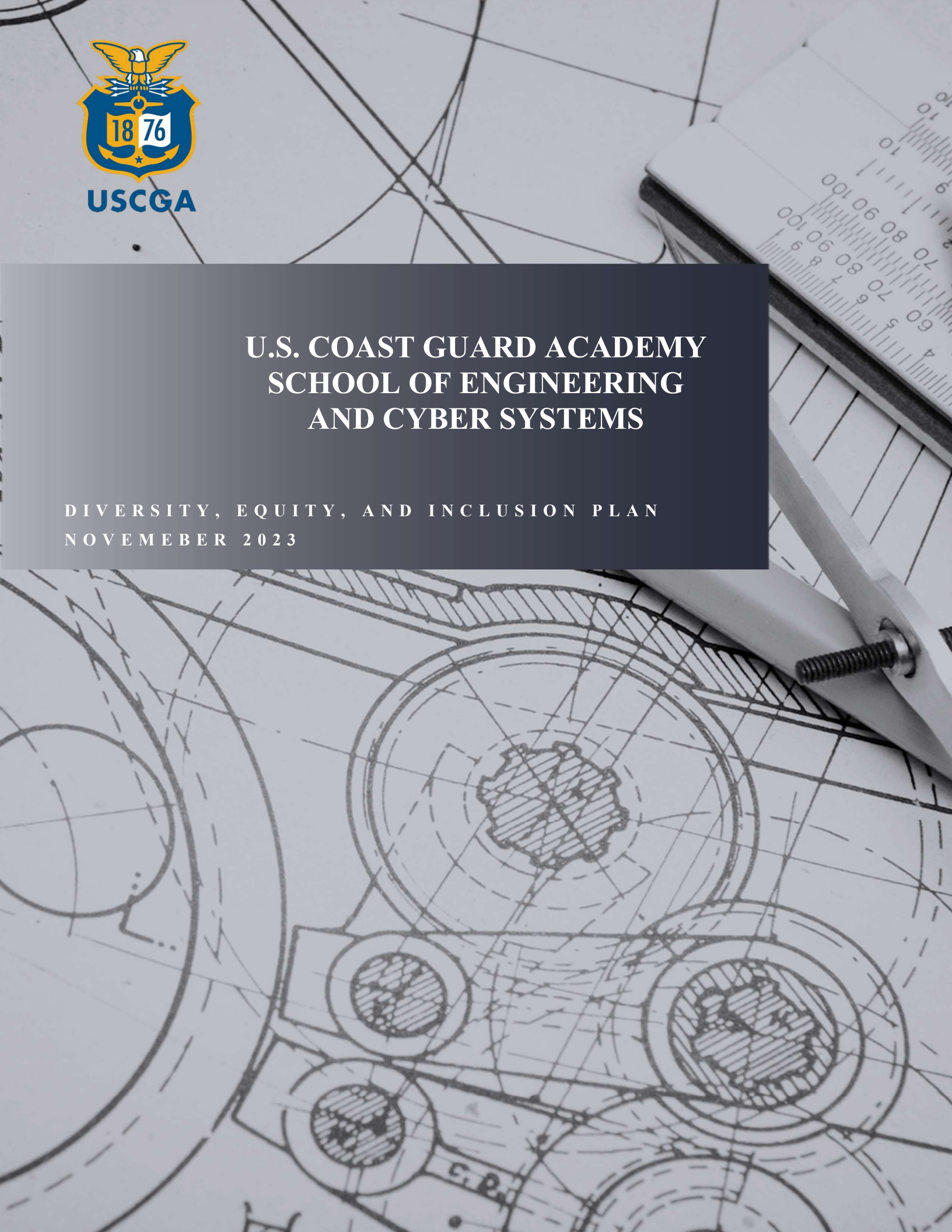


U.S. COAST GUARD ACADEMY SCHOOL OF ENGINEERING AND CYBER SYSTEMS

DIVERSITY, EQUITY, AND INCLUSION PLAN

NOVEMEBER 2023

INTRODUCTION

OUR SCHOOL

The U.S. Coast Guard Academy (USCGA) is an undergraduate only Federal Service Academy, with an enrollment of approximately 1100 students. USCGA has recently reorganized into three schools. The School of Engineering and Cyber Systems is the primary accession source for U.S. Coast Guard (USCG) officers who serve in the Naval Engineering, Civil Engineering, Marine Safety, Communications Systems & Computer Networks, and Cyber Security career fields. To ensure the USCG workforce reflects the full talent and promise of our diverse nation, it is critical that we provide equitable access, opportunities, and fair treatment for all prospective and current students, faculty, and staff at USCGA. Under our previous DEI plan we were one department housing five of nine academic majors at USCGA (whereas the other four departments each housed one major). This structure limited our ability to leverage our community to advance recruitment, retention, and diversity programs. The reorganization of our community in 2021 into the School of Engineering and Cyber Systems represents a major milestone that we advocated strongly for under our previous DEI plan. While changes on an organizational chart is a major first step, the success of academic reorganization at USCGA requires an institutional cultural transformation to truly empower our school to make progress under our renewed DEI plan. Our school community embraces the "Healthy to Innovative" framework developed by Dr. Kimberly Young-McLear, CDR (USCG, retired) as discussed below. We continue to welcome others in the larger USCGA community to partner with us on this journey.

OUR GOAL

Our goal is to foster sustainable diversity, equity and inclusion in our engineering and cyber systems communities by creating a climate of psychological safety, moral courage, and cultural competence. These fundamental elements of our Diversity, Equity, and Inclusion (DEI) plan are essential to create a healthy, safe environment for students and future USCG officers to thrive in. A review of USCGA demographics from the past three years in the context of our first three years under bronze status, highlights the need for a renewed DEI plan and another three years under bronze recognition. While we have made significant progress under the previous DEI plan, the global pandemic coupled with major organizational change over the past few years requires more work at the bronze level to realize significant milestones from ongoing and newly instituted initiatives that continue to foster a healthy culture and increased access and equity within our community. Our revised DEI plan was developed based on assessment of climate and culture surveys and focus groups in conjunction with significant work analyzing assessment data from ongoing initiatives.

