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# EDITED TRANSCRIPT

Q1 2019 Fluidigm Corp Earnings Call

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## PRESENTATION

### Operator

Good day, ladies and gentlemen, and welcome to the Fluidigm First Quarter 2019 Financial Results Conference Call. (Operator Instructions) As a reminder, this conference call is being recorded.

I would now like to introduce your host for today's conference, Ms. Agnes Lee, Vice President of Investor Relations. Ma'am, you may begin.

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### Agnes Lee

Thank you. Good afternoon, everyone. Welcome to the Fluidigm First Quarter 2019 Earnings Conference Call.

At the close of the market today, Fluidigm released its financial results for the quarter ended March 31, 2019. During this call, we will review our results and provide commentary on recent commercial activity, market trends and our strategic business initiatives.

Presenting for Fluidigm today will be Chris Linthwaite, our President and CEO; and Vikram Jog, our CFO.

During the call and subsequent Q&A session, we will make forward-looking statements about events and circumstances that have not yet occurred, including plans and projections for our business, future financial results and market trends and opportunities. Examples include statements about growth in immunology and other research markets; prospects and revenue trends for our products; market and regional trends, adoption of new products; and guidance for revenues, operating expenses and cash flow for the second quarter of 2019. These statements are subject to substantial risks and uncertainties that may cause actual events or results to differ materially from current expectations.

Information on these risks and uncertainties and other information affecting our business and operating results is contained in our annual report on Form 10-K for the year ended December 31, 2018, as well as our other filings with the SEC. The forward-looking statements in this call are based on information currently available to us, and Fluidigm disclaims any obligation to update these forward-looking statements except as may be required by law.

During the call, we will also present some financial information on a non-GAAP basis. 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. We encourage you to carefully consider our results under GAAP as well as our supplemental non-GAAP information and the reconciliation between these presentations. Reconciliations between GAAP and non-GAAP operating results are presented in the table accompanying our earnings release, which can be found in the Investors section of our website.

I will now turn the call over to Chris, our President and CEO.

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Thank you, Agnes. Good afternoon, everyone. Thank you for joining our first quarter 2019 earnings call.

We made great progress on multiple fronts during the period. Progress aimed at extending our leadership position in the immunome market. I'm excited to share the details with you. A few upfront takeaways.

We extended our streak of consecutive double-digit growth quarters to 4. Mass cytometry adoption continues at a brisk pace, including an uptick in new customer adoption of the technology. Our customers are publishing new findings in leading peer-reviewed journals with a notable shift to translational- and clinical-oriented publications. We invested in innovation to sustain our competitive advantage. We significantly deleveraged the company balance sheet, reducing our debt obligations by 75% or \$150 million while creating enhanced liquidity for stockholders.

On a separate note, in addition to our earnings release, we issued a press release today that illustrates our growth in the field of global immuno-oncology. This customer success is representative of the broader trends underpinning our longer-term prospects.

Turning to the details. First, revenue performance. We kicked off the year on a strong note, delivering 19% top line growth over Q1 2018 with total revenue of \$30.1 million. The clear standout number of the quarter is the impressive 110% growth in mass cytometry powered by sales of instrument systems, both the imaging and suspension configurations. We secured new placements across all geographies and customer segments. We did experience a net decline in consumables growth on a year-over-year and sequential basis, which was primarily due to 2 factors. Microfluidics consumables declined on a year-over-year basis. This was partially due to a large order that we called out last year as well as timing of some service and OEM customer orders.

Mass cytometry consumables grew double digits on a year-over-year basis delivering growth above our 2018 pull-through ranges, but lower than our recently raised pull-through guidance. Vikram will share more details on this later in the call. However, we don't anticipate a change in our long-term growth trajectory.

Second, we are seeing new customer success stories across multiple regions. As a specific illustration, today, we announced a customer in Japan adopting a full Hyperion Imaging System to build on the immuno-oncology work they have done with Helios. In short, they are developing an immunome model by combining data from high dimensional tissue analysis and blood, a unique value proposition of our technology platform.

Third, we succeed as our customer succeeds. Peer-reviewed publications incorporating research based on our products is one of the top metrics we track for the academic research market. Our credentials in microfluidics are well documented with more than 1,900 publications, and we are seeing publications on mass cytometry accelerate rapidly.

At this point, we have more than 700 peer-reviewed publications across our mass cytometry franchise. In the first 3 months of this year, over 70 new publications using Helios have been added with a concentration in immunology and immune function, immuno-oncology and infectious disease. We saw 4 new publications for Imaging Mass Cytometry with 22 peer-reviewed publications for IMC since our commercial launch at the end of 2017. To get this context, our customers generated just 75 publications for the full year in 2015. Beyond the raw numbers is the increasing impact of these studies. I will talk more about a few of them later.

Let's turn to a discussion of our revenue performance by geographic regions. I've traveled extensively in all of our major regions over the past months and I'm enthusiastic about our growth prospects.

First, we saw double-digit growth in 2 of the 3 regions compared to the first quarter of 2018. Asia Pacific was our top performer on a percentage basis with double-digit growth in each of our 3 APAC subregions. Revenues were up 51% in the region as a whole powered by exceptional performance in Japan and China. In addition, we hosted our first mass cytometry user group meeting in Korea, which bodes well for our prospects in that important country.



