

Integrated Inclusion: A Diversity & Inclusion Strategic Plan for CBBG

CBBG is a complex, multi-university center that aims to advance research on biogeotechnics, transform engineering education, and broaden participation of underrepresented persons in the field. With respect to the broadening participation, we propose to 1) foster understanding and awareness about, 2) promote skills- building in, and 3) engender an appreciation for the tangible value of diversity and inclusion within STEM disciplines. Accordingly, we have created a strategic plan in response to concerns raised by the SVT members during the year 1 evaluation cycle that engages transformational thinking and aspirations around diversity and inclusion across all areas/functions of the center.

The Integrated Inclusion strategic plan was developed by **Dr. Delia Saenz**, CBBG Director for Diversity and Inclusion, in consultation with assistant director Martha Mitchell, as well as members of the CBBG IDEA group and the leadership of the center. In addition to addressing concerns that were identified by the SVT, the strategic plan incorporates elements that broaden the impact of our work. The **Integrated Inclusion** framework is intended to guide our inclusion efforts in the short term as well as in the long term, as described below.

Inclusion as a Core Value of CBBG

CBBG is committed to two central inclusion goals:

- broadening participation of women, underrepresented persons, and persons with disability in the emerging field of biogeotechnics
- developing and disseminating best practices for creating and maintaining an inclusive culture in an engineering learning and discovery environment.

To achieve these goals, CBBG will engage Integrated Inclusion, such that issues relevant to diversity and inclusion, specifically, and effective group dynamics, more generally, ***will be integrated across all function areas*** of the Center. Further, all members of CBBG will play a role in promoting an inclusive environment.

Implementing and Measuring Inclusion Efforts

A logic model reflecting the Integrated Inclusion Strategic Plan is depicted in Figure 15. Its implementation will be led by Inclusion core leads, Drs. Delia Saenz (ASU) and Martha Mitchell (NMSU). However, other members of the IDEA group, the PIs, and affiliated others within the Center will work collaboratively with them to ensure the success of the plan. The paragraphs that follow provide a summary of the components of the Integrated Inclusion model.

The specific goals of the plan are highlighted on the left- most column of the graphic (Target Goal). These goals, listed under the heading ‘Priorities,’ are separated into 3 levels. More specifically, objectives are conceptualized as pertinent to 1) the person or individual level, 2) the Center or process level, and 3) a broader, more scalable level beyond CBBG specifically (inclusive of other ERC’s, NSF, and industry partners). For each goal listed, the corresponding activities and target participants are identified (see middle heading ‘Activities & Reach,’) and so, too, are the desired short-, medium-, and long- term outcomes (under the heading ‘Outcomes’). The model is both comprehensive and amenable to modification particularly as we measure and assess the effectiveness of the interventions. The foci and strategies are intended to be extensive in their reach (K-12, university, industry), and to be implemented sequentially through the life of CBBG rather than all at once.

In addition, early progress or lack thereof on key outcomes is expected to inform the direction and specificity of subsequent diversity and inclusion efforts.

Individual level. At the core of Integrated Inclusion is the education of persons at all levels on matters related to understanding and addressing underrepresentation in biogeotechnics. Among the representative activities in this category are workshops delivered to CBBG members, outreach to underserved communities, development of target-specific recruitment materials, and professional development opportunities. To facilitate successful implementation, partnerships with relevant constituencies will be incorporated into these efforts (e.g., K-12 school partnerships, external presenters, graphic designers).

Center level. Individual-level activities (from category 1 above) are expected to contribute to and complement Center-level activities. The primary emphasis at this level is the development and reinforcement of practices at the group level that reflect a value of inclusion and further contribute to the development of an inclusive culture. Representative activities range from training of CBBG members to recognize and respond effectively to bias (as both a target and an ally) in group settings (e.g., classroom, lab, work settings), to embedding inclusion as a criterion for Center support (research funding, award recognition), as well as optimization of institutional collaborations (working with deans' council members) to be recommend more expansive practices in the recruitment of diverse students and faculty.

Broader level. We anticipate that the CBBG Inclusive Integration methodology can inform a broader set of constituencies. For example, we intend to be synergistic with

industry and other ERCs in the exchange of best practices around inclusion, and to share training materials and measurement tools. In this way, the benefits of Integrated Inclusion can expand well beyond the boundaries and lifetime of CBBG. Representative activities include convening of industry and university personnel with primary responsibility for diversity and inclusion in their respective settings, and collaborative efforts with other ERCs for the development of learning modules and climate measurement tools.

