

Career-Life Balance for Women of Color in Science and Engineering Academia

Maria (Mia) Ong, Ph.D., Panelist
Senior Research Scientist
TERC

Rachel Kachchaf, Ph.D. (Smarter Balanced Assessment Consortium, UCLA)

Lily T. Ko & Nuria Jaumot-Pascual, Ph.D. (TERC)

Apriel Hodari, Ph.D. (Eureka Scientific, Inc.)



WOMEN OF COLOR IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

- Because of their race and gender, women of color who pursue advancement through the STEM fields are caught in a “double bind” (Malcom, Hall & Brown 1976)
- Persistently low numbers of women of color in STEM (NSF 2019)
- Potential human resource crisis (National Academies 2006) and raises a serious social justice issue in the U.S. (Brown, 2000; Ong, et al., 2018)
- *How do race/ethnicity, gender, and other factors affect the experiences of women of color encountering career-life balance issues in STEM?*

IDEAL WORKER NORM IN U.S. STEM

- Commitment to the job
 - Long hours and unbroken trajectories
 - Constant visibility and availability
- Assumed gendered separation of paid work and family life
- *“Successful women will need to be the most ideal of ideal workers.”* (Drago et al., 2006, p. 1225)

Sources: Acker, 1990; Britton, 2013; Drago, et al., 2006; Jones, 2012; Mason, et al., 2013; Terosky, et al., 2014; Williams & Ceci, 2012; Wonch Hill et al., 2013.

CUMULATIVE DISADVANTAGE FOR WOMEN OF COLOR IN U.S. STEM

- Women of color work under conditions of institutional tokenism and structural inequality:
 - More visible, more isolated, more often excluded, more exposed to racial/gender inequities (Rubin, 1998; Turner et al., 2011, Ong, 2010)
- Small differences in treatment can pile up, resulting in large disparities (Valian, 1998)
- *“Those who differ from the norm encounter a cycle of cumulative disadvantage, while those who fit the norm experience a cycle of advantage.”* (Turner, 2002, pp. 76-77)

SCHOOL- AND WORK-LIFE BALANCE

- Perceptions of non-stop work due to competitive environment, unrealistic expectations
- Dearth of role models, mentors, culturally competent advisory support in STEM academia
- Concern about having the time to pursue interests outside of STEM
- Implicit discouragement of use of family leave policies
- Belief that national labs or industry would offer more balance

Source: Kachchaf, Ko, Hodari & Ong, 2015

SCHOOL- AND WORK-LIFE BALANCE

“I will not be excellent in teaching, excellent in research, excellent in life all at once because it’s not possible and I don’t want to put that constraint on my system. . . . I had a miserable life [in graduate school]. . . . I’m not going to do anything close to that again.”

—Laura, Latina graduate student, physics
in Kachchaf, et al., 2015

SCHOOL- AND WORK-LIFE BALANCE

“If I were a White male, for the work that I've done, the things I've accomplished... I'd be an endowed chair professor by now.... I know that I would be—by the academic standards—further along. So it's been a long path, and it's still going but we'll see.”

— Yvette, Black associate professor, engineering
in Kachchaf, et al, 2015

RECOMMENDATIONS

- Change the cultural norms of the ideal worker
- Implement training for culturally competent mentoring
- Fully honor family leave policies
- Enforce strict policy against discrimination, harassment
- Sponsor more research on women of color and career-life balance in STEM workplaces

ACKNOWLEDGMENTS

- National Science Foundation:
DRL-0909762 & EEC-1427129
- Christina Bebe, Jodut Hashmi, Apriel Hodari, Nuria Jaumot-Pascual, Rachel Kachchaf, Lily Ko, Irene Liefshitz, Audrey Martinez-Gudapakkam, & Janet Smith