OUR DRIVE

Passionate members of our community have taken the initiative to address some of the challenges that face our community. Significant milestones under our previous DEI plan are listed below. No plan is successful without regular assessment and feedback loops. The Action Teams identified in our DEI plan ensure a diverse, collaborative approach with routine check-ins and annual reviews to facilitate continuous improvement as our engineering and cyber systems community moves forward together.

ACHIEVEMENTS UNDER THE FIRST DEI PLAN

Progress under the first DEI plan (2020-2023) was slowed by the global pandemic and by reorganization of the academic division into schools (which was a major goal of our first DEI plan). Below is a summary of meaningful progress under the previous DEI plan and ongoing initiatives that have informed our new DEI plan and our reapplication for Bronze recognition.

Impactful milestones and promising new initiatives over the past three years include:

- ✓ Reorganization of the Academics Division at USCGA into multiple schools. Our five programs fall under the School of Engineering and Cyber Systems. The institution hired the inaugural Dean (our incumbent Head of Engineering was selected), Associate Dean, and Department Heads.
- ✓ Community building events as a school for students and faculty/staff.
- ✓ Community-based input to school leaders on supporting flexibility and healthy work/life balance based on focus groups, survey results, and other feedback systems.
- ✓ Launch of the first pre-engineering/cyber prep program as a feeder to the School of Engineering and Cyber Systems in partnership with University of Massachusetts – Boston (an MSI).
- ✓ Significant improvements to AIM Engineering; USCGA's most successful recruiting program.
- ✓ Advancements in recruiting and hiring of diverse faculty. Three of four new faculty hires are women.
- ✓ Participation of school leaders and many faculty and staff in undoing racism workshops.
- ✓ Participation of faculty in inclusive pedagogy seminars/workshops and development of engineering courses infusing cultural competence and ethical practices.
- ✓ Our first Executive Leadership in Academic Technology, Engineering, and Science (ELATES) Fellow from our school completed the program in 2023. The ELATES program is designed to advance women in Engineering and STEM into academic leadership. Our ELATES fellow has been selected as a Dean.
- ✓ A "Boat Design and Build" freshmen (at USCGA freshmen are called 4/c cadets) project in Naval Architecture and Marine Engineering which has improved retention in the major. Similar efforts are planned for other majors in the school.
- ✓ A proposal for a new General Engineering major designed to reach a larger and more diverse population of engineers and cyber systems majors is being reviewed for approval and adoption.

