



# Corporate Overview

December 2018

# Forward-Looking Statements

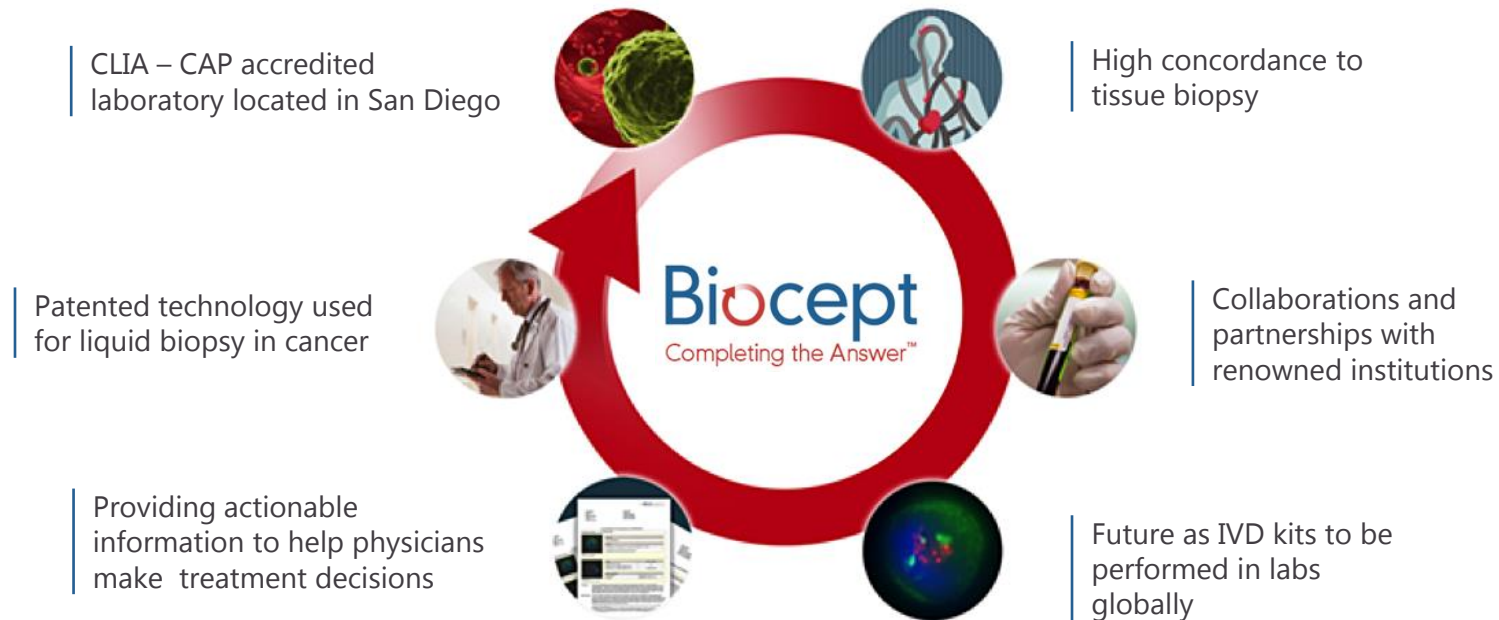
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This presentation contains, and any accompanying oral presentation would no doubt contain, forward-looking statements, within the meaning of the Private Securities Litigation Reform Act of 1995, regarding Biocept, Inc. and our business. Forward-looking statements include all statements that are not historical facts and generally can be identified by terms such as anticipates, believes, could, estimates, expects, intends, may, plans, potential, predicts, projects, should, will, would, or the negative of those terms and similar expressions.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. For details about these risks, please see our SEC filings.

All forward-looking statements contained in this presentation speak only as of the date hereof, and except as required by law, we assume no obligation to update these forward-looking statements whether as a result of any new information, future events, changed circumstances or otherwise.

# Corporate Profile



NASDAQ: BIOC, Listed 2014  
Market Cap: +/- \$6.5M  
Shares Out: 5.6M (incl. Series A Convertible Preferred Stock & Pre-Funded Warrants)  
ADTV: ~193K

# Our Team has a Deep & Successful History of Commercializing Innovation

## Michael Nall

President & CEO

- 25+ years in healthcare sales, marketing and commercial operations
- 16 years in cancer diagnostics and genomics
- Most recently General Manager N. American Sales and Marketing for Clariant — a GE Healthcare Company



## Tim Kennedy

CFO, SVP of Operations

- 30+ years of financial experience, 25+ years in the clinical diagnostics industry
- Instrumental in 2.1B restructuring of Millennium Health, a privately-held urine drug lab
- Numerous senior management positions – helped transform PLUS Diagnostics into largest independent U.S pathology lab; merged National Health Labs and Roche Biomedical Labs to form LabCorp



## Edwin Hendrick

SVP, Chief Commercial Officer

- Over 25 years of experience in diagnostic sales, marketing and commercialization
- Successfully introduced and commercialized tests from GenomeDx, US Labs, Plus Diagnostics and Ventana
- Reimbursement and Payor expertise



## Lyle Arnold, Ph.D.

SVP, Chief Scientific Officer

- Senior R&D leadership at Gen-Probe, Incyte Genomics, Genta
- Founder/ Co-founder Oasis Biosciences, Molecular Biosystems, Aegea Biotechnologies
- Former faculty member, UCSD School of Medicine and member, UCSD Cancer Center
- 47 issued US and more than 140 issued and pending patents worldwide



## Veena Singh, MD

Sr. Medical Director

- Board certified AP/CP and Molecular Pathology, UCSD, Cedars Sinai trained
- Numerous publications, serves on CAP committees
- Most recently Medical Director – bioTheranostics



## Michael Terry

SVP, Corporate Development

- 25+ years commercial leadership experience in molecular diagnostics and med-tech companies
- Former GE Healthcare executive, certified in Six Sigma
- Recent experience in liquid biopsy field; EVP commercial operations at both Sequenom and Trovagene



sequenom



# Biocept is Guided by a Board of Visionaries & Scientific Influencers

## Board of Directors

### David F. Hale

Chairman

### Bruce E. Gerhardt, CPA

Director, Member Audit Committee

### M. Faye Wilson, CPA, MBA

Lead Independent Director, Chair Audit Committee, Member Compensation Committee, Member Nominating and Governance Committee

### Ivor Royston, MD

Director, Chair – Science and Technology Committee, Member Nominating and Governance Committee

### Marsha A. Chandler, PhD

Director, Chair - Nominating and Governance Committee, Member Science and Technology Committee

### Bruce A. Huebner

Director, Chair – Compensation Committee, Member – Science and Technology Committee, Member – Audit Committee

### Michael W. Nall

Director, President & CEO

## Clinical Advisory Board

### Lee Schwartzberg, MD

Chief, Division of Hematology Oncology; Professor of Medicine, University of Tennessee

### David Carbone, MD

Director, James Thoracic Center, James Cancer Hospital and Solove Research Institute, Ohio State University

