

# UC Berkeley

## UC Berkeley Previously Published Works

### Title

Grassroots Efforts To Quantify and Improve the Academic Climate of an R1 STEM Department: Using Evidence-Based Discussions To Foster Community

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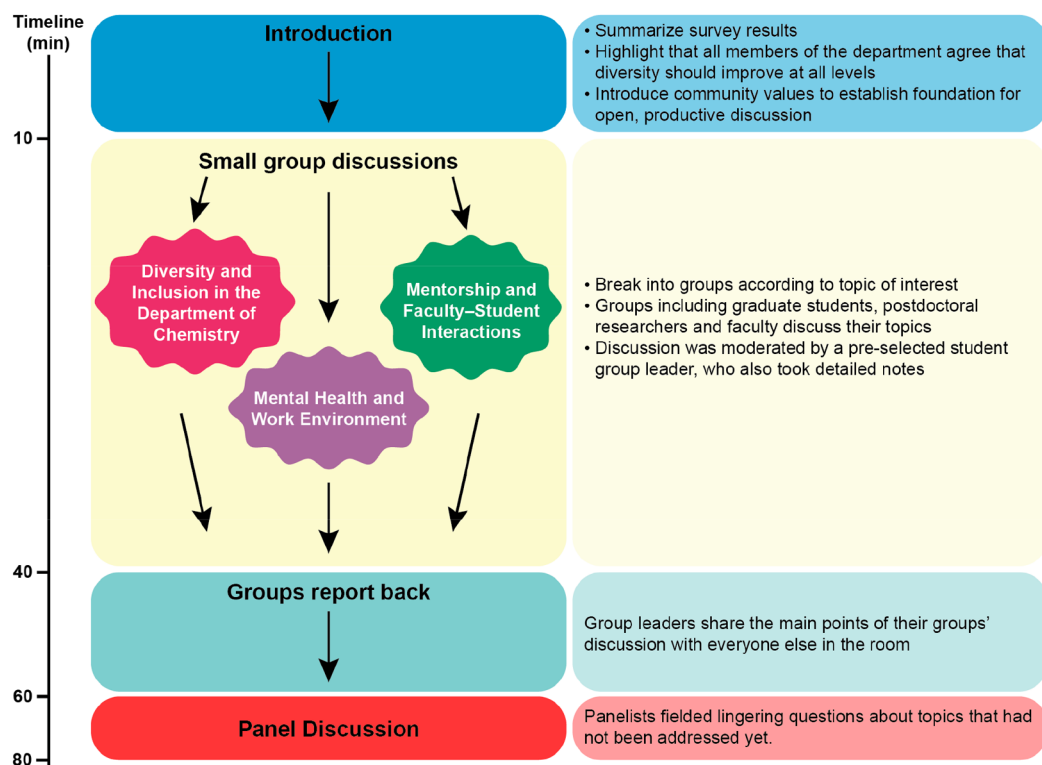
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**Figure 1.** Detailed scheme of cDIBS event. Sections of the event are separated by color, with descriptions of each section on the right-hand side. The cDIBS timeline (in min) is indicated on the left-hand side. An additional 10 min were built in as buffer time or in case of delays.

environments. Department-level initiatives that seek to quantify and improve the experiences of all members are particularly well-suited to identify and implement the cultural changes necessary to address these systemic issues. In turn, such cultural changes can ultimately lead to improved rates of academic success and degree completion of women and racial/ethnic minority students.<sup>1,16–21</sup>

To capitalize on the advantages of department-level inclusion efforts, graduate students in the Department of Chemistry at the University of California, Berkeley, designed an academic climate survey to assess the issues affecting inclusivity within their department. This grassroots effort quantified the department sentiment on several key issues and developed a new format through which our own data was used to stimulate open, effective community discussion.

Here, we discuss the design of the 2018 Department of Chemistry Climate Survey, as well as how the results have been implemented within our academic community. Specifically, we report the development of a method—in place of a traditional town hall—through which our community can collaborate to identify specific strategies to promote cultural change. The successes of this student-led effort has already begun to move the academic culture in the Department of Chemistry in a positive and more inclusive direction. This work highlights the power of student-led efforts; a tailored academic climate survey; and collaborative, department-level initiatives to create lasting cultural change.<sup>22–24</sup> We envision that this case study can serve an example to other academic departments seeking an evidence-based approach to address climate concerns and enhance the experiences of all members of their community.