Some highlights related to Japan and China. Japan was the best-performing subregion within our global franchise, continuing the renaissance in growth that we have experienced over the last 2 years, growth that was catalyzed in part by a change in commercial leadership. Japan will likely not lead the pack every quarter. Remember, Q1 is the end of the fiscal spending calendar for the Japanese government. However, we did see solid growth in the pharma segment there, too. Overall, we have plenty of opportunity for our business.

Today, we issued a press release announcing The National Cancer Center, a leading cancer center with research network affiliates across Japan, is investing in a new Hyperion Imaging System. They and we believe that the immunome is an inherently multi-omic scientific endeavor and that Hyperion will complement their ongoing work on the Helios platform. We anticipate continued investment in this area and we share a common vision for the health care impact of research with our tools.

From a broader perspective, on the heels of Dr. Honjo's 2018 Nobel Prize winner award, Japan has increased its life science research budget for the -- for the upcoming year by 5% and shifted overall spending emphasis into areas favorable to our technology capabilities. There is strong growing interest in our differentiated value propositions relevant to focus areas in immunology, immuno-oncology and cell therapy. We're excited about the ongoing opportunities in translational and clinical research.

Similarly, the underlying health care research market for China remains strong, and our business growth is trending in line. I recently visited our team and a number of large customers. Overall, the Fluidigm team is executing well, securing new accounts and growing our revenue or recurring revenue streams from the installed base. Translational hospital centers, novel direct-to-consumer enterprises and CROs are fueling demand for mass cytometry and microfluidic solutions. We remain bullish on China growth for 2019 despite the headline risks related to ongoing trade discussions.

Rounding up the view from Asia. I saw additional growth stories, including a hospital center building an insightful immunome reference database for patients. Finally in Korea, we held our first mass cytometry user group meeting at a leading hospital center just 1 year after placing the first system in the country, connecting early adopters with prospects from industry and academia. Our regional momentum is growing.

Shifting to the Americas. The region delivered 20% growth. Building on a now-familiar narrative, we had a strong quarter with mass cytometry systems leading the way. In the Americas, our customer base is branching out beyond the top-tier research centers and we added new names to our installed base. Pharma adoption remains robust and we added another organization to our portfolio of multi-instrument placements. Furthermore, you may recall prior quarters where I mentioned a trend of pharma companies sponsoring instrument placements at large academic research centers. Continuing this narrative in Q1, we won new system placement in Boston linked to pharmaceutical-funded lung cancer translational research.

Cancer centers remain an area of focus. In this quarter, we placed a new instrument at a regional cancer center. We're also starting to make inroads with Imaging Mass Cytometry purchases at government institutions, which could be an exciting topic for future calls.

Immuno-oncology and immune response get the majority of airtime from us. However, another emerging market segment, centers on stem cell and CAR-T cell manufacturing research. We sold an imaging system into a 12-center global network of academic institutions and stem cell research organizations charged with transforming the scalability of cell-based therapeutics for broad industry and clinical use. They will develop content and potential measurement standards that could be useful for propelling this important industry into the mainstream.

On the microfluidic side of the ledger, in line with our strategy, our team has established new accounts and nurtured key customers with outreach programs. However, our performance still remains variable from quarter-to-quarter. We are establishing a foundation for future growth and we will be patient and focused.

Rounding up the geographic review. EMEA revenues were down 4%. Most of this decline was due to currency headwinds coupled with a large bulk consumable inventory purchase last year. We anticipated lumpy instrument placements for the period. And excluding the bulk purchase in Q1 2018, we saw modest consumables growth.

Many investors ask about the impact of Brexit and we closely follow the quarterly calls from other market participants. In line with most of their commentary, we are vigilant about economic performance in the eurozone, but we cannot yet pinpoint specific weaknesses driven by Brexit dynamics. Therefore, we are not modeling a deterioration of the EMEA funding environment. We believe our unique technology portfolio aligns well with areas of regional focus, particularly those related to immune response end research. In general, biopharma-sponsored clinical trials at research institutions should drive incremental demand in 2019 with key clinical studies collecting samples for larger studies, as we speak.

We hosted well-attended mass cytometry user group meetings in Germany and France with strong customer engagement and new lead generation. In addition, 1 major microfluidics customer is helping us to extend our market reach to new market segments. We believe the Q1 performance in EMEA will be uplift on the radar and we anticipate a return to historical patterns in future periods.

Shifting to some strategic progress. An important pillar of future growth is innovation. In this quarter, we announced the launch of the Maxpar direct immune profiling assay, the first lyophilized fully-optimized sample-to-sample answer solution for mass cytometry. This product improves upon the successful human immune monitoring panel kit we announced a year ago. Just add blood and you can have results in as little as 5 minutes. This powerful new product demonstrates the viability of our technology for transition into higher volume lab environments and the scalability of our approach in general. We released details about the Maxpar direct immune profiling assay at the end of March. It was showcased at the American Association for Cancer Research Meeting, also known as AACR, held in Atlanta this year. It is an exciting new addition to our mass cytometry product line, with demonstrated reproducibility across different lots, runs and sites. There's nothing like it in the world, not in flow cytometry nor mass spectrometry.

At AACR, we also announced the upcoming launch of our oncology panel for use with the Juno, our microfluidics library prep instrument. We are expecting these products to be launched by the end of the second quarter, and we'll provide more detail when they are commercially available. Investors should anticipate more product announcements as the year progresses. We've been busy and we are excited to share these advancements.

