

Advisor James Lambrechts ASCE (111964)

[lambrechtsj@wit.edu](mailto:lambrechtsj@wit.edu)

Wentworth Institute of Technology – Civil Engineering Department

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*The Added Value of Equality*

Amanda Siciliano (10808638)

550 Huntington Ave

MS 2120

Boston, MA 02115

914-708-8021

sicilianoa@wit.edu

In the civil engineering industry, diversity and inclusion are essential. To enhance and participate in a global society, civil engineers must readily operate in a field free from discrimination. The American Society of Civil Engineers states in Canon 8, “Engineers shall, in all matters related to their profession, treat all persons fairly and encourage equitable participation without regard to gender or gender identity, race, national origin, ethnicity, religion, age, sexual orientation, disability, political affiliation, or family, marital, or economic status” (“Code of Ethics”). Not only does this order apply to engineers in their professional careers but also to students throughout their campus chapters. To uphold this addition to the Code of Ethics, civil engineering students and professionals alike must be vocal endorsers of diversity, equality and inclusion through sexual identification, gender and race representation, and internal bias acknowledgement.

Prior to reviewing the added impact of this canon, it is important to first consider its modern relevance. In both the engineering and non-engineering spheres, the world has experienced substantial social change. This new addition to the Code of Ethics in 2017 aims to keep ASCE pertinent with an ever-changing culture. In 2015, the Supreme Court of the United States of America declared same-sex marriage to be legal. This “equal dignity in the eyes of the law” act aligns with the goal of preventing discrimination based on sexual orientation (Campbell 2017). Following President Donald Trump’s election in 2016, immigration and political affiliation have become hotly discussed topics. While amended legislation has some feeling unsafe, anxious, or scared, ASCE still mandates that civil engineers “treat all persons fairly” regardless of race, national origin, or political view (Chappell 2015; “Code of Ethics”). Age is another relevant factor free from discrimination, in a field where the median civil engineer is 42.2 years old (“Civil Engineers”).

However, one of the most notable extensions of Canon 8 is its consideration for not only gender but also gender identity. Now, it is mandatory that all civil engineers, regardless of their identity, are treated equally. According to the Dictionary by Merriam-Webster, gender identity is defined as “a person’s internal sense of being male, female...a combination [thereof]... or neither” (“Gender Identity”). A recent study published in the Journal of Educational and Psychological Consultation found that factors, such as “gender-inclusive restrooms” and “nondiscrimination policies,” reported a higher sense of inclusivity and belonging among “trans and gender-nonconforming students” (Goldberg, Beemyn and Smith 2019).

Before Canon 8 was added, the ASCE Code of Ethics had not been updated in over two decades, with the previous amendment occurring on November 10<sup>th</sup>, 1996 (“Appendix: ASCE Code of Ethics” 1996). Canon 8, the most recent addition on July 29<sup>th</sup>, 2017, was both exciting and disappointing. It is relieving to know that unbiased participation is deemed as a mandatory aspect of professional conduct, yet disappointing to know that this canon was only recently added. But, the Code of Ethics, 2025 Vision and United Nations Sustainable Development Goals are affected by this amendment, ensuring that the ASCE remains an organization with “dignity, respect, and fairness” (“Code of Ethics”). When reviewing the ASCE Vision for 2025, the most notable responsibilities of civil engineers include the duties to “create a sustainable world and enhance the global quality of life” (“Vision for Civil Engineering in 2025”). Whether this be achieved through new construction, sustainable design, or technological advancements, civil engineers have an obligation to revolutionize the world. This process involves capitalizing on the tools learned through a college education and work experience. But, is just designing for the environment enough? To lead a profound transformation, civil engineers must affect not only civilian projects but also civilians. “Entrusted by society,” this new role assumes the responsibility of planning, designing, leading and representing (“Vision for Civil Engineering in 2025”).

This new role as “leaders in public policy” also exists in present-day politics (“Vision for Civil Engineering in 2025”). In fact, present day political leaders are cultivating a dynamic and representative environment. The 116<sup>th</sup> United States Congress, lasting from January of 2019 until January of 2021, is one of the youngest and most diverse ever elected in recent times “Women in the U.S. Congress...” 2019). Over a century after Jeannette Rankin was elected as the first woman in the House of Representatives, a ground breaking 131 women now serve in the federal offices (Jin 2018). This dramatic increase in gender diversity can improve representation, encourage participation, and shape legislation. As a result, new bills with added perspective can be created to help mold the framework for public policy. Leader and former president of ASCE, Kristina Swallow, bridged the gap between civil engineering and public policy. In 2018, she testified before the U.S. Senate Committee on Environment and Public Works (EPW) regarding water resources. In her statement, Swallow used published ASCE reports to encourage the EPW to “help alleviate our nation’s water resources infrastructure investment deficit” (Castellanos

2018). This example shows proper diversity and equitable participation that ASCE can work towards altering the industry.