## METHODS

This work was carried out as a case study to understand methods by which academic climate concerns can be addressed at a departmental level. After review of the work conducted herein, the Office for Protection of Human Subjects (OPHS) at the University of California, Berkeley, determined that it did not constitute human subjects research (HSR) as defined within the federal regulations.

### Survey Design

The questions in this climate survey were generated with input from several climate surveys administered across the UC Berkeley campus and modified as necessary. Input was also taken from the University of Michigan Diversity, Equity and Inclusion (U-M DEI) campus-wide strategic plan. Specific input surrounding demographic considerations, confidentiality, and administration logistics of this climate survey was provided by Dr. Leora E. Lawton, lecturer in the Sociology and Demography Departments and Executive Director at the Berkeley Population Center. All drafts were revised by Professor David E. Wemmer, Chair of the Department of Chemistry prior to summer 2018, and additional feedback and input on the survey design, length, and language content were provided by approximately 8–10 Department of Chemistry Faculty, at least one staff member (Joel Adlen), and ~10–15 graduate students in the Chemistry Graduate Life Committee (CGLC). The survey was fielded using Qualtrics software (Copyright © 2018 Qualtrics).

### Survey Format

The majority of the questions in this climate survey were Likert Scale questions, with either a 1–5 scale ranging from “strongly agree” to “strongly disagree” or a 1–3 scale ranging from “very important” to “not important”. “Prefer not to

answer” was an additional option for every question. Three open-ended questions were also included, and these responses were analyzed separately. The survey is included in its entirety in the Supporting Information ([Appendix S1](#)).

### Survey Administration

The survey was sent to graduate students, postdocs, and faculty in the Department of Chemistry. The UC Berkeley Office for Graduate Diversity administered the survey, acting as a third party to preserve confidentiality from all Department of Chemistry members. The survey was open for 12 days, and participants who had not yet completed the survey were reminded up to three times. Participants who completed the survey were offered a chance to win one of two \$100 raffle prizes to a business of their choice. Additionally, a coffee and snack event would be hosted for the department if participation reached 40% or more. Both incentives were advertised via e-mail and flyers posted around the College of Chemistry.

### Survey Data Analysis

Mean scores for each question were calculated and are included in [Appendix S1](#). Free-responses were separated by topic, summarized, and counted. Suggested action items were also summarized and organized by topic. Participant demographic information is summarized in [Text S1](#).

### Chemistry Department Information and Brainstorming Session (cDIBS)

The Chemistry Department Information and Brainstorming Session (cDIBS) was conducted in lieu of a town hall to discuss the results of the climate survey as a community. The 1.5 h event relied on small group discussion to generate action items that could guide a course of action for creating impactful, positive cultural change in our department. cDIBS included four components: a brief introduction by student cDIBS cochairs and the incoming Department Chair, during which the climate survey results were presented (10 min); small group discussions among faculty, postdoctoral researchers, and graduate students (30 min); a large group discussion (20 min); and a panel (20 min, [Figure 1](#)).

Upon entering cDIBS, graduate students and postdoctoral researchers selected a numbered sheet of paper containing their choice of one of the three discussion topics and some guiding questions ([Appendix S2](#)). There were three topics to choose from: Mentorship and Faculty–Student Interactions, Diversity and Inclusion in the Chemistry Community, and Mental Health and Work Environment. Students and postdocs were divided into small groups on the basis of the number that appeared on their paper to encourage discussion among community members who may not interact frequently. Faculty were then encouraged to join a group discussing their topic of interest with the smallest number of students or postdocs from their laboratory. Each group had a discussion leader, a student who was designated to take notes of the discussion and had also attended a 30 min training on how to steer small group discussions about difficult topics of conversation. A more detailed description of the event structure can be found in [Text S1](#).

