

LES 2012 Meetings



Finding the Right Time to Partner: Can You Maximize Value While Balancing Risk and Reward?

May 16, 2012

Panelists



**FOLEY
HOAG** LLP

Hemmie Chang, Esq.

Chair, Licensing & Strategic Alliances Group,
Partner, Life Sciences Group



Dicerna
pharmaceuticals

Douglas Fambrough

Chief Executive Officer



blueprint
MEDICINES

Christine Bellon, Ph.D.

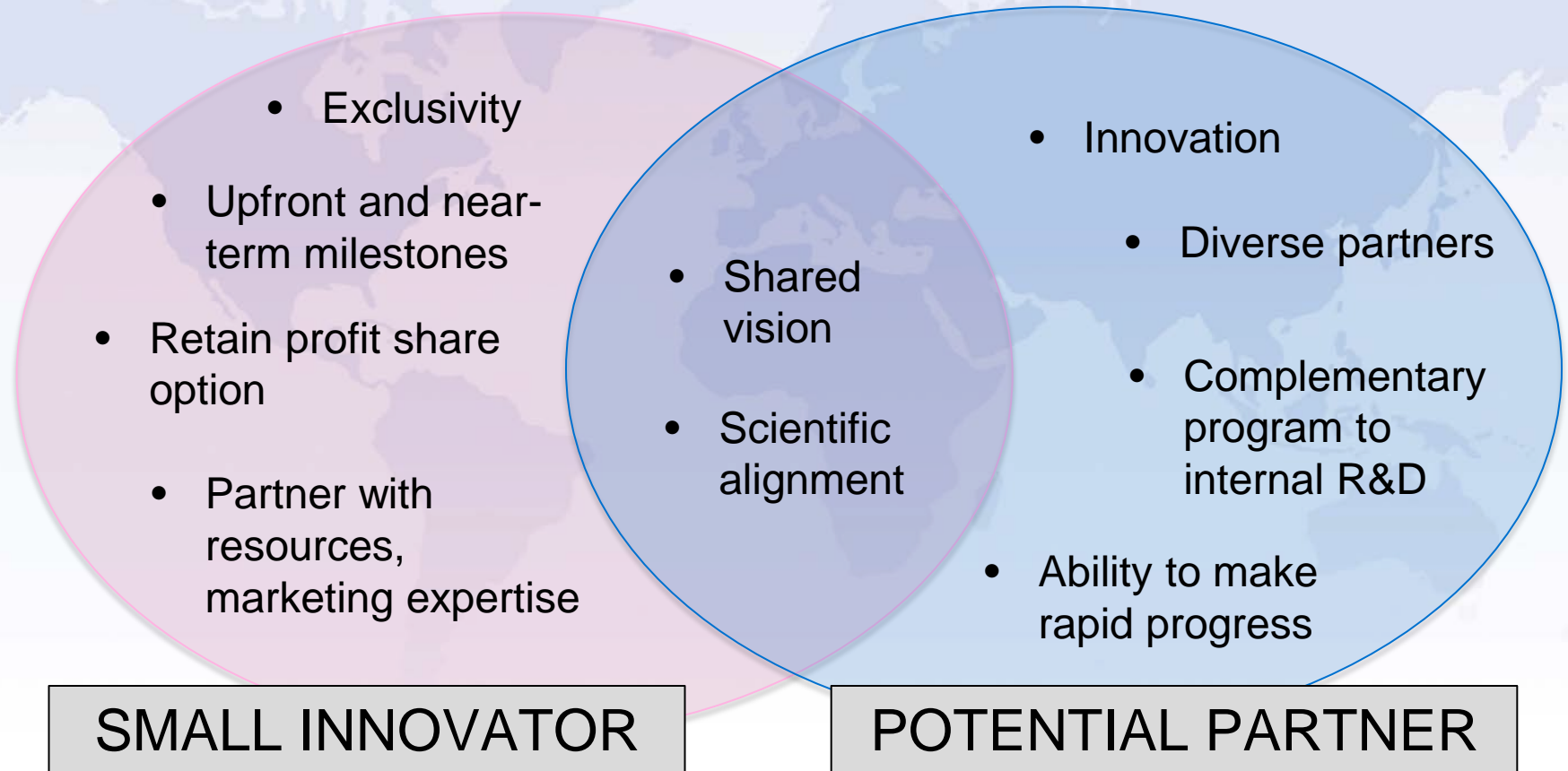
