



*Fueling life sciences through
transformative transactions*

Q3 2016: TRENDS IN BIOTECH TRANSACTIONAL ACTIVITY

October 25th, 2016

Locust Walk focuses on building companies across three distinct segments

Emerging Biopharma



Finance innovation by parallel processing global and regional deals with private and public capital tracks

Growth Biopharma



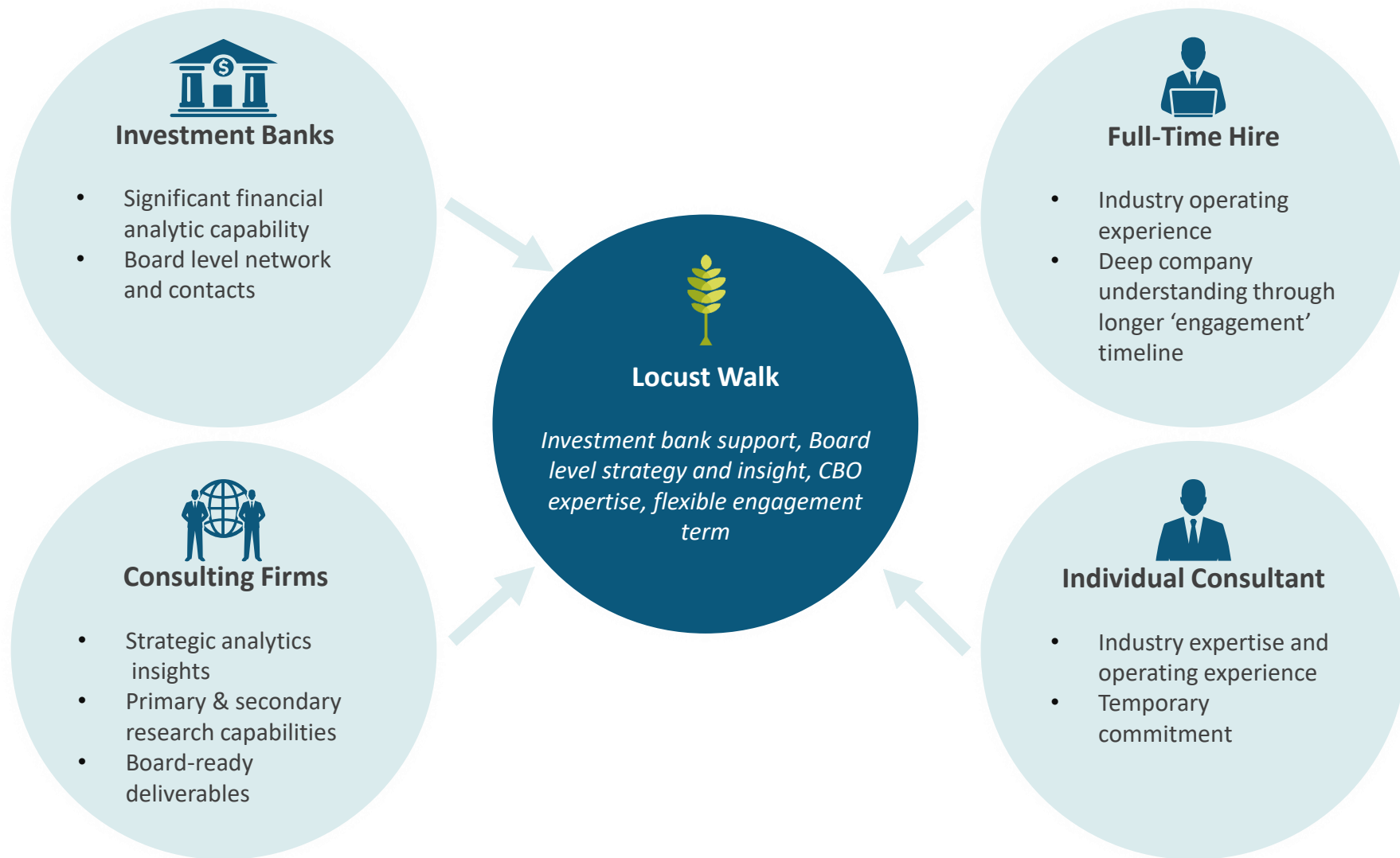
Rapidly expand product mix and grow pipeline to maximize value and mitigate risk

Medical Device



Commercialize products via strategic partnerships and innovative capital sourcing to maximize value

Locust Walk is uniquely positioned to bring your transaction from search to signature



Locust Walk has helped build many successful biopharma companies

 <p>Collaboration to develop & commercialize KHK's anti-LIGHT mAb</p> <p>KYOWA KIRIN</p> <p>Undisclosed</p>	 <p>Advised on IPO process and syndicate selection</p> <p>\$25M NASDAQ IPO</p>	 <p>Sell-side Asian Licensing Agreement for fasinumab</p> <p>Mitsubishi Tanabe Pharma</p> <p>\$55M Upfront, \$270M Milestones</p>	 <p>Sell-side Asian Licensing Agreement for Tecarfarin</p> <p>LEE'S PHARM.</p> <p>李氏大藥廠</p> <p>Undisclosed Value</p>	 <p>Buy-side licensing agreement for ALT1103 for Acromegaly</p> <p>antisense THERAPEUTICS</p> <p>\$5M Upfront, \$105M Milestones, Plus Royalties</p>	 <p>Buy-side product acquisition of Somatoprim for Acromegaly</p> <p>Aspireo Pharmaceuticals</p> <p>\$30M in Cortendo Equity</p>
 <p>Advised private placement to leading healthcare investors</p> <p>RACapital BROADFIN HealthCap</p> <p>LCA NEA TVM Capital</p> <p>Granite Point Capital</p> <p>\$33.2M Private Placement</p>	 <p>Sell-side North American Oravig® rights</p> <p>DARA BiOSciences</p> <p>Undisclosed Value</p>	 <p>Advised on Series B financing</p> <p>Life Science Investors</p> <p>\$24.3M Series B</p>	 <p>Advised private placement to leading healthcare investors</p> <p>RACapital BROADFIN HealthCap NEA</p> <p>\$26.4M Private Placement</p>	 <p>Sell-side Option Agreement for OTC Topical Ibuprofen</p> <p>Leading Consumer Health Co</p> <p>Undisclosed Value</p>	 <p>Sell-side regional Licensing Agreement for TSX-002</p> <p>aspen HOLDINGS</p> <p>\$15M Upfront, \$80M Milestones, Plus Royalties</p>
 <p>Advised on Series A financing</p> <p>Family Office Investors</p> <p>\$7M Series A</p>	 <p>Sell-side US Commercialization Agreement for Sitavig</p> <p>INNOCUTIS</p> <p>advancing dermatology</p> <p>Undisclosed Value</p>	 <p>M&A Advisory on Fabrus / Senesco Merger</p> <p>SENESCO</p> <p>\$20M Transaction Value</p>	 <p>Advised on Follow-on Strategic Investment</p> <p>proteus DIGITAL HEALTH</p> <p>\$63M Series F</p>	 <p>Buy-side Collaboration for Digital Technology</p> <p>proteus DIGITAL HEALTH</p> <p>Undisclosed Value</p>	 <p>Sell-side Actimmune® Commercial Product</p> <p>Vidara THERAPEUTICS</p> <p>\$55M Upfront, \$4M Royalty</p>
 <p>Sell-side Deal Strategy and Valuation Support</p> <p>Lundbeck</p> <p>\$200M Upfront, \$1.8B Total</p>	 <p>Sell-side Licensing Agreement for AT-406</p> <p>DEBIOPHARM GROUP</p> <p>Undisclosed Value</p>	 <p>Sell-side License/Research Collaboration for ANG1005</p> <p>geron</p> <p>\$35M Upfront, Milestones Undisclosed</p>	 <p>Spinoff and Partnership for Synthetic Genomics Vaccines</p> <p>NOVARTIS</p> <p>Undisclosed Value</p>	 <p>Sell-side Licensing Agreement for OTC Topical Ibuprofen</p> <p>Leading Consumer Health Co</p> <p>Undisclosed Value</p>	 <p>Sell-side Japan Licensing Agreement for Salirasib</p> <p>ono</p> <p>Undisclosed Value</p>

Locust Walk has closed 25 transactions across a variety of deal types, stages of development and therapeutic areas

* Sorted in Reverse Chronological Order

Our leadership includes successful biopharma operating, investing and transaction executives supported by a strong analytical team



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- Healthcare Banker: **UBS**
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*Registered Reps with Locust Walk Securities, LLC.

