TRANSCRIPTION

Fluidigm Corporation

SPEAKER IDENTIFICATION	DIALOGUE
	[BEGINNING OF Fluidigm Corporation.mp3]
WILLIAM ("BILL") R. QUIRK	**Good afternoon, everyone. Welcome to the 2:30 session. I'm Bill Quirk, Piper Jaffray's tools and diagnostics analyst. And I have the pleasure of introducing part of the leadership team from Fluidigm, to my left, your right, the CEO, Chris Linthwaite. And next to Chris is the CFO, Vikram Jog. I am going to turn the podium over to Chris to say a few introductory comments, and then we'll move into Q&A. And of course, as a reminder, this is an open session. So please feel free to join in the dialogue. Chris?**
S. CHRISTOPHER LINTHWAITE	Hi, Bill. Thanks again. I want to just appreciate the invitation from Piper Jaffray, and of course from yourself, to participate here in the 30th annual conference. Talk about Fluidigm. So Fluidigm is a company that's been a growth company, that's now accelerating in its growth trajectory. It's been increasing significantly, both its -- it's a capital goods-based equipment placement business with accelerating dynamics around consumables and services contracts. As you know, we've also been making investments in improving operating leverage, in terms of opex improvements and in gross margin. And most importantly, I think, this company's really well poised or positioned to be, really, the indispensable tools provider for elucidating understanding the immune system, all the comprehensive elements of the immune system, whether it's from a tissue perspective, from the cellular repertoire, from so-called circulating or free analytes that circulate throughout the body. And we think we're very well positioned to become the destination tools provider into this really hot space.

WILLIAM ("BILL") R. QUIRK	**Fantastic. And I was hoping we could spend some more time -- and I think we will -- on the mass cytometry --**
S. CHRISTOPHER LINTHWAITE	You're the boss, so we get to do whatever you want to do.
WILLIAM ("BILL") R. QUIRK	**-- portfolio. Well, maybe we could -- Chris, maybe you could help -- just kind of talk everyone through this emerging ecosystem that you have in mass cytometry. It's evolved significantly since you acquired DVS. You've added imaging capabilities, as well, some kits. Certainly, the number of papers that have come out over the past couple of years is really nothing short of incredible. And you're seeing more funding. You're seeing translational uses. So, kind of, help set the stage for us here on that ecosystem.**
S. CHRISTOPHER LINTHWAITE	Yeah, mass cytometry has been a breakaway success for us. And I think it -- we're still in the very early innings of what it could represent in terms of Fluidigm's destiny. Over 500 publications in place, we've been growing. I think we were at 28 percent year-over-year growth, in terms of publications, this year. It was on 40 percent growth last year. On the imaging space, we already have 18 publications, peer-reviewed publications. We most recently had a New England Journal of Medicine. It wasn't ours. It was from MD Anderson researcher. We were really fortunate enough to be participating, and they used mass cytometry technology to help change the treatment decisions and course for some very sick people. So you are seeing these expediential proof points around the acceleration of adoption. But that really doesn't go back to the point which you really brought up, which is an ecosystem. What is different here today than in the era of the DVS acquisition or, really, the creation of mass cytometry technology, five, six, seven years ago, is it's moved beyond an instrument that's a technology to now being an ecosystem and a solution. And that means we've added antibody content, pre-fixed panels that people can run more efficiently, interpretive engines for post-analytical analysis to get faster to the insights related to the interrogation of these sample types. And then, we've added this new dimension in addition to what's, kind of, we call solution- or suspension-based analysis more akin to flow cytometry.

