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# advancing research frontiers with inclusive scientific leadership

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# inclusive scientific leadership

“valuing and integrating diverse (scientific) team member perspectives, ensuring fairness in research spaces so that each member produces at the best of their ability”

# guiding principles



science is done **by people** for **people** (*humanity*)



taxpayers pay for the doing of science (*scientific responsibility*)

“ if I had one piece of advice to give it’s that although you’ve been hired for your scientific skills and research potential, your eventual success will depend heavily on your ability to guide, lead, and empower others to do their best work.”

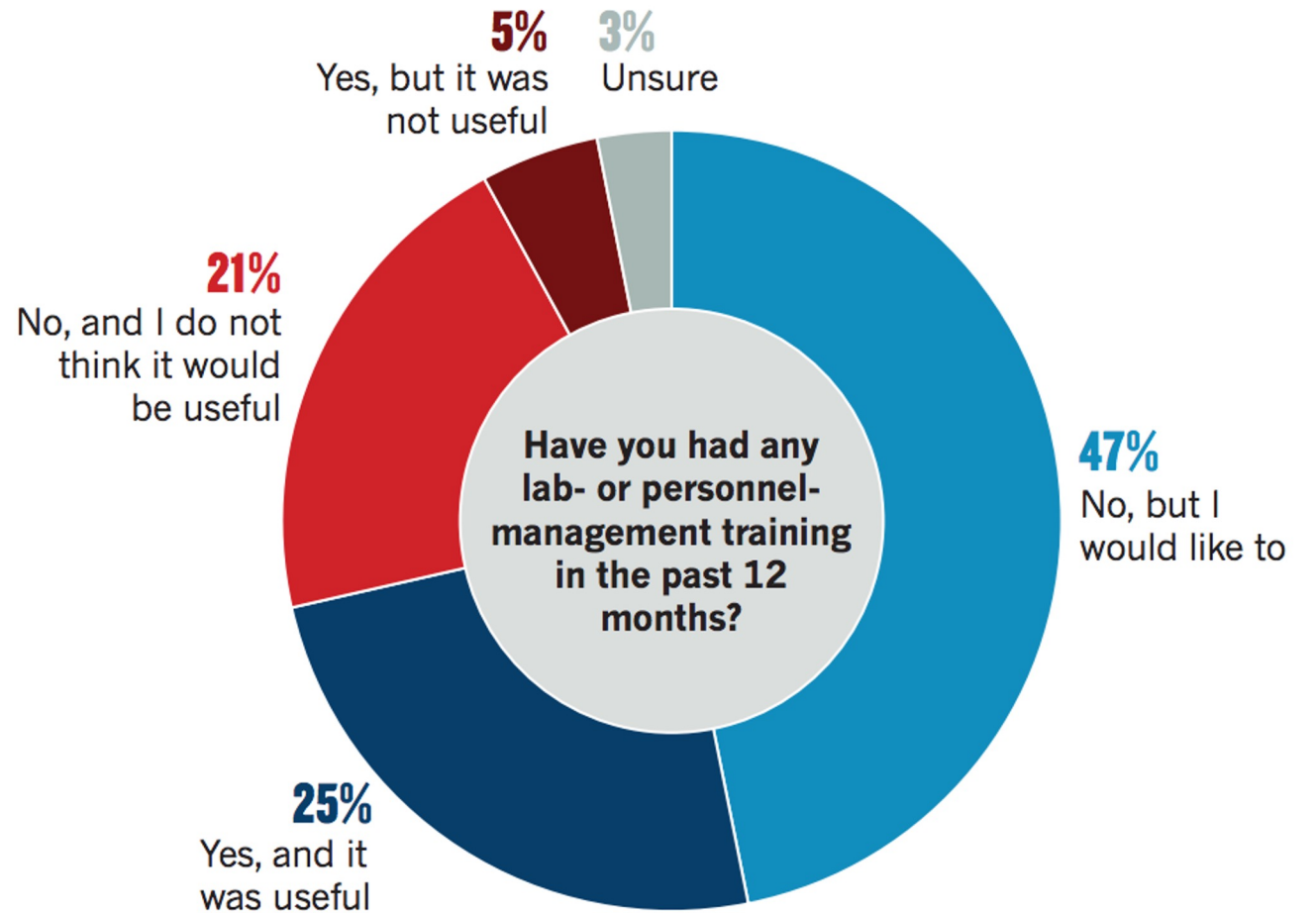
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**Thomas Cech, past president of the Howard  
Hughes Medical Institute (HHMI),**



A Nature survey of **3,200 scientists** reveals that poor lab and personnel management by principal investigators (PIs) is one of the strongest contributors to an unhealthy lab culture.

