Advisory Committee on Diversity and Digital Empowerment (ACDDE)

A Report of the
Diversity in the Tech Sector Working Group

Presented by

Workforce Diversity Subgroup

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June 24, 2021
Executive Summary

The Advisory Committee on Diversity and Digital Empowerment (ACDDE) provides advice and recommendations to the Federal Communications Commission (FCC) on how to empower disadvantaged communities and accelerate the entry of small businesses, including those owned by women and minorities into the media, digital news and information, and audio and video programming industries.

The ACDDE also provides recommendations to the Commission on how to ensure that disadvantaged communities are not denied the wide range of opportunities made possible by next-generation networks, including 5G. This Committee is intended to provide an effective means for stakeholders with interests in these areas to exchange ideas and develop recommendations to the Commission on media ownership and procurement opportunities, empowering communities to spur educational, economic, and civic development and consumer access to digital technologies. In formulating its recommendations, the Committee may gather and develop data, examine industry trends and practices, and consider both industry-based solutions, as well as targeted regulatory or legislative solutions to respond to the challenges identified by the Committee.

One of the ACDDE’s Working Groups is the Diversity in the Tech Sector Working Group (DIT), whose members focus on issues related to the hiring, promotion, and retention of women and people of color in tech industries. The DIT Working Group has three subgroups – one of which is the Workforce Diversity Subgroup (Workforce Diversity Subgroup or Subgroup), which examines the underemployment or lack of promotion opportunities for women and people of color in the tech sector and proposes a range of diverse issues. In addition, the Workforce Diversity Subgroup highlights best practices of industry leaders in training and employment diversity in the tech field and develops recommendations for innovative programs in science, technology, engineering, and math (STEM). This report is the final deliverable of the Workforce Diversity Subgroup and includes recommendations taken from a formal FCC Summit convened by the Subgroup in January 2021.

As increasing equity, inclusion, and diversity in the technology ecosystem have been urgent efforts by tech companies and government, the Workforce Diversity Subgroup explored strategies for increasing diversity within technology companies at the junior level and within the public sector, particularly at the FCC, to advance inclusion within these areas. For our purposes, the “tech sector” was broadly defined to include technology, media, and telecommunications companies, and government agencies involved in regulating these industries. While some tech companies allege that a lack of qualified workers from an underrepresented background in the education pipeline explains lackluster numbers of diverse applicants and workers, the argument has been disproven. Research shows that tech workers of color are underutilized in the workforce.¹ In some instances, the public sector has similar

challenges in the identification and retention of a diverse workforce. Included in our report are strategies that the FCC can employ to cultivate an emerging pipeline of diverse talent by leveraging the agency’s influence and “bully pulpit” to encourage the tech sector in these areas and continuing the agency’s own work to advance opportunities for underrepresented populations.

While many researchers tend to focus on facilitating employment for more workers with existing educational and skills credentials in the STEM fields, the Workforce Diversity Subgroup directly addressed the pipeline challenges, particularly the expertise and skills that high school students interested in the tech sector need to develop. By including these students in the virtual Summit that we hosted in January 2021, we were able to glean that these students require more exposure to the tech sector and, more generally, to the fields within communications that can be learned at federal agencies, like the FCC.

In line with our findings are a series of recommendations that can be adopted by the tech sector and the FCC, the agency with oversight over communications networks and systems.

**Recommendations**

1. The Commission should continue to facilitate opportunities for educators, students, private sector leadership, and other government agencies to improve their understanding of the issues related to identifying and supporting a more diverse pipeline into 21st century careers.

2. The Commission should implement the popular “Pathways” government internships program for students interested in careers in technology, media, and telecommunications law and policy.

3. The Commission should collaborate with Historically Black Colleges and Universities (HBCUs), Predominantly Black Institutions (PBIs), Hispanic-Serving Institutions (HSIs), Tribal Colleges and Universities, and other Minority Serving Institutions (MSIs), as well as the private sector to scale efforts to increase inclusion of tech workers of color and develop best practices for increasing representation in the industry.

4. The Commission should develop a Working Group that includes chief diversity officers from tech corporations to engage with Committee members and FCC staff in their recharter of the ACDDE around issues of workforce diversity and inclusion.

