



January 4, 2024

Fool Me Twice, Shame on Me; Fool Me Three Times, Shame on You | 2024 Sector Outlook

Life Science Tools & Diagnostics | Best Ideas For 2024

Our view: Following two years of sector underperformance, we expect 2024 to be a rebound year for the Life Science Tools & Diagnostics sector. In this note, we answer the three most frequent investor questions ahead of next week's San Francisco healthcare conference:

1. **What are your three best ideas for 2024?** ILMN, AVTR, and QDEL. See page 12 for more details and key debates on each name.
2. **Will the sector outperform the market after underperforming in 2022 and 2023?** Yes. We explain our logic starting on page 7.
3. **Who is likely to pre-announce next week in San Francisco, and what are key questions for each company?** QDEL and HOLX are the only two names we expect a pre-announcement from this year. We summarize our company views on page 21 and offer a list of questions for management teams on page 30.

We make no changes to our price targets or ratings from our Q3'23 review note published last week, though move QDEL and AVTR to our best ideas list for 2024 (replacing BIO and MRVI).

Best Ideas: QDEL, AVTR, and ILMN

Our updated price target and risk / reward table is below, and this note contains our views on the sector recovery, company specific details, and prep questions for next week.

Exhibit 1 - Coverage PTs and Risk / Reward

Current Price, Ratings, Targets, and Risk / Reward										
	Prices as of 12/30/23	12/30/23	Rating	PT	%Δ	Upside case Price	%Δ	Downside case Price	%Δ	R/R
INNOVATORS										
ILMN	\$139.24	OP	\$258	85%	\$371	44%	\$110	-21%	\$7.93	
MRVI	\$6.55	OP	\$12	83%	\$15	25%	\$5	-24%	\$5.45	
RGEN	\$179.80	OP	\$200	11%	\$244	22%	\$98	-45%	\$0.78	
SOPH	\$4.71	OP	\$8	70%	\$11	38%	\$3	-36%	\$3.68	
OABI	\$6.17	OP	\$7	13%	\$9	29%	\$3	-51%	\$0.89	
TECH	\$77.16	SP	\$85	10%	\$103	21%	\$50	-35%	\$0.95	
INTEGRATORS										
AVTR	\$22.83	OP	\$28	23%	\$33	18%	\$16	-30%	\$1.49	
DHR	\$231.34	OP	\$254	10%	\$305	20%	\$127	-45%	\$0.71	
TMO	\$530.79	OP	\$592	12%	\$799	35%	\$360	-32%	\$1.57	
INCUMBENTS										
QDEL	\$73.70	OP	\$130	76%	\$165	27%	\$37	-50%	\$2.49	
BIO	\$322.89	OP	\$484	50%	\$787	63%	\$233	-28%	\$5.16	
HOLX	\$71.45	SP	\$76	6%	\$102	34%	\$68	-5%	\$8.86	

Source: Company filings, RBC Capital Market estimates. R/R is Risk / Reward = (Upside scenario - current price) / (current price - downside scenario). SP = Sector Perform.
 OP = Outperform.

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Sector Background – Life Science Tools and Diagnostics (LST&Dx)

- ‘Picks and Shovels’ of the Healthcare Industry
- Equipment, consumables, and services offered to multiple end-markets with multiple uses

Discovery – Emerging Technologies for Innovative Research



Illumina Inc.
NovaSeqX Sequencer



Bio-Rad Laboratories Inc.
QX600 Droplet Digital PCR System



Thermo Fisher Scientific Inc.
Orbitrap Astral Mass Spec

Diagnosis – Equipment, Consumables and Services



QuidelOrtho Corp.
Sofia Immunoassay
Analyzer



Danaher Corp.
Cepheid GeneXpert
Molecular Diagnostic System

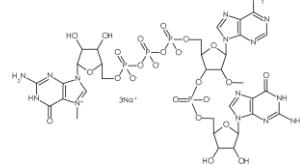


Hologic Inc.
Aptima HPV Assay &
Panther System

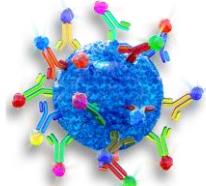
Chemicals and Components – Building Blocks for Therapeutics



Avantor Inc.
High Purity Chemicals



Maravai Life Sciences Inc.
CleanCap mRNA capping
technology



Bio-Techne Corp.
Antibodies for Immune
Cell Therapy



Repligen Corp.
KRM Chromatography
Systems



Danaher Corp.
Cytiva Xcellerex Single-Use
Bioreactor Systems



Thermo Fisher Scientific Inc.
CTS DynaCelllect Magnetic
Separation Systems

Integrating discovery, diagnosis, and manufacturing is key to ‘targeted therapies’ of the future

Sector Background – Three Categories To Simplify the Industry

To simplify the diversity of products and end markets in the LST&Dx sector, we have separated our covered names into three novel categories: **Innovators**, **Integrators**, and **Incumbents**. These categorizations help us frame the key concerns of the sector and should help investors better interrogate the risk / reward of each stock.

Innovators:

- MRVI, RGEN, ILMN, TECH, OABI and SOPH
 - These companies invent new markets, find niche applications in existing markets, or find ways to disrupt an existing market.
 - What we like to see: growth above the sector average, ability to maintain high GMs, good operating leverage once growth matures.
 - What we like to avoid: sub 50% GMs, even at launch, pursuit of growth markets without solid business model or differentiating factor.
 - These stocks will have the highest beta/volatility in our sector. **ILMN is our best innovator idea.**

Integrators:

- AVTR, DHR, and TMO
 - These companies grow through acquisition and consolidation. The industry consolidation started with the 2006 merger of Thermo Electron and Fisher Scientific. Since that time, TMO and DHR have acquired ~230 companies for over \$140B.
 - What we like to see: EBITDA margin expansion, outperformance on announced deal synergies, consistent HSD / LDD earnings growth, good cash conversion.
 - What we like to avoid: overstretching the balance sheet (>4.0x); under-delivery of margin expansion, consistently high 1x cash charges, or ERP announcement.
 - We think the integrator stocks perform best in flight to safety trades, and are typically first stocks owned when rotating into healthcare. But we believe they don't offer the absolute upside from multiple expansion – or takeout optionality – of some of the innovators and incumbents. **AVTR is our best integrator idea.**

Incumbents:

- BIO, HOLX, and QDEL
 - These companies are typically the #1 or #2 player in markets that are near peak penetration. They eventually need to find a way to fend off low-priced competition via diversification, innovative product iteration, or ultimately a good M&A / exit strategy.
 - What we like to see: ability to maintain share and take price, good cash management (watch A/R and inventory trends), strategic expansion into adjacent markets.
 - What we like to avoid: declining GMs and EBITDA margins while organic growth slows, non-strategic or desperate M&A.
 - We think multiple expansion by incumbent stocks without an 'event' is difficult to find; we like these stocks ahead of a product launch; or in anticipation of share repurchases / M&A; or ahead of a prolonged period of beats and raises. **QDEL is our best incumbent idea.**

Key is matching investor risk appetite and thematic view with appropriate investment

Life Science Tools & Diagnostics Coverage & Sector Segmentation

Rating	RBC View	INNOVATORS	12/30/23			EV / Sales		EV / EBITDA		Short Interest
			Price	PT	Market Cap (\$M)	CY'24E	CY'25E	CY'24E	CY'25E	
ILMN	Outperform*	Illumina is the dominant leader in next-gen sequencing, a technology that is the tip of the spear for all future drug development. A TAM-expanding product launch (NovaSeq X) should re-accelerate top / bottom line growth; while new management and M&A overhang resolution should all lead to multiple expansion in the next 6-18 months.	\$139.24	\$258	\$22,000	5.1x	4.6x	44.2x	25.7x	3%
TECH	Sector Perform	TECH is stuck between being an innovator and an integrator: acquisitions in early stage technologies immediately added to organic growth and multiple expansion; but recent slow-downs haven't fully reset valuation. We think the new CEO will need to find a way to repeat history for the stock to maintain current multiples.	\$77.16	\$85	\$12,495	10.4x	9.4x	28.0x	24.2x	3%
RGEN		RGEN is a pure-play bioproduction company that is well positioned to benefit from biopharma investment in emerging areas of cell & gene therapy / mRNA. We also believe their CEO, Tony Hunt, is one of the top executives in the space and should help the company navigate near-term transitory sector headwinds. Q3'23 order commentary implies RGEN may be one of the first companies to rebound following 4+ quarters of macro / sector headwinds.	\$179.80	\$200	\$10,238	15.0x	11.8x	70.1x	41.5x	12%
MRVI		While not a 'COVID company', MRVI was one of the largest beneficiaries of COVID vaccine sales during the pandemic, as their key product was used in nearly 2/3 of all WW vaccines. As COVID comps annualize, and recent investments in manufacturing are fully absorbed, we think the company can return to ~20% growth with ~40% EBITDA margins.	\$6.55	\$12	\$1,644	6.1x	5.4x	30.4x	20.2x	5%
OABI		OABI gives investors exposure to the growth potential of monoclonal antibody therapies, while limiting exposure to other companies in the Life Science Tools sector that are facing multiple near-term headwinds. With their technology being used in over 300 current programs from over 75 partners, OABI has plenty of shots on goal for future milestone payments and royalties on approved drugs using their technology.	\$6.17	\$7	\$614	9.9x	8.4x	NM	NM	5%
SOPH		SOPH is a SaaS company with proprietary software that can turn complex data from next-gen sequencers into consistent and customizable reports. Insulated from current sector headwinds, SOPH is executing ahead of long-range targets that include growth of 30%+ and GMs above 70%.	\$4.71	\$8	\$305	2.1x	1.6x	NM	NM	0%

* Best Ideas

Source: RBC Capital Markets Research, company filings, FactSet.

