



2016 Performance

Investor Financial Presentation
March 1, 2017

Highlights

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Fourth Quarter 2016

- ✓ Revenue \$18.3 million (+30%)
- ✓ Afirma GEC reported volume 6,313 tests (+13%)
- ✓ Total OpEx \$21.9 million (flat)
- ✓ Net loss \$4.4 million (45% improvement)
- ✓ Net loss per share \$0.14 (52% improvement)
- ✓ Cash burn \$4.7 million (33% improvement)
- ✓ Cash \$59 million (At December 31, 2016)

FY 2016

- ✓ Revenue \$65.1 million (+31%)
- ✓ Afirma GEC reported volume 23,237 tests (+20%)
- ✓ Total OpEx \$93.9 million (+13%)
- ✓ Net loss \$31.4 million (7% improvement)
- ✓ Net loss per share \$1.09 (16% improvement)
- ✓ Cash burn \$32.2 million (3% improvement)

Note: Percentage change shown for the applicable prior year period, either prior year quarter or prior fiscal year



Balance Sheets



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\$ in 000's										Change (Sequential Quarters 2016)				Change	
	12/31/2014	3/31/2015	6/30/2015	9/30/2015	12/31/2015	3/31/2016	6/30/2016	9/30/2016	12/31/2016	Q1 2016	Q2 2016	Q3 2016	Q4 2016	FY14-15	FY15-16
Assets															
Current assets:															
Cash	\$ 35,014	\$ 25,798	\$ 51,045	\$ 46,116	\$ 39,084	\$ 47,456	\$ 38,993	\$ 31,699	\$ 59,219	\$ 8,372	\$ (8,463)	\$ (7,294)	\$ 27,520	\$ 4,070	\$ 20,135
Accounts receivable	3,050	2,564	3,586	3,520	3,503	3,230	3,387	6,312	8,756	(273)	157	2,925	2,444	453	5,253
Supplies inventory	3,696	3,732	3,976	3,984	3,767	3,652	3,502	3,416	3,475	(115)	(150)	(86)	59	71	(292)
Prepaid expenses and other	1,518	1,460	1,970	3,574	1,442	1,618	1,395	1,405	2,057	176	(223)	10	652	(76)	615
Restricted cash	70	118	118	118	118	238	120	120	120	120	(118)	-	-	48	2
Total current assets	43,348	33,672	60,695	57,312	47,914	56,194	47,397	42,952	73,627	8,280	(8,797)	(4,445)	30,675	4,566	25,713
Property and equipment	4,161	4,132	4,211	6,200	10,314	11,272	10,937	10,435	11,480	958	(335)	(502)	1,045	6,153	1,166
Intangible assets	16,000	16,000	15,733	15,467	15,200	14,933	14,666	14,400	14,133	(267)	(267)	(266)	(267)	(800)	(1,067)
Goodwill	1,057	1,057	1,057	1,057	1,057	1,057	1,057	1,057	1,057	-	-	-	-	-	-
Other assets (restricted cash, other)	273	147	760	775	762	811	775	806	737	49	(36)	31	(69)	489	(25)