But, upon hearing about the dire need for this industrial development, some may still go unconvinced. Is diversity really tied to the success of a business or university? In the world of civil engineering, does affirmative action truly equal adequate action? According to McKinsey & Company's 2018 report, the performance difference is profound. Companies with ethnically diverse executive teams were 33% more likely to financially outperform counterparts, while companies with executive gender diversity were 21% more likely to achieve a profitability increase (Hunt, Yee, Prince and Dixon 2018). However, recent findings concur that both age and gender diversity can impact an organization. The American Association of Retired Persons revealed that 64% of workers between the ages of 45 and 74 had "seen or experienced age discrimination in the workplace," with 92% reporting it as "very or somewhat common" ("Staying Ahead..." 2014). But, according to the Journal of Applied Psychology, "age diversity correlated positively with performance...in groups solving complex decision-making tasks" (Wegge, et. al. 2008). Gender, age and cultural differences in leadership add varying perspective to the civil engineering industry. Diversified companies not only experience long term financial benefits, but also improved impact. It is possible that these multi-disciplinary teams can transform the world with supplementary opportunities by producing new construction approaches, implementing more efficient technology, or even brainstorming risk management strategies. As a result, it becomes evident that diversity and inclusivity truly make a difference in the work force.

With the action goals of reducing inequalities and achieving gender equality, the United Nations Sustainable Development Goals parallel the mission statement of Canon 8. The Code of Ethics relies upon civil engineers within the U.S.A. to uphold a new level of professional conduct, while the Sustainable Development Goals rely on a "global partnership" from countries all over the world ("Week 27..." 2017). Both understand that a versatile approach of improving inclusivity and fairness lead to improved health, quality of life and economic growth. But, do even more similarities exist between this professional engineering body and intergovernmental organization? It is possible that this comparable format was applied to show evidence of the larger implications – thinking globally rather than just nationally. The United Nations has over 193-member countries while the American Society of Civil Engineers exists in 177 countries

(“Growth in United Nations...” 2019; “About ASCE”). As a result, a plethora of new stakeholders are introduced to the equation, requiring action with plans for achieving diversity. Within ASCE, academic institutions, volunteer groups, private companies, government subcommittees and nonprofit organizations are all players that will demand results. By mirroring the United Nation’s code, the American Society of Civil Engineers too will have a pledge of ethical expectation and member accountability.

As the first national engineering society in the U.S., ASCE has evolved since its creation in 1852. Among many benefits, this professional organization has established career supportive programs, national networking events, professional certification courses, and continuing education opportunities. Since the founding over a century and a half ago, civil engineers have combined “vision and energy to develop the land of the free to its fullest potential” (Griggs 2001). But, have we already reached maximum capacity? The call for action and improvement from this professional engineering society must be unending. Additional approaches must be implemented to have the necessary framework to create a climate that encourages diversity and inclusion. These guiding principles can be conveyed through action plans such as mandated diversity training featuring education on stereotypes and microaggressions, institutional programs aiding and endorsing underrepresented groups, or new committees continuously reviewing policies and procedures. While it is indeed possible that these projects may already exist, developing truly effective cross-functional groups requires both intention and attention. Furthermore, it “takes real investment from senior leadership over a sustained period of time to look over the root causes of the issues” (Doshay 2018). Engineers must have the mindset that a cultural transformation will not be instantaneous but rather gradual.

Achieving this gradual yet important cultural revolution only occurs when personal bias is eliminated. Are we to blame individuals for unintentionally holding onto traditional, outdated beliefs that still cause bias? While bias, diversity and inclusion have become recent buzzwords, the different terms truly are interconnected. In order to remove bias, individuals must take accountability for both the unconscious and conscious beliefs that frame everyday decision making. Examining habitual actions rather than just following preconceived plans is the best way to think creatively and critically about both inclusive and exclusive decisions. Perhaps we speak to younger workers, ethnic women, or married men differently. This automatic inner bias may come from learned habits, previous interactions, or societal values. But, when bias is eliminated,

individuals are given the opportunity to achieve their full potential. “Self-awareness and taking responsibility” are two simple approaches that can be implemented to “promote engagement, innovation, and performance excellence” (Chamberlain 2018).

In 2017, the American Society of Civil Engineers created a more inclusive community upon revising the Code of Ethics to include the “treat all persons fairly” creed (“Code of Ethics”). Even using this topic as the 2019 Daniel W. Mead paper aligns with the goals of the new canon since student chapters and working professionals alike are informed about the pressing need for diversity promotion. It is only when diversity, inclusivity, and equality are actively endorsed that the globe will sincerely transform. But, as the poet Rupi Kaur reminds us, “pace yourself – the road to changing the world is never-ending” (Kaur 2017).

