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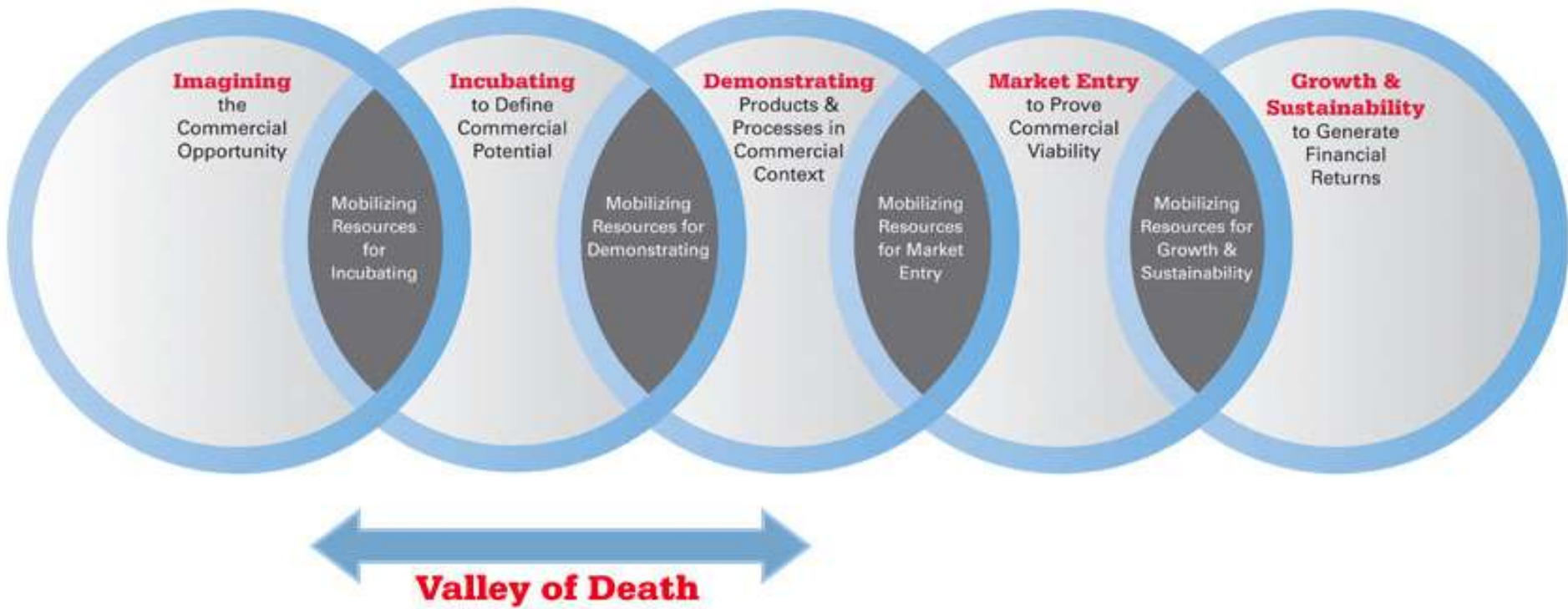
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Starting Up: Life Cycle of an Ohio Bioscience Startup

John F. Lewis Jr.
BioOhio Vice President & COO
Moderator

An Ohio Thomas Edison & Ohio MEP Center



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1. Where do good ideas come from and how to get them started (Imagining & Incubating)
2. Commercialization (Incubating, Demonstrating & Market Entry)
3. Ducks in a Row – legal and insurance issues
4. Financing & Strategic Partnering

