

Evolution Insight report:

Industry Hiring Data – August 2020.

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**Assessment of Hiring Strategy** 

Introduction

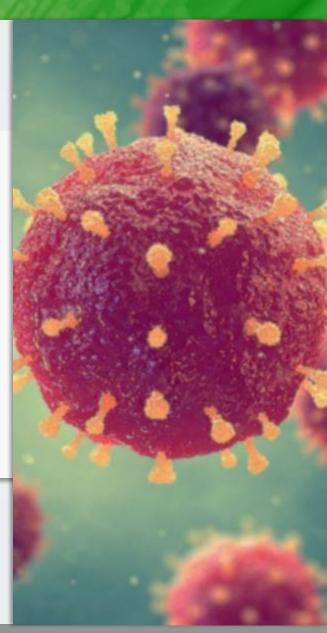
## Introduction



## **Insight into Hiring Trends**

The following briefing provides insight to global **Bio hiring trends** and perceived implications on the future-facing competitive talent pool.

 Hiring frequency was assessed for all major industry players across biomanufacturing. Data segmented for CGT, Cell Therapy manufacturing and more general biomanufacturing.





Assessment of Hiring Strategy

Assignment methodology

## Methodology



## **Analysis**

Analysis was executed across two stages:-Phase I and II.

Companies segmented across Cell Therapy Manufacturing, CGT, Biopharma and Manufacturing (CDMO)

- Phase I:- Open roles Hiring Frequency; Assessed hiring frequency of over 200 companies from August 2019 to August 2020 by month. This was executed by analysing job postings from their websites and cross matched with additional sources as a trend base line and compared YTD. Companies were segmented to allow comparison of Industry trends.
- **Phase II:- Job type Hiring Frequency;** Assessed hiring frequency by roles of over 200 companies from August 2019 to August 2020 by month. This was executed by analysing job postings from their websites and cross matched with additional sources as a trend base line and compared YTD. Job postings were segmented by R&D, Operations, Commercial & Executive





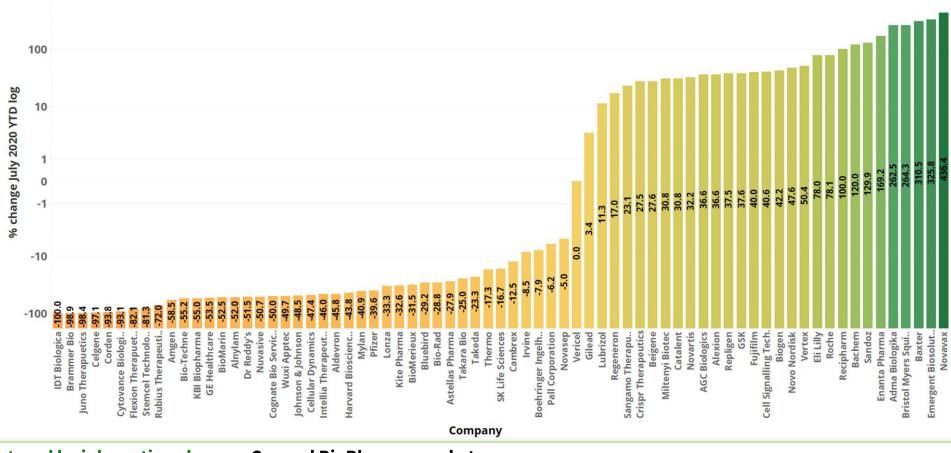
Industry Hiring Data – July/August 2020

Results



## Hiring Trend July 2020 YTD BioPharma





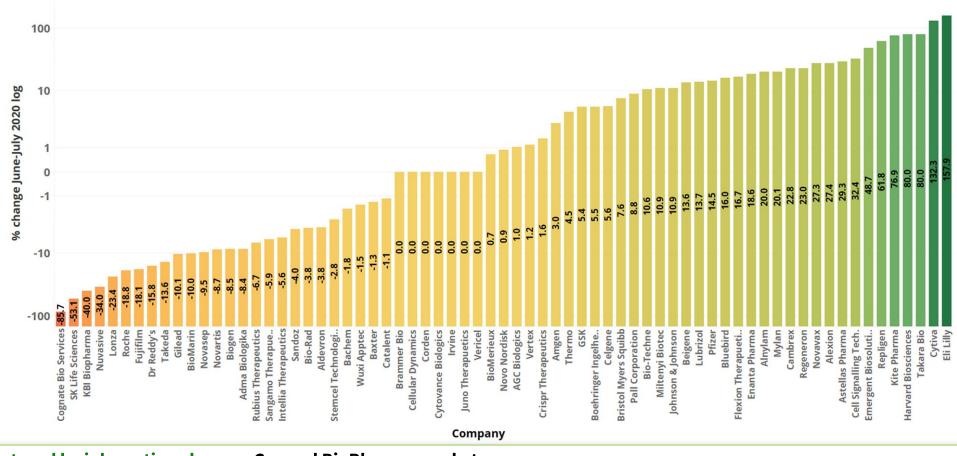
- Novavax, Emergent, Baxter, Adma, Enanta & Recipharm increasing
- IDT, Celgene, Corden, Juno & Cytovance decreasing



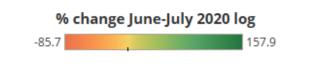


## Hiring Trend June –July 2020 MTD BioPharma





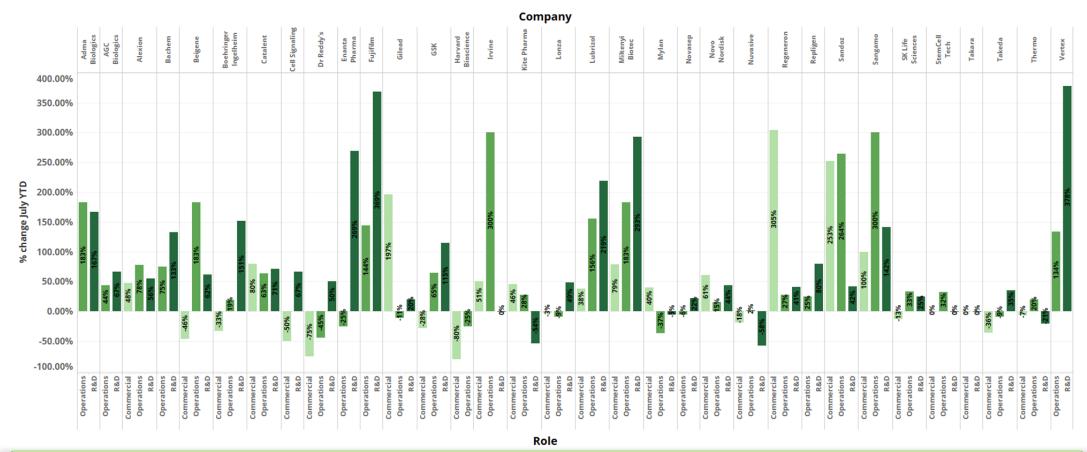
- Eli Lilly, Cytiva, Takara, Harvard Bio, Kite & Emergent increasing
- Roche, Fujifilm & KBI decreasing



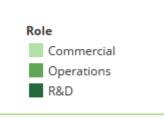


# Hiring Trend July 2020 - By Role YTD BioPharma



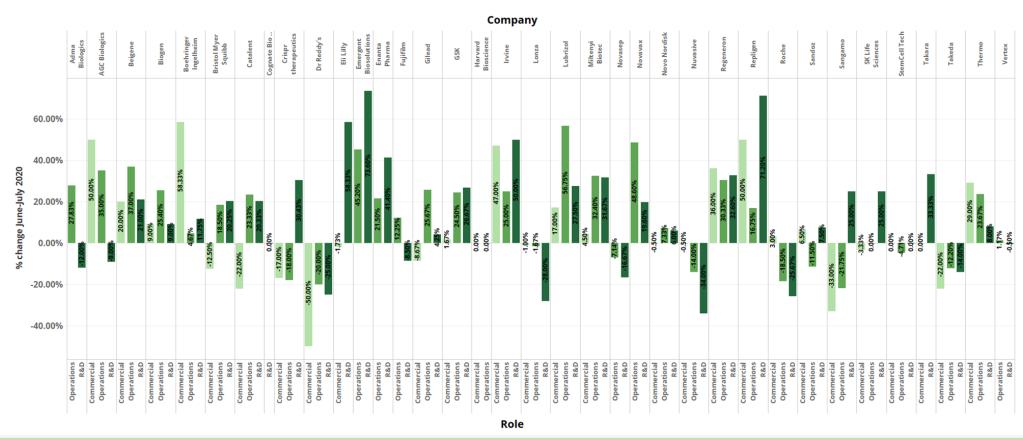


- R&D:- Vertex, Fujifilm, Miltenyi & Enanta increasing
- Operations:- Sangamo, Sandoz & Irvine, increasing
- Commercial:- Regeneron, Gilead & Sandoz increasing

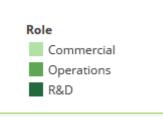


# Hiring Trend June -July 2020 By Role MTD BioPharma



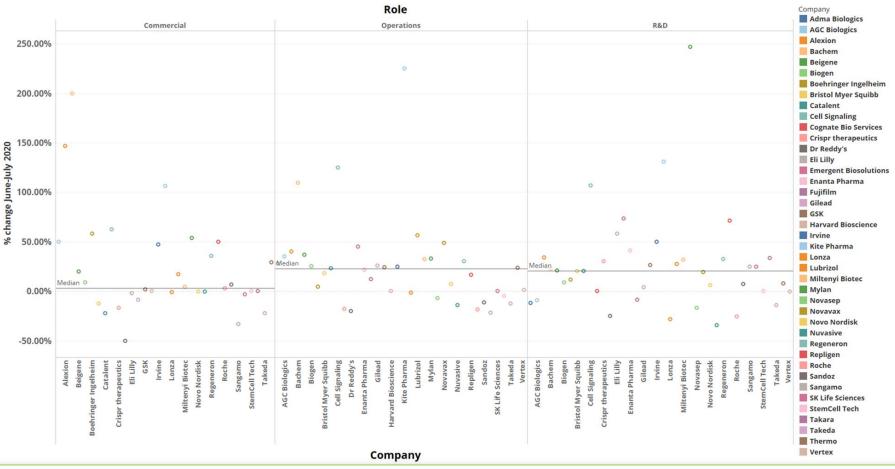


- R&D:- Repligen, Emergent, & Eli Lilly increasing
- Operations:- Lubrizol, Emergent & Novovax, increasing
- Commercial:- Repligen, Boehringer & AGC Biologics increasing



