

# Cantor Fitzgerald Global Healthcare Conference

Chris Linthwaite, President and CEO

September 2017



# Use of forward-looking statements; trademarks

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including, among others, statements regarding global health care trends, potential growth in mass cytometry, single-cell genomics, and genomics markets; market opportunities for Fluidigm, including market trends and possible growth rates; anticipated benefits to customers of using company products; value propositions for company products; planned strategic initiatives and expected timing and benefits of such initiatives; cost savings and cash flow expectations; projected revenues, expenses, and cash flows for the third quarter of 2017; and annual consumables pull-through estimates. Forward-looking statements are subject to numerous risks and uncertainties that could cause actual results to differ materially from currently anticipated results, including but not limited to risks relating to the future financial performance of Fluidigm product lines; challenges inherent in developing, manufacturing, launching, marketing, and selling new products; potential product performance and quality issues; the possible loss of key employees, customers, or suppliers; intellectual property risks; competition; Fluidigm research and development, sales, marketing, and distribution plans and capabilities; reduction in research and development spending or changes in budget priorities by customers; interruptions or delays in the supply of components or materials for, or manufacturing of, its products; seasonal variations in customer operations; unanticipated increases in costs or expenses; and risks associated with international operations. Information on these and additional risks and uncertainties and other information affecting Fluidigm's business and operating results is contained in Fluidigm's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017. These forward-looking statements speak only as of the date hereof. Fluidigm disclaims any obligation to update these forward-looking statements except as may be required by law.

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Fluidigm products are for Research Use Only (RUO), not for use in diagnostic procedures.

# Use of non-GAAP financial information

This presentation has certain financial information in accordance with U.S. GAAP and also on a non-GAAP basis for the second quarters and first halves of 2017 and 2016, and for the 2014-2016 fiscal years. Management believes that non-GAAP financial measures, taken in conjunction with GAAP financial measures, provide useful information for both management and investors by excluding certain non-cash and other expenses that are not indicative of the company's core operating results. Management uses non-GAAP measures to compare the company's performance relative to forecasts and strategic plans and to benchmark the company's performance externally against competitors. Non-GAAP information is not prepared under a comprehensive set of accounting rules and should only be used to supplement an understanding of the company's operating results as reported under U.S. GAAP. Fluidigm encourages investors to carefully consider its results under GAAP, as well as its supplemental non-GAAP information and the reconciliation between these presentations, to more fully understand its business. Reconciliations between GAAP and non-GAAP operating results are presented in the accompanying tables of this presentation.



# About Fluidigm

An innovative leader in multiparameter cell and tissue analysis committed to improving the human condition. We empower translational and clinical researchers to deeply profile precious cell and tissue samples to accelerate therapeutic development and to create prognostic and diagnostic tests of the future. The company focuses on unmet needs in translational and clinical research emphasizing oncology, immunology and cancer immunotherapy.

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**\$104m** annual revenue

**>550** employees worldwide

**53.8%** product margin (GAAP)

**>600 patents** owned or licensed

**70.4%** product margin (non-GAAP)

**>300 pending** patent applications

**Headquartered** in South San Francisco, CA, USA

**>1,300** active installed instruments

**>2,000** scientific publications

**Manufacturing** in Singapore; Markham, ON, Canada; South San Francisco, CA, USA

*For the year ended December 31, 2016*



# Global trends

Over **14m** new cancer cases each year<sup>1</sup>. More than 80 autoimmune diseases exist, affecting over **23m** in the US alone<sup>2</sup>.

The **immune system is pivotal in regulating health and disease** states, leading to new treatment paradigms including **cancer immunotherapy**.

**High-parameter analysis is essential** to identify **cellular networks and molecular biomarkers** within the highly complex **immune system and tissue microenvironments**.

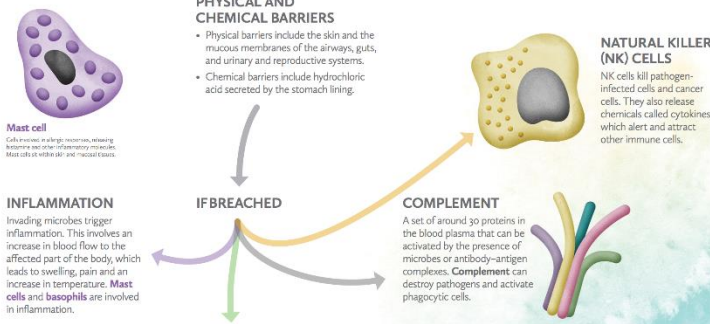
**These insights** fuel the development of **better diagnostics and more effective therapies**, but many unanswered questions remain.

1. Ferlay, J., Soerjomataram, I., Ervik, M., et al. Int J Cancer 2015, 136(5): E359-86. 2. Medicines in development, 2016 Report.

# The immune response BigPicture

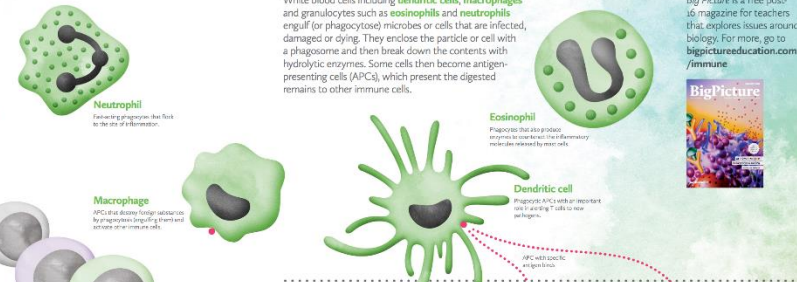
## Non-specific (innate) immune system

*Includes chemical and physical barriers (the first line of defence) and responses such as inflammation (the second line of defence). Its effects are rapid, short-lived and non-specific. Found in all multicellular organisms.*



## LEUKOCYTES

Made in the bone marrow, leukocytes, or white blood cells, are an important part of the immune system. There are two main types: granulocytes, which have granular cytoplasm and a lobed nucleus, and agranulocytes, which have smooth cytoplasm and a non-lobed nucleus. Leukocytes include **mast cells, basophils, macrophages, dendritic cells, neutrophils, eosinophils, B cells and T cells.**