5. The Commission’s Office of Workplace Diversity should develop formal alliances with organizations that have deep roots and relationships within Hispanic, Asian American, Native American, African American, and other underrepresented communities to help remedy pipeline concerns in the tech sector and at the FCC.
6. The Commission should partner with the Federal Communications Bar Association (FCBA) on their Diversity Pipeline Program to attract, develop, and support diverse law students who are interested in pursuing legal careers in technology, media, and telecommunications policy.

7. The Commission should collect data and develop metrics around new and existing opportunities for students from historically disadvantaged communities to periodically assess the effectiveness of these programs and of other Workforce Diversity Subgroup proposals.

8. The Commission should develop a “virtual” internship program, delivered quarterly or semi-annually, to expose high school and college-level students to the FCC’s work to generate interest in careers in telecommunications.

9. The Commission should institutionalize the Early Career Staff Diversity Initiative, co-sponsored by FCC Commissioner Geoffrey Stark and former FCC Chairman Ajit Pai, to advance equitable opportunities for underrepresented undergraduate, graduate, and law school students. Accordingly, the Commission should continue to devote additional resources to recruit students from Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), Tribal Colleges and Universities, and other Minority Serving Institutions (MSIs) to increase the diversity of the applicant pool for the Commission’s internship, Attorney Honors, and Honors Engineering programs.
Introduction

The 2004 Career Advancement Subcommittee of the FCC’s Advisory Committee on Diversity for Communications in the Digital Age (“Diversity Committee”) created by former Chairman Michael K. Powell recognized the importance of policies and practices that could increase opportunities for people of color and women to advance to managerial positions in the communications sectors. The Career Advancement Subcommittee (“Subcommittee”) of the FCC’s Diversity Committee first sent an inquiry letter in December 2003 to a broad range of industry-related trade associations and foundations regarding their respective member companies’ hiring, promotion, and retention practices. Years later, the Diversity Committee would be renamed and rechartered as the Advisory Committee for Diversity and Digital Empowerment (ACDDE), under former FCC Chairman Ajit Pai.

The ACDDE provides recommendations to the FCC on how to empower disadvantaged communities and accelerate the entry of small businesses, including those owned by women and minorities into the media, digital news and information, and audio and video programming industries. Additionally, the ACDDE offers proposals to the Commission that ensure disadvantaged communities are not denied the wide range of opportunities made possible by next-generation networks, including 5G.

One of the ACDDE’s Working Groups is the Diversity in the Tech Sector Working Group (DIT), whose members focus on issues related to the hiring, promotion, and retention of women and people of color in tech industries. The DIT Working Group has three subgroups – one of which is the Workforce Diversity Subgroup (“Workforce Diversity Subgroup”), which examines the underemployment or lack of promotion opportunities for women and people of color in the tech sector and proposes a range of diverse issues. In addition, the Workforce Diversity Subgroup highlights best practices of industry leaders in training and employment diversity in the tech field and develops recommendations for innovative programs in science, technology, engineering, and math (STEM).

As increasing equity, inclusion, and diversity in the technology ecosystem have been urgent priorities of tech companies and government, the Workforce Diversity Subgroup explored strategies for increasing diversity within technology companies at the junior level and within the public sector, particularly at the FCC, to advance inclusion within these areas.

While some tech companies allege that a lack of qualified workers from underrepresented backgrounds in the education pipeline explain lackluster numbers of diverse applicants and workers, the argument has been disproven. Research shows that tech workers of color are underutilized in the workforce. In some instances, the public sector has similar challenges in the identification and retention of a diverse workforce. Included in our report are strategies

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that the FCC can employ to cultivate an emerging pipeline of diverse talent by leveraging the agency’s “bully pulpit” to encourage the tech sector in these areas and continuing the agency’s own work to advance opportunities for underrepresented populations.

While many researchers tend to focus on facilitating employment for more workers with existing educational and skills credentials in the STEM fields, the Workforce Diversity Subgroup directly addressed the pipeline challenges, particularly the expertise and skills required of high school students interested in the tech sector. By including these students in the virtual Summit that we hosted in January 2021, our committee was able to glean that these students require more exposure to the tech sector and, more generally, to the fields within communications that can be learned at federal agencies, like the FCC.