Locust Walk Quarterly Update – Financial environment improves

- **Biopharma public markets continue to stabilize**

- ▶ Nasdaq Biotech Index (NBI) reached all-time high July 2015 at \$397, closed 2015 at \$338 (-14.9%)
- ▶ In January 2016, NBI slid to \$267 and to \$251 in February 2016 (-36.8% from peak, -25.7% from EoY)
- ▶ Market tested \$250 in April 2016, again in June 2016, ending Q2 at \$257
- ▶ July 2016 had steady gains, continuing into August, with a high close for Q3 at \$300 on September 22

- **Biopharma IPOs remain low**

- ▶ Dollar raise in IPOs lowest in 2 years (\$400M raised in 7 deals completed during Q3)
- ▶ Post market performance of class of 2015 improved, but majority still under IPO offering price

- **Follow-ons are down significantly**

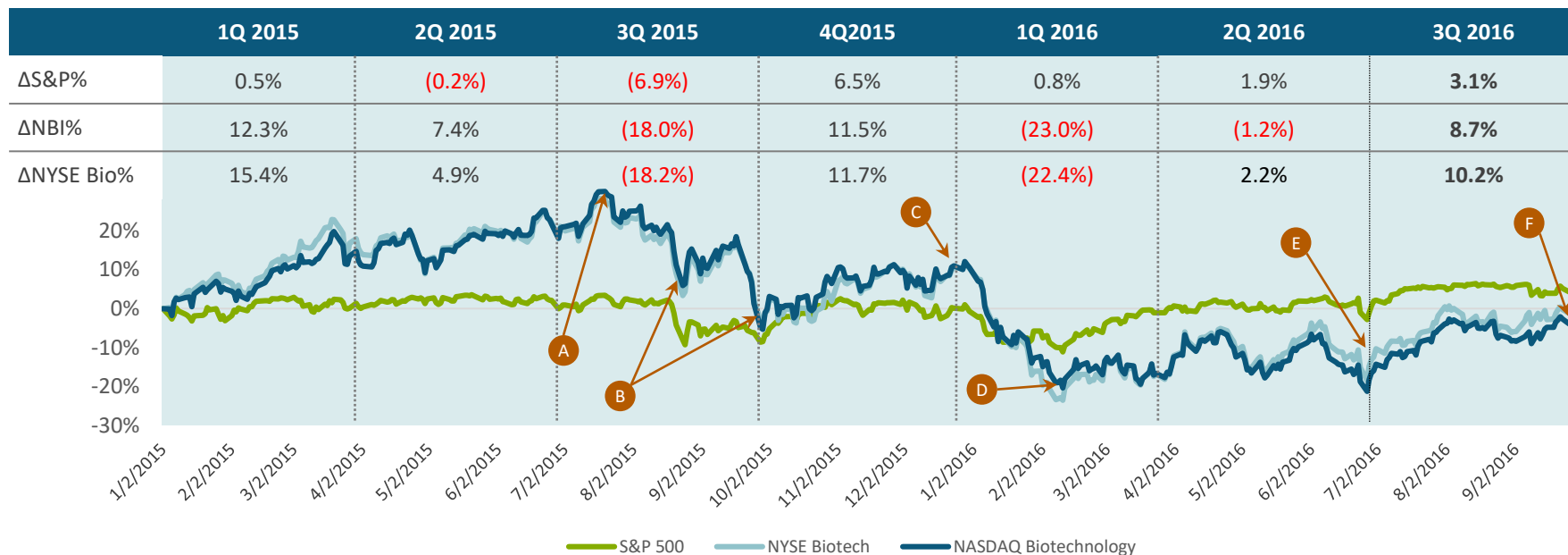
- ▶ Only \$7.5B raised YTD, compared to \$24.6B in first three quarters of 2015
- ▶ Pressure increasing for many companies with depressed valuations that have delayed secondaries

- **IPO queue remains robust, and overall market momentum may pick up in Q4**

- ▶ Significant capital returned to investors through acquisitions

Markets stabilize after major drops in 3Q 2015 and 1Q 2016, with potential momentum to the upside in 4Q 2016 and 2017