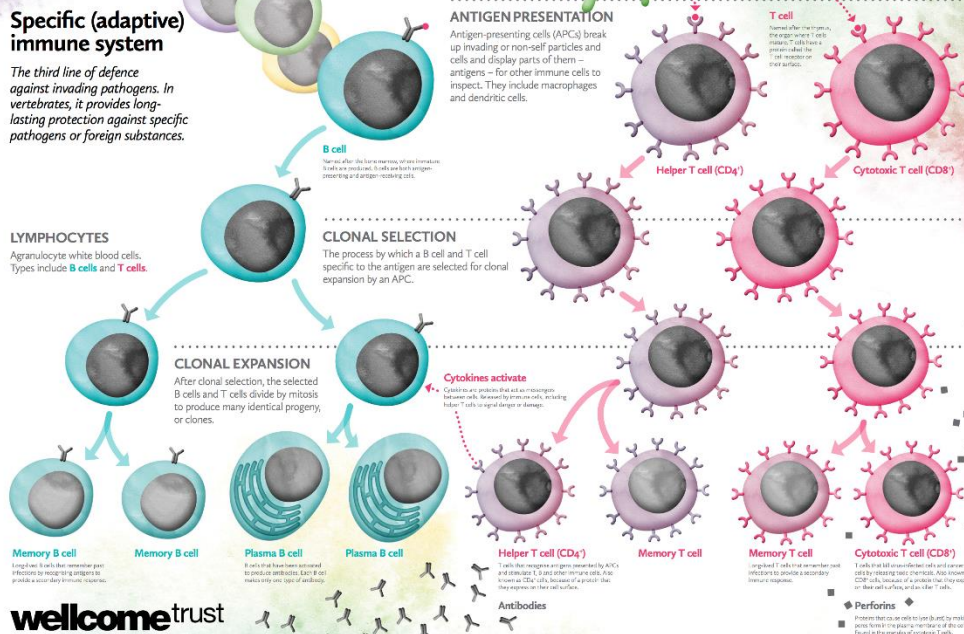


## Specific (adaptive) immune system

*The third line of defence against invading pathogens. In vertebrates, it provides long-lasting protection against specific pathogens or foreign substances.*

## LYMPHOCYTES

Agranulocyte white blood cells. Types include **B cells and T cells.**



# The immune system modulates a number of diseases

## Examples

- allergy
- arthritis
- asthma
- cancer
- cardiovascular disease
- diabetes
- inflammatory bowel disease
- multiple sclerosis
- rheumatoid arthritis
- stroke

# Examples of questions in cancer immunotherapy research

## **Molecular targets**

How do cancer cells evade the immune system?

Which cells and pathways should be targeted?

## **Therapeutic development**

What is the mechanism of the drug?

Which combination therapies are most successful?

How can efficacy and safety be improved?

## **Predicting response**

Which biomarkers could predict response?

Which drug should be given first and second, and when?

What is the prognosis?

# Current challenges



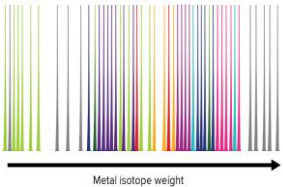
## Limited samples

Human tissue and blood samples with clinical information are precious. Maximizing insights from each sample is essential.



## Biomarker expansion

The numbers of molecular biomarkers and cell signatures are steadily increasing, necessitating simplified panel design and customization.



## High-parameter protein detection

Flow cytometry and immunohistochemistry use fluorescence, which because of “fluorescent spillover” imposes limitations on simultaneous biomarker detection. A more advanced approach is vital.

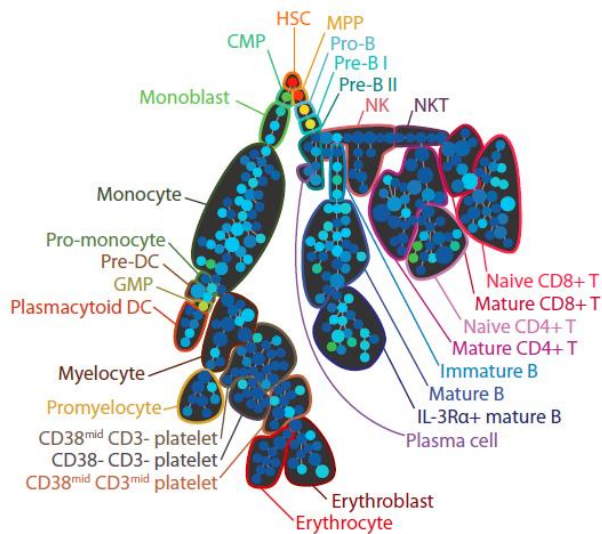


## Efficiency of variant detection with increasing scale

Improvements in cost efficiency and throughput are a challenge for next generation sequencing (NGS) and qPCR pipelines. A cost effective approach is required.



# Fluidigm, a leader in high-parameter analysis of cells and tissue



**Bone marrow example**  
Bendall, et al. Science (2011)

## Comprehensive cellular profiling from precious samples

Empowering high-parameter analysis of protein markers and genomic variants from precious blood, tissues and tumor samples in human and model systems.

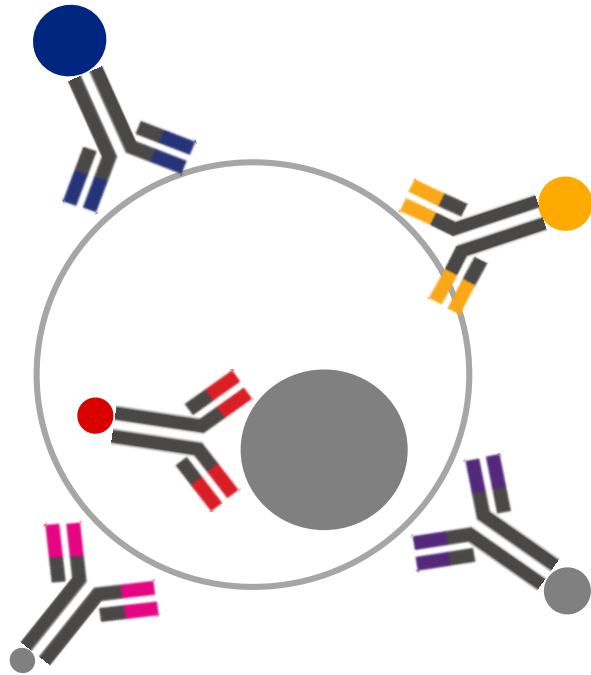
## High-parameter protein detection with panel flexibility

CytOF® technology transcends the limitations of fluorescence, enabling simplified design, customization and implementation of high-parameter panels.

## Efficient, scalable variant analysis with panel flexibility

Proven microfluidics technology enables automation and miniaturization of reaction volumes, scaling NGS library preparation, genotyping and gene expression with flexible panel design.

# Fluidigm primary businesses



**Mass cytometry**



**Genomics**

# Mass cytometry



Helios,<sup>™</sup> a CyTOF system



Imaging Mass Cytometry<sup>™</sup> System

## Customer challenges

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- Inability to profile many biomarkers simultaneously
- Spectral overlap with fluorescence tags
- Lack of cellular spatial context

## Value proposition

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- Profiling of 40+ biomarkers per cell
- Distinct signals using rare metal tags
- High-dimensional cell signatures
- Identification of cellular networks in spatial context

## Applications

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- Immune monitoring, drug / biomarker discovery, basic & translational research

# The mass cytometry business

Double-digit year-over-year growth in the first half of 2017

## Target customers

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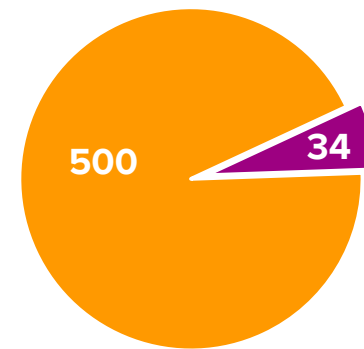
- Research labs in biopharma, CROs, cancer centers