Total Assets	\$ 64,839	\$ 55,008	\$ 82,456	\$ 80,811	\$ 75,247	\$ 84,267	\$ 74,832	\$ 69,650	\$ 101,034	\$ 9,020	\$ (9,435)	\$ (5,182)	\$ 31,384	\$ 10,408	\$ 25,787
Liabilities + Stockholders' Equity															
Current liabilities:															
Accounts payable	\$ 7,397	\$ 6,854	\$ 2,688	\$ 6,644	\$ 5,085	\$ 4,340	\$ 2,705	\$ 3,081	\$ 2,424	\$ (745)	\$ (1,635)	\$ 376	\$ (657)	\$ (2,312)	\$ (2,661)
Accrued liabilities	4,542	3,712	5,532	5,520	6,600	4,966	6,731	7,189	9,110	(1,634)	1,765	458	1,921	2,058	2,510
Accrued liabilities - Genzyme	3,309	1,684	1,685	1,845	2,089	2,055	2,179	-	-	(34)	124	(2,179)	-	(1,220)	(2,089)
Deferred Genzyme co-promo fee	1,897	1,897	1,897	1,423	948	518	227	-	-	(430)	(291)	(227)	-	(949)	(948)
Total current liabilities	17,145	14,147	11,802	15,432	14,722	11,879	11,842	10,270	11,534	(2,843)	(37)	(1,572)	1,264	(2,423)	(3,188)
Long-term debt	4,923	4,897	4,928	4,960	4,990	24,452	24,671	24,891	24,918	19,462	219	220	27	67	19,928
Deferred rent	149	111	384	2,386	4,283	4,630	4,566	4,484	4,402	347	(64)	(82)	(82)	4,134	119
Other long term liabilities + Cap lease	1,248	774	254	222	-	-	-	-	599	-	-	-	599	(1,248)	599
Total liabilities	23,465	19,929	17,368	23,000	23,995	40,961	41,079	39,645	41,453	16,966	118	(1,434)	1,808	530	17,458
Stockholders' equity:															
Common Stock + APIC	156,396	157,711	196,856	198,524	199,978	202,107	203,797	205,686	239,665	2,129	1,690	1,889	33,979	43,582	39,687
Accumulated deficit	(115,022)	(122,632)	(131,768)	(140,713)	(148,726)	(158,801)	(170,044)	(175,681)	(180,084)	(10,075)	(11,243)	(5,637)	(4,403)	(33,704)	(31,358)
Total stockholders' equity	41,374	35,079	65,088	57,811	51,252	43,306	33,753	30,005	59,581	(7,946)	(9,553)	(3,748)	29,576	9,878	8,329
Total liabilities + stockholders' equity	\$ 64,839	\$ 55,008	\$ 82,456	\$ 80,811	\$ 75,247	\$ 84,267	\$ 74,832	\$ 69,650	\$ 101,034	\$ 9,020	\$ (9,435)	\$ (5,182)	\$ 31,384	\$ 10,408	\$ 25,787
Outstanding shares	22,524	22,552	27,596	27,657	27,685	27,858	27,864	27,940	33,762	173	6	76	5,822	5,161	6,077
Net book value per share	\$ 1.84	\$ 1.56	\$ 2.36	\$ 2.09	\$ 1.85	\$ 1.55	\$ 1.21	\$ 1.07	\$ 1.76	\$ (0.30)	\$ (0.34)	\$ (0.14)	\$ 0.69	\$ 0.01	\$ (0.09)
Share Price	\$ 9.66	\$ 7.28	\$ 11.14	\$ 4.69	\$ 7.20	\$ 5.40	\$ 5.03	\$ 7.61	\$ 7.74	\$ (1.80)	\$ (0.37)	\$ 2.58	\$ 0.13	\$ (2.46)	\$ 0.54