# Hiring Trend June -July 2020 By Role MTD BioPharma



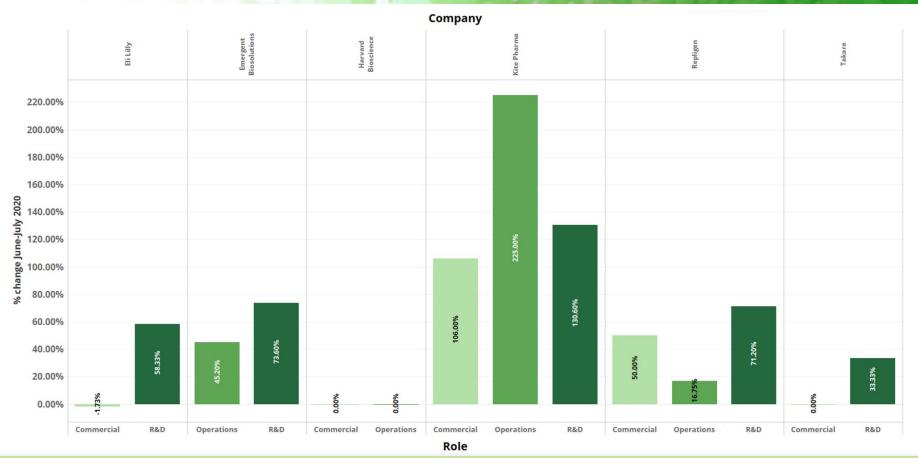


- **R&D:-** Mylan Largest increase
- Operations:- Kite Pharma Largest increase
- Commercial:- Bachem Largest increase



# Hiring Trend June -July 2020 By Role MTD BioPharma

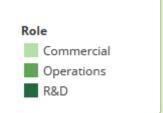






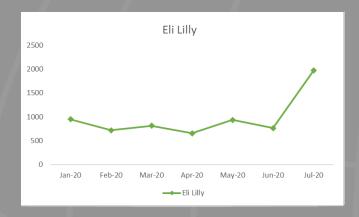
Eli Lilly:- Increase in R&D; Takara:- Increase in R&D; Kite:- Increase across operations, R&D & Commercial;

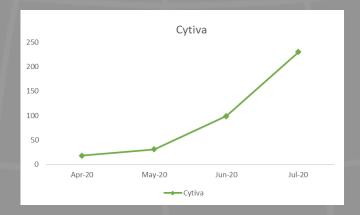
**Emergent:**- Increase across operations & R&D; **Repligen:**- Increase across operations, R&D & Commercial;

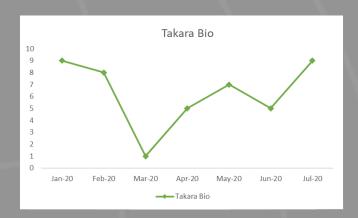


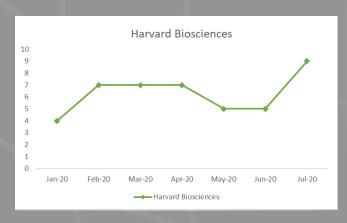
## Hiring Trend 2020 BioPharma



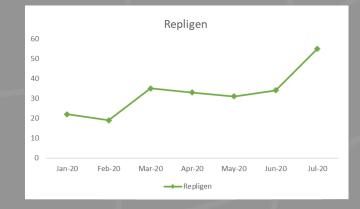












## **Increased Hiring:**-

Eli Lilly, Cytiva, Takara, Harvard Bio, Kite, & Repligen

## Biopharma





- Phase 3 Trial of LY-CoV555 for Prevention of COVID-19
- Jardiance® in phase III trial
- P-tau217 Blood Test Alzheimer's Disease
- Lilly Begins a Phase 3 Clinical Trial with Baricitinib for Hospitalized COVID-19 Patients



- Takara Bio to Support Development of Novel Coronavirus Vaccine Undertaken by Osaka University Group
- Takara Bio Launches a New Facility for the Research and Manufacturing of Regenerative Medicine Products
- Clinical program for NY-ESO-1 siTCR(TM) gene therapy candidate receives designation in Japan as Orphan Regenerative Medicine
- Takara Bio Launches a New Facility for the Research and Manufacturing of Regenerative Medicine Products
- bioSyntagma Collaboration



- Harvard Bioscience Introduces Next Generation Inhalation System to Aid in the Fight Against COVID-19
- Building Following layoffs & closures, Harvard Bioscience improves financials



- Kite Pharma gets FDA approval for second CAR-T cell therapy
- The agency approved Tecartus, previously developed under the name KTE-X19, as the first CAR-T therapy for mantle cell lymphoma



- Cytiva expands Massachusetts biomanufacturing site
- 40% Quarterly growth. Cytiva is seeing a positive impact from the opportunities arising from industry's efforts to develop COVID 19 vaccines and therapies
- Collaborations with Genedrive, Sona Nanotech, Avacta, Entos Pharma, Takara & Aptamer Grp



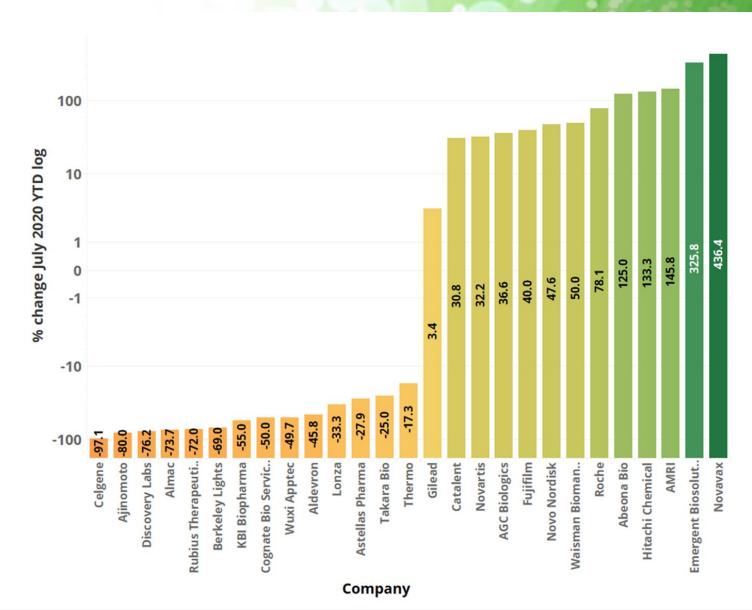
- Repligen Announces Agreement to Acquire Engineered Molding Technology
- Repligen Announces Agreement to Acquire Process Analytics Innovator C Technologies
- Sartorius Stedim Biotech and Repligen Corporation Partner



## Hiring Trend July 2020

## Cell Therapy Manufacturing





## Cell Therapy Manufacturing Market

## **Decreasing:-**

Celgene, Ajinomoto, Almac, Rubius

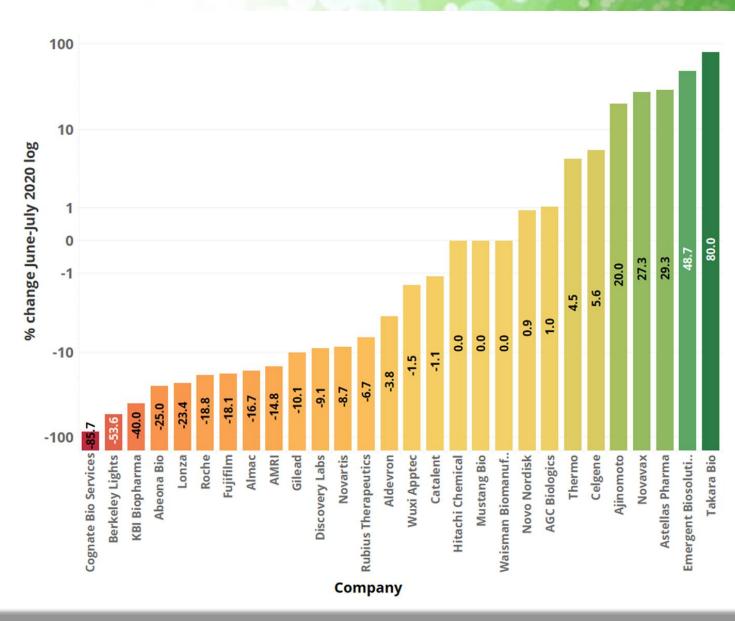
### Increasing:-

Novavax, Emergent, AMRI, Abeona

## Hiring Trend June-July 2020 MTD

## Cell Therapy Manufacturing





## Cell Therapy Manufacturing Market

#### **Decreasing:-**

Cognate, Berkeley, KBI, Abeona, Roche & Fujifilm

### **Increasing:-**

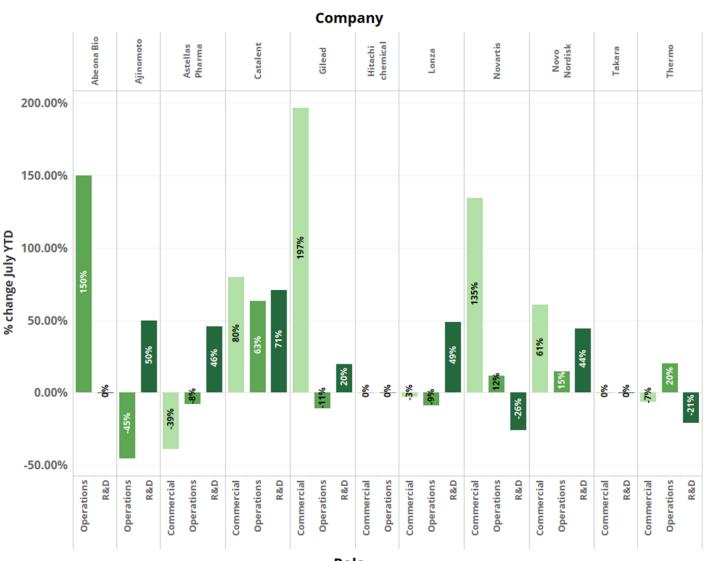
Takara, Emergent, Astellas, Novavax & Ajinomoto