## RESULTS AND DISCUSSION

### Breadth of Departmental Sample Participating in Climate Survey

Annual surveys are a useful method by which the academic climate of a department can be tracked year by year. The use of such surveys is supported by the recommendations from the National Academies (NAS), which suggest that institutions should develop “comprehensive strategies that use evidence based models and programs... to ensure a diverse, equitable, and inclusive environment.”<sup>1</sup> Specifically, the NAS recommends that institutes should administer periodic climate surveys of graduate students at the departmental level to assess their well-being in aggregate and make adjustments when problems are identified.<sup>1</sup> Thus, we designed a climate survey to assess the issues affecting inclusivity within the UC Berkeley Department of Chemistry, and to identify ways to begin addressing those issues.

The total response rate from Department of Chemistry members (including faculty, graduate students, and postdoctoral researchers) was 43.1%. Men and women filled out the survey at roughly equal rates, as approximately 40% of the department is female, and 40.8% of student or postdoc survey respondents identified as female. We also note that 53.9% of respondents identified as belonging to Underrepresented Groups (URGs). Here, the term Underrepresented Group (URG) is meant to include but is not limited to individuals that identify as female; are from underrepresented racial, religious, ethnic, sexual orientation, or international groups; have disabilities (defined as those with a physical or mental impairment that substantially limits one or more major life activities); and have low socio-economic status.<sup>10</sup> We note that although the term “URG” as used in this paper is inclusive of both female and racial/ethnic minority populations, the survey questions used terminology such as “female and URM” or “female and minority” to prevent any misinterpretation by survey respondents.

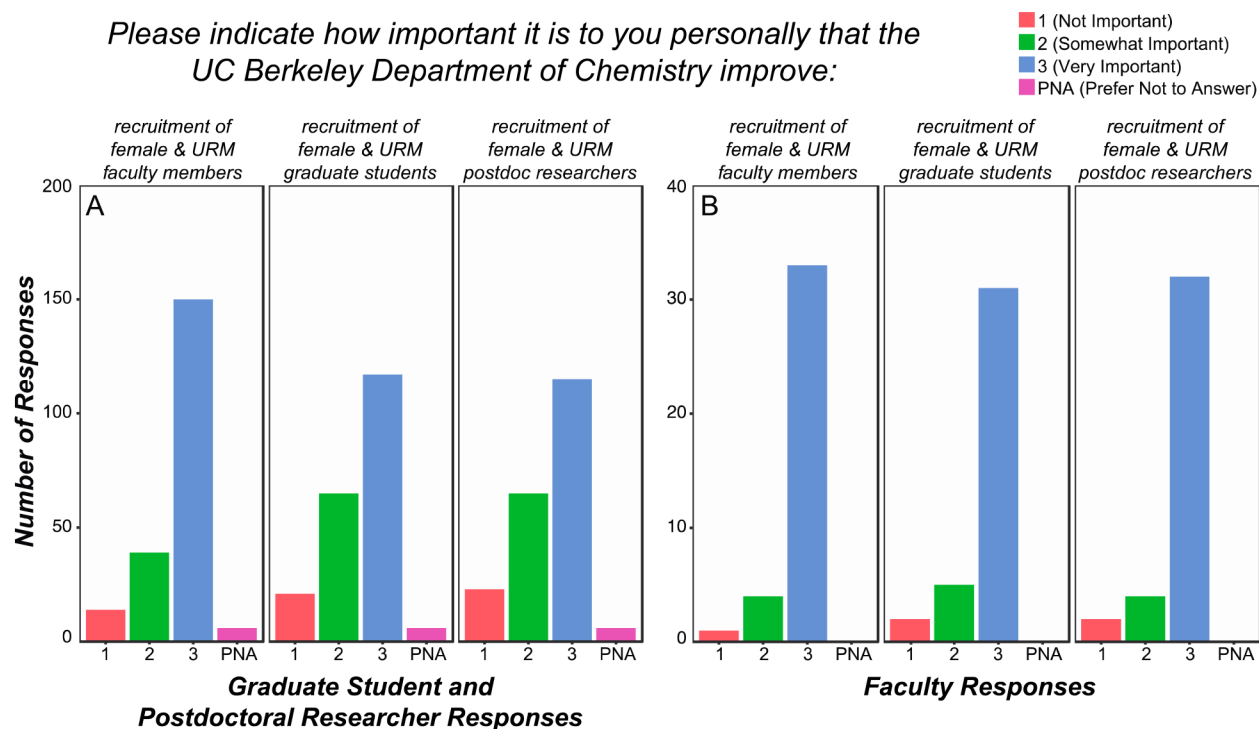
Results from the climate survey were used to gauge community sentiment, perceptions of the department, and areas for improvement. In addition, responses to the open-ended questions gave space for respondents to offer specific suggestions. Furthermore, because graduate students and postdocs were surveyed separately from faculty—although the questions addressed similar themes between the two surveys—we were able to determine whether academic climate differed between faculty and trainees. All of these data were used to prioritize action items. Complete results from the climate survey can be found in the Supporting Information ([Appendix S1](#)).

