Day Air delivery
- Strong interstate road access, with two-thirds of the U.S. population within a one-day drive
- Over 60% of the U.S. population accessible within two days via UPS Ground service



Services & Capabilities

- Extensive cold chain warehousing services
- Multi-carrier transportation
- Robust inventory management programs
- Quality assurance evaluations
- Expertise in people, processes, and technology with focus on the needs of healthcare manufacturers

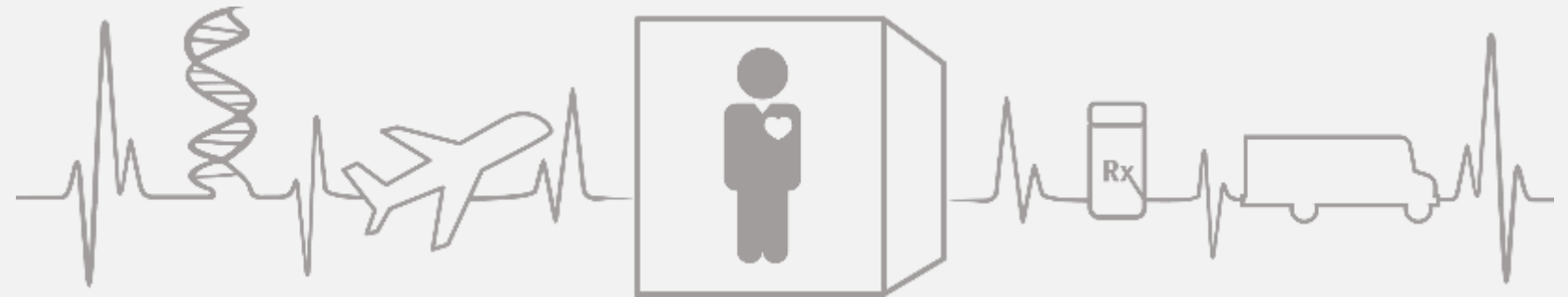
CORPORATE SOCIAL RESPONSIBILITY


- **Connected Communities**
 - \$4M donated each year to Louisville area charities
 - 623 Disaster Relief shipments coordinated across 29 disasters in 71 countries in 2018
 - 5,328 medical drone deliveries in 2018, including 10,472 units of blood
 - Special cargo moves – including a polar bear and a snow leopard for the Louisville Zoo
- **Economic Enhancement**
 - 5.2 billion packages delivered in 2018, connecting people in more than 220 countries and territories
 - 21,000 UPS employees in Kentucky
 - \$2.4 billion invested in local capital projects over the last two decades
- **Empowered People**
 - Goal: 20 million volunteer hours donated by UPS employees, families and friends by 2020 – 18.7 million hours through 2018
 - Roughly 300,000 volunteer hours donated to local charities by UPS employees and family in 2018
- **Environmental Responsibility**
 - \$1 billion invested in alternative fuel and advanced technology fleet since 2009 – 10,000 vehicles in our fleet today
 - Goal: 15 million trees planted around the world by the end of 2020 - *More than 12.5 million already planted*





It's a Patient, Not a Package™





AMGEN USA
LOUISVILLE
DISTRIBUTION
CENTER



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LDC SITE – GENERAL DESCRIPTION

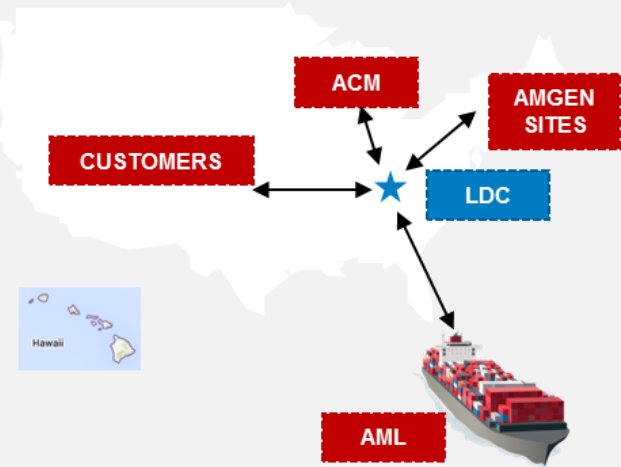
Amgen Louisville Distribution Center (LDC)

