







Today's Topics

- Increasing Dominance of Teams and Importance of Diversity
- The Problem & Solution: Leaders' Impact
- Practical tools: Celebration of Success Critical Period Support

Increasing Dominance of Teams and Importance of Diversity

- Leaders' Impact
- Celebration of Success
- Critical Period Support







University Press), uses mathematical modeling and case studies to show how variety in staffing produces organizational strength.



The Power of Diversity

 Breakthroughs emerge by looking at complex problems from diverse perspectives.

 Inclusive enterprises with a diverse work force that recognize and value unique individual contributions tend to be more successful than more homogeneous ones - lessons from business.

• As the complexity of scientific problems increases, the need to build and to work within inter- and multi-disciplinary teams increases.

Evidence for a Collective Intelligence Factor in the Performance of Human Groups

Anita Williams Woolley, ¹* Christopher F. Chabris, ^{2,3} Alex Pentland, ^{3,4} Nada Hashmi, ^{3,5} Thomas W. Malone^{3,5}

Psychologists have repeatedly shown that a single statistical factor—often called "general instelligence"—emerges from the correlations among people's performance on a wide variety of cognitive tasks. But no one has systematically examined whether a similar kind of "collective intelligence" exists for groups of people. In two studies with 699 people, working in groups of two to five, we find converging evidence of a general collective intelligence factor that explains a group's performance on a wide variety of tasks. This "c factor" is <u>not</u> strongly correlated with the average or maximum individual intelligence of group members but i<u>s correlated with the average social sensitivity of group members, the equality in</u> distribution of conversational turn-taking, and the proportion of females in the group.

29 OCTOBER 2010 VOL 330 SCIENCE

Carnegie-Mellon, MIT

Group's Collective Intelligence

- 1. Moderately correlated with average intelligence of individual group members and the intelligence of the highestscoring team member.
- 2. Not correlated with group cohesion, motivation, and satisfaction.

Woolley et al, Science 330, 2010

Group's Collective Intelligence

- Significant correlation with the average social sensitivity of group members.
- Groups where a more equal distribution of conversational turn-taking scored more collectively intelligent than those in which a few people dominated the conversation.

Woolley et al, Science 330, 2010

Group's Collective Intelligence

- collective intelligence was positively and significantly <u>correlated with the proportion of</u> <u>women in the group</u>.
- They scored better on the social sensitivity measure than men (taking turns).

Woolley et al, Science 330, 2010

Additional Benefits of Diversity

- 5. Direct contribution of diverse perspectives by women and underrepresented
- 6. Stimulates others (more traditionally included) individuals to think in different ways

Potential Gender Bias in Team Effort Evaluation

- Women receive less credit if rating is "team-based".
- Women get due credit if individual contributions are rated.

"No Credit Where Credit Is Due: Attributional Rationalization of Women's Success in Male–Female Teams." Heilman & Haynes J.Appl.Psych. <u>90</u>:905–16, 2005

Increasing Dominance of Teams
 and Importance of Diversity

"Unconscious Bias at Work" Brian Welle (Google Ventures)

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https://www.gv.com/lib/un

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- Unequal resources/rewards to senior women faculty
- Family-work conflict for junior women faculty
- Small number of women faculty
- No women faculty in <u>academic administration</u>
- Undervaluation of equal accomplishment
- Marginalization of women faculty as they rise

Nancy Hopkins, MIT



MIT (2010)

- MIT President, 3 of 5 Deans are women, 2 of 6 department chairs in science and 1 in engineering are women.
- Numbers of women faculty in science and engineering have more than doubled.
- Having children is discussed openly, and women have actually taken maternity leaves and gotten tenure – for the first time in MIT's history.
- New day care center in one of the most prominent and heavily trafficked places at MIT. (Second new day care center opened in 2013.)
- MIT is not alone: other universities have achieved similar results, In some cases these changes were initiated through NSF ADVANCE grants

Impact of Department Chairs

- Individuals experience climate in their immediate workplace –department, division.
- Chair's perspectives of climate differs from those of other faculty, especially women faculty

Study of Faculty Work-life at the University of Wisconsin-Madison, 2003



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- Chairs can significantly influence women's experiences in their departments

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Impact of a Leader

Chairman of Medicine, John Stobo, MD Johns Hopkins Medical School - 1990 (Emma Stokes, consultant)

- Women faculty earned less than men and advanced more slowly.
- Appointed a committee to evaluate situation and develop ways to deal with gender-based problems.

