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# ClearWaters

## Water Workforce Development: Insights & Inspiration



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# Clear Waters

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**Cover: Waterfall at Watkins Glen State Park, New York.** (iStockPhoto.com, photographer e Graphic Designer)

Several of our NYWEA colleagues offered their water workforce insights and inspirations for this issue of *Clear Waters* in a series of "Member Spotlight" interviews.

**Pictured on the cover are:**

**Top row (l-r):** Dan Rourke (p. 51); Oluwole "OJ" McFoy (p. 52); Claire Baldwin (p. 23); Rob DeGiorgio (p. 50); and Rosaleen Nogle (p. 34).

**Middle row (l-r):** Edward Hampston (p. 47); Hannah Rockwell (p. 13); Dolores Hewitt (p. 30); Kathleen Esposito (p. 44); and Shannon Harty (p. 36).

**Bottom row (l-r):** Jean Malafronte (p. 32); Kenneth "Corky" Kelsey (p. 43); Sara Igielski (p. 12); Pam Elardo (p. 20); and Kenya Lewis (p. 29).

The concepts, ideas, procedures and opinions contained in the articles in this publication are those as expressed by the various authors who submit the material for publication. The New York Water Environment Association, its board of directors, the editor, the executive director, and administrative staff hereby assume no responsibility for any errors or omissions in the articles as presented in this publication; nor are the concepts, ideas, procedures and opinions contained in these articles necessarily recommended or endorsed as valid by NYWEA, its board of directors, the editor, the executive director, or staff.

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### Take Ownership of Developing the Future Workforce

As I reflect on this issue of *Clear Waters*, I am struck by the need to elevate and amplify the voices of the next wave of environmental professionals who will no doubt help the water sector in becoming reflective of the people we serve. I also see the need to protect the strides we have made in the water sector and make sure the aftereffects of the pandemic do not adversely affect our water workforce. As the silver tsunami is starting to make it to shore, we cannot afford to lose anyone, especially due to lack of support or engagement. We all need to take ownership of the future workforce we are creating through our organizations' hiring practices, engagement efforts, and promotions into organizational leadership. I implore everyone to connect the dots and see how the paths we create and the decisions we make affect the sector. We cannot expect the water sector to change if our organizations don't change. We can't expect our organizations to change if we don't change. And we can't expect to change if we keep doing things the way they were always done.

How do we go about making change? Start by reading this issue of *Clear Waters* focused on Water Workforce Development and allow it to inspire and empower you!

Holding the esteemed role of NYWEA president and being a female engineer exposed to the industry for nearly 20 years, I have recognized the opportunity (and pressure) to bring perspectives from all members of the water sector to the forefront to be heard, acknowledged and transformation initiated, where needed. In one of our member spotlights in this issue (page 30), Dolores Hewitt shares her vision of the water workforce in the future, eloquently stating: "My vision is to see diversity at all levels within the water workforce. Diversity brings different experiences, different perspectives and different backgrounds, which translates into real growth."

How do we, representing organizations in the sector, begin to create a more diverse workforce? The task is significant, but what Rachel Anne Hendricks shared in her article *Organizational Culture and Its Impact on Leadership Opportunities for Women* (page 24) resonated with me: "Hiring for 'culture add' instead of 'culture fit' will help change the demographics and expand the diversity of an organization." Such a fundamental and logical concept.

While the discussion on fitting in may be front and center during the hiring process, are we continuing to follow up and make sure everyone is truly fitting in? In the article *Then and Now:*

*Women Engineers' Perspectives on Changes and Challenges in the Field Since the 1970s* by Laura Ettinger, Nicole Conroy and William Barr (page 15) the authors state, "... that one of the greatest challenges experienced by women engineers was and remains not fitting in. They articulated this as feeling of being left out; isolation; being told they didn't belong; being an oddity; and not having access to 'good old boys networking.'" Melvin Bankhead echoes this idea in his article *The Path to the Future: Why Companies Need to Prioritize Diversity, Equity and Inclusion* (page 55), "After successfully recruiting diverse candidates, then you need to figure out how to keep them. If they don't feel welcome, or valued, they won't stay."

