The Path to Professional Independence

Office of the Vice President for Research

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http://www.nature.com/nmat/journal/v3/n1/images/nmat1055-i1.jpg
What Is a Postdoc?

Requires a doctoral degree. Research associates – part of the junior research staff – receive postdoctoral appointments. The postdoctoral appointment is temporary and conferred upon an individual who has recently been awarded a Ph.D. or equivalent doctorate and who will be involved in full-time research or scholarship. The appointment is viewed as preparatory for a full-time academic or research career, is supervised by a senior scholar, and the appointee has the freedom, and is expected, to publish the results of his/her research or scholarship during the period of the appointment.

*Adapted from definitions provided by the American Association of Universities (AAU), Federation of American Societies for Experimental Biology (FASEB), and the National Institutes of Health (NIH).
## Distribution of Postdocs at U.Va.

<table>
<thead>
<tr>
<th>School</th>
<th>Architecture</th>
<th>Arts &amp; Sciences</th>
<th>Education</th>
<th>Engineering</th>
<th>Medicine</th>
<th>Nursing</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postdocs</td>
<td>1</td>
<td>74</td>
<td>10</td>
<td>34</td>
<td>340</td>
<td>2</td>
<td>6</td>
<td>467</td>
</tr>
<tr>
<td>Percent Distribution</td>
<td>0.2%</td>
<td>15.8%</td>
<td>2.1%</td>
<td>7.3%</td>
<td>72.8%</td>
<td>0.4%</td>
<td>1.3%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Changing Demographics

### 1980

Sources: IMPAC II Current and History Files and AAMC Faculty Roster System
Changing Demographics
2008

Sources: IMPAC II Current and History Files and AAMC Faculty Roster System
Best Practices

• Association of American Universities
  • “Initial postdoctoral appointments should be no longer than two to three years.”
  • “The total time spent in postdoctoral appointments by a given individual should not exceed six years.”

• NAS report recommendation (Bridges to Independence)
  • Expected duration of 3 years
  • Maximum duration of 5 years
  • “NIH should enforce a 5-year limit on the use of any funding mechanism—including research grants—to support postdoctoral researchers.”

• National Postdoctoral Association
  • “The aggregate amount of time spent as a postdoc is recommended to not exceed 5 years.”
## Policies of Benchmark Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Period of Initial Appointment</th>
<th>Maximum Term w/o Extensions</th>
<th>Maximum Term w/ Extensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanford University</td>
<td>1</td>
<td>5*</td>
<td>submitted to Asst. Dean for Postdoc Aff.</td>
</tr>
<tr>
<td>UC-Berkeley</td>
<td>1</td>
<td>3</td>
<td>4-5 (by dean)*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 (by chancellor)*</td>
</tr>
<tr>
<td>University of Georgia</td>
<td>n/a</td>
<td>5</td>
<td>submitted to V.P. for Research</td>
</tr>
<tr>
<td>University of Maryland</td>
<td>n/a</td>
<td>5*</td>
<td>n/a</td>
</tr>
<tr>
<td>University of Michigan</td>
<td>1</td>
<td>3 (research fellow)</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 (sr. research fellow)</td>
<td></td>
</tr>
<tr>
<td>UNC-Chapel Hill</td>
<td>n/a</td>
<td>5</td>
<td>submitted to V.C. for Research</td>
</tr>
<tr>
<td>University of Wisconsin</td>
<td>2-3</td>
<td>5</td>
<td>n/a</td>
</tr>
<tr>
<td>Yale University</td>
<td>n/a</td>
<td>4</td>
<td>6*</td>
</tr>
</tbody>
</table>

*Includes postdoctoral appointments at other institutions*
Revisions to the Policy on Professional Research Staff
Revised Policy on Professional Research Staff

- Revisions to *Policy on Professional Research Staff*, which includes research associates, intended to:
  - Align policy and practice for postdocs beyond 3-year term.
  - Formalize process related to justification and plan of action for completion of training period.
  - Permit longer terms in special or exceptional circumstances (e.g., NIH K99 award, discipline-specific factors, etc.)

- Revised policy expected to be in effect by end of 2009.

