WHAT CAN I DO WITH A PHD?
CAREER OPPORTUNITIES
OUTSIDE OF ACADEMIA

ANTHONY T. CHEUNG, PhD
TOO MANY SCIENTISTS?

FROM 1983 TO 2003…

- NUMBER OF DOCTORATES GIVEN ANNUALLY IN LIFESCIENCES NEARLY DOUBLED FROM 4,777 TO 8,163
- NUMBER OF POSTDOCS IN ACADEMIA INCREASED FROM 14,000 TO 33,000
- GROWING 3X FASTER THAN NATIONAL AVERAGE

FROM 1993 TO 2003…

- % OF PHD GRADS HOLDING A TENURE OR TENURE-TRACK POSITION WITHIN 6 YEARS AFTER GRADUATION FELL FROM 25% TO 15%

SOURCES: SCIENCECAREERS.ORG & NSF REPORT - “RECENT TRENDS IN THE CAREERS OF LIFE SCIENTISTS”
• ‘LOOMING CRISIS’ - 4TH YR OF FLAT-FUNDING FROM NIH
• 8 OUT OF 10 GRANT APPLICATIONS GO UNFUNDED

SOURCE: NATIONAL INSTITUTE OF HEALTH
BROADENING YOUR CAREER OPTIONS

**PhD**
- **Academia:** Professor, Instructor, Researcher, Admin
- **Industry:** Management, Scientists, BD, Clin/Reg, CMC, Marketing
- **Law:** Counsel, Litigator, Licensing, Pat. Agent, Tech Transfer
- **Consulting:** Corp Strategy, HR, Clin/Reg, Tech Transfer, Marketing
- **Finance:** VC, iBanker, Analyst, Financial Advisor
- **Media:** Journalist, Writer, Reporter
- **Gov’t/Non-Profit:** Regulator, Policy Maker, Scientist, Admin

**Adacemia**
- Researcher, Admin

**Industry**
- Management, Scientists, BD, Clin/Reg, CMC, Marketing

**Finance**
- VC, iBanker, Analyst, Financial Advisor

**Law**
- Counsel, Litigator, Licensing, Pat. Agent, Tech Transfer

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<table>
<thead>
<tr>
<th>ACADEMIA</th>
<th>INDUSTRY</th>
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</thead>
<tbody>
<tr>
<td>RESEARCH</td>
<td>DEVELOPMENT</td>
</tr>
<tr>
<td>DEPTH</td>
<td>BREADTH</td>
</tr>
<tr>
<td>PROCESS DRIVEN</td>
<td>RESULTS DRIVEN</td>
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<tr>
<td>“PUBLISH OR PERISH”</td>
<td>“IPO OR PERISH”</td>
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</table>
MYTHS ABOUT SCIENTIFIC CAREERS IN INDUSTRY

- DO NOT PUBLISH
- BORING SCIENCE
- LACK OF FREEDOM/CONTROL FOR INTELLECTUAL PURSUIT
- LACK OF JOB SECURITY
- COMPLEX ORGANIZATION HURDLES
1. MORE CAREER OPTIONS (HORIZONTAL + VERTICAL)

- R&D EXECUTIVE
- BUSINESS DEVELOPMENT
- CLINICAL/REGULATORY
- CMC
- PROJECT MANAGEMENT
- SALES & MARKETING
- HUMAN RESOURCES
- COMMUNICATIONS (IR/PR)
- EXECUTIVE MANAGEMENT (C-LEVEL, VP…)
## BENEFITS IN SCIENTIFIC CAREER IN INDUSTRY

### 2. FINANCIAL REWARD + UPSIDE POTENTIAL

### MEAN SALARIES

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
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<tbody>
<tr>
<td>ACADEMIC</td>
<td>$74,000</td>
<td>$78,000</td>
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<tr>
<td>INDUSTRY</td>
<td>$106,000</td>
<td>$116,000</td>
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KELLY SCIENTIFIC RESOURCES, 2006
## 2. Financial Reward + Upside Potential

