The Role of IR in Policy Analysis and Grant-Funded Research on Faculty

Sandra W. Gahn
Office of Institutional Research

Florence A. Hamrick
Educational Leadership and Policy Studies

Jason Pontius
ADVANCE Research Assistant

Iowa State University

Overview

- Sloan Grant database
- AAUDE Faculty Satisfaction Survey
- Iowa State ADVANCE & Mizzou ADVANCE
- Lessons Learned
Sloan Grant Goals

- Stage 1: Use institutional data to examine whether any potential savings realized by improved faculty retention justify the costs of providing tenure flexibility at Iowa State.

- Stage 2: Use database to track how career flexibility at ISU affects faculty productivity, retention, and work/life balance satisfaction.
Sloan Grant Process

• **Step 1.** Determine what data were needed and what were already captured

• **Step 2.** Meet with administrative units to determine data availability

• **Step 3.** Assess which data could be collected in time

• **Step 4.** Apply for IRB approval

• **Step 5.** Collect and combine available data into a new database

• **Step 6.** Add new data as they become available

• **Step 7.** Advocate for the collection of new information
Issues Encountered - Sloan Grant

- Lack of complete data
- Uncertainty about why faculty leave.
- Use of college-level aggregate data
- Accounting for major research grants and other funding
- Inability to fully capture breaks in tenure/service/employment
- Concerns about privacy
- Maintaining and updating the database
Faculty Work/Life Database

- The database measures the costs and benefits of ISU flexible career policies.
- Captures data in a systematic way about faculty who stop the tenure clock or reduce workload.

- Data Elements:

<table>
<thead>
<tr>
<th>Faculty Demographics</th>
<th>Job Search Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start-Up Costs</td>
<td>Faculty Compensation Data</td>
</tr>
<tr>
<td>Faculty Flexibility</td>
<td>Tenure and Employment Data</td>
</tr>
<tr>
<td>Policy Data</td>
<td></td>
</tr>
</tbody>
</table>
## Faculty Work/Life Database

<table>
<thead>
<tr>
<th>College Category</th>
<th>Search Committee Costs Sub-Total</th>
<th>On-Campus Interview Costs Sub-Total</th>
<th>Advertising &amp; Covered Classes Costs</th>
<th>Average Asst. Professor Start-Up Costs FY2003-FY2006 Sub-Total</th>
<th>Average Cost to Hire One New 9-mo. Asst. Professor (Tenure-Eligible)</th>
<th>Average Cost to Retain One 9-mo. Asst Prof from FY2006-FY2007 Sub-Total</th>
<th>Estimated Staff Cost (Central) to Administer Flexible Policies</th>
<th>Total Cost to Maintain Faculty with Flexible Policies</th>
<th>Dollars Saved with Flex Policy Retention vs. Hiring New</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$6,872</td>
<td>$2,711</td>
<td>$53,084</td>
<td>$310,621</td>
<td>$373,288</td>
<td>$65,946</td>
<td>$625</td>
<td>$66,571</td>
<td>$306,717</td>
</tr>
<tr>
<td>B</td>
<td>$8,065</td>
<td>$4,788</td>
<td>$59,978</td>
<td>$310,472</td>
<td>$383,304</td>
<td>$78,516</td>
<td>$625</td>
<td>$79,141</td>
<td>$304,162</td>
</tr>
<tr>
<td>C</td>
<td>$5,727</td>
<td>$2,029</td>
<td>$39,765</td>
<td>$93,225</td>
<td>$140,746</td>
<td>$57,559</td>
<td>$625</td>
<td>$58,184</td>
<td>$82,562</td>
</tr>
<tr>
<td>D</td>
<td>$5,021</td>
<td>$3,392</td>
<td>$32,784</td>
<td>$64,351</td>
<td>$105,548</td>
<td>$50,471</td>
<td>$625</td>
<td>$51,096</td>
<td>$54,453</td>
</tr>
<tr>
<td>average</td>
<td>$6,470</td>
<td>$3,072</td>
<td>$48,352</td>
<td>$167,222</td>
<td>$111,432</td>
<td>$66,220</td>
<td>$625</td>
<td>$28,332</td>
<td>$83,099</td>
</tr>
</tbody>
</table>

