

Biomedical Careers in Industry



Tomorrow's Doctors, Tomorrow's Cures

Learn

Serve

Lead

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Association of
American Medical Colleges

Biomedical Careers in Industry

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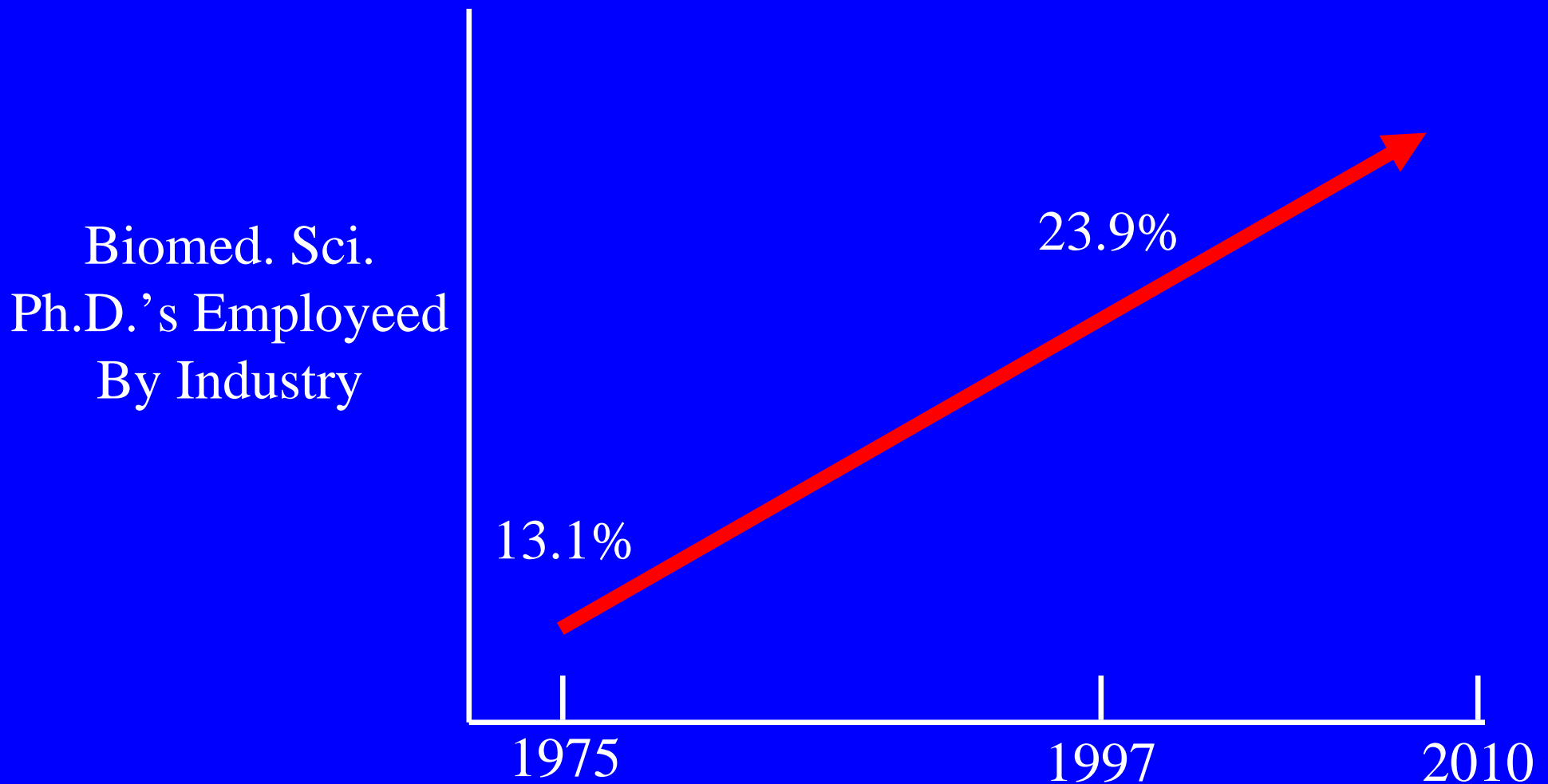
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&

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The Growth of Biomedical Sciences in Industry



Source: "Addressing the Nation's Changing Needs for Biomedical and Behavioral Scientists" (2000) National Research Council, Office of Scientific and Engineering Personnel, National Academy Press, Washington, D.C.