Life Science Tools & Diagnostics Coverage & Sector Segmentation, cont'd

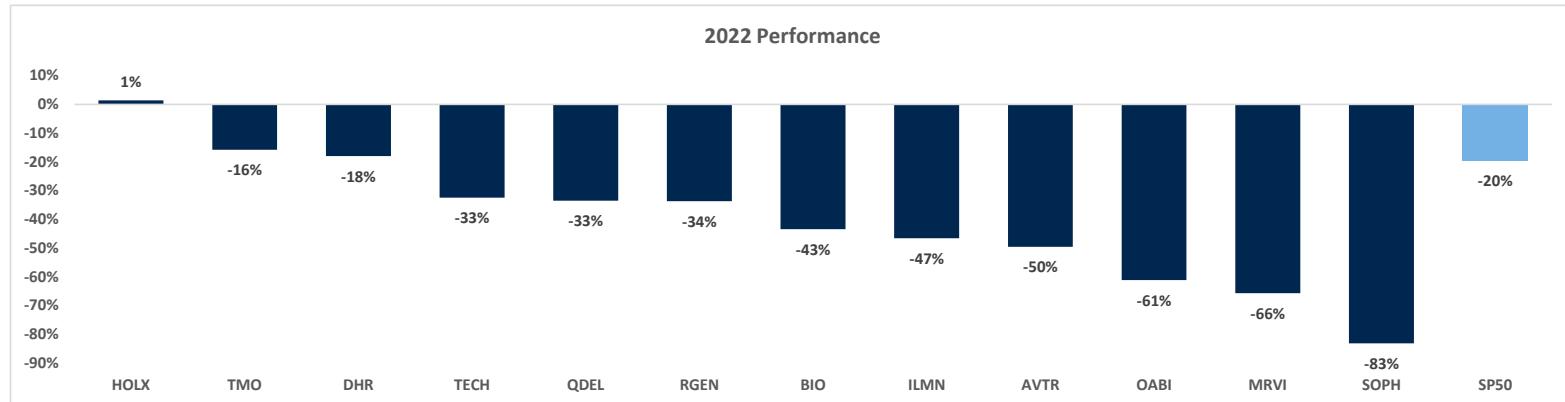
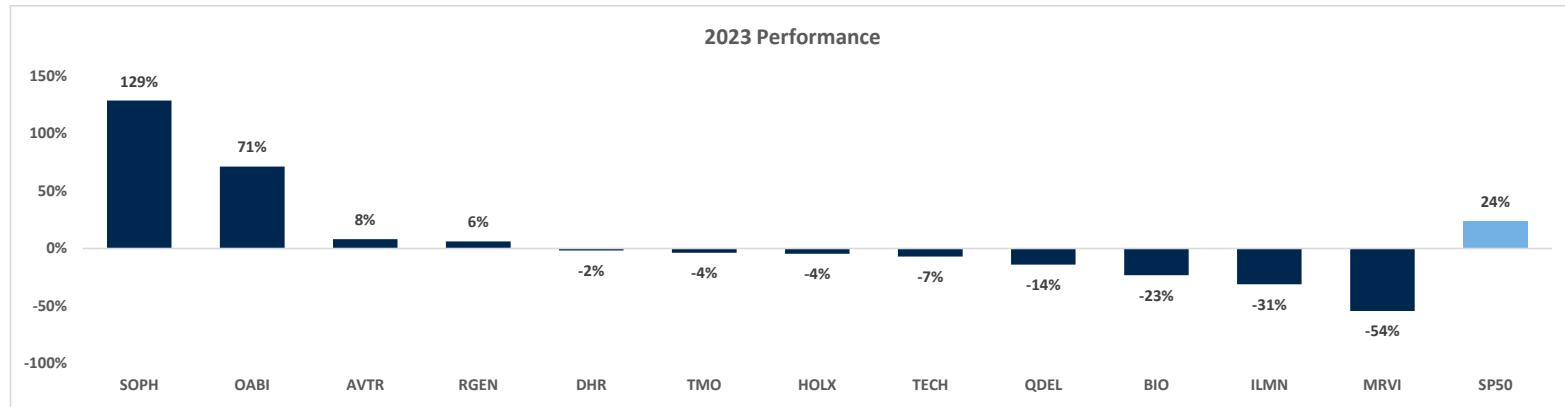
Rating	RBC View	INTEGRATORS		12/30/23			EV / Sales		EV / EBITDA		Short Interest
		Price	PT	Market Cap (\$M)	CY'24E	CY'25E	CY'24E	CY'25E	CY'24E	CY'25E	
TMO	Outperform	TMO's evolution from a combined distributor / manufacturer (in 2006) to the 'One Stop Shop' for the biopharma industry positions it to be a LT sector winner. Their current portfolio, along with \$30-50B in M&A capacity over the next 5 years will allow TMO to offer nearly every product and service to take a therapy from concept to market.				\$205,947	5.5x	5.2x	21.5x	20.3x	1%
DHR	Outperform	Danaher leverages their 'DBS' ERP system to acquire good assets and make them better. Recent investments in the bioproduction space; along with a more dedicated focus on Life Science end markets positions them well from future investments in cell & gene therapy by the biopharma industry.				\$172,557	7.5x	6.8x	22.9x	20.2x	1%
AVTR	Outperform*	Avantor is the smallest 'integrator' in the LST space; while also the cheapest. We think the company should be able to repeat a playbook laid out by larger peers, leading to years of innovation and investment in M&A as debt is paid down, and ultimately offers the most opportunity for multiple expansion in the integrator category.				\$15,479	3.0x	2.8x	16.0x	14.4x	5%
INCUMBENTS		12/30/23			Price		Market Cap (\$M)		CY'24E	CY'25E	Interest
Rating	RBC View	Price	PT	Market Cap (\$M)	CY'24E	CY'25E	CY'24E	CY'25E	CY'24E	CY'25E	Interest
HOLX	Sector Perform	HOLX is the dominant market leader in each market where it plays; and is currently benefitting from menu expansion on Panther PCR diagnostic boxes placed for COVID testing. But with disparate and fully penetrated end markets, it's our belief the key driver of future stock performance will be how the company deploys capital on M&A.				\$17,651	4.5x	4.3x	13.5x	13.1x	3%
BIO	Outperform	Bio-Rad is the cheapest cash-flow-generating company in all of LST, is growing above the market via recent product launches in the exciting area of ddPCR, and has runway for >100bps of annual margin expansion as investments in ERP and new management continue to work. Key to the story will be strategic use of their 35% ownership (~\$7B) in Sartorius.				\$9,436	1.1x	1.0x	6.0x	5.3x	2%
QDEL	Outperform*	Combined QuidelOrtho is the largest WW pure-play diagnostics company. Entrenched market shares in physician office testing and medium-size hospital labs allow for consistent low-mid SD growth in any market environment; while a successful launch of their Savanna PCR platform could push multiples closer to other LST peers.				\$4,960	2.4x	2.3x	9.0x	8.1x	8%

* Best Ideas

Source: RBC Capital Markets Research, company filings, FactSet. BIO cash balance includes est. Sartorius investment (net of tax) as of latest company 10Q/K.

Sector Turnaround – What Goes Down Must Come Up

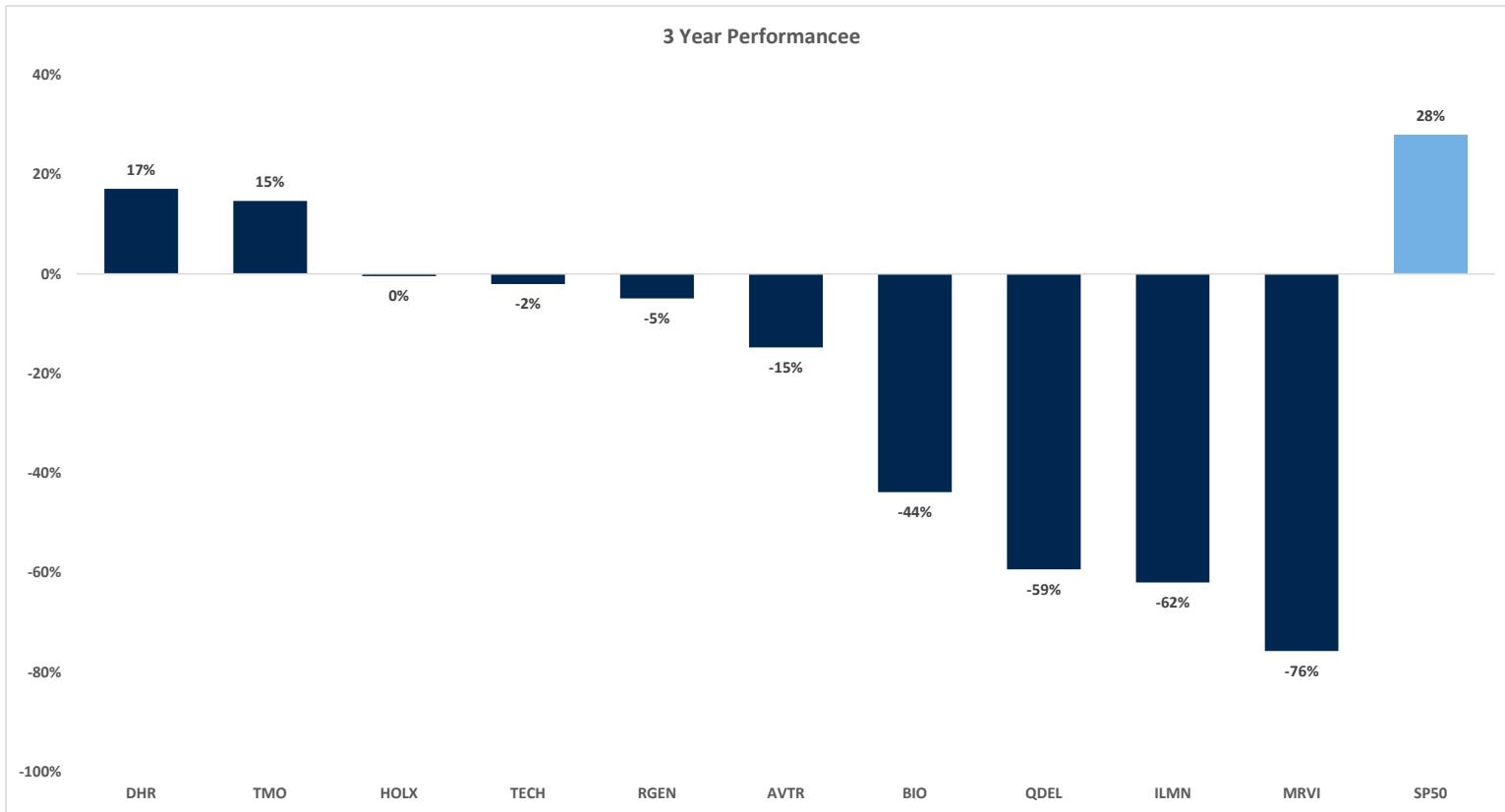
A majority of the companies in our coverage universe have underperformed the market each of the last two years...



Source: RBC Capital Markets estimates, FactSet pricing data.

Sector Turnaround – What Goes Down Must Come Up, cont'd

...and all of our companies* have underperformed for the last 3 years.

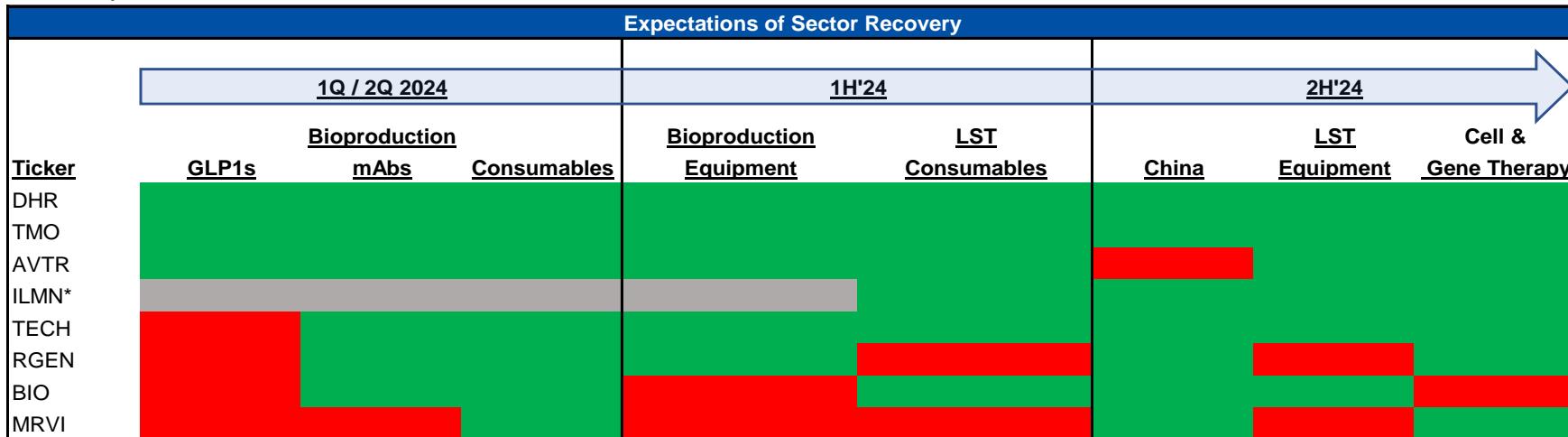


Source: RBC Capital Markets estimates, FactSet pricing data. *OABI and SOPH excluded because both have been public for less than 3 years.

Rebound Heat-Map: Who Will Recover Quickest?

As recent sector headwinds retreat – inventory de-stocking for consumables, a slowdown in equipment purchasing by biopharma, and a re-prioritization of research dollars – we think that not all companies will rebound at the same time.

- The chart below shows exposure by category for the 8 of our companies that have faced these headwinds and our expected timeline for recovery.



The integrators – DHR, TMO, and AVTR – are likely to see a return to growth quicker than others in the sector; while we expect BIO and MRVI to rebound later in the year.

This is why we've replaced BIO and MRVI from our best idea list with AVTR and QDEL for 2024.

Source: RBC Capital Markets estimates, company filings.
China is green if companies have >5% of sales in China. *ILMN doesn't have bioproduction sales.

Timing the Rebound – Numbers Better in the Second Half

As revenue growth and margin expansion return in 2H'24 for most of our companies, we expect investor sentiment to become more positive on the space.