OUR INSTITUTION

MISSION STATEMENT

The U.S. Coast Guard Academy (USCGA) School of Engineering and Cyber Systems is a "best-in-class" institution for developing culturally and ethically competent engineers and cyber systems officers who as leaders excel academically, succeed professionally, and positively respond to the needs of multidisciplinary communities within New London, the Coast Guard, and the Department of Homeland Security.

D&I VISION AT USCGA

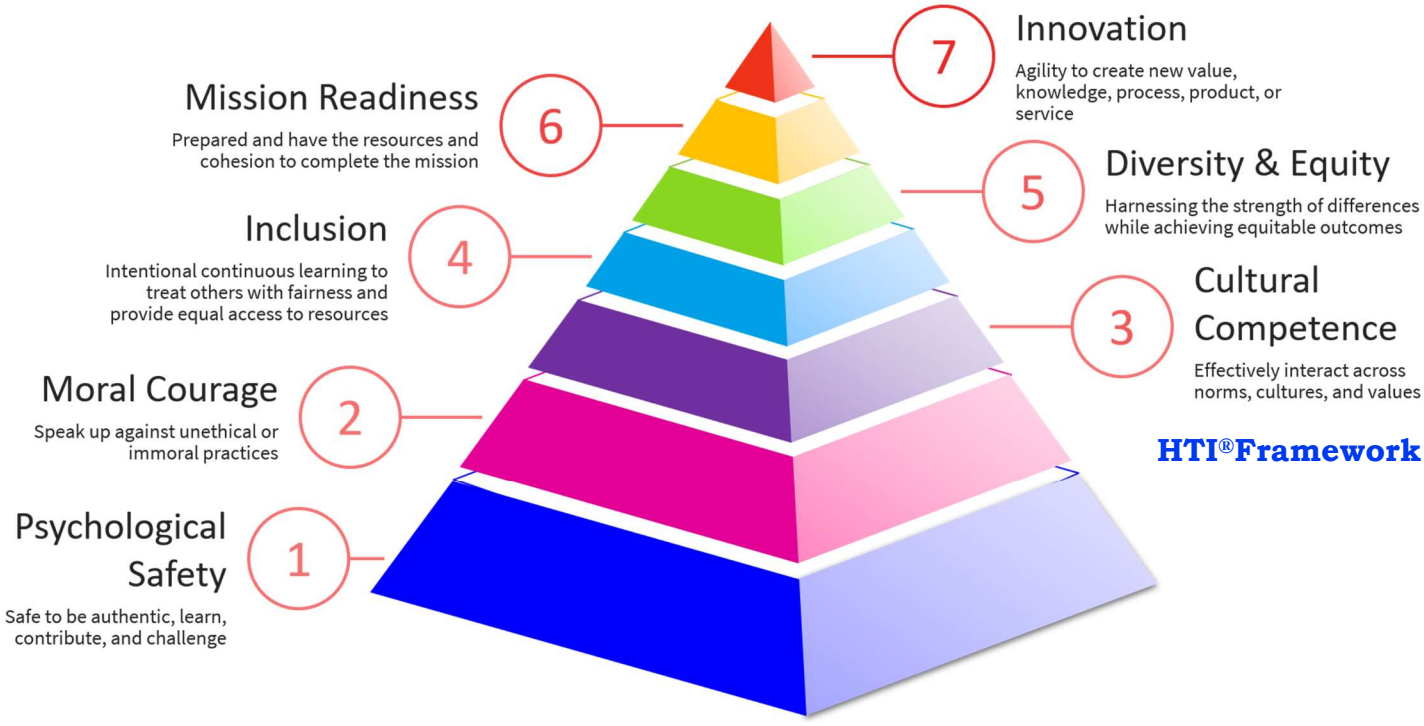
The USCGA School of Engineering and Cyber Systems is an academic community of five programs that supplies a majority of critically needed engineers and technical cyber professionals for the U.S. Coast Guard (USCG) workforce. Based on a strong organizational commitment to promoting diversity, equity, and inclusion across all career fields and communities, we established the Academy's Engineering Dean's Diversity Initiative (EDDI) to meet USCG workforce needs in a way that harnesses the true potential and talent of our diverse nation. Empowered by the Coast Guard's Strategic Vision for USCGA, our vision is to develop a diverse and culturally competent engineering and cyber systems workforce that is Ready, Relevant, and Responsive to meet the complex needs of a 21st century USCG. The USCGA is the leadership center and cultural seed of our service; as such we will develop leaders who value authenticity and moral courage, celebrate innovation, and hold themselves and others accountable to the USCG core values of honor, respect, and devotion to duty.