3Q 2016 and Historical Performance of Key BioPharma Indices

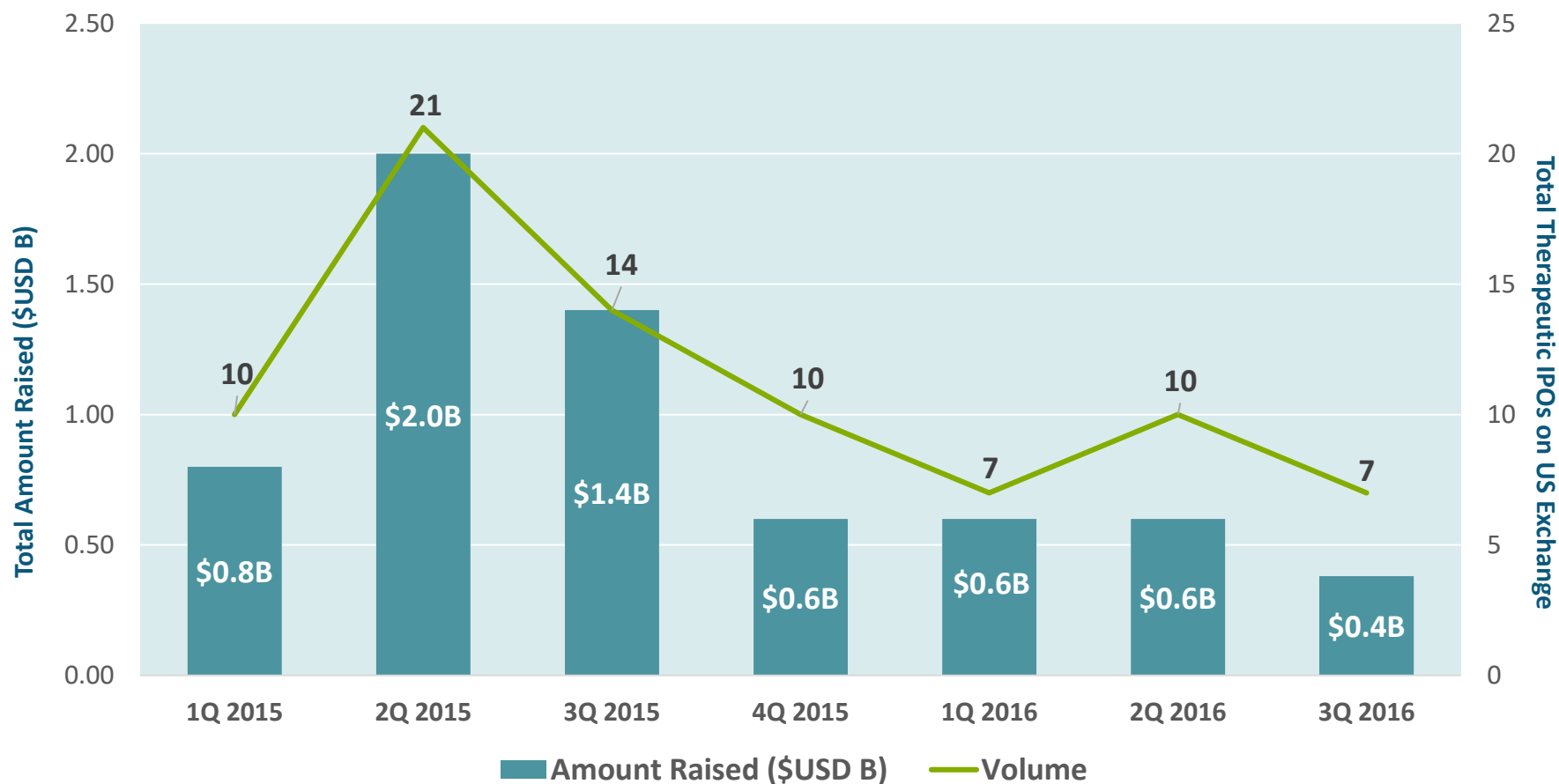


Key Event	
A	Nasdaq Biotech Index (NBI) peaked in July 2015 at \$397, an all time high
B	Pull-back in August 2015 \$339 (-14.6%), October 2015 \$310 (-21.9%)
C	Closed year at \$338 (-14.9% from peak)
D	January 2016 slide down to \$267, continuing in February 2016 to \$251 (-36.8% from peak, -25.7% from EoY)
E	Market tested \$250 in April, again in June, ending Q2 at \$257
F	July 2016 had steady gains, continuing into August, high close for Q3 \$300 on September 22

SOURCE: Locust Walk Analytics, Yahoo! Finance

IPOs have declined to the lowest level in two years, both in terms of the number of completed offerings and the amount of capital raised

Number of IPOs and Aggregate Total Raised By Quarter



SOURCE: Thomson Reuters Life Sciences Dealmaking 2015; HBM Pharma/Biotech M&A Report 2016

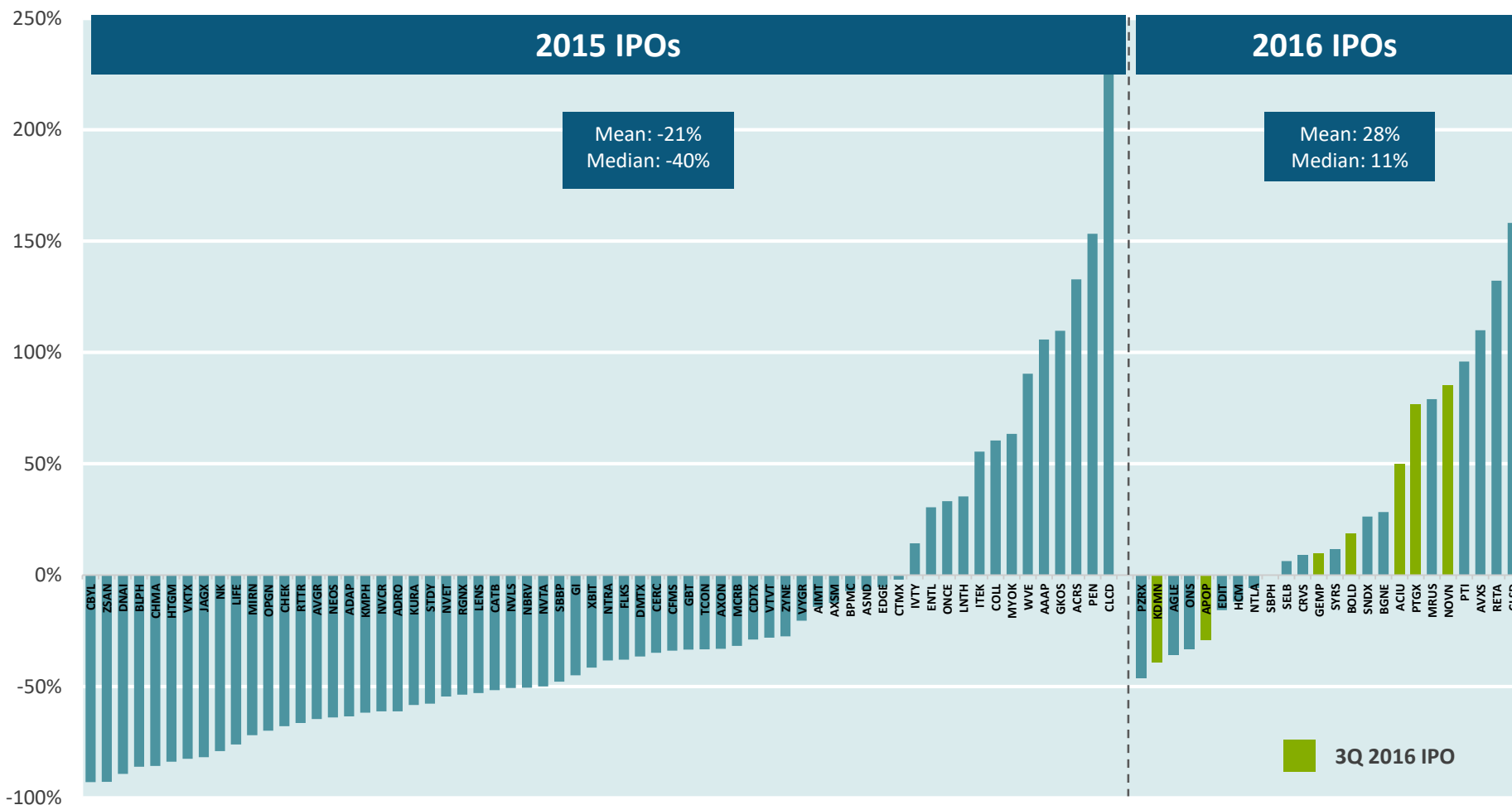
Only seven deals completed with total proceeds of \$400M in 3Q16

Biopharma Issuer	Ticker	Therapeutic Area	Phase of Lead Product	Offer Date	Expected Price Range	Public Offering Price (\$)	Total Raise	Insider Participation	Price Change to 9/30
3Q 2016									
AC Immune SA Lausanne, Switzerland	ACIU NASDAQ	Neurology / Alzheimer's Disease	Phase 3	9/23/2016	\$11-\$13	\$11.00 low-end	\$66.0M	0%	50.0%
Novan Durham, NC	NOVN NASDAQ	Dermatology	Phase 3 Ongoing	9/21/2016	\$11-\$13	\$11.00 low-end	\$51.9M	0%	85.3%
Protagonist Therapeutics Milpitas, CA	PTGX NASDAQ	IBD	Phase 2 Ready	8/11/2016	\$11-\$13	\$12.00 middle	\$93.0M	43%	76.8%
Gemphire Therapeutics Livonia, MI	GEMP NASDAQ	Hypercholesterolemia	Phase 2b Ongoing	8/5/2016	\$11-\$13	\$10.00 below	\$30.3M	0%	9.7%
Audentes Therapeutics San Francisco, CA	BOLD NASDAQ	Gene Therapy	Preclinical	7/20/2016	\$14-\$16	\$15.00 middle	\$85.1M	13.5%	18.7%
Kadmon Holdings New York, NY	KDMN NASDAQ	Autoimmune and fibrotic	Phase 2 Ongoing	7/27/2016	\$16-\$20	\$12.00 below	\$75.0M	0%	(39.2%)
						Mean	\$66.9M	9.4%	33.6%
						Median	\$70.5M	0%	34.4%
						Max	\$93.0M	43%	85.3%
						Min	30.3M	0%	(39.2%)

SOURCE: Locust Walk Analytics, EDGAR Company Filings, Yahoo!Finance, BioCentury




Recent performance has improved, however many 2015 IPOs are still trading significantly below IPO price, hampering ability to raise capital

Aftermarket Performance to Date of 2015 and 2016 BioPharma IPOs



SOURCE: Locust Walk Analytics, Yahoo! Finance. Note: Prices as of 2016-10-01.