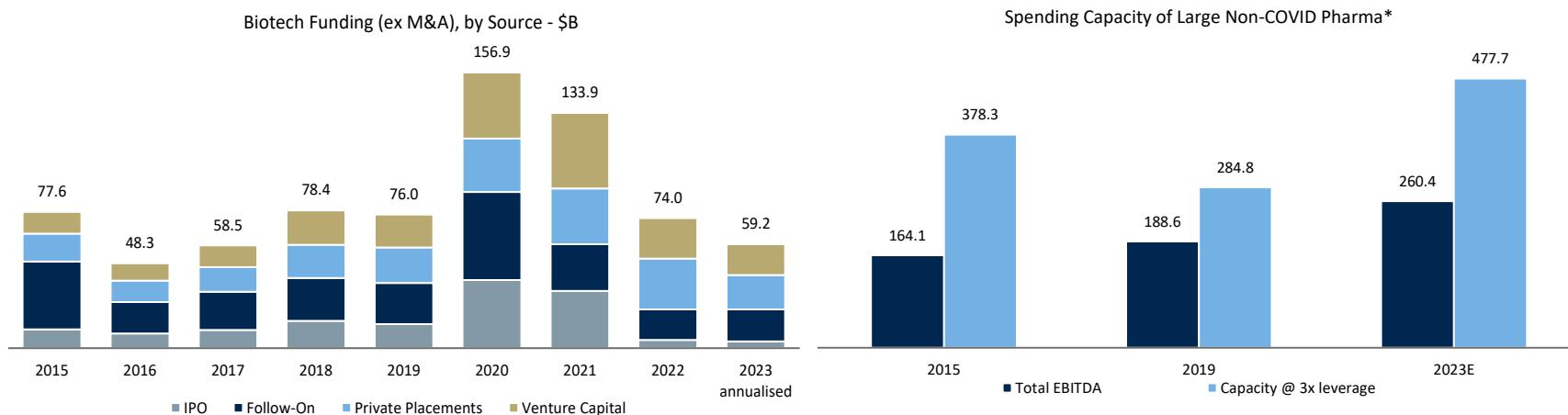
Tale of Two Halves							
1H/2H are CYE Dec. Org growth excludes CV, M&A and FX.							
RBC Estimates	Price	RBC 12-Mo	Δ	Org Rev Growth		EBITDA Margins	
Integrators	12/30/23	PT	Δ	1H'24E	2H'24E	1H'24E	2H'24E
AVTR	\$22.83	\$28	23%	-0.6%	4.5%	17.5%	19.4%
TMO	\$530.79	\$592	12%	-1.5%	3.0%	25.1%	25.6%
DHR	\$231.34	\$254	10%	-1.8%	6.7%	32.5%	32.7%
Incumbents							
QDEL	\$73.70	\$130	76%	0.3%	5.1%	24.4%	29.7%
BIO	\$322.89	\$484	50%	-2.8%	7.0%	17.7%	19.3%
HOLX	\$71.45	\$76	6%	2.6%	4.2%	33.2%	32.9%
Innovators							
ILMN	\$139.24	\$258	85%	-0.4%	4.0%	27.3%	27.8%
MRVI	\$6.55	\$12	83%	-7.3%	11.1%	18.8%	21.3%
SOPH	\$4.71	\$8	70%	40.3%	25.8%	NM	NM
OABI	\$6.17	\$7	13%	-36.4%	189.8%	NM	NM
RGEN	\$179.80	\$200	11%	2.2%	16.8%	20.6%	22.0%
TECH	\$77.16	\$85	10%	2.6%	11.3%	36.9%	37.1%

Source: RBC Capital Markets estimates, company filings. Core ILMN (ex-Grafl); QDEL organic growth excludes all respiratory; TMO excludes CV testing; DHR excludes all CV sales. BIO EBITDA margins ex-SRT dividends. Org growth is y/y vs 2023E.

What About Biotech and Pharma Funding?

While we recognized that biotech funding – including IPOs – have not yet rebounded; we believe this spending gap on life science tools and equipment will be filled by large cap pharma, which cumulatively has the healthiest balance sheet in history.

- Equity financing is down nearly \$100B from the peak in 2020...
- ...while large cap pharma has nearly \$200B more investment capacity today than pre-pandemic levels.



Source: RBC Capital Markets, FactSet. 2023 funding annualized for YTD November data. *Includes top 20 pharma totals excluding MRK and PFE due to COVID impact to numbers. Spending capacity = 3x EBITDA – Net Debt (sum of all companies).

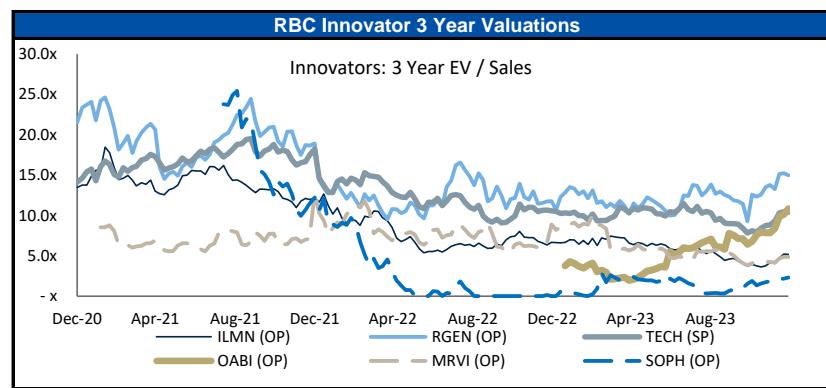
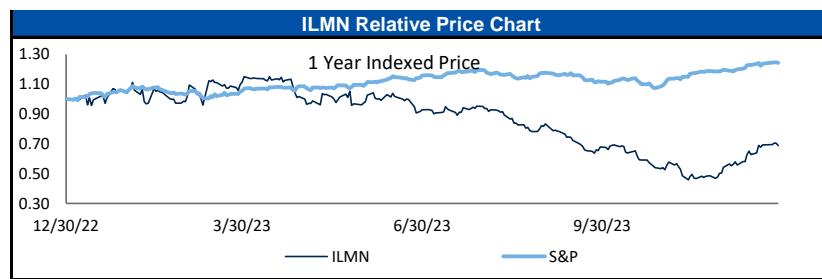
Best 2024 Idea: Illumina, Inc. (NASDAQ: ILMN) – Outperform, \$258 Price Target

ILMN Investment Thesis	
<ul style="list-style-type: none"> New product launch to drive multiple expansion: The NovaSeq X should pave the way for revenue acceleration and margin improvements Moat in attractive sequencing market: ~\$1B in annual R&D; along with early innovation will likely prevent smaller competitors from displacing ILMN in a potential >\$100B TAM Activist and management distraction in the rearview mirror: Following a proxy fight, the re-configured board and new CEO can focus on fundamentals Grail (and cash burn) divestiture provides near-term catalyst: Investors likely under-estimate true earnings power of core ILMN 	

ILMN Summary Financials		\$M except per share data		
FYE Dec	CY'22A	CY'23E	CY'24E	CY'25E
RBC Estimates				
Revenue	4,583	4,417	4,511	4,982
EV / Revenue	5.0x	5.2x	5.1x	4.6x
EBITDA	701	425	521	894
EV / EBITDA	32.8x	54.1x	44.2x	25.7x
EPS	\$2.12	\$0.68	\$1.04	\$2.37
P/E	65.6x	205.6x	133.6x	58.6x

ILMN Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$258	85%
Upside	\$371	166%
Downside	\$110	-21%
Risk/Reward	\$7.93	

ILMN Trading Info		\$M except per share data	
Price as of 12/30/23	\$139.24	Market Cap	\$22,000
52 Week Low	\$89.00	ADV (\$M)	\$361
52 Week High	\$238.55	Net Leverage	2.4x



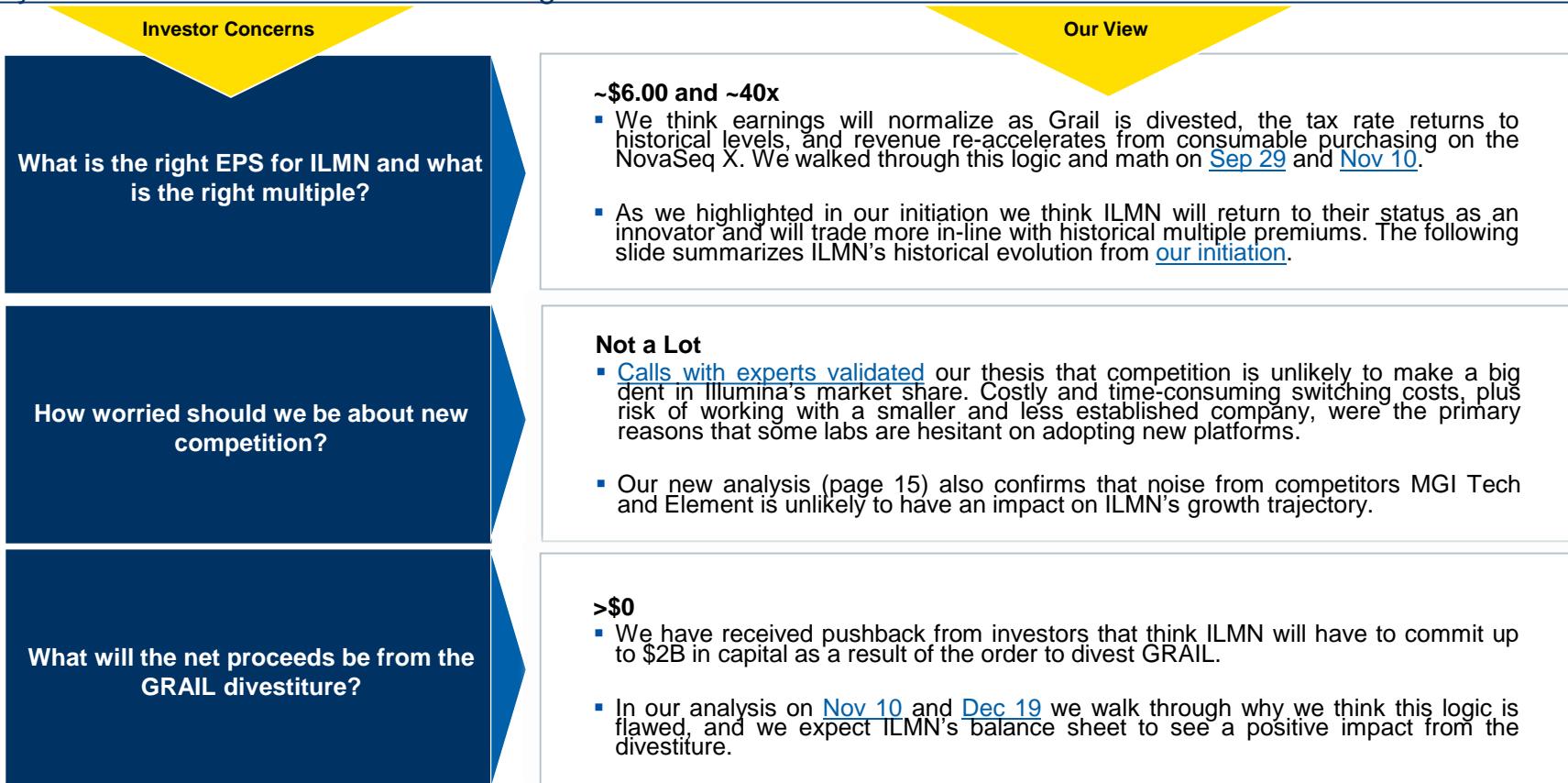
Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC; valuation chart based on NTM FacSet estimates.

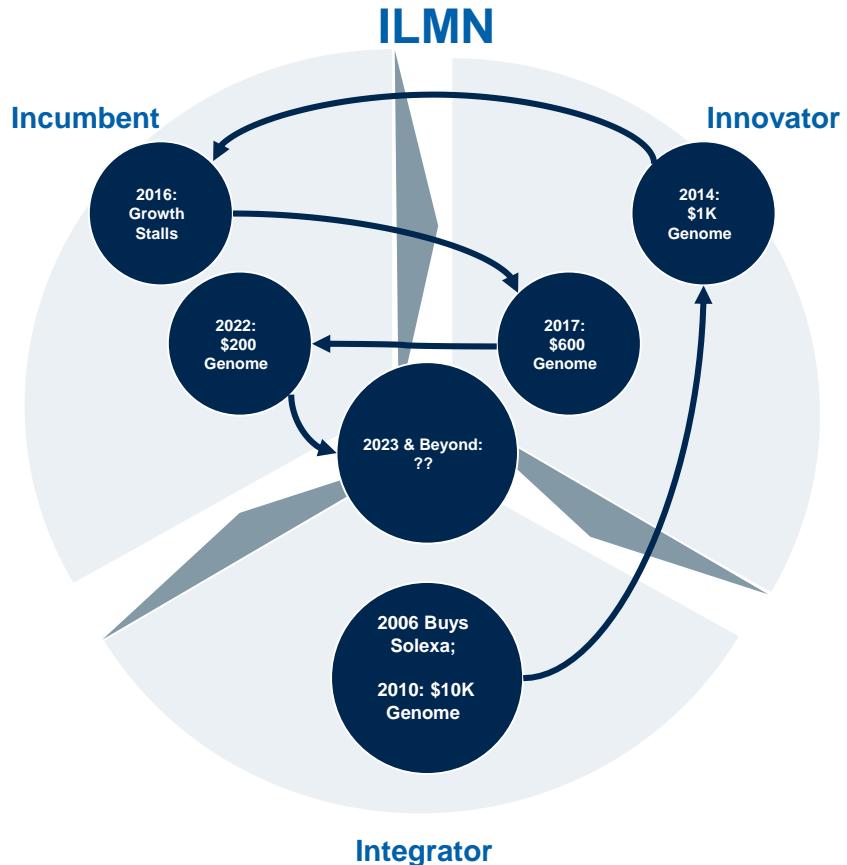
** Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

Key Debates and Questions Surrounding Illumina



Evolution of ILMN: Incumbent or Innovator?