Note: Numbers presented may vary from SEC filings due to rounding

Income Statements



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\$ in 000's	FY2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	FY2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	FY2016	Change / Variance			% Change		
												Seq-Q	PY-Q	P-FY	Seq-Q	PY-Q	P-FY
Accrued Revenue	\$ 12,545	\$ 5,386	\$ 6,586	\$ 6,985	\$ 8,085	\$ 27,042	\$ 8,226	\$ 9,349	\$ 13,903	\$ 15,621	\$ 47,099	\$ 1,718	\$ 7,536	\$20,057	12%	93%	74%
Cash Revenue	25,646	5,832	5,321	5,350	5,957	22,460	5,324	5,326	4,700	2,636	17,986	(2,063)	(3,320)	(4,474)	-44%	-56%	-20%
Revenue	38,190	11,218	11,908	12,335	14,042	49,503	13,550	14,675	18,603	18,258	65,085	(345)	4,216	15,583	-2%	30%	31%
% Accrued revenue	33%	48%	55%	57%	58%	55%	61%	64%	75%	86%	72%						
% Growth (PY period)	75%	50%	37%	25%	15%	30%	21%	23%	51%	30%	31%	-2%	30%	31%			
Operating expenses:																	
Cost of revenue	16,606	4,566	5,139	5,618	6,175	21,498	6,279	6,301	6,367	6,515	25,462	148	340	3,964	2%	6%	18%
Research and development	9,804	2,787	3,103	3,563	3,342	12,795	3,461	4,267	4,006	3,590	15,324	(416)	248	2,529	-10%	7%	20%
Selling and marketing	21,932	5,620	6,937	6,048	6,688	25,293	7,066	8,263	7,086	5,833	28,248	(1,253)	(855)	2,955	-18%	-13%	12%
General and administrative	18,854	5,798	5,536	5,728	5,521	22,583	6,228	6,071	5,763	5,725	23,787	(38)	204	1,204	-1%	4%	5%
Intangible asset amortization	-	-	267	266	267	800	267	267	267	266	1,067	(1)	(1)	267	0%	0%	33%
Total operating expenses	67,196	18,771	20,982	21,223	21,993	82,969	23,301	25,169	23,489	21,929	93,888	(1,560)	(64)	10,919	-7%	0%	13%
Loss from operations	(29,006)	(7,553)	(9,074)	(8,888)	(7,951)	(33,466)	(9,751)	(10,494)	(4,886)	(3,671)	(28,803)	1,215	4,280	4,664	-25%	-54%	-14%
Interest expense	(439)	(89)	(90)	(92)	(107)	(378)	(367)	(785)	(799)	(806)	(2,757)	(7)	(699)	(2,379)	1%	653%	629%
Other income, net	72	32	28	35	45	140	43	36	48	75	202	27	30	62	56%	67%	44%
Net loss and comprehensive loss	\$ (29,373)	\$ (7,610)	\$ (9,136)	\$ (8,945)	\$ (8,013)	\$ (33,704)	\$ (10,075)	\$ (11,243)	\$ (5,637)	\$ (4,402)	\$ (31,358)	\$ 1,235	\$ 3,611	\$ 2,347	-22%	-45%	-7%
Shares																	
Average shares	21,639	22,540	26,049	27,641	27,673	25,994	27,818	27,860	27,917	31,706	28,830	3,789	4,033	2,836	14%	15%	11%
Net loss per common share (dollars)	\$ (1.36)	\$ (0.34)	\$ (0.35)	\$ (0.32)	\$ (0.29)	\$ (1.30)	\$ (0.36)	\$ (0.40)	\$ (0.20)	\$ (0.14)	\$ (1.09)	\$ 0.06	\$ 0.15	\$ 0.21	-31%	-52%	-16%
Operational Highlights																	
Afirma GEC volume (reported)	14,061	4,020	4,758	5,034	5,609	19,421	5,352	5,832	5,740	6,313	23,237	573	704	3,816	10%	13%	20%
Afirma GEC volume growth (PY period)	45%	30%	38%	46%	38%	38%	33%	23%	14%	13%	20%	10%	13%	20%			
Revenue less Cost of revenue	\$ 21,584	\$ 6,652	\$ 6,769	\$ 6,717	\$ 7,867	\$ 28,005	\$ 7,271	\$ 8,374	\$ 12,236	\$ 11,743	\$ 39,623	\$ (493)	\$ 3,876	\$ 11,619	-4%	49%	41%
% of Total Revenue	57%	59%	57%	54%	56%	57%	54%	57%	66%	64%	61%	-1%	8%	4%			
Headcount	167					192					216			24			13%

Note: Numbers presented may vary from SEC filings due to rounding

Income Statements – Sequential Performance (Quarter)