At AACR, Fluidigm was profiled in numerous presentations and posters on mass cytometry and microfluidics for immuno-oncology. We saw several leading translational and clinical research researchers present on the development of predictive biomarkers in cancer progression and therapeutic response using our platforms. Imaging capabilities generated the most buzz, and we generated many new leads. We hosted an innovation -- or invitation-only dinner headlined by presentations by 2 leading translational centers, presentations that profiled advancements at the Mayo Clinic and the University of Zurich in breast cancer and human immune profiling and imaging and suspension.

Immuno-oncology remains a growing area for our mass cytometry business. There were 2 publications that I'd like to highlight that reflect this trend, both of them are around breast cancer. The first publication was in Clinical Cancer Research, highlighted work with Imaging Mass Cytometry that David Rimm at Yale University did with a global group of researchers. The researchers described a unique observation about the proximity of CD8 positive cells, a type of T cell, as a function of expression of the extracellular demand of HER2, a protein linked to increased breast cancer risk. The identification of the spatial relationship using Imaging Mass Cytometry, provides further evidence for the role of the immune system in the mechanism of action of a breast cancer therapeutic branded as Herceptin and could help identify patients who will benefit from targeted immunotherapy or immune therapy. In this study, researchers stated that immune -- Imaging Mass Cytometry appears to uniquely reveal relationships not previously seen using conventional in situ assessment methods.

The second one was published in Cell. A group of researchers under Bernd Bodenmiller at the University of Zurich described a single-cell proteomic atlas of the tumor and immune ecosystem of human breast cancer through analysis of 144 human breast tumors and 50 nontumor tissue samples using mass cytometry, providing a resource for future research to identify clinically relevant cell phenotypes and relationships in the tumor ecosystem for patient stratification and precision medicine applications. Dr. Bodenmiller is dispelling the dated mythology that mass cytometry cannot scale to larger clinical studies and bigger panels.

CyTOF plays a prominent role in informing the immunome, leading to a better understanding of immune function and its linkage to disease. There were 2 very exciting publications in Nature Medicine this quarter. One from researchers in Oslo, Barcelona and Stanford,



detailing the use of mass cytometry to identify and characterize CD positive -- CD4 positive, a type of T cell that is reactive to celiac's disease and could be a key driver in other autoimmune disorders.

The second pub was published by Joshua Brody and colleagues at Icahn School of Medicine at Mount Sinai. They reported a novel approach to enhancing PD1 blockade using an immune checkpoint inhibitor for cancer drugs in indolent non-Hodgkin's lymphoma patients. The researchers used CyTOF analysis of both the tumor and peripheral blood and showed the dendritic cells and tumor-killing CD8 cells expand in response to the vaccine, helping to activate the T cells to make them more effective against the tumor. This research supports the use of a vaccine to make immunotherapy more successful. Typically, immunotherapy is not effective for the majority of indolent non-Hodgkin's lymphoma patients.

These patients or these publications offer additional steps forward in possible treatment paradigms as researchers utilize the power of our transformative technologies to change lives. We look forward to the publications of larger clinical studies that are in review at the moment.

I now turn the call over to Vikram, our CFO, for a complete review of our financial results.

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**Vikram Jog *Fluidigm Corporation - CFO & Principal Accounting Officer***

Thanks, Chris, and good afternoon, everyone. Total revenue was \$30.1 million in Q1 2019, an increase of 19% year-over-year. Changes in foreign exchange rates negatively impacted our revenue by \$400,000 or 1% year-over-year.

Mass cytometry revenue of \$18.8 million increased 110% year-over-year. We had strong sales of both Helios and Hyperion Imaging Systems in the first quarter with most of our placements to new customers.

Mass cytometry consumables and service revenue delivered double-digit year-over-year growth in the first quarter, although consumables pull-through tracked below the prior year quarter and below our 2019 guidance of \$73,000 to \$78,000.

We believe that some customers accelerated their consumables purchases from Q1 2019 to Q4 '18, ahead of the effective date of a price increase announced in Q4 '18. Adjusting for the estimated effect of this acceleration, consumables pull-through in Q1 '19 was in line with the prior year quarter, although still below the low end of 2019 guidance.

In recent quarters, we've been successful in targeting the broader marketplace beyond our early adopter customers. These customers are taking longer to ramp instrument usage and consumables purchases as they become familiar with the technology. We're continuing to evaluate the effect of these changes in our customer base on consumables pull-through.

Microfluidics revenue of \$11.4 million decreased 30% year-over-year and 14% sequentially in the first quarter. Revenue declined across all categories, led by instruments. Consumables were also down on a year-over-year basis. In the prior year quarter, we have highlighted a large consumables purchase of over \$1 million, which had an impact on the comparison to this quarter. As you may remember, a significant portion of our microfluidics consumables revenue is tied to a small number of customers. We continue to expect quarter-over-quarter variability in microfluidics revenue as we execute on our strategy to focus on key accounts and grow the business over time with new applications and partnerships that align with our strategy.

Looking at pull-through, BioMark/EPI pull-through was at the higher end of our guidance range this quarter and accessory Juno pull-through came in below our guidance range.

From a regional perspective. In the first quarter, we recorded strong year-over-year revenue growth in Asia Pacific and the Americas. Specifically by region. The Americas grew 20% and Asia Pacific grew 51% driven by mass cytometry instruments offset by microfluidics. EMEA declined 4%, including a negative impact of 3 percentage points from foreign exchange rate changes. Weakness in microfluidics instruments in the region was offset by microfluidics consumables.