Creating a sustainable pipeline for a diverse, talented, and technologically savvy workforce begins within K-12 education. Not only by ensuring equity in STEM, but ensuring students have access to mentorships and internships. Generally, students, if given the opportunities, would likely consider choosing STEM careers. However, without adequate knowledge of STEM workforce opportunities, there is a risk that some students will dismiss STEM-based career paths as potential options for their future. Further, student interest in STEM careers will wane if they are not given the opportunities to participate in STEM careers activities that serve to increase their awareness and knowledge of the field.

Despite the FCC not having direct authority over the tech sector, we propose that the agency use its platform to encourage all types of diversity among underrepresented populations, especially starting in high school. The agency itself should also be encouraged to create more opportunities for diverse high school students to engage in STEM career activities.

**Diversity in Tech Companies**

In 2014, Silicon Valley companies began publicly disclosing the demographics of their workforces, which quickly exposed the extent to which the tech industry lacked robust diversity. Research shows that tech workers of color are underutilized in the workforce. A 2017 Tech Leavers study states that, “unfairness in the form of everyday behavior (stereotyping, harassment, microaggressions, etc.) is a very real and damaging part of the tech work environment, specifically affecting underrepresented groups, driving turnover, and affecting companies in financial and reputational costs.” Thus, the tech industry must do more to hire, retain, and promote people of color.

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5 Ibid.
Pew Research indicates that African American and Hispanic workers remain underrepresented in the STEM workforce compared with their share of all workers, including in computing jobs, which have seen considerable growth in recent years. In addition, the representation of women varies widely across STEM occupations. Hispanics comprise 8% of all STEM workers, African Americans account for 9% of STEM occupations, and women make up 50% of STEM jobs. While there has been dramatic growth in the number of STEM graduates from U.S. colleges and universities at all degree levels since 2010, research shows that there is little indication that diversity in related jobs will shift substantially in the near term.

A CNBC analysis of the annual disclosures of diversity reported by top tech companies like Alphabet, Apple, Facebook, Microsoft, and Twitter shows that such companies have seen low single-digit increases in their percentage of Black employees. While companies acknowledge issues regarding diversity, the data reveal that few gains have been made. Although some companies have seen increases, the data show that those numbers include warehouse and delivery workers and are not necessarily in managerial or senior STEM positions.

Several tech companies have presented “matching programs” or expanded investments in internships (as well as externships) for students of color. Google’s STEP (Student Training in Engineering Program) internship is for first and second-year undergraduate students with a passion for computer science. Google’s internship program provides development opportunities to students from groups historically underrepresented in tech through technical training and professional development. The Amazon Future Engineer program is a comprehensive childhood-to-career program aimed at increasing access to computer science education for children and young adults from underserved and underrepresented communities.

While there are several successful STEM internship opportunities developed by community organizations and companies, standards and a repository of best practices for training programs currently do not exist for high school students. A recommendation that would be outside of the

9 Ibid.
12 Ibid.
13 See Google, STEP (Student Training in Engineering Program), STEP (Student Training in Engineering Program) – Build your future with Google
14 See Amazon, Future Engineer, Amazon Future Engineer | Homepage.
FCC’s authority but could be well-received is to support the development of national standards that match the educational training of students with the job expectations.

**Takeaways for the FCC**

Some public sector agencies lack significant diversity among their workforces, which should be addressed as the federal government reflects the country’s demographic differences. Communications and related policymaking careers can be lucrative and relatively unknown to diverse students, especially those early in the talent pipeline. Further, the absence of diverse or underrepresented populations can result in high-level positions being disproportionately occupied by people of color and other underrepresented populations. For example, the data from the FCC indicate that Senior Executive Service (SES) positions could have more representative populations in these roles.15

In 2018, former FCC Chairman Pai installed an Acting Director of Workplace Diversity at the FCC whose role has been reconstituted under Acting FCC Chairwoman Jessica Rosenworcel.16 Along with the tech sector, the FCC can encourage more underrepresented populations to pursue communications early in their careers, starting in primary and secondary education to college and graduate school.