Your Part of Something Big & Growing Bioscience Organizations in Ohio

Locations by Subsector

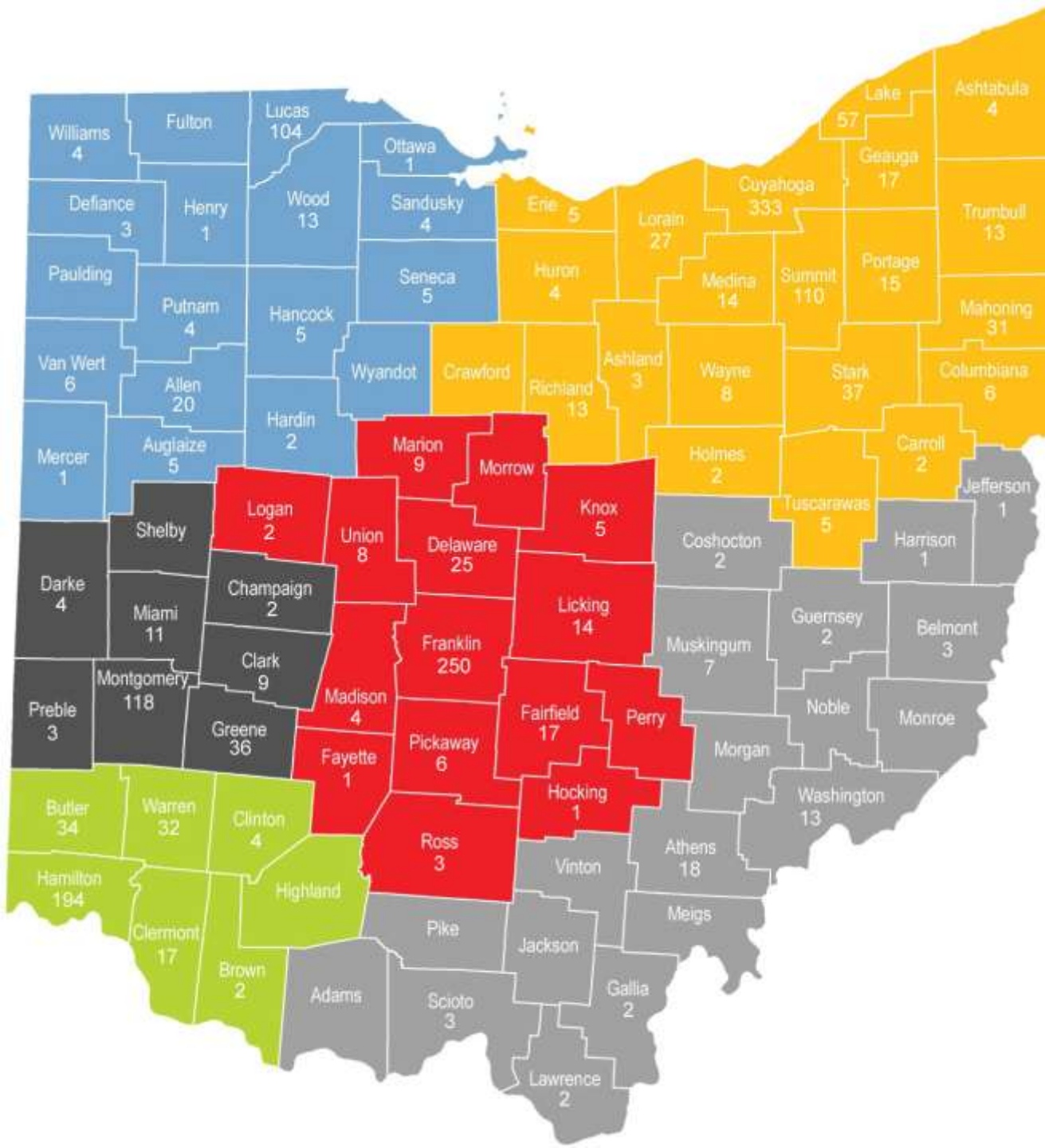
| Subsector | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Agricultural Biotechnology | 117 | 121 | 121 | 123 | 124 | 126 | 128 | 134 | 140 | 163 |
| Medical & Testing Laboratories | 339 | 350 | 430 | 453 | 478 | 508 | 564 | 590 | 622 | 647 |
| Medical Device & Equipment Manufacturers | 589 | 609 | 609 | 615 | 616 | 626 | 627 | 624 | 607 | 604 |
| Pharmaceuticals & Therapeutics | 68 | 67 | 66 | 71 | 74 | 78 | 82 | 85 | 91 | 94 |
| Research & Development | 177 | 197 | 203 | 195 | 206 | 222 | 244 | 270 | 278 | 292 |
| All Bioscience in Ohio | 1,290 | 1,344 | 1,429 | 1,457 | 1,498 | 1,560 | 1,645 | 1,703 | 1,738 | 1,800 |

Research conducted by BioOhio and Cleveland State University indicates at least 1,345 bioscience-related firms (1,800 total locations) were operating in Ohio through 2009. These organizations range from Fortune 500 to incubating startups.