### Jenny Chang, MD

Director, Methodist Hospital Cancer Center, Houston, Texas

### Michael Kosty, MD

Scripps Clinic Torrey Pines, San Diego California

### Edgardo Santos, MD

Medical Director, Lynn Cancer Institute, Boca Raton, Florida

### Melissa Johnson, MD

Medical Oncologist, Nashville, Tennessee

### Fred Hirsch, MD, PhD

CEO, Int'l Assoc. of Study of Lung Cancer; Professor of Medicine, University of Colorado

### Santosh Kesari, MD, PhD

Chair, Dept. of Translational Neuro-oncology and Neurotherapeutics, John Wayne Cancer Institute, Santa Monica California

## Scientific Advisory Board

### David Rimm, MD, PhD

Professor of Pathology and Medicine (Oncology) Yale University School of Medicine

### Marileila Garcia, PhD

Professor, University of Colorado Division of Medical Oncology

### David Berz, MD, PhD

Beverly Hills Cancer Center  
Chief Medical Officer – Valkyrie Pharmaceuticals  
Beverly Hills, CA

# Investment Highlights

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## Liquid Biopsy Market Forecast to Reach in the Billions

- Commercial organization, improving cancer patient outcomes
- Advantages of a simple blood test vs. tissue biopsy (high sensitivity, actionable, rapid results, non-invasive, cost-effective)

## Test Menu Focused on Actionable Information

- Unique CTC and ctDNA testing platform
- Enables detection and monitoring of clinically-validated biomarkers listed in NCCN Guidelines

## Industry-Leading Test Performance

- Multiple clinical studies, publications, and presentations support Biocept's proprietary Target Selector™ platform
- Favorable reimbursement – cost-effective liquid biopsy testing, fits with health care reform goals

## Opportunities for Value-Creating Strategic Partnerships

- Current partnerships with industry leading companies
- Potential for U.S. and Global Transactions
- Commercial and Technology Partnerships

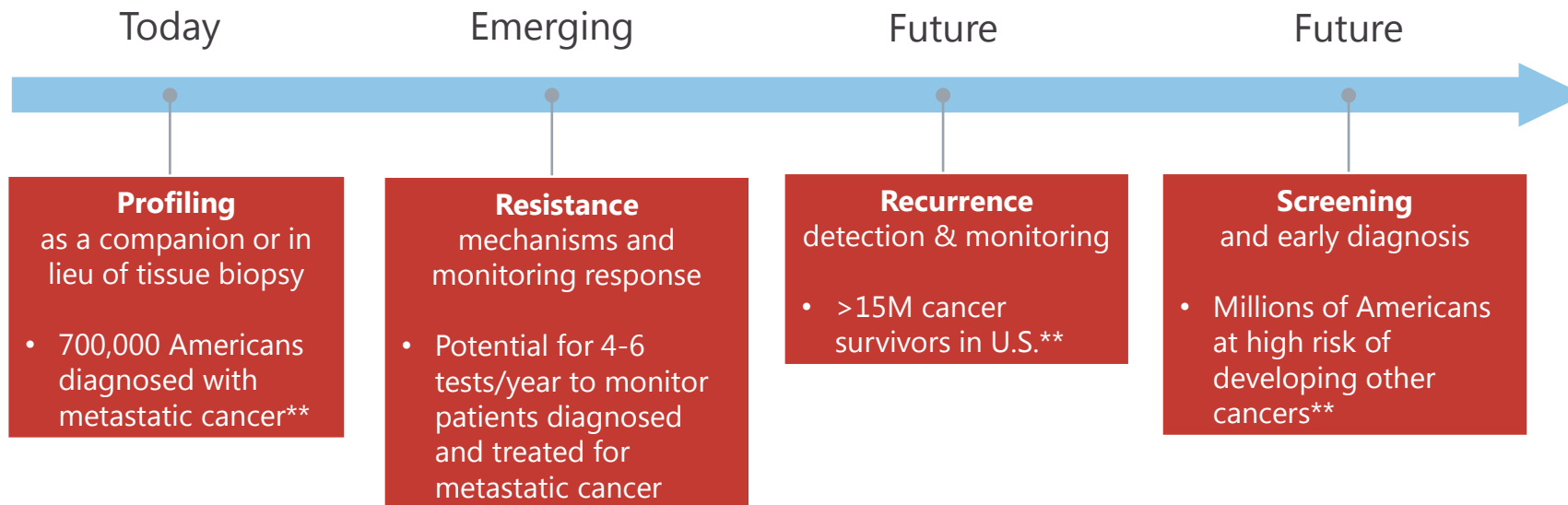
## Evolution Toward Distributed Business Model

- Actively growing Pathology Partnership (i.e. TC-PC) business
- Target Selector Kits for both CTC and ctDNA platforms

# Liquid Biopsy Market for Oncology



Estimated \$17 billion market by 2023\*



**Biocept focuses on patients with lung, breast, prostate, & colorectal cancers (>45% of all metastatic cancers\*\*)**

\*International Liquid Biopsy Market Report, Market Research Future, August 18, 2018

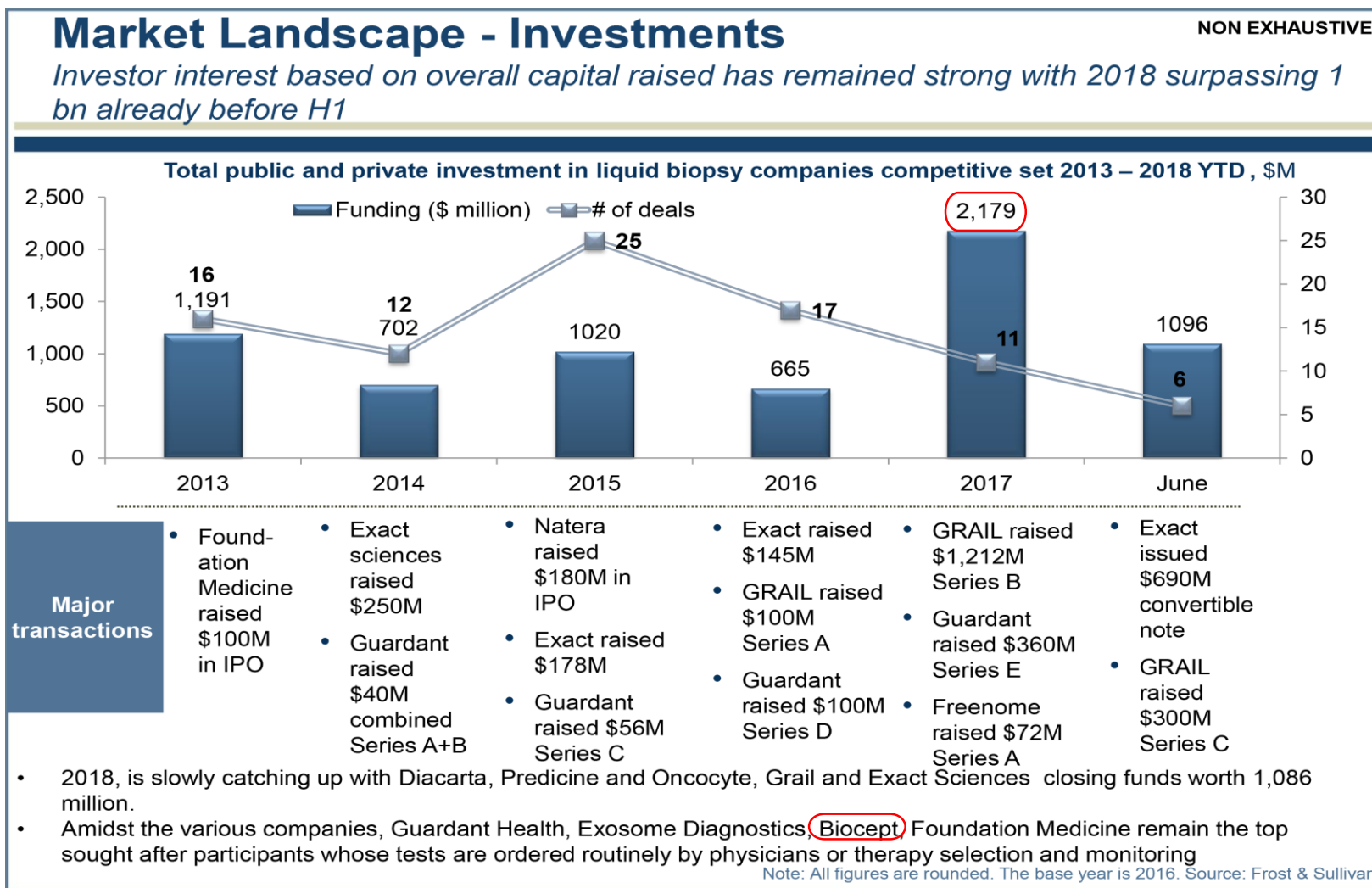
\*\*American Cancer Society: Cancer Treatment and Survivorship 2016-2017