Before I talk about our operating performance, I wanted to note that starting this quarter, we are going to focus on gross margin within

our commentary. In the past, we have focused on product margin, which excluded our service business. We've also provided historical breakdowns of gross margin on our website to help adjust your models.

GAAP gross margin was 56.4% in the first quarter of 2019 compared to 53.2% in the year ago period and 58.2% in the fourth quarter of 2018.

Non-GAAP gross margin was 67.7% in the first quarter of 2019 compared to 67.1% in the year ago period and 69.3% in the fourth quarter of 2018. The year-over-year increase in gross margin was primarily due to higher instrument production volumes and, to a lesser extent, improved service margin offset by product mix. Sequentially, decreases in gross margins were primarily due to product mix and lower capacity utilization. In the case of GAAP margin, the year-over-year increase was coupled with fixed amortization over higher revenue while the sequential decrease in gross margin was coupled with fixed amortization over lower revenue.

Operating expenses in the first quarter increased approximately 20% year-over-year to \$31.2 million on a GAAP basis and \$28.2 million on a non-GAAP basis. The first quarter of 2019 reflected higher headcount-related expenses and unplanned business development and severance expenses.

GAAP net loss for the first quarter was \$25.5 million compared to \$13.2 million for the same period last year and \$14.8 million in Q4 2018. The year-over-year increase in GAAP net loss was primarily due to a \$9 million loss associated with the extinguishment of \$150 million principal value of convertible debt as well as higher operating expenses offset by higher gross margin.

The non-GAAP net loss for the first quarter was \$8.2 million compared to \$6.3 million for the year ago period and \$2.4 million in the fourth quarter of 2018. The higher net loss compared to the prior year quarter was primarily driven by higher operating expenses offset by higher gross margin. Please note that reconciliation tables between our GAAP and non-GAAP measures are provided at the end of our earnings press release that we issued earlier today.

Moving on now to cash flow and the balance sheet. Accounts receivable increased to \$19.3 million at the end of the first quarter from \$16.7 million at the end of the fourth quarter of 2018 driven by timing of collections. DSO was 58 days in the first quarter compared to 46 days at the end of the fourth quarter and in line with the end of the prior year quarter.

Cash, cash equivalents and short-term investments were \$75.1 million at the end of the first quarter compared to \$95.4 million at the end of 2018. Total cash outflow in the quarter was \$20.3 million, including annual incentive compensation payments and retention bonus payments of approximately \$10.3 million and a semiannual interest payment of \$2.7 million.

In the first quarter of 2019, \$150 million principal value of our 2018 convertible bonds were converted into common stock in accordance with their conversion terms. We've approximately \$50 million principal value of our 2014 convertible bonds remaining on our balance sheet. As a result of the conversion, our semiannual interest payments in the first and third quarters of the year are expected to be \$700,000, a decrease of \$4.1 million per year.

At the end of Q1 2019, our borrowing base under our asset base revolving credit facility was \$13.7 million.

And finally, moving on to guidance for the second quarter of 2019. Total revenue is projected to be between \$28 million and \$31 million. GAAP operating expenses are projected to be \$29.5 million to \$30.5 million. Non-GAAP operating expenses are projected to be \$25.5 million to \$26.5 million, excluding stock-based compensation of approximately \$3 million and depreciation and amortization expense of approximately \$1 million. Total cash outflow is projected to be between \$4 million to \$6 million.

And with that, I will turn the call back to Chris for closing remarks.

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Thank you, Vikram. We had a great start to 2019. We started the quarter with strong performance in instrument placements and we see headroom for growth around the world. With the launch of Maxpar direct immune profiling assay, we are providing new

sample-to-answer content to make it easier for our customers to do their research.

Our strategy is simple: advance our core technology, build content and provide more complete workflows with matched informatics.

We are a major market participant empowering immunome research via our multi-omic platforms. We are the clear market leader in multiplexed image analysis of tissue via Hyperion, and we are demonstrating global adoption with a focus on translational and clinical research. We continue to make great progress on our operational and quality initiatives. We integrated our quality systems across 3 locations and began deployment of a leading-edge digital tool. We passed a rigorous external audit with no adverse findings or deficiencies.

We executed a seamless transition of commercial leadership at the end of Q1 with our prior leader, Steve McPhail, retiring. Once again, I thank Steve for his many contributions. Colin McCracken assumed the leadership in April. We're excited at the enhanced capabilities we've added to the team. Colin brings more than 25 years of commercial leadership in life sciences tools, spanning research in regulated markets. He's an award-winning leader who honed his skills at QiAGEN, Invitrogen, Life Technologies and Thermo Fisher Scientific. Well-established leaders in commercial excellence. Colin will guide us through the next phase of scaling our franchise worldwide.

Finally this month, we are kicking off our 20th anniversary celebration. Over the next year, we will celebrate our tradition of innovation. We've transformed inspiration into reality. We are bringing new insights to life. More to come on this front as the year progresses.

From a shareholder perspective, I remain confident that our mix of innovation, revenue growth, financial discipline and operational excellence will drive tremendous value. I'd like to thank our over 500 employees for their contributions this quarter and their commitment in our mission: providing customers with tools to drive new insights in health and disease, identify meaningful biomarkers and accelerate therapeutic development.