### Results from the Graduate Student–Postdoctoral Researcher Survey

Graduate student and postdoc respondents were generally positive in their views of and experiences in the department, as well as in their descriptions of student–principal investigator (PI) interactions. Although the survey results do identify several areas where we can improve as a community, we were encouraged that many responses reflected a positive experience in the department.

Although individual responses varied, graduate student and postdoc respondents generally felt that they received helpful research advice and guidance from their PIs ([Appendix S1](#), GP-Q1). More subtle markers of productive interactions were also viewed positively: PIs generally treated respondents’ ideas with





**Figure 2.** Subset of the climate survey results. (A) Graduate student and postdoctoral researcher responses and (B) faculty responses to the question, “Please indicate how important it is to you personally that the UC Berkeley Department of Chemistry improve recruitment of female and URM faculty members, graduate students, and postdoctoral researchers.” The unanimous departmental agreement that female and URM representation should improve at all levels was highlighted during cDIBS to facilitate communication among graduate students, postdoctoral researchers, and faculty.

respect, encouraged participation in conferences, and fostered collaborative research environments (Appendix S1, GP-Q2). We were particularly interested to see that respondents were comfortable talking with PIs about nonacademic career paths (Appendix S1, GP-Q3). We hypothesize that this positive result is due to efforts to increase discussion of nonacademic career paths from many people in the department in recent years.

Interestingly, and perhaps not unexpectedly, respondents were more willing to ask for research support than emotional support from their PIs (Appendix S1, GP-Q1–3). Respondents were also less comfortable informing PIs about mental or physical health conditions. Taken together, these data indicate that PIs are offering strong research support in most cases. However, improved training on how and when to provide emotional or nonacademic support to students or how to convey approachability for students seeking such support could be beneficial, particularly because emotional state can affect academic achievement.<sup>25,26</sup>

Graduate students and postdoc respondents indicated that more action could be taken to make the department a more diverse and inclusive place. First, respondents indicated that better representation of URGs at all levels of the department—and especially among the faculty—is a high priority (Figure 2). Survey results also suggested that, although over 60% of the department said that exclusionary behavior is not tolerated, many more respondents indicated that more action toward improving equity and inclusion is needed. Finally, graduate students and postdocs responded that they generally feel that more education about best practices for inclusion is important,

including education about biases and behaviors negatively affecting women (Appendix S1, GP-Q7).

#### Results from the Faculty Survey

Faculty respondents were also generally positive about the academic climate in the department. Gratifyingly, faculty responses largely agreed with student and postdoc responses on availability of mentorship related to research efforts. Faculty feel they are available to students when they need advice concerning their research, and they work to foster collaborative environments within their groups (Appendix S1, F-Q1). We view this as an encouraging result: other studies have shown that a significant perception gap can exist between faculty and students.<sup>25</sup> We did not find evidence of this perception gap in our results.

We found other metrics that reflected a positive environment in the Department of Chemistry. In general, faculty felt positive about their interactions with one another. Faculty within the department feel that they collaborate with each other well, are respected, and can ask each other for advice and feedback (Appendix S1, F-Q2). Unlike students and postdocs, faculty responded that they know who to engage with about concerns regarding the department climate (Appendix S1, F-Q4).

Like students and postdocs, faculty respondents generally agree that more steps can be taken to improve retention and recruitment of URGs at all levels (Figure 2B), better educate the department about biases and behaviors that affect some of its members, and generally improve equity and inclusion (Appendix S1, F-Q6). Faculty, graduate students, and postdocs in the Department of Chemistry agree in feeling that exclusionary or offensive behavior and harassment are not

tolerated, and there is also strong agreement that diversity, equity, and inclusion need to improve at all levels (Figure 2).