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	Q3 2016	Q4 2016	Change	
			Dollars	Percentage
\$ in 000's				
Accrued Revenue	\$ 13,903	\$ 15,621	\$ 1,718	12%
Cash Revenue	4,700	2,636	(2,063)	-44%
Revenue	\$ 18,603	\$ 18,258	\$ (345)	-2%
Operating expenses:				
Cost of revenue	6,367	6,515	148	2%
Research and development	4,006	3,590	(416)	-10%
Selling and marketing	7,086	5,833	(1,253)	-18%
General and administrative	5,763	5,725	(38)	-1%
Intangible asset amortization	267	266	(1)	0%
Total operating expenses	23,489	21,929	(1,560)	-7%
Loss from operations	(4,886)	(3,671)	1,215	-25%
Interest expense	(799)	(806)	(7)	1%
Other income, net	48	75	27	56%
Net loss and comprehensive loss	\$ (5,637)	\$ (4,402)	\$ 1,235	-22%
Shares				
Average shares	27,917	31,706	3,789	14%
Net loss per common share (dollars)	\$ (0.20)	\$ (0.14)	\$ 0.06	-31%
Operational Highlights				
Afirma GEC volume (reported)	5,740	6,313	573	10%
Revenue less Cost of revenue	\$ 12,236	\$ 11,743	\$ (493)	-4%
% of Total Revenue	65.8%	64.3%		-1.5%

Note: Numbers presented may vary from SEC filings due to rounding

Comments (in millions)

Revenue

- Revenue declined sequentially by \$0.3 driven by:
 - ↑ \$1.7 in accrued revenue
 - ↓ (\$2.1) in cash-based revenue
- Afirma GEC volume increased 573 or 10% sequentially

Expenses

- Cost of revenue flat period to period: improvement driven by lower reagent expense
- R&D expenses declined sequentially driven by lower lab supplies and labor
- S&M includes \$1.6 of incremental Genzyme fees in Q3 2016 over Q4 2016, the sequential reduction offset by \$0.3 of incremental headcount spend in Q4 2016
- No material changes in G&A or intangible asset amortization

Interest Expense

- Interest accruing at 12% on \$25.0, plus PIK balance, or ~\$0.8 per quarter
- Elected to PIK payments (3%) in Jun+Sep 2016 (~\$0.2 per period / \$0.4 PIK balance)

Shares

- Average shares increase driven by issuance of 5.7 shares on November 2, 2016 (weighted average impact for quarter of 3.7)

Income Statements – Prior Year Performance (Quarter)



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\$ in 000's	Q4 2015	Q4 2016	Change	
			Dollars	Percentage
Accrued Revenue	\$ 8,085	\$ 15,621	\$ 7,536	93%
Cash Revenue	5,957	2,636	(3,320)	-56%
Revenue	\$ 14,042	\$ 18,258	\$ 4,216	30%
Operating expenses:				
Cost of revenue	6,175	6,515	340	6%
Research and development	3,342	3,590	248	7%
Selling and marketing	6,688	5,833	(855)	-13%
General and administrative	5,521	5,725	204	4%
Intangible asset amortization	267	266	(1)	0%
Total operating expenses	21,993	21,929	(64)	0%
Loss from operations	(7,951)	(3,671)	4,280	-54%
Interest expense	(107)	(806)	(699)	653%
Other income, net	45	75	30	67%
Net loss and comprehensive loss	\$ (8,013)	\$ (4,402)	\$ 3,611	-45%
Shares				
Average shares	27,673	31,706	4,033	15%
Net loss per common share (dollars)	\$ (0.29)	\$ (0.14)	\$ 0.15	-52%

Operational Highlights

Afirma GEC volume (reported)	5,609	6,313	704	13%
Revenue less Cost of revenue	\$ 7,867	\$ 11,743	\$ 3,876	49%
% of Total Revenue	56.0%	64.3%		8.3%

Note: Numbers presented may vary from SEC filings due to rounding

Comments (in millions)

Revenue

- Revenue increased year over year by \$4.2 driven by:
 - ↑ \$7.5 in accrued revenue
 - ↓ (\$3.3) in cash-based revenue
- Afirma GEC volume increased 704 or 13% year over year

Expenses

- Cost of revenue increased \$0.3 driven by increased molecular volume processed
- R&D expenses increased \$0.3 driven by higher lab supplies and labor
- S&M includes \$1.6 of incremental Genzyme fees in Q4 2015 over Q4 2016, the sequential reduction offset by \$0.6 of incremental headcount spend and \$0.1 increase in controllable expenses to support collateral marketing campaign in Q4 2016
- No material changes in G&A or intangible asset amortization

Interest Expense

- Entered into new senior secured loan agreement in Q1 2016
- Interest accruing at 12% on \$25.0, plus PIK balance, or ~\$0.8 per quarter