## Strategic objectives

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- Expand content and workflow solutions
- Build new partnerships

## Market opportunity, \$m



■ 2016 market size ■ 2016 FLDM revenue

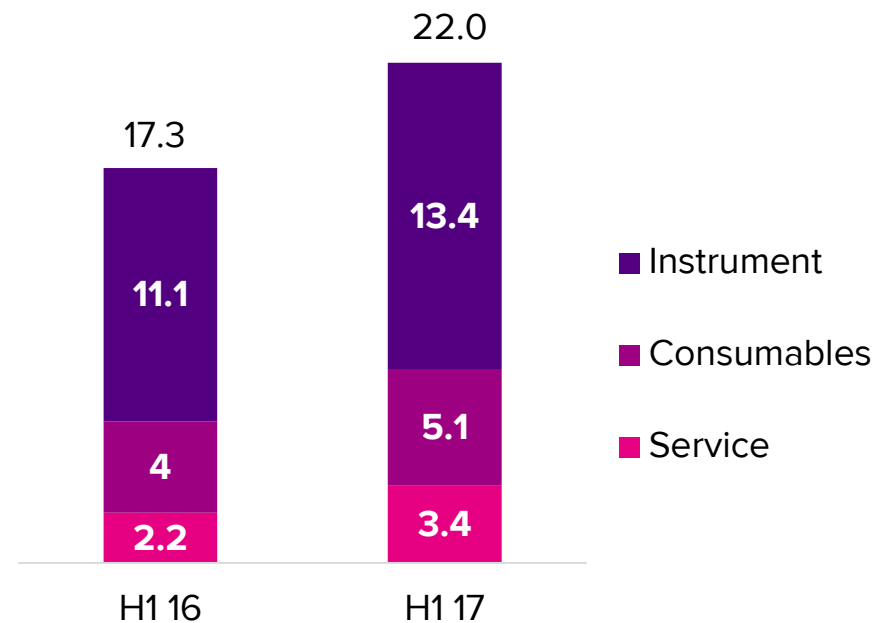
# The mass cytometry business

Double-digit year-over-year growth in the first half of 2017

## Recent progress

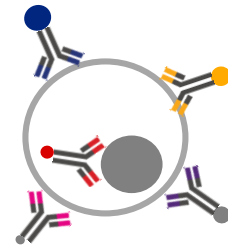
- Launched Maxpar® panel
- Introduced Imaging Mass Cytometry System to early adopters
- Delivered double-digit year-over-year growth in H1 17
- Over 400 publications in H1 2017 vs. 340 at 2016 YE
- Record attendance at 6th Annual Mass Cytometry Summit

## FLDM revenue YTD, \$m



# Science that changes lives

## Why the technology matters



**Case study** Tissue samples from a melanoma patient cohort are tested to determine the efficacy of an investigational checkpoint inhibitor therapy. Mass cytometry enables an unexpected discovery in one patient: abnormal blood-forming cells in the bone marrow, a disease known as myelodysplastic syndrome.

**The human impact** The finding, which had been previously missed, not only results in a new treatment plan for this individual patient, it ultimately leads to discussion of an expanded protocol for future cancer patients treated with checkpoint inhibitor therapy. Discovery of unforeseen data through mass cytometry is informing new approaches to study design and data analysis, potentially accelerating development of new therapies.

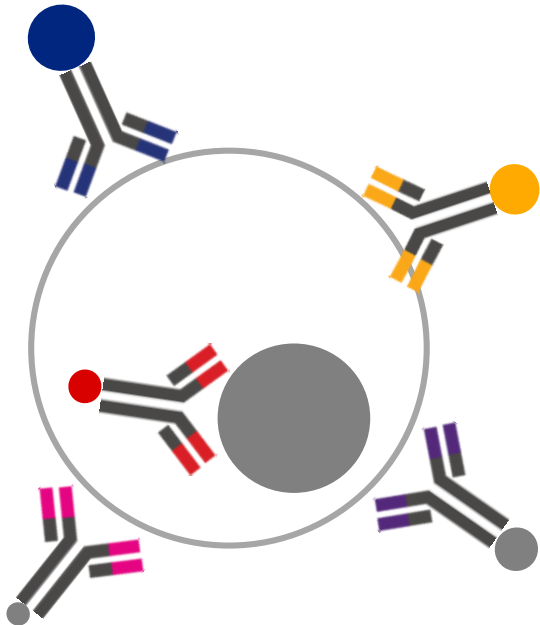
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***In traditional cytometry, researchers would only have measured PD-1 expression in a T cell panel and would not have been able to sufficiently examine PD-1 expression on myeloid blasts, a signature for myelodysplastic syndrome. Mass cytometry is a powerful tool that frequently reveals new cell types and disease signatures.***

Insights gained through mass cytometry are sometimes yielding fundamental, new knowledge.

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# New product development through innovation and partnership



## Mass cytometry

### Content

Delivery of verified, high-content research panels for impactful applications in immunology, cancer and cancer immunotherapy

- Maxpar Immuno-Oncology panels

### Software

Better, more sophisticated tools for deep cell and tissue analysis in translational and clinical research applications

- Cytobank cloud-based data analysis

### Workflow

Continued improvements in efficiencies and ease of use

- Enhancements in user interface, protocols, tube loading, and other areas

# Genomics microfluidics



NGS library prep with Juno™



qPCR with Biomark™ HD



Single-cell isolation with C1™

## Customer Challenges

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- Low-quality and limited samples
- Sample throughput requirement
- Need workflow integration and simplification

## Value Proposition

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- Flexibility that enables changes in panel content
- Automation and miniaturization of reaction volumes
- Lower cost per sample, reduced hands-on time to maximize profitability
- Data quality and menu breadth with C1 system

## Applications

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- **Genomics:** Tests for inherited disease and cancer, molecular fingerprint for quality control, basic & translational research, and breeding programs
- **C1:** human cell atlasing, single-cell TCR & BCR sequencing, and CTC and rare cell sequencing



# The genomics microfluidics business

Five partnership, collaboration and license agreements in LTM

## Target customers

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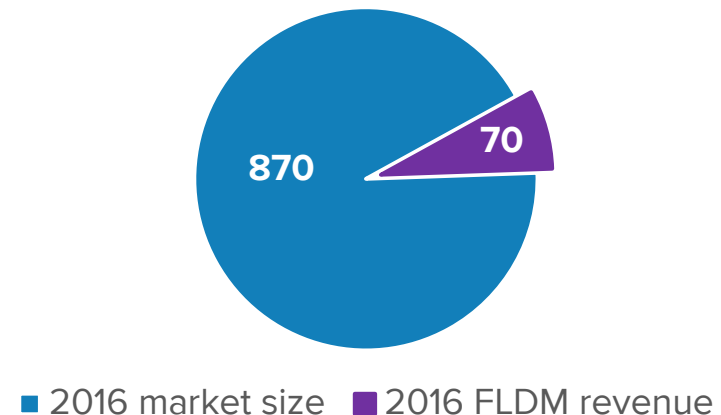
- Research labs in biopharma, cancer centers, genome centers, CRLs and AgBio

## Strategic objectives

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- Add content and workflow solutions
- Build new partnerships

## Market opportunity\*, \$m



\*2016 genomics market opportunity includes single-cell genomics \$120m and high-throughput genomics \$750m.

