Proposing the Next ADVANCE for Women Faculty

Tailoring Data-driven Programs for Career Achievement and Success
iClicker Registration & Test

• What is the goal of the National Science Foundation ADVANCE initiative?
   a) to develop systemic approaches to increase the representation and advancement of women in academic STEM careers
   b) to develop innovative and sustainable ways to promote gender equity in the STEM academic workforce
   c) to contribute to the development of a more diverse science and engineering workforce
   d) All of the above

Michigan Tech
Create the Future
What is the goal of the National Science Foundation ADVANCE initiative?

a) to develop systemic approaches to increase the representation and advancement of women in academic STEM careers
b) to develop innovative and sustainable ways to promote gender equity in the STEM academic workforce
c) to contribute to the development of a more diverse science and engineering workforce
d) All of the above
Progress during first ADVANCE grant: Headcount of Male and Female Faculty 2009-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Coll of Eng</th>
<th>Coll of S&amp;A</th>
<th>Sch of Biz</th>
<th>SFRES</th>
<th>Sch of Tech</th>
<th>MTU Total</th>
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<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
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<tr>
<td>2012-13</td>
<td>21</td>
<td>113</td>
<td>59</td>
<td>91</td>
<td>8</td>
<td>16</td>
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<tr>
<td>2011-12</td>
<td>21</td>
<td>115</td>
<td>58</td>
<td>94</td>
<td>8</td>
<td>16</td>
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<tr>
<td>2010-11</td>
<td>21</td>
<td>115</td>
<td>55</td>
<td>93</td>
<td>7</td>
<td>13</td>
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<tr>
<td>2009-10</td>
<td>16</td>
<td>106</td>
<td>55</td>
<td>91</td>
<td>8</td>
<td>13</td>
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</tbody>
</table>

Went from 26% women to 27% women in 4 years

STEM data on next slide

Male to female ratio far from 1:1

Institutional Analysis MTU Fact Book
## STEM Fields Only: Male and Female Tenure/Tenure-Track Faculty by Rank 2013

<table>
<thead>
<tr>
<th>Fall 2013</th>
<th>Coll of Eng</th>
<th>Coll of S&amp;A (STEM)</th>
<th>SFRES</th>
<th>Sch of Tech</th>
<th>STEM Total</th>
<th>%F</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>Assistant</td>
<td>11</td>
<td>28</td>
<td>10</td>
<td>16</td>
<td>1</td>
<td>5</td>
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<tr>
<td>Professor</td>
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<tr>
<td>Associate</td>
<td>8</td>
<td>43</td>
<td>7</td>
<td>21</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Professor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Professor</td>
<td>4</td>
<td>46</td>
<td>7</td>
<td>27</td>
<td>1</td>
<td>6</td>
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</table>

http://www.admin.mtu.edu/ia/faculty/Faculty_Department_Rank_Gender_2013.pdf

- Male to female ratio remains unbalanced
- Attrition and plateauing of women faculty
# Kaizen Series

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>September 24</td>
<td>✔ #1: Career Path Mapping</td>
</tr>
<tr>
<td>October 29</td>
<td>✔ #2: Pre-tenure career progress, obstacles and possible programs</td>
</tr>
<tr>
<td>December 2</td>
<td>✔ #3: Post-tenure career progress, obstacles and possible programs</td>
</tr>
<tr>
<td>February 5</td>
<td>#4: Recruitment, hiring, and retention</td>
</tr>
<tr>
<td>March 5</td>
<td>#5: Obtaining &amp; crunching the data</td>
</tr>
<tr>
<td>Fall 2015</td>
<td>#6: Creating a shared responsibility system for managing interventions</td>
</tr>
<tr>
<td>Jan 2016</td>
<td><em>Submit proposal</em></td>
</tr>
<tr>
<td></td>
<td>After grant funding: Kaizens on implementation</td>
</tr>
</tbody>
</table>
Introduction to Basic Lean Concepts

• **Lean**- Critical thinking resulting in continuous improvement
• **Kaizen** - a Japanese term that means “improvement” or “change for the better”
• **Kaizen Event** - A structured, team-based, problem solving activity that engages a team in identifying waste and the root cause of a problem, followed by identifying and implementing countermeasures to stop the problem