It's not just the 3 C's, Bio in Ohio is statewide!

Bioscience companies and organizations can be found in 72 of Ohio's 88 counties!

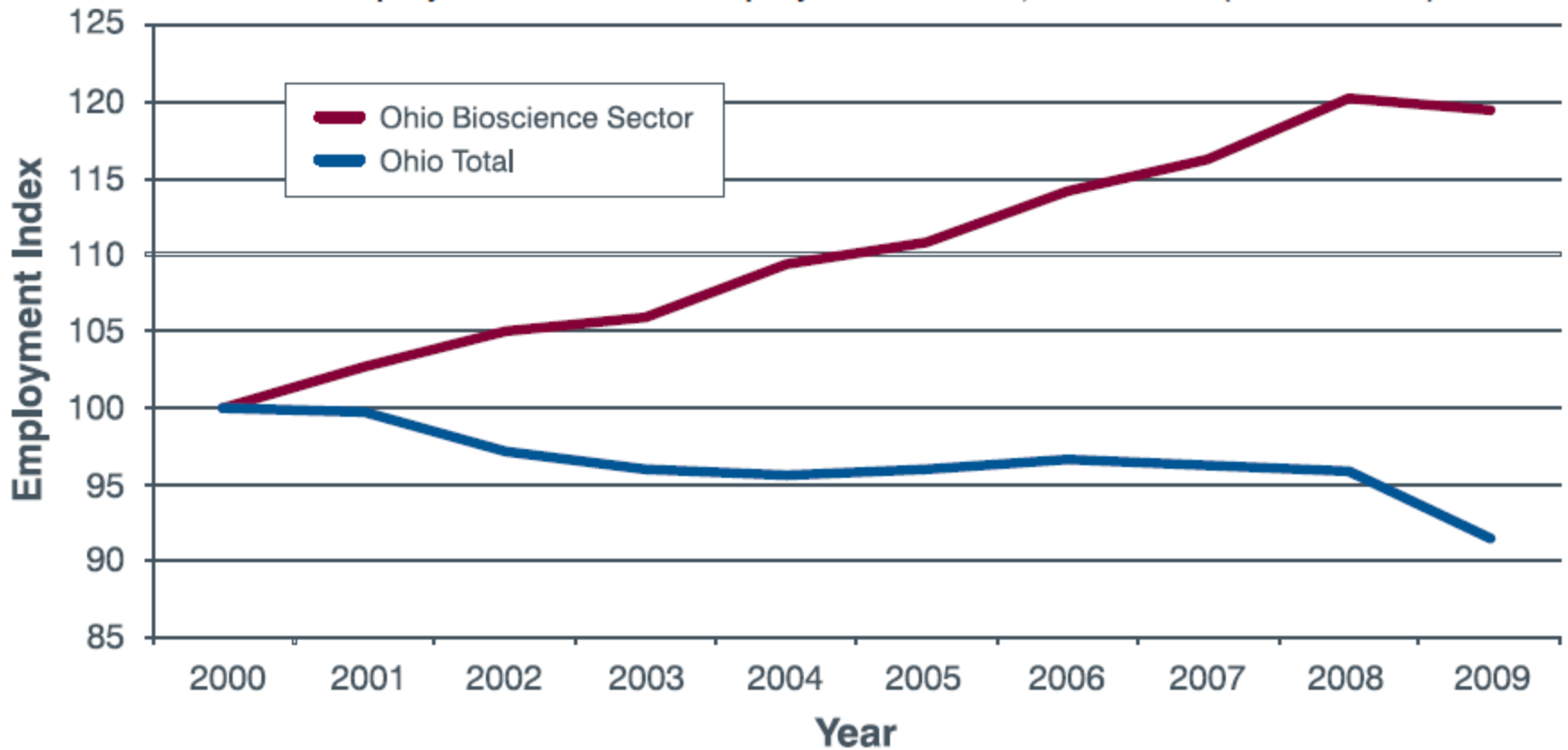


- Southeast (11 counties, 54 locations)
- Central (13 counties, 345 locations)
- West Central (7 counties, 183 locations)
- Northeast (20 counties, 706 locations)
- Northwest (15 counties, 178 locations)
- Southwest (6 counties, 283 locations)

Based on data from the Ohio Bioscience Resource Directory. Prepared April, 2011.