Implementation

All partner institutions (ASU, NMSU, UCD, GTech) will participate in the implementation of Integrated Inclusion. Elements that are part of the strategic plan well reflect both site-specific and common center-wide activities. As noted earlier, not all components of the strategic plan will be launched simultaneously. In part, this is due to the need to take time to develop some of the proposed interventions, and in part, because of the need to work within the parameters of funding availability. Nonetheless, CBBG leadership is committed to fleshing out the full model as quickly as possible.

Other Considerations

Note that the Integrated Inclusion graphic, as a logic model, does not list the corresponding assumptions, external factors, and measurement tools or timeline that are often included in logic models. These omissions are mostly due to space considerations and partly, to the time required to flesh out each component. Nonetheless, these considerations are succinctly addressed in the next paragraph. Note that the Integrated Inclusion graphic, as a logic model, does not list the corresponding assumptions, external factors, and measurement tools or

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The primary assumptions guiding our Integrated Inclusion model is that CBBG will continue to receive support from NSF and that the Center director will continue to reinforce the importance of inclusion as a core value of the Center.

. External factors that may impact our proposed work relate to collaborative efforts and cooperation of outside entities such as university administrators and industry leaders. Insofar as measurement tools and timelines are concerned, CBBG inclusion leaders are working closely with the Center's external evaluators, College Research and Evaluation Services Team (CREST), to map out appropriate measurement intervals and instruments that will capture progress and inform our direction. The education core led by Dr. Jean Larson has been working closely with CREST in the past year and reports that they have provided excellent guidance and objective feedback on that component. We anticipate that CREST will likewise provide professional services to the diversity and inclusion core. As per their progress to date, it is highly likely that tools and timelines will be more definitive by the next evaluation cycle.

Sample Activities

Over the course of the past years, a number of the target goals listed in the logic model graphic have been pursued actively, including the following events/efforts:

- workshops on diversity and inclusion were delivered by diversity director Saenz to CBBG members;
- extensive outreach to underserved K-12 populations transpired at multiple sites;

- a workshop on mentoring was delivered by Dr. Erika Camacho (with online access to those off site);
- regular meetings between CBBG leadership and the ASU dean have been ongoing, and one session solely focused on diversity is upcoming;
- multiple SafeZone trainings have been conducted;
- changes have been made to research project evaluation forms to utilize diversity as a dimension of evaluation;
- the development of tracking of K-12 participants across the different levels of schooling (middle, high, college) and transition has begun;
- an electronic communication network (using SLACK) involving members from 5 ERC's nationwide has been established by a CBBG staff member to facilitate collaboration on instruments that measure climate;
- utilization of partner organizations (minority-serving schools, regional and national conferences, offices focused on services to veterans and persons with disability, respectively) yielded a diverse set of participants in our summer programs;
- outreach to Native American communities has facilitated plans to develop culturally-friendly curricular offerings;
- Young Scholars have learned about tools for academic success and about specific ways that they can effectively navigate college admissions requirements.

Notably, these efforts have spanned the Center's different function areas such as Research, Outreach, Education, Student Leadership, and university administrators, and have generated synergy with outside entities (other ERC's). Integrating inclusion into every function reflects our strategic approach going forward. Measurement efforts (evaluations) from

individual events/initiatives, further will be integrated into a database that is being created by CREST evaluators. Thus, we will have baseline measures from the early to later years of the Center's lifespan.

Commitment to Diversity & Inclusion

The leadership has been responsive to NSF SVT recommendations by providing consistent and strong messaging to all CBBG members that inclusion is a core value of our Center and a responsibility that must be embraced by each and every person. Further, the leadership has endorsed the view that inclusion is most effective when it is infused throughout all function areas. Notably, the same is true for our education component (please see that section for elaboration).

There is significant work to be completed (e.g., formal recruitment plan, increasing participation of men of color,

involvement of industry, increasing diversity at Georgia Tech). However, the development of a strategic plan, the skill set and academic expertise of the current director, the early progress across different arenas, and the enthusiasm of CBBG leadership toward the contributions of inclusion to the field, are good indicators that the Center will achieve success in advancing diversity and inclusion in alignment with NSF exigencies.