# Investment Continues to Build in Liquid Biopsy & Cancer Diagnostics

- Strong investor interest in liquid biopsy field

- Growing investments over time (Frost & Sullivan)

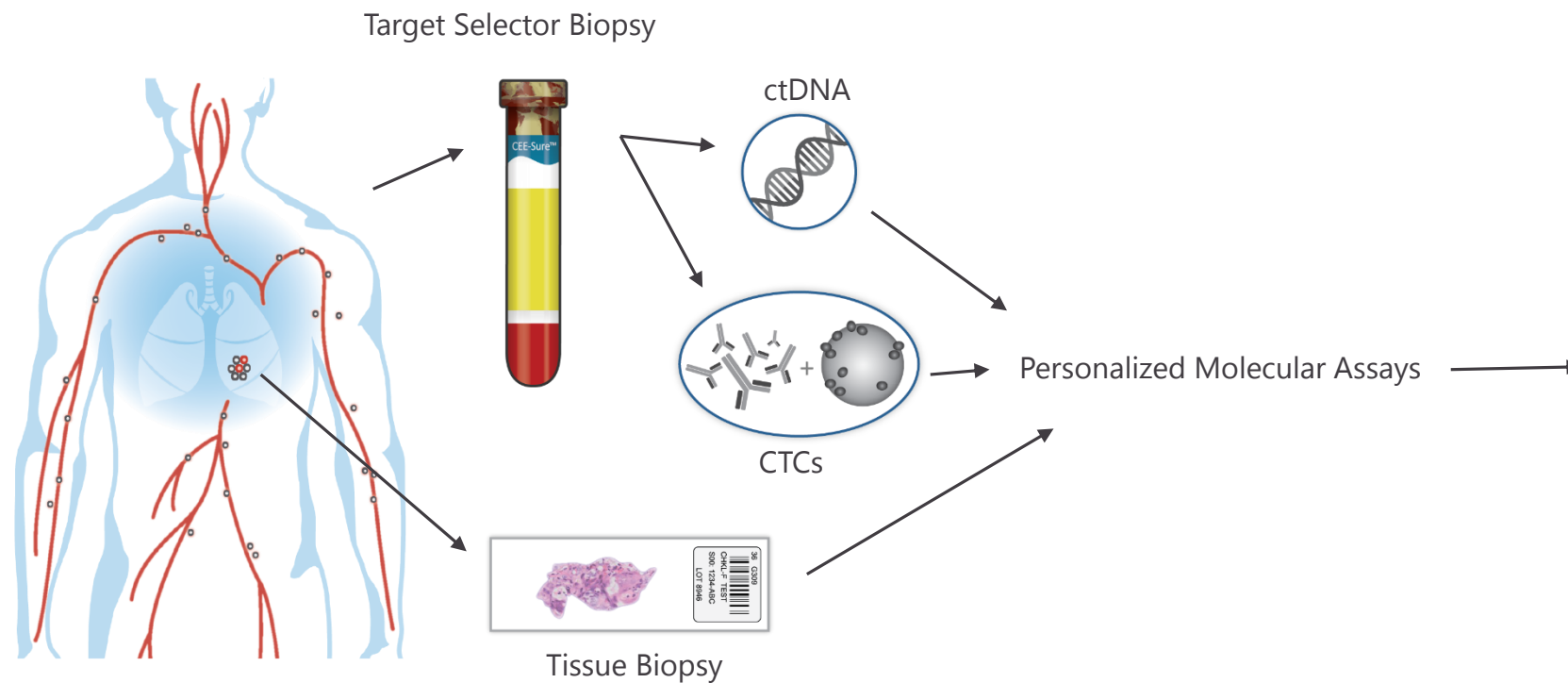
- >\$2B invested in 2017





# Precision Treatment

## Molecular Profiling Cancer Biomarkers



Identification of Molecular Biomarkers Required to Qualify Patients for Targeted Therapy

**Biocept**  
Completing the Answer™

OncoCEE-BR™ Circulating Tumor Cell (CTC) Test

18110 Nancy Ridge Drive, Suite 100, San Diego, CA 92121  
Client Service: 858-333-1729 FAX: 858-333-1701 • www.biocept.com

PATIENT INFORMATION		CLIENT INFORMATION	
Patient Name:	Patient, 10001234	Ordering Physician:	Sam Smith, MD
Patient ID#:	C100024	Order Location:	Dana-Farber Cancer Institute
Address:	400 Brookline Avenue Boston, MA 02215	Address:	400 Brookline Avenue Boston, MA 02215
Date of Birth:	12/13/1918	Account Number:	00000101
Sex:	F	Phone:	617-555-5555
		Fax:	617-555-5555

SPECIMEN INFORMATION	
Accession #:	DFW-0010
Client Account #:	1218-KX-KX
Specimen Type:	Peripheral
Waiver (Yes):	18
Collected Date:	5/7/2014 6:30 PM
Received Date/Time:	1/9/2014 9:45 AM
Reported Date/Time:	5/8/2014 12:31 PM
Test(s) Ordered:	HER2 OncoCEE-BR™

RESULTS	
Diagnosis:	History of Breast Cancer
CTCs:	Present
HER2:	Amplified (Positive)

CTC image: Blue/DAPI, Green/CK20  
HER2 image: Green/HER2, Red/DAPI

**SUPPORTING DATA**

Enumeration of Circulating Tumor Cells by OncoCEE™, 179  
HER2 Analysis of CTCs by OncoCEE™, 180 Amplified (Positive)

Parameter	Value
Number of CTCs	180
Number of CTCs, HER2 amplified	179
Number of CTCs, HER2 amplified (CTCs)	179

179 HER2 amplified CTCs (179/180) (100%) (100%) (100%)  
179 HER2 amplified CTCs (179/180) (100%) (100%) (100%)

Circulating tumor cells (CTCs) were detected in peripheral blood submitted to test by OncoCEE™. FISH analysis for HER2 showed evidence of HER2 amplification.