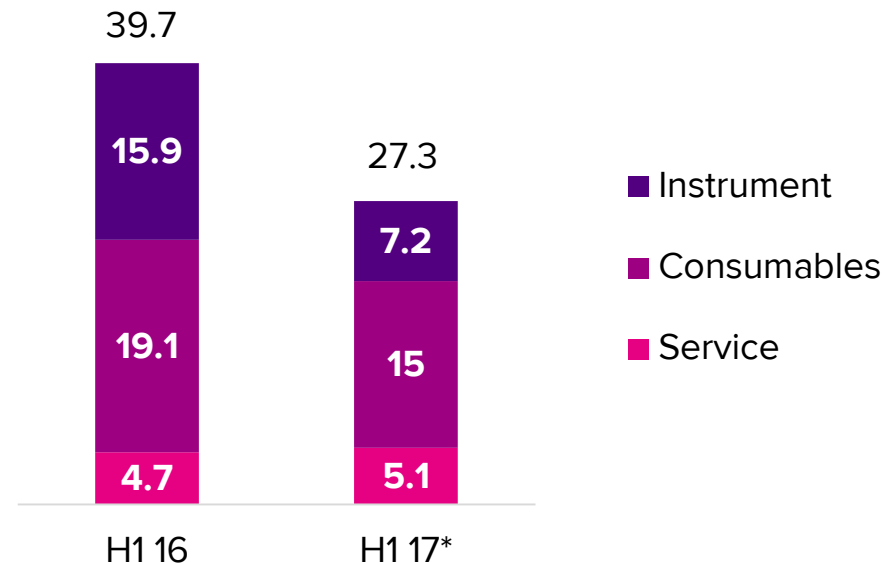
# The genomics microfluidics business

Five partnership, collaboration and license agreements in LTM

## Recent progress

- Launched Advanta™ IO Gene Expression Assay
- Introduced new medium-cell HT IFC (high-throughput integrated fluidic circuit) for C1
- Licensed CFTR NGS sequencing from Baylor Genetics
- Partnered with Ascendas Genomics to develop microfluidic molecular diagnostics in China
- Partnered with GenomOncology to co-market NGS oncology library prep

## FLDM revenue YTD, \$m



\*H1 17 single-cell genomics revenue represented approximately 9% of product revenue.

# Science that changes lives

## Why the technology matters



**Case study** A clinical trial of an investigational therapy for patients with previously treated non-small-cell lung cancer utilizes immunohistochemistry, a powerful technique for visualizing cellular components such as proteins. Researchers utilize a gene expression panel of 91 genes, defined in an earlier cancer immunotherapy study as representative of tumor and immune response.

**The human impact** Beyond the initial scope of the trial, researchers use the results to develop a gene signature based on a subset of the panel. This subset effectively predicts therapeutic response, providing data potentially of value in developing new diagnostic tests for cancer patients.

Fehrenbacher, L. "Atezolizumab versus docetaxel for patients with previously treated non-small-cell lung cancer (POPLAR): a multicentre, open-label, phase 2 randomised controlled trial." *The Lancet* 387, 1837–1846 (2016).

S Herbst, et al. "Predictive correlates of response to the anti-PD-L1 antibody MPDL3280A in cancer patients." *Nature* 515. 563-7.

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***Tumor gene expression has proven effective in measuring immune response during cancer progression and therapeutic response. As emerging therapies reveal new biomarkers, researchers need reliable and sensitive tools for identifying gene expression signatures from immune and cancer cells.***

The 91 genes referenced in this clinical trial are included in the Advanta Immuno-Oncology Gene Expression Assay, a qPCR assay for expression of 170 genes that enables profiling of tumor immunobiology and new biomarker identification.

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# New product development through innovation and partnership



## Genomics

### Content

Emphasis on PCR, targeted sequencing and targeted NGS library prep

- The Advanta Immuno-Oncology Gene Expression Assay

### Software

New tools to explore and analyze biomarker identification and validation

- SNP Genotyping software, Real-Time PCR Analysis, tools for digital PCR

### Workflow

Advances in microfluidic architecture to automate more hands-on processes

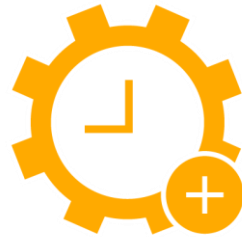
- Commercialization of Baylor Genetics CFTR library prep assay for use with Juno

# Strategic pillars

2017 is a transformational year



Innovation and  
Partnerships



Operational Efficiency



Financial Discipline and  
Cash Management

# Executing on strategic pillars

	2016	Year-to-Date
<b>Innovation</b>	<ul style="list-style-type: none"> <li>• IMC™ system (a)</li> <li>• C1™ medium-cell HT IFC</li> <li>• Maxpar® panel</li> </ul>	<ul style="list-style-type: none"> <li>• Advanta I/O Gene Expression Assay</li> </ul>
<b>Key Partnerships, Collaborations and Licenses</b>	<ul style="list-style-type: none"> <li>• GenomOncology</li> </ul>	<ul style="list-style-type: none"> <li>• Ascendas Genomics</li> <li>• Baylor Genetics</li> </ul>
<b>Operational Efficiency</b>	<ul style="list-style-type: none"> <li>• Operations Council</li> </ul>	<ul style="list-style-type: none"> <li>• Expect \$8 million in headcount reduction savings in 2017, before severance expenses starting in Q2 2017</li> <li>• Expect \$6 million in exit/sublease cost savings over 4 years</li> <li>• Research &amp; Applied sales teams consolidated</li> <li>• Business Process Excellence Leader</li> <li>• Completed ISO Surveillance audit for 2017</li> <li>• Chief Information Officer</li> </ul>
<b>Financial Discipline</b>	<ul style="list-style-type: none"> <li>• Business Transformation Office</li> </ul>	<ul style="list-style-type: none"> <li>• Total quarterly cash outflow down sequentially starting with Q4 2016</li> </ul>
<b>Cash Management</b>		<ul style="list-style-type: none"> <li>• ATM raised \$30 million</li> </ul>

(a) IMC system commercial release to early adopter customers

# Summary

**Fluidigm is positioning itself for a return to sustainable growth** as it responds to a market driven by increasing demand for high-parameter analysis, principally in immunology, oncology and cancer immunotherapy.

**Fluidigm is a leader in high-parameter analysis with the premiere tools** in this space, enabling deep profiling of precious samples to accelerate therapeutic development and deliver new and fundamental knowledge in translational and clinical research.

