CIRGE Charts Work/Family Paths of Female PhDs

By Dr. Elizabeth Rudd, research associate, and Dr. Lori Homer, survey director at the Center for Innovation and Research in Graduate Education (CIRGE) at the University of Washington, Seattle.

Forty years ago Helen Astin undertook a groundbreaking study of all 1,979 U.S. women who had earned a PhD degree in 1957 and 1958, which she reported in her 1969 book, *The Woman Doctorate in America*.

One of the main hindrances to the women's careers, Astin found, was the challenge of combining work and family. Women doctorates, Astin concluded, "often face problems in their career development that their male counterparts generally do not experience because they have chosen an unconventional path and many of them are wives and mothers who are trying to combine two very important and demanding roles successfully."

In the intervening years, women's representation among doctorate recipients has increased dramatically. In 2002 a 36-year upward trend in women's graduate education culminated in the first ever cohort of U.S. doctoral recipients with a majority of women.

But does the gender equality of earning PhDs translate into equality in careers? Women accounted for 42.1% of faculty in degree-granting institutions in 2001, according to the U.S. Department of Education.

Evidence from the survey, PhD's—Ten Years Later, housed at the Center for Innovation and Research in Graduate Education (CIRGE) at the University of Washington, suggests that gender equality in the career paths of PhD recipients is still hampered by conflicts between family lives and career structures Astin identified.

PhD's—Ten Years Later was a national survey of 6,000 people who earned doctorates between 1982 and 1985 in biochemistry, computer science, English, mathematics and political science (Nerad, Aanerud, and Cerny, 2004). They surveyed graduates 10 to 13 years after earning a PhD degree, asking about graduate school experiences and career paths.

Challenges of managing family and career turned out to be a major theme of this survey, especially for women. In open-ended survey items in particular, respondents repeatedly pointed out that for them family and career considerations were deeply intertwined.

- A political scientist chided the researchers: [You] might ask more pointedly about kid-career problems and trade-offs. My first two kids were born while I was in grad school. My third while I took hiatus from the career during my husband's dissertation research stint in Japan (2 years). My choice of jobs and non-continuous employment record are/were due almost entirely to child-rearing responsibilities. An examination of PhD career tracks should attend closely to dual career couples and kid-friendly—or hostile work environments.

- An electrical engineer suggested putting off marriage until after earning the doctorate, warning "if the graduate student is already married, the work must be done in a way that the marriage is not destroyed."

- An English professor noted, "I assumed that I would follow in the footsteps of my male or childless-female professors. But since I wanted to raise a family and be a university teacher, I had to be part-time and that has been a dead-end street."

These respondents all point to the systemic mismatch between the timing of careers and family formation. Although it is considered desirable for PhD programs to require five years of study and writing, this time to completion is more easily reached in science and engineering fields. Social scientists and scholars in the humanities often spend many more years in grad school. Among the 2,959 survey respondents, the median time to degree varied from a low of 5.75 years for women in biochemistry to a high of 9.8 years for women in English.

**Median Years to PhD by Field and Gender**

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<thead>
<tr>
<th>Field</th>
<th>Women</th>
<th>Men</th>
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</thead>
<tbody>
<tr>
<td>Biochemistry</td>
<td>5.75 years</td>
<td>6.08 years</td>
</tr>
<tr>
<td>English</td>
<td>9.83</td>
<td>8.75</td>
</tr>
<tr>
<td>Math</td>
<td>6.83</td>
<td>6.33</td>
</tr>
<tr>
<td>Political science</td>
<td>9.25</td>
<td>8.75</td>
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In some fields the time spent in graduate school significantly underestimates how long it actually takes to reach stable employment. In the academic sector, only a minority of PhD recipients begin a post-PhD career in a tenure track position. Instead, many spend time in postdoc appointments and non-tenure track faculty positions.

In biochemistry, for example, 85% of respondents followed doctoral training with postdoc appointments, holding an average of 1.5 such positions for a median of 3.5 years. Adding the 3.5 years of postdoctoral work to the 6.4 years in graduate school means that biochemists in academia actually took about as long as English PhDs to get their first assistant professorship.

On top of this, among academically employed biochemists 33% of women and 24% of men report their first (non-postdoc) job as non-tenure track. In English, of those reporting academic jobs as their first jobs, 40% of men and almost half of the women (46%) were off the tenure track.

Most people are already in their early to mid-30s when they earn their PhD. This means they are beginning demanding, post-PhD careers at a time when family demands are often intense as well. Among respondents, almost two-thirds were married at the time of earning the PhD, while 38% of men and 24% of women already had children. By 10 to 13 years after grad school, 66% of women and 71%
of men had children.