Committee found

- Women were coming up for promotion later than men because evaluators failed to identify qualified women.
- e.g., junior men faculty were asked to chair confs 6X more frequently than junior women faculty.
- · Women didn't know the criteria for promotion.

"Career Development for women in academic medicine: Multiple interventions in a department of medicine." Fried et al JAMA 1996; 276:898. (Emma Stokes and Linda Fried)

- Dr. Stobo's initiatives included:
- Annual faculty evaluations with explicit info re progress.
- Monthly meetings with concrete mentoring for moving up in career.
- Senior faculty were given explicit info on how to mentor.
- · Important meetings moved from outside normal hrs.

Career Development for women in academic medicine: Multiple interventions in a department of medicine. Fried et al JAMA 1996276:898.

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Impact on the Dept of Medicine •1990 there were <u>6 women Assoc Profs</u>

•1995 there were 26 women Assoc Profs.

Career Development for women in academic medicine: Multiple interventions in a department of medicine Fried et al JAMA 1996276:898.

To Overcome Unconscious Bias*

- Collect data
 Evidence that something is wrong state metrics
- Establish structure for success
 •Criteria that are essential ignore all else
- Evaluate subtle messages
 Microaggressions driven by unconscious bias (DWEGs)
- Hold everyone accountable
 •Think and than act (rather than react unconscious bias)
 •Justify in writing
- Make decisions collectively
 After discussion by diverse committee
- * Google Ventures, Unconscious Bias at Work <u>https://www.gv.com/lib/</u> * University of Michigan, STRIDE <u>http://sitemaker.umich.edu/advance/stride_committee</u>

Chairs Have a Huge Impact

- · Improve departmental stability
- Increase faculty & student productivity
- Recruit & retain faculty and students
- Promote respect, collegiality, inclusion, collaboration, and cooperation in department
- Expose & correct unconscious bias
- Improve the delivery of medicine and science

Chisholm-Burns, Richardson & Rodrigues, University of Arizona ADVANCE Program

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• 26 accomplished women faculty - physicians and scientists

Diverse ages, background and cultures

• Overcame hardships, biases, and their own self-doubts to pursue their passion for research and helping others.

• Passion, perseverance and success of women "balancing" work and family.

"Legends and Legacies: Personal Journeys of Women Physicians and Scientists at MD Anderson Cancer Center" Edited by Elizabeth L. Travis, PhD 2009

Just Desserts Program Icahn School of Medicine at Mount Sinai

- Goal: Platform for highly successful women physicians & scientists as role models & mentors for women trainees and faculty
- · Monthly meeting in informal setting
- Features the story of unique path of a highly successful woman scientist and/or physician
- Sharing information about success in juggling competing responsibilities of career, family, and outside interests, overcoming bias
- · Chocolate and fruit are served

"Building Groups to Help Women Survive and Succeed." ASCB Newsletter, October 2014

Celebration of Success: Grand Rounds Speakers

- You could follow Grand Rounds
 with a Just Desserts event
- How many women speakers this year at your Grand Rounds?

Women Speakers for Seminars, Grand Rounds, Symposia

Two very different examples in Bioengineering:

- MSSM Annual Imaging Symposium: 1 woman and 24 men (five years)
- Stanford BioX Symposium 2014: Mechanobiology 5 speakers – all women

Women Speakers for Seminars, Grand Rounds, Symposia - resources

WICB Speakers Referral List

http://ascb.org/wicb-committee/

downloadable list and/or customized list

Synberc

http://www.synberc.org/speaker-diversity provides names of suggested women speakers and sample letter to organizers to encourage gender balance

[Synberc organizers: Pamela Silver, George Church (Harvard) Kristala Jones Prather, Natalie Kuldell, Ken Oye, Christopher Voigt, Ron Weiss (MIT)]

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Claflin Distinguished Scholar Awards

- Advancement of junior women scientists to senior faculty positions is still far less frequent than that of their male counterparts at MGH
- Significant obstacle to career advancement is the difficulty of maintaining research productivity during the child-rearing years
- Provide bridge funding for junior faculty to sustain
 research productivity during the child-rearing years
- Funds may be used for support of a technician, postdoctoral fellow or graduate student and supplies.

http://www2.massgeneral.org/facultydevelopment/owc/claflin.html

- •Three-page basic or clinical research plan
- MD, PhD, within 7 years of first full-time faculty appointment
- Primary appointment and conducting their research at MGH
- · Salary support from a grant or other funding source
- Applicant is clearly the PI, whose academic progress would benefit from such funding support
- Evidence of strong research training, productivity, and a welldefined focus in either basic or clinical research
- Responsible for care of children
- \$50,000/yr X 2 in 2014 in direct costs, plus 15% indirect costs per year.