## Hiring Trend July 2020 - By Role

## Cell Therapy Manufacturing





Cell Therapy Manufacturing Market

#### **R&D:-**

 Ajinomoto, Catalent & Novo - Increasing

### **Operations:-**

 Abeona & Catalent - Increasing

### Commercial:-

 Gilead, Novartis & Novo - Increasing

#### Role

Commercial
Operations

Operation

R&D

## Hiring Trend June-July 2020 By Role

## Cell Therapy Manufacturing





Cell Therapy Manufacturing Market

#### R&D:-

• Takara, Novo & Astellas Increasing

#### **Operations:-**

 Thermo, Astellas, & Ajinomoto Increasing

#### Commercial:-

• Thermo & Astellas - Increasing

#### Role

Commercial

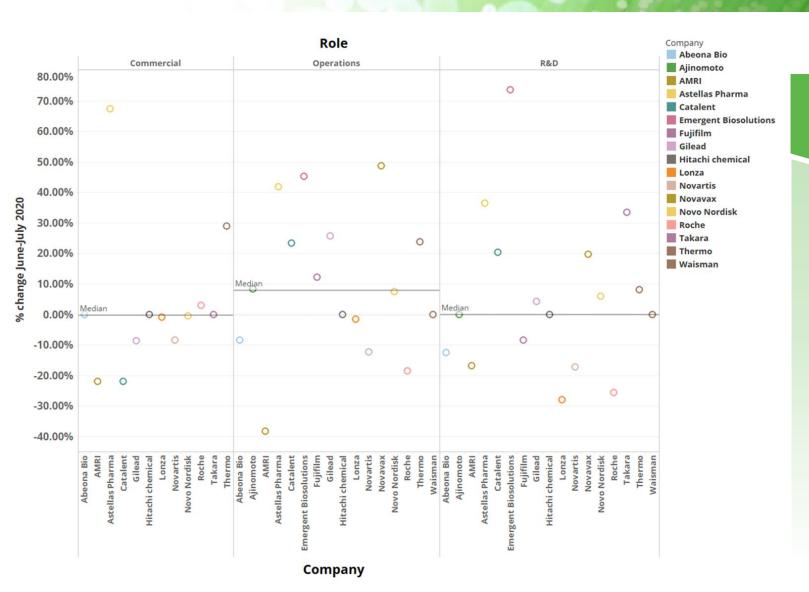
Operations

R&D

# Hiring Trend June-July 2020 By Role MTD

## Cell Therapy Manufacturing





## Cell Therapy Manufacturing Market

#### R&D:-

Emergent Biosolutions
 Largest Increase

#### **Operations:-**

 Novavax Largest Increase

#### Commercial:-

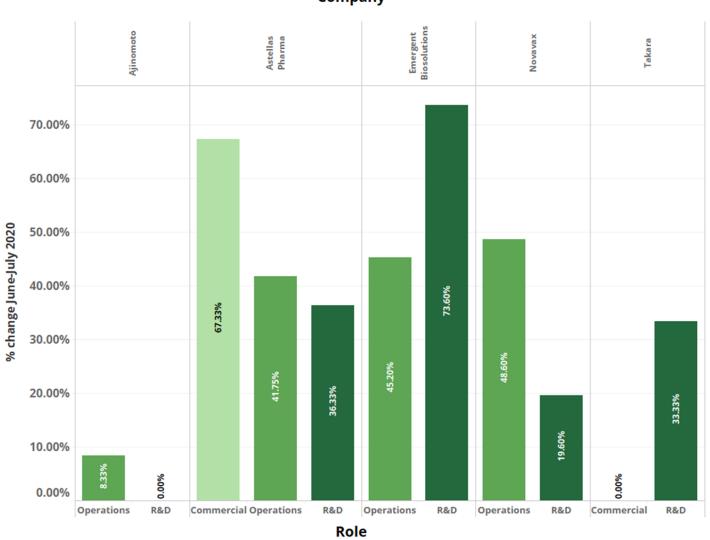
 Astellas Pharma Largest Increase

## Hiring Trend June-July 2020 By Role MTD

## Cell Therapy Manufacturing







## Cell Therapy Manufacturing Market

**Ajinomoto:**- Increase in Operations;

**Takara:-** Increase in R&D;

**Astellas:-** Increase across operations, R&D & Commercial;

**Emergent:-** Increase across operations & R&D;

**Novavax:-** Increase across operations, R&D & Commercial;

#### Role

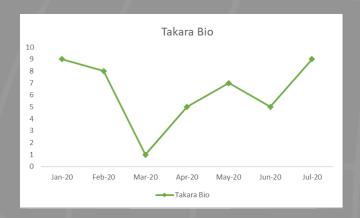
Commercial
Operations

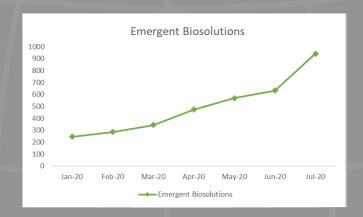
Operations

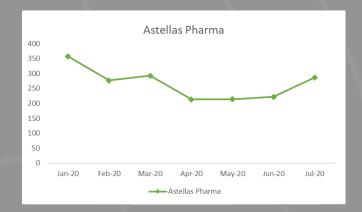
R&D

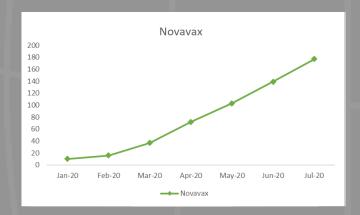
# Hiring Trend 2020 Cell Therapy Manufacturing

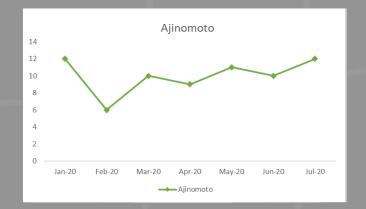












## **Increased Hiring:-**

Takara, Emergent, Astellas, Novavax & Ajinomoto.

## Cell Therapy Manufacturing





- Takara Bio to Support Development of Novel Coronavirus Vaccine Undertaken by Osaka University Group
- Takara Bio Launches a New Facility for the Research and Manufacturing of Regenerative Medicine Products
- Clinical program for NY-ESO-1 siTCR(TM) gene therapy candidate receives designation in Japan as Orphan Regenerative Medicine
- Takara Bio Launches a New Facility for the Research and Manufacturing of Regenerative Medicine Products



- Emergent BioSolutions Signs Agreement with AstraZeneca to Expand Manufacturing for COVID-19 Vaccine Candidate
- Emergent BioSolutions Signs Agreement with AstraZeneca to Expand Manufacturing for COVID-19 Vaccine Candidate
- Emergent BioSolutions Signs Agreement for Large-Scale Drug Substance Manufacturing for J & J's Lead COVID-19 Vaccine Candidate
- Emergent BioSolutions to Invest \$75 Million in Canton Site and Expand Viral Vector and Gene Therapy Capability



- Early Clinical Studies of ASP8062 to Investigate Potential Novel Therapeutic Approach to Address the Opioid Crisis
- Phase 3 DOLOMITES Study of Anemia in CKD
- XTANDI® enzalutamide approval Treatment of Prostate Cancer



- Novavax and Takeda Announce Collaboration for Novavax' COVID-19 Vaccine Candidate in Japan
- Novavax and Serum Institute of India Announce Development and Commercial Collaboration
- Novavax Announces Positive Phase 1 Data for its COVID-19 Vaccine Candidate
- Novavax and FUJIFILM Diosynth Biotechnologies Initiate Large Scale Manufacturing of COVID-19 Vaccine Candidate

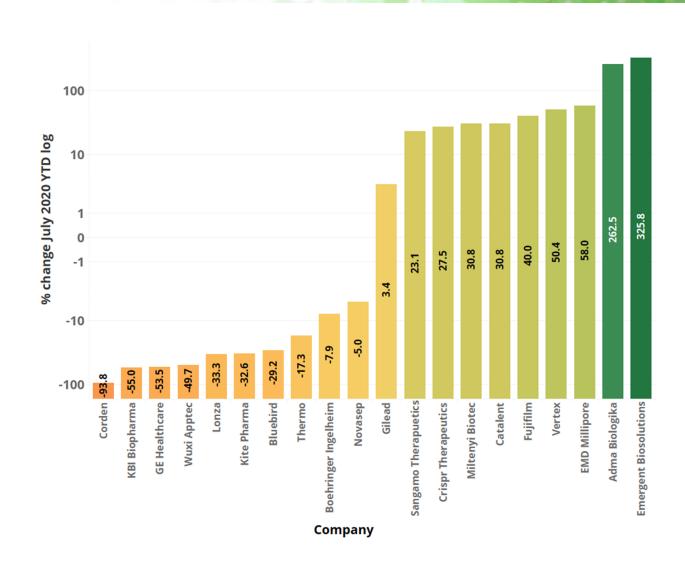


- Ajinomoto Co., Inc. Announces Changes in Its Organization and Personnel
- Ajinomoto India to triple in four years
- Ajinomoto Bio-Pharma Services Introduces AJILITY Fast Track Platform for Drug Product Manufacturing
- Ajinomoto Bio-Pharma Services Completes Acquisition of Granules OmniChem Joint Venture in India