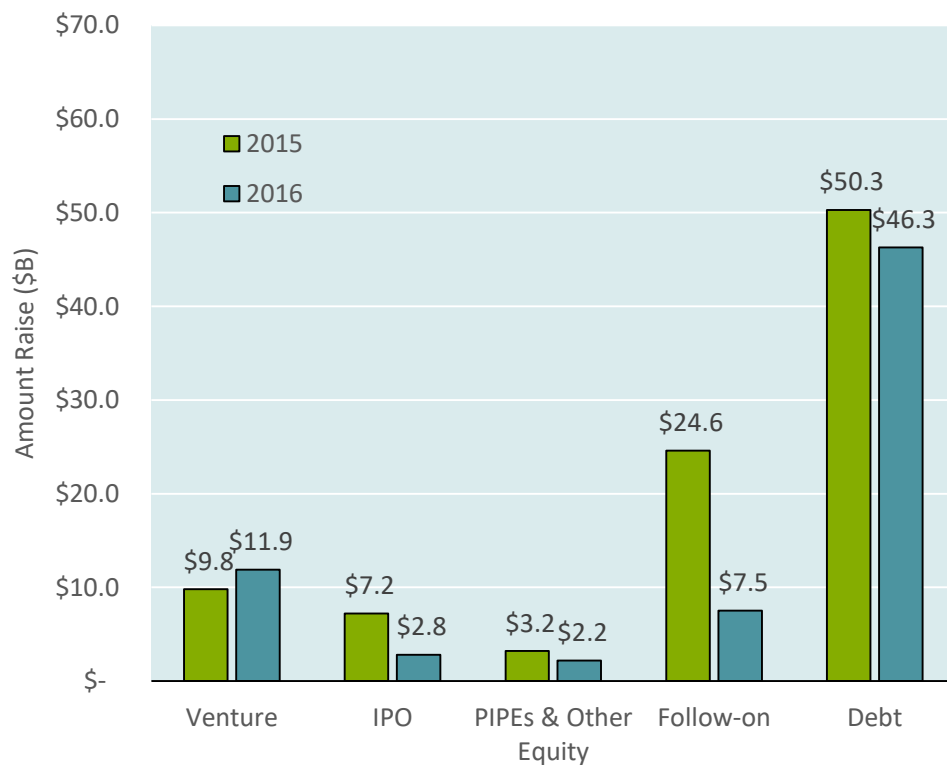
There continue to be notable companies lining up in the queue for initial public offerings – select examples

			
Summary	RA Pharma is a clinical stage biopharma company focused on developing a peptide chemistry platform in diseases of complement dysregulation and orphan indications	CRISPR Therapeutics is a gene therapy company focused on using genetic editing to manage disease	Myovant is a biopharma company focused on innovative treatment of women's health diseases as well as other endocrine-related diseases
Lead Compound	RA101495 is a Phase 2 ready subcutaneous injectable seeking approval for paroxysmal nocturnal hemoglobinuria (PNH)	CRISPR/Cas9 is a gene editing technology that selectively deletes, modifies or corrects disease causing abnormalities	Relugolix is a Phase 3 ready, oral GnRH receptor antagonist seeking approval for heavy menstrual bleeding associated with uterine fibroids, endometriosis-associated pain and advanced prostate cancer
Current Investors	<ul style="list-style-type: none"> • NEA • Morgenthaler Venture Partners • Novartis Bioventures • Novo A/S • Lightstone Ventures • RA Capital Management. 	<ul style="list-style-type: none"> • Versant Ventures • SR One • New Enterprise Associates • Abingworth • Celgene Ventures 	<ul style="list-style-type: none"> • Roivant Sciences 85% • Takeda 18%
Proposed Offering	Up to \$86.3M offering	\$90M offering	\$172.5M offering

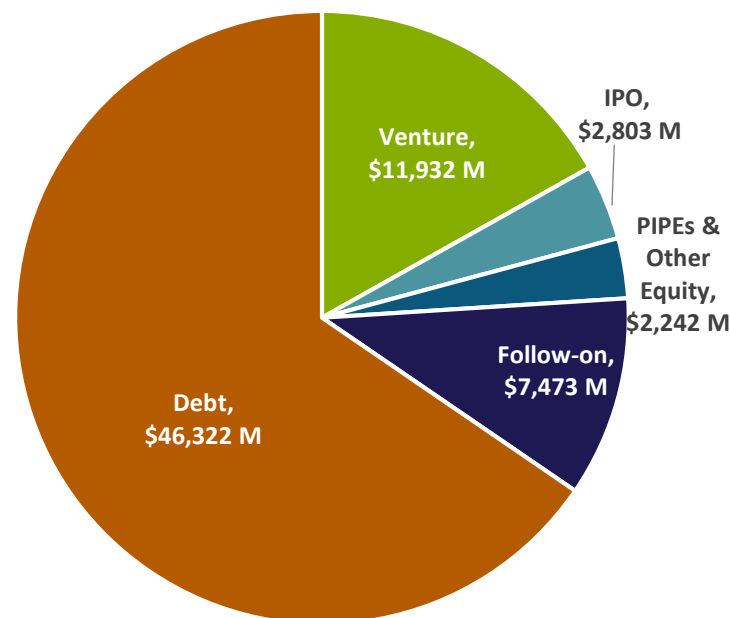
SOURCE: Locust Walk Analytics, EDGAR Company filings, Company websites

Follow-on offerings are down significantly in 2016, as emerging and growth biopharma are hampered by depressed market valuations

2016 Total Raise YTD vs. 2015 Total Raise



2016 YTD
Total Raise: \$70.8B



SOURCE: BioCentury

Follow on offerings continue to lag in 3Q16

Biopharma Issuer	Ticker	Offer Date	Total Raise (M)	Post-\$	Mkt Cap 9/30	%Change
3Q 2016						
Delcath Systems Inc.	DCTH <small>NASDAQ</small>	9/30/2016	\$1.3	\$5.8	\$4.8	(18%)
VolitionRx Ltd.	VNRX <small>NYSE-M</small>	9/30/2016	\$11.3	\$128.9	\$136.6	6%
Actinium Pharmaceuticals Inc.	ATNM <small>NYSE-M</small>	9/29/2016	\$10.0	\$69.7	\$75.3	8%
Foamix Pharmaceuticals Inc.	FOMX <small>NASDAQ</small>	9/28/2016	\$54.2	\$347.7	\$338.0	(3%)
Versartis Inc.	VSAR <small>NASDAQ</small>	9/28/2016	\$60.0	\$421.9	\$421.9	0%
Array BioPharma Inc.	ARRY <small>NASDAQ</small>	9/27/2016	\$115.0	\$1,021.4	\$1,103.1	8%
MyoKardia Inc.	MYOK <small>NASDAQ</small>	9/27/2016	\$57.0	\$462.3	\$503.6	9%
Catabasis Pharmaceuticals Inc.	CATB <small>NASDAQ</small>	9/23/2016	\$11.5	\$73.0	\$112.5	54%
Sarepta Therapeutics Inc.	SRPT <small>NASDAQ</small>	9/22/2016	\$300.0	\$3,161.9	\$3,249.8	3%
CareDx Inc	CDNA <small>NASDAQ</small>	9/21/2016	\$9.0	\$84.9	\$75.4	(11%)
Aquinox Pharmaceuticals Inc.	AQXP <small>NASDAQ</small>	9/19/2016	\$75.4	\$286.2	\$312.2	9%
Aerie Pharmaceuticals Inc.	AERI <small>NASDAQ</small>	9/16/2016	\$75.0	\$942.8	\$1,101.7	17%
Capricor Therapeutics Inc.	CAPR <small>NASDAQ</small>	9/16/2016	\$9.9	\$68.3	\$67.9	(1%)
Immune Design Corp.	IMDZ <small>NASDAQ</small>	9/15/2016	\$30.0	\$156.1	\$189.3	21%
Agios Pharmaceuticals Inc.	AGIO <small>NASDAQ</small>	9/14/2016	\$172.5	\$1,865.6	\$2,214.4	19%
CoLucid Pharmaceuticals Inc.	CLCD <small>NASDAQ</small>	9/9/2016	\$65.0	\$371.8	\$709.2	91%
Proteostasis Therapeutics Inc.	PTI <small>NASDAQ</small>	9/9/2016	\$65.0	\$314.4	\$377.0	20%
AveXis Inc.	AVXS <small>NASDAQ</small>	9/8/2016	\$136.6	\$930.6	\$1,111.6	19%
Sage Therapeutics Inc.	SAGE <small>NASDAQ</small>	9/8/2016	\$175.0	\$1,450.7	\$1,680.7	16%
Xenon Pharmaceuticals Inc.	XENE <small>NASDAQ</small>	9/8/2016	\$25.9	\$134.1	\$141.2	5%
Atossa Genetics Inc.	ATOS <small>NASDAQ</small>	8/31/2016	\$2.9	\$9.5	\$8.0	(15%)
Sophiris Bio Inc.	SPHS <small>NASDAQ</small>	8/23/2016	\$26.0	\$116.5	\$90.6	(22%)

