HOW TO BUILD A PIEP - POSTDOC INDUSTRY EXPLORATION PROGRAM

2012 NPA MEETING
SAN FRANCISCO
Agenda for Today

- Share our knowledge and experience creating PIEP
  - Why would I create PIEP?
  - How do I get PIEP started?
  - What can I expect from PIEP?
  - Can PIEP be customized?
Why Would I Create PIEP?
PhD Supply is Exceeding PI Demand

Percentage of NIH R01 Principal Investigators Age 36 and Younger and Age 66 and Older (Fiscal Years 1980 to 2010)

- Blue line: Age 36 and Younger
- Red line: Age 66 and Older

The graph shows a decreasing trend in the percentage of NIH R01 Principal Investigators age 36 and younger from 1980 to 2010, while the percentage of those age 66 and older is increasing.
Industry Wants Great Postdocs!
Postdocs Know Little About Industry

- Consumed by research
- Difficult to visit companies
- Poor networking skills
- Small professional network
- Non-bench careers are foreign

Result: Many postdocs don’t know if they want a career in academia or industry
Solution:

Give postdocs a fun opportunity to explore industry careers:

SITE VISITS!
The Value for Postdocs

- Free visit to companies
- Learn about corporate cultures
- Exposure industry trends and careers paths
- Network with industry employees
- Career guidance

- For the committee: Build great connections with colleagues and companies!
Value for Companies

- Attract great postdocs to your company
- Generate scientific collaborations
- Identify potential future hires

On the job market:

- < 1 year, 71%
- 1 year, 13%
- 2 years, 8%
- 3 years, 2%
- 4 years, 6%
Most Importantly This Program Works!

Before PIEP

- Very Interested: 41.8%
- Somewhat Interested: 50.9%
- Not Interested: 7.3%

After PIEP

- Very Interested: 72.7%
- Somewhat Interested: 23.6%
- Not Interested: 3.6%

55 respondents
How do I get started?

1) Get information
2) Evaluate your postdocs
3) Get help and resources
4) Build the infrastructure
5) Identify corporate partners
6) Have fun on your site-visits!
The ABC’s of industry: a postdoc program provides a
sneak peek into industry careers

Adnan O Abu-Yousif, Erik C Hett, Ann M Skoczenski & Tayyaba Hasan

An innovative partnership allows local companies to educate postdocs about careers in industry.
Evaluate your Postdocs

- Survey your population
  - Google Forms

- What do you want to know about them?
Our Survey: PIEP affiliation

UC Berkeley, 82%
LBL, 11%
HHMI, 3%
UCSF, 2%
Stanford, 2%

200+ members
Our survey: PIEP Nationality

- United States of America
- China
- India
- Germany
- Armenia
- Canada
- Israel
- Spain
- Ukraine
- Finland
- Guatemala
- South Korea
- Perú
- Poland
- France
- Finland
- Ukraine
- Spain
- Israel
- Canada
- Armenia
- Germany
- India
- China
- United Kingdom of Great Britain
- Uruguay

55 respondents
Result From Survey: VISA Workshop

- Special VISAs for the private sector
- Adam Green, immigration attorney
- Requirements, Dates, Cost
Get Help and Resources

- Who can you ask for help?
- What are your resources?
Our Help and Resources:
PIEP Committee
Organizing events

- How do organize and select participants?
Name: Michael Fisher
Email: mikefisher@berkeley.edu
Employer: UC Berkeley
PhD Degree: Molecular Biology, 2009
PhD Institute: Princeton University
Ideal Job Start Date: 2013-01-02
US citizen/perm resid: Yes

Formerly a graduate student with Michael Hecht and currently a postdoc at Berkeley, I am well versed in a variety of subjects and techniques in molecular biology and biochemistry. My main projects have involved generating, characterizing, and screening libraries of proteins for applications in synthetic biology and bioenergy. Among my responsibilities has been managing research subgroups of three to seven members. I have also taken on leadership positions such as the presidency of the Berkeley Postdoctoral Association. I find teaching concepts and techniques to scientific novices very fulfilling. In that vein, I have helped to organize events that share science with the public, such as a symposium to examine how science is portrayed by the media and entertainment industries, and an EBI showcase to acquaint the local community with biofuels research. I hope to transition to a position that allows me to help make high-level scientific concepts accessible and engaging to non-experts.
The Biosketch: part 2

Interests:
- science outreach
- public/investor relations
- science policy

Expertise:
- synthetic biology
- bioenergy/biofuels
- protein engineering

Team Skills:
- Managed teams of 3 to 7; one project garnered substantial media attention upon publication
- Led 2 semesters of classes to educate nonscientists about socially relevant topics in biology
- Engaged a variety of critical audiences with over 30 technical or informational presentations