So how do we motivate and encourage our emerging leaders in the water sector workforce? Our colleague Claire Baldwin (page 23) would tell her younger self to "have more confidence" in what she understands and knows. Shannon Harty (page 36) enthusiastically advises "Say Yes! Every opportunity that comes up – even if you have no clue how to do that job – give it a shot! We grow when we step out of our comfort zone so it's critical to constantly try new things and challenge your limits." Kathleen Esposito adds, "I am comfortable being uncomfortable" (page 44). Words to live by!

To further this Water Workforce Development conversation, I invite everyone to come to the Women of Water Summit (Reflect. Protect. Connect: Water Leaders Growing Stronger Together) on October 27, where we will be highlighting women in our water workforce and helping our colleagues gain the tools and resources needed to face the upcoming challenges of the water sector.

To leave you with this, our Young Professional board representative, Sara Igielski, had this to say about her vision for the water workforce (page 12):

1. **Empowered** to make a positive and lasting impact on our communities and the environment.
2. **Equitable** to create safe spaces and opportunities for under-represented/underserved groups in management, leadership and operations.
3. **Sustainable** to identify, inspire, and mentor the next generation of industry professionals.

I think the future of the water sector is in good hands.

Lauren M. Livermore, P.E., BCEE  
NYWEA President



### Insights and Inspiration

The enthusiasm in putting this issue of *Clear Waters* together has been palpable! Each one of you has a personal story to tell, and the pages of stories included in this issue exemplifies our membership's uniqueness, with insight and inspiration that reinforces what a privilege it is to work as a water professional. In this issue we've also included articles from different perspectives (think IBM, and veterinarians); not water

professions but organizations that run into the exact same workplace development issues. There's much to learn from them. And while we learn about workforce development issues it emphasizes to me how working as a water professional is a noble career. We see the world through a different water lens. It is something to be grateful for.

Although change is slow in coming for some sectors – only 5% of the workforce is made up of female operators – overall, 25% of NYWEA's membership is female. It is enlightening to see women rise to leadership positions within the governance structure of NYWEA, starting with our current president, Lauren Livermore, only the third woman to hold that role in 93 years! We are making up for lost time, with two other female officers coming up through the ranks! Four out of seven chapters have female chairs or vice-chairs. The same scenario holds true for NYWEA's committee structure; out of 30 committees/task forces, 16 have women in leadership roles. However, this is not enough. Diversity is much more than the influx of women entering the field. We need to advance and expand our collective vision (pick up the magnifying glass) and together create a diverse, equitable and inclusive group of water professionals. I am tremendously proud that NYWEA was out in front early on the issues of Diversity, Equity & Inclusion by having a statement to our membership in early 2020.

Although it shouldn't be the case, there are challenges and roadblocks that get in the way of promoting water careers that we

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**“However, this is not enough. Diversity is much more than the influx of women entering the field. We need to advance and expand our collective vision (pick up the magnifying glass) and together create a diverse, equitable and inclusive group of water professionals.”**

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are working on, as referenced in both Clement Chung's article (page 39) and Dan Rourke's member spotlight (page 51). We have been working with the New York State Civil Service since 2017 to eliminate the duplicative testing required in some municipalities. Stay tuned, as we hope to announce the details of this new program in early 2022. We are also working hard to make sure we stay true to our educational mission and continue our virtual meetings to be able to bring unique training to all members.

As we are on this water journey together, let NYWEA be a resource to you! Do you have a co-worker that deserves recognition? If so, we encourage you to nominate them for an award. Let your staff see that you value their contributions and hard work. For some, there is no greater respect.

Many thanks to the members of the Publications Committee, especially Rosey Nogle, Sandy Lizlovs, President Lauren Livermore and Jean Malafronte who worked hard to make sure this issue was developed in a comprehensive and deliberate manner.

Patricia Cerro-Reehil, pcr@nywea.org

### Introducing Carolyn Steinhauer, NYWEA's Operator Certification Administrator



Carolyn Steinhauer is our new Operator Certification Program Administrator, effective August 2. She most recently served as Human Resources Manager with Merit Apprenticeship Alliance, a New York State Department of Labor (NYS DOL)-registered sponsor of apprenticeship training in five different construction trades. Among her various responsibilities,

with the DOL's apprenticeship regulations during a four-year period of significant growth for the organization, including a 65% increase in signatory contractors and a 52% increase in apprentice enrollments. Her trade apprenticeship training experience, combined with her attention to detail, presents a solid, well-qualified fit for the position.