## Hiring Trend July 2020 YTD Cell Gene Therapy





## General CGT Market

## **Decreasing**

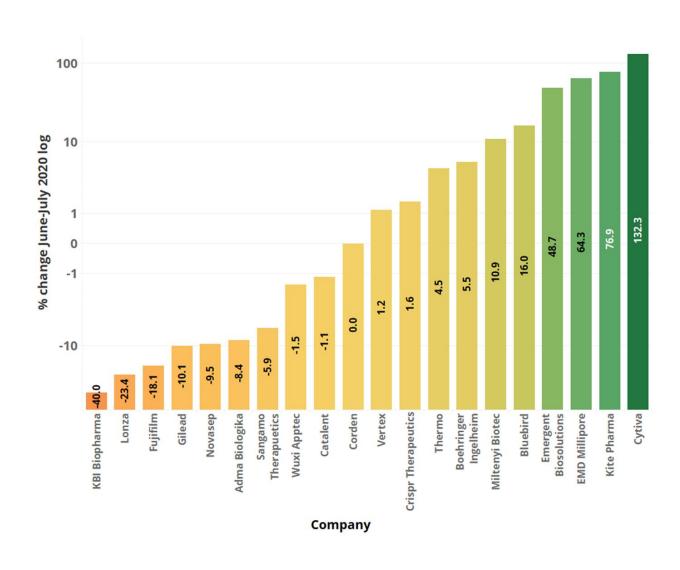
 Corden, KBI, GE, Lonza and Wuxi

## **Increasing**

Emergent, ADMA,
 MilliporeSigma and
 Fujifilm

# Hiring Trend June -July 2020 MTD Cell Gene Therapy





## General CGT Market

## **Decreasing:-**

KBI, Fujifilm, GE
 Healthcare, Lonza &
 Novasep

## **Increasing:-**

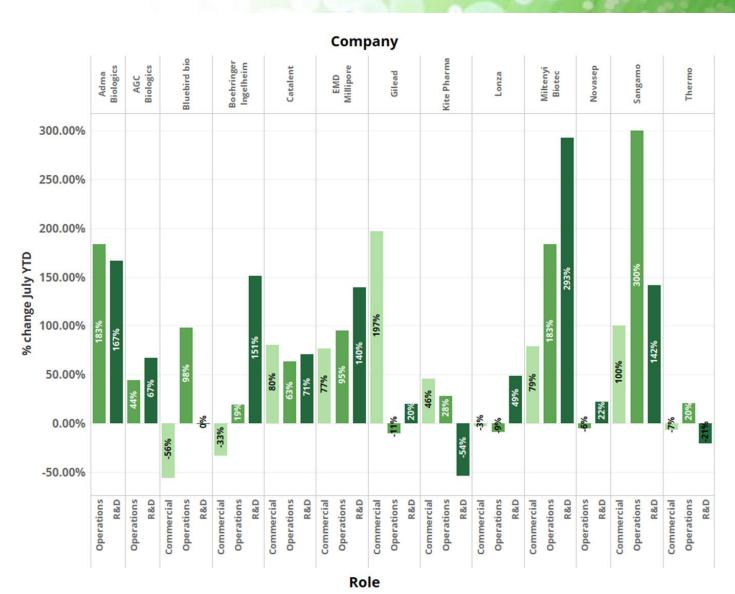
Cytiva, Kite,
 MilliporeSigma, Emergent,
 Bluebird & Miltenyi



## Hiring Trend July 2020 - By Role

## Cell Gene Therapy





## General CGT Market

#### R&D:-

 Miltenyi, Adma, Boehringer increasing

#### **Operations:-**

 Sangamo, Miltenyi, Adma & Boehringer increasing

#### Commercial:-

 Gilead, Sangamo & Catalent increasing

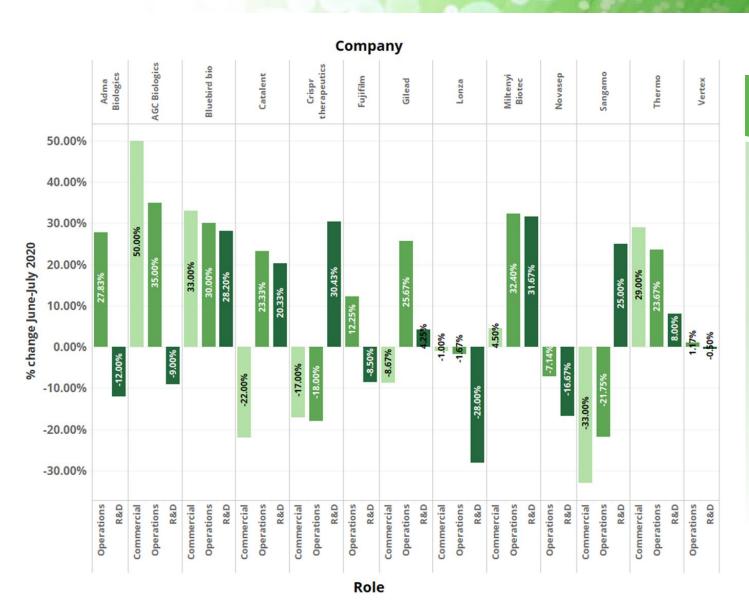
#### Role

- Commercial
- Operations
- R&D

# Hiring Trend June -July 2020 By Role

# EVOLUTION SEARCH PARTNERS

Cell Gene Therapy



## General CGT Market

#### R&D:-

Sangamo, Miltenyi, Crispr
 Ther & Bluebird Increasing

### **Operations:-**

Thermo, Bluebirs & AGCIncreasing

#### Commercial:-

Thermo, Bluebird & AGC
 Increasing

#### Role

Commercial

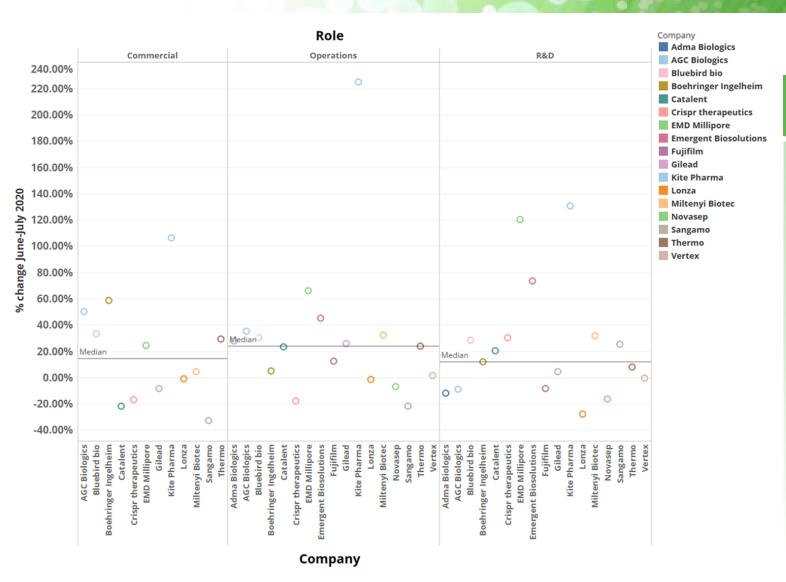
Operations

R&D

## Hiring Trend June -July 2020 By Role

## Cell Gene Therapy





## General CGT Market

#### **R&D:-**

 Kite Pharma Largest increase

#### **Operations:-**

 Kite Pharma Largest increase

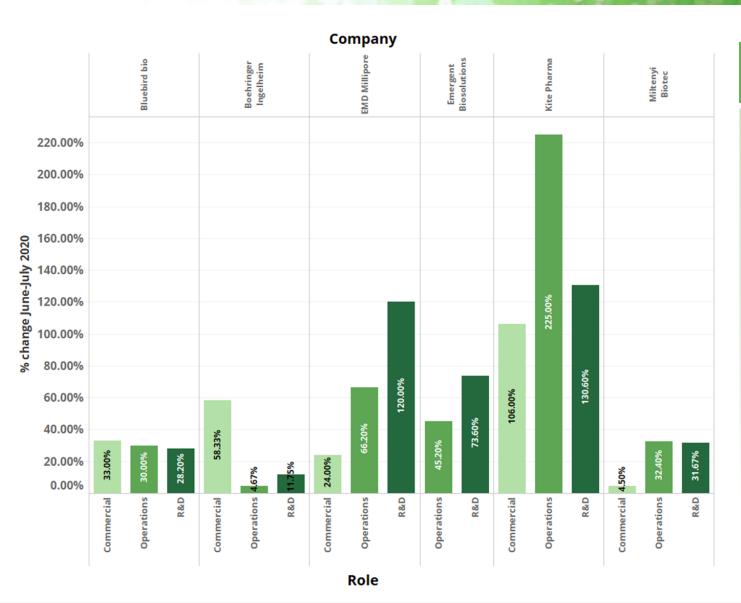
#### Commercial:-

 Kite Pharma Largest increase

## Hiring Trend June-July 2020 By Role

## Cell Gene Therapy





#### **General CGT market**

**Bluebird:-** Increase in Operations, R&D & Commercial

**Boehringer:**- Increase in Operations, R&D & Commercial

**MilliporeSigma:-** Increase across operations, R&D & Commercial;

**Emergent:-** Increase across operations & R&D;

**Kite:**- Increase across operations, R&D & Commercial;

**Milteny**i:- Increase in Operations, R&D & Commercial

#### Role

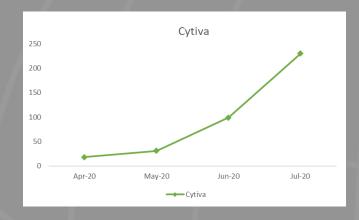
Commercial

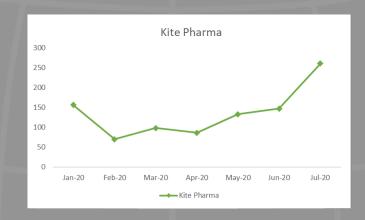
Operations

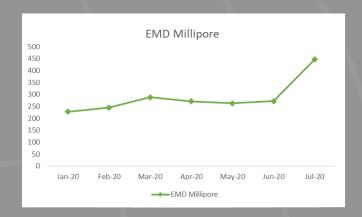
R&D

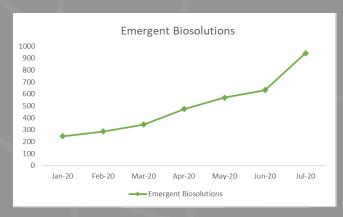
## Hiring Trend 2020 Cell Gene Therapy

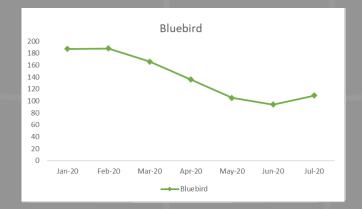


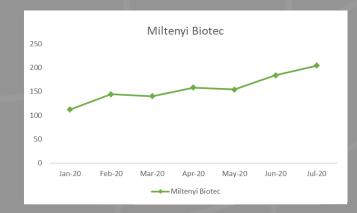












## **Increased Hiring:-**

Cytiva, Kite, MilliporeSigma, Emergent, Bluebird & Miltenyi

## Cell Gene Therapy





- Kite Pharma gets FDA approval for second CAR-T cell therapy
- The agency approved Tecartus, previously developed under the name KTE-X19, as the first CAR-T therapy for mantle cell lymphoma.