Vice President, Legal Affairs



Jason P. Rhodes

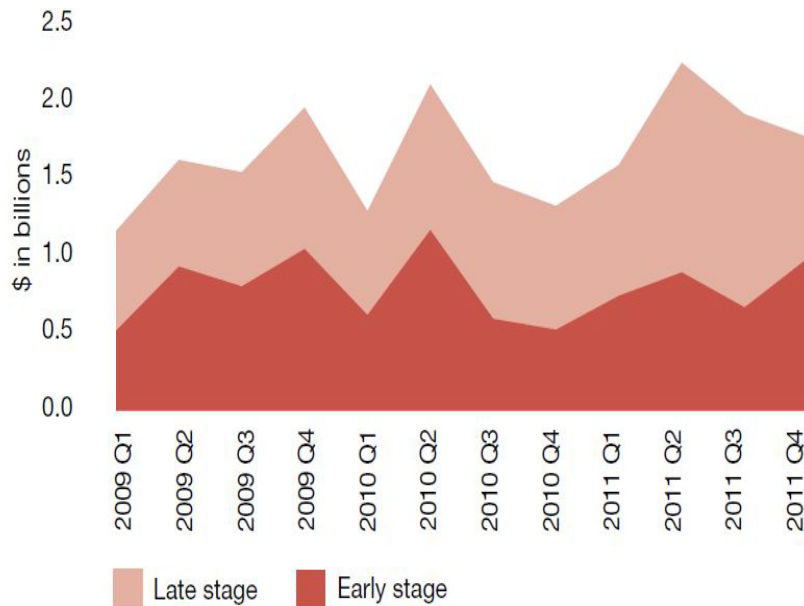
Executive Vice President and
Chief Business Officer

Evaluating Potential Partnerships



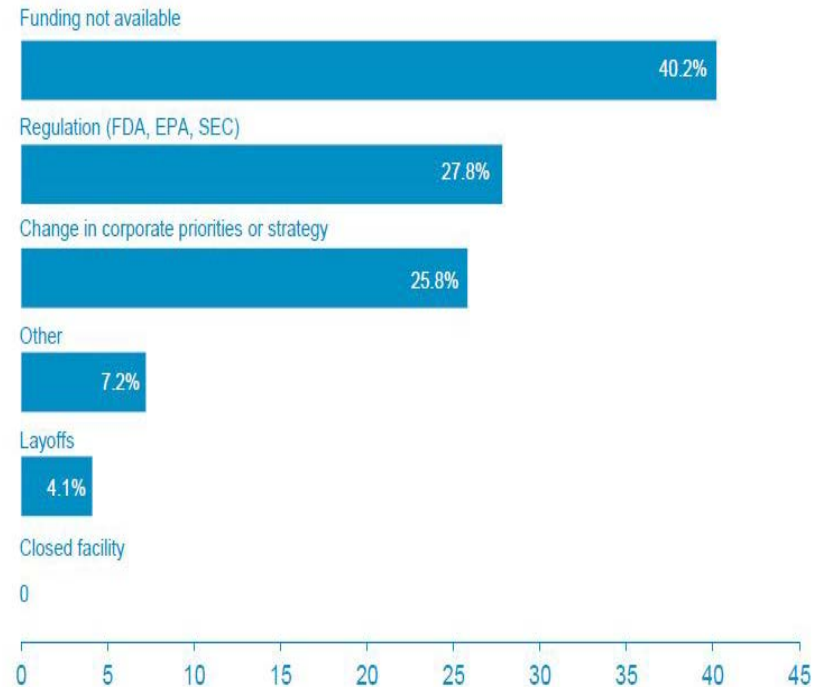
Funding Trends: Challenging Environment for Early Stage Funding

Life sciences funding by stage 2009-2011



Source: PricewaterhouseCoopers, "Zigzagging upward," February 2012

Why did your company delay R&D 2011?