Shares

- Average shares increase driven by issuance of 5.7 shares on November 2, 2016 (weighted average impact for quarter of 3.7)
- EE Stock Purchase Plan contributed 0.2 to average shares in 2016

Income Statements – Prior Year Performance (Annual)



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\$ in 000's	FY2015	FY2016	Change	
			Dollars	Percentage
Accrued Revenue	\$ 27,042	\$ 47,099	\$ 20,057	74%
Cash Revenue	22,460	17,986	(4,474)	-20%
Revenue	\$ 49,503	\$ 65,085	\$ 15,583	31%
Operating expenses:				
Cost of revenue	21,498	25,462	3,964	18%
Research and development	12,795	15,324	2,529	20%
Selling and marketing	25,293	28,248	2,955	12%
General and administrative	22,583	23,787	1,204	5%
Intangible asset amortization	800	1,067	267	33%
Total operating expenses	82,969	93,888	10,919	13%
Loss from operations	(33,466)	(28,803)	4,664	-14%
Interest expense	(378)	(2,757)	(2,379)	629%
Other income, net	140	202	62	44%
Net loss and comprehensive loss	\$ (33,704)	\$ (31,358)	\$ 2,347	-7%
Shares				
Average shares	25,994	28,830	2,836	11%
Net loss per common share (dollars)	\$ (1.30)	\$ (1.09)	\$ 0.21	-16%

Operational Highlights

Afirma GEC volume (reported)	19,421	23,237	3,816	20%
Revenue less Cost of revenue	\$ 28,005	\$ 39,623	\$ 11,619	41%
% of Total Revenue	56.6%	60.9%		4.3%
Headcount	192	216	24	13%

Note: Numbers presented may vary from SEC filings due to rounding

Comments (in millions)

Revenue

- Revenue increased year over year by \$15.6 driven by:
 - ↑ \$20.1 in accrued revenue
 - ↓ (\$4.5) in cash-based revenue
- Afirma GEC volume increased 3,816 or 20% year over year

Expenses

- Cost of revenue increased \$4.0 driven by increased molecular volume processed. Rate of growth for labor, reagents, chips and consumables in-line with revenue growth rate.
- R&D expenses increased \$2.5 driven by higher higher lab supplies and labor
- S&M expenses increased \$2.9 driven by direct headcount increases
- G&A expenses increased \$1.2 driven by higher labor offset by lower consulting/outside vendor spend
- Intangible asset amortization increased due to one additional quarter of amortization in FY2016

Interest Expense

- March 2016 repaid \$5.0 debt (5% rate) and borrowed \$25.0 (12% rate)
- New facility, 9% cash pay rate + 3% PIK rate (election made quarterly)

Shares

- Average shares increased 1.7 due to prior year share balance, 0.9 due to issuance of 5.7 shares on November 2, 2016 and the remainder due to EE exercise of options

Headcount

- ↑ 2 in Cost of revenue (CLIA labs)
- ↑ 7 in Research and development
- ↑ 12 in Sales and marketing
- ↑ 3 in General and administrative