- MilliporeSigma Invests \$20 Million in New Switzerland Laboratory based Buchs to support its rapidly growing reference materials business
- Merck Opens its Largest M Lab™ Collaboration Center in Shanghai
- Merck Advances Bioprocessing Capabilities with Raman Technology Sensor Acquisition



- Emergent BioSolutions Signs Agreement with AstraZeneca to Expand Manufacturing for COVID-19 Vaccine Candidate
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- Emergent BioSolutions to Invest \$75 Million in Canton Site and Expand Viral Vector and Gene Therapy Capability



• Bristol Myers Squibb and Bluebird T cell immunotherapy collaboration



- Miltenyi Biotec offers automated and closed adherent cell culture solutions on CliniMACS Prodigy®
- Miltenyi Biotec launches world's first fully automated light sheet microscope
- Miltenyi Biotec launches new tool for coronavirus-specific T cell research

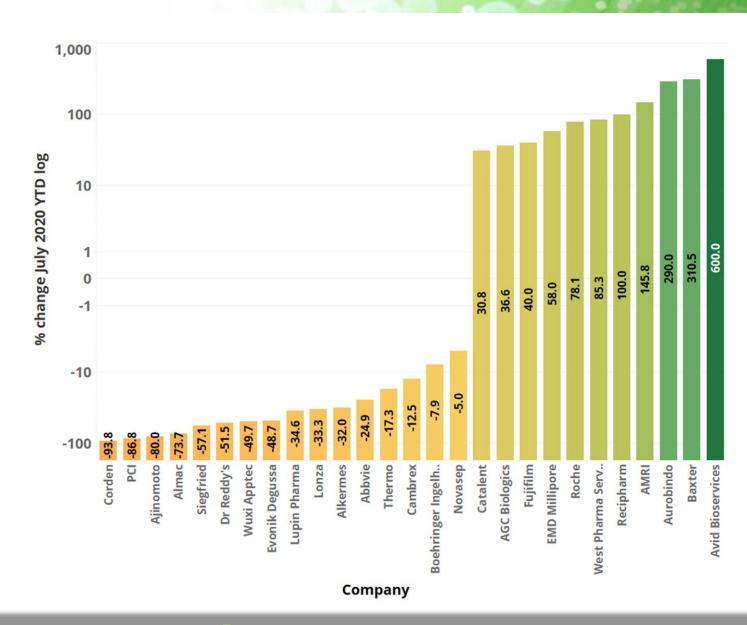


- Cytiva expands Massachusetts biomanufacturing site
- 40% Quarterly growth. Cytiva is seeing a positive impact from the opportunities arising from industry's efforts to develop COVID 19 vaccines and therapies
- Collaborations with Genedrive, Sona Nanotech, Avacta, Entos Pharma, Takara & Aptamer Grp



# Hiring Trend July 2020 YTD CDMO





**General CDMO market** 

#### **Decreasing**

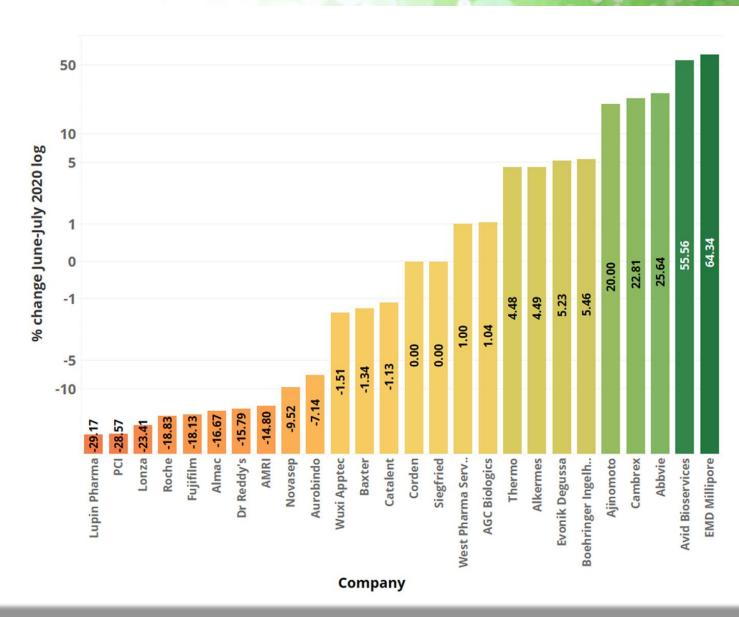
 Corden, PIC, Ajinomoto, Almac, Seigfried and Wuxi

#### **Increasing**

 Avid, Baxter, Aurobindo, AMRI and Recipharm

# Hiring Trend June - July 2020 MTD CDMO





**General CDMO market** 

#### **Decreasing:-**

Lupin, PCI, Roche, fujifilm
 & Almac

#### **Increasing:**

MilliporeSigma, Avid,
 Abbvie, Cambrex,
 Ajinomoto & Boehringer



# Hiring Trend July 2020 - By Role YTD CDMO





#### General CDMO Market

#### R&D:-

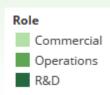
 MilliporeSigma, Aurobindo, Boehringer increasing

#### **Operations:-**

MilliporeSigma, Aurobindo
 & Catalent increasing

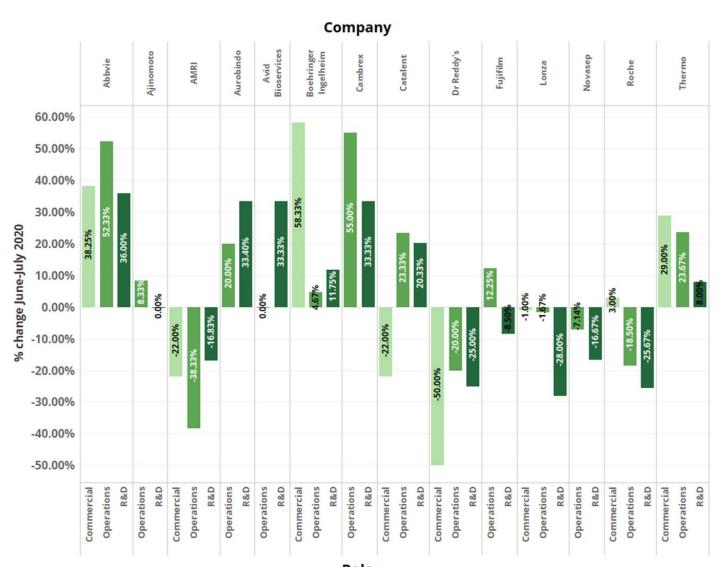
#### Commercial:-

MilliporeSigma & Catalent increasing



# Hiring Trend June - July 2020 By Role MTD CDMO





#### General CDMO Market

#### R&D:-

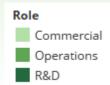
 Abbvie, Aurobindo, Avid, Cambrex & Catalent increasing