Periods of Change – Innovator / Incumbent / Integrator		
<u>Time Period</u>	<u>EV / Sales</u>	<u>Event</u>
2007-2013	6.1x	Buys Solexa, Sequencing remains >\$10K per genome
2014-2015	11.9x	Launches HiSeq X, \$1K per genome
2016	8.4x	Growth slows ahead of new product launch
2017-2021	11.8x	Launches NovaSeq 6000, \$600 per genome
Jan'22 – Oct'22	7.9x	Growth slows ahead of new product launch
Nov'22 – Dec'23	6.0x	Launches NovaSeq X, \$200 per genome

January 2024 and beyond:
We expect multiple expansion indicative of ‘Innovator’ status

Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations. Multiples are average weekly NTM EV / Sales over specified range, per FactSet.

Competition : More Bark than Bite

Investors have found it difficult to properly measure Illumina's potential market loss from new competitors like Element Biosciences and Chinese-based MGI Tech. Below we walk through our understanding of current sequencing dynamics:

- While MGI Tech has shown growth above ILMN's (+23% vs -4% YTD) the company only has \$14m in revenue in the US.
 - Further, it appears that most of their success is in China, where the company is based.
 - In addition, MGI reports placements including "related party" sales to BGI/MGI entities.
- It also appears the MGI Tech is winning accounts on pricing – with their recognized price nearly 40% below ILMN's list price.
 - We believe MGI Tech is giving a big discount to customers to try to get them to switch...but with a low annual pull-through, it appears customers are 'trialing' but not 'converting'.

If all new MGI customers and the ~100 customers that have ordered an Element machine were to switch their entire volume and consumable spend away from ILMN – something we view as unlikely – it would only have a 2% impact to Core Illumina revenue.

ILMN vs MGI Tech Revenue Comparison				
RBC Estimates. \$\$ in millions USD	9 Months Ending:		Y/Y Change:	
Revenue by company	2022	2023	\$\$	%
Total sequencing revenue				
ILMN	3,176	3,047	(129)	-4%
MGI Tech	199	246	47	23%
China				
ILMN	346	279	(67)	-19%
MGI Tech	136	154	19	14%
Americas				
ILMN	1,691	1,704	12	1%
MGI Tech	8	14	6	74%
All other geographies				
ILMN	1,138	1,064	(74)	-7%
MGI Tech	56	77	22	39%

Machine Model - ILMN, MGI, and Element			
RBC Estimates	ILMN	MGI Tech	Element
Mid-throughput machine comparison			
Installed base of mid-throughput machines	6,800	3,100	100
Cost / machine (\$000)	\$335	\$199	\$289
Annual consumables / machine (\$000)	\$120.0	\$62.8	NA
Calculating potential revenue impact			
2023 boxes placed		640	100
ILMN lost consumables / box (\$000)		\$57	\$120
Lost annual revenue (\$MM)		\$37	\$12
Potential revenue loss to ILMN	\$49		
% of core 2023 ILMN revenue	2%		

Source: RBC Capital Markets estimates, company presentations and press releases.

Cost / machine from company website for Element and ILMN (NextSeq 2000 with P3); calculated for MGI Tech based on YTD placements.

Annual pull-through based on company website for Element and weighted average of disclosed throughput installed base for ILMN; calculated for MGI Tech based on YTD sales.

ILMN revenue loss = estimated annual loss in consumable sales if new customers switch all \$120k annual consumable spend to competitors.

Best 2024 Idea: QuidelOrtho Corporation (NASDAQ: QDEL) – Outperform, \$130 Price Target

QDEL Investment Thesis		QDEL Summary Financials																																							
<ul style="list-style-type: none"> Merger offers diversification: QDEL has gone from a 'flu' company to a more steady diagnostics business with the ability to better compete with larger companies MSD growth with margin expansion at bargain price: At 9.0x CY'24E EBITDA and 2.4x sales, QDEL offers multiple expansion via execution Communication is key: Management is slowly realizing that beats / raises are better than setting heroic growth targets Product launch key: Recently approved Savanna could be a game-changer in QDEL's long-term ability to expand margins, adding a sample-to-answer multiplexing platform in molecular diagnostics 		<p>FYE Dec</p> <table border="1"> <thead> <tr> <th>RBC Estimates</th> <th>CY'22A</th> <th>CY'23E</th> <th>CY'24E</th> <th>CY'25E</th> </tr> </thead> <tbody> <tr> <td>Revenue</td> <td>3,266</td> <td>3,046</td> <td>2,953</td> <td>3,097</td> </tr> <tr> <td>EV / Revenue</td> <td>2.2x</td> <td>2.4x</td> <td>2.4x</td> <td>2.3x</td> </tr> <tr> <td>EBITDA</td> <td>1,346</td> <td>810</td> <td>803</td> <td>887</td> </tr> <tr> <td>EV / EBITDA</td> <td>5.4x</td> <td>8.9x</td> <td>9.0x</td> <td>8.1x</td> </tr> <tr> <td>EPS</td> <td>\$14.91</td> <td>\$5.14</td> <td>\$5.09</td> <td>\$6.14</td> </tr> <tr> <td>P/E</td> <td>4.9x</td> <td>14.3x</td> <td>14.5x</td> <td>12.0x</td> </tr> </tbody> </table>					RBC Estimates	CY'22A	CY'23E	CY'24E	CY'25E	Revenue	3,266	3,046	2,953	3,097	EV / Revenue	2.2x	2.4x	2.4x	2.3x	EBITDA	1,346	810	803	887	EV / EBITDA	5.4x	8.9x	9.0x	8.1x	EPS	\$14.91	\$5.14	\$5.09	\$6.14	P/E	4.9x	14.3x	14.5x	12.0x
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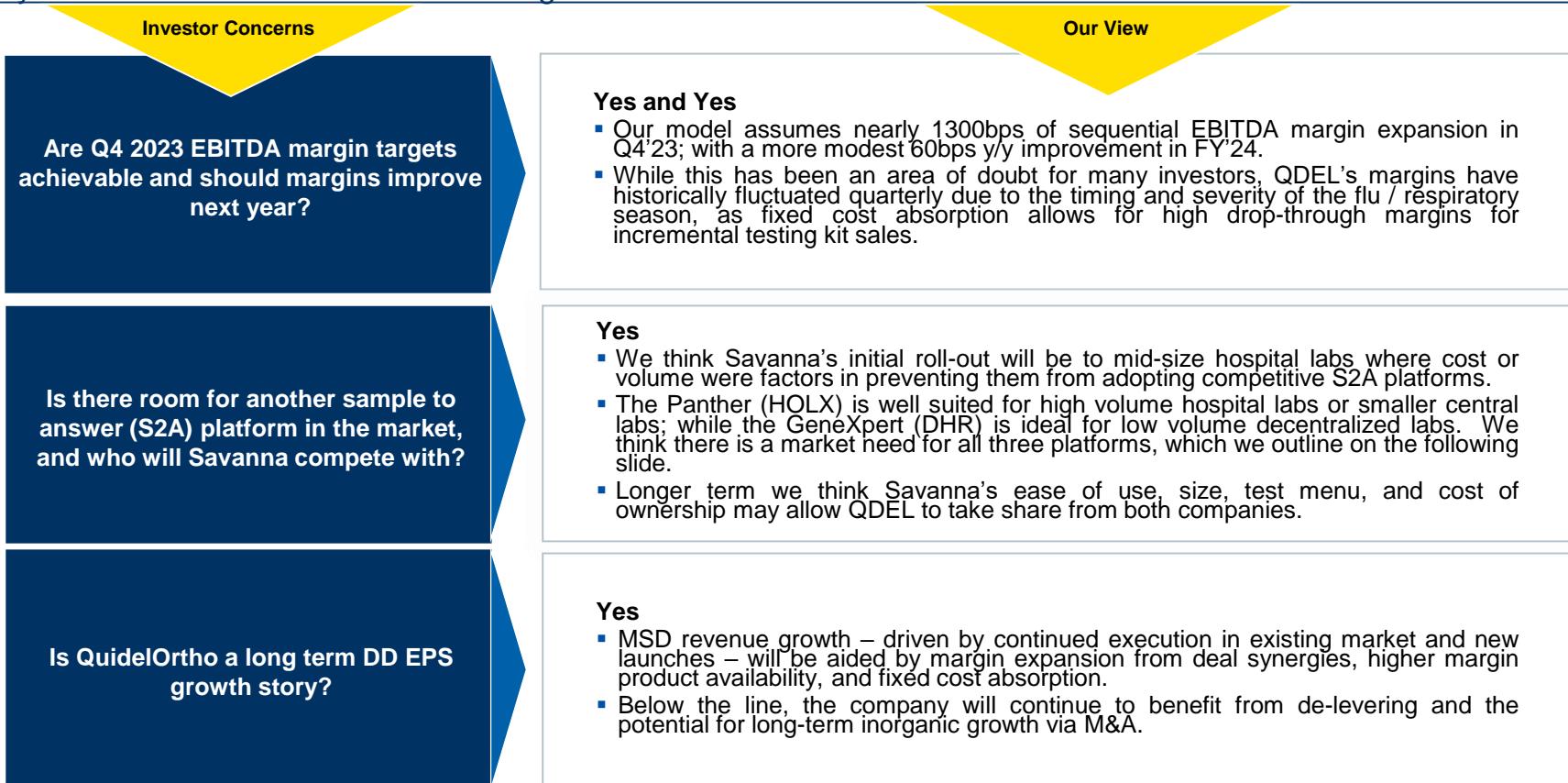
Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC; valuation chart based on NTM FactSet estimates.

** Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

Key Debates and Questions Surrounding QuidelOrtho



Molecular Diagnostics Platforms

Sample to Ans	Test Menu	Install Base	Revenue
QDEL: Savanna	 <p>Approved: HSV1&2 Planned: RVP Panel (FluA + FluB +RSV +COVID), STI Panel, GI Panel, Pharyngitis Panel, Vaginitis Panel</p>	6,000*	>\$250M*
HOLX: Panther	 <p>CT/NG, HPV, Zika, Mycoplasma genitalium, Bacterial vaginalis, Candida vaginitis, Trichomonas vaginalis, HSV 1 & 2, Chlamydia trachomatis, Neisseria gonorrhoeae, HIV, HCV, HBV, CMV, SARS-CoV-2</p>	3,260	\$1B
DHR: GeneXpert	 <p>StrepA, COVID, Flu, RSV, S. Aureus, MRSA, Norovirus, C. difficile, Enterococci, Chlamydia, gonorrhoeae, trichomoniasis, bacterial vaginosis, Ebola, Mpox, TB, Thrombosis, myelogenous leukemia</p>	~50,000	~\$2B

Source: RBC Capital Markets, company documents and presentations. *3-year QDEL Savanna target. DHR \$2B includes \$1.6B in respiratory sales; HOLX \$1B is approximate total core molecular Dx sales.