	We've added this new dimension of imaging and multifactorial elucidation of images. That is all new. That's really hot science. It's very exciting. And we just got acknowledged, you know, from the Life Sciences Industry Awards for being the company to watch in 2019. And it's really on the backs of this mass cytometry technology. And it is related to the whole ecosystem. We've attracted new partners who are developing more content on the platform -- or more content, more software solutions to plug into the platform. And so I think we're just in the earliest innings of what this could become, but we're clearly building out a full ecosystem.
WILLIAM ("BILL") R. QUIRK	**And it's been a -- you know, your 10 years' CEO has been a kind of a wild ride, an interesting ride, at that, and all good, incidentally, in terms of improvement and turning the story around. But I confess, you know, your conviction on that third quarter conference call was, I think, the strongest we've heard so far. And maybe you can kind of speak to why. Yeah. What kind of drove that level of confidence in the call?**
S. CHRISTOPHER LINTHWAITE	Well, just to make sure you're clear on the -- forward looking from the second quarter into the third or are you talking about the results after the third and talking about fourth?
WILLIAM ("BILL") R. QUIRK	**Well, I'm speaking specifically to the third-quarter call. You came across --**
S. CHRISTOPHER LINTHWAITE	OK.
WILLIAM ("BILL") R. QUIRK	**-- as being quite bullish on the overall franchise --**
S. CHRISTOPHER LINTHWAITE	Yeah.
WILLIAM ("BILL") R. QUIRK	**-- and the pipeline of opportunities.**

S. CHRISTOPHER LINTHWAITE	Well, I mean, you kind of set it up pretty well, I think, earlier. The -- it's not about promoting. It's about showing now existent- -- real proof points, related to the option of technology. We look on every front. We look at geographic expansion. We have broad geographic expansion. We are no longer dependent on only research budgets. We're now -- we're moving more and more into translational, so we're opening up new pools of opportunity. Our funnel quality, and we talked about the first half of the -- at the very beginning of the year, we talked. This was going to be a second half story. Now, every one of us that's ever been around in this business or any other life sciences business, there's always a back half story, right? Every salesperson says there's a back half story. I hate hearing it's a back half story. But we really believed it was going to be a back half story, and we had the data to support it. But we had no- -- we didn't have the credibility, I think. And that's what I hope is different is that, over the last eight, 10 quarters, eight quarters since I've been CEO, and with this executive team, is we've tried to really put it as a [?prove, say, do?] culture, that as we re- -- hit the reset button on who Fluidigm is and who it will be in the future, is to not overly promote. It's to, kind of, build on fact sets, to be very analytical in our approach and methodology of talking about the business, talking about the value drivers, studying metrics, and then going forth and achieving those metrics. And so what you saw in confidence was us achieving those short interval controls, those interim points -- and whether it's in the magnitude of the ampli- -- the magnitude of the funnel, the quality of the funnel, that they -- we're seeing the close rates advance in the rate in which we predicted they would be. We're seeing consumables adoption in a pattern that was matching our, kind of, internal models. Those are all things that give us much stronger confidence and move beyond just promoting and seeing these broad brush strokes that are -- there's, you know, tremendous funds flowing into cell therapy. There are tremendous fund flows going to immuno-oncology and oncology. Yes, we are in rising tide environment, but we want to make sure we get our [?own fair?unfair?] share of that. And as we're seeing these specific proof points, like increasing penetration at comprehensive cancer centers, expa- -- capacity expansion, we talked

	about a -- so, two sequential quarters in a row, about a third of our instrument placements have been people who have been successful users that need to add that N plus one capacity expansion. The balance of placements have been new to the technology. And so that tells us that we have a huge amount of market opportunity out there, and we're not just putting our tip -- our toe is just in the beginning of tipping, dipping into the water. And we're making -- the best way to continue to grow your business is to make the people who have made a commitment around the technology really successful and have them go buy another system. So we're seeing both of those vectors advancing, and that's why you're seeing, I think, the whole management team building in confidence.
WILLIAM ("BILL") R. QUIRK	**And, Chris, building off that last comment you made, that the last two quarters, about a third of the mass cytometry placements have gone to people that are looking for additional capacity, relative to two thirds that are new to the technology. Is there anything -- you know, should we be reading anything into, I guess, kind of, the ceiling on consumables utilization for mass cytometry, given about a third of the placements are -- we've kind of run out of capacity?** **I'm just trying to think of, you know, several iterations in the future, here, updated, you know, designs, faster throughput, which a lot of consumables go higher [CROSSTALK].**
S. CHRISTOPHER LINTHWAITE	Yeah. There's many dimensions that we can do to unlock -- I don't think we've begun to identify or explore what the -- there's an automatic -- there's headro- -- or how -- I know we have headroom. We have no clear ceiling --
WILLIAM ("BILL") R. QUIRK	**OK.**
S. CHRISTOPHER LINTHWAITE	-- in terms of what consumable expansion could look like. We have examples of customers who have pulled hundreds of thousands of dollars of revenue per annum on instruments. That's not us making it up. We have historical information related to that. What we've been attempting to do is -- how do we move? When we give you, or we've given the investment community -- once a year, we give them a target range of pull-through. And

