



W I S E L I

*Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison*

**NSF ADVANCE Institutional
Transformation Award at
UW-Madison**



Six Schools/Colleges Targeted: Physical & Biological Sciences

- **College of Agricultural and Life Sciences (2 Departments)**
- **College of Engineering (9 Departments)**
 - Materials Science & Engineering is an MSP discipline
- **College of Letters and Science (8 Departments)**
 - Astronomy, Chemistry, Mathematics, Physics, and Statistics are MSP disciplines
- Medical School
- School of Pharmacy
- School of Veterinary Medicine



Women in Science & Engineering Leadership Institute (WISELI)

WISELI's goals:

- to promote the participation and advancement of women in academic science and engineering
- to have the gender ratios of the faculty, chairs, and deans reflect the gender ratio of the student body



WISELI Initiatives - Workshops

- ***Training for chairs of hiring committees***
 - Use social science literature on impact of unconscious biases and assumptions on evaluations of men and women
 - Physical Sciences: 25 faculty attending, 4 MPS
- ***Climate workshops for department chairs***
 - Based on concepts of active learning, from “scientific teaching” literature
 - Physical Sciences: 7 departments, none MPS



WISELI Initiatives - Grants

- ***Celebrating Women in Science & Engineering Grant Program***
 - Small (~\$1K-\$3K) grants to departments or groups to bring in speakers who will meet WISELI's goal to “enhance the participation and advancement of women in academic S&E”
 - Addresses the isolation and invisibility of women in STEM fields
 - 10 of 19 awards have gone to Physical Sciences (3 MPS)



WISELI Initiatives – Grants (Cont'd)

- ***Life Cycle Research Grant program***
 - Provide funds for a faculty member who is experiencing a life crisis simultaneously with a critical career juncture. Awards are large (~\$30K)
 - Designed to alleviate some of the work/life conflicts that disproportionately affect women earlier in the career
 - 6 applications from Physical Science departments (of 20 total); 1 from MPS
 - 9 awards, none to Physical Sciences (yet— one is pending)



WISELI Initiatives - Other

- Conversion of academic staff to tenure-track
 - One case attempted in MPS department, failed
- Awards and honors
- Leadership development for academic staff
- Workshops on building effective research teams
 - In development
- Senior women initiative
 - Discovery interviews, professional development opportunities, study of entrepreneurship
 - 7 out of 10 senior women in MPS participate in WISELI in some way; 9 out of 17 senior women in other physical sciences participate in WISELI
- Documentary video



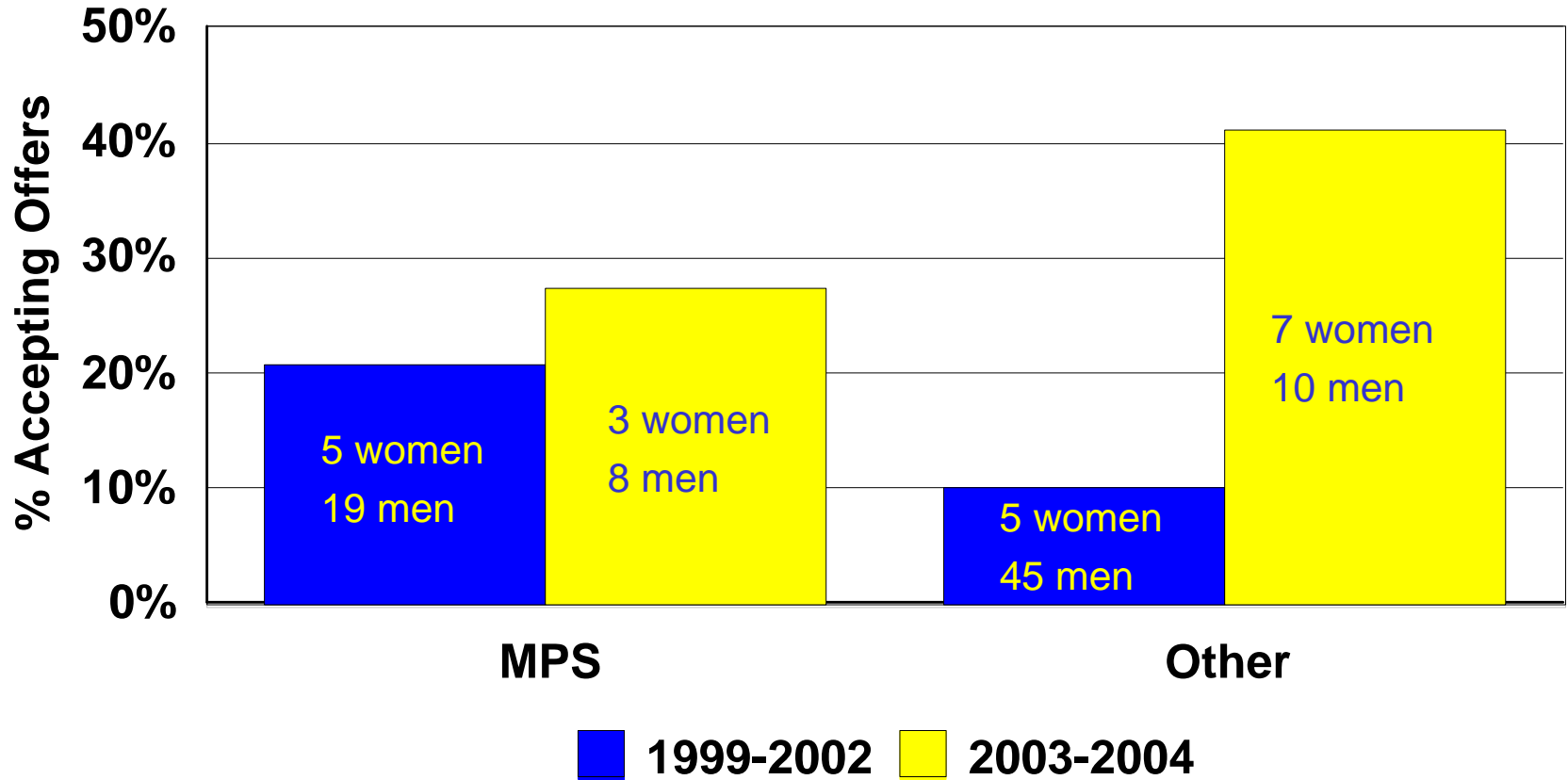
WISELI Initiatives – Research & Evaluation

- Gunter, Ramona and Amy Stambach. 2003. “As Balancing Act and As Game: How Women and Men Science Faculty Experience the Promotion Process.” *Gender Issues*. 21(1):24-42.
- Brennan, Patricia; Jennifer Sheridan; Molly Carnes; Jo Handelsman; and Bernice Durand. 2004. “Discovering Directions for Change in Higher Education Through the Experiences of Senior Women Faculty.” Accepted for publication, special issue of *Journal of Technology Transfer* (Volume 31, Issue 1. Jan./Feb. 2006).
- Carnes, Molly; Stacie Geller, Eve Fine, Jennifer Sheridan, and Jo Handelsman. 2004. NIH Director’s Pioneer Awards: Could the Selection Process Have Favored Men?” Under Review.
- Handelsman, Jo; Nancy Cantor, Molly Carnes, Nancy Hopkins, Cora Marrett, Denice Denton, Eve Fine, Sue Rosser, Jennifer Sheridan, and Virginia Valian. 2004. “More Women in Science.” Under Review.
- Pribbenow, Christine Maidl; Susan Daffinrud; and Deveny Benting. 2004. “The Climate for Women Faculty in the Sciences and Engineering: Their Stories, Successes, and Suggestions.” In progress.
- Ford, Cecilia. 2003. “Gender and Language in/as/on Academic Science: Combining Research with a Commitment to Institutional Change.” In progress.
- Pribbenow, Christine Maidl and Deveny Benting. 2004. “Why Women Leave.” In progress.