It should be noted that this discussion primarily considers average values of agreement among survey respondents rather than distribution widths. Relatively wide standard deviations on many questions indicate that people in the Department of Chemistry have a diverse set of experiences, even if the average experience is generally positive. Nonetheless, these results suggest good agreement between faculty and graduate student or postdoc experiences and reflect a generally positive attitude toward the department culture.

### Open-Ended Questions Providing Insight into Priorities for the Department of Chemistry

In addition to Likert Scale questions, we asked respondents three open-ended questions. These questions provided space for respondents to offer specific suggestions.

1. Are there any particular actions you would like the Chemistry Graduate Life Committee (CGLC) and the department to take in order to enhance the environment and/or climate for all graduate students? Please be specific.
2. Of the topics addressed in this survey, which do you personally think are most important for the Department of Chemistry to address?
3. Is there anything else you would like to share about the departmental climate or see the administration and/or the CGLC address?

Several themes emerged from these responses. In particular, diversity and inclusion in the department, faculty–student interactions, and mental health were frequently discussed. Because faculty and trainee free-responses were assessed independently, we gained nuanced insight into the suggestions arising from each group of department members.

Graduate students and postdoc respondents suggested ways to improve mentorship interactions in the department. Free-responses suggested the implementation of a system through which students can easily schedule follow-up meetings with their thesis committees after completing their qualifying exam requirements for the PhD program. Respondents expressed that such meetings could increase interactions with non-advisor faculty and offer a forum for soliciting advice on all aspects of a PhD, not just research. Respondents also mentioned having more regular or institutionalized meetings with their advisors to discuss research progress. Generally, graduate students and postdoc respondents requested more transparency and guidance from faculty regarding qualifying exams and, especially, the potential options students have if they do not pass. Respondents also want increased awareness and discussion of mental health within the department, and discussion of its ramifications throughout all stages of graduate school.

Free-responses to the graduate student and postdoctoral survey addressed the need for implicit and unconscious bias training for all department members. Respondents also suggested implementing a lecture series in which scientists and leaders from URGs present on both their experiences and scientific careers. In addition, respondents suggested providing graduate students with more outlets and freedom to build social networks and leadership skills. These suggestions are supported by studies showing the importance of community in promoting academic success.<sup>16,27</sup>

Finally, students and postdocs were strongly in favor of hiring and retaining more diverse faculty. To achieve this goal, respondents repeatedly suggested (1) increasing the transparency of the faculty hiring process and (2) implementing systematic procedures to promote student involvement in the process. It is interesting to note that faculty were most surprised by these repeated calls for more transparency from student and postdoc respondents. From a practical perspective, the faculty we spoke with saw this as a simple problem to fix, either by making existing practices more visible or available, or by encouraging more communication between faculty and students.

Faculty also commented via open response questions. Many themes were similar, though the focus was heavily weighted toward improving mentorship and faculty–student interactions rather than faculty diversity (though both topics were repeatedly mentioned). Faculty also discussed implementing yearly student–thesis committee progress reports, educating department members about microaggressions, and providing more forums for graduate students and postdoctoral researchers to air concerns as ways to improve the academic climate in the department.

We were encouraged to see that faculty and graduate student or postdoc respondents once again generally agreed on themes and priorities. This gives us confidence that efforts to improve the academic climate are desired by all groups in the department and that members will be able to work together as a community to make the department a better place for everyone.

### Using the Climate Survey Results To Guide a Course of Action

After survey data collection and analysis, a focus group of students and faculty were gathered to discuss survey results. A community discussion such as a town hall was a clear next step; however, previous town halls held in the Department of Chemistry were not universally well-received, largely because of the selected format. In previous town halls, a faculty member fielded questions from students. The inherent power dynamic of this structure made communication difficult, leading to one-sided discussions; unequal participation of attendees; and less productive conversations—such as the airing of complaints—rather than more productive conversations geared toward building solutions as a community.

As a way to address these concerns, a new format—a community brainstorming session—was suggested as a way to gather department input and stimulate group discussion about issues raised in the climate survey. This event was called the Chemistry Department Information and Brainstorming Session (cDIBS, Figure 1), and its intent was to engage the community in active discussion in order to generate feasible action items that the department can implement to improve the experiences of all members. Approximately 40% of faculty and 20% of the student population attended the event.