1. See Table 1
2. See Table 2
3. See Table 3
4. See Table 4
5. See Table 5
6. See Table 6
7. Does not include salary savings for vacant positions but dollars were calculated and appear in Table 7.
Faculty Work/Life Database

Search Committee Costs:
• Number of Committee Members
• Length of Search in Days
• Ave. Hours Spent on Committee per Week
• Salary to pay committee members for the percent of time spent on search committee

Advertising Costs:
• Ave. number of publications used
• Type of publications
• Ave. cost of advertising
Interview Costs:

- Ave. no. of on-campus interviews per search
- Ave. domestic airfare
- Des Moines to Ames ground travel costs
- Ave. Ames hotel costs per night
- Food per diem
- Ave. number of days on campus
Faculty Work/Life Database

Start Up Costs:

• Ave. Assistant Professor starting salary
• Ave. start-up costs
  • Computer/peripherals
  • Lab space/equipment
  • Graduate assistants
  • Summer support
  • Moving expenses
  • Research support
Faculty Work/Life Database

Vacancy Costs and/or Savings:
• Ave. length of search in days
• Time from hire to start date
• Average cost of lecturer to fill vacancy

Work/Life Administrative Costs:
• No. of administrative staff to approve policies
• Hours spent administering program
• Salary of staff
# Tenure-Clock Extension Policy

## Reasons, 2003-2008

<table>
<thead>
<tr>
<th>Reason</th>
<th>Women</th>
<th>Men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival of children</td>
<td>17</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Illness</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Extenuating P&amp;T review decision</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Family/life change</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Care of spouse</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Hire date caused tenure date changes</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Care of child</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Care of parent</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Change in job responsibilities</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Lab construction delays</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
<td><strong>30</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>
# Outcomes of Tenure Clock Extension Policy, 2003-2008

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Women</th>
<th>Men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure Granted</td>
<td>7</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Tenure Pending</td>
<td>19</td>
<td>20</td>
<td>39</td>
</tr>
<tr>
<td>Deceased</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Resigned</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepted other employment</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Personal reasons (e.g. childcare)</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Tenure Pending, Accepted academic position elsewhere</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Tenure Granted, Accepted academic position elsewhere</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Resigned Total</td>
<td>4</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
<td><strong>30</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>
NSF ADVANCE Institutional Transformation Grant to Iowa State University (2006-2011, $3.3 million).

- This material is based upon work supported by the National Science Foundation under Grant No. SBE 06003999.
- Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.
ISU ADVANCE Program

- Faculty Satisfaction
- Institutional Transformation process
- Mentoring
- Faculty Data Reporting Requirements
AAUDE Faculty Satisfaction Survey

• Created by Association of American Universities Data Exchange
• Record-level submission of responses to AAUDE data warehouse
• 11 institutions (including ISU) collected survey data beginning in 2006
Topics Covered in Faculty Survey:

- Overall Satisfaction
- Faculty Resources
- Work Environment
- Sources of Stress
- Mentoring
- Tenure & Promotion
- Advancement
- Hiring & Retention
- ISU Work/Life Policies
- Life Outside the Institution
AAUDE Faculty Satisfaction Survey

- ISU faculty surveyed electronically in January 2008.
- All tenured and tenure track faculty, all non-tenure-eligible.
- 889 Respondents; overall response rate: 53%.
### AAUDE Faculty Satisfaction Survey

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Population</th>
<th>Respondents</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>574</td>
<td>328</td>
<td>57.1%</td>
</tr>
<tr>
<td>Men</td>
<td>1,102</td>
<td>560</td>
<td>50.8%</td>
</tr>
<tr>
<td>Professor</td>
<td>573</td>
<td>331</td>
<td>57.8%</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>427</td>
<td>231</td>
<td>54.1%</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>328</td>
<td>193</td>
<td>58.8%</td>
</tr>
<tr>
<td>Instructor</td>
<td>348</td>
<td>134</td>
<td>38.5%</td>
</tr>
<tr>
<td>Tenured</td>
<td>984</td>
<td>557</td>
<td>56.6%</td>
</tr>
<tr>
<td>Tenure-Eligible</td>
<td>308</td>
<td>178</td>
<td>57.8%</td>
</tr>
<tr>
<td>Non-Tenure-Eligible</td>
<td>384</td>
<td>154</td>
<td>40.1%</td>
</tr>
<tr>
<td>White</td>
<td>1,368</td>
<td>759</td>
<td>55.5%</td>
</tr>
<tr>
<td>African American</td>
<td>33</td>
<td>16</td>
<td>48.5%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>228</td>
<td>88</td>
<td>38.6%</td>
</tr>
<tr>
<td>American Indian</td>
<td>9</td>
<td>5</td>
<td>55.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>38</td>
<td>21</td>
<td>55.3%</td>
</tr>
<tr>
<td>Full-time</td>
<td>1,435</td>
<td>801</td>
<td>55.8%</td>
</tr>
<tr>
<td>Part-time</td>
<td>241</td>
<td>88</td>
<td>36.5%</td>
</tr>
</tbody>
</table>
Overall, how satisfied are you being a faculty member at Iowa State?