Due to documented shortages in the USCG engineering and cyber systems fields, USCG workforce managers have clearly stated the need for USCGA to increase graduation rates in these specific fields to meet this demand. While the USCG humanitarian missions uniquely position USCGA to attract, retain, and develop a diverse technical workforce, the EDDI is designed to foster sustainable diversity, equity and inclusion. The "Healthy to Innovative" framework discussed in detail below posits that in order to achieve sustained diversity and equity in support of mission readiness and innovation, it is imperative to start with the development of psychological safety, moral courage, and cultural competence. This foundation defines a service culture where all members of the workforce have the confidence to serve as their authentic selves where self-knowledge, initiative, creativity, and self-empowerment are rewarded. The USCGA School of Engineering and Cyber Systems recognizes that creating a culture of assimilation has the potential to negatively impact our workforce, making the development of psychological safety and morale courage more difficult. Instead, the School is committed to creating a culture where all service members can bring their whole selves to work, and all members of our community are able to share their perspectives without fear of retaliation, bullying, or discrimination.

OUR FRAMEWORK

USCGA SCHOOL OF ENGINEERING AND CYBER SYSTEM'S EDDI FRAMEWORK

Our commitment to diversity, equity and inclusion is organized into Action Teams (comprised of faculty, staff, and students) aligned with the framework shown below. We foster sustainable diversity, equity and inclusion built upon a foundation of psychological safety, moral courage, and cultural competence. Diversity and equity drive both mission readiness and innovation as we navigate complex 21STcentury technical challenges that require a multi-disciplinary and creative approach.



Model Developed by Dr. Kimberly Young-McLear, U.S. Coast Guard Academy, CDR (retired)