#### **Operations:-**

Abbvie, Cambrex, Catalent
 & Thermo increasing

#### Commercial:-

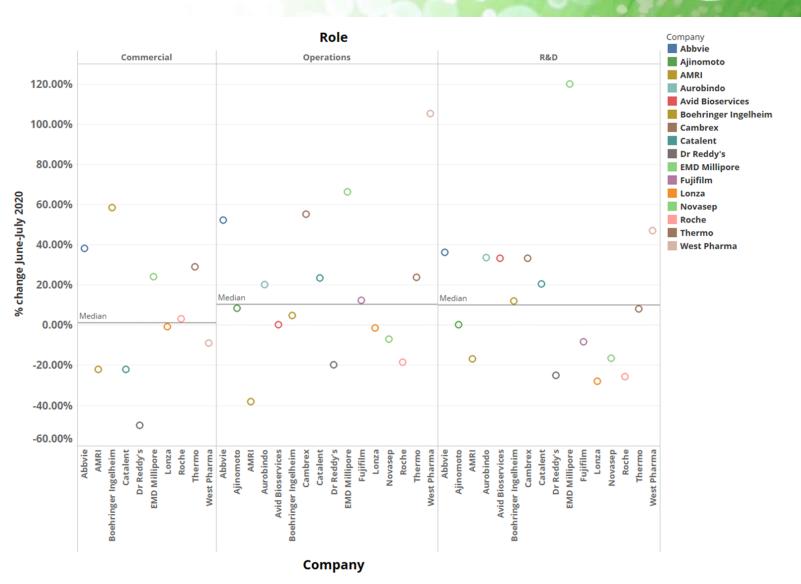
 Thermo, Abbvie & Boehringer increasing



Role

# Hiring Trend June - July 2020 By Role MTD CDMO





## General CDMO Market

#### R&D:-

Millipore Largest Increase

#### **Operations:-**

 West Pharma Largest Increase

#### Commercial:-

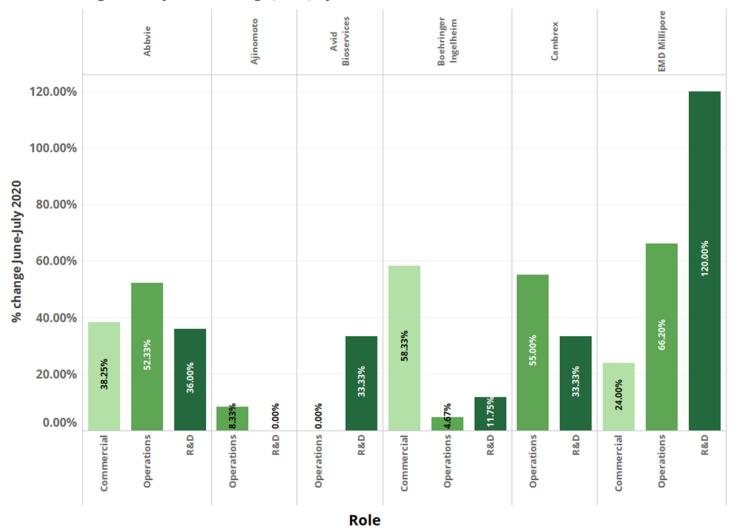
 Boehringer Ingelheim Largest Increase

# Hiring Trend June - July 2020 By Role MTD CDMO



#### **Company**

CDMO:- Hiring Trend by Role %change June-July 2020



#### **General CDMO market**

**Abbvie:-** Increase in Operations, R&D & Commercial

**Ajinomoto:**- Increase in Operations **Avid:**- Increase across Operations & R&D

**Boehringer:-** Increase across operations, R&D & Commercial

**Cambrex:-** Increase across Operations & R&D

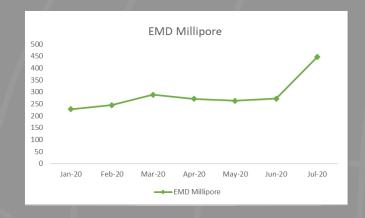
**MilliporeSigma**:- Increase in Operations, R&D & Commercial

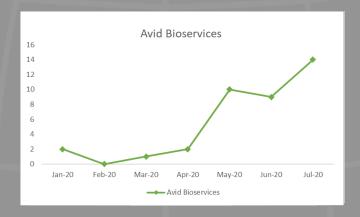
#### Role

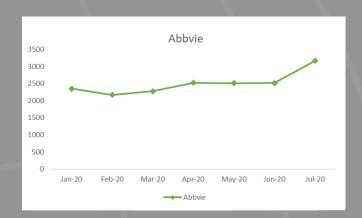
- Commercial
- Operations
- R&D

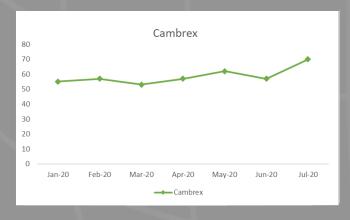
# Hiring Trend 2020 CDMO

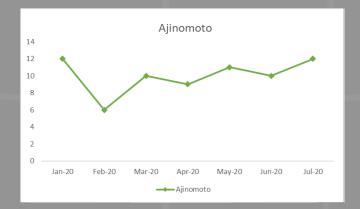


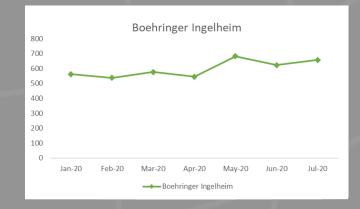












#### **Increased Hiring:**-

MilliporeSigma, Avid, Abbvie, Cambrex, Ajinomoto & Boehringer

### CDMC





- MilliporeSigma Invests \$20 Million in New Switzerland Laboratory based Buchs to support its rapidly growing reference materials business
- Merck Opens its Largest M Lab™ Collaboration Center in Shanghai
- Merck Advances Bioprocessing Capabilities with Raman Technology Sensor Acquisition



- Avid Bioservices Selected By Iovance Biotherapeutics to Lead Process Development Through CGMP Manufacturing of novel IL-2 Analog
- Avid Bioservices and Argonaut Manufacturing Services Enter Agreement to Offer Integrated Process Development, Drug Substance Manufacturing and Drug Product Parenteral Manufacturing
- Avid Bioservices and Aragen Bioscience Enter Agreement to Offer Integrated Solution for Cell Line and Process Development through Commercial Manufacturing



- I-SPY COVID Trial
- Abbvie & Jacobio collaboration SHP2 Inhibitors
- Positive Phase 3 Data for Atogepant in Migraine Prevention
- Phase 3 Study RINVOQ™



- Cambrex Increases Flexible Manufacturing Capacity at Karlskoga, Sweden Facility
- Cambrex Completes Biopharmaceutical Expansion at its Durham, NC Facility



- Ajinomoto Co., Inc. Announces Changes in Its Organization and Personnel
- Ajinomoto India to triple in four years

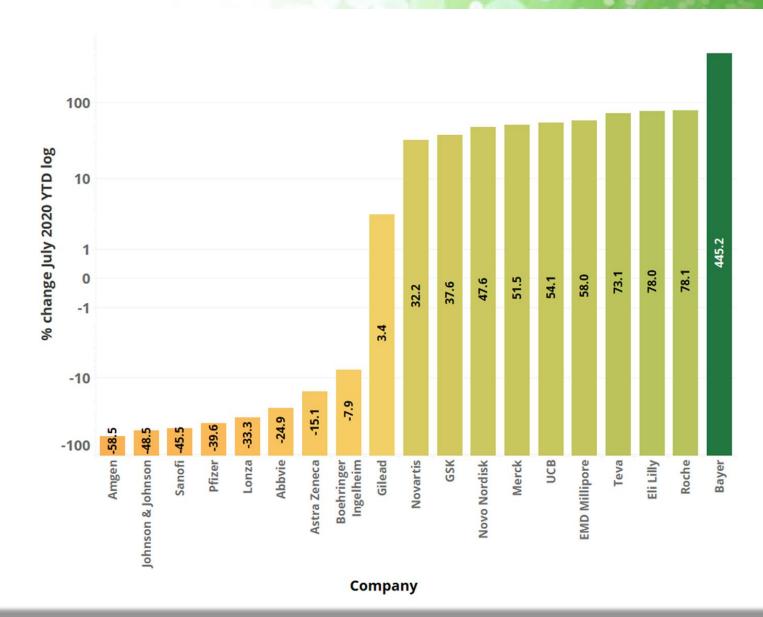


- Boehringer Ingelheim Launches External Innovation Hub in China
- Boehringer Ingelheim acquires GST to strengthen its stem cell capabilities in Animal Health
- Boehringer Ingelheim's China-developed Classical Swine Fever live vaccine approved
- Boehringer Ingelheim Acquires Northern Biologics' Preclinical Cancer Antibody Pipeline, Expanding Immuno-oncology Portfolio



### Hiring Trend July 2020 YTD Pharma



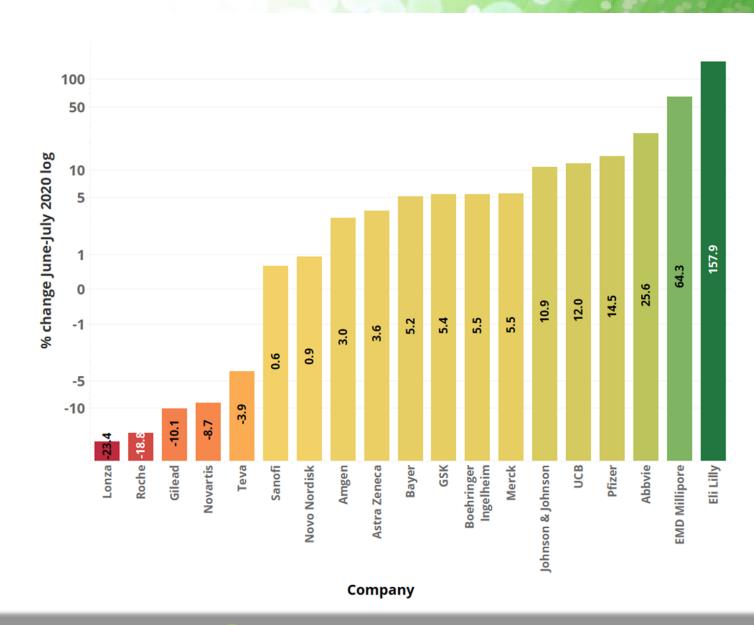


#### **General Pharma market**

- **Decreasing:** Amgen, J&J, Sanofi & Pfizer
- Increasing:- Bayer,
   Roche, Eli Lilly Teva &
   EMD Millipore

### Hiring Trend June - July 2020 MTD Pharma





#### **General Pharma market**

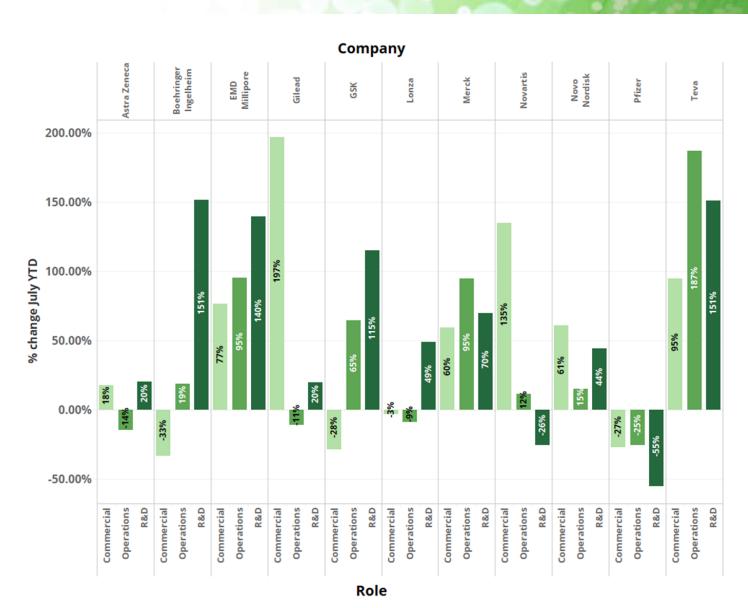
- **Decreasing:-** Roche, Gilead, Novartis & Teva
- Increasing:- Eli Lilly, EMD Millipore, Abbvie, UCB & Pfizer