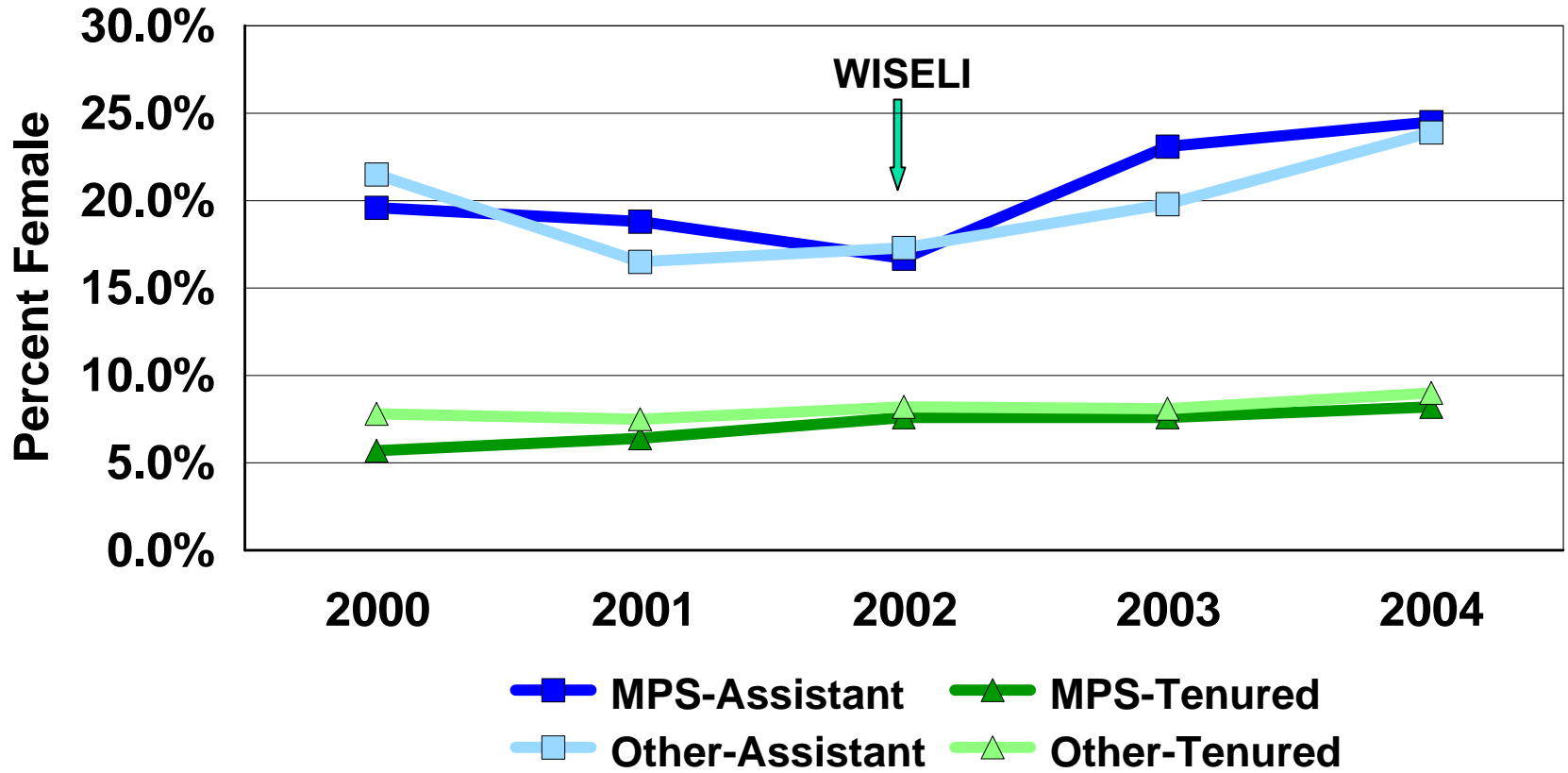


- Life Cycle Research Grants
- Creating Space
- Celebrating Women in S&E Grants
- Conversion to tenure-track
- Awards and honors
- Endowed Professorships for Women in Science
- Leadership Development for academic staff
- Climate Workshops for Department Chairs
- Workshops for Search Committee Chairs
- Workshops on building effective research teams
- Senior women initiative
- Documentary Video
- Evaluate existing programs
- Resource Study
- Interviews with women faculty and staff in S&E
- Study of Faculty and Academic Staff Worklife at UW-Madison
- Discourse analysis of women's communication strategies
- Ethnographic study of gendered interactions in the laboratory setting
- Study of Career Choices in Engineering