Carolyn is married to her husband Alan, a wastewater project manager with Ramboll and NYWEA member. Together they have three children.

Carolyn is eager to meet with operators throughout New York state and to work with the Certification Council and NYWEA leadership to apply modern wastewater treatment certification and renewal standards while efficiently managing applications. Her focus? Clearing qualified operators to serve their very important role of protecting public health and the environment.

Welcome, Carolyn!

Carolyn developed systems to maintain exemplary compliance

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**Dan Sammon, EIT**  
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Working at HDR has given me the opportunity to pave my own career path by providing opportunities for growth supplemented with the tools and trainings necessary to succeed.

**Quinn Desibia, PE**  
*Water/Wastewater Engineer*



Working at HDR has opened my eyes to the potential of great achievements through diligence and collaboration. In this supportive workspace I can rise to be the leader I aspire to be among my peers whom I value as my teachers, leaders and friends.

**Adina Rivera, EIT**  
*Water/Wastewater EIT*



At HDR I work on some of the most technically challenging, and personally interesting, environmental engineering projects in the New York City Metro area. Since joining HDR, I have become a stronger engineer and leader.

**Andy Watson, PE**  
*Project Manager*



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### Women Leading NYSDEC's Division of Water

When the New York State Department of Environmental Conservation (NYSDEC) was formed in 1970, most engineers, technicians and biologists working in its Division of Water were men. However, the number of women joining the environmental professions has gradually increased, and today 47% of the division's professional staff are women – a 17% increase from just 10 years ago. Women are rising to leadership positions and guiding the Division of Water on complex issues. They are the role models and mentors for younger women who are beginning their careers.

Having recognized the power of mentorships, training and support, in 2018 Commissioner Basil Seggos launched the “Women’s Initiative” to cultivate a welcoming culture within the agency that provides all employees with the opportunity to reach their highest professional potential and that recognizes staff talents at all levels of career development. The Women’s Initiative is led by a steering committee with several active subcommittees.

Now in its fourth year, the Women’s Initiative reports many accomplishments, including a successful mentoring program that provides opportunities for professional growth and career development for women. The Women’s Initiative Speaker Series provides a space for all staff, men and women, to tap into the expertise of seasoned professionals, as well as time to discuss matters important to all staff, such as work/life balance.

The Division of Water’s women leaders include two bureau directors, seven section chiefs and three regional water engineers. In fact, one of our sections, the Western Flood Protection and Dam Safety HUB in Avon, New York, is led and staffed entirely by women.

Please meet three of the Division of Water’s excellent leaders: Tara Blum, Jacqueline Lendrum and Susan Van Patten.

### Tara Blum, P.E.



Tara Blum is the Regional Water Engineer in NYSDEC’s Region 8 office in Avon, New York. Tara began her NYSDEC career as an Assistant Engineer, and over the years served as a regional enforcement coordinator and a project manager for remediation projects. Every position taught her new technical and management skills that help her lead the Region 8 water team.

Raised near a lake on Long Island, Tara understood the importance of clean water at an early age. When Tara worked as a consultant before joining NYSDEC, she heard comments suggesting that she was not being taken seriously as a civil engineer because of her gender. Though this reaction to women in the field is disheartening, she learned to blaze her own trail and says that women should not be afraid to speak up and find their own approach to solving problems.

### Jacqueline Lendrum, Ph.D.



Jaqueline Lendrum is the Bureau Director in NYSDEC’s central office in Albany, New York. Joining the Division of Water as a research scientist, Jackie has worked in a variety of positions involving permits, compliance, planning and currently water monitoring and assessment. She welcomed the support of division mentors along the way.

Jackie brings a scientist’s perspective to addressing water-related issues and believes our environment benefits when people with diverse backgrounds work on a project together. She encourages higher education for young scientists. Graduate study in the sciences allows us to discover new solutions to emerging issues. This kind of training is invaluable for protecting and conserving our water resources.