## Hiring Trend July 2020 By Role







**General Pharma market** 

**R&D:-** Teva, Boehringer, MilliporeSigma & GSK **increasing** 

**Operations:-** Teva, Merck, & MilliporeSigma **increasing** 

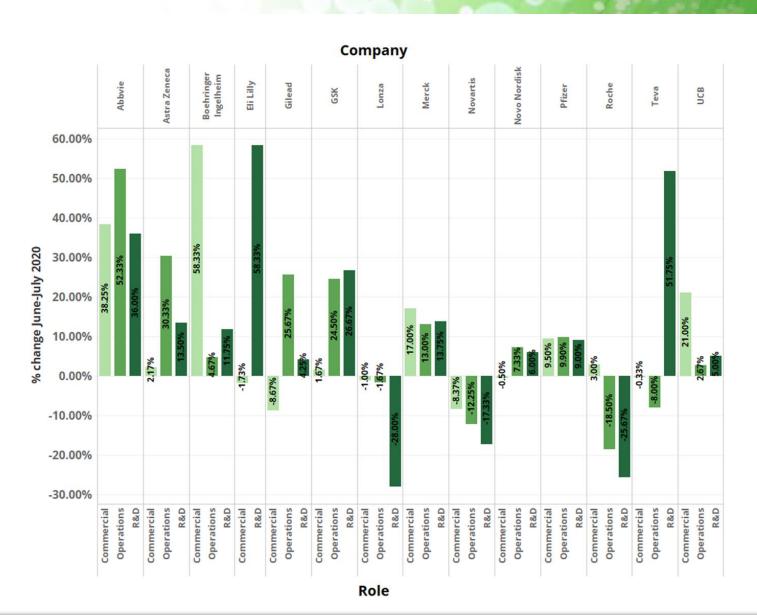
**Commercial:-** Gilead, Novartis & MilliporeSigma **increasing** 



- Commercial
- Operations
- R&D

# Hiring Trend June - July 2020 By Role MTD Pharma







#### **R&D:-**

Teva, Eli Lilly & Abbvie increasing

#### **Operations:-**

Abbvie, Gilead, GSK increasing

#### Commercial:-

Abbvie, Gilead, Merck & UCB increasing

#### Role

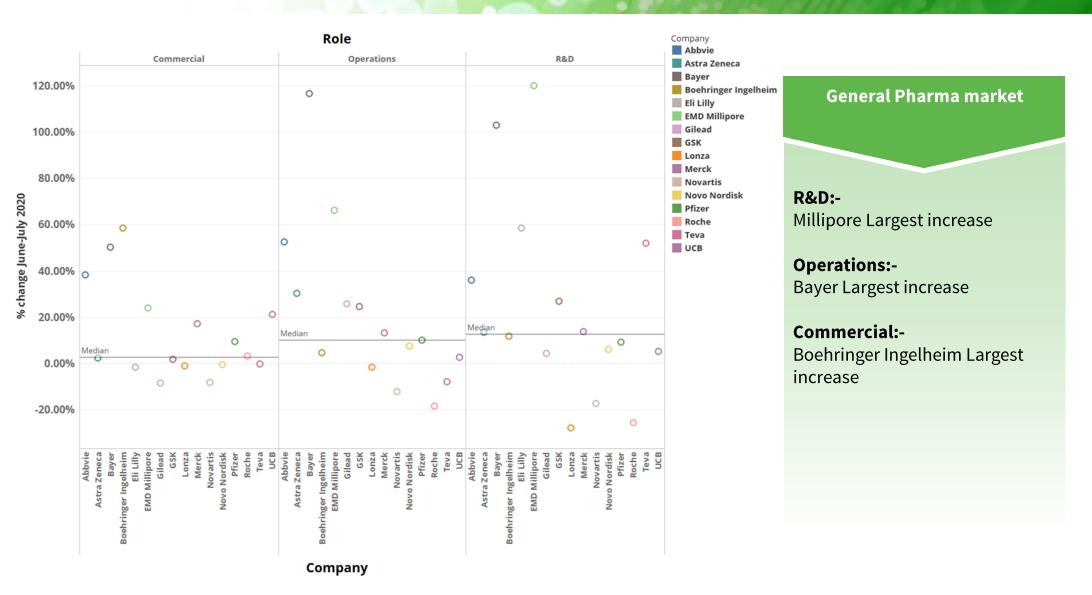
Commercial

Operations

R&D

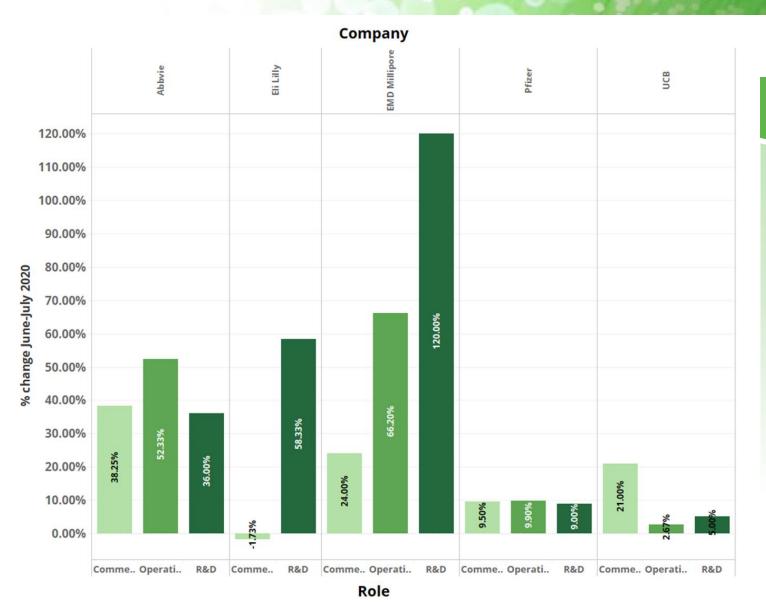
# Hiring Trend June - July 2020 By Role MTD Pharma





# Hiring Trend June - July 2020 By Role MTD Pharma





#### **General Pharma market**

**Abbvie:-** Increase in Operations, R&D & Commercial

Eli Lilly:- Increase in R&D

**Pfizer:-** Increase across operations, R&D & Commercial

**UCB:-** Increase across operations, R&D & Commercial

**MilliporeSigma**:- Increase in Operations, R&D & Commercial

#### Role

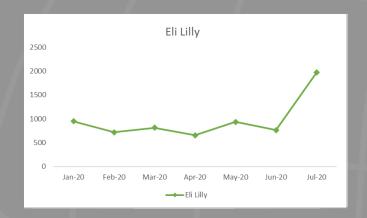
Commercial

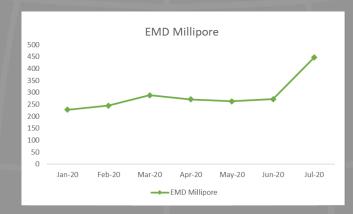
Operations

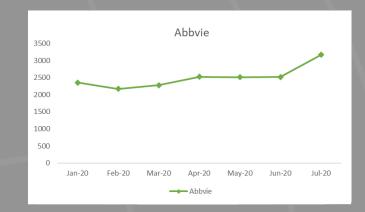
R&D

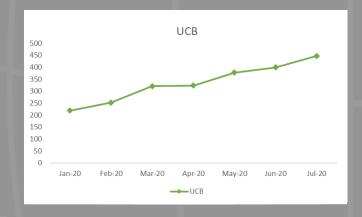
### Hiring Trend 2020 Pharma













#### **Increased Hiring:**-

Eli Lilly, EMD Millipore, Abbvie, UCB & Pfizer

### Pharma





- Phase 3 Trial of LY-CoV555 for Prevention of COVID-19
- Jardiance® in phase III trial
- P-tau217 Blood Test Alzheimer's Disease
- Phase 3 Clinical Trial with Baricitinib for Hospitalized COVID-19 Patients



- MilliporeSigma Invests \$20 Million in New Switzerland Laboratory based Buchs to support its rapidly growing reference materials business
- Merck Opens its Largest M Lab™ Collaboration Center in Shanghai
- Merck Advances Bioprocessing Capabilities with Raman Technology Sensor Acquisition



- I-SPY COVID Trial
- Abbvie & Jacobio collaboration SHP2 Inhibitors
- Positive Phase 3 Data for Atogepant in Migraine Prevention
- Phase 3 Study RINVOQ™



- CIMZIA[®] Biologic Approved in Europe for Full Axial Spondyloarthritis Spectrum
- UCB enters into collaboration with Roche to develop antibody treatment for people living with Alzheimer's Disease
- UCB acquires Engage Therapeutics: Staccato
- UCB completes the acquisition of Ra Pharmaceuticals



- Pfizer announces agreement with Gilead to manufacture remdesivir for treatment of COVID-19
- Pfizer and BioNTech to supply canada with their BNT162 MRNA-based vaccine candidate
- Pfizer and BioNTech to supply japan with 120 million doses of their BNT162 MRNA-based vaccine candidate
- Pfizer and BioNTech announce an agreement with u.s. government for up to 600 million doses of MRNA-based vaccine



**Assessment of Hiring Strategy** 

**Summary** 

### Summary





#### BioPharma:-

MTD:- Eli Lilly, Cytiva, Takara, Harvard Bio, Kite & Repligen have the largest increase in hiring

YTD:- Novavax, Emergent, Baxter, Adma, Enanta & Recipharm

#### **Cell Therapy Manufacturing:-**

MTD:- Takara, Emergent, Astellas, Novavax & Ajinomoto have the largest increase in hiring

YTD:- Novavax, Emergent, AMRI and Abeona

#### **Cell Gene Therapy:-**

MTD:- Cytiva, Kite, MilliporeSigma, Emergent, Bluebird & Miltenyi have the largest increase in hiring

YTD:- Emergent, ADMA, MilliporeSigma and Fujifilm

#### CDMO:-

MTD:- MilliporeSigma, Avid, Abbvie, Cambrex, Ajinomoto & Boehringer have the largest increase in hiring

YTD:- Avid, Baxter, Aurobindo, AMRI and Recipharm

#### Pharma:-

MTD:- Eli Lilly, EMD Millipore, Abbvie, UCB & Pfizer have the largest increase in hiring YTD:- Bayer, Roche, Eli Lilly Teva & EMD Millipore



Assessment of hiring strategy

Commentary

### Commentary



The changes in the bio/pharmaceutical industry are being accelerated and catalysed by the current Covid-19 crisis and appears to be a catalyst for acceleration of existing and emerging trends in the industry.