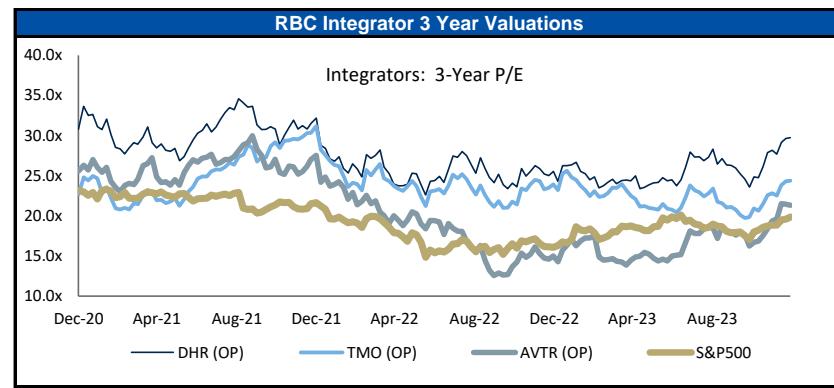
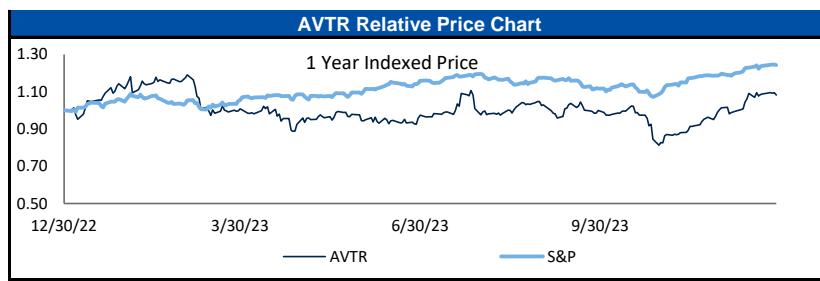
Best 2024 Idea: Avantor, Inc. (NYSE: AVTR) – Outperform, \$28 Price Target

AVTR Investment Thesis	
<ul style="list-style-type: none"> Healthy end markets: The Life Science Tools ("LST") sector has historically performed well in any market condition Best near-term setup: AVTR has the lowest relative exposure to current pressures on inventory, small-cap biotech, or China Financial metric improvements = multiple expansion: Revenue acceleration, margin improvements, and opportunistic M&A should all lead to multiple convergence with peers Improved balance sheet: After years of PE-related debt preventing sizeable M&A, AVTR's leverage is below 4x and easily serviceable with solid FCF generation 	

AVTR Summary Financials				
FYE Dec	CY'22A	CY'23E	CY'24E	CY'25E
RBC Estimates				
Revenue	7,512	6,928	7,047	7,399
EV / Revenue	2.8x	3.0x	3.0x	2.8x
EBITDA	1,570	1,290	1,302	1,449
EV / EBITDA	13.3x	16.2x	16.0x	14.4x
EPS	\$1.41	\$1.03	\$1.09	\$1.27
P/E	16.2x	22.1x	21.0x	17.9x

AVTR Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$28	23%
Upside	\$33	45%
Downside	\$16	-30%
Risk/Reward	\$1.49	

AVTR Trading Info			
	\$M except per share data		
Price as of 12/30/23	\$22.83	Market Cap	\$15,479
52 Week Low	\$16.63	ADV (\$M)	\$150
52 Week High	\$25.25	Net Leverage	4.2x



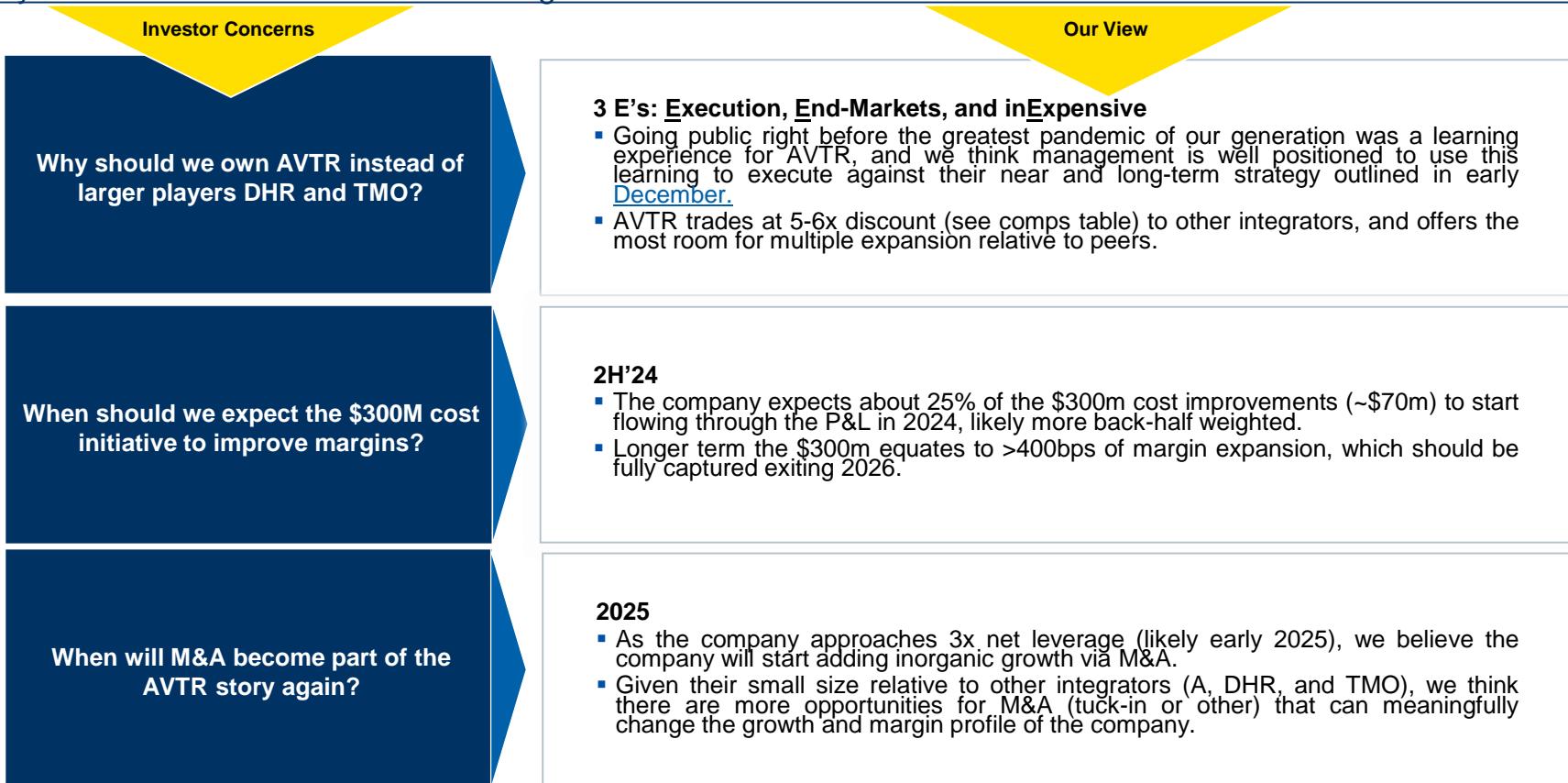
Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC valuation chart based on NTM FactSet estimates.

**\$ Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

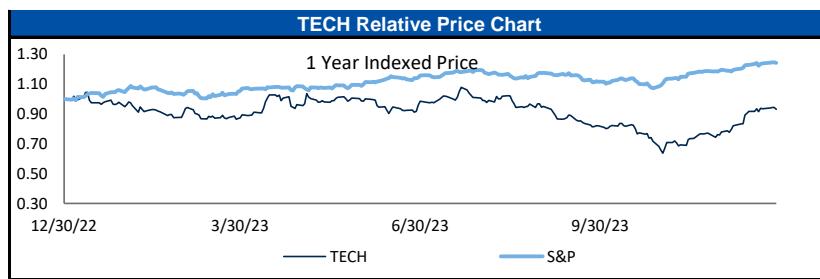
Key Debates and Questions Surrounding Avantor



Bio-Techne Corporation (NASDAQ: TECH) – Sector Perform, \$85 Price Target

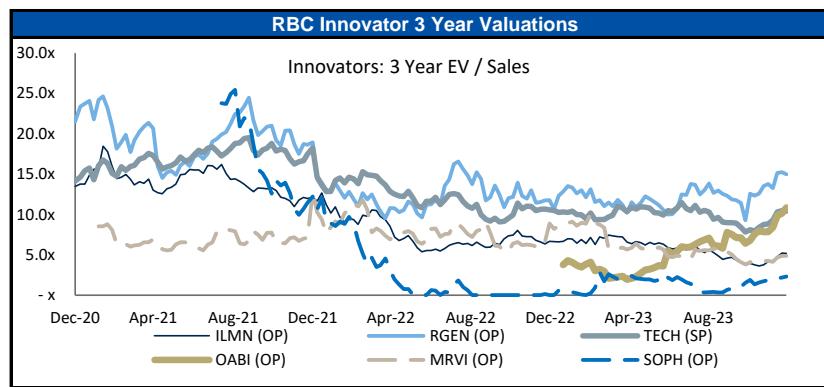
TECH Investment Thesis	
<ul style="list-style-type: none"> Roll-up strategy has worked: Buying unique and fast-growing assets in the LST space has helped drive outperformance and above-market growth since (outgoing) CEO Chuck Kummeth took over in 2013 New leadership: While we are confident incoming CEO Kim Kelderman – who officially takes over on February 1st and has over 30 years of industry experience – will be a great leader, duplicating Mr. Kummeth's success is no easy task Valuation ambiguity: Until TECH can return to sustainable DD revenue growth, it's unclear if TECH is an expensive integrator or a cheap integrator Good end-market exposure: TECH plays in the 'buzz-word' categories of drug development, and many investors value this growth diversification strategy 	

TECH Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$85	10%
Upside	\$103	33%
Downside	\$50	-35%
Risk/Reward	\$0.95	



TECH Summary Financials				
FYE Jun	CY'22A	CY'23E	CY'24E	CY'25E
RBC Estimates				
Revenue	1,120	1,151	1,235	1,364
EV / Revenue	11.4x	11.1x	10.4x	9.4x
EBITDA	442	429	457	527
EV / EBITDA	28.9x	29.8x	28.0x	24.2x
EPS	\$1.96	\$1.90	\$2.04	\$2.40
P/E	39.4x	40.5x	37.9x	32.2x

TECH Trading Info			
	\$M except per share data		
Price as of 12/30/23	\$77.16	Market Cap	\$12,495
52 Week Low	\$51.79	ADV (\$M)	\$88.6
52 Week High	\$89.91	Net Leverage	0.7x



Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC; valuation chart based on NTM FacSet estimates.

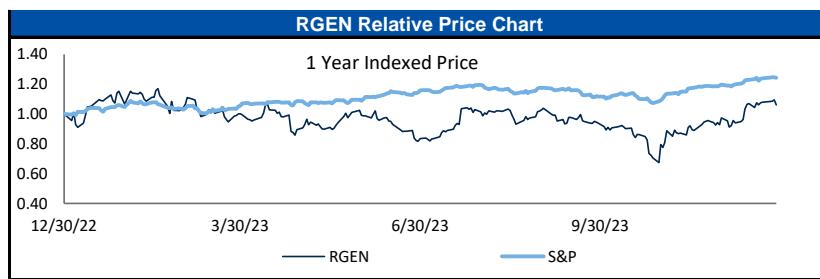
** Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

Repligen Corporation (NASDAQ: RGEN) – Outperform, \$200 Price Target

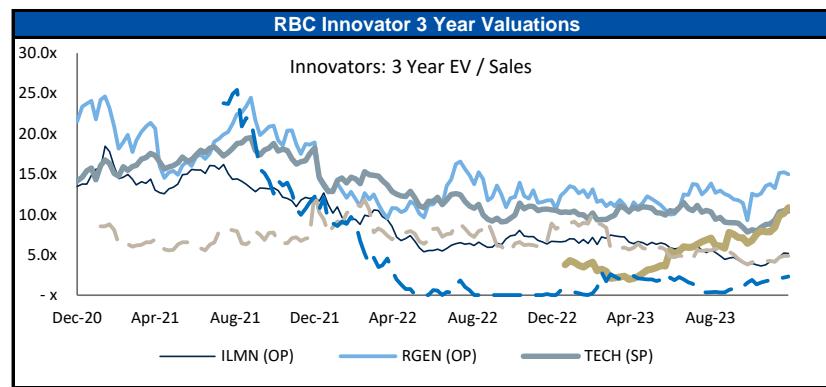
RGEN Investment Thesis	
▪ Pure-play bioproduction leader: RGEN is one of the true innovators in the biopharma market and has a good track record of growing well above LST peers	
▪ Best-in-class management team and products: RGEN's CEO Tony Hunt made the right early investments in bioproduction technology, allowing the company to grow sales ~10x since 2015	
▪ Best ability to navigate rough waters: Mr. Hunt's early recognition of customer buying patterns bodes well for his ability to weather the storm	
▪ Valuation hurdle: 15.0x CY'24E sales screens expensive; though with the best product offering and history of best execution in the most attractive end-market in LST (bioproduction), many investors can look past NTM multiples	

RGEN Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$200	11%
Upside	\$244	36%
Downside	\$98	-45%
Risk/Reward	\$0.78	



RGEN Summary Financials				
FYE Dec	\$M except per share data			
RBC Estimates	CY'22A	CY'23E	CY'24E	CY'25E
Revenue	802	641	669	851
EV / Revenue	12.5x	15.6x	15.0x	11.8x
EBITDA	247	133	143	241
EV / EBITDA	40.5x	75.4x	70.1x	41.5x
EPS	\$3.28	\$1.71	\$1.69	\$2.98
P/E	54.9x	105.2x	106.1x	60.4x

RGEN Trading Info			
	\$M except per share data		
Price as of 12/30/23	\$179.80	Market Cap	\$10,238
52 Week Low	\$110.45	ADV (\$M)	\$110
52 Week High	\$200.98	Net Leverage	NM



Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC : valuation chart based on NTM FactSet estimates.