### Susan Van Patten, M.S.



Susan Van Patten is Section Chief in NYSDEC’s central office in Albany, New York. Sue began with NYSDEC as an intern with the Division of Water while getting her master’s degree at the State University of New York College of Environmental Science and Forestry (SUNY ESF). Growing up, Sue loved the outdoors and, when it was time to go to college, SUNY ESF was an easy decision. Although she left NYSDEC

after her internship to start her career with the New York State Department of Health, she came back to NYSDEC.

Throughout Sue’s career, she has focused on working collaboratively with many partners and stakeholders to achieve water quality improvements. She considers herself fortunate to have had the opportunity to work on a wide variety of successful water-related projects. Sue says that working on water issues is an effective way for women to make a difference in the world and that it is fulfilling to work in a field that is critical to life itself.

– James Tierney, Deputy Commissioner for Water Resources  
NYS Department of Environmental Conservation







**Crisis: Management and Recovery**

I am honored and delighted to have been asked to write this column – I hope I can live up to the example of Eileen Reynolds, CSP. I began my scientific career as a limnologist, conducting field sampling and biological and chemical analysis of lakes and reservoirs. Then I became a chemist for a coke oven battery, performing chemical analysis of coal, coke, by-products and wastewater. Then, as a chemist for a wastewater treatment plant, I conducted biological and chemical analysis of wastewater and I became a licensed wastewater treatment plant operator. I transitioned to the occupational safety and health field about 35 years ago; one of my earliest publications addressed wastewater and sewer workers.

The COVID-19 pandemic inspired this article. The pandemic has been a crisis for which so many workplaces were unprepared, never having looked at their workplaces through the lens of communicable disease. In my experience, during crisis training workplaces have been reluctant to consider disease as a crisis, even during the 2009 H5N1 influenza pandemic.

A ‘crisis’ is a situation where an organization either (a) doesn’t have sufficient or accurate information to make decisions, or (b) lacks the resources to control the situation, and the situation unfolds with an escalating flow of events that needs to be managed. During a crisis, the organization has to manage the problem while under intense scrutiny from outsiders, the media and its own workforce.

We don’t want to imagine that things could go terribly wrong. So, how do we get started? Well, we form a diverse team to uncover situations that could become major problems – those most likely to occur or those that would be the most damaging if they did occur – especially those that the organization is not prepared to manage. I push workplaces to consider 11 families of crisis, including those as varied as major equipment failures, serious legal trouble, lost intellectual property, a damaged reputation, or an outbreak of illness in the workplace.

To ensure recovery after a crisis, it is essential for the organization to focus on the most basic functions, not necessarily everything you had before the crisis happened. Especially imagine what will be the needs of people, so that you can make sure that they are getting the support they need as they do the recovery work and so that critical incident stress does not become post-traumatic stress disorder. This preplanning enables a workforce to recover faster and stay healthier, as well as remain more productive on the job.

Yes, it is tough to think about the unthinkable. But, for any workplace, it’s no longer a matter of WHETHER a crisis will happen or not, it’s a matter of WHAT TYPE it is and WHEN it occurs. Of course, it’s the crisis you don’t want to envision that is the one that bites you.

– *Nellie J. Brown, MS, CIH*  
*ILR School, Cornell University*

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# Developing the Water Workforce: Building Your Next Generation of Organizational Leadership through Involvement in Professional Societies

by Lauren M. Livermore

**K**nowledge sharing. Industry experience. Networking. What do these three concepts have in common? All three are the tangible benefits of having your team of staff participate in professional societies. All organizations can benefit from a knowledgeable, skilled and well-connected team who are motivated to better themselves and ultimately protect public health and the environment.

Participation in professional societies can look different from person to person, even year to year depending on the stage of one's career, the type of organization they work for, and the time they have available. Whether it's young professionals starting out on the job or experienced professionals who have been in the water sector for years, there are benefits to the individuals and the organization they work for.