In order to make cDIBS a targeted and productive discussion, we compiled the areas of concern most frequently highlighted by department members in the climate survey responses. We then used the following rationale to generate three broad topics for small group discussion.

#### Diversity and Inclusion in the Chemistry Community.

The climate survey unambiguously showed that nearly all members of the department—including faculty, postdocs, and graduate students—agreed that URG representation should

**Table 1. Summary of Action Items<sup>a</sup> Generated from the 2018 cDIBS, Listed by Discussion Group Topic**

Mental Health and Work Environment	Diversity and Inclusion in the Chemistry Community	Mentorship and Faculty–Student Interactions
Improve mentorship	Ask standardized questions about mentorship, teaching, and fostering inclusion in faculty candidate interviews	Make thesis committee meetings mandatory, and incentivize them!
Discuss mental health and available resources openly	Encourage diversity in all seminars and establish a series for URG speakers	Publicize available resources for students concerning conflict, issues with mentors, and switching groups
Develop mechanisms to give anonymous feedback to PIs	Involve students in faculty hiring and tenure processes	Designate faculty “open office hours”
	Support and encourage research and diverse career options for diverse undergraduates	Ensure confidentiality when talking to non-PI faculty
	Improve child support for parents at all levels	Generate template or guiding questions for thesis committee meetings (organized by year)
	Better advertisement of faculty candidate talks	Update student resources or create a comprehensive handbook for the post-QE process
	Require structured implicit bias training	

<sup>a</sup>The full list of action items generated during cDIBS is included in the Supporting Information (Appendix S2).

improve at all levels (Figure 2). Thus, during cDIBS, we highlighted this near-unanimous, department-wide agreement to encourage improved faculty–student communication. By emphasizing that students and faculty largely agreed on this issue, we sought to encourage honest conversations and practical brainstorming about these critical issues.

**Mental Health and Work Environment.** A University-wide survey of graduate student wellness conducted in 2015 revealed that 47% of PhD students at UC Berkeley score at the threshold considered depressed.<sup>28</sup> This high possibility of depression is an important issue to address because “balanced, happy people are more productive, more creative, more collaborative, better at long-term goal pursuit, more likely to find employment, more physically and psychologically resilient.”<sup>28</sup> In survey responses, calls for better work environments and increasing awareness of mental health—including destigmatizing both mental health care and discussions—were frequent. Several groups discussed this topic; specifically, how students and PIs can work together to improve mental health and work environments in the department.

**Mentorship and Faculty–Student Interactions.** Between 2014 and 2016, the Committee on Faculty–Graduate Student Mentorship identified several critical changes that could be made in the department, mainly to clarify the expectations that graduate students and PIs have of each other. Only some of these suggestions have been addressed in the subsequent years. The importance of implementing the remaining action items was emphasized in the results of the 2018 climate survey—graduate students, postdocs, and faculty indicated that structured efforts to improve mentorship and increase non-PI interactions was a critical way to improve the department culture.

### Outcomes of Small Group Discussions

After groups were reunited for large group discussion, each discussion leader reported the main points that had been raised by their group during small group discussions (summarized below). A consolidated list of the resulting action items can be found in Table 1, and the full list of action items generated during cDIBS is included in Appendix S2.

Groups that focused on “Mental Health and Work Environment” discussed ways that PIs can promote healthy work environments. Specifically, groups focused on the small changes that a PI can make to encourage a better social environment in their own group. Suggestions included

appointing a group social chair whose group job would include organizing group outings or social events. Groups also discussed how PIs can improve the work environment within their groups by setting more explicit expectations. In particular, suggestions included discussing expectations with students prior to them joining a group, and having frequent (at least yearly) one-on-one meetings to discuss current expectations and progress. Groups also discussed how graduate students can promote a healthy work environment for themselves and their peers. In particular, older graduate students can act as a resource for younger students, promote positive social culture, and engage in group activities.