	for -- since we're talking mass cytometry, it's $60,000 to $65,000 per annum. But we have distribution throughout that. And we have -- in the upper quartile and upper decile, we have people who are pulling north of $100,000. And some of those are pulling well north of $100,000. What we have to do is figure out how to shift that curve and to move people more and more to where the upper decile is. And there's a lot of strategies. We've been in the life sciences tool space our entire careers, effectively. And so there's a lot of ways to go do that, and you've talked about a couple. So you can always make the instruments better and make the theoretical capacity, but we haven't maxed out -- the most successful customers have figured out ways to get more capacity utilization out of the existing instruments. I won't belabor the ways to do that. We can automate some of those things and make it even easier for the next generation of users to come in and take advantage. But the other things are we sell labeling detection kits. We sell pre-conjugated antibody content. We've now moved up the food chain to offering pre-fixed panels, and those panels are matched with informatic solution. What this does is it eliminates the frictional costs of the setup in the pre-analytical phase, when they have to get their -- for people who want to do it themselves, they're wasting, in our minds, time that we'd rather have the instrument running, in which they're preparing the sample to run. They're preparing the questions, the analytes. They want to interrogate the panel design. They're building those antibodies. They're pre-titra- -- they're titrating those antibodies. They have to do lot testing. Then they have to do the conjugation work. We're doing all that now for them, so they can go run the next experiment. And because we've tied these inc- -- these improved algorithms for doing post-analytical cleanup and interpretation, that means, instead of waiting hours or even days to get the information analyzed, to then lead to the next experiment, we have it ready in five to 20 minutes. So we think we can get a lot more pull-through, and we're not even talking about the most crude tool, which is price. You know, we can always do things in price. We have chosen, right now, to make -- to price this technology, pretty much, at parity with flow cytometry. So we don't put people at a disadvantage if they choose to build bigger panels.

	From a reference perspective, we have a lot of opportunity, economic opportunity, we could capture in the future. I'm not saying we will or we won't. But it means that's a clear way to go and grab more vol- -- or grab more pull-through value. And in addition, we have services contracts. And those services contracts represent between 10 and 15 percent of the cost of the instrument as an industry standard. And that's an additional annuity stream that these are highly complex instruments, and people always want to have service contracts. And so we think that's a very legitimate and profitable business for us to have, side by side with the traditional consumables.
WILLIAM ("BILL") R. QUIRK	**And I think, one thing that was a -- particularly impressive to us, relatively shortly after some of the mass cytometry launches with the fairly rapid uptake for some translational purposes. I confess, I had thought this would stay in the realm of academic research for a much longer period of time before it translated. But certainly, you know, talking about your penetration within the cancer center community is, I know, a badge of honor for the company.** **So I guess, kind of, where are we with respect to penetration there? And then just help us think about, I guess, some of these factors that have driven some of these translational uses, perhaps faster than many of us would have thought.**
S. CHRISTOPHER LINTHWAITE	Yeah. We are humbled by the fact that it is accelerating faster than we, perhaps, perceived it would. We have been doing some things to future-proof, or at least prepare for a future, which -- we've always envisioned clinical applicability for this. But it was such a big reach that we were already shaping an industry that was used to looking at a handful of analytes simultaneously, to now saying, what would you do with large panels? Would you ask many questions? Or would you, in a clinical setting, only want to ask one or two of the most important questions? And I think that was something that we didn't know how the science -- well, we still don't know exactly how the science will play out in that area. But we have certain areas, such as cell therapy and transfusions, transplantation science. There is going to be a value in looking at many different parameters simultaneously. So we may make -- and it looks like we're making an evolution faster than we anticipated. And it -- because the immune system, also, is being investigated more and more for being a causal driver for hundreds of different disease states,

