

Engaging Two-year Geoscience College Faculty to Promote Diversity, Equity, and Inclusion: The SAGE 2YC Project

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This work is supported by the National Science Foundation Division of Undergraduate Education through grants 1525593, 1524605, 1524623, 1524800.





SAGE 2YC

2YC Faculty as Agents of Change

National network of 16 teams of 2YC geoscience faculty working to

- Support success of all students
- Broaden participation in geoscience
- Facilitate students' career pathways in geoscience



- Their teaching
- Their geoscience program
- Their region

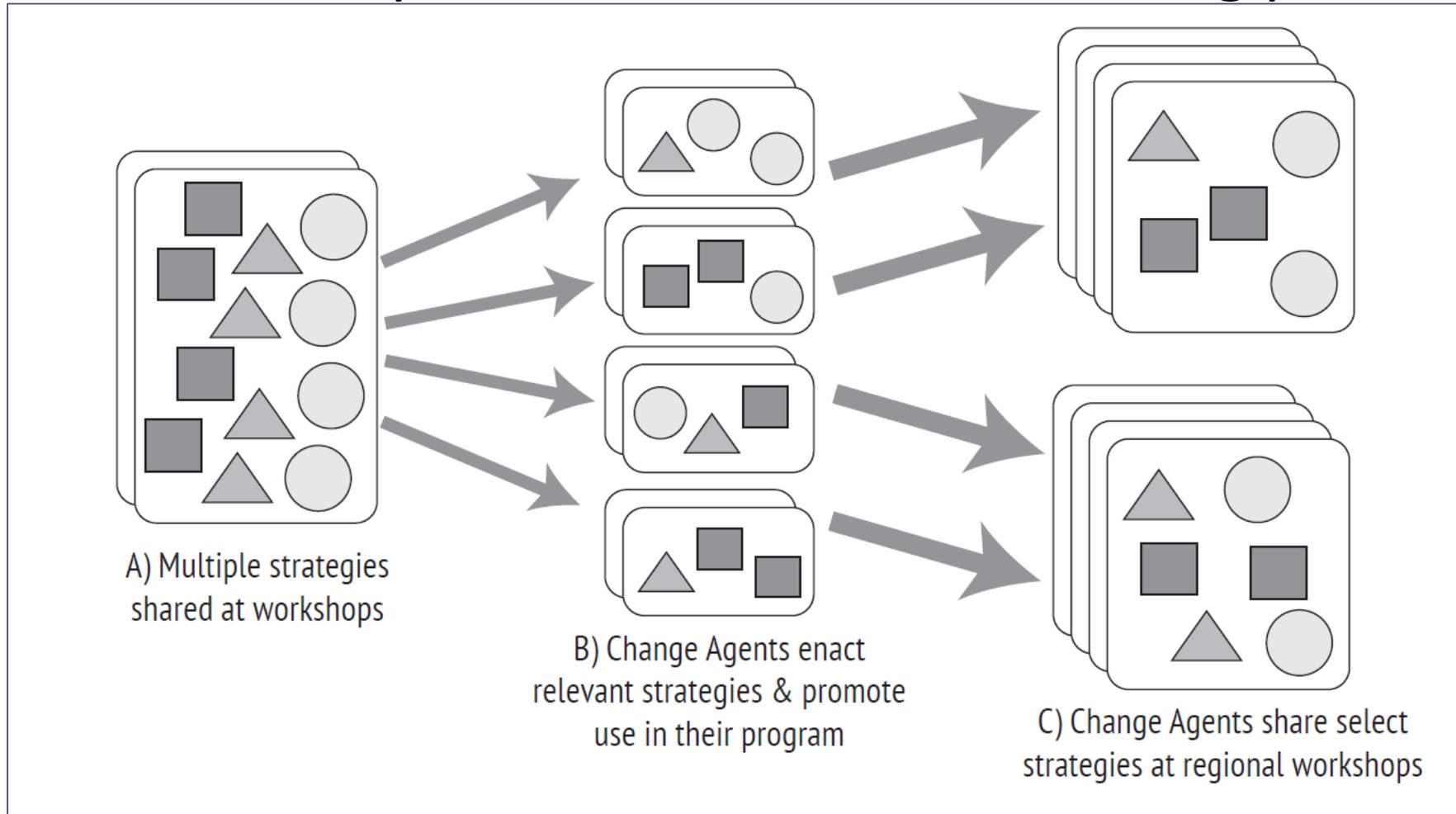
Two-year colleges (2YCs) enroll ~40% of undergraduates in the U.S.