<table>
<thead>
<tr>
<th></th>
<th>Non-Tenure-Eligible</th>
<th>Tenure-Eligible</th>
<th>Tenured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very or somewhat unsatisfied</td>
<td>23.5</td>
<td>25.0</td>
<td>24.0</td>
</tr>
<tr>
<td>Neither satisfied nor unsatisfied</td>
<td>7.2</td>
<td>10.8</td>
<td>7.2</td>
</tr>
<tr>
<td>Very or somewhat satisfied</td>
<td>69.3</td>
<td>64.2</td>
<td>68.9</td>
</tr>
</tbody>
</table>

Source: ISU AAUDE Faculty Satisfaction Survey 2008
Salary, specify the degree to which you are satisfied

- Ag. & Life Sci.: 3.53*
- Business: 3.47
- Design: 2.75
- Engineering: 3.83*
- Human Sci.: 2.98
- LAS-Humanities: 2.37*
- LAS-Sci. & Math: 3.21
- LAS-Social Sci.: 2.83
- Library: 3.00
- Vet. Medicine: 3.31

Scale: 1 = Very dissatisfied, 5 = Very satisfied
Red line = mean response for all faculty
Source: ISU AAUDE Faculty Satisfaction Survey 2008
Criteria for promotion and/or tenure are clearly communicated
(by College)

Responses for tenured and tenure-eligible faculty only
Source: ISU AAUDE Faculty Satisfaction Survey 2008
How many children do you have?
(by gender)

Source: ISU AAUDE Faculty Satisfaction Survey 2008
AAUDE Faculty Satisfaction Survey

- Executive VP/Provost report to Faculty Senate
- Write-up in local newspaper
- Deans requesting special reports
- ADVANCE networking event
- ADVANCE benchmarking
Briefly - ISU ADVANCE Program’s Collaborative Transformation Efforts.

- Interviews, focus groups with faculty in nine “focal” STEM departments about institutional and departmental cultures, structures, and practices.
- Identification of prospective concerns such as isolation or information/policy transparency. Qualitative analyses of empirical data.
- Findings can be paired with AAUDE survey findings such as departmental fit (e.g., integration/isolation) measures and knowledge of P&T processes (e.g., degrees of transparency).
ISU ADVANCE Scholar Program

- Women STEM faculty of color: assistant, associate, non-tenure track.
- Pair with eminent scholar in field/discipline.
- Reciprocal visits funded to present research or seminars and for consultations.
- Program Goals: networking, collaborations, mentoring.
- Examine faculty mentoring within contexts of institutional and academic cultures (Zellers, Howard, Barcic, 2008).
- Faculty perceptions: mentoring available? worthwhile?
- AAUDE data related to faculty experiences with mentoring. **Institutional faculty mentoring program since 1993.
AAUDE Survey – Mentoring items:

- Mentoring (formal and informal) received by faculty
- Judgments of helpfulness of mentoring received
- Demographics including Sex, Rank, & Ethnicity

Some descriptive findings - - -
Findings:

Have you had a formal mentor within your department?

- Prof Women
- Prof Men
- Assoc Prof Women
- Assoc Prof Men
- Asst Prof Women
- Asst Prof Men

Options:
- No
- Yes, my choice
- Yes, assigned

Percentage Distribution: 0% to 100%
Findings:

While at ISU, have you had an informal mentor?

- Prof Women
- Prof Men
- Assoc Prof Women
- Assoc Prof Men
- Asst Prof Women
- Asst Prof Men

Options: No, Yes
Findings:

How helpful was this formal mentoring?