- Operating since 1992
- Total square footage is 125,000 and 12 acres of available land
- Licensed to distribute Amgen's commercial products to the U.S.
- Accredited by the National Association of Boards of Pharmacy[®] in the Verified-Accredited Wholesale Distributors[®] (VAWD[®]) program
- Manufacturer permit for Secondary Packaging
- \$12 million original investment 1991 - 1992
- \$9 million expansion and infrastructure upgrade in 2000
- \$38 million expansion and infrastructure upgrade in 2006
- ~\$25 million additional investment over past 4 years to achieve business priorities (i.e., secondary packaging, tornado shelter)



CONTINUOUS CHANGE FOR THE BENEFIT OF OUR PATIENTS

US Distribution



- Commercial & sample distribution
- Serialization Ready
- Shipments for International Markets

Primary distribution center for the US

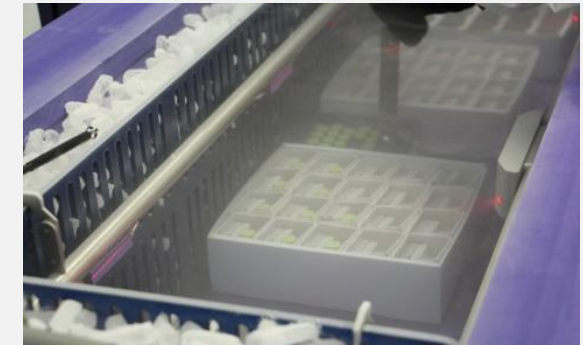
Warehouse Capabilities



- Vendor Managed Inventory
- Risk Mitigation:
Commercial\clinical cell banks
& DS - Ivabradine
- DSI – Epogen

Support growth; maximize assets utilization

Packaging Operation



- Secondary Packaging of Imlygic for US & ROW
- Serialization Ready
- Design allows for multiple packaging activities

Adapt to the evolving business environment

ALL AMGEN PRODUCTS FOR THE US MARKET ARE MANAGED THROUGH LDC



NEUPOGEN[®]
(FILGRASTIM)

Aranesp[®]
(darbepoetin alfa)

Neulasta[®]
(pegfilgrastim)

Corlanor[®]
(ivabradine) 5 mg
7.5 mg tablets

Kyprolis[™]
(carfilzomib) for injection

Parsabiv[™]
(etelcalcetide) Injection for intravenous use
2.5 mg/0.5 mL | 5 mg/1 mL | 10 mg/2 mL

KANJINTI[™]
(trastuzumab-anns)
For Injection 420 mg/vial multiple dose

EPOGEN[®]
(EPOETIN ALFA)
RECOMBINANT

Sensipar[®]
(cinacalcet) Tablets
30 mg-60 mg-90 mg

Vectibix[®]
(panitumumab)
Injection for IV Infusion

Enbrel[®]
etanercept

BLINCYTO[™]
(blinatumomab) for injection

aimovig[™]
(erenumab-aooe)₇₀ injection

EVENITY[™]
(romosozumab-aqqg)
injection 105 mg/1.17 mL

MVASI[™]
(bevacizumab-awwb)
Injection 100 mg/vial & 400 mg/vial

prolia[®]
(denosumab) injection

XGEVA[®]
(denosumab)

Nplate[®]
romiplostim

NEW IMLYGIC[™]
(talimogene laherparepvec)

Repatha[®]
(evolocumab) injection
140 mg/mL

For additional information about Amgen products, including important safety information, please visit amgen.com



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Amgen Proprietary—For Internal Use Only



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LDC ENGAGEMENT WITH THE COMMUNITY

- **University of Louisville**
- **American Heart Association**
- **Kentucky Chamber of Commerce**
- **Greater Louisville Inc.**
- **Where Opportunity Knox**
- **Louisville Metro Parks**

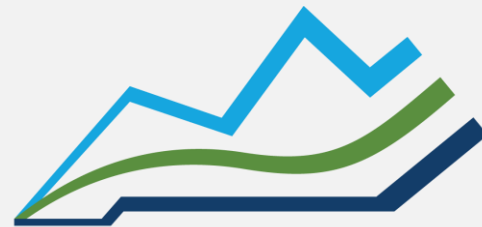


AHA Kentuckiana Walk



KENTUCKY LOGISTICS

- Logistics has become one of Kentucky's signature industries
 - Kentucky is within a day's drive of 65 percent of the U.S. population
 - More than 490 facilities, employing over 64,000 people
- Biologistics is a critical but too often overlooked piece of Kentucky's logistics puzzle
- Kentuckians are delivering important medications to the world thanks to the continued growth of the biologistics industry



Kentucky Chamber



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Q&A