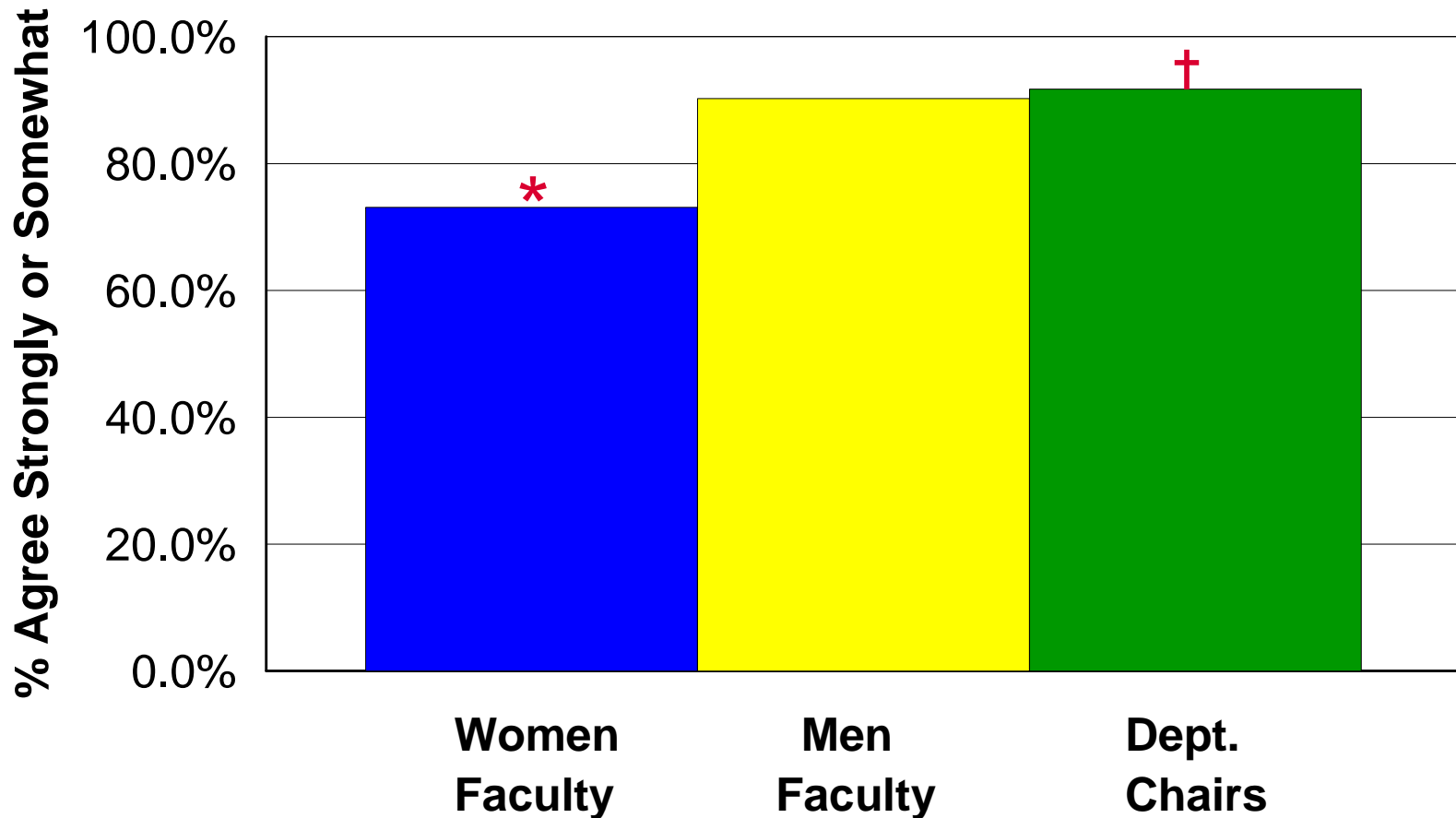
Percent Female, New Junior Hires in Physical Science Departments 1999-2004



Percent Women, MPS Departments vs. Other Physical Science Departments 2000-2004



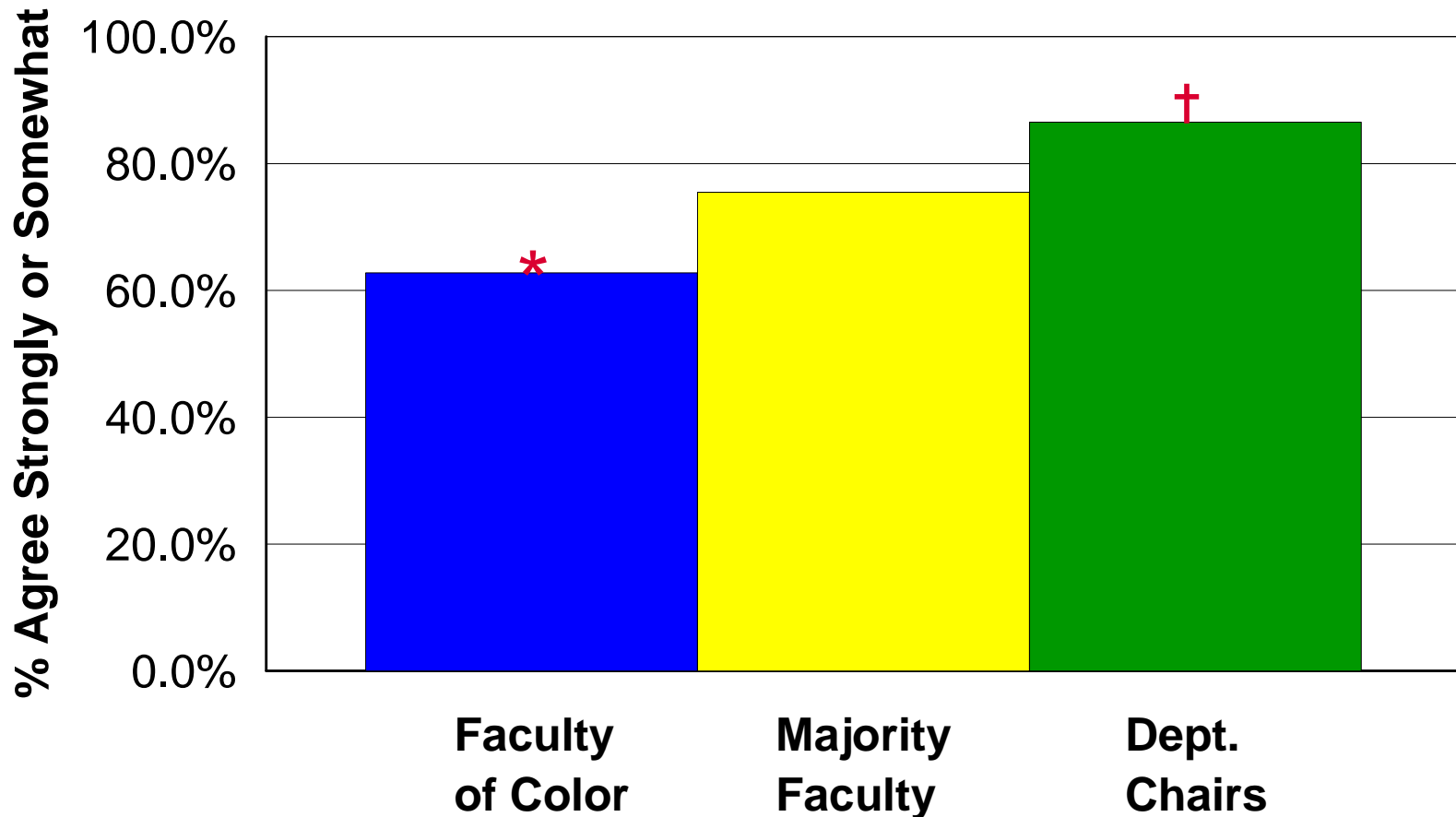
The climate for women in my department is good



* Significant t-test between women and men faculty at $p < .05$.

† Significant t-test between dept. chairs and all other faculty at $p < .05$.

The climate for faculty of color in my department is good



* Significant t-test between minority and majority faculty at $p < .05$.

† Significant t-test between dept. chairs and all other faculty at $p < .05$.



Conclusions

- MPS faculty and leaders are not participating to the same extent as faculty/leaders in other Physical Science departments
- MPS results (particularly in hiring) are lagging the results for Other Physical Science departments
 - This is a correlational observation! We cannot “prove” that WISELI’s work has “caused” any observed gains.
- Leadership matters—the units with the most committed leaders are participating at higher rates, and have bigger gains.