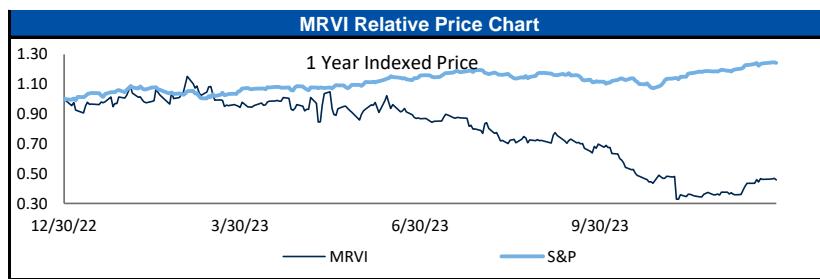
** Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

Maravai Lifesciences Holdings, Inc. (NASDAQ: MRVI) – Outperform, \$12 Price Target

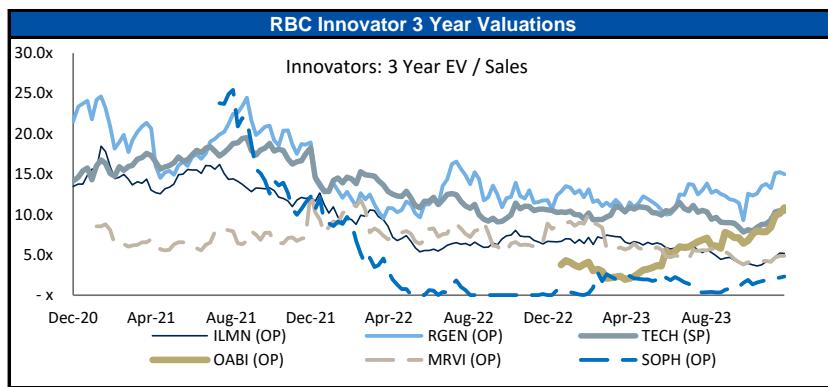
MRVI Investment Thesis	
<ul style="list-style-type: none"> 15%+ growth and 40%+ EBITDA margins: MRVI is the best long-term way to invest in the expanding investments by biopharma in emerging technologies, offering best-in-class growth and margins Long-term COVID beneficiary: Cash generated during the pandemic from the sale of an essential component in the COVID vaccine has transformed the balance sheet and inorganic growth opportunities; though it also caused a recent slowdown in revenue growth and margin pressure from over-investment in manufacturing Near-term transition: A new CEO; a slowdown in pharma investments in new cell and gene therapy programs; and investor appetite for emerging technologies have all created near-term unknowns that will take 6-12 months to be fully resolved 	

MRVI Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$12	83%
Upside	\$15	129%
Downside	\$5	-24%
Risk/Reward	\$5.45	



MRVI Summary Financials				
FYE Dec	CY'22A	CY'23E	CY'24E	CY'25E
RBC Estimates				
Revenue	883	284	260	293
EV / Revenue	1.8x	5.6x	6.1x	5.4x
EBITDA	638	59	52	79
EV / EBITDA	2.5x	26.9x	30.4x	20.2x
EPS	\$1.80	\$0.02	\$0.02	\$0.11
P/E	3.6x	397.0x	271.1x	62.4x

MRVI Trading Info			
	\$M except per share data		
Price as of 12/30/23	\$6.55	Market Cap	\$1,644
52 Week Low	\$4.52	ADV (\$M)	\$13.2
52 Week High	\$16.90	Net Leverage	NM



Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC; valuation chart based on NTM FactSet estimates.

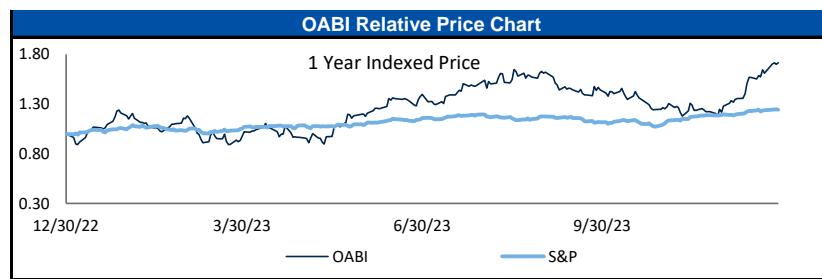
** Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

OmniAb, Inc. (NASDAQ: OABI) – Outperform, \$7 Price Target

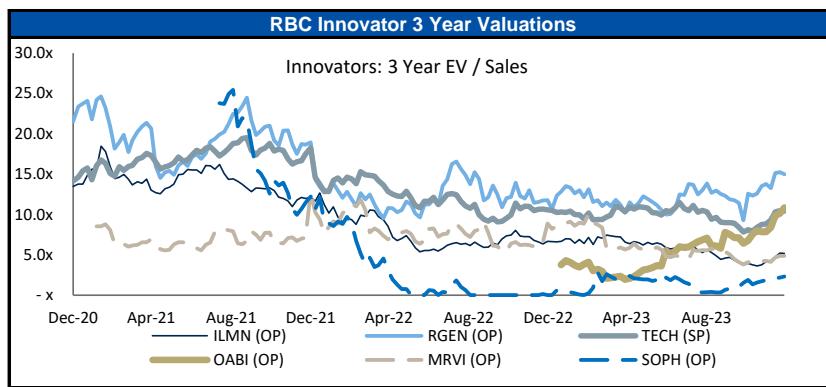
OABI Investment Thesis	
<ul style="list-style-type: none"> Exposure to growth in monoclonal antibody therapies: OABI operates in the fastest-growing market of biological therapeutics with the broadest offerings of transgenic animal models and AI powered screening technologies aimed at increasing the likelihood of monoclonal antibodies obtaining regulatory approval and speeding commercial launch Insulated from near-term headwinds: As a pure-play in the field of antibody drug discovery, OABI has not been impacted by headwinds (inventory destocking, China exposure, and conservative spend in biopharma and biotech) because it does not carry inventory, does not have China exposure, and doesn't sell equipment Diversified revenue mix: By partnering with pharma customers, OABI is able to capitalize on every stage of therapy lifespan – from discovery to market – with very little binary risk from a single program 	

OABI Price Target Summary		Potential
RBC 12-Month Price Target	\$7	13%
Upside	\$9	46%
Downside	\$3	-51%
Risk/Reward	\$0.89	



OABI Summary Financials				
FYE Dec	\$M except per share data			
RBC Estimates	CY'22A	CY'23E	CY'24E	CY'25E
Revenue	59	37	52	62
EV / Revenue	8.8x	14.1x	9.9x	8.4x
EBITDA	-8	-48	-36	-28
EV / EBITDA	NM	NM	NM	NM
EPS	-\$0.26	-\$0.51	-\$0.40	-\$0.34
P/E	NM	NM	NM	NM

OABI Trading Info		
	\$M except per share data	
Price as of 12/30/23	\$6.17	Market Cap
52 Week Low	\$3.07	ADV (\$M)
52 Week High	\$6.20	Net Leverage



Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC; valuation chart based on NTM FactSet estimates.

** Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

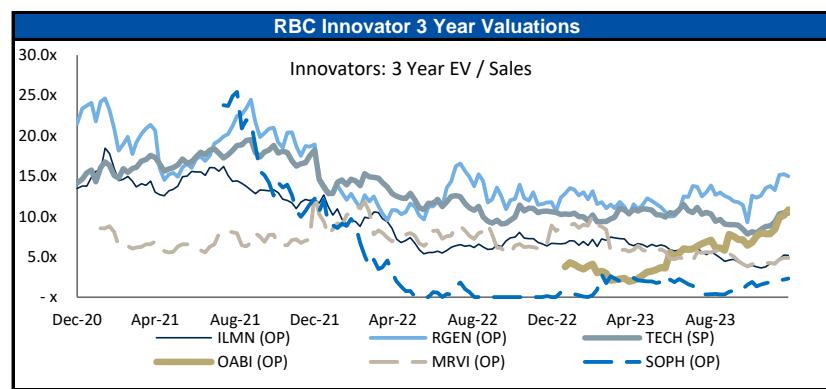
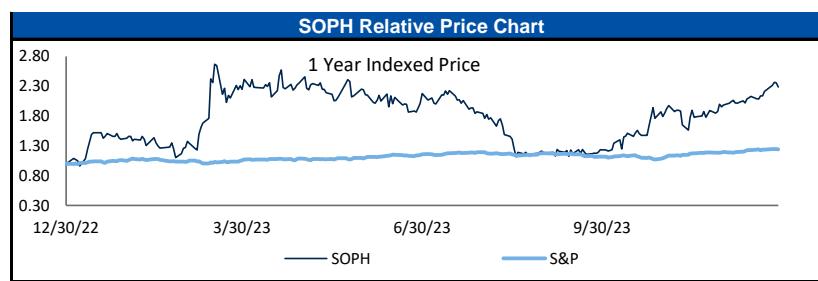
SOPHiA GENETICS SA (NASDAQ: SOPH) – Outperform, \$8 Price Target

SOPH Investment Thesis	
▪ LST market exposure; no near-term headwinds: As a SaaS company, SOPH isn't exposed to near-term dynamics pressuring other Life Science Tools (LST) companies – inventory de-stocking, weak biotech funding, and a slowdown in China research	
▪ Product agnostic software targeting \$21B TAM: SOPHiA's software can be used to analyze data from any sequencer and with any liquid biopsy test	
▪ Beneficiary of LT growth in NGS: We believe next-gen sequencing (NGS) is still in its infancy, and as sequencing costs decline, elasticity of demand will drive continued growth in the number of sequences done. SOPH captures a per-click fee, so will be a direct beneficiary of higher NGS volumes	

SOPH Summary Financials				
FYE Dec	CY'22A	CY'23E	CY'24E	CY'25E
RBC Estimates				
Revenue	48	63	84	108
EV / Revenue	3.6x	2.7x	2.1x	1.6x
EBITDA	-68	-48	-35	-24
EV / EBITDA	NM	NM	NM	NM
EPS	-\$1.12	-\$0.77	-\$0.51	-\$0.34
P/E	NM	NM	NM	NM

SOPH Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$8	70%
Upside	\$11	134%
Downside	\$3	-36%
Risk/Reward	\$3.68	

SOPH Trading Info		
	\$M except per share data	
Price as of 12/30/23	\$4.71	Market Cap
52 Week Low	\$1.85	ADV (\$M)
52 Week High	\$5.77	Net Leverage



Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC; valuation chart based on NTM FacSet estimates.

** Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

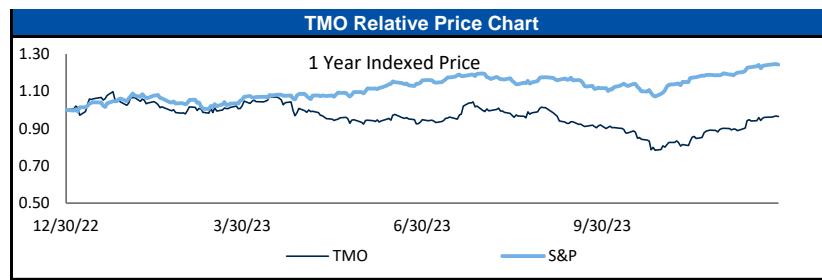
Relative Price Chart indexed to year ago period.