Continuous Improvement website: http://www.mtu.edu/improvement/
Kaizen 2 and 3 Report Out

Kaizen 2: Pre-tenure Cartographers
(Oct. 29, 2014)

Kaizen 3: Post-tenure Cartographers
(Dec. 2, 2014)
Kaizen 2 Team Members

• Date: October 29
• Focus: Career progress, Pre-tenure obstacles and possible programs
• Team Members:
  – Adrienne Minerick, Sonia Goltz, Team Leaders
  – Jill Hodges, Team Member
  – David Reed, Champion
  – Laura Brown, Lucia Gauchia, Customer/Outside Eyes
  – Jason Carter, Terry Sharik, Customer/Outside Eyes
  – Theresa Coleman-Kaiser, Facilitator
  – Ruth Archer, Observer
Problem Statement

Kaizen 2:

We need an explicitly delineated map of successful progression of newer faculty with an emphasis on research intensive expectations and retention of those faculty once successful.
We started with this...
And did this.
## Teaching and Research obstacles years 1-3

<table>
<thead>
<tr>
<th>Years</th>
<th>Teaching</th>
<th>Research</th>
</tr>
</thead>
</table>
| **1-2** | • Attracting graduate students who take advantage  
• Establishing credibility in the classroom  
• Developing new courses  
• No grad elective course in your area  
• Lack of sharing of student evaluations with department head/deans (to get help)  
• Teaching in new institution/country | • A poor start-up package was negotiated  
**Not using start-up funds early on**  
• Don’t know research funding process: that can ask for more than 1 REF grant; that should be meeting with Pete and Jodi; funding agency idiosyncrasies  
• Dean and P&T not on the same page  
• Establishing research collaborators  
• Submission of first grant proposal |
| **2-3** | • Too much new course development | • Spending start-up appropriately  
• Recruiting a good graduate student  
• Submitting grant proposals and responding to reviews  
• Lack of multiple research ideas/streams (all eggs in one basket)  
• Lab management issues  
• Managing bad research collaborations |
# Teaching and Research obstacles years 3-6

<table>
<thead>
<tr>
<th>Years</th>
<th>Teaching</th>
<th>Research</th>
</tr>
</thead>
</table>
| 3-4   | • Teaching assignment issues continue (e.g., never taught the same class twice)  
• Teaching load starts increasing in year 3 | • Tricks of publication process; hitting submit (letting go)  
• Childcare issues at conferences  
• Grant proposal submission and rejection |
| 4-5   | | • Grant administration issues (grants are getting accepted)  
• Hard to learn new methodologies when you are the only one in an area |
| 5-6   | | • Research professors unable to move into tenure track positions (research productivity, dual-career issues, etc.) |
### Additional obstacles

<table>
<thead>
<tr>
<th>Years</th>
<th>Service</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>• Heavy service load including faculty searches</td>
<td>• Missing orientation (e.g., international faculty)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A lack of clear expectations (e.g. proportion spent on teaching vs. research)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Isolation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dual career issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Child care roadblocks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Finding mentors you can trust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Following bad advice</td>
</tr>
<tr>
<td>2-3</td>
<td>• Reviewing for journals (how? Too much/too little)</td>
<td>• Getting caught up in conflict or bullying in the department</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of mentorship</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stigma associated with stopping the clock or extending the probationary period</td>
</tr>
<tr>
<td>3-4</td>
<td></td>
<td>• Poor external networks, to obtain awards, external reviewers</td>
</tr>
<tr>
<td>4-5</td>
<td>• Doing minimal on committees, not leading</td>
<td>• Change in leadership that might affect</td>
</tr>
<tr>
<td></td>
<td>• Participation in funding panels as a reviewer</td>
<td>expectations, progress</td>
</tr>
<tr>
<td></td>
<td>• Poor focus of service (not meaningful or doesn’t build professional credentials)</td>
<td></td>
</tr>
<tr>
<td>5-6</td>
<td></td>
<td>• Nerves, stress, anxiety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Misinformation, poor communication</td>
</tr>
</tbody>
</table>
### Possible programs: Research and Grants