Clinical investigators believe that presence of circulating tumor cells (CTCs) is a biomarker of metastatic disease. Metastasis is a complex multi-step process that includes epithelial-mesenchymal transition (EMT), in which tumor cells are characterized by loss of cell adhesion, expression of E-cadherin, acquisition of mesenchymal markers, increased cell motility, and invasiveness. OncoCEE™ is designed as an important predictive and prognostic factor in breast cancer (2). HER2 status is predictive of a patient's response to HER2 targeted agents such as (trastuzumab).

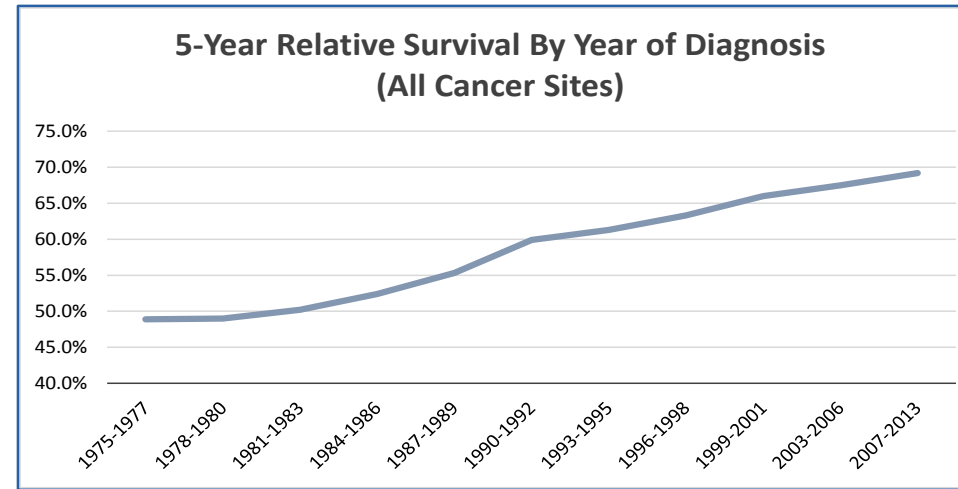
Laboratory Director: Sam Smith, MD, FACMG, PPSC (BCP)  
CLIA ID Number: 00000000000000000000000000000000

Accession #: DFW-0010  
Page 1 of 2

# Precision Treatment Improved Outcomes

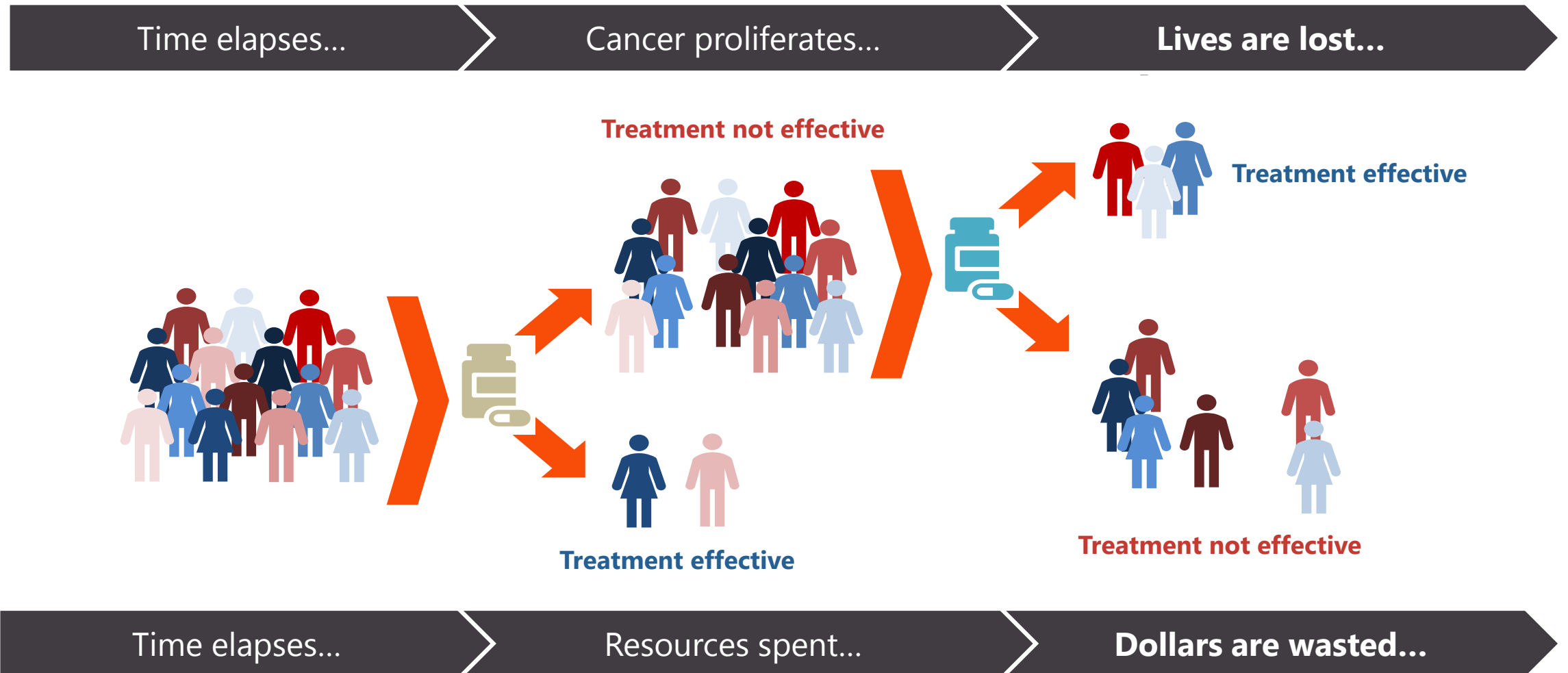


Source: SEER Cancer Statistics Review 1975-2013  
cancer.gov



\*NCI Cancer Statistics [https://seer.cancer.gov/csr/1975\\_2014/browse\\_csr.php?sectionSEL=2&pageSEL=sect\\_02\\_table.08.html](https://seer.cancer.gov/csr/1975_2014/browse_csr.php?sectionSEL=2&pageSEL=sect_02_table.08.html)