Follow on offerings continue to lag in 3Q16 (Cont'd)

Biopharma Issuer	Ticker	Offer Date	Total Raise (M)	Post-\$	Mkt Cap 9/30	%Change
Eiger BioPharmaceuticals Inc.	EIGR <small>NASDAQ</small>	8/18/2016	\$20.0	\$133.7	\$111.9	(16%)
OncoMed Pharmaceuticals Inc.	OMED <small>NASDAQ</small>	8/18/2016	\$63.3	\$370.0	\$413.4	12%
MabVax Therapeutics Holdings Inc.	MBVX <small>NASDAQ</small>	8/17/2016	\$9.4	\$26.6	\$23.5	(12%)
Recro Pharma Inc.	REPH <small>NASDAQ</small>	8/16/2016	\$14.9	\$88.9	\$104.8	18%
Alimera Sciences Inc.	ALIM <small>NASDAQ</small>	8/11/2016	\$26.5	\$90.5	\$96.3	6%
Amarin Corp. plc	AMRN <small>NASDAQ</small>	8/11/2016	\$69.2	\$595.1	\$666.1	12%
Omeros Corp.	OMER <small>NASDAQ</small>	8/11/2016	\$40.0	\$491.9	\$477.3	(3%)
Acadia Pharmaceuticals Inc.	ACAD <small>NASDAQ</small>	8/9/2016	\$230.0	\$3,992.2	\$3,848.2	(4%)
BioMarin Pharmaceutical Inc.	BMRN <small>NASDAQ</small>	8/9/2016	\$720.0	\$16,412.7	\$15,817.8	(4%)
ImmunoCellular Therapeutics Ltd.	IMUC <small>NYSE-M</small>	8/9/2016	\$7.4	\$20.4	\$15.4	(25%)
Palatin Technologies Inc.	PTN <small>NYSE-M</small>	8/4/2016	\$9.2	n/a	\$54.1	n/a
Collect Biotechnology Ltd.	APOP <small>NASDAQ</small>	7/29/2016	\$8.4	\$35.0	\$24.7	(29%)
Chembio Diagnostics Inc.	CEMI <small>NASDAQ</small>	7/29/2016	\$13.8	\$71.9	\$88.3	23%
Quotient Ltd.	QTNT <small>NASDAQ</small>	7/29/2016	\$17.7	\$162.1	\$230.6	42%
Argos Therapeutics Inc.	ARGS <small>NASDAQ</small>	7/28/2016	\$50.0	\$226.2	\$204.7	(9%)
Exact Sciences Corp.	EXAS <small>NASDAQ</small>	7/28/2016	\$131.8	\$1,654.9	\$1,982.7	20%
Cardiome Pharma Corp.	CRME <small>NASDAQ</small>	7/26/2016	\$34.5	\$95.6	\$100.1	5%
ContraFect Corp.	CFRX <small>NASDAQ</small>	7/22/2016	\$35.0	\$103.7	\$103.0	(1%)
GW Pharmaceuticals plc	GWPH <small>NASDAQ</small>	7/12/2016	\$289.8	\$2,261.3	\$2,904.3	28%
3Q 2016 (41 Deals)		Total	\$3,279.1	Median Change		6%
2Q 2016 (37 Deals)			\$16,735.3			21%
1Q 2016 (30 Deals)			\$16,011.8			8%
YTD (108 Deals)			\$36,026.2			9%