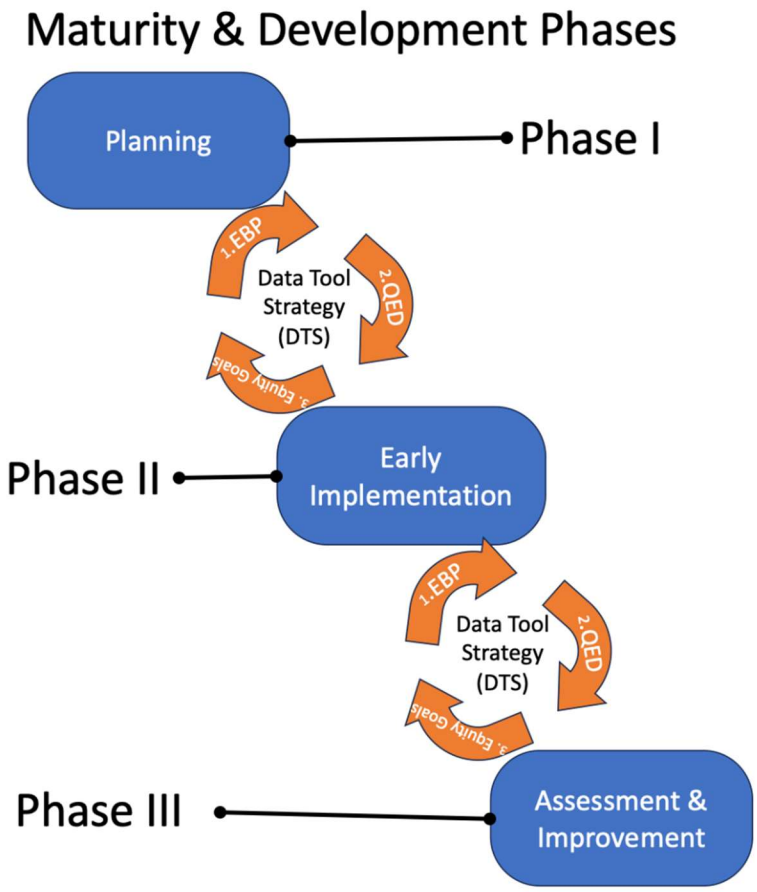
ACTION TEAMS

The structure of our EDDI includes Action Teams that are collaborative groups of faculty, staff, and students who share a passion for advancing our DEI plan through action under our culture of continuous assessment and improvement. Based on significant overlap between our four previous Action Teams, we met as a community in August 2023 and unanimously affirmed that we should reformulate into two Action Teams with each team having co-chairs. As such, we decided the Health of Climate and Cultural Competence Action Teams are now the Culture and Climate Action Team. The Access and Equity Action Team remains intact, and the Strategic Partnerships Team has been absorbed into the two action teams, because developing strategic partnerships has been a natural outgrowth of our work on all the teams. All activities are discussed below under the Action Team that has assumed primary responsibility.

Three Phases of Development:

In redefining goals, we have categorized efforts in three phases of maturity/development for each action item: Planning phase, early implementation phase, and assessment and improvement phase. Initiatives in early implementation are typically those that are within the first few years of implementation and are in active development and/or expansion which involves frequent assessment and adjustment. Initiatives in assessment and improvement are those that are more mature and a part of our culture of continuous improvement and associated annual review activities. For future assessment and improvement efforts, we will implement the Data Tool Strategy (DTS) described below. The DTS consists of three iterative steps as shown below.

Data Tool Strategy (DTS):



At each phase, the teams follow a generalized three-part Data Tool Strategy (DTS). Each of the strategies are informed by our collective development as we traverse the HTI pyramid and continue to strengthen as a community. First, we utilize evidence-based practices (EBPs) with guidance from subject matter experts (SMEs).

1. Evidence-Based Practices:
EBPs are designed to immediately mobilize SME-proven actions requiring little cultural competency training and demonstrated equity gap (disparity) reduction. Next, we identify and measure data to identify equity gaps and deficits.

2. Queryable Equity Database (QED):
Our USCGA expert will lead efforts to develop a QED to guide measures that remove institutional barriers to student success and close equity gaps for engineering and cyber systems students. The QED will allow for more robust data collection and analysis than was possible under our previous DEI plan. (Assessment: Once the QED is set up, develop, and analyze disaggregated data to guide pedagogy and institutional policies).

3. Setting Equity Goals:
Equity goals help practitioners stay on track with achieving equity. Equity goals can focus on demographic data that reveal lack of access, equity gaps to close, and practices to change. Equity minded framing of the data and desired impacts is critical. To safeguard the framing, we center on:

- Equity-minded Data Analysis
  Data are powerful for their ability to reveal whether and where equity gaps exist. Once gaps are identified, CUE guides practitioners through a process of analyzing and making sense of those gaps from an equity-minded lens. Equity-minded data analysis and sense-making means: (a) noticing equity gaps by workforce demographics (race, gender, LGBTQIAP+ identity, disability, ethnicity, etc.…); (b) understanding equity gaps as a dysfunction of policies and practices; (c) attributing equity gaps to policies and/or practices that may not be working; and (d) questioning our individual and institutional underlying assumptions and biases.

- Translating Equity Gaps into Numbers
  The final aspect of equity-minded data analysis is to take action to eliminate equity gaps. Translating equity gaps—which may seem too abstract or too large—into workforce, technology target, numbers of students is a compelling motivator for practitioners to undertake the critical transformation to achieve equity. Examples of the framing for this process can be found in references listed in Appendix A.

Each step of the Data Tools Strategy (DTS) forms an iterative process 'feedback loop' for all three phases. DTS steps include evidence-based practices, ongoing survey data review from the QED, milestones, and goals from equity minded gap analysis with subsequent policy review and updates during each phase for each Action Team.

For each Action Team, overarching goals are translated into a set of action items that will be assessed and matured based on the DTS strategy. We present action items in the context of the phase of maturity (Planning Phase, Early Implementation Phase, or Assessment and improvement Phase).

CULTURE AND CLIMATE ACTION TEAM(CCA

(CO-CHAIRS: DR. TOORAN EMAMI & LCDR DAN BURKE)

CCAT Goal 1: Create a climate where psychological safety remains at the core of all decisions, policies, and culture. Foster a speak up culture where all members of our community are empowered to exercise moral courage.