	we're getting more and more exposure to diseases that we didn't anticipate that the system would be well represented to help elucidate, you know, answers to. And so anything that already has, in the literature, biomarkers that are becoming established in industry to look at the most common, say, 15, 20 or 35 markers, they were looking at them in flow cytometry panels before, that were in smaller chunks. They were 8-, 10-, 12-marker panels. So what we're able to do, when you can build panels at 50 or 45, is they're taking three or four flow cytometry assays, and they're putting them together into one assay. And so that's also helping us make leaps and bounds faster, because we've established things like reproducibility. System-to-system reproducibility in independent sites is very difficult to do in flow cytometry. The fact that we have established that with very consistent C.V. values between system performances is now encouraging people to look at this as a more clinical ready, perhaps, or translational science ready instrument than we, perhaps, had believed it might be able to be.
WILLIAM ("BILL") R. QUIRK	**But what are some of the next steps there that, you know, those of us looking from the outside in can, kind of, point to and, kind of, that aha moment that, you know, this could represent another leap in adoptability?**
S. CHRISTOPHER LINTHWAITE	There's a couple things I would look for. I believe adoption by CROs in a meaningful way will help show as another inflection point in the company. We have -- we -- that's one that's very clear. I think continuing our penetration in the comprehensive cancer centers in the United States, but then we need to start sharing with U- -- targets ex-U.S. So we've not been sharing that right now. We've been modeling it for each region and developing what we think the right analog is. So in some places, like the U.K., it's relatively easy to identify, and we have very strong penetration in the U.K. market, at the key deci- -- the key centers that influence clinical trial support. But generally, in the European model, you work through consortia. And those consortia transcend geographical country-specific barriers. We have been mapping more and more disease-specific consortia and making sure that we have exposure, and we're penetrating who are the key decision makers and who are the key places where samples are going to be managed in large consortia across Europe. We know access and following

	the samples will -- and positioning our instruments in front of those samples will lead to a virtuous cycle of very strong adapti- -- adoption. And when you get more shot- -- we're getting, basically, more shots on goals for more clinical trials' work. As we get more shots on goal, the science is proving that it's important to use our system. That's why the article you asked about, in the New England Journal of Medicine, earlier -- that came because we had a very strong penetration strategy at MD Anderson. We've now put more than one instrument at MD Anderson, so we'll start tracking and start to share over time, here, multi-system placements inside institutions. But in that case, we had to be in it to win it. We were in the core. We now have multiple systems in place, so more -- many, probably hundreds, of P.I.s are getting access now to our instrument in a place like MD Anderson. And they're now feeding more and more trials' work through it. And they're finding more insights that are coming, that we didn't anticipate. So I think we don't have to have a clinic-ready box in order to participate in this market any time soon. We are thinking about that. We put the design history files in place. We've been upgrading our own ISO standards in side of each of our facilities, going to 13485:2016 standards. And this is another milestone in place. We're putting an electronic quality management system in place, heading into next year. These are all building blocks that we think are going to help ensure that we can sustain this growth over a long period of time.
WILLIAM ("BILL") R. QUIRK	**Questions from the group? Pivoting to the genetic analysis side of the business, a little bit of up and down. You certainly have some, I think, you know, well thought out plans for trying to consistently drive some performance here. But what's the latest in terms of that business, Chris, and, you know, the long-term plan here to shift from, kind of, stability to reaccelerating growth in that franchise?**
S. CHRISTOPHER LINTHWAITE	Yeah. We definitely just don't want to be seen as a one-trick pony in any way, whatsoever. I think, on the mass cytometry, we've spent a fair amount of time discussing both suspension and imaging, and that's about half of the revenue of the company. And it's clearly putting up good, eye-catching numbers right now. And that's a huge part of why we're establishing double-digit growth.