“Nearly half of the principal investigators in the survey want training in managing people or running a lab but haven’t been able to get it recently”







institutional responsibility to cultivate  
culturally responsive scientific leaders

# why the need for critical mass of inclusive scientific leaders

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01

global interconnectedness

02

awareness of inequities

03

generational schism

04

loss of public confidence in  
higher education

05

social polarization

06

financial challenges

- The Higher Ed Generation Gap, Steven Mintz, <https://www.insidehighered.com/blogs/higher-ed-gamma/higher-ed-generation-gap>
- The Growing Partisan Divide in Views of Higher Education <https://www.pewresearch.org/social-trends/2019/08/19/the-growing-partisan-divide-in-views-of-higher-education-2/>
- Higher Education Financial Realities <https://www.insidehighered.com/blogs/leadership-higher-education/higher-education-financial-realities>



## **CASE STUDY:**

engaging entire research community in culturally responsive scientific leadership & management



**early career**

**institutional leaders**

- assessment of needs via regular climate studies
- focus groups, exit interviews, onboarding interviews
- assessment of levels of readiness



- <https://chemistry.illinois.edu/diversity/climate-and-diversity-action-plan>
- <https://las.illinois.edu/about/diversity/programs/eo>
- <https://las.illinois.edu/about/diversity/programs/almi>
- <https://chemistry.illinois.edu/diversity/initiatives/chem-591-introductory-professional-development-chemists>
- <https://chemistry.illinois.edu/diversity/diversity-climate-initiatives/chem-593-advanced-professional-development-chemists>

**example curriculum for  
senior graduate students**  
advanced professional  
development for chemists

Week	Topic
Jan 24	Clifton Strengths workshop
Jan 31	InterSECT Job Simulators
Feb 7	Understanding Your Transferable (Non-technical) Skills in Research
Feb 14	Transforming conflict into collaboration: Part I
Feb 21	Transforming conflict into collaboration: Part II Managing
Feb 28	Leading Up and Down
Mar 7	Cultures of Excellence Intro and Discussion
Mar 14	Incivility
Mar 21	Gender Harassment/Bro-Cultures
Mar 28	Racial Awareness/Microaggressions
Apr 4	Mental Health and Resilience in Graduate School

- Advancing Graduate Education in the Chemical Sciences, Full Report of an ACS Presidential Commission, Submitted to ACS President Bassam Z. Shakhshiri on December 6, 2012
- Aligning Graduate STEM Education with Industry Needs, Cory Valente, PhD , The Dow Chemical Company 03/23/2017

# example curriculum for deans, directors, department chairs/heads

principled academic leadership

## Sessions

› **The Special Challenges of the Academic Environment**

› **Session 2: Critical Friends/Group Problem Solving**

› **Session 3: Vibrant Academic Units**

› **Session 4: Difficult Conversations and Personal Scripts**

› **Session 5: Exploring Leadership**

› **Session 6: Negotiation**

› **Session 7: Giving and Receiving Feedback**

› **Session 8: Bullyproofing Academic Units**

› **Session 9: Becoming a Leader Who Makes a Difference**

› **Session 10: Capstone Case and Closing**

“The sessions I selected [as favorites] were not just practical for academic department head leadership, rather, have been very helpful to developing who I am as a leader in my research and project groups. I have found the philosophy of leading with intention: understanding the mission and keeping people focused on that”

- Participant



**Massachusetts  
Institute of  
Technology**

- VPR interdisciplinary labs, centers and initiatives
- diversity in research focus and workforce

**lab directors**

**staff & administrators**

**postdocs & research  
scientists**



culturally responsive scientific leaders



healthy climate that recruits and retains diverse talent that performs at their best



competitive edge in research and funding