Action Items/Assessment:

Planning Phase:

- **Deploy and analyze a focused survey based on the psychological safety work of Dr. Amy Edmondson of Harvard University.** This will benchmark the starting point for psychological

safety work in our community. The survey will be deployed periodically to gauge progress. (Assessment: Psychological safety survey results – initial survey and re-survey at least every 2 years)

- **Continue and expand psychological safety work for faculty, staff, and students.** Our in-house psychological safety expert will lead efforts in this area and connect us with other experts in the Amy Edmundson network. (Assessment: Psychological safety survey results and post workshop feedback)

- **Implement student advisory groups.** The success of informal engagement with students on how to improve the cadet experience points to the need for these groups. (Assessment: Anonymized summary of student advisory group discussions presented to the community to inform efforts).

Assessment and Improvement Phase:

- **Continue to analyze, discuss, and develop action items based on the annual Defense Organizational Climate Survey (DEOCS).** DEOCS is deployed service-wide with a school report made available to the Dean and other school leadership. The co-chairs of Culture and Climate will lead an annual DEOCS de-briefing. (Assessment: DEOCS School Report and Institutional Results; summary of post-DEOCS discussions with the school community).

- **The Culture and Climate Action Team will continue advising the school leadership** to ensure the need to be present for students is balanced with a healthy work/life balance for faculty and staff. (Assessment: Feedback from the CCAT on areas of progress, surveys, and areas for improvement shared with the community through an annual EDDI meeting each May after final exams).

- **Review the anonymous feedback system** for faculty, staff, and students to help foster an inclusive climate. This vehicle has not been widely utilized since its inception. (Assessment: Gauge use of the anonymous feedback system to determine whether to modify or discontinue the system).

- **Continue work to reimagine and redesign spaces** in our school's building to promote a sense of belonging for everyone in our community. This work will also inform the initiatives underway to redevelop the USCGA campus as new buildings are designed and as existing buildings are renovated. (Assessment: Feedback from the Student Advisory Group, surveys, and discussion at the annual EDDI meeting).

CCAT Goal 2: Acquire and apply knowledge of diverse groups by embedding equitable practices in classroom management, institutional practices, and social-emotional learning to intervene against racism and all forms of oppression.

Action Items/Assessment:

Early Implementation Phase:

- **Identify best practices at Minority Serving Institutions (MSI) and establish collaborative networks with these institutions.** Expand on current partnerships, such as the collaboration with UMASS Boston. (Assessment: Gauge progress with UMASS Boston and additional partnerships).

Assessment and Improvement Phase:

- **Support workshops/events that advance cultural competence and combat oppression and discrimination.** Foster participation in community-based workshops in the New London area, including undoing racism workshops run by the *People's Institute for Survival and Beyond*. (Assessment: Discussion of workshop experiences at the annual EDDI meeting, DEOCS and focus group/survey feedback).

- **Participation in equity minded workshops and seminars** to ensure culturally competent recruitment, hiring, and retention of diverse student and faculty talent. (Assessment: Discussion of workshop experiences and best practices at the annual EDDI meeting; data on student, faculty and staff demographics over time including student and faculty persistence at USCGA and in the school).

- **Workshops and speakers on inclusive pedagogy with a focus on engineering and STEM.** Previous workshops and speakers have been offered across the institution. (Assessment: Annually gauge the implementation of pedagogical and curricular best practices in the school and at USCGA).

ACCESS AND EQUITY ACTION TEAM(AEAT)

(CO-CHAIRS: DR. RICH FREEMAN & DR. DAVOR COPIC)

AEAT Goal: Recruit, admit, retain, and develop diverse and culturally competent cadets/faculty. Ensure that culture, structure, policies, and procedures support access, equity, and success for all engineering and cyber systems faculty, staff, and students.

Action Items/Assessment:

Planning Phase:

- **Implement a General Engineering major.** Assessment of best practices coupled with decades of not meeting the USCG need for more engineers from diverse backgrounds, has inspired a year-long development of a General Engineering major. This flexible and interdisciplinary engineering major is designed to increase the total graduation rates in engineering and cyber systems and to diversify our school population. A team of senior faculty across several disciplines developed this General Engineering major that is being vetted through our institutional process. We hope to implement the new program for the class of 2027. This major also addresses persistence in engineering because students who fall behind academically for any reason would have an opportunity to finish in the mandatory four-year timeframe of our programs. (Assessment: Once implemented, gauge the increase in engineering enrollments and the diversity in the school, track career choices and success in the CG, develop and track achievement of Program Educational Objectives).