Differences between Academic and Pharmaceutical Company Science

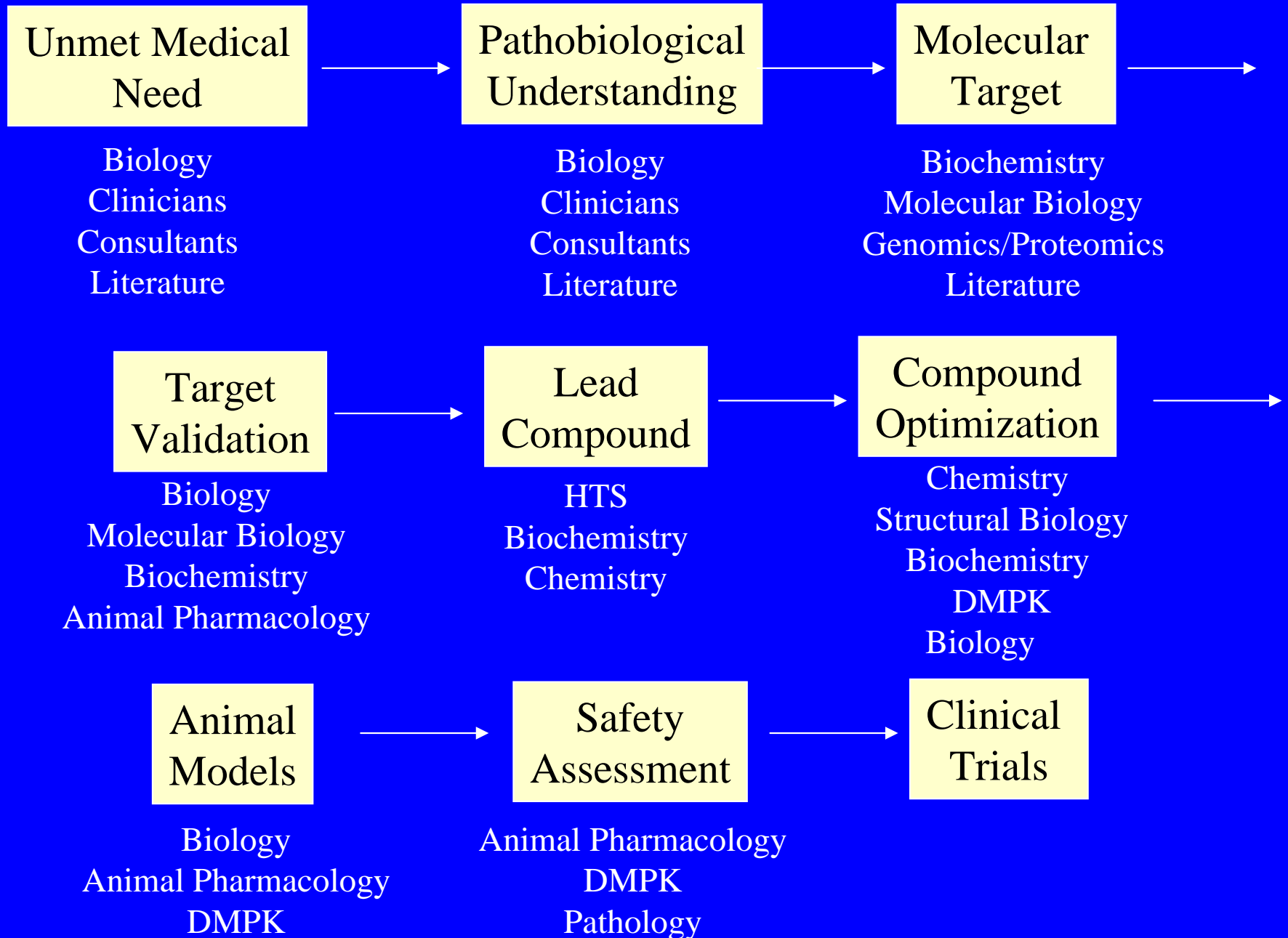
Academics

- Early focus on biology.
- Answer questions of broad interest.
- Develop new models.
- Work as an individual contributor w/ occasional collaborations.
- Project lifetime less defined.
- Product is information (publications).

Company

- Later focus on pathobiology.
- Answer very directed questions of clinical utility.
- Utilize new models.
- Work as a member of a project team.
- Project lifetime defined by progression to clinic (typically 1-5 years of preclinical work).
- Product is a marketable drug.

Discovery Project Matrix Teams



Discovery Project Matrix Teams



Frequent Misconceptions about Industry

- ***Scientists have no freedom to work on what they want.***
 - Nobody has complete freedom: all work has to be funded, hence justified to some organization.
 - Good ideas get resourced in any organization.
 - Clever, dedicated people find ways to work on what interests them.
- ***Industrial scientists can't publish or otherwise obtain external recognition.***
 - R.A. Copeland: >135 papers, 4 books, 9 patents/applications.
 - Companies want to showcase excellent work.
 - Publications & external talks are valuable recruiting tools.
- ***There are no opportunities for teaching/mentoring in industry.***
 - Teaching/mentoring is required on a daily basis.
- ***Career advancement in industry requires moving out of the lab and into management.***
 - Most companies have scientific as well as management career ladders.
 - How often have you seen a Full Professor working at the bench?

Pros of “Big Pharma” vs. Biotech.

Big Pharma

- Secure funding for R&D.
- Larger companies can usually weather economic hard times better.
- Larger R&D budgets.
- Research goals are more clearly defined and usually aligned with existing product areas.
- Well defined career ladders.
- Salaries and benefits are typically better.