2YCs have diverse student populations - 47% students of color, 23% first-generation

AACC Fast Facts, 2018

SAGE 2YC Change Agent model

Diffusion of equitable and inclusive teaching practices



The framework for how Change Agents learn and share strategies with colleagues employs **adult learning theory** (Knowles, 1984) and **diffusion of innovation theory** (Rogers, 2010).

Project support for Change Agents includes:

- National workshops and on-going virtual activities
- SAGE 2YC website and *SAGE Musings*
- Sponsorship by campus administrator
- Leadership development
- Repeated opportunities for reflection & peer exchange

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Build capacity for Change Agents to:

- Implement equitable and inclusive practices in their teaching
- Promote use of these practices in their programs/departments
- Share information and practices with their regional communities
- *Use data and research findings to identify inequities and opportunities for growth*

Multiple opportunities for learning about teaching practices that support diversity, equity, and inclusion

Sessions at annual national workshops

External presenters

- Successful Models, Best Practices, Benefits, and Outcomes for Broadening Participation: *Ashanti Johnson*
- Broaden Participation in the Geosciences: Change Mindsets & Close the Achievement Gap: *Sandra McGuire*
- Addressing Implicit Bias: Exploring Strategies for Promoting Student Success: *Don Gillian-Daniel*

SAGE 2YC-led sessions designed for re-use

- Building students' science identity
- Diversity in action: Broadening participation through strategies for inclusion
- Supporting students' sense of belonging

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Virtual activities

- Book discussion on *Whistling Vivaldi: How Stereotypes Affect Us and What We Can Do* by *Claude Steele*
- *Developing your students' science identity*
- *Fostering a sense of belonging*

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SAGE 2YC website and SAGE Musings

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Change agent work

- Implementation of practices in their courses and programs that focus on diversity, equity, and inclusion
- Regional workshops led by Change Agent teams