- **Develop and interpret disaggregated data to promote student success and close equity gaps using a queryable equity database (QED).** USCGA hired the Center for Urban Education (CUE) to conduct a review and produce a Vital Signs Report highlighting areas in which we can improve equity across demographic groups. With the QED, we will transform institutional stakeholder-created data sets, which lack a disaggregated structure, into a universal one that identifies systemic gaps to advance evidence-based policy-making. Structurally, all action teams use the QED at each transitional phase, as a part of our Data Tools Strategy (DTS), and as a continuing monitoring tool.

Early Implementation Phase:

- **Expand on the pre-engineering and cyber pipeline program with UMASS Boston** to supplement the current USCGA prep program. The UMASS Boston prep program is in the second year of a three-year pilot program. We send five students per year to an engineering and cyber focused prep year. The prep year includes significant mentoring by active-duty USCG engineers and field trips to a variety of USCG units to deepen interest in becoming engineers or cyber systems students at USCGA. We have recently incorporated a summer waterfront leadership experience at UMASS Boston and plan to add upper class cadets as interns and mentors. Based on success with the first cohort of the UMASS Boston prep program who have entered CGA as engineers and are doing well academically, we plan to expand access to prep programs that focus on building excitement for becoming engineers and cyber professionals while shoring up academic readiness. We will develop grants and other funding sources to grow the UMASS Boston program and we hope to expand to other MSI partnerships. (Assessment: Measure matriculation of prep students into the school and persistence in engineering and cyber systems majors, gauge expansion of the prep program through grants and CG support).

- **Offer early project experience throughout the school.** The Naval Architecture and Marine Engineering Program has pioneered a "Boat-Design and Build" freshmen experience which has been highly effective increasing retention in the major and in the school as noted by surveys and persistence in the major. There are plans to expand this program into other academic programs, as resources allow. (Assessment: Expand 4/c (freshmen) project offerings, gage persistence in engineering/cyber systems majors, and conduct surveys to assess impact of the project on student persistence in engineering and cyber systems).

- **Mature the specialized 4/c (freshmen) Advising Program** to include community building activities, and helping first-year cadets manage time and avail themselves of the academic support services which are being increased across the Academy to address nationwide learning loss. (Assessment: Survey advisors and students for ideas on improving the program, gauge student success, persistence, and use of academic support services)

- **Expand and refine school efforts to increase the diversity of faculty and staff.** There are several types of faculty members at USCGA: civilian faculty (tenured/tenure track/time limited), permanent military faculty (Permanent Commissioned Teaching Staff), and rotating military faculty, each with unique recruitment and hiring systems. We have made progress in educating hiring committees on implicit bias and we ask applicants to explain how they have/would foster communities of inclusion. Faculty have participated in numerous seminars on diverse faculty hiring practices and we are advising the Provost staff, who are working to remove unnecessary barriers as we compete for top talent. Still, more progress is needed to improve recruitment, hiring, and retention practices. (Assessment: Collect data on faculty demographics, persistence, advancement/promotion, and professional development opportunities)

- **Revitalize engineering-focused affinity societies and mentoring activities.** The Society of Women Engineers (SWE) Student Chapter has been revived after becoming inactive during the global pandemic. Officers attended the annual SWE conference in Los Angeles in October 2023. We are working on re-establishing the NSBE chapter and other affinity groups and designing events that combine efforts to mitigate the load on student and faculty leaders. We also continue to bring in USCG engineers, engineering and cyber professionals in government/ industry, and retired CG officers from diverse backgrounds as speakers and mentors. Our individual programs are developing mentoring programs to

inspire students. (Assessment: Feedback on activities, data on membership, focus groups with group leaders and student advisory groups, establishment of additional affinity societies).

Assessment and Improvement Phase:

- **Ensure the long-standing Academy Introduction Mission (AIM) one-week summer K-12 program is effective in recruiting more engineers and cyber systems students from diverse backgrounds through the AIM Engineering portion of the experience.** The AIM program is USCGA's largest recruiting program that yields up to 40% of each incoming class. Recent improvements to project-based engineering and cyber focused hands-on activities highlight inter-disciplinary opportunities. Data indicates the need to redouble efforts to yield more female and URM engineers and cyber systems students from AIM, by ensuring that diverse High School students have access to the program, developing new activities to meet interests of diverse student populations, and following up with AIM students after the program. (Assessment: Data on yield of engineers/cyber majors from AIM by demographic group; survey results.)