# Matching Cancer Patients to Personalized Therapy Remains Challenging



# Legacy Cancer Diagnostic Tools Do Not Complete The Answer

	Advantages	Disadvantages	Cost
<b>Traditional Surgical Biopsy</b>	<ul style="list-style-type: none"> <li>▪ Required for diagnosis</li> <li>▪ Considered standard of care</li> <li>▪ Source of cancer (histology)</li> <li>▪ Results for all known oncogenic alterations</li> <li>▪ Analysis of whole cells</li> </ul>	<ul style="list-style-type: none"> <li>▪ Invasive – not appropriate for monitoring</li> <li>▪ Risk of adverse events</li> <li>▪ Expensive</li> <li>▪ Often inadequate for complete molecular profiling</li> <li>▪ Only 57% of tissue biopsies have sufficient tissue for analysis</li> <li>▪ Can take as much as 30 days for results</li> <li>▪ Heterogeneity of tumor can lead to false negatives</li> <li>▪ Does not account for evolving cancer over time – snapshot view</li> </ul>	<b>\$15,000 to \$45,000</b>

# Biocept Completes the Answer

## Target Selector



### Biocept Liquid Biopsy Differentiators

#### Highest Sensitivity

- Combined results from CTCs and ctDNA from a single blood sample
- Industry leading sensitivity – delivers high concordance with tissue
- Addresses challenges of tumor heterogeneity


#### Actionable Results

- Results for all types of oncogenic alterations including SNVs, Indels, Fusions, CNVs, and Protein Expression
- Target markets – medical oncology, naturopathic medicine, urology, and pathology

#### Rapid, Non-Invasive, Cost Effective

- Turnaround in 3-7 days enables targeted and immuno-therapy options
- Reimbursement advantages – pay for individual/ actionable alterations
- Non-invasive - appropriate for both profiling and monitoring
- Cost - \$1,200 per test on average

# Differentiated Product Offerings Among Liquid Biopsy Providers



Company	CTCs / Whole Cells	ctDNA / DNA Fragments	Menu - Multiple Cancer Types	Proprietary Collection Tube	Pathology Partnership Strategy
<b>Biocept (BIOC)</b>	✓	✓	✓	✓	✓
Guardant Health (GH)		✓	✓		
Foundation Medicine (FMI)		✓	✓		
Epic Sciences (private)	✓		✓		
Biodesix (private)		✓			

## Biocept Advantage

- CTCs and ctDNA from a single blood sample
- Flexibility depending upon the biomarker
  - Mutations from ctDNA (ex. EGFR T790M), protein expression from CTCs (ex. PD-L1)
- Menu applicable across wide number of cancer types
  - i.e. NSCLC, Breast, Prostate, CRC, Pancreatic, Ovarian, Gastric
- Additional revenue channels with proprietary collection tubes
- Revenue share (Empower TC™) with pathology partners