Conclusions (cont'd)

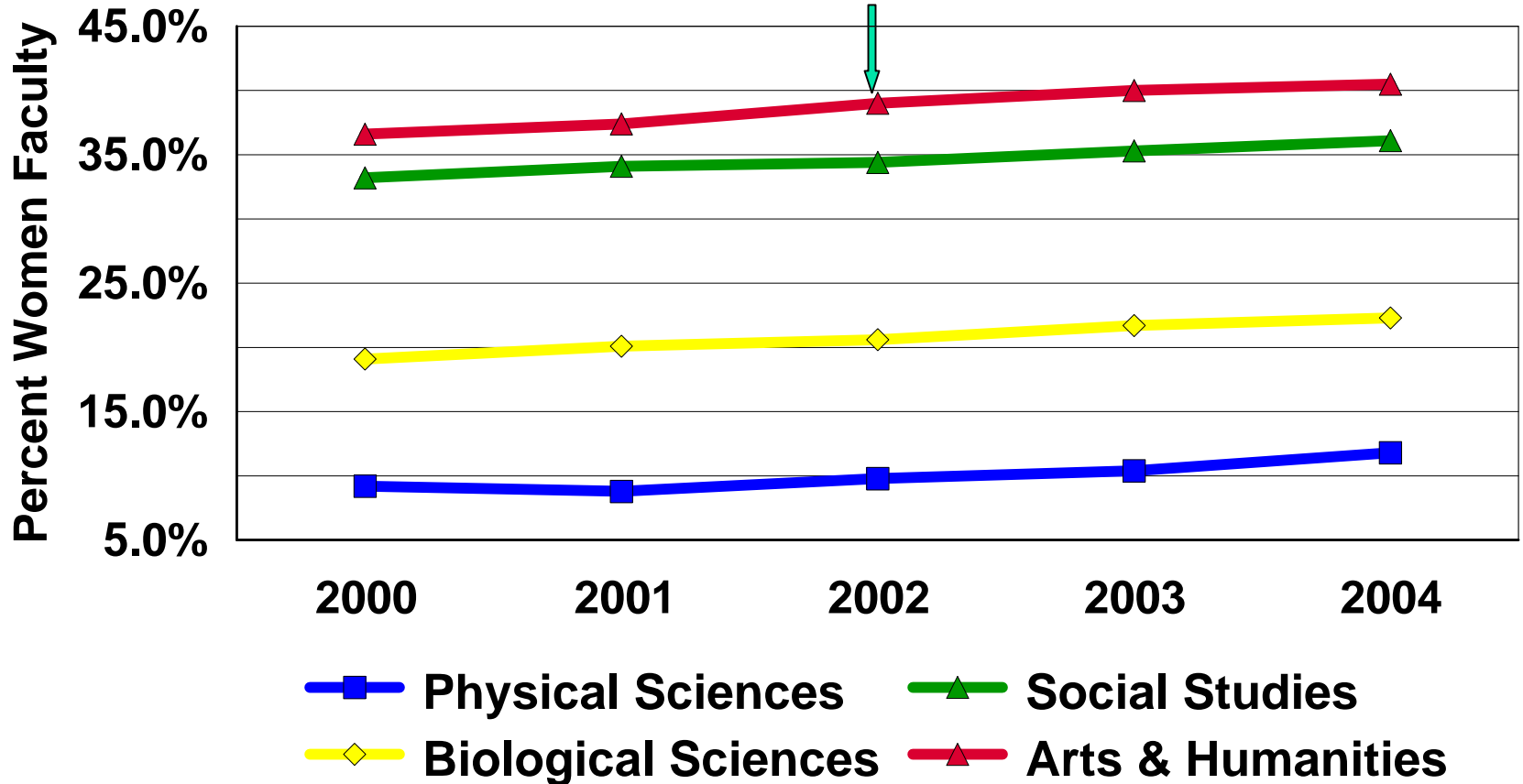
- Can't solve this problem without involving men
 - ADVANCE program innovative in this regard—address under-representation from an institutional perspective rather than by supporting only individual women
- Continued monitoring of gender equity is vital to avoid “relapse”