With that, I'd like to open the line for questions.

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## QUESTIONS AND ANSWERS

### Operator

(Operator Instructions) Our first question comes from Sung Ji Nam with BTIG.

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### **Sung Ji Nam *BTIG, LLC, Research Division - Director***

Chris, congratulations on the National Cancer Center in Japan win. I was curious as to whether or not you guys might be willing to share kind of what the opportunity looks like internationally from the cancer center standpoint in terms of how many such centers are out there that you think could be good potential customers of the mass cytometry technology?

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### **Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Hi, Sung Ji. Thank you very much for the compliments, and good afternoon or evening to you. As far as NCC, we're super excited about what progress we're making there at the National Cancer Center in Japan. Let me take a little bit of a longer think about how much we want to share kind of the mapping of all the cancer centers and the consortia that we're developing. In some sense, it's really competitive advantaged intelligence for us and we've got -- had targeted business development activities in those areas. But I think kind of a broad brush strokes of kind of the number of placement opportunities, the kind of size of the opportunity of these centers is important, fair. So we'll get back to you on that.

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### **Sung Ji Nam *BTIG, LLC, Research Division - Director***

Okay. That's fair. And then just on the -- just a clarification on the service revenue, the lumpiness of it, could you maybe elaborate on kind of what's going on there? Whether that might be potentially recognized in future quarters?

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Yes. So I think that your question is specific to microfluidics and that was where we kind of highlighted, I think, in my comments about potential service providers and OEM. I think that's the area you're referring to, correct?

**Sung Ji Nam *BTIG, LLC, Research Division - Director***

Yes.

**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Yes. So microfluidics, we have seen -- as you know, we've been focusing. We have a relatively concentrated customer base. A number of those customers are resell. So they use our technologies, they build content on top of it and then they sell that into hospital systems or other places that consume the test volume. So I'd just say that they've been signaling, they had some lumpiness in their demand and that was it -- they've been launching new products. They didn't give us any kind of clear guidance as far as the rate of uptick, but we have no reason to believe -- they're certainly conveying optimism about their business models. And for this particular quarter, we seem to have some lumpiness.

**Operator**

And our next question comes from Doug Schenkel with Cowen & Company.

**Adam Joseph Wieschhaus *Cowen and Company, LLC, Research Division - Associate***

This is Adam on for Doug. We can get to the high end of your Q2 revenue guidance by simply setting instrument placements flat sequentially and full throughout the midpoint of the range. So acknowledging that you don't provide placement guidance numbers, can you directionally or qualitatively frame how you expect the mass cytometry and genomics instrument segments to perform in Q2 relative to last quarter?

**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Well, Adam, thank you very much for the question. First off, so I think -- I have to think about that, I think as far as the mass cytometry instrument placements are concerned, as you said, we have not been giving kind of broken-down guidance as it relates to specific unit placements nor mix related to that. As you well know, there's a significant -- there can be a bit of sensitivity related to the mix and ASPs related to the mix in which [they -- we place.] So I think at this time, I just kind of wouldn't provide any additional color as it relates to the specific number of instrument placements over the period.

**Vikram Jog *Fluidigm Corporation - CFO & Principal Accounting Officer***

Maybe, Adam -- hi, this is Vikram. I think something to note, not specifically responding to your question on instruments per se, but we did make a statement about the mass cytometry consumables issue that we experienced in Q1 that should normalize in Q2. And then likewise, we talked about a blip in Europe in microfluidics consumables, which would also come back into more normal conditions. So perhaps that might give you additional color as to the mix of revenues that we're expecting in Q2 should be slightly less instrument focused than it was in Q1.

**Adam Joseph Wieschhaus *Cowen and Company, LLC, Research Division - Associate***

Okay. That's helpful. And gross margin came in a little bit lighter than we modeled, but the mix shift rationale and the lower utilization in the period makes sense. Do you expect the plant utilization to rebound in Q2? And can you just talk about how you're thinking about gross margins trending over the course of the year?

**Vikram Jog *Fluidigm Corporation - CFO & Principal Accounting Officer***

Yes. So gross margins, I think, is -- as we have talked multiple times in the past, is a function both of mix as well as capacity utilization. Q4 generally tends to be the quarter in which capacity is utilized to the max. And compared year-over-year, the margins were more or less in line with some mix changes in Q1 '19 because of the consumables issue we talked about. But I don't expect nor do we give guidance on gross margins in the future, but there's nothing in our business environment right now in the short run that should cause the margin profiles on individual products to be any different than we experienced in Q1.



**Operator**

And our next question comes from Bill Quirk with Piper Jaffray.

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**William Robert Quirk *Piper Jaffray Companies, Research Division - MD and Senior Research Analyst***

So first question, Chris. I think I heard you say in your prepared comments that -- actually it might have been Vikram -- that some of the new mass cytometry customers in terms of consumables utilization were coming up a little slower perhaps than you'd seen in the past. And so I guess if I heard that correctly, can you walk us through some of the plans, maybe some of the steps you're taking to try to get these new users comfortable and up and running faster?

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

No problem, Bill, I'll take it. It was in Vikram's section if I remember correctly, so he may want to add some additional color on this later.