# Biocept Growth Drivers

## Broad Technology Expertise

- CTC testing
- ctDNA test
- NGS

## New Customer Markets

- Urology
- AND Protocol
- Integrative Oncology
- Pathology Partnerships

## New Clinical Application

- Monitoring for Disease Progression and Treatment Efficacy

## Monetizing Intellectual Property

- CEE Sure Blood Tubes
- Molecular test kits

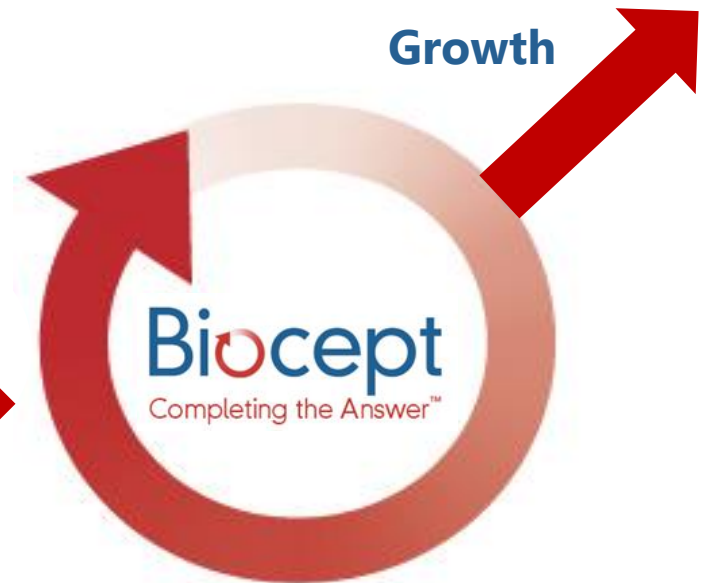
## Monetizing Database

- >16,000 patients
- >60K laboratory tests performed

## Single Cell Analysis

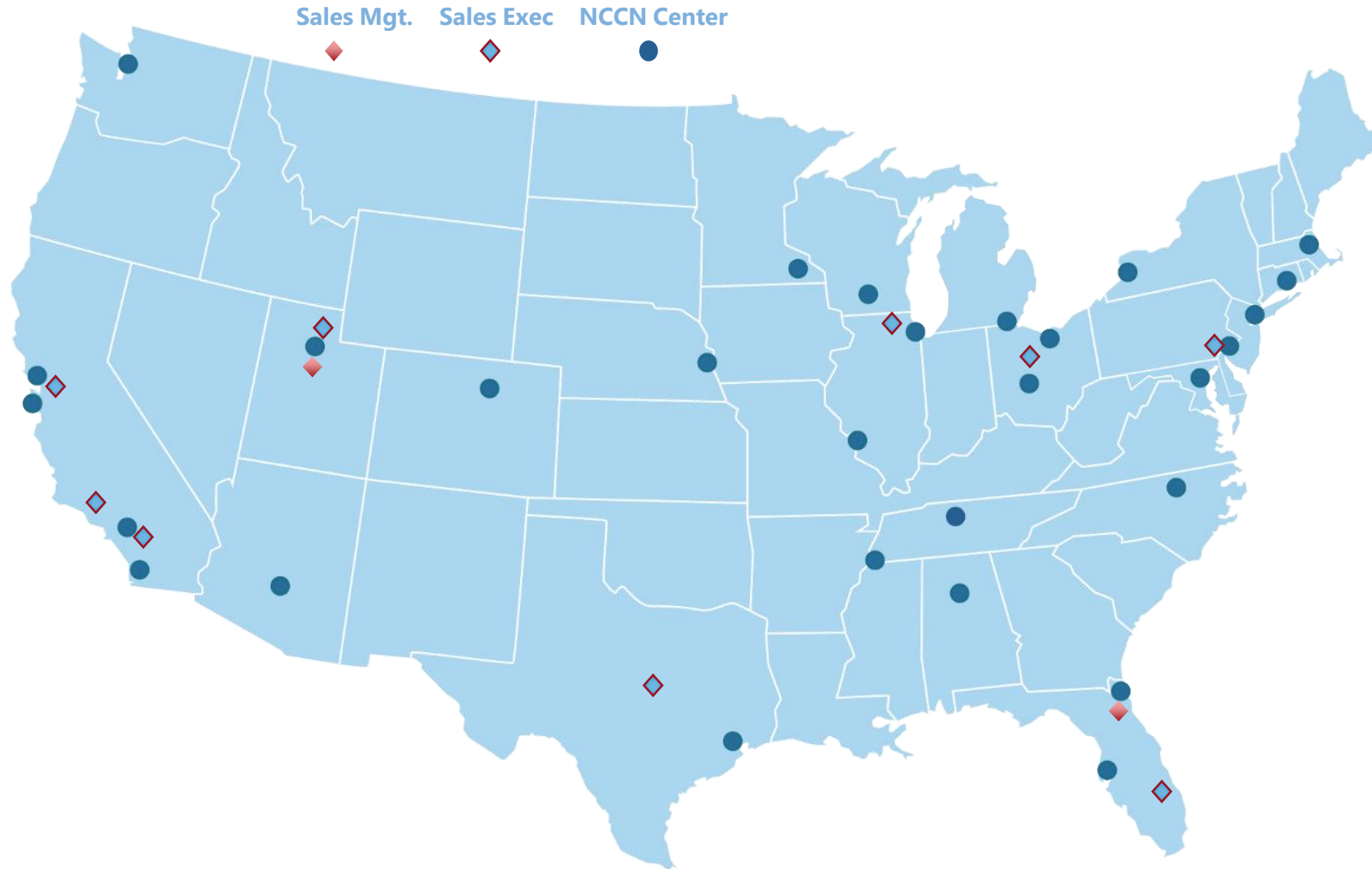
- Pharma
- Drug Discovery

Growth



# Team Liquid - New "Biocept Blood"

## Current Salesforce Coverage



## New skill sets:

- Small company growth focus
- Deep market knowledge
- Urology
- Naturopathic Medicine
- Pathology Partnerships
- Contracting and CMS coverage

## New "Biocept Blood":

- Managed Care
- Marketing
- Sales and Sales Management
- Field Product Managers

9 Clinical Biomarker Specialists (CBS) in the field & 2 Sales Managers



# Profiling at diagnosis or recurrence: “AND” Campaign – Bringing Liquid Biopsy into the Standard of Care

**Biocept**  
Completing the Answer™

Target Selector™  
Liquid Biopsy

Increasing Targeted Therapies via Liquid Biopsy

When treating cancer patients, it's no longer an either/or world.

At Biocept, we're  
all about the **AND...**

It's time to consider molecular information from both  
tissue **AND** blood.

Biocept is the industry's first to offer cancer biomarker  
testing using both ctDNA **AND** CTCs.

Focused on approved NCCN biomarkers, Biocept's tests  
include targeted therapy **AND** immunotherapy markers.

Visit Booth #25160 to learn about Biocept's Liquid Biopsy Technology.  
[www.biocept.com](http://www.biocept.com)

# Profiling at diagnosis and recurrence: Real-World Lung Cancer Treatment Initiative with Allegheny Health Network

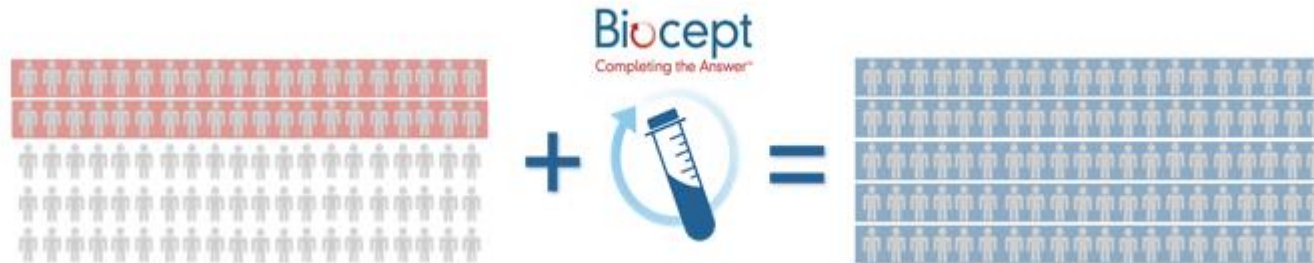


40% not tested for guideline tests

27% of patients not enough tissue



QI Project – Test all newly diagnosed and patients progressing with Tissue and Liquid



Hypothesis – 100% of patients, Increase detection of biomarkers, Improve outcomes, Reduce Costs

Highmark Health's VITAL Innovation Program testing benefits of Biocept's liquid biopsy platform for improving outcomes and lowering costs of treatment for patients with non-small cell lung cancer

*Allegheny Health Network's Cancer Institute spearheading the evaluation*

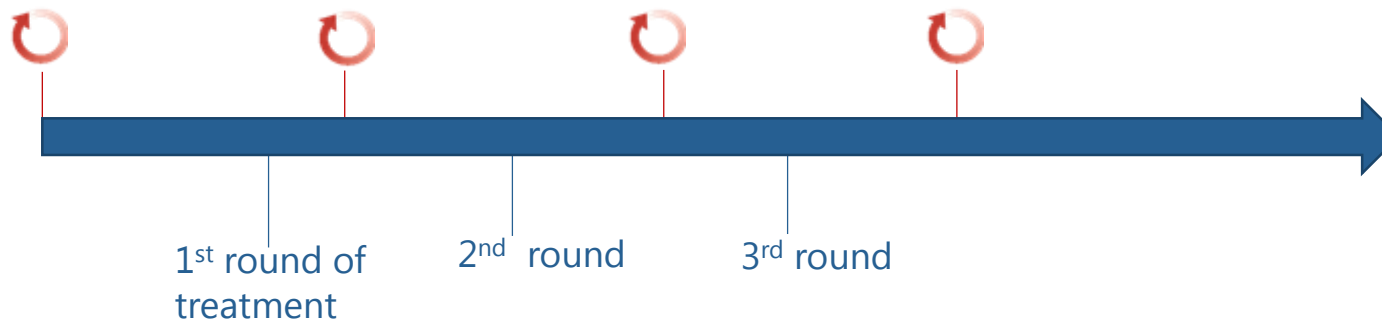
<https://www.highmarkhealth.org/hmk/newsroom/pr/pressreleases.shtml>

# Monitoring for progression or response

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- Specialty Areas of Focus :
  - Urology—Prostate Cancer
  - Integrative Oncology and Naturopathic Medicine
  - Breast Oncology
- Clinical Application for Monitoring:
  - Recurrence
  - Disease Progression
  - Therapy Effectiveness and Resistance

Order Biocept



# Profiling and Monitoring: EmpowerTC™-Pathology Partnership



**Empower TC™**  
**Tech-Only Liquid Biopsy**

Empowering Local Pathologists  
With World-Class Diagnostics

The first in the industry to offer cancer biomarker testing using both ctDNA **AND** CTCs.

Biocept offers specialized tests for approved NCCN biomarkers, including targeted therapy **AND** immunotherapy markers.

## ctDNA

- BRAF
- EGFR
- KRAS
- NRAS

## CTC

- ALK
- AR
- ER
- FGFR1
- HER2
- MET
- PD-L1
- PR
- RET
- ROS1
- CTC Count



## Our World-Class Lab. Your Expertise.

Partner with Biocept for **Tech-Only Services** that combine our leading **CTC Testing Technology** with **Your Local Knowledge**.

**ALK Gene Rearrangement by FISH: DETECTED (1 CTC/16 mL)**

Case Study: Biocept's Liquid Biopsy Enables Personalized Treatment for Non-Small Cell Lung Cancer (NSCLC) Patient After Tissue Biopsy Proves Inadequate.