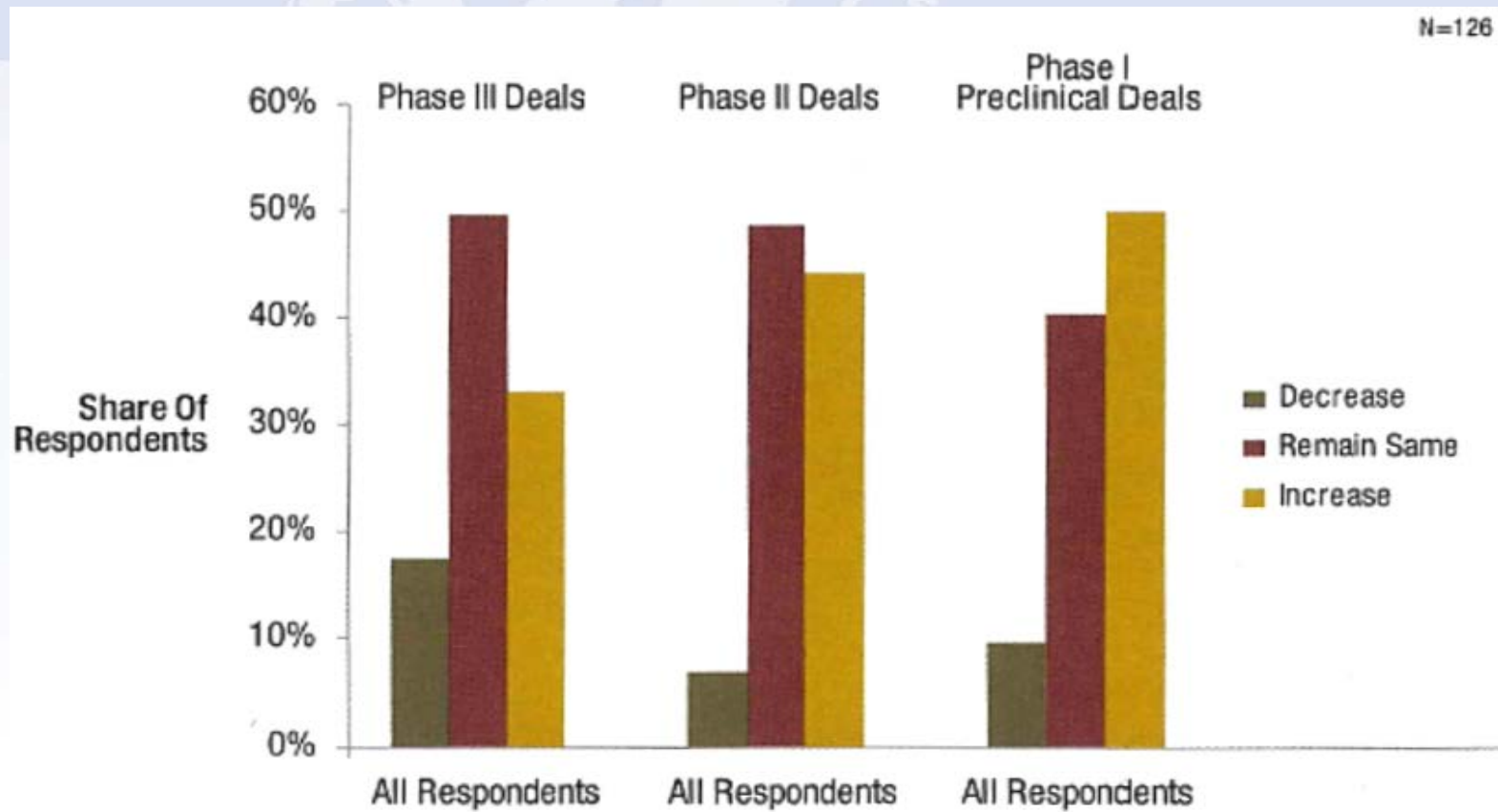


Source: California Biomedical Industry 2012 Report

Partnering Trends: Early Stage Dealmaking on the Rise

Expectations for Deal Activity