Team action planning: Teaching, program, region



Develop plans



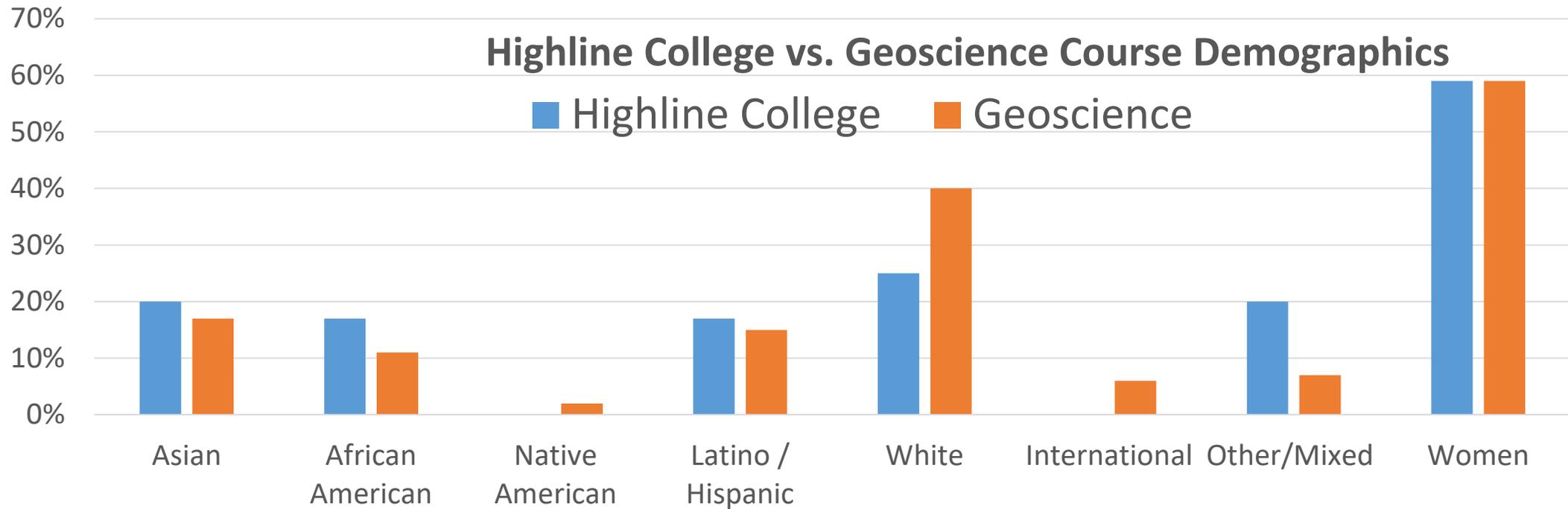
Give & consider feedback



Report on progress
and repeat

Involvement of campus administrators

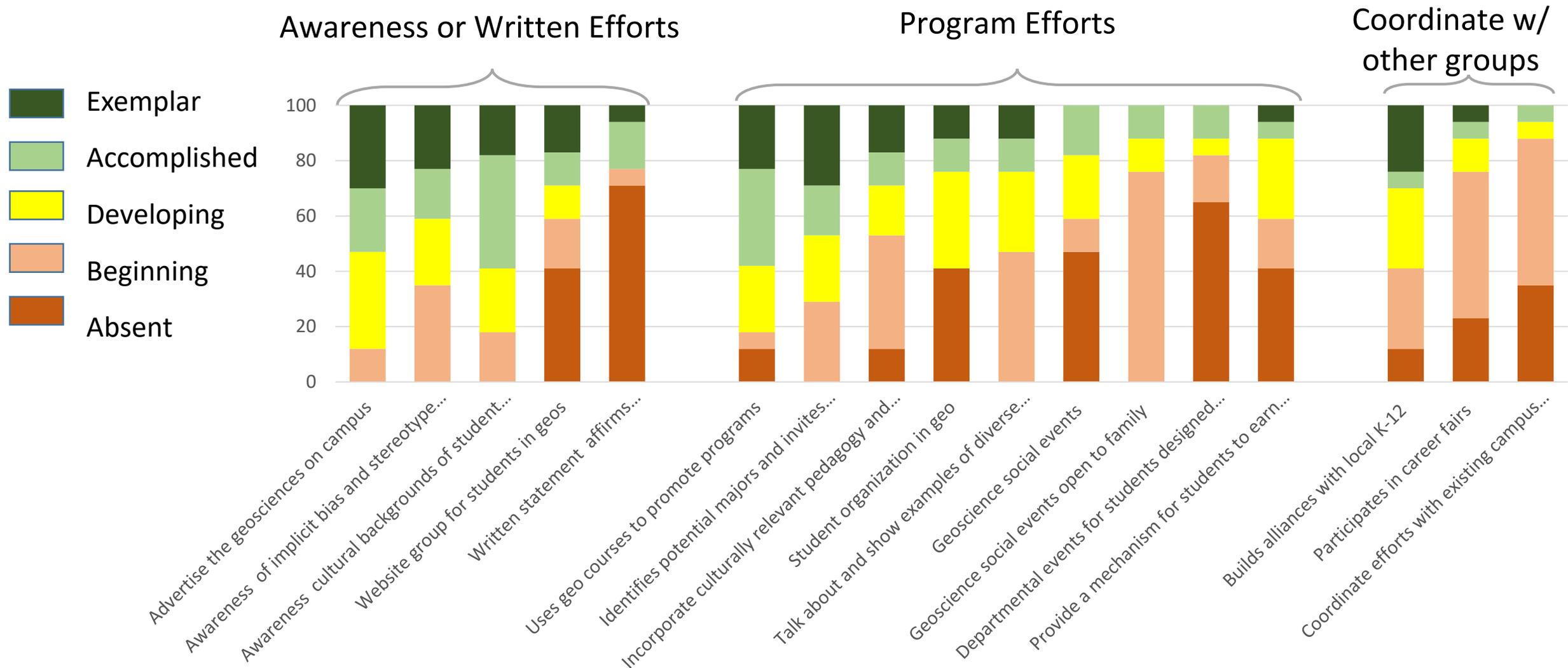
An example: Participation (enrollment) for one quarter