Groups discussing “Diversity and Inclusion in the Chemistry Community” talked about increasing diversity among faculty in the Department of Chemistry, mainly by attracting more diverse applicants. One interesting question was whether the current hiring process places value on teaching, outreach, or mentorship in addition to research. Faculty in these discussion groups were helpful in explaining the current process for hiring new faculty. This led students to suggest that this information should be readily available to other students who are interested in learning about how hiring occurs in the department. Groups suggested that improving the transparency of the hiring process—in addition to formalizing a mechanism to increase student input in the hiring process—could help ensure that new faculty understand the Department’s commitment to mentorship, diversity, and teaching in addition to research. The discussion then progressed to brainstorming ways in which the department could take first steps toward valuing the kind of extracurricular involvement that is necessary to enact long-term change in our own hiring and promotion processes.

These groups also discussed ways to improve the experiences of members of the department from URGs. Suggestions included providing structured implicit bias training for both faculty and students, and increasing the number of speakers from URGs in seminar series. This conversation was also intertwined with discussions about increasing support for students interested in a wide variety of career options. Groups discussed expanding seminar series to provide students with a better survey of career options, as well as encouraging faculty to have deliberate discussions with their groups about nonacademic career paths. Finally, groups suggested that better support for families and women with children could help attract more female faculty to the Department of Chemistry.

Groups discussing “Mentorship and Faculty–Student Interactions” primarily brainstormed ways to incentivize thesis



committee meetings for students after they pass their qualifying exam—as these meetings are currently not mandated in our program<sup>29</sup>—and better publicize resources for students who are struggling with mentorship issues. Groups mentioned that these changes could improve the frequency and quality of faculty–student interactions, and acknowledged that more faculty involvement will be key to achieving these goals. Groups generally agreed that a formalized or structured approach for thesis committee meetings could help maximize impact while minimizing administrative or organizational challenges. A few ideas were discussed that could facilitate the implementation of such structure:

1. Students could be denied permission to register for research or course credits without a signed form indicating that they had meetings with their thesis committee.
2. Professors could hold “open office hours” for students, or have them sign up for 30 min meeting slots.
3. Groups agreed that a template for this meeting, including what topics should be discussed (research update, career goals update, PhD completion timeline, internship opportunities, teaching experiences, extracurricular activities, etc.), would be helpful.

Groups also discussed how to encourage students to talk with nonadvisor faculty if they have mentorship concerns during the course of their PhD. Currently, a number of roadblocks stand in the way of students with such concerns, including confidentiality or lack of knowledge of available resources. Groups suggested that a description of resources available to students, should they have mentorship issues, would be a great place to start. Participants also suggested that demystifying the process of switching groups would be helpful. Generally, these groups were strongly in favor of promoting the availability of existing resources (such as the graduate student handbook) or updating or generating resources where they are lacking.

### Community-Driven Changes since cDIBS

Since cDIBS, students and faculty within the chemistry community—in both the CGLC and other groups—have developed a number of new initiatives. These initiatives address mental health, mentorship, faculty hiring, and several other action items generated in cDIBS.

The 2018 Fall New Student Orientation included multiple discussions of mental health challenges. Dr. Yu Bi, our in-house counselor, gave a presentation that addressed mental health challenges surrounding graduate school, as well as cultural adaptation and student identity within the department. Additionally, several student-led panels addressed some of the mental health challenges that occur in graduate school and how to get help on campus to better deal with such challenges. Finally, the department chair addressed this issue in new graduate student orientation as well. We targeted orientation because we view this as the fastest way to reduce the stigma of mental health challenges among incoming graduate students and begin implementing positive changes in the overall mental health culture of our department. In feedback surveys, many students communicated surprise and appreciation for the emphasis placed on mental health during orientation, with several noting that they did not expect this level of care from an institution the size of UC Berkeley. Students also indicated gratitude for the level of mental health support available to

them and that such topics were openly featured with such prominence.

Such comments suggest that these changes have already moved our community closer to the recommendation from the National Academies, which states that institutions should provide “stronger support for graduate student mental health services... to help students manage the stresses and pressures of graduate education and maximize their success.”<sup>1</sup>

Additionally, the graduate student handbook was updated in Summer 2018 and distributed as a paper copy at orientation to first year graduate students, providing students with a comprehensive overview of departmental policies, support, and available resources. To address the desire for increased transparency regarding qualifying exam requirements, we added a section that highlights the options available to students who do not pass their qualifying exams or decide to leave the program.