Members of Congress have recently made diversity among their top priority for executive branch roles in science, technology, and telecommunications.17 Thus, the appointment and empowerment of a human resource role at the FCC to ensure the recruitment, retention, and hiring of underrepresented populations is a critical first step in ensuring diversity at the entry and highest levels of leadership at the agency. The next step is the establishment of opportunities, which is an area that Commissioner Geoffrey Starks has focused on in the new internship program for underrepresented communities interested in the fields of telecommunications.

As we discovered in the January virtual Summit, both the private and the public sectors play a role in providing more internship opportunities for high school students to encourage interest in STEM, public service careers, and to provide valuable work experiences. Currently, there are several career development programs within the U.S. federal government that provide local high school students with combined on-the-job training and career development. For example, the Federal Aviation Administration, the Library of Congress, and the Department of Energy all offer internship programs for high school students. Accordingly, “[t]he U.S. Department of State’s Pathways Internship Program includes both the Internship Experience Program (IEP) and the Internship Temporary Program (ITEP). Both programs are targeted toward U.S. citizens

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16 In 2018, Pai appointed D’Wana R. Terry to serve in the role. *D’wana R. Terry, Office of Workplace Diversity | Federal Communications Commission (fcc.gov)*. In January 2021, the role was extended by Acting Chairwoman Jessica Rosenworcel.
enrolled in a wide variety of educational institutions from high school to graduate school and professional academic levels. Both programs provide students with opportunities to explore Federal careers while being paid for the work performed.”\textsuperscript{18}

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A Roadmap to Tech Jobs Summit

To determine the most effective ways to increase the exposure and interest of students in the tech sector, the Workforce Diversity Subgroup planned and conducted a virtual Summit under the umbrella of the ACDDE. The goal of the Summit was to convene a series of experts who could speak to the challenges of high school and college students in the identification, recruitment, and retention of diverse talent.

The goal of the Summit was to bring together experts and students to share advice and information on what students and school administrators need to know to seek a job in the tech industry. The virtual event was designed for diverse high school and college students seeking employment and training in tech, as well as parents, guidance counselors, and other influencers of students and youth.

The Summit was held on January 15, 2021 and hosted by the Workforce Diversity Subgroup Group in collaboration with the FCC’s Media Bureau. The event was titled A Road Map to Tech Jobs (“Summit”). The summit was convened virtually and was open to the public on the Internet via a live feed from the FCC’s web page at www.fcc.gov/live and on the FCC’s YouTube channel. Approximately 400 participants attended the live virtual event and an additional 268 (to date) have viewed the recording of the video online.

Experts included leaders within the tech industry and attendees included diverse high school and college students and key influencers, such as guidance counselors, placement officers, and parents who were interested in the information and resources on obtaining employment in the tech sector.¹⁹ Over the course of the event, the following topics were discussed:

- Career opportunities in the tech sector and information about work experience
- Insights on education, skills, and experience needed to get a job in tech
- Information on how to build a robust and competitive resume
- Information on how to build a strong professional network within the tech and telecom realm and leverage that network
- Advice on appearance and professionalism
- Information on necessary communications skills
- Insights on how to interview for and land a job

¹⁹ A video of the event is available at the FCC’s webpage at https://www.fcc.gov/news-events/events/2021/01/road-map-tech-jobs-virtual-summit.
The Summit featured welcome remarks, a keynote address by Keiana Cavé, a young Black scientist and entrepreneur, and two panels that included a total of nine speakers:

**Panel I: Developing a Game Plan for a Tech Career**

**Moderator**: Deborah Elam, President & CEO, Corporate Playbook and member of the Diversity in the Tech Sector Working Group – Workforce Diversity Subgroup, ACDDE.

**Panelists**: Rosalind Hudnell, Retired Vice President of Human Resources and Director of Corporate Affairs, Intel, and former President, Intel Foundation; Dr. Calvin Mackie, Founder, STEM NOLA; Stacey G. Mangham, Principal Systems Engineer and Group Leader, MITRE Corporation; Robert Vaughn, Vice President of the National Instructors Institute, NPower; and Donna White, East Coast Regional Program Director, Black Girls Code.

**Discussion**: Speakers provided information on how to build a strong resume, networking skills, professional appearance, and how to interview.

**Panel Takeaways:**

➔ Mentorship is important at every level of a career.

➔ Students should reach out to people in their field via social networking sites.

➔ Students should build positive relationships with teachers and counselors at school.