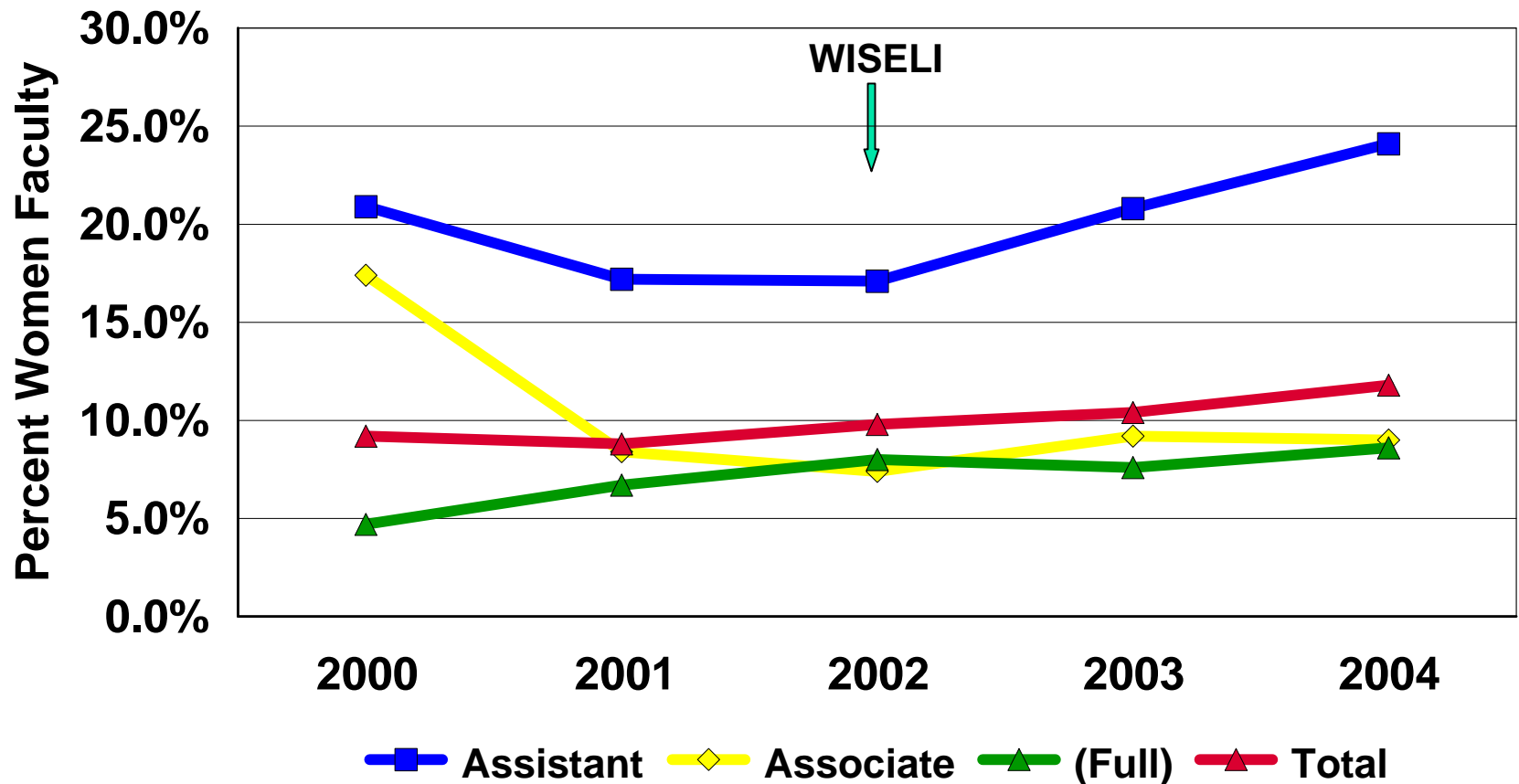
Additional slides

Percent Women Faculty, by Division University of Wisconsin-Madison

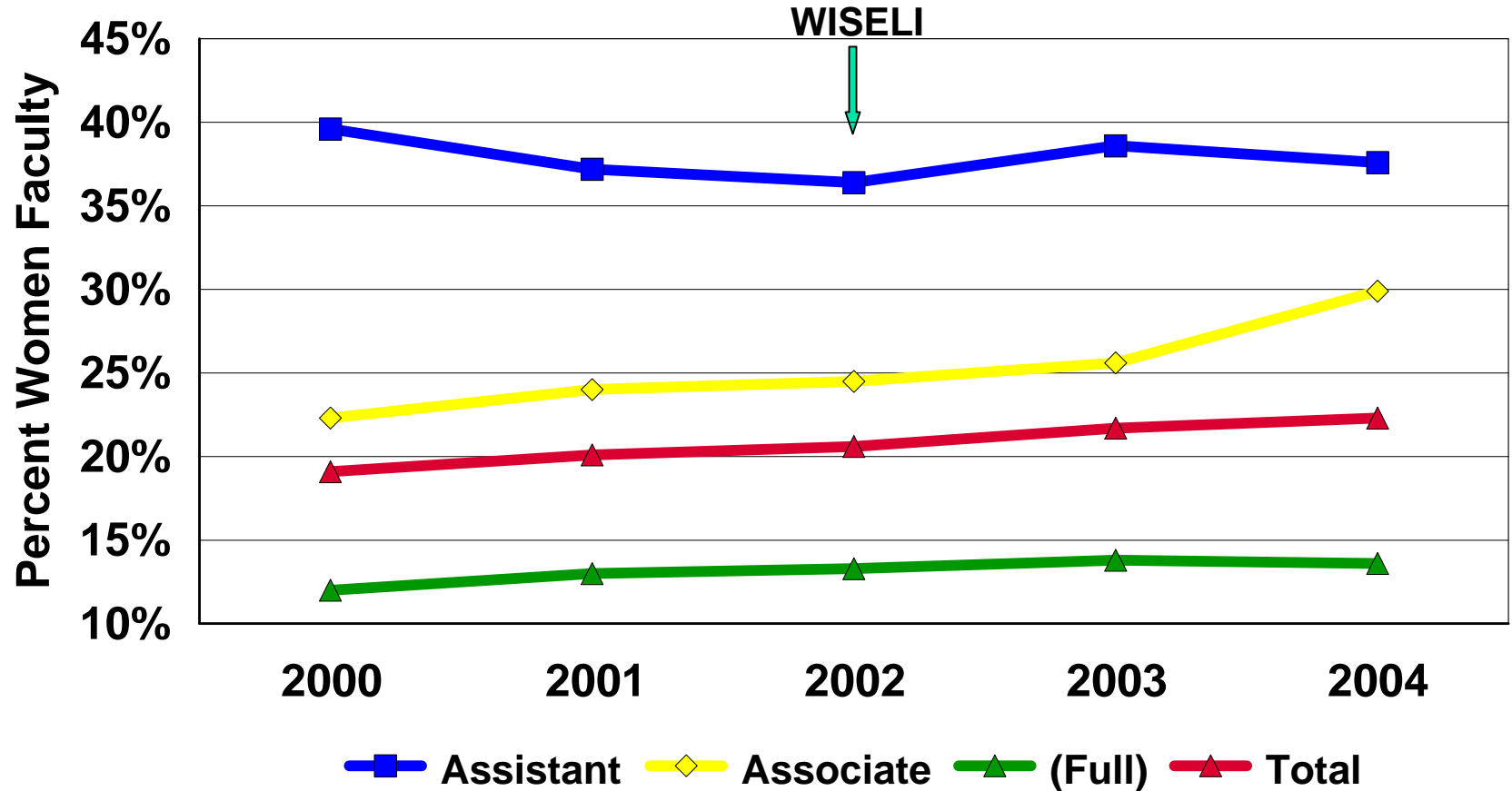
WISELI



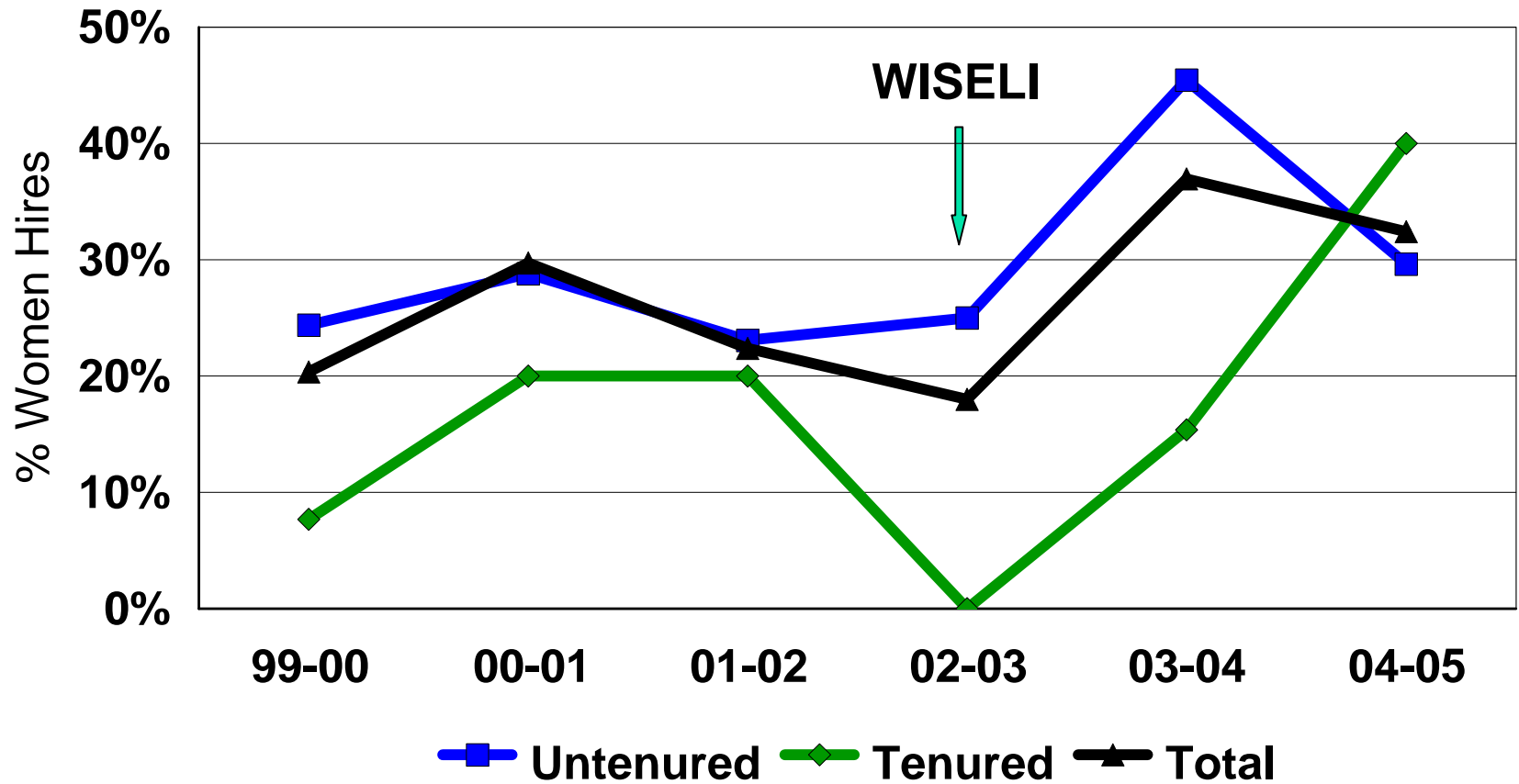
Percent Women Faculty, by Rank Physical Science Departments