Statements of Cash Flows



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\$ in 000's	FY2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	FY2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	FY2016	Seq-Q	PY-Q	P-FY
Operating activities														
Net loss	\$ (29,373)	\$ (7,610)	\$ (9,136)	\$ (8,945)	\$ (8,013)	\$ (33,704)	\$ (10,075)	\$ (11,243)	\$ (5,637)	\$ (4,402)	\$ (31,358)	\$ 1,235	\$ 3,611	\$ 2,347
Adjustments to reconcile net loss to net cash used in operating activities:														
Depreciation and amortization	1,175	352	644	646	612	2,254	762	941	899	909	3,511	10	297	1,257
Stock-based compensation	3,548	1,223	1,489	1,474	1,416	5,602	1,496	1,677	1,572	1,633	6,378	61	217	776
Genzyme co-promotion fee amortization	(2,269)	(474)	(475)	(474)	(474)	(1,897)	(430)	(291)	(227)	-	(948)	227	474	949
Other	232	52	64	57	57	230	364	233	220	27	844	(193)	(30)	614
Changes in operating assets and liabilities:														
Accounts receivable	(1,961)	466	(1,055)	39	(8)	(558)	207	(159)	(2,925)	(2,444)	(5,321)	481	(2,436)	(4,763)
Supplies inventory	(1,129)	(36)	(243)	(9)	217	(71)	115	150	86	(59)	292	(145)	(276)	363
Prepaid expenses and other assets	(84)	9	(397)	(1,543)	2,193	262	(225)	259	(41)	(383)	(390)	(342)	(2,576)	(652)
Accounts payable	1,874	(356)	(4,281)	2,806	(1,715)	(3,546)	301	(1,106)	418	(1,054)	(1,441)	(1,472)	661	2,105
Accrued liabilities, deferred rent and capital lease	355	(2,493)	1,924	2,146	2,885	4,463	(1,113)	1,825	(1,803)	1,542	451	3,345	(1,343)	(4,012)
Net cash used in operating activities ¹	(27,632)	(8,867)	(11,466)	(3,803)	(2,830)	(26,966)	(8,598)	(7,714)	(7,438)	(4,231)	(27,981)	3,207	(1,401)	(1,016)
Purchases of property and equipment ¹	(2,024)	(511)	(341)	(1,123)	(4,190)	(6,165)	(2,855)	(732)	(173)	(450)	(4,210)	(277)	3,740	1,955
Cash remitted for acquisitions, net of cash received	(6,916)	-	-	-	-	-	-	-	-	-	-	-	-	-
Change in restricted cash	(70)	70	(603)	-	-	(533)	(120)	118	-	-	(2)	-	-	531
Net cash used in investing activities	(9,010)	(441)	(944)	(1,123)	(4,190)	(6,698)	(2,975)	(614)	(173)	(450)	(4,212)	(277)	3,740	2,486
Financing activities														
Proceeds from issuance of debt, net of costs	(110)	-	-	-	-	-	19,312	(148)	-	-	19,164	-	-	19,164
Proceeds from issuance of common stock, net of costs	(129)	-	37,258	(197)	(50)	37,011	-	-	-	31,949	31,949	31,949	31,999	(5,062)
Proceeds from the exercise of common stock options	675	92	399	193	38	722	633	13	317	253	1,216	(64)	215	494
Net cash provided by financing activities	436	92	37,657	(4)	(12)	37,733	19,945	(135)	317	32,202	52,329	31,885	32,214	14,596
Net increase (decrease) in cash	(36,206)	(9,216)	25,247	(4,929)	(7,032)	4,069	8,372	(8,463)	(7,294)	27,521	20,136	34,815	34,553	16,067
Beginning Cash	71,220	35,014	25,798	51,045	46,115	35,014	39,083	47,455	38,992	31,698	39,083	(7,294)	(14,417)	4,069
Ending Cash	\$ 35,014	\$ 25,798	\$ 51,045	\$ 46,115	\$ 39,083	\$ 39,083	\$ 47,455	\$ 38,992	\$ 31,698	\$ 59,219	\$ 59,219	\$ 27,521	\$ 20,136	\$ 20,136
Additional information														
Cash Burn ¹	\$ (29,656)	\$ (9,378)	\$ (11,807)	\$ (4,926)	\$ (7,020)	\$ (33,131)	\$ (11,453)	\$ (8,446)	\$ (7,611)	\$ (4,681)	\$ (32,191)	\$ 2,930	2,339	\$ 939

Note 1 - Cash Burn defined as net cash used in operating activities plus cash used to purchase property and equipment.