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SUSTAINABILITY

INSTITUTIONAL INFRASTRUCTURE TO SUPPORT OUR EFFORTS

Our EDDI program is part of a larger USCGA diversity and inclusion ecosystem, and we have representatives from the school involved in broad-based USCGA efforts. The USCGA has an Office of Inclusion and Diversity (OID) staffed by a Chief Diversity Officer, who is part of our Senior Leadership Team, and several staff members. OID supports faculty, staff and cadet equity, inclusion, and diversity initiatives. OID has provided staff assistance upon request and has funded several of our speakers, conferences, and workshops noted above. With a CG-wide emphasis on diversity, equity, and inclusion, the funding has been generous, however, recent budget cuts have limited their ability to fund EDDI activities. OID is also committed to supporting the various Affinity Councils that have been established at USCGA to provide all members of the community with the resources they need to better understand and engage in constructive conversations regarding the concept of inclusion and how it relates to mission effectiveness in the educational, organizational, and leadership arena.

- Genesis Club
- Compañeros
- Asian Pacific American Club
- Spectrum Council
- International Council Club
- Women's Leadership Council
- Diversity Peer Educators

We are also supported by the USCGA Office of Institutional Research (IR) which has provided metrics upon demand, including the data provided in the narrative. As described above, we intend to supplement this data with the QED to support our efforts.

The Admissions Division has been working with us to cooperatively market our majors and recruit/admit a diverse engineering class each year. They have partnered with us on recruiting events and are helping us develop and mature new pipeline programs such as the UMASS Boston program as discussed above.

Academic support services at the USCGA have been increased to meet the needs of students arriving at college less prepared. Increased percentages of students are starting in developmental courses such as Foundations of Calculus. Military officers on the faculty stand duty to staff various academic support services. In addition, the Academy has hired evening tutors for Engineering Mechanics: Statics, mathematics, and science courses. We also have faculty tutors in the Cadet Reading and Writing Center. The 4CASP program is mandatory additional tutoring for students identified as "at risk" by tracking grades in first-year courses. The adequacy of support services will be assessed on a regular basis.

We hope our EDDI activities under the "Healthy to Innovative" framework will help inspire greater support for positive cultural transformation across our institution and across the USCG. We believe

the case for additional support for our efforts has never been stronger and we intend to increase efforts for additional staffing and funding for our efforts. The Chief Diversity Officer has agreed to allow us part-time services of a staff member and the Admissions Officers have been active in supporting new prep programs and recruiting events, including a recent trip to St. Benedict's Prep School to develop a partnership. We also plan to find new funding sources for our efforts. As we implement resource intensive programs such as General Engineering and continue active efforts in recruiting and retaining a diverse population of students and faculty we will advocate for additional faculty and staff.

ACCOUNTABILITY

The Dean of Engineering and Cyber Systems is responsible for ensuring the programs of the USCGA EDDI are moving forward according to the plan. Through our Engineering and Cyber Advisory Council (ECAC) we receive feedback and ideas from USCG stakeholders as well as from colleagues in higher education, industry, and government. As we are empowered to cultivate a healthy school climate and culture, we will continue to advance the importance of transparency and accountability in our school. As the only nationally recognized DEI program at the Academy, the EDDI team is committed to guiding similar efforts at institutional and service-wide levels. By supporting a psychologically safe culture that encourages moral courage, we will respect and advance the dignity and well-being of all members of the USCGA community. As the cultural seed of the USCG, we hope that our efforts will cultivate a healthy culture in our service.

ASSESSMENT

Each Action Team has goals and methods to assess progress as noted above. The Data Tool Strategy (DTS) described will enhance our ability to gather and analyze data that will catalyze continuous progress. With a small student body (approximately 1100 at USCGA with roughly half in the School of Engineering and Cyber Systems), small changes in numbers can drastically impact percentages. We will use a combination of qualitative and quantitative data to track and interpret progress meaningfully. In addition, the EDDI team will hold an annual review that will include a summary report. This annual review will comprehensively assess progress by each of the Action Teams and make suggestions that strengthen our community and close equity gaps.

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