Maria (Mia) Ong, Ph.D.
Senior Research Scientist
TERC
mia_ong@terc.edu



REFERENCES

- Acker, J. (1990). Hierarchies, jobs, and bodies: A theory of gendered organizations. *Gender and Society*, 4, 139–58.
- Britton, D. (2013). *The glass ceiling in the ivory tower*. Paper presented at the Annual Conference of the Eastern Sociological Society, Boston, MA.
- Brown, S. V. (2000). The preparation of minorities for academic careers in science and engineering: How well are we doing? In G. Campbell, R. Denes, & C. Morrison (Eds.), *Access denied: Race, ethnicity, and the scientific enterprise* (pp. 239-269). New York: Oxford University Press.
- Drago, R., Colbeck, C. L., Stauffer, K. D., Pierretti, A., Burkum, K., Bazioli, J., Lazzaro, G., & Habasevich, T. (2006). The avoidance of bias against caregiving: The case of academic faculty. *American Behavior Scientist*, 49(9), 1222-1247.
- Jones, J. B. (2012). Working hours for graduate students. [Blog post]. Retrieved from The Chronicle of Higher Education website: <http://chronicle.com/blogs/profhacker/working-hours-for-graduate-students/43912>.
- Kachchaf, R., Ko, L., Hodari, A., and Ong, M. (2015). Career-life balance for women of color: Experiences in science and engineering academia. *Journal of Diversity in Higher Education*, 8(3), 175-91.
- Malcom, S. M., Hall, P. Q., and Brown, J. W. 1976. *The double bind: The price of being a minority woman in science*. Washington, D.C.: American Association for the Advancement of Science. Report No. 76-R-3.
- Mason, M. A., Wolfinger, N. H. & Goulden, M. (2013). *Do babies matter? Gender and family in the ivory tower*. New Brunswick, NJ: Rutgers University Press.
- National Academies, Committee on Prospering in the Global Economy in the 21st Century. (2006). *Rising above the gathering storm: Energizing and employing America for a brighter economic future*. Washington, DC: National Academies Press.
- National Science Foundation, National Center for Science and Engineering Statistics (2019). *Women, minorities, and persons with disabilities in science and engineering*. (Report No. 19-304). Alexandria, VA.

REFERENCES

- Ong, M. (2010). *The mini-symposium on women of color in science, technology, engineering, and mathematics (STEM): A summary of events, findings and suggestions*. Cambridge, MA: TERC.
- Ong, M., Smith, J. M., & Ko, L. T. (2018). Counterspaces for women of color in STEM higher education: Marginal and central spaces for persistence and success. *Journal of Research in Science Teaching*, 55(2), 206-245. Available at: <http://rdcu.be/ERfU>
- Rubin, D. L. (1998). Help! My professor (or doctor or boss) doesn't talk English. In J. N. Martin, T. K. Nakayama, & L. A. Flores (Eds.), *Readings in cultural contexts* (pp. 149-160). Mountain View, CA: Mayfield Publishing Company.
- Terosky, A. L., O'Meara, K., & Campbell, C. M. (2014). Enabling possibility: Women associate professors' sense of agency in career advancement. *The Journal of Diversity in Higher Education*, 7(1), 58-76.
- Turner, C. (2002). Women of color in academe: Living with multiple marginality. *The Journal of Higher Education*, 73(1), 74-93.
- Turner, C. S. V., González, J. C., & Wong, K. (2011). Faculty women of color: The critical nexus of race and gender. *Journal of Diversity in Higher Education*, 4(4), 199-211.
- Valian, V. (1998). *Why so slow: The advancement of women*. Cambridge, MA: MIT Press.
- Williams, W. & Ceci, S. (2012). When scientists choose motherhood. *American Scientist*. Available online at <http://www.americanscientist.org/issues/feature/2012/2/when-scientists-choose-motherhood>
- Wonch Hill, P., Holmes, M. A., & McQuillan, J. (2013). *The new faculty profile: Rethinking academic institutions based on partner employment status*. Paper presented at the annual conference of the Eastern Sociological Society, Boston, MA.