Customer Service 888-332-7729 • FAX 877-300-1761

**Biocept, Inc.**

5810 Nancy Ridge Drive, San Diego, CA 92121

[www.biocept.com](http://www.biocept.com)



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MKTG-0036-02

# Commercial Collaborations



AstraZeneca



- Executing on strategy to contract with major cancer treatment institutions, GPOs, and distributors
- Increasing patient access
- Accelerating adoption of liquid biopsy
- Leveraging sales and marketing resources by increasing awareness of Biocept's liquid biopsy platform within large health systems
- Roll out new tests and service offerings including molecular pathology partnering model (i.e. "TC-PC")

# Thermo Fisher Scientific Agreement

Collaboration aimed at becoming Thermo Fisher's only Liquid Biopsy Center of Excellence



- Seek to validate Thermo Fisher Oncomine™ NGS Panel in Biocept's CLIA-certified laboratory
- Once validated, Biocept to be designated as Thermo Fisher Liquid Biopsy "Center of Excellence" for oncology-focused liquid biopsy initiatives with the companies jointly pursuing various commercial opportunities
- Initially target the pharmaceutical industry to provide diagnostic testing services for drug development, clinical trial support, and companion diagnostics (CDx)
- Collaboration also intends to evaluate the feasibility of developing best-in-class products based on the integration of Biocept's Target Selector™ technology with Thermo Fisher's Ion Torrent™ NGS platform and Oncomine™ liquid biopsy-based NGS panels.

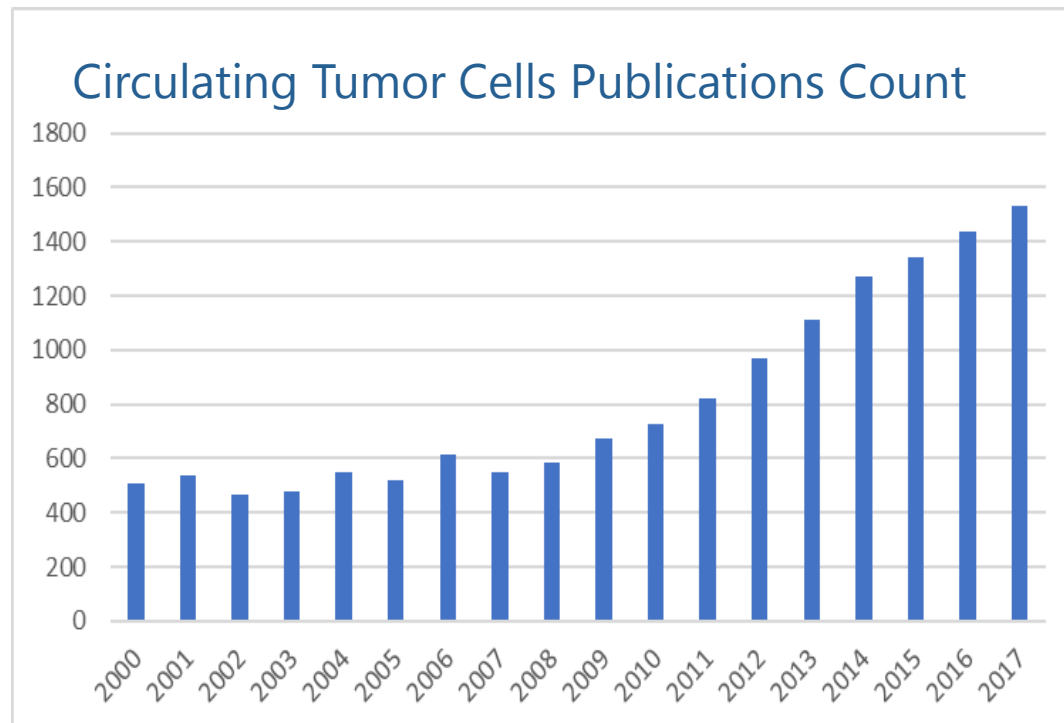
- Prognos, Inc.
  - Leader in predicting disease by applying artificial intelligence to clinical lab diagnostics
  - Maintains a registry of over 20 billion medical records to help its pharmaceutical clients ensure the right patients receive the right therapies
  - Investors include top tier funds and strategic partners including Merck Global Health Innovation fund
- The field of oncology-focused targeted therapeutics is driven by big data
- Biocept's clinical experience data base of more than 16,000 patients is a potentially valuable asset
- Partnership enables Biocept's data monetization strategy
  - Biocept's de-identified patient records are integrated into Prognos registry through their proprietary interface software
  - Prognos markets data to biopharma clients

# Increasing Focus on CTCs & Other Rare Cells of Interest

## Biocept's Patented Antibody Cocktail & Microchannel Platform Is Enabling for Single Cell Capture

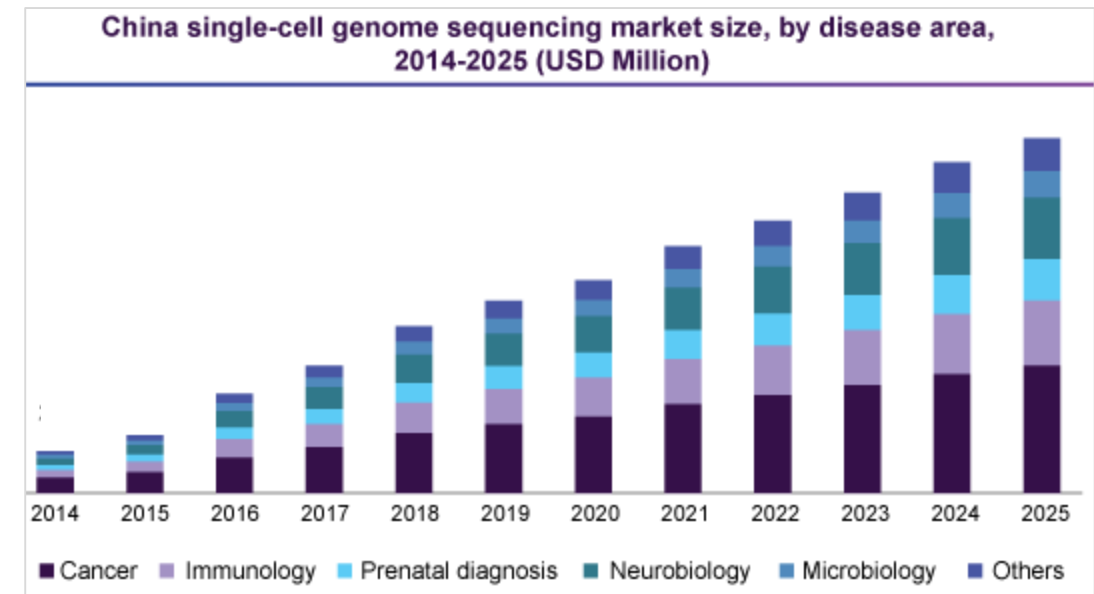
### CTC importance growing in liquid biopsy

- Number of CTC publications has tripled since 2000\* (Pubmed)
- >1500 CTC publications released in 2017 (Frost & Sullivan)



### Single cell sequencing market at the forefront

- The global single-cell genome sequencing market size is expected to reach US\$2.49 billion by 2025<sup>1</sup>
- Growing at a CAGR of 14.64% during the forecast period