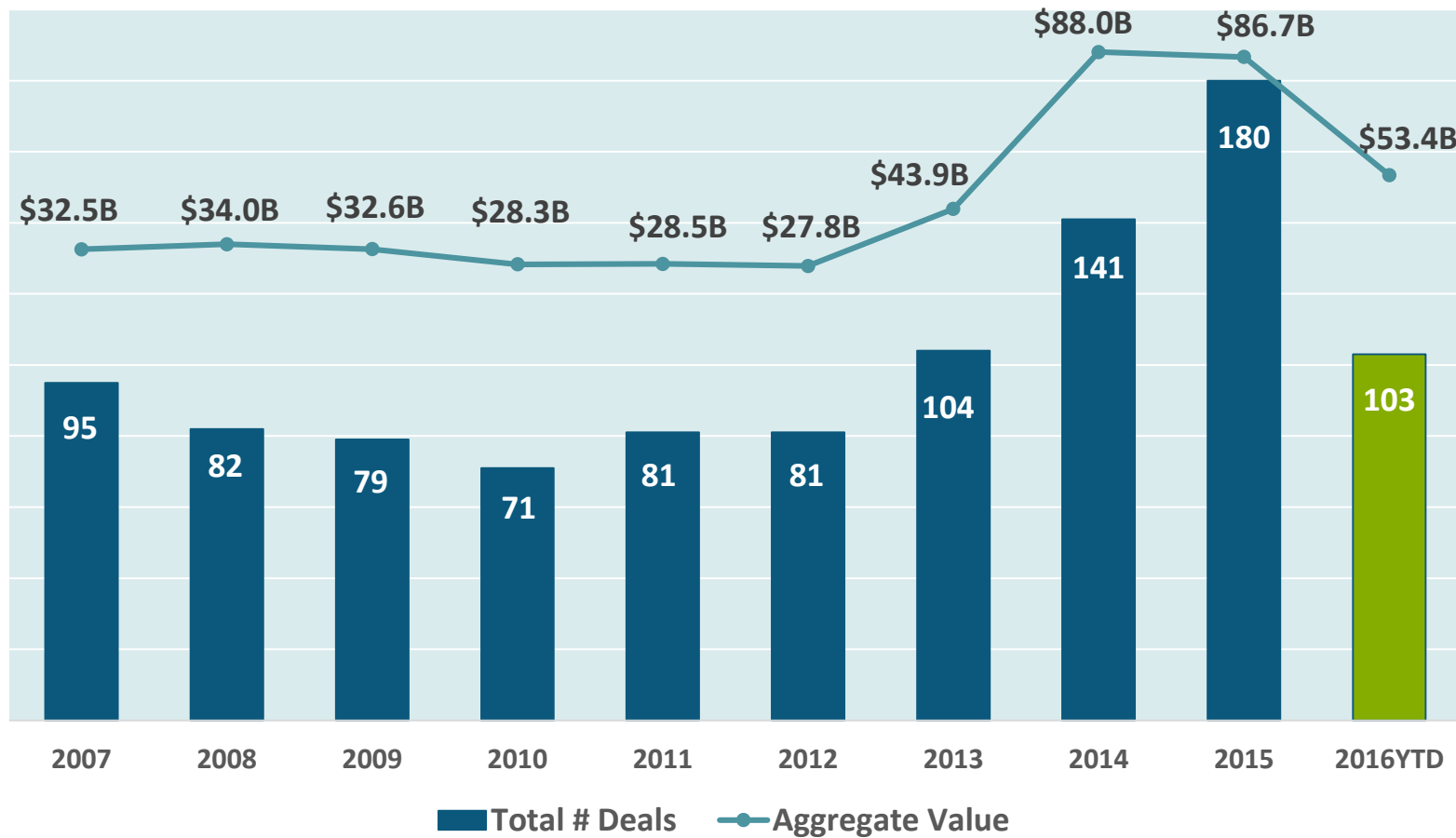


Locust Walk Quarterly Update – Strategic partnering and M&A trends

- **Dealmaking has been robust in 2016, but slightly lower than peak 2014/2015**
 - ▶ Macro environment and US election has hampered ability to transact for many
 - ▶ Large pool of companies that have delayed financing
 - ▶ Setup going into the Q4 2016 and 2017 may be record strategic dealmaking
 - ▶ Over the past 10 years, the fourth quarters have represented 30% of deal volume and 47% of the total dollar value announced per year
- **Acquisitions are returning significant capital to investors**
 - ▶ \$21.7B in announced transactions during the Q3 2016
 - ▶ Medivation acquired by Pfizer for \$14B (\$81.50/share, 23% premium)
 - ▶ Relypsa (\$1.53B), Raptor (\$800M) and Tobira (\$1.7B) return significant cash to public shareholders
 - ▶ Private acquisitions: EngMab (\$600M), Bamboo (\$645M), and Cormorant (\$520M) demonstrate interest in earlier stage deals and platforms

After peak dealmaking in 2014 and 2015, 2016YTD has been robust and based on historicals we project 47 deals in Q4 (est. 150 total, \$77.9B)

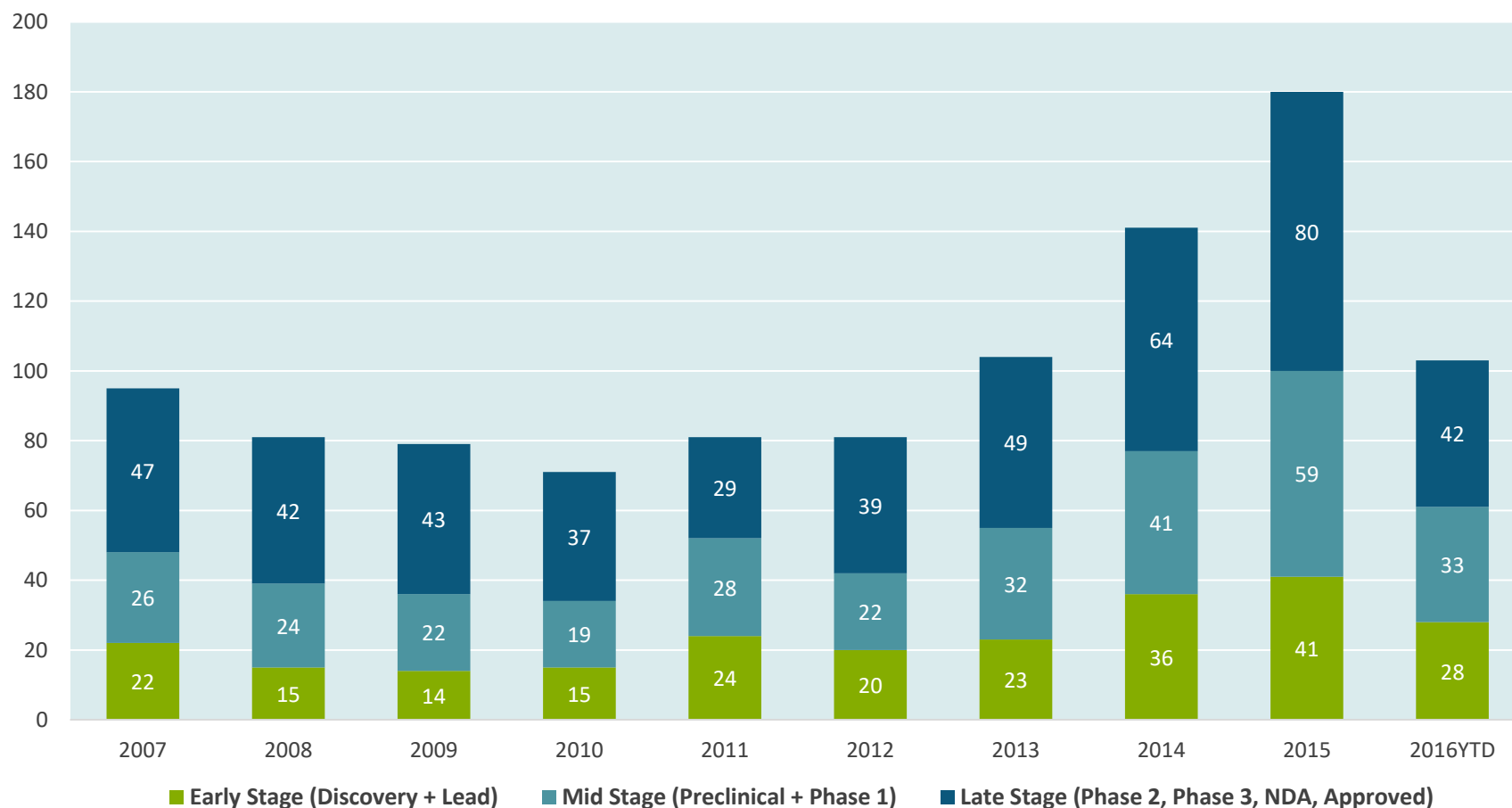
Therapeutic Deals >\$50m Announced Size since 2007



SOURCE: Locust Walk Analytics, BioSciDB

Early stage dealmaking is up (as a % total) over the past three years, however the industry may be primed for more late stage deals in Q4