Thermo Fisher Scientific Inc. (NYSE: TMO) – Outperform, \$592 Price Target

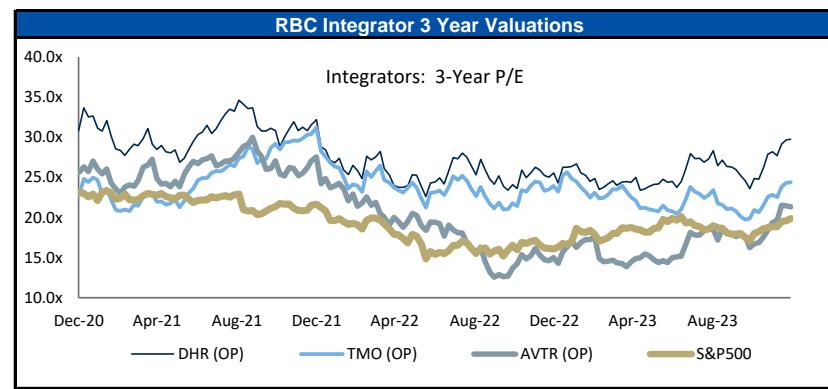
TMO Investment Thesis	
<ul style="list-style-type: none"> One-stop shop for the life sciences: Through a series of well executed transactions, TMO has become the vendor of choice for nearly all products and services for life sciences customers Early and smart investments in cell & gene therapy: TMO pivoted from a pure play life science tools provider to become an invaluable partner to emerging biopharma programs, something competitors were late to recognize Solid financial discipline: With a relatively low cost of capital driven by tax and capital market planning, TMO's long success of M&A integration should drive outperformance in the future 	

TMO Summary Financials				
FYE Dec	\$M except per share data			
RBC Estimates	CY'22A	CY'23E	CY'24E	CY'25E
Revenue	44,915	42,719	42,995	45,528
EV / Revenue	5.2x	5.5x	5.5x	5.2x
EBITDA	11,971	10,823	10,918	11,608
EV / EBITDA	19.6x	21.7x	21.5x	20.3x
EPS	\$23.24	\$21.52	\$21.62	\$23.99
P/E	22.8x	24.7x	24.5x	22.1x

TMO Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$592	12%
Upside	\$799	51%
Downside	\$360	-32%
Risk/Reward	\$1.57	



TMO Trading Info		\$M except per share data	
Price as of 12/30/23	\$530.79	Market Cap	\$205,947
52 Week Low	\$415.60	ADV (\$M)	\$893
52 Week High	\$609.85	Net Leverage	2.7x



Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC valuation chart based on NTM FactSet estimates.

*\$ Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

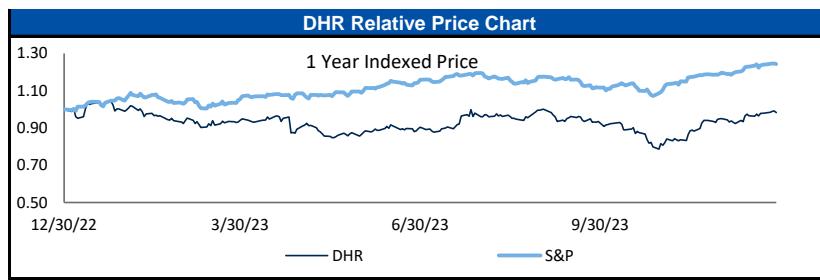
Relative Price Chart indexed to year ago period.

Danaher Corporation (NYSE: DHR) – Outperform, \$254 Price Target

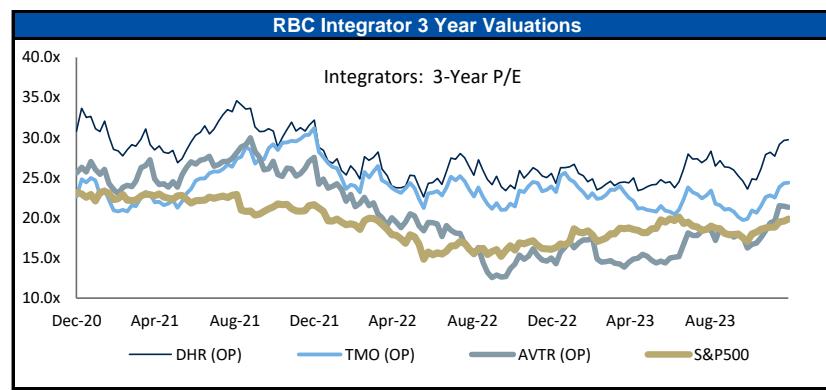
DHR Investment Thesis	
▪ End-to-end solution in bioproduction: The combination of Cytiva and Pall has created a market leader in one of the most attractive long-term markets in LST	
▪ Cash created by COVID allows for more M&A: The sale of testing kits (GeneXpert) and vaccine components for COVID during the pandemic allowed DHR to clean up the balance sheet	
▪ EAS spin adds M&A capacity: Now a pure-play life science company, DHR has the lowest leverage of the integrators	
▪ Easy way to play cell & gene therapy: DHR will be a vendor of choice for many future biopharma programs	

DHR Summary Financials				
FYE Dec	\$M except per share data			
RBC Estimates	CY'22A	CY'23E	CY'24E	CY'25E
Revenue	26,643	23,344	24,178	26,481
EV / Revenue	6.8x	7.7x	7.5x	6.8x
EBITDA	9,710	7,349	7,879	8,918
EV / EBITDA	18.6x	24.5x	22.9x	20.2x
EPS	\$9.71	\$7.36	\$7.85	\$9.16
P/E	23.8x	31.4x	29.5x	25.3x

DHR Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$254	10%
Upside	\$305	32%
Downside	\$127	-45%
Risk/Reward	\$0.71	



DHR Trading Info			
	\$M except per share data		
Price as of 12/30/23	\$231.34	Market Cap	\$172,557
52 Week Low	\$182.09	ADV (\$M)	\$653
52 Week High	\$279.32	Net Leverage	1.0x



Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC; valuation chart based on NTM FactSet estimates.

*\$ Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

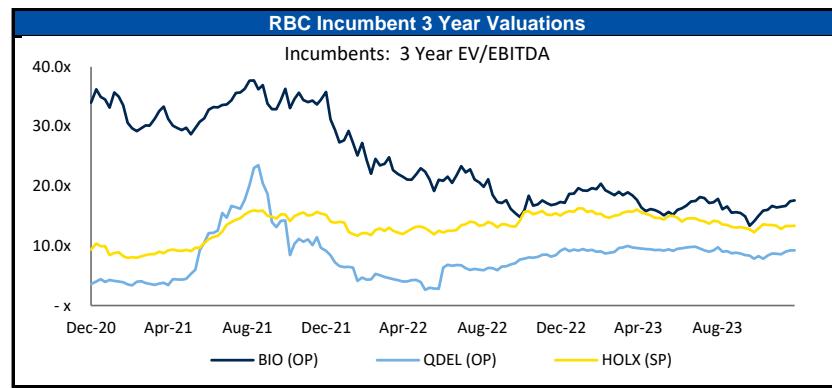
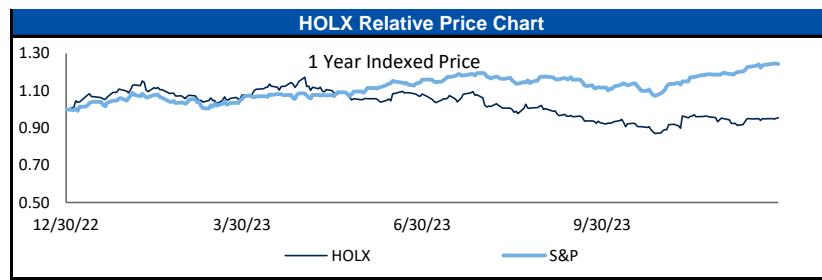
Hologic, Inc. (NASDAQ: HOLX) – Sector Perform, \$76 Price Target

HOLX Investment Thesis	
<ul style="list-style-type: none"> Near-term success creates long-term opportunities: Hologic was one of the biggest beneficiaries of global demand for molecular ("PCR") COVID tests, and the company has the balance sheet to pursue larger transaction Long-term growth will depend on M&A: Medium-term guide of 5-7% revenue growth is very achievable; but as their diagnostics test offering becomes fully penetrated, HOLX will need M&A to sustain MSD growth longer term No clear strategy: Without TAM expansion, we see little room for multiple expansion until HOLX shows a viable LT growth strategy Balance sheet provides downside protection: Without M&A to drive TAM expansion, share buybacks provide a good floor in the stock 	

HOLX Summary Financials				
FYE Sep	\$M except per share data			
RBC Estimates	CY'22A	CY'23E	CY'24E	CY'25E
Revenue	4,466	3,946	3,970	4,135
EV / Revenue	4.0x	4.5x	4.5x	4.3x
EBITDA	1,694	1,254	1,311	1,352
EV / EBITDA	10.5x	14.2x	13.5x	13.1x
EPS	\$4.93	\$3.83	\$4.08	\$4.36
P/E	14.5x	18.7x	17.5x	16.4x

HOLX Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$76	6%
Upside	\$102	43%
Downside	\$68	-5%
Risk/Reward	\$8.86	

HOLX Trading Info			
	\$M except per share data		
Price as of 12/30/23	\$71.45	Market Cap	\$17,651
52 Week Low	\$64.02	ADV (\$M)	\$128
52 Week High	\$87.88	Net Leverage	0.1x



Source: RBC Capital Markets estimates, FactSet, company filings and investor presentations.

Summary Financials based on RBC; valuation chart based on NTM FactSet estimates.

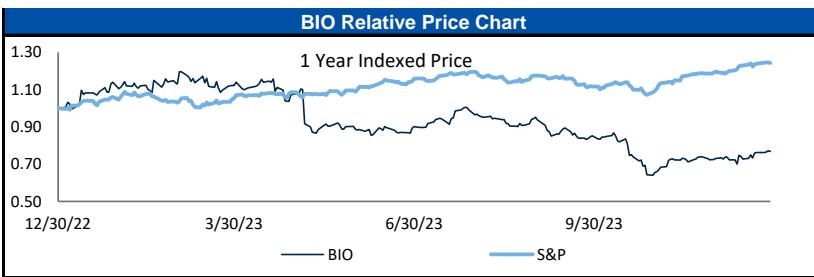
** Risk / Reward estimate = (upside - current price) / (current price downside) represents potential \$ gain per \$1 of risk.

Relative Price Chart indexed to year ago period.

Bio-Rad Laboratories, Inc (NYSE: BIO) – Outperform, \$484 Price Target

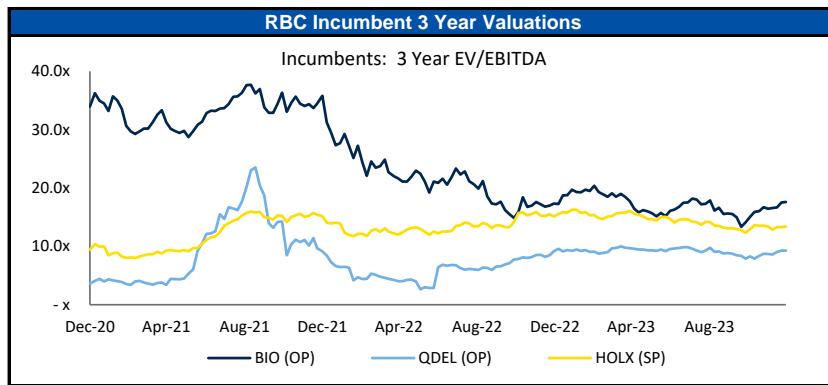
BIO Investment Thesis	
<ul style="list-style-type: none"> Best-in-class growth and margin expansion: ~10-year company transformation should drive higher LT revenue growth and margin expansion than peers New product launches expand TAM: Bio-Rad's ddPCR has >80% share of an emerging market that is growing >20% and has a TAM potential of >\$5B Cheapest stock in LST: 1.1x FY'24E sales and 6.0x EBITDA make BIO the cheapest name in the group Balance sheet optionality: ~\$6.4B in Cash & LT investments (~\$220 / share) Sartorius strategy unknown: The future of BIO's 35% ownership in the publicly traded bioproduction company is a question mark that deters many investors 	

BIO Price Target Summary		
	Potential	
RBC 12-Month Price Target	\$484	50%
Upside	\$787	144%
Downside	\$233	-28%
Risk/Reward	\$5.16	



BIO Summary Financials				
FYE Dec	\$M except per share data			
RBC Estimates	CY'22A	CY'23E	CY'24E	CY'25E
Revenue	2,802	2,676	2,701	2,885
EV / Revenue	1.1x	1.1x	1.1x	1.0x
EBITDA	636	497	501	575
EV / EBITDA	4.8x	6.1x	6.0x	5.3x
EPS	\$14.43	\$11.53	\$12.01	\$13.95
P/E	22.4x	28.0x	26.9x	23.2x

BIO Trading Info			
	\$M except per share data		
Price as of 12/30/23	\$322.89	Market Cap	\$9,436
52 Week Low	\$261.59	ADV (\$M)	\$92
52 Week High	\$509.62	Net Leverage	NM



Management Questions – AVTR

- What does the path to recovery look like in 2024 – more back half weighted?
- What are the cost headwinds and tailwinds in 2024, outside of revenue growth?
- How quickly should we expect to see the impact of the \$300m cost savings initiative?
- Will these cost cuts impact LT growth?
- How does AVTR plan to increase the mix between proprietary and 3rd party materials?
- What are target areas of M&A?
- Are there any products / business units that are non-core and could be spun-out or sold?
- Was AVTR a net share gainer or loser in 2023?
- What are expectations for the pricing environment in the next 12-24 months?
- Which business unit (or end market) is likely to rebound the quickest?