<table>
<thead>
<tr>
<th>Programs</th>
<th>Brief Description</th>
<th>Obstacles Targeted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brown Bag discussions for research proposals</strong></td>
<td>Schedule brown bag discussions when faculty are in the proposal phase to obtain feedback (could be interdisciplinary)</td>
<td></td>
</tr>
<tr>
<td><strong>Intervention if a certain percentage of unsuccessful proposals</strong></td>
<td>Track percentage of successful proposals and intervene if low</td>
<td>Grant proposal rejections</td>
</tr>
<tr>
<td><strong>Regular Bi-weekly meetings</strong></td>
<td>Regular Lunch and Learns on Research topics (not just papers, but also available grants, research methods, etc.)</td>
<td>Isolation, need for mentoring</td>
</tr>
<tr>
<td><strong>Have senior faculty help with grants administration</strong></td>
<td>Ask senior faculty to help with grants administration and provide incentives for this</td>
<td>Too much time spent by junior faculty on grant administration</td>
</tr>
<tr>
<td><strong>Continue the new faculty rapid fire campus wide research presentations</strong></td>
<td>Restart the campus wide rapid fire research presentations by new faculty and maybe by all faculty</td>
<td>Isolation, few collaborators</td>
</tr>
<tr>
<td><strong>Provide examples of successful proposals</strong></td>
<td>For the career grant and other programs, provide samples of successful proposals</td>
<td>Not familiar with structure of grant funding</td>
</tr>
</tbody>
</table>
Other Possible Program Targets

- Feedback, coaching, mentoring
- Career development
- Work and family
- Faculty training
- Programs for chairs
- Programs for P&T committees
Problem Statement

Kaizen 3:

We need an explicitly delineated map of successful progression beyond tenure with an emphasis on continued career development and expectations for professional and university contributions.
Kaizen 3 Team Members

• Date: December 2
• Focus: Career progress, Post-tenure obstacles and possible programs
• Team Members:
  – Adrienne Minerick, Patty Sotirin, Team Leaders
  – Jill Hodges, Team Member
  – Wayne Pennington, Champion
  – Shari Stokero, Tess Ahlborn, Customer/Outside Eyes
  – Ron Strickland, Customer/Outside Eyes
  – Theresa Coleman-Kaiser, Facilitator
  – Sally Heidtke, Chris Anderson, Ruth Archer, Observers
We started with This . . .

- Faculty in Years 7-20
- Faculty taking sabbaticals
- Faculty achievements/recognition
- Faculty in empowered/leadership positions

Later Career Map
And did this
Obstacles for Associate Professors

- **Expectations/communications**
  - *Nebulous and inconsistent communication (similar to pre-tenure)*
  - Disciplinary differences and variability in productivity measures

- **Reward structure**
  - Few incentives to work for promotion
  - Feeling de-valued
  - Administrative promotions viewed as burdensome
  - Service commitments not rewarded

- **Lack of career options**
  - No tradition of promotion to full in some areas
  - Few career options other than full
  - Dead-end administrative assignments
  - Fail to plan for loss of funding sources

- **Lack of career advocates**
  - No sponsors (critical for women)
  - Delayed sabbaticals or failure to apply
  - Lack of nominations for awards and positions
  - Little reward for peer mentoring
Obstacles at the Full Professor Level

- Need to leave MTU to attain leadership positions
- Not enough professional leadership development
- Lack of nominations for awards and positions
- No MTU scholarships for senior faculty research
- Service demands can become burdensome
- Feeling de-valued
# Possible Programs: Expanding Leadership