Yes, so we have seen some -- I mean, [as you said], it's a kind of a good news, bad news thing in the sense that it's not -- we seem to be perhaps reaching kind of one of these inflection points in which we're expanding the addressable market or moving past the early adopters to a group of users who are newer to the technology. That's incumbent upon us to make that easier for them to make that transition, and that means that we have to do everything perhaps including kind of increasing our capacity just to conduct more training as we've broadened our user base. So we have a bit of a queue right now, a backlog related to getting users trained up on systems. Our field service engineer group that helps them with the support and our FAS team, or field application specialist team, which supports them and helps them design panels to ramp up. The third element to this is informatics. So things like we've done, particularly with the new product offering with this direct immune monitoring technology or assay that we've released, this panel takes a lot of that preexperimental planning away. It puts them all in a single tube, just add blood, run the pathsetter software package and this helps accelerate the whole cycle time on that system. So as people -- as we build more backbone panels and we release more content that allows turnkey-like analysis, that will also help these new to the technology adopters come to speed faster in our estimation.

And third leg is we introduced some of that with imaging also, so we have not advanced our fixed content backbone strategy as far as we'd like to do it here in the coming quarters. In the imaging side, that will also help bring users up to speed faster as we build out more antibody library content and more fixed content. So all of these things kind of play together. So it's a combination of training, helping them get the installation and training experience up to post the experimental planning and then the analysis of those experiments and helps lead to the next experiment faster. And so these are a couple of 5 or 6 different strategies. They're well-understood strategies and they're -- but they're within our control. But it's something that we need to pay attention to and it could have some impact in the near term and some of our pull-through dynamics.

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**William Robert Quirk *Piper Jaffray Companies, Research Division - MD and Senior Research Analyst***

Understood. And then, Chris, did I hear correctly that some of the placements in China were for DTC usage. And if I heard that correctly, can you talk about whether or not this is portable to -- I guess, first of all, what is it for, specifically, I guess the application for? And then secondly, whether or not this is portable to other geographies?

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Well, as you well know that for -- this is specific to microfluidics in this particular context, I think you well know the explosion of creativity that's being -- or [animal spirits] that are being unlocked particularly in the Chinese market in the DTC space. We have examples in the U.S. as it relates to 23andMe and other models like that. But in China, there's a wonderful number of new companies that are appearing, a number that are doing that are selling it as part of insurance packages or they are part of signing up for travel programs and you also get a profile on your health by a series of markers or [sniff] panels that relate to kind of a snapshot of health. And so I think this model is certainly portable to other geographies. I think China has kind of a unique mix of willing capital, a large population base, entrepreneurship and some of the installed sequencing capacity to take advantage of that. So we're certainly going to feed into that, but we're very cognizant of trying to replicate or support others that have DTC models in other fast-moving markets and other geographies. So yes, we are quite optimistic about that and I think that's part of the advantages of our value proposition particularly in the Juno system that allows that automation that helps throughout the simplification [in the hindfeet] into these higher throughput opportunities. And



our systems are uniquely positioned, as you also well know, for miniaturization and reduction of reagents, reagents being the single largest component to the experiment to get that answer, and DTC customers are particularly sensitive to price points and so we can help them automate and help them drive lower cost per data point.

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**Operator**

And our next question comes from Paul Knight with Janney.

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**Paul Richard Knight *Janney Montgomery Scott LLC, Research Division - MD, Head of Healthcare Research & Senior Equity Research Analyst***

I was looking at want ads for in the biotechnology market. I've seen demand for experience in mass cytometry. Is there a shortage of capable users in the market do you feel? Or meaning, is that a gating factor? Or what are your thoughts around that?

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Well, it's a great question actually, Paul. If you know any folks, we would certainly be interested in sending their CVs our way to our customers. That is probably one of the rate limiting steps -- is getting qualified users and getting up to speed quickly. The good news is we started out with some of these super large state-of-the-art kind of leading-edge research centers. They produce small armies of postdocs and PhDs in their process -- in their education process. And as we have more and more systems in place, we have more users and so it's helping expand our ready-made group of people who can operate the system. But you don't have to just be a PhD or postdoctoral to run the system. That's part of the advantages as we're starting to simplify the elements of that workflow so that it makes it easier for operators to come to speed. And I will say that it's true. We see more of that in the suspension mode and maybe it's the placements of people going into flow cytometry labs, but when we talk to people who have experience in the imaging side, they actually come to speed quite quickly on the technology. And it's something about the user base perhaps in the imaging course or coming from an imaging background that they use a very complex kit and they seem to come to speed much faster on operating it. So it's true the placements in the suspension side, I have also heard that story when I'm out. And generally, when we talk to people or I come to new accounts and I visited a lot of new accounts in the last 2 quarters and that will be one of the things they're talking about. It's not just getting the facilities ready, it's not just getting their first experiment up and running. It's helping them match up or marry with an experienced operator or an operator.

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**Paul Richard Knight *Janney Montgomery Scott LLC, Research Division - MD, Head of Healthcare Research & Senior Equity Research Analyst***

What portion of their mass cyto panel do you think are homebrew?

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

That's a tricky question. I would say, I don't know how -- I don't know the answer off the top of my head. We have some indication -- we have 3 elements to kind of our revenue streams. We have things such as kind of starting at the apex, the most complete offerings are things like the newest technology release we just had, where it's a single vial lyophilized -- just add blood to an answer. That's pre-fixed, right? And then we have pre-conjugated antibodies and we have one of the largest menus of pre-conjugated antibodies certainly for -- we have the largest for mass cytometry. And in that case, people can configure antibodies that we've already developed. They put them into novel configurations. One could argue those novel configurations are homebrew based, but I think the real question you are getting at is the labeling and detection kits.