Bioscience Employment and Total Employment in Ohio, 2000-2009 (2000=100%)



Bioscience employment in Ohio has grown 2% on average each year since 2000. Conversely, total employment in all sectors of Ohio has declined 1% on average each year.



New Bioscience Organizations

| New Bioscience Companies in Ohio | | | | | | | | |
|--|------|------|------|------|------|------|------|-----------------------|
| (totals based on NAICS industry codes, only includes those classified as Bioscience) | | | | | | | | |
| | | | | | | | | Regional Totals |
| Region | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2004-2010 |
| Central | 16 | 14 | 17 | 11 | 14 | 14 | 16 | 102 |
| Northeast | 23 | 36 | 28 | 38 | 48 | 33 | 14 | 220 |
| Southwest | 12 | 12 | 14 | 12 | 9 | 17 | 8 | 84 |
| Southeast | 3 | 2 | 0 | 1 | 1 | 6 | 2 | 15 |
| Northwest | 7 | 7 | 8 | 1 | 8 | 4 | 5 | 40 |
| West Central | 5 | 4 | 6 | 2 | 5 | 4 | 0 | 26 |
| Statewide Totals | | | | | | | | |
| | 66 | 75 | 73 | 65 | 85 | 78 | 45 | 487 |
| | | | | | | | | <u>Average</u> |
| | | | | | | | | 70 |

* 2010 data includes significant lag in reporting. We expect to see figures in line with yearly trends once data is available.

From 2004 to 2010, at least 487 new bio-related firms began operations in Ohio—an average of 70 each year.



Investment in Bioscience - 2011 Update

| Total Bioscience Funding - Statewide Totals | | | | | | |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Funding in Millions \$ | 2011** | 2010* | 2009 | 2008 | 2007 | 2006 |
| Private Investment | \$121.82 | \$179.20 | \$121.40 | \$194.91 | \$296.09 | \$114.30 |
| IPO | | | | | \$188 | \$14 |
| Acquisitions | \$934.20 | \$1,322.50 | \$269.00 | \$470.80 | \$1,590.4 | \$79.8 |
| Ohio Third Frontier (OTF) | \$13.54 | \$44.54 | \$39.68 | \$98.30 | \$135.24 | \$154.73 |
| Matching Corporate Funds for Biomedical Partnerships (OTF) | \$14.92 | \$72.66 | \$46.00 | \$105.45 | \$92.16 | \$273.80 |
| NSF Bioscience Grants | not yet available | \$18.02 | \$24.18 | \$13.09 | \$12.37 | \$9.82 |
| NIH Institutional Grants (2009 & 2010 include ARRA Funding) | not yet available | \$777.14 | \$744.60 | \$657.77 | \$676.15 | \$666.73 |
| NIH SBIR/STTR Grants | not yet available | \$19.74 | \$24.29 | \$20.90 | \$21.97 | \$22.15 |
| SBIR/STTR funded Bioscience Awards (not including NIH awards) | not yet available | \$23.56 | \$20.15 | \$17.84 | \$15.04 | \$20.55 |
| Other Healthcare Equity Financing | | | | | \$13.00 | |
| Therapeutic Discovery Program | | \$6.11 | \$9.80 | | | |
| Total Bioscience Funding | \$1,084.48 | \$2,463.47 | \$1,299.10 | \$1,579.06 | \$3,040.42 | \$1,355.88 |

**2010 figures are more current than originally published in the 2010 Ohio Bioscience Growth Report ** 2011 figures will change as data becomes available*

Over \$2.4 billion was invested in 2010 across Ohio to accelerate bioscience growth, making it the second highest year since tracking began in 2004. 2011 is off to a strong start with available data exceeding the \$1 billion mark.