N=126



Source: Campbell Alliance's 2011 Dealmakers' Intentions Survey

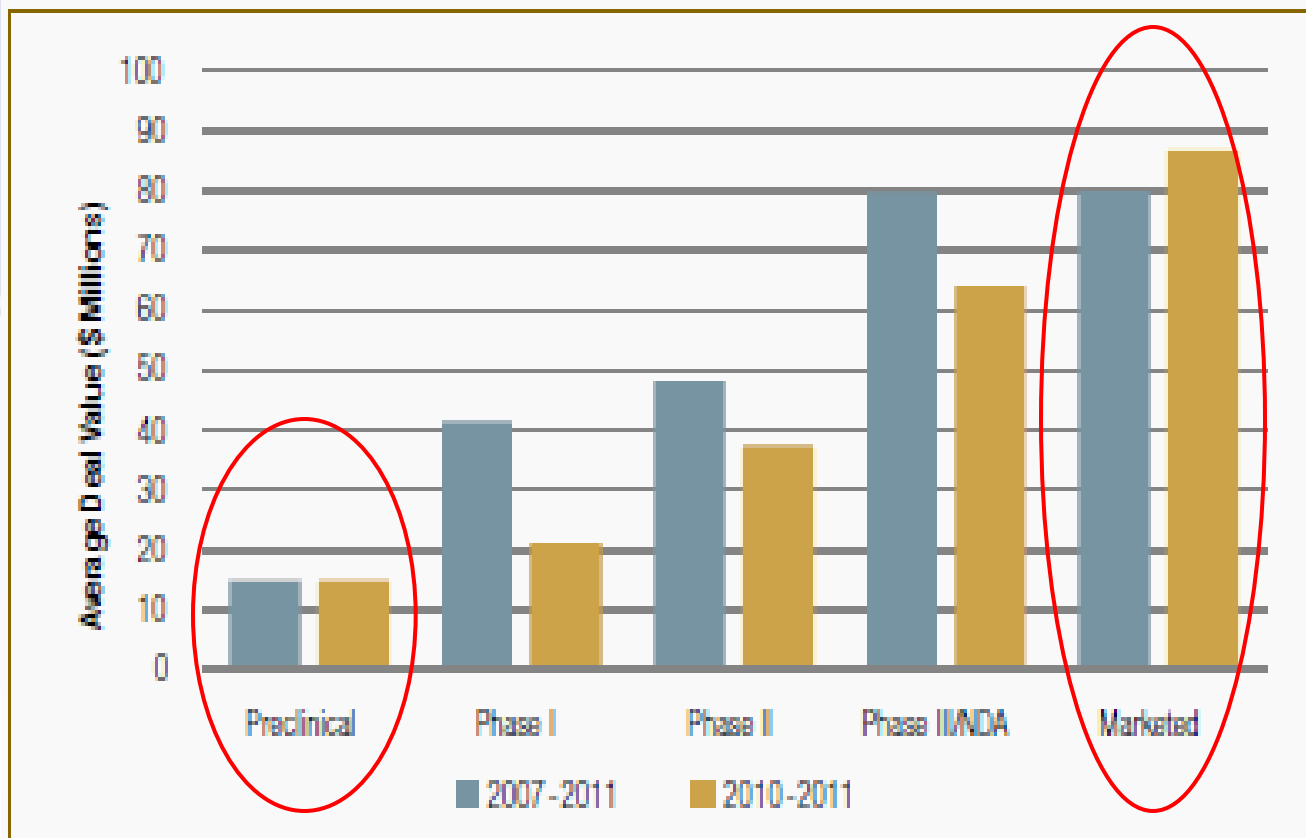
Partnering Trends: Early Stage Dealmaking on the Rise