### Mean Biotech Salaries

<table>
<thead>
<tr>
<th>Position</th>
<th>Salary</th>
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</thead>
<tbody>
<tr>
<td>CEO</td>
<td>$351,100</td>
</tr>
<tr>
<td>CORP DEV EXEC</td>
<td>$197,800</td>
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<tr>
<td>BD EXEC</td>
<td>$201,500</td>
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<tr>
<td>SR. MED AFFAIRS</td>
<td>$248,100</td>
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<tr>
<td>CSO</td>
<td>$330,700</td>
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<tr>
<td>R&amp;D EXEC</td>
<td>$175,300</td>
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<tr>
<td>PROJ MGM</td>
<td>$126,300</td>
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<tr>
<td>PR EXEC</td>
<td>$146,400</td>
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</tbody>
</table>

Canadian Biotech Survey, AON Consulting 2006
3. MULTI-DISCIPLINARY WORKING ENVIRONMENT

- LAWYERS
- MARKETING
- PHARMACISTS
- LAB TECHNICIAN
- TECH WRITER
- SAB
- FINANCE
- VET
- CHEMISTS
- SUPPLY CHAIN
- BUSINESS DEV
- BIOSTATISTICIAN
- PROJECT PLAN
- BOD
- VC
- CMO/CRO
- CEO
- REGULATORY

↑ RESOURCES
↑ PRODUCTIVITY
↑ CONTACTS
ACADEMIA VS INDUSTRY: SKILL SETS

- Strategic Planning Skills
  - Project Management
  - Goals Development
  - Budget Management

- Team Skills
  - Connect
  - Communicate
  - Collaborate

- Scientific Skills
  - Technical Skills
  - Sci Knowledge
  - Creativity

- Leadership Skills
  - Mentorship
  - Enabling Others
  - Personnel Mgmt
  - Initiative

- Project Management
- Goals Development
- Budget Management

ENGENE

CHARTING YOUR CAREER PATH

DECISION
GO/NO GO

SELF-ASSESSMENT
VALUES, SKILLS, INTERESTS, PERSONALITY

RESEARCH + PLAN
WHO, WHAT, WHERE, HOW?

DEVELOPMENT
- HOW DO I GET THERE?
- ACQUIRE NEW SKILL SETS
- TAKES TIME… START EARLY
SAUNDER
SEGAL
CSO BOOTCAMP
HHMI
UC DAVIS

HUNT
- BUILD CONTACTS
- INFO INTERVIEWS
- ID SKILLS NEEDED
LIFESCIENCES BC
VCR. ENT. FORUM
STUDENT BIO. NTWK.
BIO
BIOPARTNERING
SCIENCECAREERS.ORG
ENGENE

IT’S POSSIBLE...

GEORGE RATHMAN
FOUNDING CEO
AMGEN

ED PENHOET
CO-FOUNDER + EX-CEO
CHIRON

RON CAPE
CO-FOUNDER + EX-CEO
CETUS

ARTHUR LEVINSON
CEO
GENENTECH

BILL RUTTER
CO-FOUNDER + EX-CSO
CHIRON

STEVE GILLIS
CO-FOUNDER + EX-CEO
IMMUNEX + CORIXA

DAVID GOEDDEL
CO-FOUNDER + CEO
TULARIK

JULIA LEVY
EX-CSO, EX-CEO
QLT
YOU CAN COME BACK FROM THE ‘DARK SIDE’...

AXEL ULRICH
SCIENTIST, GENENTECH
DEVELOPED HUMULIN + HERCEPTIN
CO-FOUNDER, SUGEN
DIRECTOR OF MOL BIOL, MAX PLANCK

FRANK MCCORMICK
RESEARCH VP, CETUS
RESEARCH VP, CHIRON
ONYX, FOUNDER + CSO
PROFESSOR, UCSF
DIRECTOR, CRI UCSF
GOOD LUCK!

BLING BLING