<sup>1</sup> Grandview Market Research  
Single-Cell Genome Sequencing Market Size, Share & Trends  
Analysis Report



# Biocept IP Portfolio – Over 30 Patents Issued Worldwide

## Family 1

MicroChannel for CTC Capture

- Patent 1 – Recovery of rare cells using microchannel
- Patent 2 – Device for Cell Separation

**1) Issued in US (2), China (3), Korea, France, Germany, Great Britain, Italy, Spain, Hong Kong (3), Japan, and Canada**

- Pending in Australia

**2) Issued in US**

Expire  
2025

## Family 2

CTC Capture With Antibody Cocktail

- Patent 1 – Devices & Methods of Cell Capture Analysis
- Patent 2 – Method and Reagents for Signal Amplification

**1) Issued in US (2), Australia, France, Germany, Great Britain, Spain, Italy, Hong Kong, Japan (3), and China**

- Pending in Canada

**2) Issued in US, Japan, and China**

- Pending in Canada – Europe - Hong Kong –Korea

Expire  
2030

## Family 3

Collection Tube

Patent 1 – Use of DU for Anti-Clumping of Biological Sample

**1) Issued in US**

Expire  
2031

## Family 4

Switch Blockers for ctDNA Analysis

Patent 1 – Methods for Detecting Nucleic Acid Sequence Variants

**1) Issued in US, Australia, China, France, Germany, Italy, Great Britain, Belgium, Ireland, and Switzerland**

- Pending in Japan – Hong Kong – Korea – Brazil – Canada

Expire  
2033

Extensive IP portfolio expected to allow Biocept to monetize IP through out-licensing and moving to distributed model based on developing diagnostic kits

# Health Plan Access Continues to Expand with Third Party Contracts

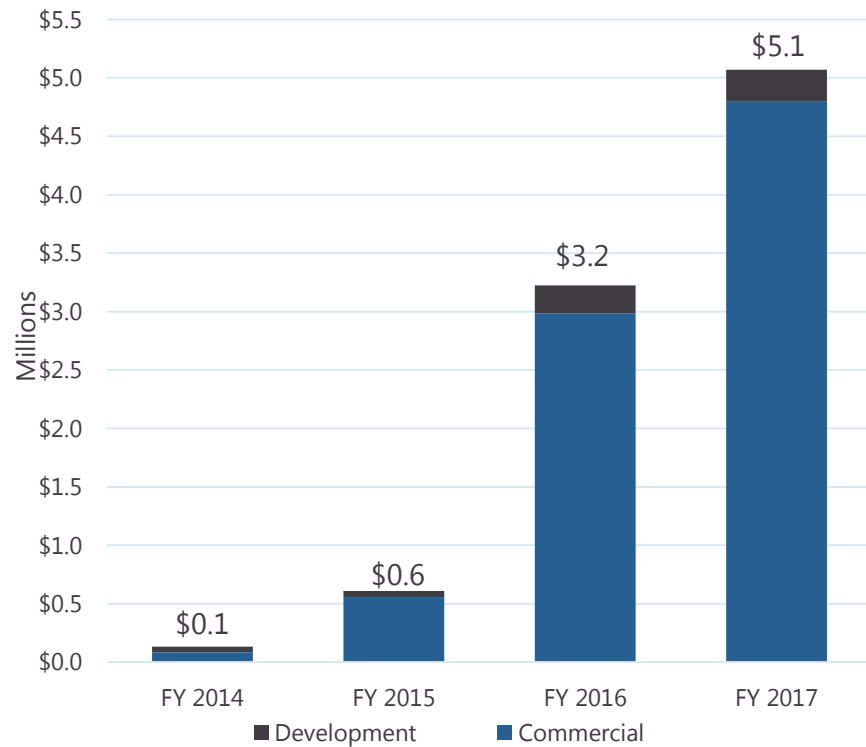


- Managed Care agreements in place covering >200 million lives
- Dedicated managed care leadership with years of experience from GE, LabCorp and Quest
- Payors have positive coverage for biomarkers listed in guidelines
- Aligns with goals of healthcare reform
- Improved outcomes while reducing costs
- Utilize established CPT codes

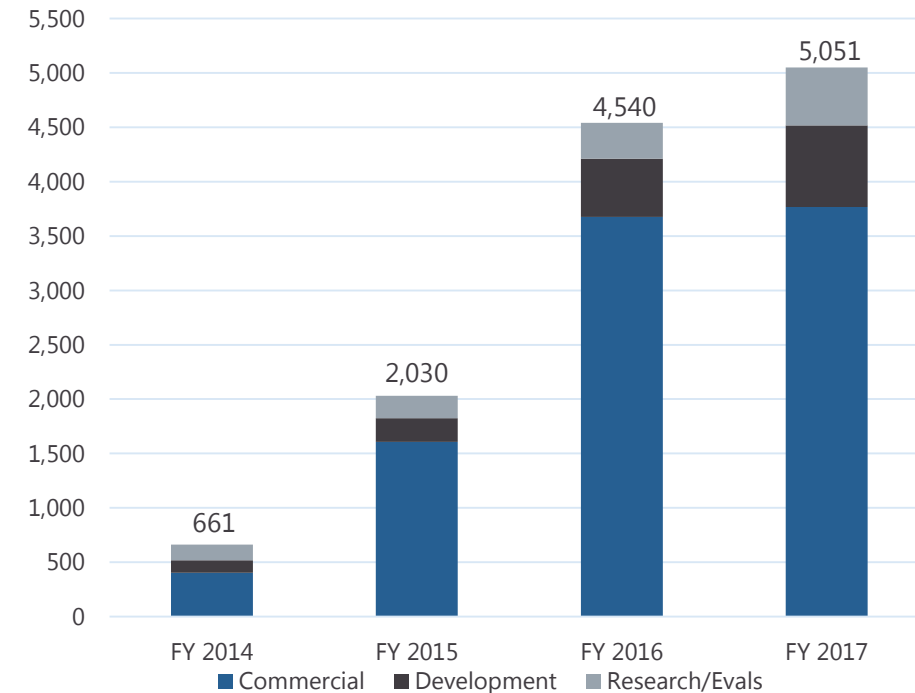
# Deploying Capital To Fuel Growth

- Cumulative Revenue of ~\$11.4M Since 2014
- Cumulative Test Volume of ~17,000 Since 2014

## Annual Commercial Revenue



## Annual Patient Samples



*Note: FY2017 includes \$1.2M related to revenues recognized upon the receipt of payment.*

# Anticipated Near Term Milestones

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- ✓ Increase market penetration into emerging liquid biopsy segment
- ✓ Enter into strategic commercial and technology partnerships – Global and U.S.
- ✓ Validate Oncomine™ NGS Panel; Become Thermo Fisher Liquid Biopsy Center of Excellence
- ✓ Grow sales of blood collection tubes under VWR marketing and distribution agreement
- ✓ Sign new third-party health plan agreements and expand relationship with BCBS
- ✓ Publish clinical case studies
- ✓ Develop and launch ex-US kit strategy
- ✓ Launch additional oncology biomarker assays
- ✓ Monetize data through Artificial Intelligence (AI) from over 16,000 patients tested

# Biocept