- **Helpful**
- **Neither/nor**
- **Unhelpful**

<table>
<thead>
<tr>
<th></th>
<th>Prof Women</th>
<th>Prof Men</th>
<th>Assoc Prof Women</th>
<th>Assoc Prof Men</th>
<th>Asst Prof Women</th>
<th>Asst Prof Men</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Findings:

How helpful have you found this informal mentoring?

- **Prof Women**
- **Prof Men**
- **Assoc Prof Women**
- **Assoc Prof Men**
- **Asst Prof Women**
- **Asst Prof Men**

- **Helpful**
- **Neither/nor**
- **Unhelpful**
Findings:

While at ISU, have you received adequate mentoring?

- **Prof Women**: 100% Yes
- **Prof Men**: 100% Yes
- **Assoc Prof Women**: 80% Yes, 20% No
- **Assoc Prof Men**: 80% Yes, 20% No
- **Asst Prof Women**: 60% Yes, 40% No
- **Asst Prof Men**: 60% Yes, 40% No
Findings:

Have you had a formal mentor within your department? (by race/ethnicity)

- Yes, one was assigned to me:
  - White Faculty: 24.0%
  - Faculty of Color: 46.0%

- Yes, one was chosen by me:
  - White Faculty: 23.5%
  - Faculty of Color: 18.0%

- No:
  - White Faculty: 52.5%
  - Faculty of Color: 36.0%

Responses for tenured and tenure-eligible faculty only
Source: ISU AAUDE Faculty Satisfaction Survey 2008
Findings:

How helpful have you found this formal mentoring?
(by race/ethnicity)

Responses for tenured and tenure-eligible faculty only
Source: ISU AAUDE Faculty Satisfaction Survey 2008
Next steps for analyses using AAUDE data:

**Inclusion and Transparency variables:**
- Exclusion from informal department networks.
- Navigating unwritten department rules for faculty.
- Clarity of promotion and tenure criteria (among assistant professors).
- Clarity of promotion and advancement criteria (among associate professors).

**Collaboration and Fit variables:**
- Opportunities to collaborate with dept faculty.
- Opportunities to collaborate with faculty in other units.
- Overall job satisfaction.
- Departmental fit.
Faculty Data Reporting

NSF Required Reports
- Faculty Headcount by Gender, Rank & Discipline
- Non-tenured Headcount by Gender & Discipline
- Promotion & Tenure Outcomes by Gender
- Years-in-Rank by Gender
- Attrition by Gender and Rank
- New Hires by Gender, Rank & Discipline
- Leadership Positions by Gender

Resource Allocation
- Salary Equity Report
- Start-Up Cost Evaluation
- Lab and Office Space Quality
Lessons Learned

• Grants provide opportunities for you to:
  • Collaborate on a bigger scale
  • Work with faculty
  • Improve the university
• Help with IR research efforts
• Great for training Graduate Assistants
• Be careful what you wish for!
Contacts

- Sandra W. Gahn 515.294.8539 (sgahn@iastate.edu)
- Florence A. Hamrick 515.294.9628 (fhamrick@iastate.edu)
- Jason Pontius 515.294.8061 (jpontius@iastate.edu)
- ISU ADVANCE Program: http://www.advance.iastate.edu
Partnerships for Adaptation, Implementation, and Dissemination (PAID) Grant
- January 1, 1007 – June 30, 2010
- $500,000

Focus of grant is the promotion of women associate professors in STEM fields to full professor

IR’s role is as a partner on the grant
Institutional Data

• Process of providing data to grant initiatives on campus

• Issues that arise with providing data
  – Small N’s
  – Grant personnel approach individual departments for data prior to approaching IR
  – Other groups on campus wanting similar data; keeping data provided consistent between groups
Benefits of IR Collaborations with Grants

• Institutionalize data collection
• Data necessary to start conversations with others on campus
• Opportunity to work with faculty and administrators on campus
Challenges of IR Collaborations with Grants

- Small N’s
- Over reliance on quantitative/IR data
- Flexibility of grant makes process undefined
- Set reasonable priorities and time lines
- Not everyone involved in the grant understand quantitative analysis or data definitions
Discussion/Contact Information

• Ann Patton (PattonTA@missouri.edu)

• Kathy Schmidtke Felts (FeltsK@missouri.edu)