Collaborations by Stage, 2011



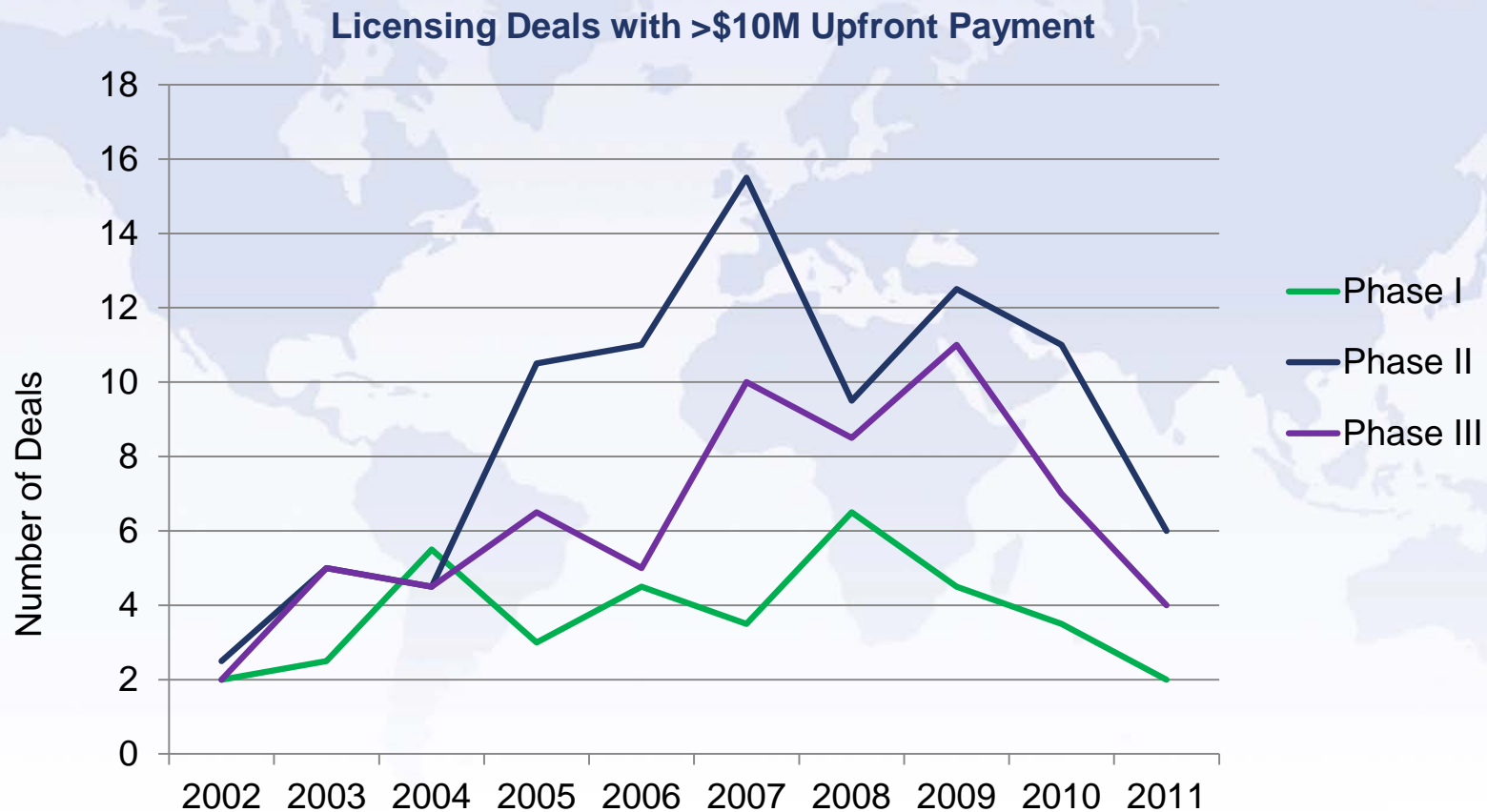
Partnering Trends: Clinical Stage Upfronts on the Decline