1997-2004 Claflin AwardsRetention90% of awardeesInvestment in
35 awards\$ 2,100,000Awardee's grants as PI\$ 51,401,314ROI = 24.5 fold*Arageted Intervention for the Career Development of Women in Academic Medicine.* Jagsi et al. Arch Intern Heit 1873 33 (2007)



Stanford ABCC* Program - Work-Life Integration Career customization plan (3-5 yr period): Pace to promotion Disaggregated workload Role as contributor or leader Schedule predictability Work-life integration Organized as teams -meeting clinicians' administrative responsibilities. Basic scientists - tradeoff teaching and service with others. Faculty earn credits for taking on these responsibilities when they can cal Career Customization based on Deloitte's Mass Career ademic Biom Customization model for flexibility "Changing the Culture of Academic Medicine to Eliminate the Gender Leadership Gap: 50/50 by 2020" Valantine & Sanaborg, Acad Med 2013;88:1411–1413. Supported by Dean and a Grant from the Sloan Foundation

Stanford ABCC* Program

Faculty bank earned credits

Trade credits for time for high-priority work-related tasks or for time for home and family responsibilities.

"Banking system" rewards individual faculty for taking on the shared responsibilities of the group, thereby providing concrete benefits to alleviate work– life and work–work conflict when needed.

Exchange Banked Credits for:

Work: targeted coaching, editing and PowerPoint design support services. Home: housecleaning and meals delivered at home, outsourcing errands,

Key Programs and Benefits for Faculty with Family Responsibilities Stanford University

- Child Care Resources and Referrals (7 on-site childcare centers; waiting lists)
- Child Care Subsidy Grant Program (children 9 y.o. and younger; up to \$5K based on application including income information)
- Faculty Child Care Assistance Program (children 5 y.o. and younger; salary supplement to eligible faculty to offset child care expenses; \$5-20K based on adjusted family income)
- Dependent Day Care Flexible Spending Account (before tax \$, reimbursement of work-related dependent day care if incurred)
- Adoption Reimbursement Program (\$10K)
- ParentNet & SeniorNet email lists
- School-Age Resources & Elder Care Resources

Key Programs and Benefits for Faculty with Family Responsibilities

- Faculty <u>Back-Up Care</u> Advantage Programs -Kids (10 days/yr; co-pay \$15/day in center, \$6/hr at home) -Elders (10 days/yr; \$6/hr co-pay)
- Junior Faculty Dependent Care Travel Grants (untenured Jr faculty up to \$1K post-tax/yr)
- New Parent Tenure Clock Extension
- Reduced Teaching or Clinical Load (during quarter of childbirth, full pay)
- Part-Time Appointments (for family related needs)
- Dual Career Assistance (finding positions in Bay area or Stanford)
- Counseling Support (on both personal and workplace issues, for faculty members and family; free 10 sessions/issue)

Similar programs and benefits at University of Pennsylvania, Princeton University

Helping Women Succeed in Academic Biomedicine

- High impact work is now done by teams. Women scientists and physicians are an essential part of the team.
- Informed, committed leadership is essential.
- Celebrate success and provide support and alternative pathways.
- Overcome unconscious bias.
- Provide support at critical times for Jr faculty.
- Change the climate and enhance the success of your faculty and department

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Advancing Women in Academic Biomedicine

Sandra K. Masur April 2015

<u>References</u>

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Women in Cell Biology of the American Society for Cell Biology (downloadable)

- 1. Monthly WICB career strategy columns <u>http://ascb.org/wicbcareer-strategy-column/</u> <u>http://www.ascb.org/other-publications/other-publications.html</u>
- 2. Speakers Referral List <u>http://ascb.org/wicb-committee/</u>

Websites of potential interest and helpful information

 ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers <u>http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5383</u> Institutional Transformational Awards (2 page summaries with urls for Best Practices):

https://www.nsf.gov/crssprgm/advance/advance_Two-Page_Summaries_2007.pdf

e.g. U Michigan ADVANCE (STRIDE) <u>http://sitemaker.umich.edu/advance/stride_committee</u>

- 2. NIH Updates on Women in Science (NUWS) <u>http://womeninscience.nih.gov</u>
- 3. The National Library of Medicine's "Changing the Face of Medicine" exhibition: Celebrating America's Women Physicians: is an exhibition that honors the lives and achievements of women in medicine. <u>http://www.nlm.nih.gov/changingthefaceofmedicine/exhibition/</u>
- 4. Synberc: http://www.synberc.org/speaker-diversity

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