So the use of our labeling and detection kits in which they bring their own antibodies and they bring their own combinations and we don't necessarily have visibility to that is one of the toughest things for us to track. And there's many reasons why labeling and detection kits are useful for them to spike in or add antibodies of interest, targets of interest in the things we've already built backbones for. We do track our label and detection revenue streams and we're keen to try to get the right mix between pre-conjugated antibodies and more pre-fixed menu and still balance those label and detection kits like -- because we know we need to enable the flexibility for people to bring their own components to the table.



So in one hand, we kind of represent -- we do know it exists as a leakage as potential monetization or pull-through revenue that we can realize in the system and we enable it right now as part of our business model to allow that flexibility. So I think we need to continue to contemplate different business models that help us capture more of that kind of homebrew market.

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**Operator**

And our next question comes from Dan Brennan with UBS.

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**Daniel Gregory Brennan *UBS Investment Bank, Research Division - Senior Equity Research Analyst of Healthcare Life Sciences***

I joined a little late, Chris, I apologize. But on the mass cytometry, did you guys provide any color regarding Hyperion versus Helios and kind of within the quarter kind of installs?

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

First off, welcome, Dan. I think Vikram is taking a deep breath to answer the question. Welcome to the family -- did you want to go ahead and answer?

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**Vikram Jog *Fluidigm Corporation - CFO & Principal Accounting Officer***

Yes. So short answer, Dan, is we don't. But I'll point you to the information we provided at the beginning of the year relative to our installed base where we had talked about an installed base in mass cytometry of 240 systems, of which over 50 had been enabled with imaging capabilities. So rough order of magnitude, it's in the just over 1/5 of our systems have been enabled with imaging capabilities. And we continue to be very encouraged by the demand that we've seen for imaging in Q1, and we would expect to get periodic updates on the lines of the information we provided at the beginning of the year.

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

And then in my prepared comments, you'll read that we provided -- we have good strength in both sides, both suspension and imaging.

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**Daniel Gregory Brennan *UBS Investment Bank, Research Division - Senior Equity Research Analyst of Healthcare Life Sciences***

Excellent. And then kind of related to that, Chris, I know (inaudible) your market sizing data was woefully kind of old and kind of, I think, kind of too small. So has there been any more color regarding helping us think about kind of this opportunity ahead whether it'd be this year or in a couple of years about the TAM that these products are playing in?

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Dan, you're singing from the hymnal I'd like to hear. So I am hoping that my marketing team is listening. I anticipate that they are probably listening to this, or they will read it later on. We do anticipate giving you updated information as it relates to market size. I know Agnes is working on some things just now. Maybe, Agnes, is there anything you want to add color on to right now?

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**Agnes Lee**

No, Dan. We do expect to have at least some new the information and we'll be releasing that kind of over the next couple of quarters.

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

And I concur, I believe it's both woeful and it's understated.

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**Daniel Gregory Brennan *UBS Investment Bank, Research Division - Senior Equity Research Analyst of Healthcare Life Sciences***

And then, Chris, I know you talked about that there's a lot more behind the scenes that you're doing in terms of R&D and while the products are doing quite well right now, it looks like there's always improvement. So is there anything that we should look forward to whether it'd be this year that might further enhance the product? Whether it'd be more multiplexing, maybe getting the price point down, maybe improving the speed? Just any color that could kind of enhance the products further?

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**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

It's a great question, Dan, for many reasons. So when I first joined, I felt that the company had gotten kind of way all over its skis in kind of talking about futures and maybe it's even within my own DNA not to want to talk about kind of this prospective road map of technology development. We've had this -- we've been having this discussion at the Board level. We'll continue to -- I'm not ready to tell



you quite the answer yet, but I will say that I believe there is a point in time which we need to start sharing more openly on where some of the areas that we're working on, and how we're going to scale this technology. Because as you identified, each one of these areas -- where it's speeding up the instrument, reducing the overhead or idle time on the instruments themselves, this is mass cytometry related, whether it's refreshes of our various microfluidic space platforms, new chipsets, new chemistries, et cetera. All these things are obvious things that we should be working on, including content strategies and informatics. We've been intimating about it, but we haven't really talked about how we're going to add more multiplexing capabilities and continue to scale the platform. And I think, unfortunately, in the absence of us creating a narrative around that, a different narrative is forming. So I can assure you that we're working on those. But we have to kind of figure out what the right way to share glimpses, snapshots, kind of vignettes or windows on where we're going so that there's confidence in both the investment community as well as our installed base that we are fully intending to scale this business.

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**Daniel Gregory Brennan** *UBS Investment Bank, Research Division - Senior Equity Research Analyst of Healthcare Life Sciences*

And then maybe just a final one. I don't if you commented but the genomics was a lot weaker than we expected. I know it's a lumpy business. I know you were pretty confident in terms of a lot of low-hanging fruit, partnerships and generating more content. So any -- can you just kind of speak to kind of the color about the outlook for genomics?

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**Vikram Jog** *Fluidigm Corporation - CFO & Principal Accounting Officer*

Microfluidics (inaudible).

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**Stephen Christopher Linthwaite** *Fluidigm Corporation - President, CEO & Director*

Yes. Well it starts -- thank you for -- I was going to correct to microfluidics, because some of our fastest-growing applications are on the protein side in microfluidics.