Management Questions – BIO

- Any updates on the CFO search? Should we expect an internal or external candidate?
- Is SRT still a strategic investment? If so, what value does the SRT bring to BIO?
- Should investors expect anything to happen with that investment prior to 2028? If so, what are those options?
- Are there other ways to enter the bioproduction market besides SRT?
- ddPCR – was Q3 a temporary slowdown or has there been a major change in that market?
- Where do you stand on product iteration on consumable pull-through for ddPCR?
- How quickly will liquid biopsy and diagnostics testing be big contributors for the ddPCR platform?
- What are potential areas of M&A that would help the long-term growth and margin profile of BIO?
- Succession planning and other long-term thoughts on BIO as a standalone company?

Management Questions – DHR

- How has the rebrand of DHR post Veralto gone?
- Following the integration of Cytiva and Pall, what is the appetite to integrate other M&A candidates?
- Areas of capital deployment – all M&A, or is a buyback / dividend an option for the company?
- What is the timeline for integration of Abcam into DHR?
- And product launch plans (ie – non RUO) for Abcam now that it's under the DHR umbrella?
- Would DHR ever consider becoming an integrated service / product company, similar to the TMO strategy?
- Cost headwinds and tailwinds in 2024: comp accrual, restructuring, deal synergies?
- What growth rate is required for the DBS model to show 50+bps of margin expansion annually?

Management Questions – HOLX

- How have margins fared since expanding facilities and capacity for instruments and assays?
- What is the updated timeline on backorders of gantry systems?
- What is the menu expansion plan for Panther?
- What is the current M&A strategy and ability to take leverage?
- Are share buybacks still the best capital deployment strategy?
- Long-term outlook for HPV testing – both from potential industry guidelines and from HPV vaccine impacts?
- How is the move to ASCs and image outsourcing impacting the demand for mammography equipment?
- Are competitive threats from AI something investors should be concerned about for the breast health business?
- Are there non-core assets that can be spun out or sold?

Management Questions – ILMN

- What is the timeline for GRAIL's divestment and current options on the table?
- Would you provide us with an update on adoption rates of the NovaSeq X since launch?
- How has access to the 25B flow cells influenced usage rates on the NovaSeqX?
- What is the progress on X-Leap chemistry for the NextSeq 1K/2K?
- Has ILMN lost share since new competitive DNA sequencer companies have entered the market?
- What is the path to margin expansion back to pre-covid levels?
- Is there an appetite to acquire other sequencing technologies in the market?
- What are M&A potentials, if any, given the FTC rulings on GRAIL?
- Is ILMN a growth company or margin expansion company?
- What are cost tailwinds and headwinds in 2024 from restructuring and comp / bonus accrual (if any)?

Management Questions – MRVI

- What does the path to recovery look like in 2024?
- What is visibility on ordering patterns, especially from drug candidate program progression?
- Post COVID, what are the end markets where you see the most growth potential – mAbs, GLP-1s, cell and gene therapy, etc?
- How important is the M&A strategy to growth?
- Has the competitive landscape changed over the last 6-12 months?
- Have any customers reached out to re-validate shelf life re-validation on products?
- What is the long-term strategy of GTCR?
- Given the unique product offering, would being part of a larger organization make growth easier?

Management Questions – OABI

- What are some of the key programs investors should be looking at in 2024 for meaningful updates?
- How many current projects are using OABI technology?
- What stages are these current projects at in terms of clinical trial timeline?
- When would OABI be able to be profitable?
- What has been the response to OmniDab?
- Is there an appetite for M&A – either for complementary product offerings or product extensions?

Management Questions – QDEL

- What has been the response to the US launch of Savanna?
- Where is Savanna currently being placed in the market?
- What are the current expansion plans in place for Savanna in terms of menu and revenue targets?
- What is the status of manufacturing lines for Savanna cartridges to keep up with demand?
- Has there been interest in bundling Savanna with other equipment like Sofia or VITROS?
- Are there any cost headwind / tailwinds in 2024 from comp bonus accrual or restructuring?
- What is the margin impact to QDEL from Savanna in 2024 and longer term?
- Cadence of menu expansion – how important is that to market acceptance?
- How much of Savanna success will come from competitive wins?

Management Questions – RGEN

- What does the path to recovery look like in 2024?
- What areas of bioproduction will return first?
- What is the long-term market growth forecast? And how much of that is pricing vs volume?
- When will bioproduction destocking end?
- Have customers made requests for re-validation or extension of production shelf life?
- What are cost headwinds or tailwinds in 2024 from bonus accrual, restructuring, or other?
- How important will M&A be for medium and long-term growth?
- Have there been market share shifts exiting the pandemic?

Top Ten Management Questions – SOPH

- What is the long-term geographic expansion plan? Will the US ever take over as the largest end-market?
- Have customers pushed back on pricing or looked for volume discounts as the pricing of sequencing comes down?
- What gives you confidence that end-markets in sequencing are still healthy?
- When does the biopharma strategy via drug development become a meaningful part of the strategy?
- Have there been any competitive entrants or product offerings that have extended your sales cycle?
- Are there any cost tailwinds or headwinds going into 2024?

Management Questions – TECH

- How soon do you anticipate returning to DD revenue growth?
- What is the status of OEM orders for TECH?
- Any updates from China?
- Does Wilson Wolf prevent you from pursuing sizeable M&A prior to 2027?
- Any competitive noise from DHR (Abcam) or TMO (Olink) that could disrupt market share?
- GMP capabilities – what is the status there and can you quantify the opportunity?
- How important will M&A be for long term growth?
- Are there any ERP or restructuring plans as you integrate recent deals?

Management Questions – TMO

- Should the market return to normal growth in 2H'24, or is that too optimistic?
- Interest rate changes – how, if any, has that impacted your investment strategy?
- What are some risks / potential tailwinds for long-term tax rate?
- Are there any cost headwinds or tailwinds in 2024 – bonus accrual, restructuring, etc?
- Historic model of 50-100bps of annual EBIT margin expansion: what growth is required to hit that model?
- Longer term, can TMO continue to take 100-200bps of market share?
- Areas of interest, or gaps in the portfolio required to be the true one-stop-shop for biopharma?
- How does M&A (pharma buying biotech) typically impact your revenue if the customer is a buyer or seller?
- China commentary and long-term expectations for growth?
- Budget flush – any chance there is a bolus in Q1'24 if there was no flush in Q4'23?
- Long term proteomics strategy – how quickly does that business accelerate from a better market presence as opposed to customer appetites for investments?

Comparable Company Analysis

Life Science Tools & Diagnostics - RBC Coverage Universe Valuations																	
Integrators			RBC		12/30/23		Market		Price / CY EPS			EV / CY EBITDA			EV / CY Revenue		
			Rating	PT	Price	Cap(\$M)	2023E	2024E	2025E	2023E	2024E	2025E	2023E	2024E	2025E		
DHR	Danaher Corporation	OP	\$254		\$231.34	172,557	31.4x	29.5x	25.3x	24.5x	22.9x	20.2x	7.7x	7.5x	6.8x		
TMO	Thermo Fisher Scientific Inc.	OP	\$592		\$530.79	205,947	24.7x	24.5x	22.1x	21.7x	21.5x	20.3x	5.5x	5.5x	5.2x		
AVTR	Avantor, Inc.	OP	\$28		\$22.83	15,479	22.1x	21.0x	17.9x	16.2x	16.0x	14.4x	3.0x	3.0x	2.8x		
Mean							26.1x	25.0x	21.8x	20.8x	20.1x	18.3x	5.4x	5.3x	4.9x		
Median							24.7x	24.5x	22.1x	21.7x	21.5x	20.2x	5.5x	5.5x	5.2x		
Incumbents																	
BIO	Bio-Rad Laboratories, Inc. Class A	OP	\$484		\$322.89	9,436	28.0x	26.9x	23.2x	6.1x	6.0x	5.3x	1.1x	1.1x	1.0x		
HOLX	Hologic, Inc.	SP	\$76		\$71.45	17,651	18.7x	17.5x	16.4x	14.2x	13.5x	13.1x	4.5x	4.5x	4.3x		
QDEL	QuidelOrtho Corporation	OP	\$130		\$73.70	4,960	14.3x	14.5x	12.0x	8.9x	9.0x	8.1x	2.4x	2.4x	2.3x		
Mean	Mean						20.3x	19.6x	17.2x	9.7x	9.5x	8.8x	2.7x	2.7x	2.6x		
Median	Median						18.7x	17.5x	16.4x	8.9x	9.0x	8.1x	2.4x	2.4x	2.3x		
Innovators																	
MRVI	Maravai Lifesciences	OP	\$12		\$6.55	1,644	397.0x	271.1x	62.4x	26.9x	30.4x	20.2x	5.6x	6.1x	5.4x		
ILMN	Illumina, Inc.	OP	\$258		\$139.24	22,000	205.6x	133.6x	58.6x	54.1x	44.2x	25.7x	5.2x	5.1x	4.6x		
TECH	Bio-Techne Corporation	SP	\$85		\$77.16	12,495	40.5x	37.9x	32.2x	29.8x	28.0x	24.2x	11.1x	10.4x	9.4x		
RGEN	Repligen Corporation	OP	\$200		\$179.80	10,238	105.2x	106.1x	60.4x	75.4x	70.1x	41.5x	15.6x	15.0x	11.8x		
OABI	OmniAb, Inc.	OP	\$7		\$6.17	614	NM	NM	NM	NM	NM	NM	14.1x	9.9x	8.4x		
SOPH	SOPHiA GENETICS SA	OP	\$8		\$4.71	305	NM	NM	NM	NM	NM	NM	2.7x	2.1x	1.6x		
Mean	Mean						187.1x	137.2x	53.4x	46.6x	43.2x	27.9x	9.1x	8.1x	6.9x		
Median	Median						155.4x	119.9x	59.5x	42.0x	37.3x	25.0x	8.4x	8.0x	6.9x		

Source: RBC Capital Markets estimates, company filings, FactSet pricing. BIO multiples assume SRT (net of tax) investment is included as cash.

Analyst Introduction

- 17 years as an institutional healthcare investor; joined RBC in 2022 with goal to provide unique and thought-provoking research.
- We believe the Life Science Tools & Diagnostics sector has an unmatched diversity of products, end markets, and growth opportunities, making it a very attractive space for any investor regardless of risk appetite.
- Sector-specific issues, along with the current macro backdrop, have made picking stocks a daunting task, in our view.
- Buyside experience brings depth, rigor, and independent thought processes required to navigate this market.
- Leveraging this experience, our goal is to provide valuable research that will:
 - simplify a very complex industry;
 - offer innovative ways to differentiate analyzing a stock vs analyzing a company; and
 - provide a fresh perspective by offering unique ways to interact with industry experts and management teams.
- Engage with clients early and often on ideas; and give them the tools to invest with confidence.



Conor McNamara, CFA

- Previously at three long / short healthcare funds - Tamarack Capital Management, Hudson Bay Capital, and FrontPoint Partners
- Focus was on Life Science Tools & Diagnostics, mid-cap med devices and services, and HC / consumer hybrids
- Started Wall Street career in IBD division of Lehman Brothers out of undergrad
- Econ major / math minor at Occidental College
- Interests: golf, exercise, watching my kids' sports, and making up new excuses for still not learning to surf after living in San Diego for 10 years

Simplifying a complex industry



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Rating	Count	Percent	Investment Banking		
			Serv./Past 12 Mos.		
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HOLD [Sector Perform]	575	39.66	154	26.78	
SELL [Underperform]	46	3.17	6	13.04	

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