<table>
<thead>
<tr>
<th>Programs</th>
<th>Brief Description</th>
<th>Obstacles Targeted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aspirational Training</strong></td>
<td>Prepare people for leadership opportunities. More strategic development of leaders.</td>
<td>Have to leave to find leadership positions.</td>
</tr>
<tr>
<td><strong>Create an Advisory Group for Chairs and Deans</strong></td>
<td>Create advisory role or council of senior faculty with organizational knowledge to create pool for administrative positions.</td>
<td>People feel devalued; resolving “next in line” issues</td>
</tr>
<tr>
<td><strong>Leadership Institute</strong></td>
<td>Have biweekly workshops and meetings.</td>
<td>Have to leave to find leadership positions</td>
</tr>
<tr>
<td><strong>Expand university and departmental leadership positions</strong></td>
<td>Make promotion and appointment practices transparent and best practices visible; Value leadership in teaching and service.</td>
<td>Have to leave to find leadership positions; for example, the Dean’s Council is currently all male.</td>
</tr>
<tr>
<td><strong>Distinguished Teaching Fellow</strong></td>
<td>Create a 3-year appointment that would include leadership roles on campus in areas of pedagogy and teaching innovations</td>
<td>Few institutional options for those who do not want to go up for full</td>
</tr>
</tbody>
</table>
Other Possible Program Targets

• Build faculty community
• Develop mentoring and advocacy programs
• Revise reward structure and transparency
• Collect data on reasons for attrition
• Improve communications about promotion to full
• Create more career track options
• Encourage sabbaticals, accountability
• Create more recognition programs, distinguished positions
Summary and Additional Resources

• Kaizens 2 & 3 helped us understand the obstacles to successful career progression
  – provided possible programming ideas
  – along with metrics for assessing improvements

• More information on the ADVANCE Institutional Transformation grant proposal planning process is available at: [www.mtu.edu/ADVANCE](http://www.mtu.edu/ADVANCE)
  – Please also provide your comments at the above site
We need your input

1) iClicker Questions

2) Prioritization Worksheet
Q2: Prioritization of Audience

• What should be the primary emphasis on intervention programs selected to include in the proposal?
  a) Programs for female/underrepresented minority faculty
  b) Programs for administrators
  c) Programs for male advocates
  d) Programs for everyone
Q3: Prioritization of Audience (part 2)

• What should be the *secondary* emphasis on intervention programs selected to include in the proposal?
  
a) Programs for female/underrepresented minority faculty  
b) Programs for administrators  
c) Programs for male advocates  
d) Programs for everyone
Q4: Prioritization of Level

- What should be the primary emphasis on faculty level for intervention programs for retention?
  a) Programs for untenured faculty
  b) Programs for tenured associate professors
  c) Programs for tenured full professors
  d) Programs for aspiring administrators
  e) **Programs for non-tenure, research, instructors, etc.
Q5: Prioritization of Level (part 2)

• What should be the secondary emphasis on faculty level for intervention programs for retention?
  a) Programs for untenured faculty
  b) Programs for tenured associate professors
  c) Programs for aspiring administrators
  d) **Programs for non-tenure, research, instructors, etc.
Q6: Prioritization of Subject

• What should be the primary subject emphasis be for intervention programs?
  a) Research progress
  b) Teaching
  c) Service
Q7: Prioritization of Subject (part 2)

• What should be the *secondary* subject emphasis be for intervention programs?
  a) Research progress
  b) Teaching
  c) Service
Q8: Prioritization of Subject

• What should be the primary subject emphasis be for intervention programs?
  a) Mentoring/Sponsors
  b) Visibility/marketing
  c) Skills development (leadership, etc.)
  d) Work-Life
Q9: Prioritization of Subject (part 2)

• What should be the secondary subject emphasis be for intervention programs?
  a) Mentoring/Sponsors
  b) Visibility/marketing
  c) Skills development (leadership, etc.)
  d) Work-Life
Q10: Categorization

• Please categorize your gender identity
  a) Male
  b) Female
Q11: Categorization

- Please categorize your job classification
  a) Tenure/tenure-track faculty
  b) Instructor/research faculty/professor of practice, etc.
  c) Administrator
  d) Staff
Please complete the paper worksheet

• Rate the programs listed as:
  – H = Highly important
  – M = Medium importance
  – L = Less urgent/impactful

  To avoid rating compression, please aim for
  \[ \frac{1}{3} H, \frac{1}{3} M, \text{ and } \frac{1}{3} L \]

• If comfortable, also assess implementation ease
  – E = Easy to implement
  – D = Difficult to implement
Your input and feedback is always wanted.

Details of Kaizen results will be posted on the ADVANCE Website.

www.mtu.edu/ADVANCE