	Genomics growing in double digits would make this company extremely powerful, and I think that it's a -- we have a path to go do that. We haven't -- we've grown consumables, this year, at about seven percent over the course of the year. We had a bad -- we didn't have a great quarter in third quarter. That's the one step that kept us from having a perfect Q3. And -- but we think we have a pretty good explanation for why it happened. And we are concentrated in our customer base, so we have -- and so we are going to have some relative exposure in terms of the genomics business, but we have some super users. And if those super users have any change in their consumption dynamics, that can undo a lot of work as we're seeding a lot of new accounts. And so we talked about new accounts. For instance, we opened up more than 65 new accounts in China from the -- since the beginning of the year. So that's seeding the future for the business, but we -- it's hard for us to replace the ebbs and flows of business at the high end, when someone does an inventory buildup, and then they want to draw down that inventory, and they didn't signal to us that they were going to make that change. So we think we have a lot of opportunity, both scientifically, because it's not the -- understanding the immunome in the im- -- isn't a one technology only solution. We believe that there's going to be a very strong component between genomics and proteomics. There will be, over time, potentially, codetection across those technology platforms, and that there will not be just one analyte or one mode of piece of information that's going to answer everything. Therefore, there's going to be a significant portion of gene expression work, in particular, in place there. We've got some great tools in place that can sit in front of next generation sequencing. There are many applications on our C1 technology, a breadth of application beyond the bulk RNA, RNA-Seq. That's the primary one today, but we see the world of single cell is going to evolve. And we think there are many reasons to believe that microfluidics technology is well-positioned for where the single cell market may evolve to in the future. And in our core genomics franchise, there are also applications that are traditionally seen as genomics applications that also are proteomic in nature. So we have -- if you look in our investor deck, we have customers that are using our microfluidics genomics platform, but they're actually doing biomarker discovery and proteomics. And so that, potentially, gives

	us another leg up. It'll differentiate us from an otherwise, you know, relatively well-shaped genomics business in PCR, as an example, which is not commoditized, but it is relatively stable.
WILLIAM ("BILL") R. QUIRK	**Thank you, Chris.**
S. CHRISTOPHER LINTHWAITE	Yeah.
WILLIAM ("BILL") R. QUIRK	**Vikram, it's your turn.**
S. CHRISTOPHER LINTHWAITE	Oh, OK. Oh.
WILLIAM ("BILL") R. QUIRK	**I don't want to --**
S. CHRISTOPHER LINTHWAITE	Oh.
WILLIAM ("BILL") R. QUIRK	**Give Chris all the glory.**
S. CHRISTOPHER LINTHWAITE	No worries, no worries.
WILLIAM ("BILL") R. QUIRK	**So a couple of financial questions -- you --**
S. CHRISTOPHER LINTHWAITE	I know financial stuff.
VIKRAM JOG	Yeah.

WILLIAM ("BILL") R. QUIRK	**I never said you didn't, Chris. I never said that you didn't. You guys have done a really nice job with respect to looking at and carving out operating expense savings over the last couple of years. You guys have talked about bringing in some personnel to help with materials management. And so what sort of milestones should we be looking for and tracking to, kind of, assess the progression of that?**
VIKRAM JOG	Yeah, so you're right. We took about 16 percent off our opex. If you compare our opex, it had peaked in 2016, actually Q1 of '17. So we took some very tough actions in the first half of '17. And if you look at our '16 to '17 comparison, we took about 16-ish percent off, but $21 million on a GAAP basis, of opex out of the system. And then, in the period of time in which we have resumed double-digit revenue growth, we have been very successful in holding opex relatively flat. And if you look at where we expect to end up 2018, based on our Q4 guidance, it'll be relatively flat to, maybe, 1 or 2 percent higher. So we've kept very good control on cost. During the same time in '17, while we did very well on opex, we had a gross margin decline of about 7 percentage points, year-over-year. In the very latest quarter of reporting of Q3 of '18, we have recovered gross margins on a non-GAAP basis up to 66 percent. So we are not quite all the way back to where we were in '17, but we're about half to two-thirds of the way there. What you're referring to is the appointment for head of operations that we had in April of 2018, and he has now, over time, established a supply chain operation. So we are tackling this on a couple of fronts. On the instrument side, the biggest driver of cost of goods is not labor and overhead. It's primarily materials, and where you source your materials from, and how efficiently those -- and how efficiently you are managing your suppliers. And of course, on the other side, as we get bigger, we have more clout with those suppliers as well, in addition to active management. So that's one front. The other front is that [?he's?] going to take deliberate actions to make our manufacturing operations more efficient, in addition to just managing suppliers. One of the two areas that have affected our margins in the past is -- one is underutilization of capacity, as we had the downturn in the '14, '15, '16 timeframe. And the second area that affects our margins on an overall basis is mix. So generally speaking, instrument margins are below the