	Students	Asian	African American	Native American	Latino/Hispanic	White	International	Other/Mixed	Women
Highline	10,765	20%	17%	<1%	17%	25%	<1%	20%	59%
Geoscience	213	17%	11%	2%	15%	40%	6%	7%	59%

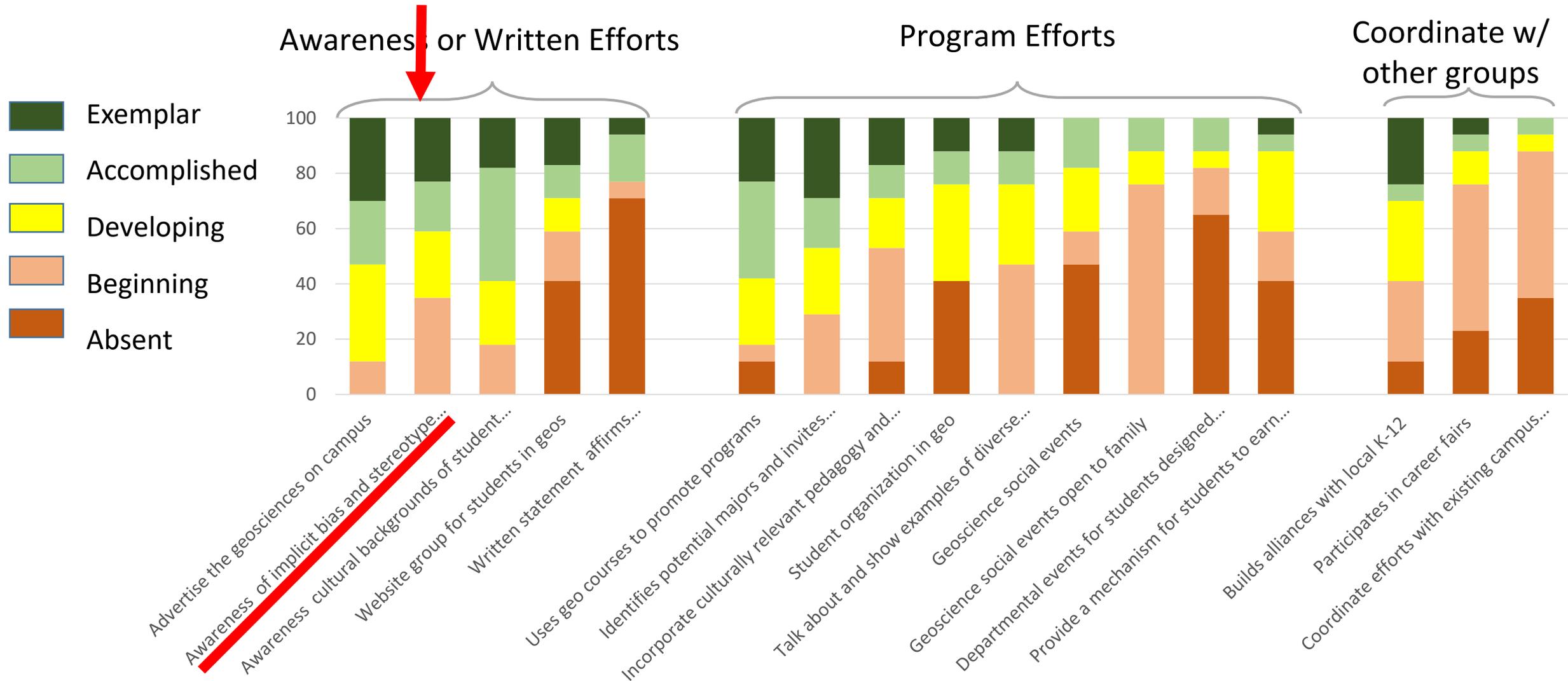
Self-reported use of practices that support equity and inclusion