**Fluidigm is executing on a strategy** that exploits the confluence of our unique capabilities with this historic new paradigm in research, serving a **customer base that is significant, diverse and growing.**



**A high-throughput genomics business** offering highly scalable, flexible and cost-effective solutions



**A mass cytometry business** that continues to gain momentum, with disruptive technology that is increasing integral to cancer, IO and immune system research; first-in-class Imaging Mass Cytometry on track for 2H launch

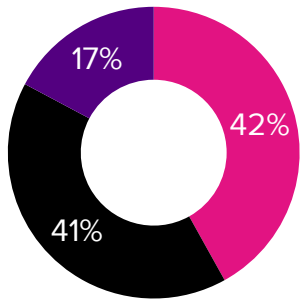
**New product development is under way across content, software and workflow** fueled by innovation and partnership.

# Appendix



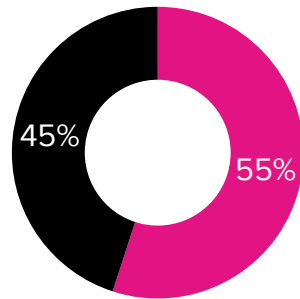
# YTD revenue profile

Revenue by category



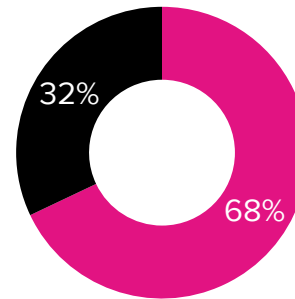
- Instruments
- Consumables
- Service

Product revenue by market



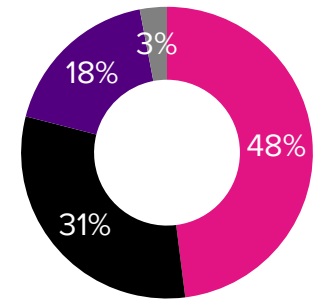
- Genomics
- Mass cytometry

Product revenue by customer type



- Research
- Applied

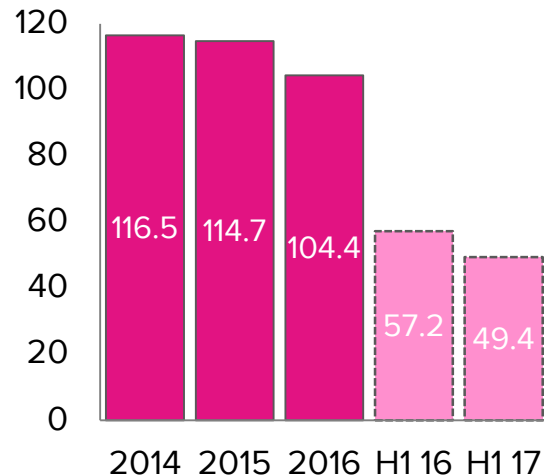
Revenue by geographic area



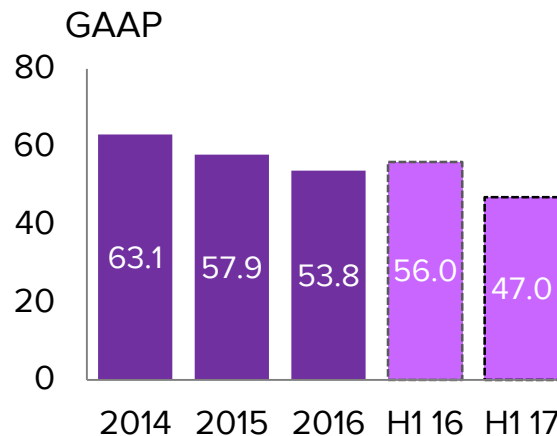
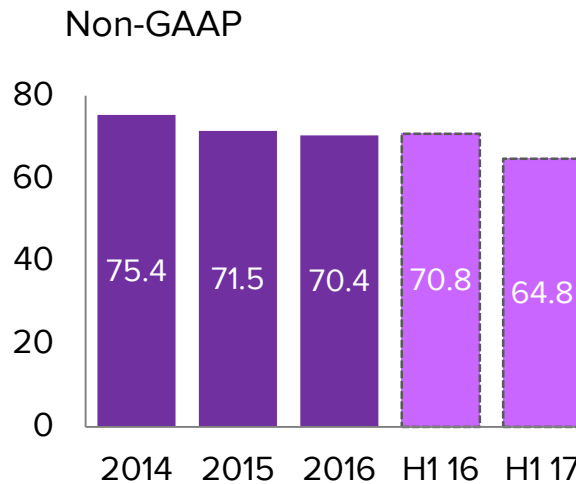
- United States
- Europe
- Asia-Pacific
- Other

# Revenue and product margin

Revenue (\$,m)<sup>a</sup>



Product margins (%)<sup>b</sup>



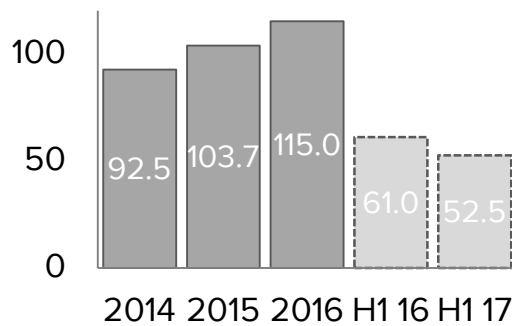
(a) acquired DVS in February 2014

(b) represents expense associated with research and development, selling, general and administrative activities

# Operating expense, operating loss, and cash flow from operations

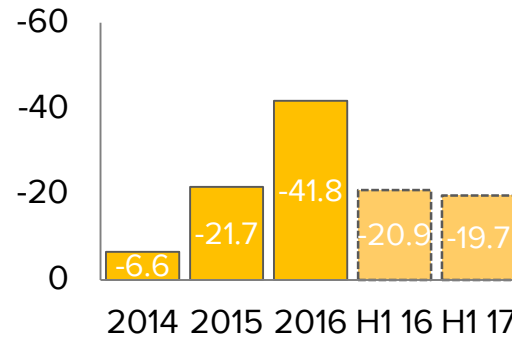
Operating expenses (\$,m)

Non-GAAP

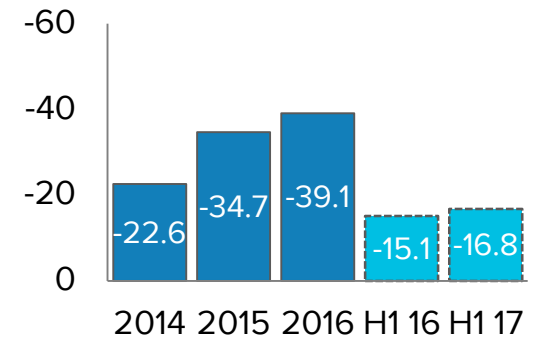


Operating loss (\$,m)