The conjunction of intense career and family demands may partly explain why women PhDs have fewer children and are less likely to be married than male doctorate holders—and why women are disproportionately represented among the "unfaculty," those holding non-tenure track teaching positions.

In all fields surveyed, women were more likely than men to report their "main job" as a non-tenure track position after earning the PhD. The table below shows that women are 12.6% of male biochemists in academic employment held non-tenure track positions, compared with 21.4% of female biochemists. Almost 20% of women but less than 10% of men among academically employed English PhDs held non-tenure track jobs. In math and political science, non-tenure track employment was much less prevalent in general, but women were still more likely than men to be among the "unfaculty."

Percent of Non-tenure Track Faculty Academics

<table>
<thead>
<tr>
<th>Field</th>
<th>Women</th>
<th>Men</th>
</tr>
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<tbody>
<tr>
<td>English</td>
<td>17.7%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Math</td>
<td>9.2%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Political science</td>
<td>8.8%</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

U.S. citizens or permanent residents only

In 1969 Austin drew policy implications from her research. Many of her suggestions are as relevant today as they were then. She noted that almost all women with PhD degrees stayed in the work force (which is true today as well) and concluded that professional women should be supported to help them combine work and family roles.

She proposed devising options for part-time graduate school, part-time professional employment with full benefits, job-sharing and public support for quality childcare. Like others since her, Austin recognized two main hindrances to the careers of women with PhD's—sex-based discrimination and problems of combining work and family.

In 1969 combining work and family was understood to be women's problem, yet she still argued that there should be public support for women's unpaid family care and that career structures should be changed in response to the demands of family lives.

Today we recognize that men may also want—or need—to be involved in family care in ways that conflict with existing career structures. Yet, evidence from surveys like PhD's—Ten Years Later shows that it is still women who are more likely to be disadvantaged by institutionalized conflicts between work and family lives.

Women on the Move

- **Dr. Debra Austin**, chancellor of Florida's university system, becomes provost and VP of academic affairs at Florida A&M University, the state's only historically black university.
- **Dr. Sharon Blackburn**, president of Oakland Community College's Auburn Hills campus MI, becomes president of Brookhaven College TX.
- **Dr. Johnella E. Butler**, associate dean and associate vice provost of the University of Washington's graduate school, will move to Spelman College GA, where she will be provost.
- **Dr. Theresa Chiang**, associate VP for academic affairs and executive director of student services at the University of Texas Health Science Center at San Antonio, becomes VP for academic administration.
- **Dr. Sorarya M. Coley**, professor emeritus of human services at Cal State Fullerton, becomes provost and VP at Cal State Bakersfield.
- **Corliss Cummings**, one of three senior vice chancellors at the University of Georgia, was named interim chancellor. She is the first woman and African American chancellor of the system.
- **Amy Jacobson**, a supervising attorney with Southern Tier Legal Service, will be the first director of the Women's Leadership Center at Alfred University NY.
- **Dr. Carol Eaton**, vice chancellor for community colleges in the SUNY system, becomes president of Frederick community College MD in August.
- **Lynn E. Jackson**, executive director of development at Kalamazoo College MI, becomes VP for advancement at Lycoming College PA.
- **Patricia Jackson**, associate VP for development at Dartmouth College NH, becomes VP for advancement at Smith College MA on September 1.
- **Dr. Sandra L. Kurtinitis**, president of Quinsigamond Community College MA, will be the new chancellor of the Community College of Baltimore County MD.
- **Dr. Denise Maybank**, who has been associate to the system president at the University of Nebraska for diversity and equity since 2003, will become VP for student affairs and services at Michigan State University.
- **Dr. Ann Marie Murray**, dean of the schools of business and engineering and industrial technologies at Hudson Valley Community College NY, becomes VP for academic affairs at Broome Community College NY.
- **Marcia K. Nance**, vice provost and dean of enrollment and marketing services, is the new VP for enrollment management at Barry University FL.
- **Dr. Jane Nichols**, who stepped down as chancellor of the Nevada system of higher education in May 2004, returns as interim vice-chancellor for academic and student affairs.
- **Dr. Beverley J. Pitts**, provost and VP of academic affairs at Ball State University IN, became the first female president of the University of Indianapolis in July.
- **Deborah A.W. Read**, VP for university advancement at Northern Kentucky University, moves to VP for development at SUNY-Albany.
- **Karen Reinertson**, former executive director of the Colorado Department of Health Care Policy and Financing, became president of Front Range Community College CO in August.
- **Dr. Lucille Sansing**, provost at the College of Notre Dame of Maryland, moves to president of Argosy University's San Francisco Bay Area campus.
- **Dr. Jenny Zorn**, associate dean of the college of social and behavioral sciences at California State University, San Bernardino, moves to associate provost for academic programs.