Alternative Careers for Physics PhDs

What will you do?

First 10 screens of statistics…
How many?
Where do they go?

**Figure 1. Initial employment of physics PhDs, 1979-2006.**

- **Postdoc**
- **Potentially Permanent Position**
- **Other Temporary Position**
- **Unemployed**

In 1991, the survey questionnaire was changed to measure "other temporary" employment as a separate category.

*AIP Statistical Research Center, Initial Employment Report.*
How much do they make?

Figure 2. PhD starting salaries, classes of 2005 & 2006.

Non-Postdoc Positions

Private Sector

PhD-granting Physics Department

Bachelor's-granting Physics Department

Postdocs

National Lab/FFR&DC

University

Typical Salaries in Thousands of Dollars

Varies strongly by specialty- Don’t become too specialized (MRI).
Physicists held about 17,000 jobs in 2006.

About 38% of physicists and astronomers worked for scientific research and development services firms.

About 21% were employed by the Federal Government, mostly in the U.S. Department of Defense, but also in the National Aeronautics and Space Administration (NASA) and in the U.S. Departments of Commerce, Health and Human Services, and Energy.

Employment of physicists and astronomers is expected to grow at 7%, about as fast as the average for all occupations during the 2006-16 decade. The need to replace physicists and astronomers who retire or otherwise leave the occupation permanently will account for many additional expected job openings.

Median annual earnings of physicists were $94,240 in May 2006. The middle 50% earned between $72,910 and $117,080. The lowest 10% earned less than $52,070, and the highest 10% earned $143,570

-Bureau of Labor Statistics (bls.gov)
It’s academic

Table 8. Estimated Tenured and Tenure-Track Physics Faculty Turnover, 2004-05 Academic Year

<table>
<thead>
<tr>
<th>Highest Degree Offered in Department</th>
<th>PhD</th>
<th>Master’s</th>
<th>Bachelor’s</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Vacant Positions</td>
<td>163</td>
<td>28</td>
<td>133</td>
<td>324</td>
</tr>
<tr>
<td>Percent of Departments with Vacancies</td>
<td>55%</td>
<td>38%</td>
<td>21%</td>
<td>31%</td>
</tr>
<tr>
<td>Estimated Turnover</td>
<td>3.0%</td>
<td>3.2%</td>
<td>4.5%</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

AIP Statistical Research Center: 2006 AWF Survey

Special kind of people, these Professors...
Grants
Teaching
“Academia”
APS Committee on Careers and Professional Development recommendations:

- Follow Current Events
- Learn Basic Skills
- Give Presentations
- Prepare a Well-Thought-Out CV
- Don't Procrastinate
- Set Goals
- Identify Potential Employers and Relevant Jobs
- Do Your Own Thinking
- Learn Soft Skills
- Join Professional Organizations

Job-hunting resources:

- phds.org
- aps.org
- aip.org
- monster.com, etc.
- craigslist.com (specific region)
Non-traditional careers

- Consulting
- Energy and environmental science
- Computer programming
- Finance (Quants)
- Entrepreneurial

automotive  energy  healthcare  financial
It's all about me

**1968** – Began PhD program at ND, solid state
- Published one paper in Phys. Rev. Letters
- Got two patents

**1973** – Began Post Doc at IIT in Chicago – 3 years (bad job market)
- Radiation Damage in Superconductors

**1975** – Defended Dissertation. Now I've got a PhD!

**1976** – Got a job in industrial research (good job market)
- Got three patents
- Got promoted to head of lab
- Got promoted, Director of Corporate Development

**1985** – Got fired, joined business with partner, Microsphere, Inc.

**1994** – Microsphere dissolved; started Interact Multimedia

**2003** – Changed name to Interact Medical

Always lived comfortably, but pretty high stress
Capabilities presentation

advanced elearning solutions for medical training
compelling visualizations for medical marketing

Accelerating Success through eLearning / eMarketing
Interact Medical is a leading developer of visually-driven interactive e-Learning solutions for the medical device industry

- Training / Marketing / Product Launch Expertise
- Extensive Medical Marketplace Experience
- Interactive Digital Media Experts
- Certified by CSBRN to award CE credits
- Started in 1994
- 90% medical and bioscience client base
- Headquarters in South Bend, IN
- Production in American Fork, UT
- Sales Office in Boston, MA
- 25 full-time staff
<table>
<thead>
<tr>
<th>TOOLS</th>
<th>SKILLS</th>
<th>PRODUCT</th>
<th>DELIVERY</th>
</tr>
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<tbody>
<tr>
<td>Adobe Flash</td>
<td>Creative</td>
<td>Interactive Simulations</td>
<td>Websites</td>
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<tr>
<td>Autodesk Maya</td>
<td>Subject Matter Expertise</td>
<td>Animations</td>
<td>Trade Shows</td>
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<td>Autodesk 3DS Max</td>
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<td>Web Video</td>
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<td>Interactive Design</td>
<td>Attractors</td>
<td>CD / DVD</td>
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<tr>
<td>Adobe Premiere/Encore</td>
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<td>Patient Ed</td>
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<td>Video</td>
<td>CE - CME</td>
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<tr>
<td>Adobe Illustrator</td>
<td>Sound</td>
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<td>Programming</td>
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<tr>
<td></td>
<td>Programmers</td>
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