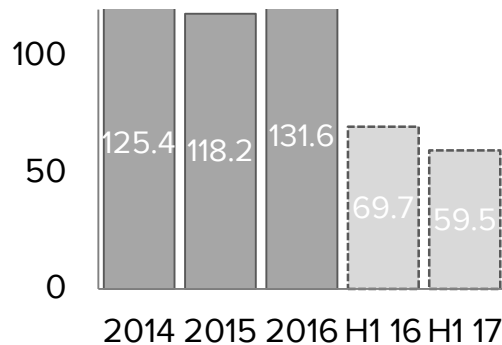
Non-GAAP



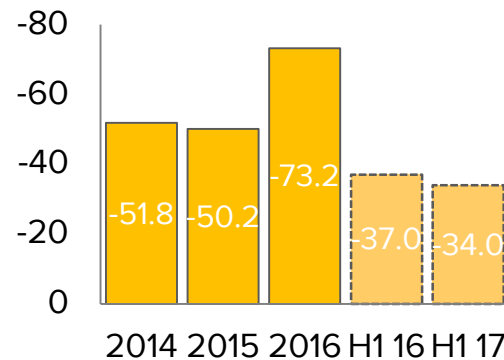
Cash flow from operations (\$,m)



GAAP



GAAP



# Q2 Selected financial information

Statement of operations data, non-GAAP (in millions)	Q2 2017	Q2 2016
Total revenue	\$23.9	\$28.2
<i>Year-over-year growth</i>	-15%	
<i>Quarter-over-quarter growth</i>	-6%	
Loss from operations (non-GAAP)	(9.3)	(10.1)
Net loss (non-GAAP)	(9.0)	(9.9)
Net loss per share, basic and diluted (non-GAAP)	(0.31)	(0.34)

Statement of operations data, GAAP (in millions)	Q2 2017	Q2 2016
Total revenue	\$23.9	\$28.2
Loss from operations (GAAP)	(16.5)	(18.1)
Net loss (GAAP)	(16.9)	(18.6)
Net loss per share, basic and diluted (GAAP)	(0.58)	(0.64)

Balance sheet data (in millions)	as of Jun. 30, 2017	as of Mar. 31, 2017
Cash, cash equivalents, and short and long-term investments	\$42.0	\$50.3
Total long-term debt	195.1	

# Reconciliation of GAAP to non-GAAP 2016-2014 years product margins

*(in thousands)*

	Year Ended December 31,		
	2016	2015	2014
Product margin (GAAP)	\$ 47,893	\$ 59,139	\$ 67,500
Amortization of developed technology (a)	11,200	11,200	9,800
Depreciation and amortization (d)	2,211	837	919
Loss on disposal of property and equipment	-	-	31
Non-cash charge for sale of inventory revalued at the date of acquisition	-	-	856
Stock-based compensation expense (d)	1,347	1,822	1,584
Product margin (Non-GAAP)	<u>\$ 62,651</u>	<u>\$ 72,998</u>	<u>\$ 80,750</u>
Product margin percentage (GAAP)	53.8%	57.9%	63.1%
Product margin percentage (Non-GAAP)	70.4%	71.5%	75.4%

(a) Represents amortization of developed technology in connection with the DVS acquisition

(d) Represents expense associated with cost of product revenue

# Reconciliation of GAAP to non-GAAP 2016-2014 years loss from operations

*(In thousands)*

	Year Ended December 31,		
	2016	2015	2014
Loss from operations (GAAP)	\$ (73,190)	\$ (50,155)	\$ (51,836)
Acquisition-related expenses			10,696
Gain on escrow settlement	-	(3,986)	-
Stock-based compensation expense	13,858	16,830	20,940
Amortization of developed technology (a)	11,200	11,200	9,800
Depreciation and amortization (e)	6,262	4,328	3,791
Loss (gain) on disposal of property and equipment (e)	87	87	49
Loss from operations (Non-GAAP)	\$ (41,783)	\$ (21,696)	\$ (6,560)

(a) represents amortization of developed technology in connection with the DVS acquisition

(e) represents expense associated with research and development, selling, general and administrative activities

# Reconciliation of GAAP to non-GAAP 2016-2014 years operating expenses

*(In thousands)*

	<b>Year Ended December 31,</b>		
	<b>2016</b>	<b>2015</b>	<b>2014</b>
Operating expenses (GAAP)	\$ 131,627	\$ 118,237	\$ 125,443
Acquisition-related expenses			(10,696)
Gain on escrow settlement	-	3,986	
Stock-based compensation expense (e)	(12,511)	(15,008)	(19,356)
Depreciation and amortization (e)	(4,051)	(3,491)	
Loss on disposal of property and equipment (e)	(87)	(87)	(49)
Operating expenses (Non-GAAP)	<u>\$ 114,978</u>	<u>\$ 103,637</u>	<u>\$ 92,470</u>

(e) represents expense associated with research and development, selling, general and administrative activities

# Reconciliation of GAAP to non-GAAP first half and second quarters of 2017 and 2016 product margins

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
<i>(In thousands)</i>				
Product margin (GAAP)	\$ 8,706	\$ 13,494	\$ 19,163	\$ 28,077
Amortization of developed technology (a)	2,800	2,800	5,600	5,600
Depreciation and amortization (d)	543	549	1,094	1,088
Stock-based compensation expense (d)	229	338	569	716
Product margin (Non-GAAP)	<u>\$ 12,278</u>	<u>\$ 17,181</u>	<u>\$ 26,426</u>	<u>\$ 35,481</u>
Product margin percentage (GAAP)	44.6%	54.6%	47.0%	56.0%
Product margin percentage (Non-GAAP)	63.0%	69.5%	64.8%	70.8%

(a) Represents amortization of developed technology in connection with the DVS acquisition

(d) Represents expense associated with cost of product revenue



# Reconciliation of GAAP to non-GAAP first half and second quarters of 2017 and 2016 net loss and net loss per share

*(In thousands, except per share amounts)*

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Net loss (GAAP)	\$ (16,933)	\$ (18,617)	\$ (34,134)	\$ (38,501)
Stock-based compensation expense	2,329	3,730	4,775	7,447
Amortization of developed technology (a)	2,800	2,800	5,600	5,600
Interest expense (b)	1,456	1,453	2,911	2,906
Depreciation and amortization	2,048	1,552	3,919	3,016
Benefit from acquisition related income taxes (c)	(655)	(808)	(1,658)	(1,826)
Loss on disposal of property and equipment	-	5	-	12
Net loss (Non-GAAP)	\$ (8,955)	\$ (9,885)	\$ (18,587)	\$ (21,346)
Shares used in net loss per share calculation - basic and diluted (GAAP and Non-GAAP)	29,344	28,944	29,292	28,904
Net loss per share - basic and diluted (GAAP)	\$ (0.58)	\$ (0.64)	\$ (1.17)	\$ (1.33)
Net loss per share - basic and diluted (Non-GAAP)	\$ (0.31)	\$ (0.34)	\$ (0.63)	\$ (0.74)

(a) Represents amortization of developed technology in connection with the DVS acquisition

(b) Represents interest expense on Senior Convertible Notes

(c) Represents the tax impact on the purchase of intangible assets in connection with the DVS acquisition

# Reconciliation of GAAP to non-GAAP first half and second quarters of 2017 and 2016 operating expenses and loss from operations