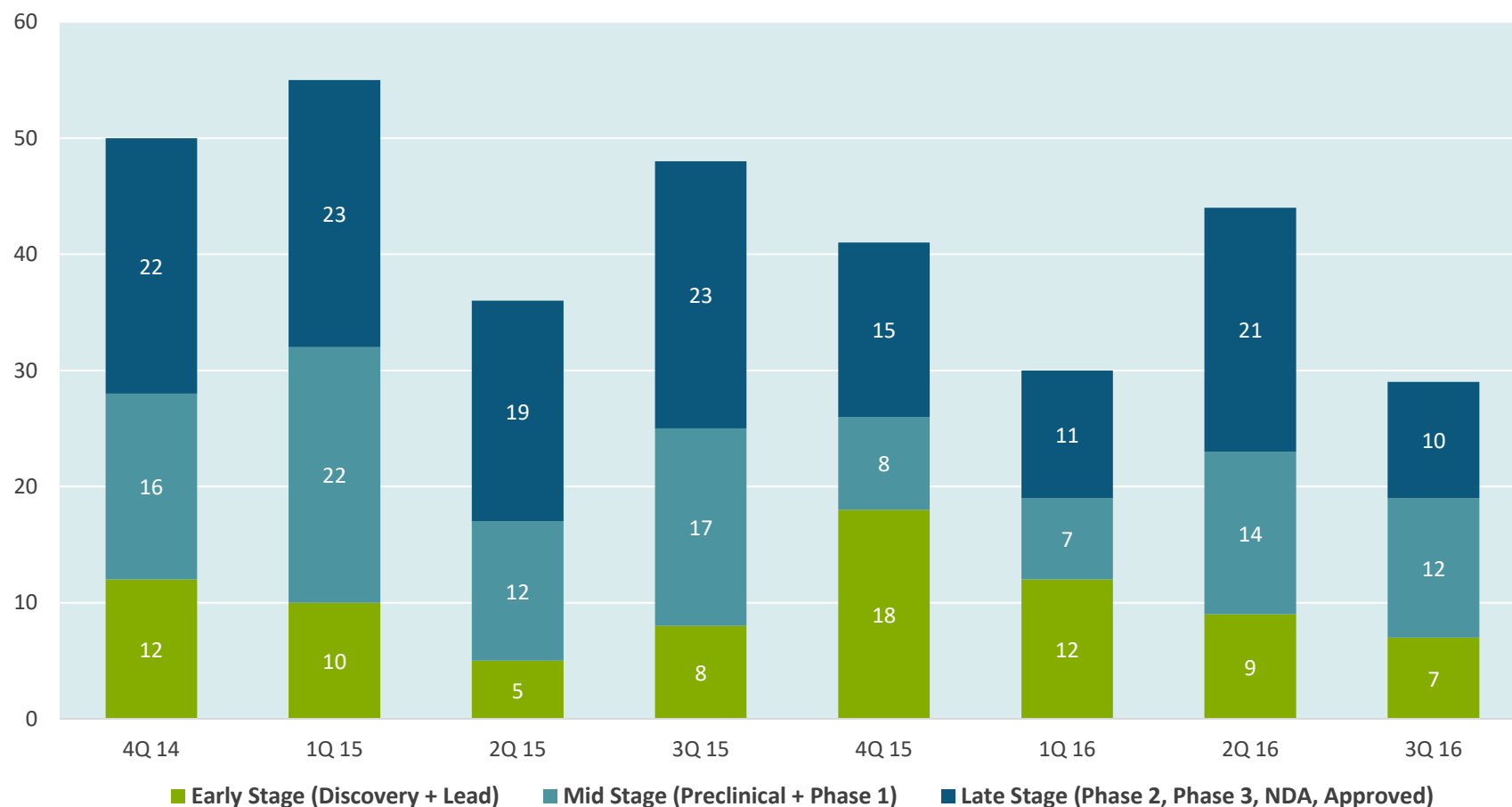
Therapeutic Deals > \$50m Announced Size since 2007



SOURCE: Locust Walk Analytics, BioSciDB

Over the past ten years, fourth quarter dealmaking has represented 47% of the aggregate value and 30% of the deal volume

Therapeutic Deals > \$50M Announced Size since 2007



SOURCE: Locust Walk Analytics, BioSciDB

Early-stage (Discovery + Lead) deals announced in 3rd quarter 2016

Licensee	Licensor	Date	Stage	Size (\$M)	Subject
Bluebird Bio	Medigene	09/2016	Discovery	\$1,000	T-cell receptor immunotherapy products for up to four cancer targets
Bayer	Evotec AG	09/2016	Discovery	\$350	Multi-target collaboration to develop clinical candidates for kidney diseases
Roche, Genentech	BioNTech	09/2016	Discovery	\$310	IVAC Mutanome mRNA vaccine platform for cancer
Gilead	Genmab	08/2016	Discovery	\$282	DuoBody technology to develop bispecific antibody products for HIV
Bayer	X-Chem	07/2016	Discovery	\$528	DNA-encoded X-Chem library and screening platform for undisclosed indications
Vertex	Moderna Therapeutics	07/2016	Discovery	\$315	Messenger Ribonucleic Acid therapeutics for cystic fibrosis
Petra Pharma	Sprint Bioscience	07/2016	Lead Molecule	\$243	PIP4k2a inhibitor program targeting tumor metabolism

SOURCE: Locust Walk Analytics, BioSciDB

Mid-stage (Preclinical + Phase 1) deals announced in 3rd quarter 2016

Licensee	Licensor	Date	Stage	Size (\$M)	Subject
Roche, Genentech	Hanmi Pharmaceutical	09/2016	Phase I	\$910	HM95573 pan-RAF inhibitor for cancer ex-South Korea
Amgen	Arrowhead Pharmaceuticals	09/2016	Preclinical	\$673	RNAi ARC-LPA program and option to additional undisclosed RNAi product for cardiovascular diseases
Tarveda Therapeutics	Madrigal Pharmaceuticals	09/2016	Preclinical	\$249	HSP90 Drug Conjugate program including PEN-866 for cancer
Pfizer	Oncolmmune	09/2016	Preclinical	\$250	Anti-CTLA4 mAbs including ONC-392 for immuno-oncology indications
Amgen	Advaxis	08/2016	Preclinical	\$540	ADXS-NEO personalized immunotherapy for cancer
GlaxoSmithKline	Johnson & Johnson, Janssen	07/2016	Phase I	\$230	CNTO 7160 anti-IL-33R mAb
Ono Pharmaceutical	Celyad	07/2016	Phase I	\$312	Allogeneic NKR-2 T-cell immunotherapy in Japan, Korea and Taiwan
Celgene	Jounce Therapeutics	07/2016	Preclinical	\$2,561	JTX-2011 and four additional immuno-oncology programs WW ex-US
Servier	Sorrento Therapeutics	07/2016	Preclinical	\$971	STI-A1110 (human anti-PD-1 immune checkpoint mAb) for immuno-oncology
Syndax Pharmaceuticals	UCB	07/2016	Preclinical	\$375	UCB6352 anti-CSF-1R mAb for cancer

SOURCE: Locust Walk Analytics, BioSciDB

Late-stage (Phase 2 + later) deals announced in 3rd quarter 2016

Licensee	Licensor	Date	Stage	Size (\$M)	Subject
Aspen Pharma	GlaxoSmithKline	09/2016	Approved	\$373	Acquisition of anesthesia portfolio
Seelos Therapeutics	Ligand	09/2016	Phase II	\$150	Portfolio of four products including SLS-006 for CNS and respiratory indications
Pfizer	AstraZeneca	08/2016	Approved	\$1,575	Acquisition of small molecule anti-infective business
Helsinn	MEI Pharma	08/2016	Phase II	\$469	Pracinostat HDAC inhibitor for leukemia
Attenua	Catalyst Biosciences	08/2016	Phase II	\$106	TC5619, TC6987 and TC6683 Neuronal Nicotinic Receptor assets
Teijin Pharma	Versartis	08/2016	Phase III	\$165	Somavaratan recombinant growth hormone in Japan
Takeda	TiGenix	07/2016	Filed	\$433	Cx601 (eASC stem cells) to treat perianal fistulas in patients with Crohn's disease ex-US
LEO Pharma	AstraZeneca	07/2016	Phase II	\$1,115	Tralokinumab anti-IL-13 mAb for dermatologic indications including atopic dermatitis