Alliance Upfronts



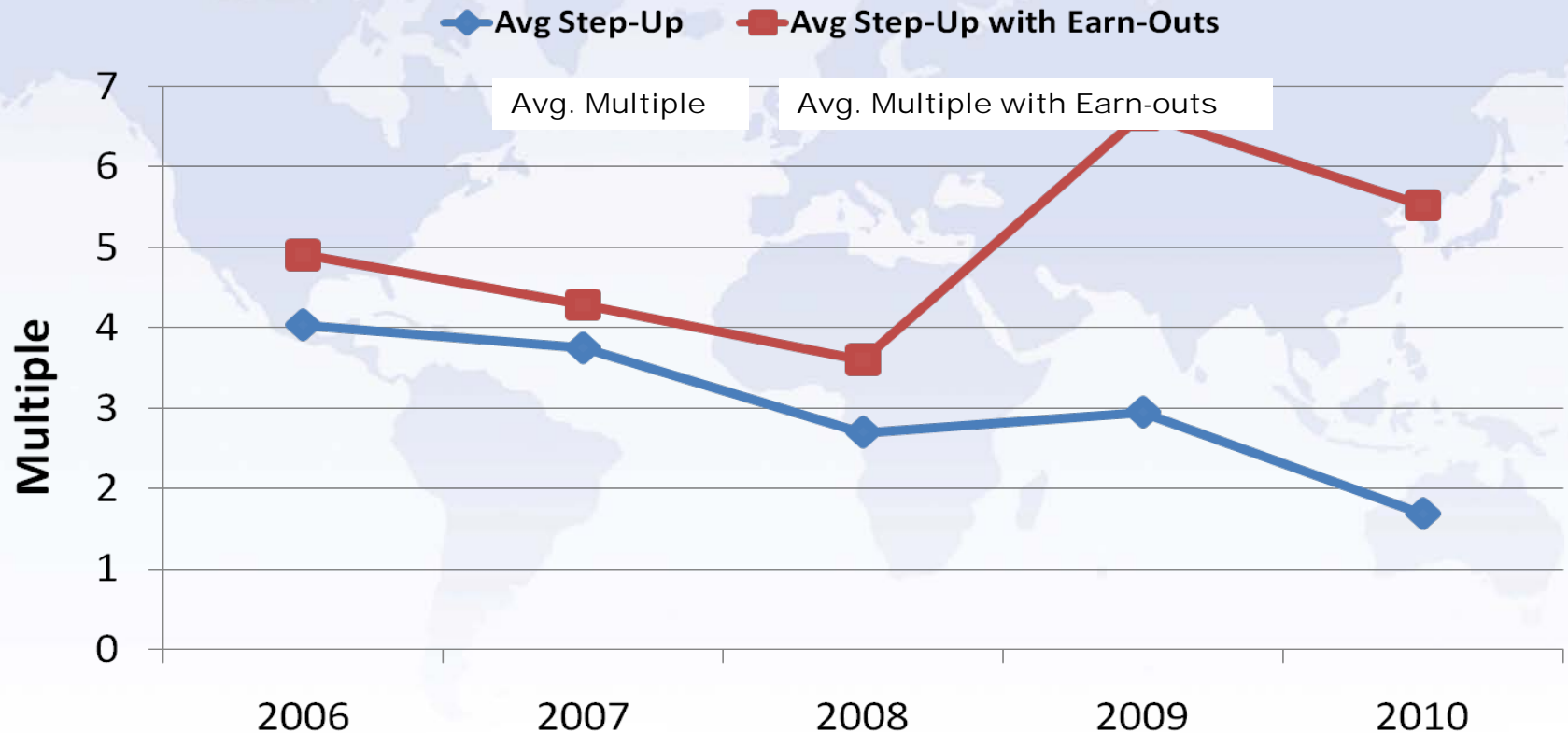
Source: Elsevier's Strategic Transactions via
<http://invivoblog.blogspot.com/2011/10/deals-of-week-ponders-is-ind-new.html> accessed 4/18/12

Partnering Trends: Recent Deal Activity



Source: EBI Transaction Tracker
Accessed November 11, 2010 and October 30, 2011

Partnering Trends: The Rise of Contingent Value Rights



Source: Elsevier's Strategic Transactions

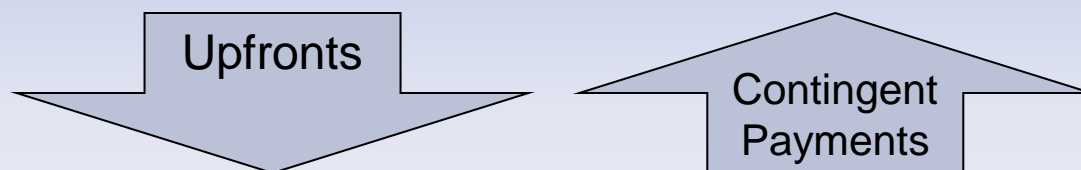
When to Partner Based on Data

PARTNERING ACTIVITY

- Early stage partnering on the rise – potential funding alternative
- Phase II dominates in alliances with large upfronts

FINANCIALS

In general



But upfronts for pre-clinical deals holding steady
and R&D investments on the rise

Hot Areas: 2011 Licenses and JVs for Products and Technologies by Therapeutic Area

Therapeutic Area	Total Number of Deals	Agg. Value of Deals Disclosed (\$B)	Mean/Median Deal Size (\$M)
Cancer	161	10	264/131
Infectious Disease	90	3.2	191/97
Neurology	64	4.7	262/105
Autoimmune & Inflammatory <i>(note: mostly early stage compounds)</i>	58	5.5	366/400
Endocrine & Metabolic <i>(note: mostly late stage compounds)</i>	55	3.9	362/163
Diversified & Broad Focus	35	1.8	360/300
Cardiovascular	22	0.5	95/20
Other/Unknown	105	3.8	182/63
Unknown	82	1.5	249/243
All Therapeutic Areas	672	34.9	260/133

Cancer accounted for 28.7% of the aggregate value of disclosed deals.

