



What I would do if I Ruled the World – Policies and Programs that Advance Excellence

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What are consequences if no change?

- I feel strongly that we need more trained scientists and engineers
 - May not work in traditional STEM fields but need mindset/approach
- STEM progress hindered by who we are losing from these fields (losing able people)
- Scott Page “The Difference”
 - The more diverse the team the more diversity of approaches that can be employed to come up with a solution to a problem



Crowds and Experts

- If you take a group of people and ask them to independently estimate something like the number of jelly beans in a bottle – likely average of individual estimates will be very close to correct answer
 - High and low estimates will balance out
 - Group will do better than a single randomly chosen individual
- If you ask a group to decide a complex issue where expert technical knowledge matters (e.g. should vaccines be used) group may not improve upon expert opinion



Shades of Grey

- Situations where diverse teams flourish
 - Complex situations that require skills drawn from many disciplines
 - Multiple good solutions
 - “Tree” not “Ladder” fields
 - Individuals on team feel empowered to speak/act
 - Creative conflict encouraged
 - Failure allowed/anticipated/accepted
- Does intellectual diversity correlate with gender and/or ethnic diversity?



Assuming Yes - What should be done?

- “Insanity: Doing the same thing over again and hoping for a different result” Einstein
- We need to make this a global issue
 - Not the responsibility of the women in the field to ensure broader access for other women..
 - OK for women not to be interested in these issues
 - White males may be better at influencing other white males...
 - See recent Catalyst.org article...
- Assessment needs to look at long term impacts
 - Less interested in if people enjoy a program than if it changes their behaviors...



Accumulated Disadvantage

- Leaders are expected to be charismatic, strong, decisive, assertive..
 - We tend to associate these abilities with men
 - The more feminine a woman is the less likely she will be seen also as a leader
 - The more a woman is seen as a leader the more likely she will also be seen as deviant....
 - Women can be penalized for acting too like men (expected to be more polite, spend more time on “niceties”....)
- Women face a **labyrinth** of accumulated disadvantages
 - It is possible to navigate
 - Ongoing work to make it easier



General Principles

- Actions should be research based
 - Need a model of organizational change
 - Multiple facets, multiple levels
 - Able to justify need for program
 - Cost effective
 - Evidence for problem
 - Assess impacts
 - Qualitative, quantitative measures
 - How do you define success?



NSF's ADVANCE Institutional Awards

- Move from small grants to individuals to large grants to an institution
 - Very visible – high level interest/access
 - More systemic approach
 - Work at key career stages/transitions
 - Different Fields
 - Different Loss points
 - Different Issues?
 - Work with key influencers
 - Department Chairs/Group Leaders



Required Features

- Supportive
 - Listen to people you want to help
 - Associate Professor grants
- Provide Accurate Information
 - Peer networking can only go so far
- Inclusive
- Flexible/Responsive
- Evolvable
 - If successful some needs should change over time
- Extendable
 - Not just Faculty



What we had - mentoring

- Original plan was to develop a group of trained senior faculty mentors
 - Easy to get volunteers, hard to restrict to people we felt would be most effective
 - Case study based training
 - Worked well – much better than bringing in coach with little experience of academia
 - Use what is known about student engagement – make interactive
- Few junior faculty members asked to be assigned mentors
 - Useful for few having known problems, not majority
 - Connection to “support” made some people reluctant to ask



What we have

- Recruitment and Work-life Brochures
 - Retention begins before offered job!
 - Recruitment stresses “best practices” to minimize bias
 - Define process, attributes looking for
 - Same process for everyone
- Workshops for junior faculty
 - Peer networks
 - Connect to key members of senior admin
 - Repeat information given at orientation....
 - Time Management, Difficult Conversations..



Workshops 101

- Use “in house” presenters if at all possible
 - Understand culture, more credible, builds networks
- Time management is number one request – if people can manage their time they can manage their stress
- People often query “difficult conversations” at the time presented and then later tell us how grateful they are they had it
 - Easier to minimize conflict in advance than deal with it after problems arise
 - Common and erroneous belief that conflicts will go away if ignored
- Have had women comment that it feels Machiavellian to employ techniques taught...



Policies

- Transparency in policies, central application (or monitoring)
 - Minimize chance for different interpretations and/or errors in use
 - Reward what you say is important
 - Ask faculty to comment in their annual report of activities on their work related to increasing diversity
- Opt out rather than opt in tenure clock stopping if take medical/family leave
 - No penalty if ask for early tenure consideration
 - Want default to be what we recommend
 - Use went up significantly...



Other activities

- Book groups, lunches, one off workshops, group invites to theater
 - Encourage connections across disciplines
 - Theater and Dance professor made film on young women science faculty members with families and how they managed it
- Associate Prof workshops, grants
 - Help people re-engage, get promoted
- Chairs trainings



What we will have

- Expand Postdoctoral support
- LEAPS (LEAP for staff)



Look for

- Flexibility in options
 - Address different needs
 - Children
 - No Children
 - Address changing needs
 - Childcare
 - Eldercare
- Are existing programs
 - Known about?
 - Used?



Unintended Consequences

- Many well meaning interventions have failed to be fully effective (assessment key)
- How would you solve the following ?
 - Women may be underprepared for graduate courses in STEM if come from a liberal arts background
 - Women are paid less because they typically do not negotiate their starting salaries



Interventions

■ Poor Preparation

- A solution was to offer remedial classes
 - Stereotype Threat

■ Negotiation

- A solution was to train women to negotiate
 - Catalyst Study (<http://www.catalyst.org>)
 - “The Double-Bind Dilemma for women in Leadership - Dammed if you do, doomed if you don’t”
 - Women in leadership roles who act as men do not get the same responses and may not negotiate because they expect a negative response



Conclusions

- Increasing the number of women in STEM is not “rocket science”
 - Smart enough to work in STEM?
 - Smart enough to diversify the demographics!
- Over to you
 - Questions?
 - Comments?