(In thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Operating expenses (GAAP)	\$ 28,436	\$ 33,823	\$ 59,537	\$ 69,710
Stock-based compensation expense (e)	(2,100)	(3,392)	(4,206)	(6,731)
Depreciation and amortization (e)	(1,505)	(1,003)	(2,825)	(1,928)
Loss on disposal of property and equipment (e)	-	(5)	-	(12)
Operating expenses (Non-GAAP)	\$ 24,831	\$ 29,423	\$ 52,506	\$ 61,039
	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Loss from operations (GAAP)	\$ (16,487)	\$ (18,142)	\$ (34,024)	\$ (37,011)
Stock-based compensation expense	2,329	3,730	4,775	7,447
Amortization of developed technology (a)	2,800	2,800	5,600	5,600
Depreciation and amortization (e)	2,048	1,552	3,919	3,016
Loss on disposal of property and equipment (e)	-	5	-	12
Loss from operations (Non-GAAP)	\$ (9,310)	\$ (10,055)	\$ (19,730)	\$ (20,936)

(a) represents amortization of developed technology in connection with the DVS acquisition

(e) Represents expense associated with research and development, selling, general and administrative activities

# Attractive markets

## Mass cytometry

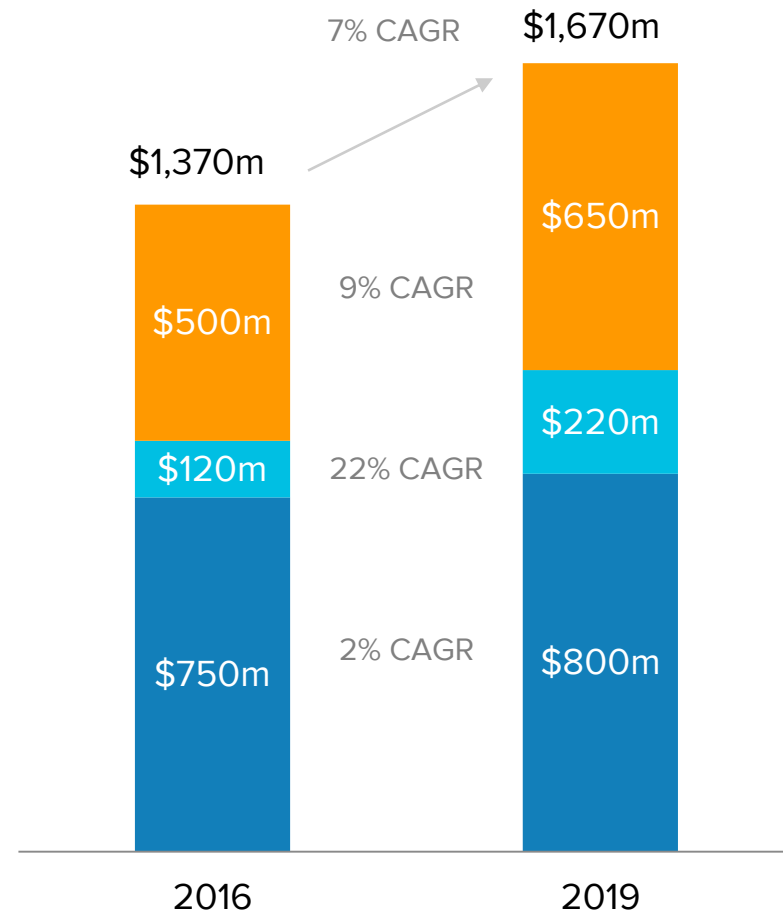
- Mid-to-high-parameter flow cytometry and high-end microscopy/imaging driven by oncology and immunology developments
- Helios™ competitive advantage in 15-plus-parameter flow cytometry market
- Imaging Mass Cytometry™ is an evolving category in high-end microscopy market.

## Single-cell genomics

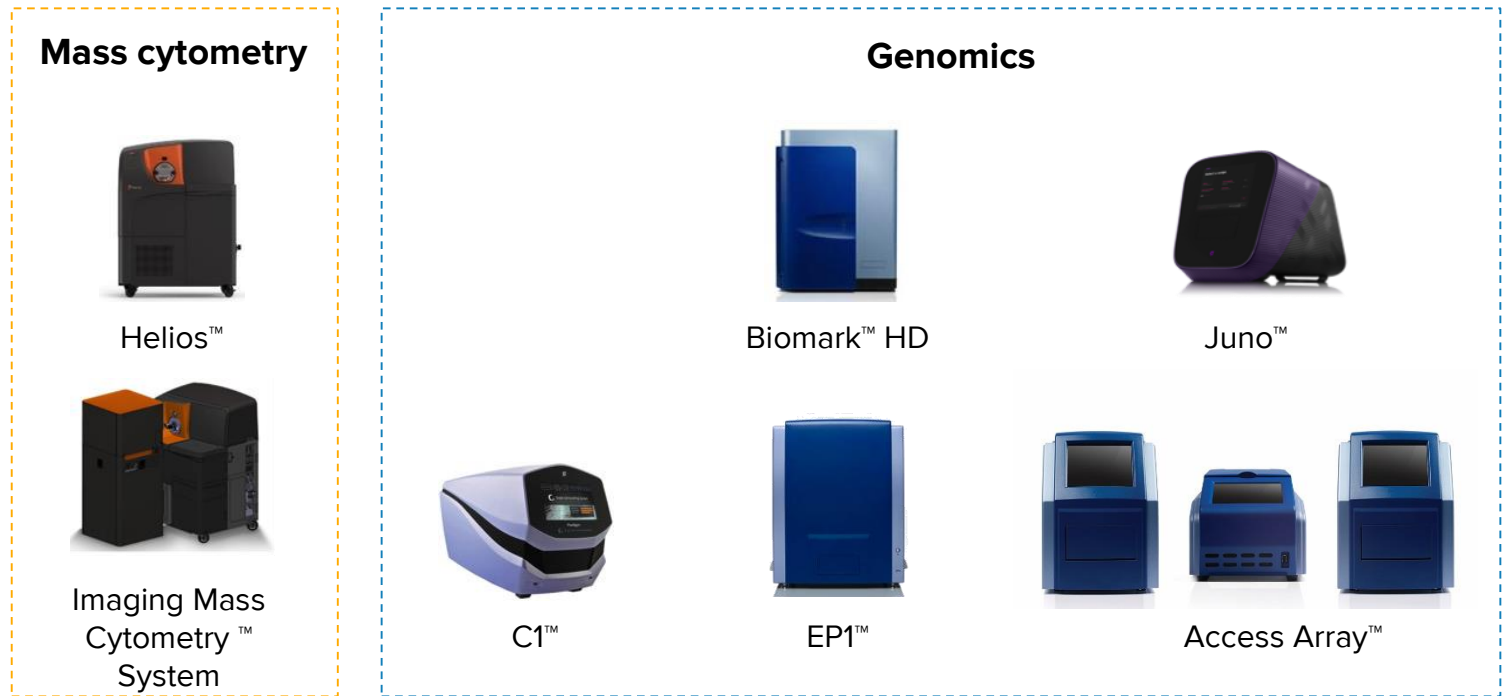
- Single-cell research market driven by publications, single-cell funding and initiatives such as human cell atlas
- C1™ competitive advantage in breadth of applications and quality

## Genomics

- Genomics market driven by conversion to next-generation sequencing
- Fluidigm (including Biomark™, EP1™ and Juno™) is competitive in mid-plex market and provides low-cost, efficient, accurate solutions for limited and low-quality samples.