SOURCE: Locust Walk Analytics, BioSciDB

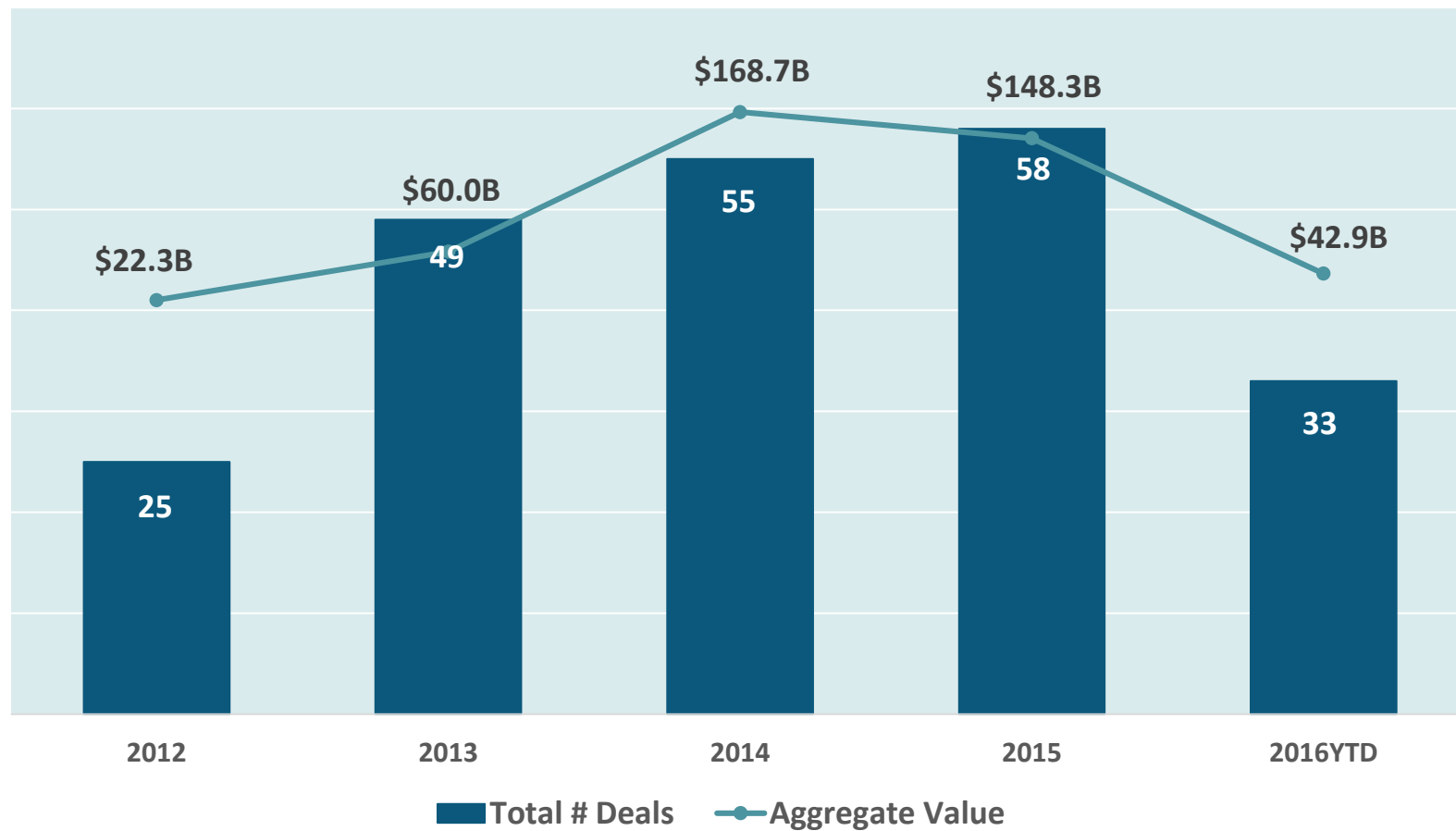
Japan dealmaking has been lower than expected in 2016, leaving the potential for an uptick going into the end of the year and beyond

Seller	Buyer	Date	TA	Stage	Product(s)	Deal Type	Deal Size (\$M)	Upfront (\$M)
Menlo	Torii Pharma	08/2016	Dermatology	Phase II	Serlopitant NK-1 receptor antagonist for chronic pruritus	License	n/a	n/a
Versartis	Teijin pharma	08/2016	Endocrinology & Metabolic	Phase III	Somavaratan recombinant growth hormone	License	\$165	\$40
Amgen	Daiichi Sankyo	07/2016	Autoimmune/ Inflammatory, Oncology	Phase III	Nine biosimilar products	License	n/a	n/a
Celyad	Ono Pharma	07/2016	Oncology	Phase I	Allogeneic NKR-2 T-cell immunotherapy	License/ Option	\$312	\$12.5
1H 2016 Notable Japan Deals								
Cell Therapy	Daiichi Sankyo	05/2016	Cardiovascular	Phase II	Heartcel (immuno-modulatory progenitorcells) for heart failure	License	n/a	n/a
Merck	Taiho	04/2016	Oncology	Filed	Pembrolizumab anti-PD-1 immune checkpoint inhibitor	Co-Promote	n/a	n/a
Kyorin	Kissei	03/2016	Genitourinary/ Gynecology	Phase III	KRP-114V (Vibegron) for overactive bladder	Co-Develop	n/a	n/a
Array	Asahi Kasei	03/2016	Autoimmune/ Inflammatory, Central Nervous System	Preclinical	TrkA inhibitors including ARRY-954 for pain, inflammation and non-cancer indications	License	\$76	\$12
HUYA	Eisai	02/2016	Oncology	Phase I	HBI-8000 HDAC inhibitor for lymphoma	License	n/a	n/a
Athersys	Healios	01/2016	Central Nervous System	Phase II	MultiStem for ischemic stroke	License/ Option	\$240	\$15

SOURCE: Locust Walk Analytics, BioSciDB














M&A during the third quarter totaled \$21.6B for 13 deals, with highlight transactions for Relypsa, Medivation, Raptor, and Tobira

Merger and Acquisition Deals Announced since 2012



SOURCE: Locust Walk Analytics, BioSciDB

Several acquisitions returned capital to investors, public and private

Seller	Buyer	Date	TA	Stage	Deal Value (\$M)
	Celgene	09/2016	Oncology	Preclinical	\$600
	Boehringer Ingelheim	09/2016	Oncology	Preclinical	\$236
	Allergan	09/2016	Liver & Gallbladder Diseases	Phase 2	\$1,695
	Allergan	09/2016	Dermatology	Phase 2	\$639
	Horizon	09/2016	Endocrinological & Metabolic	Approved	\$800
	Dainippon Sumitomo	08/2016	Central Nervous System	Phase 3	\$624
	Pfizer	08/2016	Oncology	Approved/ Phase 3	\$14,000
	Sorrento	08/2016	Central Nervous System	Phase 2	\$200
	Sorrento	08/2016	Central Nervous System	Filed	\$70
	Pfizer	08/2016	Central Nervous System	Phase 1	\$645
	Galencia	07/2016	Endocrinological & Metabolic	Approved	\$1,530
	Amicus	07/2016	Other/Miscellaneous	Preclinical	\$90
	Bristol-Myers Squibb	07/2016	Oncology	Phase 1	\$520

SOURCE: Locust Walk Analytics, BioSciDB

Locust Walk Quarterly Update – What to expect in the 4th quarter

- **Following election, public markets have room for upside**
 - ▶ NASDAQ Biotech Index remains more than -30% from peak in July 2015
 - ▶ We expect deal flow to improve, more strategic deals announced in the fourth quarter
 - ▶ Positive strategic deal news flow could effect broader valuations
- **Biopharma IPOs may continue to be selective**
 - ▶ Public market investors see many value opportunities in public marketplace
 - ▶ Large volume of companies need to complete secondaries, competing for capital against IPOs
- **Strategic dealmaking could expand, including acquisitions**
 - ▶ Squeeze in the public marketplace could lead more companies to partner
 - ▶ Plans may have included capital raise, but valuations remain too low to complete
 - ▶ Companies look to carve-out regional deals (Japan, Europe)
 - ▶ Late stage opportunities are ripe for partnering or acquisition
 - ▶ Fatigue from investors and boards may lead to more trade sales