## Works Cited

- “About ASCE.” *American Society of Civil Engineers*. <[https://www.asce.org/about\\_asce/](https://www.asce.org/about_asce/)>. (Feb. 25, 2019).
- “Appendix: ASCE Code of Ethics.” (1996). *American Society of Civil Engineers*. <<https://ascelibrary.org/doi/pdf/10.1061/9780784405260.ap>> (Mar. 01, 2019).
- Campbell, A. F. (2017). “6 Immigrants Talk About the Anxiety of Living in Trump’s America.” *Vox*. <<https://www.vox.com/policy-and-politics/2017/8/4/16069926/immigrants-trump-america>> (Feb. 28, 2019).
- Castellanos, E. (2018). “ASCE President, Kristina Swallow, Testified Before Senate EPW Committee.” *Infrastructure Report Card*. <<https://www.infrastructurereportcard.org/asce-president-kristina-swallow-testifies-before-senate-epw-committee/>> (Feb. 20, 2019).
- Chamberlain, R. (2018). “Three Ways to Eliminate Bias and Create Inclusive Cultures.” *Forbes*. <<https://www.forbes.com/sites/forbescoachescouncil/2018/08/17/three-ways-to-eliminate-bias-and-create-inclusive-cultures/#12c82f252882>> (Mar. 01, 2019).
- Chappell, B. (2015). “Supreme Court Declares Same-Sex Marriage Legal in All 50 States.” *National Public Radio*. <<https://www.npr.org/sections/thetwo-way/2015/06/26/417717613/supreme-court-rules-all-states-must-allow-same-sex-marriages>> (Feb. 27, 2019).
- “Civil Engineers”. *Data USA*. <<https://datausa.io/profile/soc/172051/#intro>> (Mar. 01, 2019).
- “Code of Ethics.” *American Society of Civil Engineers*. <<https://www.asce.org/code-of-ethics/>> (Feb. 26, 2019).
- Doshay, H. (2018). “Three Reasons Why Your Diversity and Inclusion Programs Are Not Working.” *Forbes*. <<https://www.forbes.com/sites/forbeshumanresourcescouncil/2018/07/17/three-reasons-why-your-diversity-and-inclusion-programs-are-not-working/#8f33ad5494bf>> (Feb. 25, 2019).
- “Gender Identity.” *Merriam-Webster*. <<https://www.merriam-webster.com/dictionary/gender%20identity>> (Mar. 01, 2019).
- Goldberg, A. E., Beemyn, G., and Smith, J. Z. (2019). “What is Needed, What is Valued: Trans

Students' Perspectives on Trans-Inclusive Policies and Practices in Higher Education.” *Journal of Educational and Psychological Consultation*. 27-67.

Griggs, F. E. (2001). “1852 – 2002: 150 Years of Civil Engineering in the United States of America.” *Journal of Professional Issues in Engineering Education and Practice*. 127(4). 148-159.

“Growth in United Nations Membership, 1945 – Present.” (2019). *United Nations*.

<<http://www.un.org/en/sections/member-states/growth-united-nations-membership-1945-present/index.html>> (Feb. 28, 2019).

Hunt, V., Yee, L., Prince, S., and Dixon-Fyle, S. (2018). “Delivering Through Diversity.”

*McKinsey & Company*. <<https://www.mckinsey.com/business-functions/organization/our-insights/delivering-through-diversity>> (Feb. 27, 2019).

Jin, B. (2018). “Congress’s Incoming Class is Younger, Bluer, and More Diverse Than Ever.”

*Politico*. <[https://www.politico.com/interactives/2018/interactive\\_116th-congress-freshman-younger-bluer-diverse/](https://www.politico.com/interactives/2018/interactive_116th-congress-freshman-younger-bluer-diverse/)> (Feb. 27, 2019).

Kaur, R. (2017). “The Sun and Her Flowers.” *Andrews McMeel Publishing*.

“Staying Ahead of the Curve 2013: AARP Multicultural Work and Career Study

Perceptions of Age Discrimination in the Workplace – Ages 45-74.” (2014). *AARP*. <[https://www.aarp.org/content/dam/aarp/research/surveys\\_statistics/econ/2013/Staying-Ahead-of-the-Curve-Age-Discrimination.pdf](https://www.aarp.org/content/dam/aarp/research/surveys_statistics/econ/2013/Staying-Ahead-of-the-Curve-Age-Discrimination.pdf)> (Feb. 25, 2019).

“Vision for Civil Engineering in 2025.” *American Society of Civil Engineers*.

<<https://www.asce.org/vision2025/>> (Feb. 20, 2019).

“Week 27 – Naiara Costa and Emilia Reyes, Co-Chairs, Steering Group of the Major

Groups and Other Stakeholders (MGOs) Coordination Mechanism.” (2017). *United Nations*. <<https://sustainabledevelopment.un.org/hlpf/blog2017/week17mgos>> (Feb. 28, 2019).

Wegge, J., Roth, C., Neubach, B., Schmidh, K. H., and Kanfer, R. (2008). “Age and Gender

Diversity as Determinants of Performance and Health in a Public Organization: The Role of Task Complexity and Group Size.” *Journal of Applied Psychology*. 1301-1313.

“Women in the U.S. Congress 2019.” (2019). *Rutgers Center for American Women and Politics*.

<<https://www.cawp.rutgers.edu/women-us-congress-2019>> (Feb. 25, 2019).