Autoimmune & Inflammatory had a median deal size 3X as big as the average over all therapeutic areas.

Case Study 1: Dicerna Pharmaceuticals / City of Hope

Objectives

Dicerna

- Exclusivity
- Economics allow stacking with 2nd technology
- Development flexibility
- Risk sharing
- IP control

City of Hope

- Broad technology use
- Diligent commercialization
- Near- and long-term economic returns

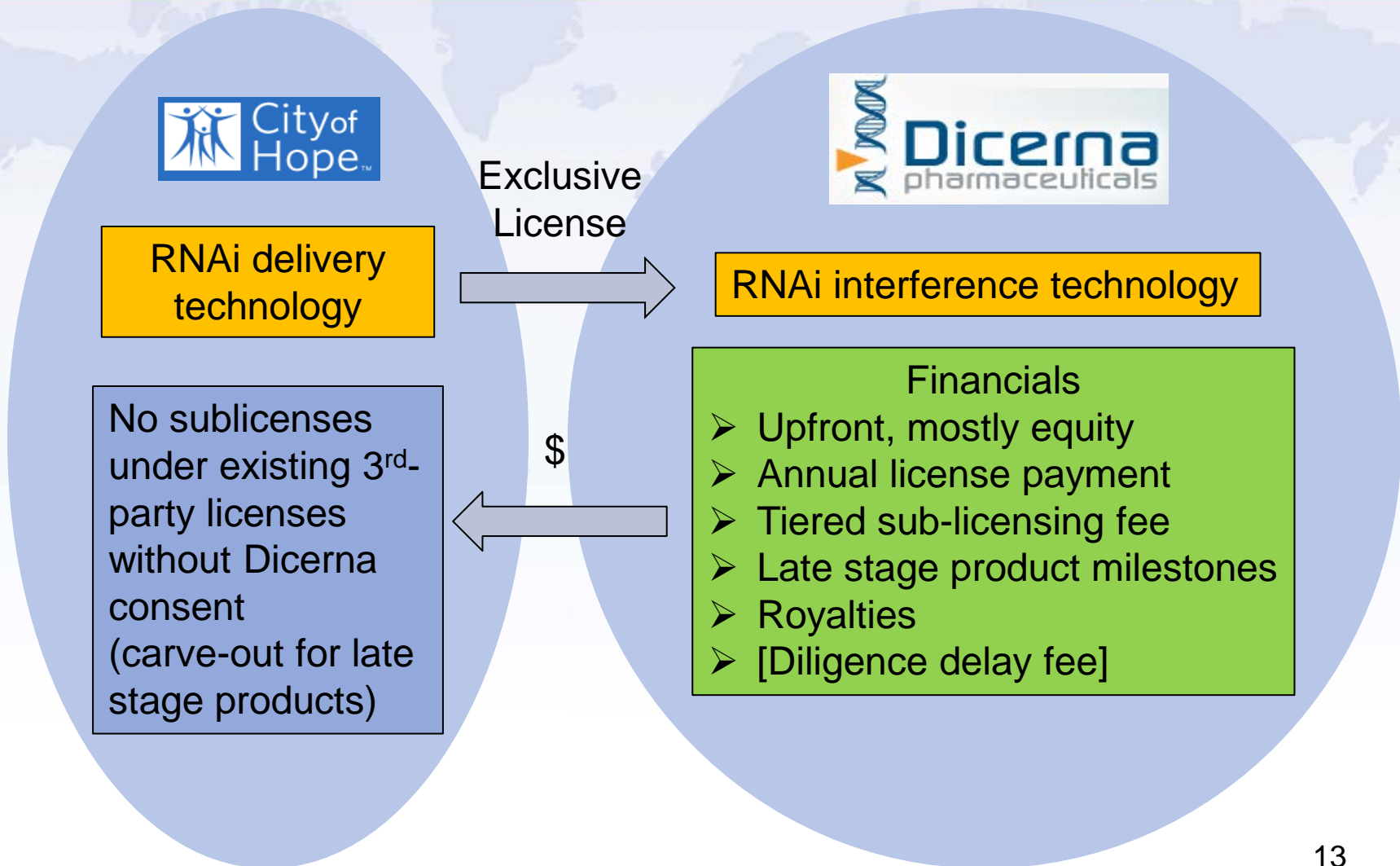
Development Plan

- Exclusive license to Dicerna
- Tiered sub-licensing fees (as investment ↑, fees ↓)
- For a fee, Dicerna can delay diligence requirements
- Late stage development milestones

Technology

- RNAi interference technology
- Dicerna needed RNAi delivery technology

Case Study 1: Dicerna Pharmaceuticals / City of Hope



Case Study 1: Dicerna Pharmaceuticals / City of Hope

Lessons Learned

- Our solutions were good - deal is working for both parties
- Patience is a virtue
- Cash is worth the same to everyone, but equity isn't

Potential Pitfalls

- Rude shock for non-exclusive license holder

Case Study 2: Infinity / Novartis

Objectives

- Non-dilutive funding
- 100% ownership in advanced programs
- Partner with shared vision for research
- Partner with development and clinical expertise

Development Plan

- Infinity and partner to collaborate on research
- Infinity to retain options to step back in during clinical trials and commercialization

Technology

- **Bcl-2 proteins**: key apoptosis regulator
- **Single agents**: B-cell malignancies dependent on Bcl-2 (e.g., follicular lymphoma, CLL, DLBCL)
- **Combo therapy**: Sensitize solid tumors to chemotherapeutics

Case Study 2: Infinity / Novartis



Extremely potent compounds that inhibited target of interest

Research team with proven track record

Infinity option to participate in clinical development

Exclusive License

Collaborative Research
Chemistry
Biology
Structural biology

\$

←

Infinity option to co-commercialize in the U.S.

Proven track record in clinical trials

Financials -

- \$15M upfront cash
- \$5M equity
- \$10M research funding
- Milestones, royalties

Total payments > \$400M