Throughout Fall 2018, the CGLC worked with the department chair to solicit student input in the faculty hiring process for the 2018 application cycle. Six students were selected to serve on a committee to interview the faculty candidates in each field of hire, using a list of formalized questions that address their research, service, teaching, mentorship, and contributions to diversity. We anticipate that this more formal method of incorporating student input in the faculty hiring process will promote greater administrative transparency for department members and instill a greater sense of shared governance between students and faculty.

A new mentorship program, called CHEMentor, was piloted in Fall 2018 to pair incoming students with older students that can guide them through the process of integrating into and navigating the Berkeley Chemistry PhD program. This effort is run by several students and supplements faculty-led mentorship with peer mentorship in order to improve the work environment and mental health for incoming first-year graduate students.

Lastly, in Fall 2018, the Department of Chemical & Biomolecular Engineering (CBE) also surveyed its members using the Department of Chemistry climate survey. Following this effort, the CBE Graduate Student Advisory Committee joined with the CGLC, the Chemistry Library, and the Berkeley PATH to Care Center to implement monthly Diversity and Inclusion Focus Groups (DIFGs). This series of focus groups is meant to foster the discussion of topics such as unconscious bias and microaggressions, which were highlighted by members of the entire College of Chemistry community as necessary for promoting a more welcoming, diverse, and inclusive academic culture.

We are thrilled with these collective, grassroots, community efforts to improve the academic climate of our community, and feel that they address many action items identified in the climate survey and cDIBS. Additional action items that we would like to address in the coming year(s) are listed in [Appendix S2](#).

### CONCLUSIONS AND ONGOING AND FUTURE WORK

Herein, we presented the outcomes of a graduate student-led initiative to assess and address issues affecting inclusivity, diversity, and wellness within the Department of Chemistry at the University of California, Berkeley. Importantly, we report how data from an academic climate survey was used to ground community discussion during cDIBS. The cDIBS format—in



lieu of the traditional faculty-led town hall format, which can inhibit productive discussions between faculty and students because of the inherent power dynamic—enabled open, productive communication among graduate students, post-doctoral researchers, and faculty. This collaborative discussion resulted in the identification of specific strategies and action items that are already being implemented to make our academic community more inclusive and welcoming for all members. For example, verbal feedback from attendees of the newly instated, monthly DIFGs suggests that these meetings are succeeding in fostering an inclusive, neutral space in which community members can engage in challenging topics of conversation. Themes discussed during recent DIFGs include: sexism in science, LGBTQ+ community inclusion, unconscious bias, sexual assault and sexual harassment prevention, mental health, and managing work–life balance.

We anticipate that conducting an annual survey of our academic climate will be an excellent way to track the effectiveness of the new initiatives highlighted above, as well as any future diversity and inclusion efforts within the Department of Chemistry. Moreover, although these efforts primarily focused on faculty, postdocs, and graduate students thus far, we aim to include a wider set of voices in future Climate Survey and cDIBS efforts—including staff, undergraduate students, and the Department of Chemical and Biomolecular Engineering. By doing so, we hope that these grassroots efforts for improving academic climate can benefit our entire College of Chemistry.

It should be noted that this work was carried out as a case study to understand methods by which academic climate concerns can be addressed at a departmental level. These results highlight the importance of fostering evidence-based, departmental discussions that are grounded in community data to address issues within any individual academic unit. We believe this work provides a blueprint for individual departments to use when engaging in efforts to improve their academic climate on the basis of survey results—specifically in a way that does not put the varying interests within a department in opposition. By focusing on the needs of our entire community, we have laid the foundation for collaborative efforts that have the potential to create lasting, positive institutional change. We hope that implementation of the aforementioned methods will benefit other institutions wishing to create a more diverse, equitable, and inclusive environments for all members.

## ■ ASSOCIATED CONTENT

### 📄 Supporting Information

The Supporting Information is available on the ACS Publications website at DOI: [10.1021/acs.jchemed.9b00163](https://doi.org/10.1021/acs.jchemed.9b00163).

Questions, results (as released to department members), demographic data, and observations from the climate survey and structure, topics, discussion questions, and results from the departmental brainstorming session (PDF).

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## Notes

The authors declare no competing financial interest.

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