Bottom line is there's plenty of market -- there's plenty of market opportunity for us and we're a very small market share participant at this moment. And we've got content strategies, we've got focused customer strategies. We've got -- we've been throwing a lot of things at this and I remain adamant -- I kind of had a comment about that I think in my prepared comments that discussed that we remain bullish and committed to the long-term prospects of driving growth in the microfluidics platform, in particular in consumables. We readily admit that our instruments may be kind of lumpy from cycle to cycle as we're focusing on more OEM accounts, more kind of large whale, so to speak, that we may see variability in the placements from cycle to cycle. However, the one thing you need -- people keep coming back to is how the consumables are doing. And I think it's quite reasonable, and that's where we're committed to driving growth in the consumables business.

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**Daniel Gregory Brennan** *UBS Investment Bank, Research Division - Senior Equity Research Analyst of Healthcare Life Sciences*

Actually, sorry, maybe one more. Did you give any color on mass cytometry regarding like incremental things to watch? Whether it'd be number of IO trials, whether it'd be like -- is there any shadow backlog or any qualitative color you gave about barometers or indicators that would give us a flavor for kind of what the opportunity is and how quickly like your kind of customer might be [willing?]

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**Stephen Christopher Linthwaite** *Fluidigm Corporation - President, CEO & Director*

What we did do is we did talk about clinical trials, so I think that's also something that's kind of interesting. We're actually seeing more clinical trial participation than I had -- we had anticipated we would see even 6 months ago. So that is something that's an interesting metric we may start to titrate out.

What we did share in the prepared comments relates to publications. So as you know the currency of the realm for academics is publications and so we track that as an important adoption curve signal. And we presented in the prepared comments over 70 -- over 70 publications alone in mass cytometry and 22 now cumulatively in Imaging Mass Cytometry. And to put that into context, in 2015, we had 75 for the entire year. So that's what we did in just one quarter. So you can see the acceleration, we continue to see -- continued acceleration on the trial -- a very high trend line for publications, and we are beginning to see more and more spill over into clinical studies and in clinical trials. So I think it is very encouraging, although the only data we're sharing externally at the moment is the one related to publications. And that's one of the easiest ones to track, although you and the community just the same as us can start to reference the clinical trials databases and could begin to build a picture of that, and that's something we're very intrigued by trying to develop for ourselves and then to share with you externally, as another signal.

**Operator**

(Operator Instructions) Our next question comes from Sung Ji Nam with BTIG.

**Sung Ji Nam *BTIG, LLC, Research Division - Director***

Maybe kind of a different way to ask Adam's question earlier. If you look at your second quarter guidance at the midpoint, it kind of implies a sequential decline. And you talked about -- and there are a lot of moving pieces here, but you talked about mass cytometry consumable improvement and then also the EU microfluidics consumable should also normalize, et cetera. So I was curious as to kind of what's underlying that assumption of a sequential slight decline? Is that also due to the more [accounting] comp in Japan?

**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

Well, we did signal as you said. I mean, Japan was a very strong period -- or a very strong quarter for us. It was a strong instrument placement quarter also in Japan in the first quarter, and there's no reason to anticipate -- generally second quarter is the weakest quarter of the year and will pull down the APAC number. So thus we had an inversion of particular cycle in which APAC exceeded EMEA in total sales for the first time for us, which is great, but it's not likely to be sustained in the near term. I think that's the short answer. I think there's a mix in the instruments. There's no reason necessarily. We still have instrument placements that could be lumpy from cycle to cycle, but I think I understand that kind of root of your real question.

**Vikram Jog *Fluidigm Corporation - CFO & Principal Accounting Officer***

Yes, so Sung Ji, this is Vikram. Our guidance for Q1 was \$28 million to \$31 million, so the midpoint was \$29.5 million and we came in at \$30.1 million. So I think the numbers between the midpoint that would signal the decline, I think, are so small within the ASP of one instrument or even less. So I wouldn't over-interpret the guidance as to signal a decline. It's, I think, within the margin position that we can have given our mix of products and the relative ASPs.

**Stephen Christopher Linthwaite *Fluidigm Corporation - President, CEO & Director***

That's one of the areas we stayed pretty disciplined on, was maintaining this kind of \$3 million swing for the very reasons that Vikram highlighted. And so I could imagine if you deconstruct it, you could see -- would reach kind of some of the conclusions we are reaching, but again, I'll fundamentally reassert what we said, we see strong and steady demand. We don't really reveal backlog numbers, but we continue to see very strong demand for our instruments. And on the consumable side, we see no reason why the trend lines won't continue to revert back towards the norm. With the caveats, what we described with perhaps on the mass cytometry side, we've seen some impact from this significant introduction or wave of new to the technology users.

**Operator**

I'm not showing any further questions at this time. I would now like to turn the call back over to Agnes Lee for any closing remarks.

**Agnes Lee**

Thank you, Jewel. We'd like to thank everyone for attending our call today. A replay of this call will be available on the Investors section of our website. This concludes the call, and we look forward to the next update following the close of the second quarter of 2019. Please reach out to us if there are further questions. Good afternoon, everyone. Jewel, you may now close the call.

**Operator**

Ladies and gentlemen, thank you for participating in today's conference. This does conclude today's program, and you may all disconnect. Everyone, have a wonderful day.

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