<table>
<thead>
<tr>
<th></th>
<th>Period of Initial Appointment</th>
<th>Maximum Term w/o Extensions</th>
<th>Maximum Term w/ Extensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Policy</td>
<td>1 year</td>
<td>3 years</td>
<td>n/a</td>
</tr>
<tr>
<td>New Policy</td>
<td>1 year</td>
<td>3 years</td>
<td>5 years*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt;5 years**</td>
</tr>
</tbody>
</table>

* With approval by the Office of the Vice President for Research
** With approval by the Office of the Executive Vice President & Provost
Request for Extension of Postdoctoral Employment

- Documentation must be provided to justify that the nature of employment continues to be training-related and that an extension is beneficial to involved parties.
- Prior to submission of request, faculty mentor and postdoc should meet to discuss training- and career-related goals.
- Faculty mentor and postdoc are encouraged, but not required, to complete an individual development plan (IDP).
- Request for extension includes a one-page statement citing (a) the reason for the request, (b) training-related goals for the extension period, and (c) career-related milestones for the extension period.
## What Makes a Successful Experience?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Direction &amp; Vision</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Mentoring</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Work Culture-Environment</td>
<td>5</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Networking</strong></td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Employer/Situation</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>8</td>
<td>n/a</td>
</tr>
<tr>
<td>Advancement/Career Options</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Compensation &amp; Benefits</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Considering Spouses/Partners</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

*Source: Science Careers (2008 & 2009)*
Sigma Xi Postdoc Survey

Correlates of Success

Percentage Reporting Satisfaction

- Structure: High 82, Low 59
- Training: High 82, Low 57
- Benefits: High 77, Low 62
- Salary: High 74, Low 67

Average Advisor Grade (0=E, 4=A)

- Structure: High 3.4, Low 2.7
- Training: High 3.4, Low 2.7
- Benefits: High 3.2, Low 2.9
- Salary: High 3.0, Low 3.1

Percentage Reporting Conflicts

- Structure: 9, Low 22
- Training: High 11, Low 17
- Benefits: High 11, Low 18
- Salary: High 15, Low 13

Average Peer-reviewed Publications/Year

- Structure: 1.4, Low 1.0
- Training: High 1.3, Low 1.1
- Benefits: High 1.2, Low 1.1
- Salary: High 1.3, Low 1.2
Importance of Structure

“...the influence of structured oversight and training on the quality of the postdoctoral experience appears to be [great]. It turns out that a single-standard-deviation difference in our measure of structured oversight or of formal training (roughly equivalent to adding a written plan that covers both postdoc and advisor responsibilities and instituting regular, formal reviews) corresponds to the same difference in satisfaction seen in people with salary differentials of $20,000.”

-- Sigma Xi Postdoc Survey, 2005
Developing Transferable Skills

- **Research Ethics**
  - Workshop or formal coursework: 31%
  - Informal, on-the-job training: 36%
  - No training: 33%

- **Proposal Writing**
  - Workshop or formal coursework: 17%
  - Informal, on-the-job training: 46%
  - No training: 37%

- **Writing Skills**
  - Workshop or formal coursework: 29%
  - Informal, on-the-job training: 60%
  - No training: 10%

- **Teaching Skills**
  - Workshop or formal coursework: 5%
  - Informal, on-the-job training: 64%
  - No training: 31%

- **Negotiating Skills**
  - Workshop or formal coursework: 67%
  - Informal, on-the-job training: 29%
  - No training: 4%

- **Lab Management**
  - Workshop or formal coursework: 50%
  - Informal, on-the-job training: 47%
  - No training: 4%
Staying on the Path to Independence

• Complete an individual development plan (IDP), in cooperation with faculty mentor.
• Meet regularly with faculty mentor to discuss research goals/accomplishments and career goals/progression.
• Take advantage of postdoctoral programs office:
  • One-on-one career/professional development counseling sessions.
  • Postdoc seminar series.
  • Other seminars open to graduate students and postdocs.
• Explore myriad of career opportunities outside academia.
• Seek out opportunities to develop “transferrable skills:”
  • Center for American English Language & Culture
  • Teaching Resource Center
  • University Human Resources
The Path from Trainee to Independent Scientist

“There’s educational value in some period of years, such as three years – or five years for physicists and mathematicians – of being in a training position. But at some point they’re not training any more; they’re in career paths as independent scientists.”

-- Michael Stryker, William F. Ganong Endowed Chair in Physiology
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