Biotech.

- Very exciting, fast pace research.
- Little bureaucracy to deal with.
- Typically closer to basic research, looking for applications.
- Flat management structures and small size allow greater impact for young scientists.
- Typically greater equity in company provided through stock options.

Key Skills for Biomedical Scientists that are Valued by Industry

- **Be a Scientist, not a Technologist**
 - Master your craft
 - Focus on problem solving, not on tools.
 - Focus on creative solutions (think outside the box)
- **Demonstrate Quantitative Skills**
- **Communicate Effectively**
 - Take every opportunity to write and speak publicly.
 - Don't forget about letter and resume writing as important skills.
 - If English is not your 1st language, its up to you to master it.
- **Be a Team Player**
 - Industrial science is a “team sport”.
 - Understand the concept of Project Matrix Teams.
 - Develop networking and interpersonal skills as well as technical skills.
 - “Abandon all ego those who enter here”.
- **Think Holistically**
 - Be able to put your science in a broader context.
 - Understand project goals and issues, not just your piece of the pie.
 - Commit to life-long learning.

Some Suggestions for Career Success

- ***Visualize what success looks like for you.***
 - Know what you want out of life and seek employment that provides a path to your goals.
 - Makes sure your value system is not incompatible with that of your employer.
 - Balance career with other life needs (e.g, family, hobbies, etc.).
- ***Identify role models and seek them out as mentors.***
- ***Be adaptable to change.***
 - Be a problem solver, not an expert on a specific method or area.
 - Commit to life-long learning.
- ***Always remember that your career is in your hands.***
 - Don't look to others to advance your career - be proactive.
 - Distinguish yourself at the job and externally.
 - Network, network, network.