# Active installed base and pull-through









	<b>Mass cytometry</b>	<b>C1</b>	<b>Biomark HD and EP1</b>	<b>Juno and Access Array</b>
Active installed base (a)	158	366	585	227
Pull-through (b)	\$50,000 to \$60,000	\$10,000 to \$15,000	\$33,000 to \$38,000	\$23,000 to \$30,000

(a) approximate active installed base as of December 31, 2016

(b) projected annualized consumables pull-through per active instrument per year for 2017

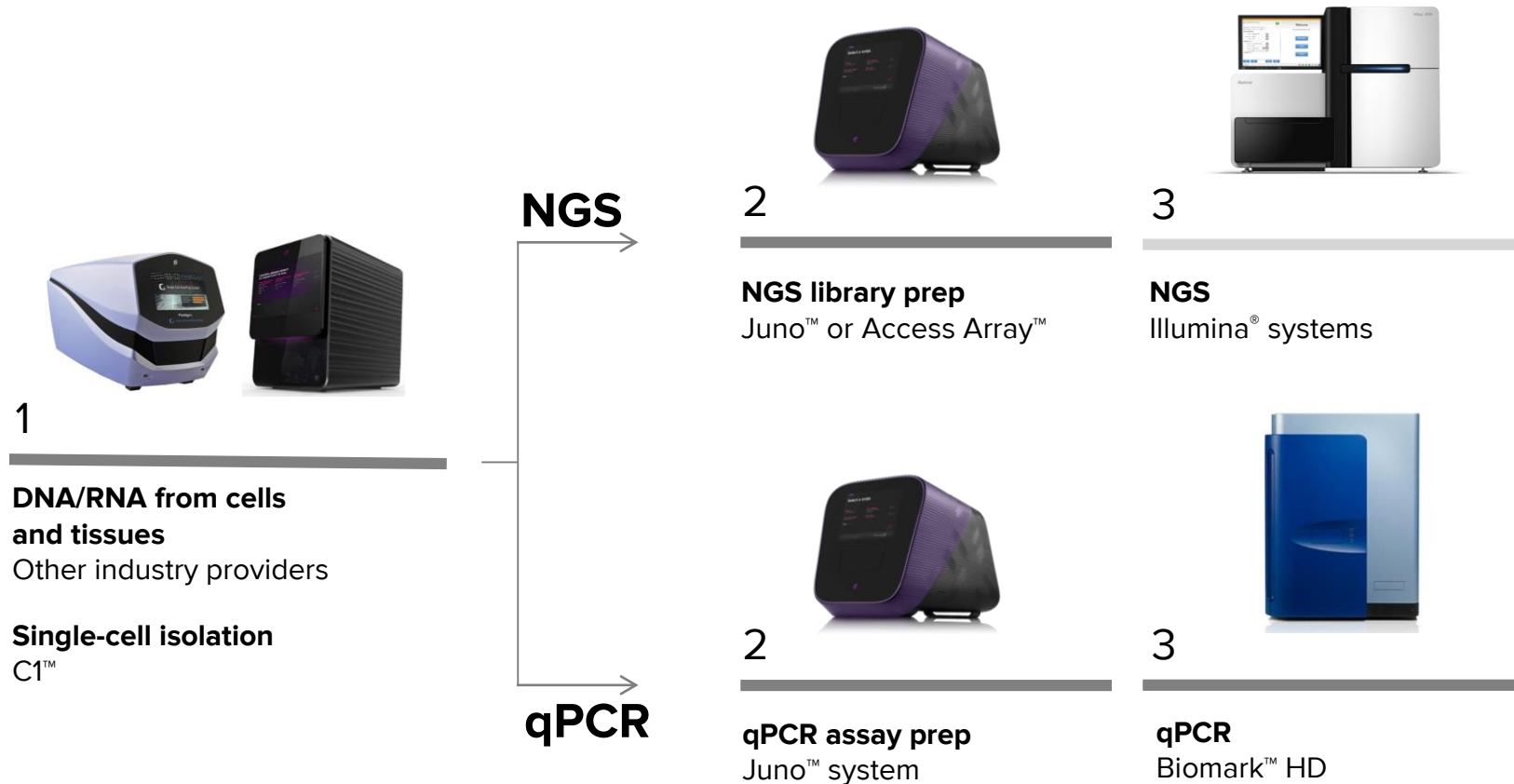
# High pull-through customer profiles

	Mass cytometry	Genomics		
				
	Helios™	Biomark™ HD	Juno™	
Customer type	Biopharma	Hospital reference lab	Clinical reference lab	
Application	Profiling in neuroimmunology	qPCR-based LDT (b), sample ID	DNA library prep for LDT	
Pull-through (a)	\$130,000	\$440,000	\$145,000	
				
		C1™	EPI™	Access Array™
Customer type		Academic center	Agricultural biotechnology	Academic research hospital
Application		mRNA sequencing	Marker-assisted crop breeding	DNA library prep for LDT
Pull-through (a)		\$90,000	\$180,000	\$98,500

(a) Actual consumables approximate pull-through per active instrument in the last 12 months

(b) Laboratory diagnostic test

# Providing efficient NGS library prep and qPCR workflows



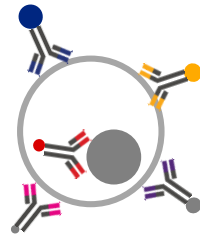
# Mass cytometry workflow



1

## Design

panels using Maxpar<sup>®</sup> antibodies and reagents or use pre-designed Maxpar panels.



2

## Stain

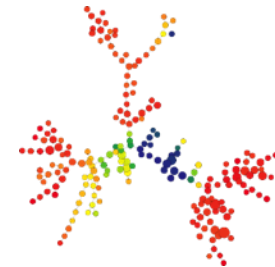
cells using protocols and buffers validated by Fluidigm.



3

## Acquire

high-parameter data for millions of cells with the Helios<sup>™</sup> mass cytometer.



4

## Analyze

data using cloud-based tools.

## Developing partnerships

## Established partner



# Imaging Mass Cytometry™ workflow

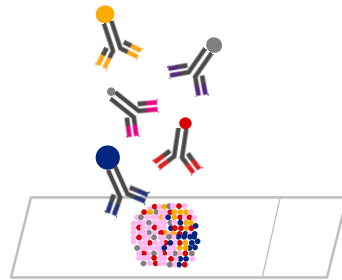


1

## Design

panels using Maxpar® antibodies and reagents.

**Developing partnerships**



2

## Stain

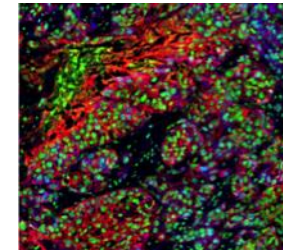
cells and tissues on slides using protocols and buffers validated by Fluidigm.



3

## Image

high-parameter data for millions of cells with the Imaging Mass Cytometry System (IMC).



4

## Analyze

data using cloud-based tools.

**Established partner**



University of Zurich





FLUIDIGM®