Summary results from the Departmental Practices Inventory



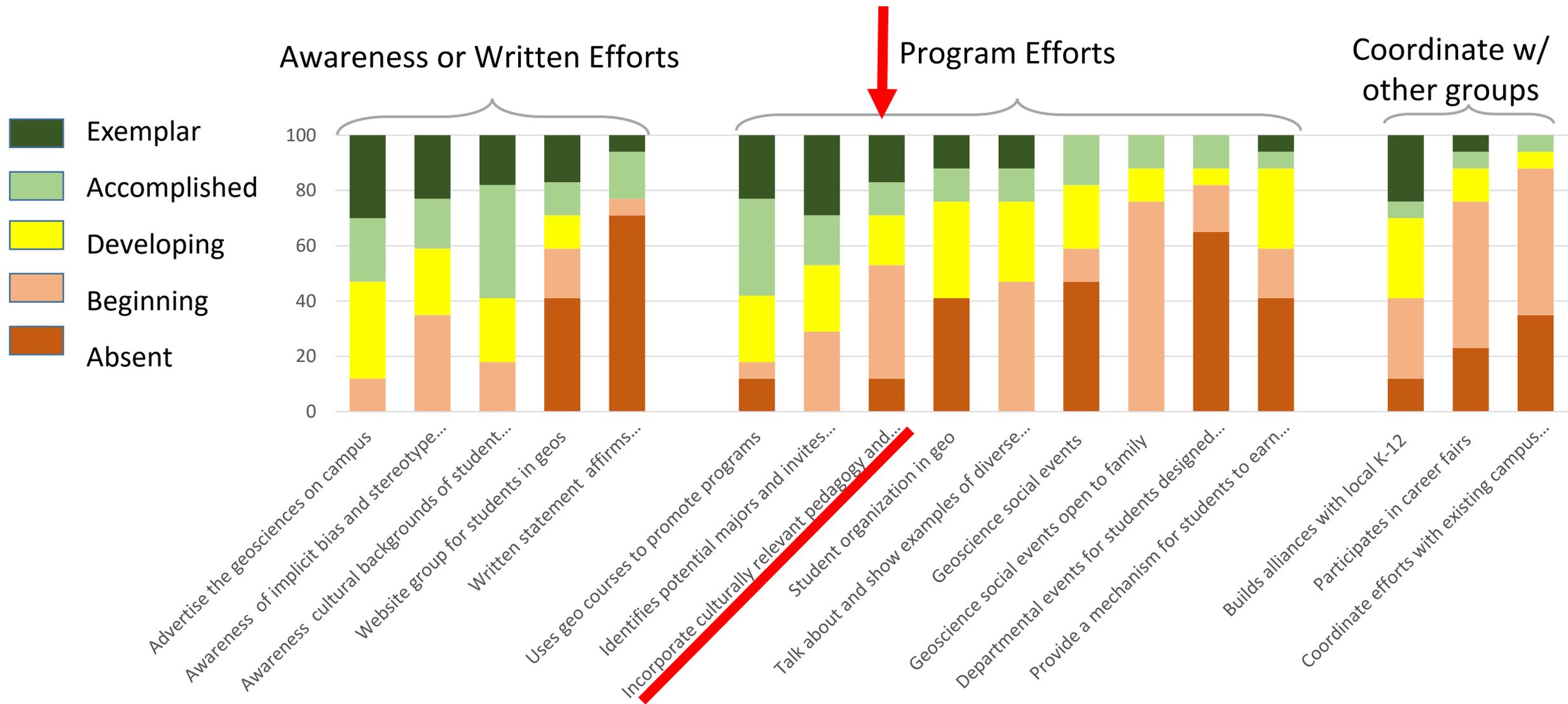
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Summary results from the Departmental Practices Inventory



Self-reported use of practices that support equity and inclusion

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Regional workshops & events

SAGE 2YC-led workshops

- 2016, 2017, 2018



Change Agent-led workshops

- 2016/2017 – 10 workshops
- 2017/2018 – 10 workshops
- 2018/2019 – 16 workshops

Scientist Profiles

Goal: Provide all students with opportunities to see someone in geoscience that reflects them in terms of gender/race/ethnicity, and to whom students might personally relate, based on interests and experiences.

Advantages:

- Shows underrepresented students that people like them exist
- Shows major geoscience careers to diverse students

Strategies

Explicitly show diverse examples in teaching. Use images you find in your research. Show case the work of non-white geoscientists when appropriate in your courses. Use both historical and modern day examples of diverse individuals.