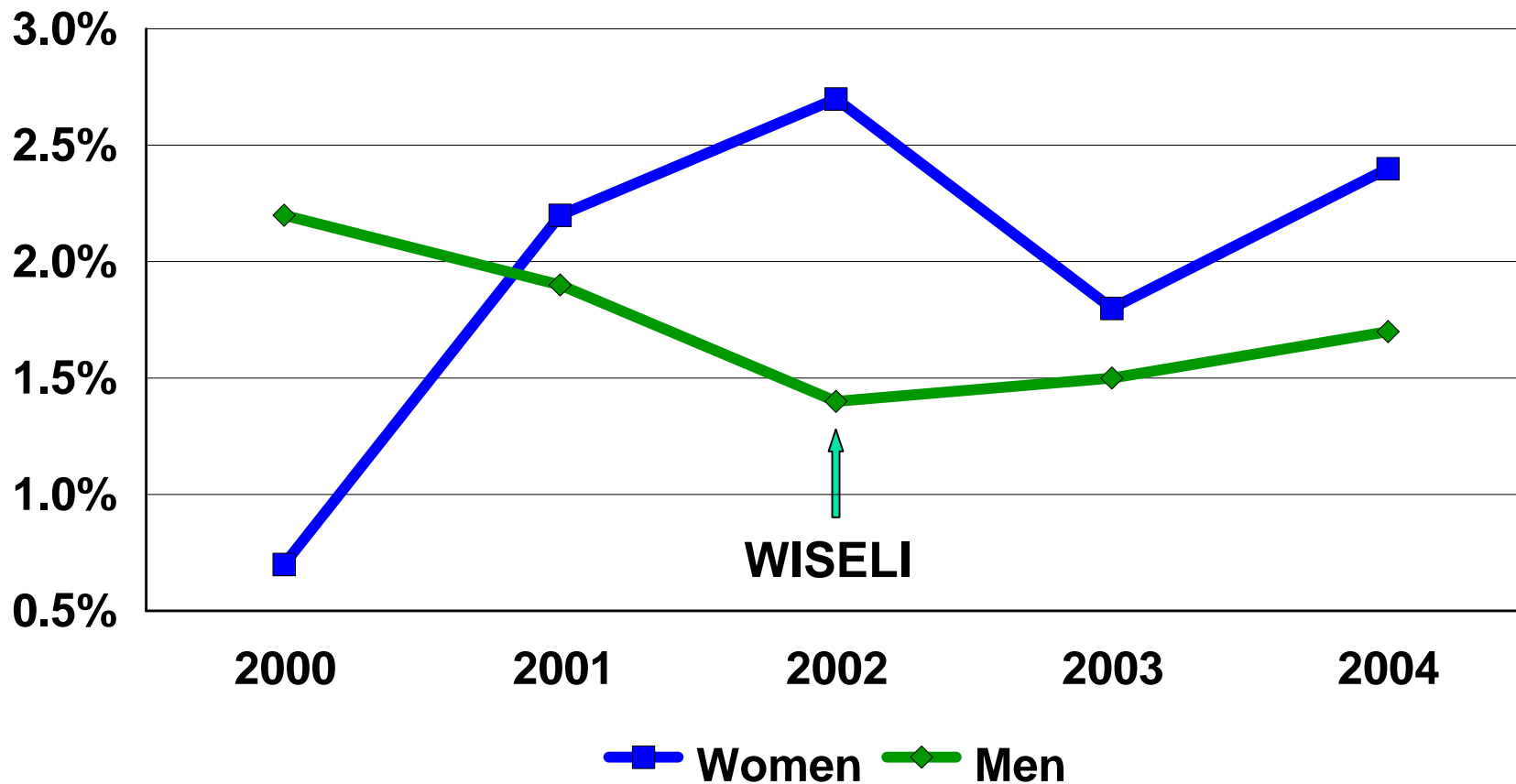
Percent Women Faculty, by Rank Biological Science Departments