Numbers presented may vary from SEC filings due to rounding

Operating Expenses



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\$ in 000's	FY2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	FY2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	FY2016	\$ Change			% Change		
												Seq-Q	PY-Q	P-FY	Seq-Q	PY-Q	P-FY
Reagents, Chips, Consumables and Related	\$ 5,271	\$ 1,457	\$ 1,745	\$ 2,008	\$ 2,298	\$ 7,508	\$ 2,290	\$ 2,314	\$ 2,459	\$ 2,576	\$ 9,639	\$ 117	\$ 278	\$ 2,131	5%	12%	28%
Cytopathology Fees	4,561	1,197	1,386	1,395	1,558	5,536	1,480	1,508	1,489	1,486	5,963	(3)	(72)	427	0%	-5%	8%
Sample Collection	2,531	657	765	834	868	3,124	908	885	824	841	3,458	17	(27)	334	2%	-3%	11%
Direct Labor	1,809	545	560	685	738	2,528	785	784	792	834	3,195	42	96	667	5%	13%	26%
Other	2,434	710	683	696	713	2,802	816	810	803	778	3,207	(25)	65	405	-3%	9%	14%
Cost of revenue	16,606	4,566	5,139	5,618	6,175	21,498	6,279	6,301	6,367	6,515	25,462	148	340	3,964	2%	6%	18%
Personnel related expense	4,534	1,425	1,492	1,553	1,444	5,914	1,668	1,742	1,829	1,607	6,846	(222)	163	932	-12%	11%	16%
Stock-based compensation	790	253	342	296	287	1,178	300	340	342	340	1,322	(2)	53	144	-1%	18%	12%
Direct R&D expense	2,734	615	714	999	1,078	3,406	813	1,407	1,074	908	4,202	(166)	(170)	796	-15%	-16%	23%
Other expense	1,746	494	555	715	533	2,297	680	778	761	735	2,954	(26)	202	657	-3%	38%	29%
Research and development	9,804	2,787	3,103	3,563	3,342	12,795	3,461	4,267	4,006	3,590	15,324	(416)	248	2,529	-10%	7%	20%
Personnel related expense	8,121	2,665	3,251	2,905	3,246	12,067	3,736	4,230	3,640	3,867	15,473	227	621	3,406	6%	19%	28%
Stock-based compensation	707	269	321	353	383	1,326	408	395	396	395	1,594	(1)	12	268	0%	3%	20%
Direct marketing expense	1,544	693	889	656	630	2,868	536	998	671	752	2,957	81	122	89	12%	19%	3%
Genzyme co-promotion expense, net	9,733	1,210	1,212	1,330	1,615	5,367	1,626	1,886	1,590	-	5,102	(1,590)	(1,615)	(265)	-100%	-100%	-5%
Other expense	1,827	783	1,264	804	814	3,665	760	754	789	819	3,122	30	5	(543)	4%	1%	-15%
Selling and marketing	21,932	5,620	6,937	6,048	6,688	25,293	7,066	8,263	7,086	5,833	28,248	(1,253)	(855)	2,955	-18%	-13%	12%
Personnel related expense	9,563	2,550	2,664	2,596	2,585	10,395	3,026	3,411	3,150	3,043	12,630	(107)	458	2,235	-3%	18%	22%
Stock-based compensation	2,000	684	811	794	709	2,998	758	909	803	866	3,336	63	157	338	8%	22%	11%
Professional fees expense	4,525	1,697	1,032	1,101	1,248	5,078	1,279	1,052	1,039	1,085	4,455	46	(163)	(623)	4%	-13%	-12%
Rent and other facilities expense	1,504	407	618	898	703	2,626	901	502	537	530	2,470	(7)	(173)	(156)	-1%	-25%	-6%
Other expense	1,262	460	411	339	276	1,486	264	197	234	201	896	(33)	(75)	(590)	-14%	-27%	-40%
General and administrative	18,854	5,798	5,536	5,728	5,521	22,583	6,228	6,071	5,763	5,725	23,787	(38)	204	1,204	-1%	4%	5%
Intangible asset amortization	-	-	267	266	267	800	267	267	267	266	1,067	(1)	(1)	267	0%	0%	33%
Total operating expenses	\$ 67,196	\$ 18,771	\$ 20,982	\$ 21,223	\$ 21,993	\$ 82,969	\$ 23,301	\$ 25,169	\$ 23,489	\$ 21,929	\$ 93,888	\$ (1,560)	\$ (64)	\$ 10,919	-7%	0%	13%

Note: Numbers presented may vary from SEC filings due to rounding