Ohio IPOs & Acquisitions, 2007-2010

| Company | Type of Exit | Exit Details | Year |
|--|--------------|---|------|
| Athersys | IPO | IPO via reverse merger | 2007 |
| Eurand | IPO | IPO | 2007 |
| BioCrystal | Acquisition | Product line purchased by Thermo Fisher Scientific | 2007 |
| Biomec | Acquisition | Acquired by Greatbatch | 2007 |
| EdgePark Surgical | Acquisition | undisclosed amount by Jordon Company | 2007 |
| Hygenic | Acquisition | purchased by CorTec | 2007 |
| Memberhealth | Acquisition | Acquired by Universal American Financial Corp. | 2007 |
| ReVasc | Acquisition | Sold to Micrus Endovascular Corp | 2007 |
| Sears Dental and Dental Care | Acquisition | Purchased by MSD Capital LP and North Peak Capital | 2007 |
| Wellcorp | Acquisition | purchased by Nationwide | 2007 |
| Bargmann Management | Acquisition | Purchased by Invacare | 2008 |
| Healthcare Transaction Processors | Acquisition | Purchased by McKesson | 2008 |
| NDI Medical | Acquisition | Product line purchased by Medtronic | 2008 |
| USB / Anatrace | Acquisition | acquisition by Affymetrix | 2008 |
| Whole Health Management | Acquisition | purchased by Walgreens | 2008 |
| Theken Spine | Acquisition | acquisition by Integra Life Sciences | 2008 |
| Healthcare Pharmacy | Acquisition | Acquired by Remedi Senior Care | 2008 |
| Artromick Mobile Solutions Group | Acquisition | Acquired by Capsa Solutions | 2009 |
| Noteworthy Medical Systems | Acquisition | Acquired by CompuGROUP Holding AG | 2009 |
| Diagnostic Hybrids, Inc. | Acquisition | Acquired by Quidel Corporation | 2010 |
| PharmaForce | Acquisition | Acquired by Daiichi-Sankyo subsidiary Luitpold Pharmaceuticals | 2010 |
| OncoDiagnostics Laboratory | Acquisition | Acquired by Predictive Biosciences of Boston | 2010 |
| Innovative Process Administration | Acquisition | Acquired by Mercer LLC | 2010 |
| Opticon Medical | Acquisition | Liberator Medical Supply - sold in May, name change to Practica Medical | 2010 |
| Ethicon Endo Surgery Mammotome Breast Care Division | Acquisition | Acquired by Devicor Medical Products, backed by GTCR | 2010 |
| CSC Group / Computer Systems Company | Acquisition | Acquired by Hyland Software | 2010 |
| Edgepark Medical Supplies | Acquisition | Acquired by Clayton, Dubilier & Rice GS Capital Partners | 2010 |
| IntellisEPM (product line) | Acquisition | Acquired by Carefx | 2010 |
| Therapy Partners (Wallace Management Corporation) | Acquisition | Acquired by HealthPro Rehabilitation | 2010 |

Company & Capital Formation



www.rgp.org &
UTIE



www.jumpstartinc.org



www.bioenterprise.com

www.braintreepartners.org



www.ci.akron.oh.us

dayton development coalition
GROWING THE DAYTON REGION

www.daytonregion.com



www.techcolumbus.org

BIO/START
Bio/Medical Start-Up Center

www.biostart.org



www.ohio.edu/research/innovation

Innovation Center
Fueling bright ideas.