Technical Skills:
- Libraries via error-prone PCR, DNA shuffling, assembling oligos containing degenerate codons
- Site-directed mutagenesis, various molecular cloning techniques, protein purification
- Flow cytometry, in vivo screens/selections, lab robotics, circular dichroism, gel filtration

Analytical Skills:
- DNA and amino acid sequence analysis (BLAST, COBALT, CLUSTALW, etc.)
- Substantial use of Guava InCyte software (flow cytometry), Microsoft Excel
- Extensive use of ApE plasmid editor; limited experience with Perl
What workshop topics would you offer to your postdocs?
Workshop: Saavy Site-visitor – Creating a Biosketch

- Andrew Green, Associate Director of the Career Center
- Understand the sources of your value
- Translate your credentials
- Resume critique, mock interviews
Workshop: Creating Opportunities with a Linked-in Profile

- Online-professional network
- Points from Bio-sketch workshop immediately transferrable
- Community space for PIEP participants
Workshop: Informational Interviewing

- Lynne Hollyer, Associate Director of IPIRA
- A way for you to gain valuable insight into your career area of interest, that would otherwise be difficult to find in books or on the internet
- Roleplays
Database and survey tools

- Google forms
- Zoho creator
- Spreadsheet software (Excel)
Site visit mechanics

1. Collect Biosketches (once per year)
2. Zoho Creator
3. Announce site visit and collect RSVPs
4. Eventbrite
5. Select attendees and export biosketches
6. Zoho and Excel
7. Create a pdf of all biosketches
8. Word and Excel
9. Attend Site Visit
10. Google forms
11. Send followup survey to postdocs & co

Sequence:
- Collect Biosketches
- Zoho Creator
- Announce site visit and collect RSVPs
- Eventbrite
- Select attendees and export biosketches
- Zoho and Excel
- Create a pdf of all biosketches
- Attend Site Visit
- Google forms
- Send followup survey to postdocs & co
Before each site visit…

- Company profile and major accomplishments
- Familiarity with on-going projects
- Familiarity with employment options within the company
- Current employment opportunities
- Make business cards
- Prepare Resumes
Site-visits with Bay Area Life Sciences Companies
Getting to Site-Visits
Site visit interactions

What should postdocs learn from employees?
Individual Speakers
Panel Discussion with Employees
Networking Hour
Gratitude For Our Industry Partners
Where to visit?

Are you near by companies?
Where would you visit first?
How would you contact them?
Who goes on the site-visits?
Postdoc Industry Exploration Program
Timeline (inception – fall 2011)
Life Technologies

- Applied Biosystems, Invitrogen, Gibco, Ambion, Molecular Probes, TaqMan, Ion Torrent, Novex
- Kits, reagents, devices, and services for the molecular biology market
“Confirmed my interest in pharmaceutical industry over the tool development industry”

“When considering non-bench roles in companies, it is easier to start at the bench and then move laterally. Alternatively, start in marketing”

“Mobility within the company is attractive”

Senior recruiter, Talent acquisition

Postdocs experience the company campus and commute
QB3 Garage at UCSF

- Small spaces for entrepreneurs to lay the foundations for companies that may spearhead new industries (start-ups)
- Access to facilities and investigators at UCSF
- Refactored Materials, Allopartis
"Start-up company is doable but it takes over your ENTIRE life"

"You do not need much to start a company"

- Start-up in a box (legal assistance, mentorship, business bank account, SBIR application assistance, operational checklist)

"Starting a company feels like being a professor – constantly trying to secure funding"

- Uncle Sam is one of the biggest supporters of new businesses
Pharmaceutical Industry

Scientists develop small molecule drugs or antibodies to target key nodes within pathways that, when defective, lead to disease.
Novartis Institute for Biomedical Research

- “Should not send my resume to every position within the company”
- “Better understand their criteria for selection”
- “Surprised by the science-first culture and the dynamic work environment”
- Postdoc Program
LS9

- Provide sustainable fuels and chemicals to meet current and future world demands
- Uses synthetic biology to reengineer microorganisms with new biocatalytic capabilities
“Loved the team atmosphere in a mature start-up” (Matrix)

“There is just as much pressure working in industry as academia”

“Better impression about working in industry”

Tour of facilities not commonly found in labs

Many recent hires were at the networking event
Bio-Rad Laboratories

- Products and systems used to separate complex chemical and biological materials and to identify, analyze, and purify their components
Bio-Rad Laboratories

- “Employees covered a wide-range of backgrounds and experiences”
- “Technical support can be a great foot in the door for someone looking to move beyond the bench”
- “Great professional development opportunities within the company”
- Top-ten company to work for in the Bay Area (stable, low turnover)
Critiques

- More networking time (one-on-one setting)
- Tour of a real lab setting
- Identify employees prior to the mixer event (those that join who were not on the panel)
- Put a diverse group of people on the panel (not just scientists)
- Advanced notification of who will be on site-visits
PIEP has Perks!
Testimonials

- “I have an interview at Life Technologies from the announcements you forwarded from Erika Albury. THANK YOU!!!!!!!!!!!!!!!!!!!!!!!!!”
  