➔ Students should attend STEM fairs and programs.

➔ Students should take Advanced Placement (AP) STEM classes in high school.

**Panel II: Building Your Personal Brand**

**Moderator**: Maurita Coley, Retired President & CEO, Multicultural Media, Telecom, and Internet Council (MMTC) and member of the Diversity in the Tech Sector Working Group – Workforce Diversity Subgroup, ACDDE.

**Panelists**: Celeste Carrasco, Director of Public Affairs, AT&T; Donald Cravins, Vice President, Policy and External Affairs, Charter Communications; John Gibson, Vice President, External and Multicultural Affairs, Motion Picture Association; and Eric T. Gonzalez, Cloud Security Program Manager, Ridgeline.

**Discussion**: Panelists gave advice regarding the education, skills, and experience needed to get a job in the tech industry.
Panel Takeaways:

➔ Exposure to opportunities in STEM is important for students.

➔ Engage K-12 schools in STEM-related education and careers.

➔ Community organizations need to ensure STEM is a part of programming.

➔ Community organizations should leverage existing partnerships and programs to engage students in areas of STEM.

➔ Students should consider internships and apprenticeships to gain experience and to take advantage of opportunities to earn while they learn.

The virtual Summit revealed that getting to a more diverse workforce involves targeted efforts to interest more students, and early professionals in communications, especially within the tech sector. While other studies have explored how to specifically address recruitment and retention, pipeline concerns still matter and, as discussed in the summit, many students do not know what the occupational opportunities are in the tech sectors and how to present themselves for internships, apprenticeships, or other hiring opportunities and community-based stakeholders are not clear on how to partner with agencies, like the FCC, to activate a sustainable pipeline.

These takeaways heightened the desire of our Subgroup to offer tangible recommendations that could be readily adopted by both tech companies, the FCC, and any other government agency for that matter. We respectfully submit these recommendations for consideration to the ACDDE and FCC below.
Recommendations for Creating and Maintaining a Tech Diverse Workforce

The Federal Communications Commission (FCC) is one of many organizations that should play an integral role in addressing and helping to remedy the challenges and barriers that impede people of color from being employed, trained, retained, and promoted in the tech and telecom industry, as well as tech-focused federal agencies. These recommendations were developed with the input of experts and Workforce Subgroup deliberations. We offer the recommendations below as a series of proposals and programs that the FCC can suggest to the tech sector and potentially adopt as they work to increase diversity at the agency. The FCC’s “bully pulpit” can serve as a powerful tool to advance diversity in hiring, equity, inclusion, and long-term professional development.

1. The Commission should continue to facilitate opportunities for educators, students, private-sector leadership, and other government agencies to improve their understanding of the issues related to identifying and supporting a more diverse pipeline into 21st century careers.

2. The Commission should implement the popular “Pathways” government internship program for students interested in careers in technology, media, and telecommunications law and policy.

3. The Commission should collaborate with Historically Black Colleges and Universities (HBCUs), Predominantly Black Institutions (PBIs), Hispanic-Serving Institutions (HSIs), Tribal Colleges and Universities, and other Minority Serving Institutions (MSIs), as well as the private sector to develop best practices for increasing representation in the industry.

4. The Commission should develop a Working Group that includes chief diversity officers from tech corporations to engage with Committee members and FCC staff in their recharter of the ACDDE around issues of workforce diversity and inclusion.

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7. The Commission should collect data and develop metrics around new and existing opportunities for students from historically disadvantaged communities to periodically assess the effectiveness of these programs and of other Workforce Diversity Subgroup proposals.

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Selected Resources for Support

- **Charter Communications**
  - Spectrum Scholars Program
  - Spectrum Digital Education Program

- **Joint Center for Political and Economic Studies**
  - Increasing Congressional Staff Diversity

- **Kapor Center**
  - Tech Leavers Study

- **Multicultural Media Telecom and Internet Council (MMTC)**
  - MMTC Jumpstart Your Tech Business Guide
  - MMTC Jumpstart Your Tech Career Guide

- **STEM NOLA**
  - STEM NOLA Descriptions
  - STEM NOLA Modules-2020

- **The Links, Incorporated – Eastern Area**
  - Eastern Area Links STEM Toolkit