www.cincytechusa.com

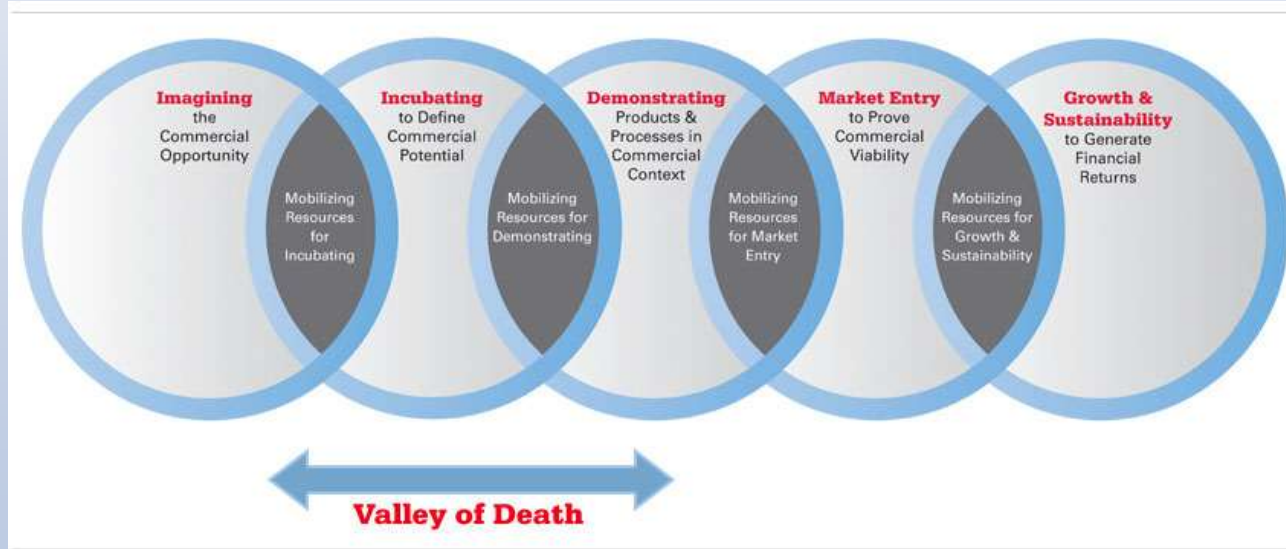


www.ohiou.edu/biotech



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Imagining & Incubating

Jan Rosenbaum, CincyTechUSA

Jeff Wiseman, Edison Biotechnology Institute

Joseph Gardner, Akebia Therapeutics

Commercialization

Michael Lang, JumpStart Ventures

George Proicou, TechColumbus

Rick D'Augustine, CincyTechUSA

Jon Klotz, RocketVentures

Ducks in a Row: Legal & Risk Management

Steven Karzmer, Calfee, Halter & Griswold

Dan McDonough, NewScience Insurance

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Ray Hagerman, Dayton Development Coalition

Allison Finkelstein, TechColumbus

Mike Bunker, Early Stage Partners

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Risk Management Considerations Biotech and Life Science Companies Getting Your Ducks In A Row



Dan McDonough

October 27, 2011

I. Technology Development/Transfer

- Idea or Concept
- Initial Research
- Patent Filing
- Licensing Agreements
- Intellectual Property
- Pre-Seed Funding

Insurance Considerations

- Contractual Liability Obligations
 - Property/Lease
 - General Liability
 - Intellectual Property
 - Licensing



II. Initial Company Formation

- Formalized Corporate Structure
- Dedicated Work Space
 - Incubator Facility
 - Institutional Facility
 - Commercial Facility



Insurance Considerations

- Expanded Property
- Auto HNO
- Key Man Life
- General Liability
 - Employee Benefits Liability
 - Fiduciary
- Directors & Officer's
- Workers Compensation

III. Pre-Clinical Phase

- Animal Testing
- Lab testing
 - Cell Cultures
 - Reagents
- FDA Filing
 - 510(k)
 - IND
 - IDE

Insurance Considerations

- Expanded property
 - R&D Property
 - Lab Equipment/Stock



IV. Clinical Trails

- Phase I, II, & III
- Initial Funding
 - Private Placement
 - Seed Money
 - State/NIH Grants
- IRB/SAB



Insurance Considerations

- Products/Domestic and Foreign Clinical Trials Liability
- Professional
- Foreign Coverage
- Business Income for R&D Companies

V. Marketing Operations

- Advanced Funding
 - Strategic Partnerships
 - PPM
 - Licensing
 - Distribution Agreements
 - IPO
- Manufacturing



Insurance Considerations

- More complicated D&O
- Ocean Cargo
- Vendors
- Pollution Exposures
- Products Recall
- Manufacturers E&O
- Multiple Property Exposure
- Stock/Inventory

Thank you!

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NewScience Insurance



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Stick around for the Networking Reception

Featuring hors d'oeuvres, drinks, and
great silent auction items benefitting
the BioOhio Scholarship Fund



Let us know how we can help you!

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614-675-3686 x7

An Ohio Thomas Edison & Ohio MEP Center