	company average, and consumables margins are above the consum- -- company average. Since mass cytometry is on the beginning trend, you -- we will, and you should, expect instruments to be predominant in the revenue stream. But as we take steps to increase our consumption and our pull-through, over time, over the longer period, for sure, the consumables portion of the revenue mix would increase, and as a result, just based on mix alone, our overall company margins should go up.
WILLIAM ("BILL") R. QUIRK	**So, kind of, three drivers, if you will --**
VIKRAM JOG	Correct.
WILLIAM ("BILL") R. QUIRK	**-- to ongoing gross-margin improvement.**
VIKRAM JOG	Yeah.
WILLIAM ("BILL") R. QUIRK	**And, Vikram, going back to the -- your first comment about taking a lot of, just, hard dollars out of opex and, you know, and having a relatively low percentage increase in opex spent in an aggregate basis, this year, I guess, how should we just, kind of, fundamentally think about, kind of, ongoing operating cost structure? I mean, is this something where, hypothetically, if we, say, grow, just to make the numbers easy, 10 percent in 2019 or '20, or pick your year, that we'd have about half of that fall? In other words, do you anticipate that we need to have some incremental investment --**
VIKRAM JOG	Yeah. I --
WILLIAM ("BILL") R. QUIRK	**-- on the opex line, given how much you guys have taken out of it over the past several years?**
VIKRAM JOG	I think that's a prudent assumption. It's not necessary. Of course, we can always make cuts in R&D, I mean, and just let science do its business. As long as I've been there, when folks used to ask me, when are you going to break even, I would say, when do you want us to break even? But you're not going to do things that is going to jeopardize future growth. So you

	have to be judgmental in opex and not cut areas that is going to result in diminished growth in the future. So we believe where we are right now is at the right point, given our prospects, our outlook in our businesses, that we appear at the right point. We do have another initiative that I didn't talk about, but we have talked about in our call, is the Fluidigm operating excellence process project. So we are now developing expertise within the company on an ongoing basis, not just in manufacturing but company-wide, in doing things more efficiently than we've ever done before and in propagating that as -- just as a part of our ethos, within the company. So that part is hard for us to say. If that is successful beyond our expectation right now, it may not necessar- -- be necessary for us to increase opex. But I think, for now, it's a safe assumption that we will increase opex, but not to the same extent as we used to do in the past, as you recall, not to the same extent as the growth and revenue.
WILLIAM ("BILL") R. QUIRK	**OK, [CROSSTALK]**
S. CHRISTOPHER LINTHWAITE	We generally talked about it. We would call out those events and say -- let's say, for instance, we wanted to do a regulatory filing because we see so clear a demand, and there's a demand for a clinical grade box, and we want to go file a 510K for it, do a registration against it. We might step up our investment, in that case, but w- -- because we can clearly see, we can create a moat to protect the technology and help push it into that clinical or more routine use. That'd be an example.
WILLIAM ("BILL") R. QUIRK	**OK, got it. And then, just in our last minute here, Chris -- just, kind of, the big picture takeaway message on Fluidigm.**
S. CHRISTOPHER LINTHWAITE	I think it's go time. I think we're having -- we're set up for a fantastic finish for the year. We don't want to make it a one, and then stumble right out of the gates next year, so we really see an opportunity to extend this growth. We don't see an end, right now, in the demand for our technology. We think we've been laying the foundation to deliver sustained topline growth, attractive consumables growth, get operating margin to improve gross margins and generate operating leverage. I think this is setting up, in a

	scarcity of tool- -- of assets business, clear clinical demand. I really feel like this company is really arriving now, and we're on an organic basis.
WILLIAM ("BILL") R. QUIRK	**Fantastic, guys. Thank you so much for joining me today.**
S. CHRISTOPHER LINTHWAITE	Thank you again.
VIKRAM JOG	Thank you.
	[END OF Fluidigm Corporation.mp3]