- Novartis to invest in IPO if within 2 years

Capacity to commercialize

Case Study 2: Infinity / Novartis

Lessons Learned

- Start partnering discussions early
- Have clinical and commercial path well thought out
- Be opportunistic
- Involve lawyers early (and often)

Potential Pitfalls

- Challenge to manage multiple large pharma potential partners' calendars
- Distraction and cost of taking multiple deals to signature-ready agreements

Case Study 3: Epizyme Partnerships

Objectives

- Build a leading biopharma company based on personalized therapeutics for patients with genetically defined cancers
- Realize potential of a large target class while retaining value
- Minimize equity while retaining independence and control

Development Plan

- Develop platform technology in HMT targets
- Develop lead preclinical programs (MLL, non-Hodgkin's lymphomas and solid tumors)
- Establish pipeline of compounds targeting HMT

Technology

- Biology - Epigenetic enzymes called HMTs
- Biochemistry - Assays to evaluate enzyme function
- Chemistry - Small molecule HMT inhibitors

Case Study 3: Epizyme Partnerships

Platform Expansion
January 2011



- Multi-target
- \$20M upfront
- Research funding
- \$630M in total milestones
- Worldwide royalties into double digits

US Rights
March 2011



- EZH2 only
- \$6M upfront
- \$208M in milestones
- Eisai funds 100% through POC
- Epizyme US co-promote and profit share
- Ex-US royalties

Transformative
April 2012



- Epizyme retains all US rights
- DOT1L ex-US
- 3+1 year option for ex-US rights to other HMT programs
- Global co-development and funding
- \$90M upfront
- >\$160M milestones/program
- Ex-US royalties into double digits

\$189M capital raised to date

- Venture capital - \$54M
- Partners - \$135M

Case Study 3: Epizyme Partnerships

Lessons Learned

- Establish business strategy before partnership strategy
- Anticipate downstream consequences of superficially similar deal terms

Potential Pitfalls

- Interplay among multiple partners (rights and organizational requirements)
- Balance near-term cash vs. downstream value capture

Discussion

Q & A

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