Essentially all bioprocessing-related industrial activities are continuing largely unaffected in terms of operations and output. While there are many changes in onsite staff management, broader business plans are not affected in the near-term. there will be a number of fundamental changes resulting from the pandemic. Many of these, such as the increase in the number of global facilities, were commencing prior to the crisis due to regional growth, the need for redundant production, and requirements for smaller, dedicated facilities. But the added pressures will move up the timelines and magnitude of change.

The general expectation is that there will be relatively minimal adverse near-term economic impact from the pandemic and its aftermath on the bioprocessing sector. Most companies are continuing with their long-term capital-intensive expansions and mergers/acquisitions.

Biopharmaceutical-related equipment suppliers, CDMOs, CROs and developer companies are considered "essential," and have continued operations with only minimal initial disruptions, most associated with staff management. Many are now planning on how to ramp-up their activities.

#### **Summary**

Overall, industry suppliers of goods and services are experiencing or expect increases in sales with an increasing number of pandemic and other infectious disease orders and projects beginning to come in.



### Commentary



#### **Change in Process**

- More facilities/modular
- More Bioprocessing
- More pandemic R&D & Manufacturing
- More supply chain control
- More Single use vs Stainless Steel
- More Regionalisation
- Faster R&D & speed to market
- Staffing difficulties



### Commentary



#### **Staffing Difficulties**

Prolonged employment challenges have beset the industry for over 10 years. These will now be intensified by the expected increase in bioprocessing for pandemic-related products. Hiring challenges and shortages of staff with expertise and experience will accelerate. Pandemic R&D and manufacturing will compete for limited staff with the cellular and gene therapies sectors, as new facilities come online. Bioprocessing expertise may be in short supply within a few months, with recruiting more difficult and salaries increasing.

This report illustrates evidence of companies increasing hiring now to mitigate the threats



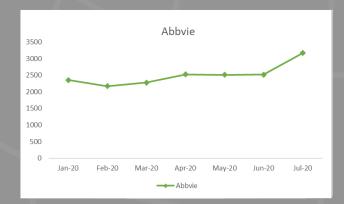


Assessment of hiring strategy

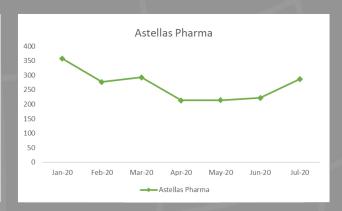
**Appendices** 

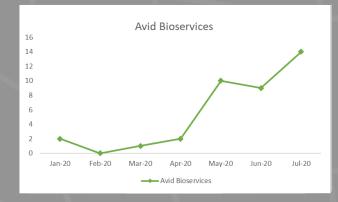
# Appendix One Hiring Trend

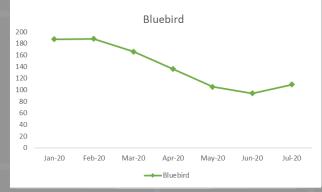


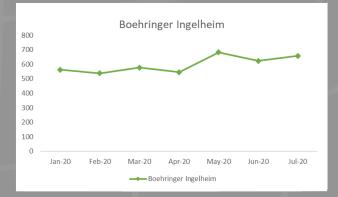






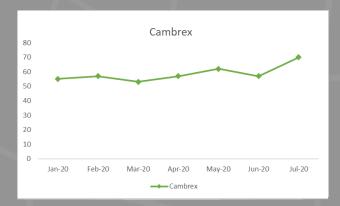


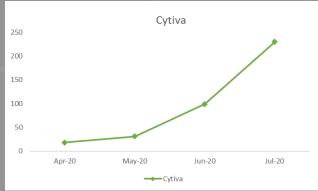


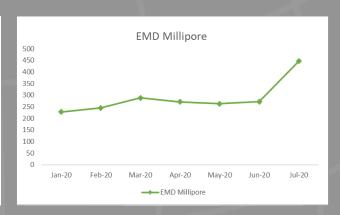


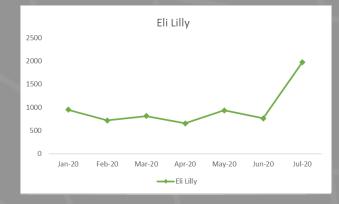
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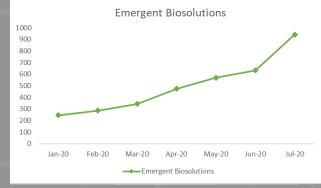


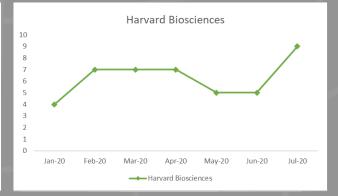






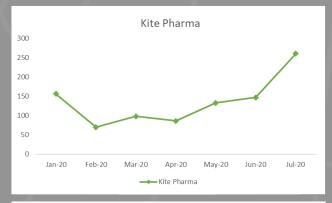


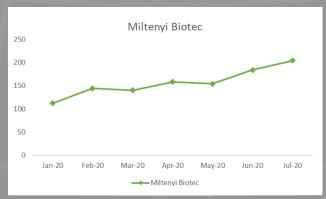


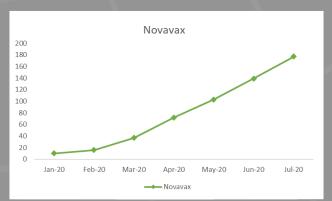


# Appendix One Hiring Trend

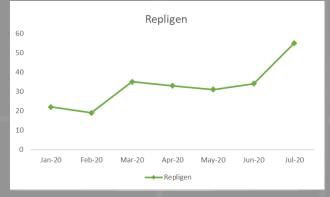


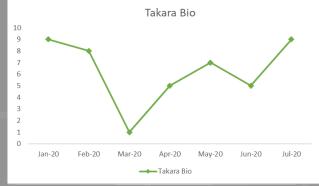


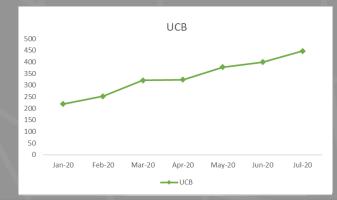














Biopharma Companies							
Adma Biologika	AGC Biologics	Aldevron	Alexion	Alnylam	Amgen	Astellas Pharma	Bachem
Baxter	Beigene	Bio-Rad	Bio-Techne	Biogen	BioMarin	BioMerieux	Bluebird
Boehringer Ingelheim	Brammer Bio	Bristol Myers Squibb	Cambrex	Catalent	Celgene	Cell Signalling Tech.	Cellular Dynamics
Cognate Bio Services	Corden	Crispr Therapeutics	Cytovance Biologics	Dr Reddy's	Eli Lilly	Emergent Biosolutions	Enanta Pharma
Flexion Therapuetics	Fujifilm	GE Healthcare	GE/Cytiva	Gilead	GSK	Harvard Biosciences	IDT Biologica
Intellia Therapeutics	Irvine	Johnson & Johnson	Juno Therapuetics	KBI Biopharma	Kite Pharma	Lonza	Lubrizol
Miltenyi Biotec	Mylan	Novartis	Novasep	Novavax	Novo Nordisk	Nuvasive	Pall Corporation
Pfizer	Recipharm	Regeneron	Repligen	Roche	Rubius Therapeutics	Sandoz	Sangamo Therapuetics
SK Life Sciences	Stemcel Technologies	Takara Bio	Takeda	Thermo	Vericel	Vertex	Wuxi Apptec



Cell Therapy Manufacturing Companies					
Abeona Bio	AGC Biologics	Ajinomoto	Aldevron	Almac	
AMRI	Astellas Pharma	Berkeley Lights	Catalent	Celgene	
Cognate Bio Services Discovery Labs		Emergent Biosolutions	Fujifilm	Gilead	
Hitachi Chemical	KBI Biopharma	Lonza	Mustang Bio	Novartis	
Novavax	Novo Nordisk	Oxford Biomedica	Roche	Rubius Therapeutics	
Takara Bio	Thermo	Waisman Biomanufacturing	Wuxi Apptec		



Cell Gene Therapy Companies						
Adma Biologika	Bluebird	Boehringer Ingelheim	Catalent	Corden	Crispr Therapeutics	
EMD Millipore	Emergent Biosolutions	Fujifilm	GE Healthcare	Cytiva	Gilead	
KBI Biopharma	Kite Pharma	Lonza	Miltenyi Biotec	Novasep	Sangamo Therapuetics	
Thermo	Vertex	Wuxi Apptec				



CDMO Companies						
Abbvie	AGC Biologics	Ajinomoto	Alkermes	Almac		
Aurobindo	Avid Bioservices	Baxter	Boehringer Ingelheim	Cambrex		
Corden	Dr Reddy's	EMD Millipore	Evonik Degussa	Fujifilm		
Lupin Pharma	Novasep	PCI	Recipharm	Roche		
Thermo	West Pharma Services	Wuxi Apptec				



Pharma Companies						
Abbvie	Amgen	Astra Zeneca	Bayer	Boehringer Ingelheim		
Eli Lilly	EMD Millipore	Gilead	GSK	Johnson & Johnson		
Lonza	Merck	Novartis	Novo Nordisk	Pfizer		
Roche	Sanofi	Teva	UCB			