  – PIEP member

- “…thanks for the help, I think the site visit (and especially having Erika’s e-mail address) helped tremendously”
  
  – PIEP member

- “…It was a great success, as our R&D managers were very impressed with the caliber of attendees. The attendees were well prepared and asked great questions. This was a great opportunity for us to pipeline for future talent with Bio-Rad.”
  
  – Bio-Rad Staffing Consultant
Testimonials

“\[I recently got a job offer from Bio-Rad... and have accepted the position... I first met my hiring manager in the visit we had to Bio-Rad... I just wanted to... thank you and let you know that these visits are very useful, and can lead to opportunities!\]

– Happy PIEP member
## More than one way to PIEP

<table>
<thead>
<tr>
<th>Issue</th>
<th>UCB</th>
<th>MGH</th>
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<tbody>
<tr>
<td>PIEP organization structure</td>
<td>Committee</td>
<td>Online website system</td>
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<tr>
<td>Funding</td>
<td>UCB VCR</td>
<td>MassBioEd/MGH-ORCD</td>
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<tr>
<td>Travel to and from site visit</td>
<td>Bus (all)</td>
<td>Subway/carpool</td>
</tr>
<tr>
<td>Nondisclosure agreement</td>
<td>Nonissue (UC umbrella)</td>
<td>Not applicable</td>
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<tr>
<td>Postdocs on typical visit</td>
<td>20-50</td>
<td>2-20</td>
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<tr>
<td>Site visit structure</td>
<td>Talks, panel discussions, food, networking</td>
<td>Talks, panel, tour, one-one, HR overview</td>
</tr>
<tr>
<td>Postdoc:employee ratio</td>
<td>3:1 - 5:1</td>
<td>1:1</td>
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<tr>
<td>Time commitment</td>
<td>2-5 hrs./week</td>
<td>3-6hrs/visit</td>
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<tr>
<td>Committee size</td>
<td>As necessary</td>
<td></td>
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<tr>
<td>Company selection</td>
<td>Skill set</td>
<td>Search via Keywords/250 word Biosketch</td>
</tr>
<tr>
<td>Institutional collaboration</td>
<td>If spots still available</td>
<td>Boston U., Brigham &amp; Women’s Hospital, Dana Farber Cancer Institute, MassBioEd (2012)</td>
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<tr>
<td>GS participation</td>
<td>5% (2012)</td>
<td>0% (postdocs only)</td>
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Thank you for your attention
What if Academia is not for me?

- Biotechnology Companies are a Rich Source for Ph.D. Jobs
- South San Francisco is the birthplace of biotechnology
The Job Market is Getting Tougher

- More than ever, finding the right job in industry requires information gathering and networking.
Site-Visit with a Biotech Pioneer

- Organized by the company
- Talk by the VP of Research
- Tour of the Facilities
- Problems:
  - Focus on research careers
  - No perspective from new employees
  - HR a mystery
  - Difficult to follow-up
  - Up to the company to host a site-visit
Biotechnology Companies have Diverse Career Opportunities
Workshop: How to Land a Job in the Life Sciences

- Toby Freedman, Author
  Comprehensive and systematic review of careers in biotech
- Day-to-day roles and responsibilities
- Ups and Downs
Workshop: Working at the US Patent and Trademark Office

- Ram Shukla, Supervisory Patent Examiner
- How to become a Patent agent
- MCB295
Workshop: Transitional Education for Alternative Positions in Science

- Victoria Sharma, Director of Biotechnology Program
- Professional and Continuing Education for Adults
- Regulatory Affairs, Quality and Compliance, Project Management etc.
Workshop: Negotiating Your First Offer

- Peter Fiske, CEO Paxwater, Author on leadership and career development for young scientists
- PhDs over-value their technical knowledge and under-value the broader range of skills they have (affects their value proposition)
Workshop: Dealing with Difficult People and Situations

- Doug Kalish, Founder of Dougsguides: Making the Transition from College or Graduate School to the Real World