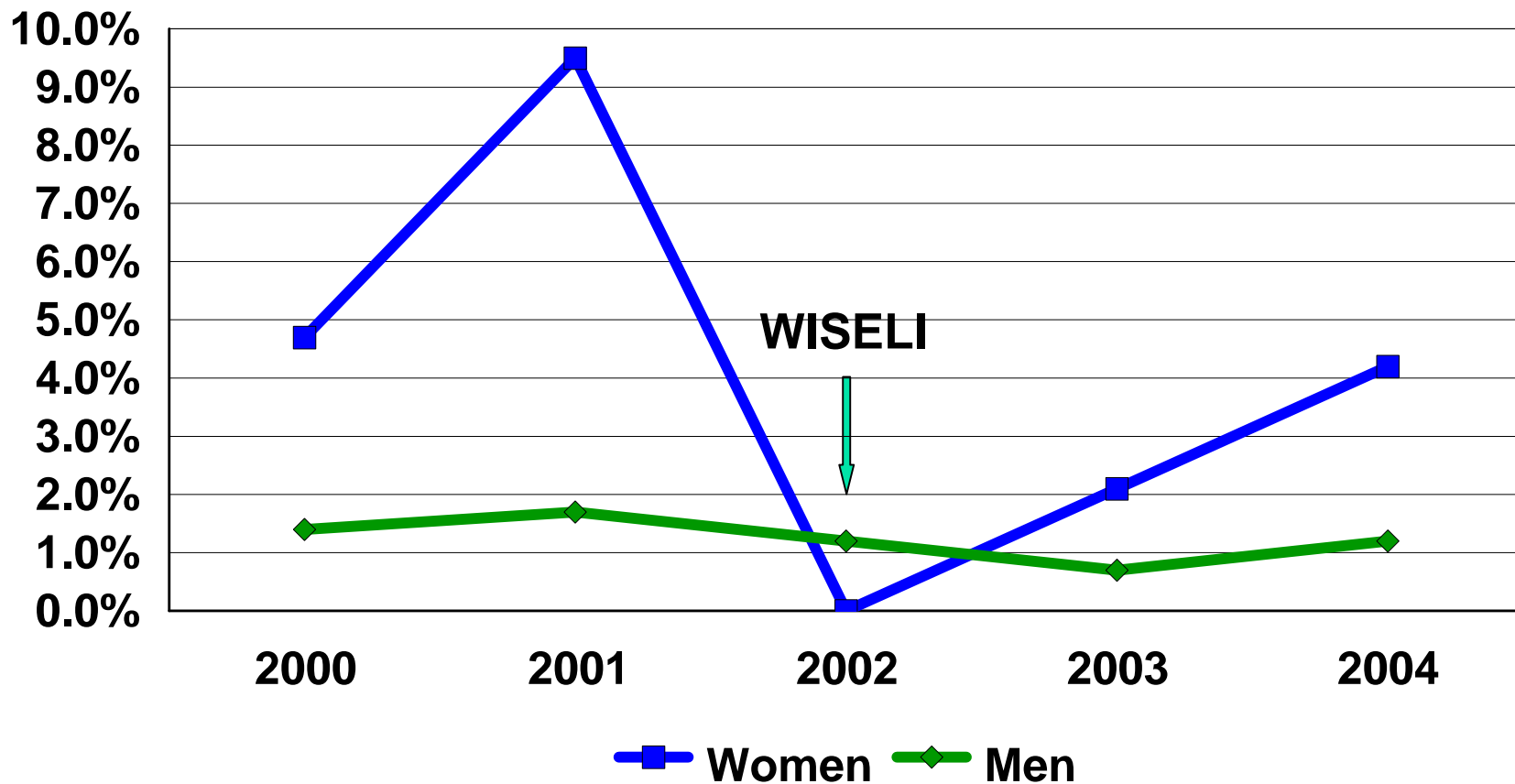
Women as Percentage of New Hires Biological and Physical Sciences



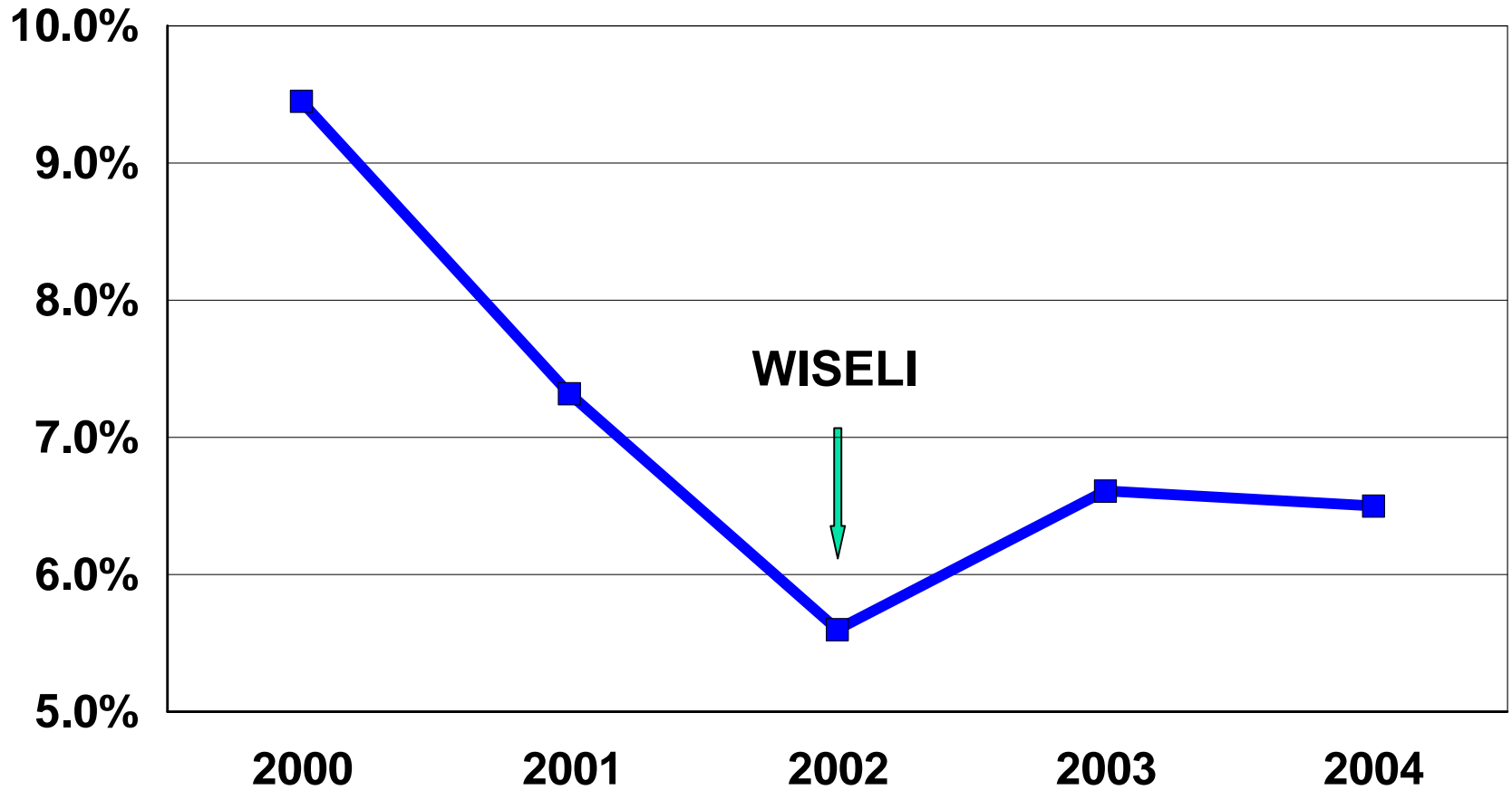
Attrition Rates (Resign), by Gender Biological Sciences