Expose students to geoscientists who represent the human diversity of our world. Invite speakers or arrange a social event. Include young people (recent alumsni?) that are working in geoscience. Arrange a visit or field trip to an appropriate place for your class that has a diversity of geoscientists.

Implementation

- Use scientist spotlights to add a human dimension to science course topics.
- Weave examples of diverse geoscientists throughout the course, not just as a one-off session.

References

1. L. Rodriguez, Kelly Cunningham & Alec Jordan 2016: What a Scientist Looks Like: How Community Colleges Can Utilize and Enhance Science Identity Development as a Means to Improve Success for Women of Color, Community College Journal of Research and Practice, DOI: 10.1080/10668926.2016.1251354
2. Schinske J., Perkins, H., Snyder, A., and Wyer, M. 2016. Scientist Spotlight Homework Assignments Shift Students' Stereotypes of Scientists and Enhance Science Identity in a Diverse Introductory Science Class. CBE - Life Sciences Education 15 (3):1-18.

SCIENTIST SPOTLIGHT

Dr. Karletta Chief is an assistant professor and extension specialist in the Department of Soil Water and Environmental Science at the University of Arizona. In her extension specialist work she brings relevant science to home American communities in a culturally sensitive manner by providing hydrology expertise, transferring knowledge, assessing information needs, and developing applied science projects. Dr. Chief is third generation from Black Mesa, AZ.

Resources you could use:

- Her web page at the University of Arizona that shows her accomplishments and has links to her work: <https://www.sab.arizona.edu/people/karletta-chief>



SAGE 2YC resources used in regional workshops

In two academic years, 10 CA teams led 20 workshops

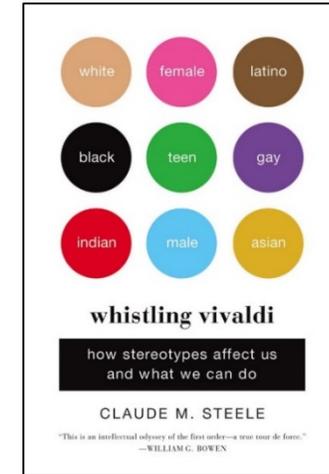
- 328 participants
- 98 institutions
- 27% adjunct faculty

Change Agents lead regional workshops and events

Texas Change Agent Team
Bryn Benford and Kristie Bradford
Lone Star College

Spring 2018 Book discussion (virtual) using Zoom

Whistling Vivaldi: How Stereotypes Affect Us and What We Can Do?



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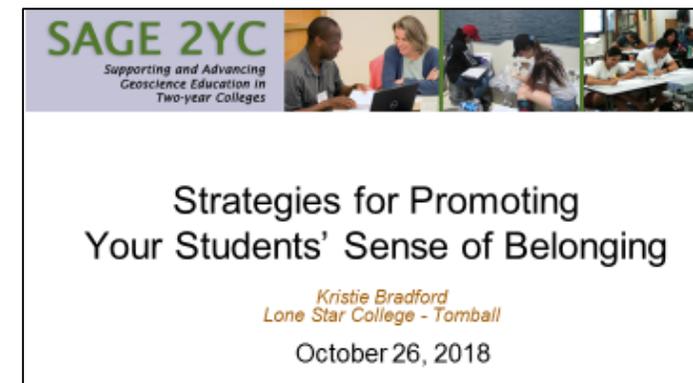
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Regional Workshop Fall 2018 – 15 attendees including 6 adjuncts

*Unseen Barriers in our Geology Classes and Helping our
Students Prepare for Transfer*

- Implicit Bias & How It Impacts Your Students' Success
- The Achievement Gap in Our Classes
- Strategies for building classroom environments that support your students' sense of belonging



Adapted from SAGE 2YC June 2018
workshop session led by Kristin
O'Connell & Carol Ormand, SERC

SAGE 2YC, through its Change Agent approach, is catalyzing equity-minded and inclusive teaching practices in geoscience courses and programs



Thanks to the faculty Change Agents and their administrators

<https://serc.carleton.edu/sage2yc/index.html>