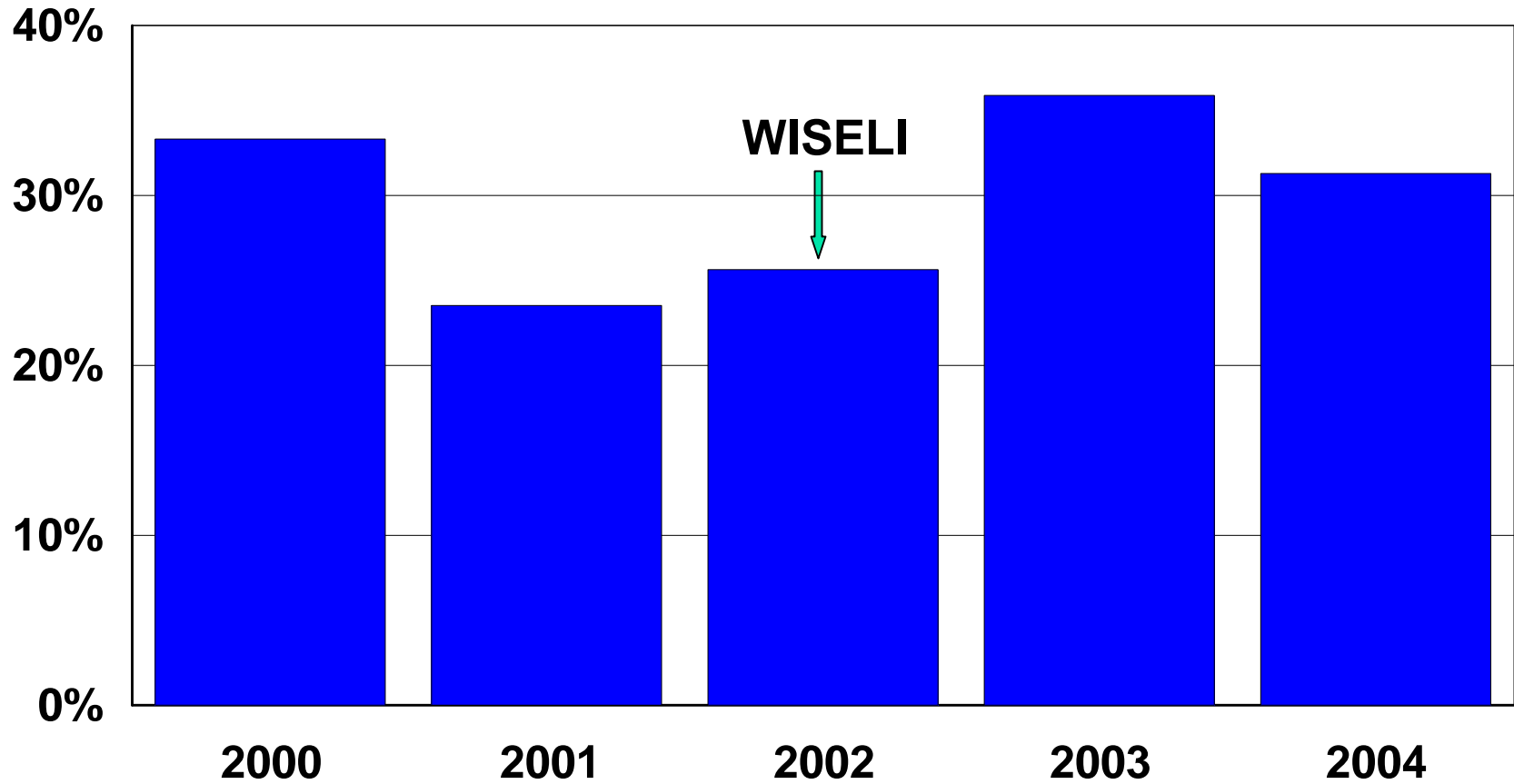
Attrition Rates (Resign), by Gender Physical Sciences



% Women in Administrative Positions (Dept. Chair, Deans, Center Directors)

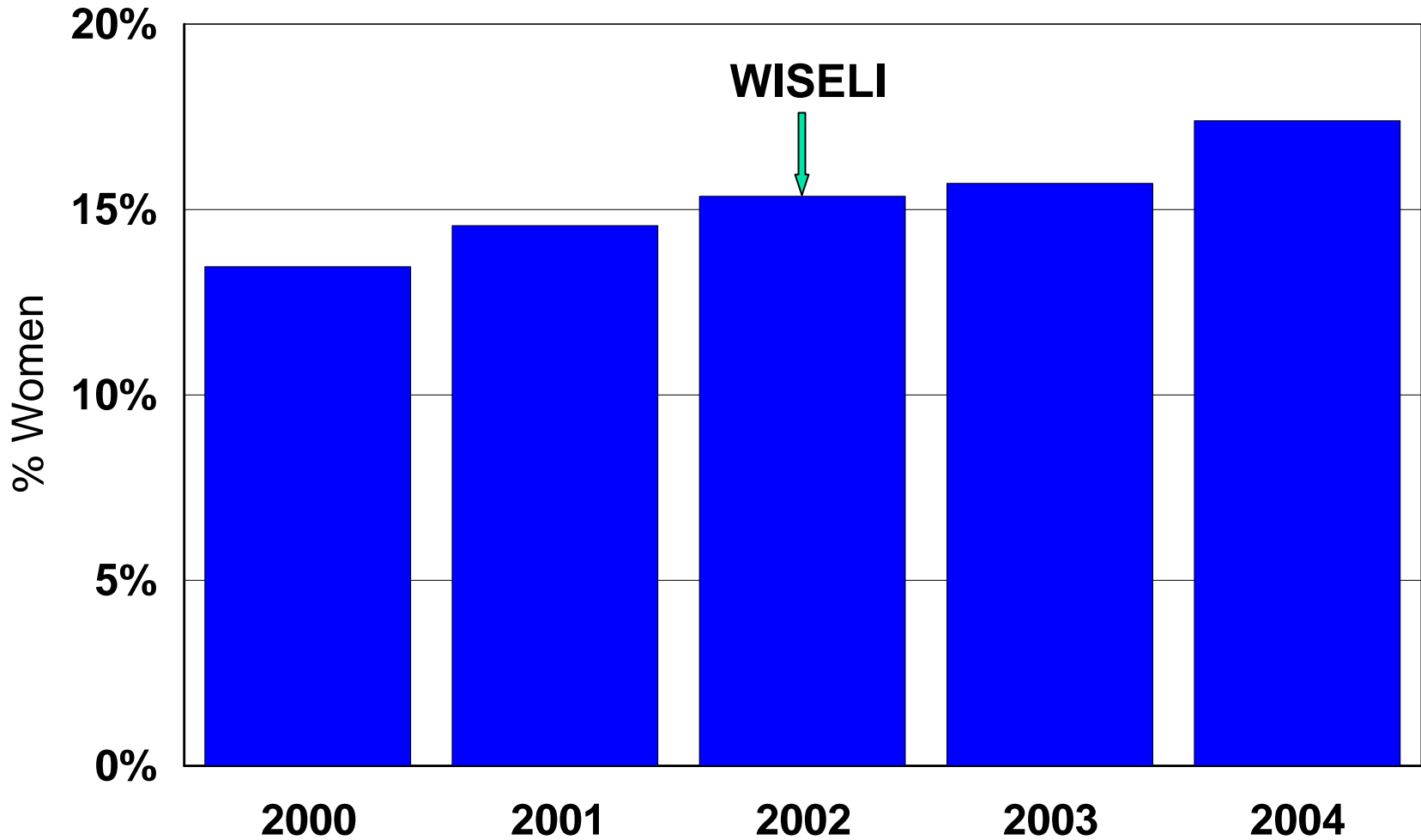


% Female, Major UW-Madison Faculty Awards*



* Vilas Associate, Hilledale, Romnes, Kellett

Women as Percentage of Named Professorship Recipients





Three Themes in All Activities/Initiatives

- Use *evidence-based* approach to drive institutional change
- Foster individual *behavioral change*
- Ensure *sustainability* of the transformation



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