Each one of us has unique experiences that guide our decisions. We can all learn from each other in the water sector. The industry does not exist in a vacuum. We regulate, design, sell, construct and operate complex, expensive equipment that has to work. We can all benefit from the "lessons learned" within the successes and failures of what we learn through publications, our colleagues and from attending conferences. We all have a business to run, whether it's a water resource recovery facility, a consulting firm or an educational institution; regardless of our purpose along the way, our ultimate goals are to be good stewards of our infrastructure and protect public health and the environment.

How can professional societies help build your next generation of organizational leadership?

## Knowledge Sharing

Participation in conferences, webinars and trainings hosted by professional societies are an excellent time to showcase your industry experts, innovative employees and successful projects (even if there were one, two or 10 bumps along the way). I am not saying to divulge intellectual property here but getting your organization's name out there as a leader in selecting and operating an energy-efficient technology at your facility or showcasing your leadership in a specific design concept helps your organization, your team of staff and the industry as a whole move forward. The saying goes that "it takes a village;" professional societies are your village, your county and your consultant all in one place! Share your knowledge, but also work to gain knowledge from others in the sector. Get more training on a specific process or topic, attend a session at a conference on projects with equipment similar to the equipment at your facility or to a design you are working on, get wastewater and water operator credits, get professional development hours. Another saying goes "you don't know what you don't know;" if you are never exposed to anything outside of your own plant or your own way of doing things, how do you know that there is not a better, more efficient way of doing things that you are missing out on?

## Industry Experience

There are some skills that are not readily obtained on the job depending on a person's role in the organization, their number of years in the industry, their title, location, etc. However, opportunities abound at all levels in a professional society. Having a diverse group involved in program planning, committee leadership, and board involvement helps the organization better understand the needs of its members. Similarly, the opportunities to gain additional experience in the industry are numerous, from gaining experience in public speaking by submitting an abstract and giving a presentation, to getting involved in or even leading a technical committee. Leadership opportunities abound in professional societies at the chapter, state and national level where you can help lead a group of volunteers reach a common goal.

## Networking

Making connections and forming lasting relationships within a professional society are often what hooks people in and keeps them coming back for more. These business and personal connections we make help the industry move forward. At a typical professional society conference, it's commonplace to hold an important client meeting, create a teaming arrangement with another consultant, exchange tips and tricks with a fellow operator who is running the same equipment you are, or make critical connections with the representative of a manufacturer you are specifying on a project or installing at your facility, all while gaining knowledge from technical sessions! Make connections with everyone; the water sector community ends up being small and we all cross paths at some point in our careers!

Professional societies also give us and our staff mentoring opportunities they may not have available within the workplace. Let's face it, many of our organizations lack diversity and exposure to other perspectives. Yet, this is exactly what is needed to help our organization grow and flourish, so why not encourage these connections. The village, remember?

Staff who are supported, engaged and motivated perform better. Professional societies can give them the knowledge, experience and connections to help take them and your organization to the next level. How are you supporting, engaging and motivating your next generation of organizational leadership?

---

*Lauren Livermore is the current president of NYWEA and a managing engineer with Barton & Loguidice, D.P.C. in Syracuse, New York. She may be reached at [LLivermore@bartonandloguidice.com](mailto:LLivermore@bartonandloguidice.com).*



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## Member Spotlight

### Sara Igielski, Engineer



Photo credit, Martin Benisen

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*“Be comfortable with being uncomfortable.”*

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Sara Igielski is an engineer at Carollo and serves as the Metropolitan Chapter’s Young Professional Chair (2020-2021) and the Young Professional Representative to the NYWEA state board of directors (2021-2023). Sara completed an accelerated five-year program at the University of Maryland, College Park, where she received her bachelor’s and Master of Science degrees in civil engineering in 2015 and 2016, respectively.

During her academic career she spent most of her time in the Stormwater Research Lab where she studied urban stormwater nutrient removal and specialized in complete denitrification in bioretention to help restore the Chesapeake Bay. Through her research she began to understand the importance of integrating sustainable solutions to solve complex problems, and how water/wastewater professionals have a commitment to both communities and the environment.

After completing her degree, she returned home to New York and has dedicated her professional career thus far to serving the greater metropolitan area. To date Sara has had the opportunity to put her passion into practice by contributing to large-scale programs focused on resilient, sustainable and innovative solutions throughout various wastewater resource recovery facilities and at the community-level. She recognizes this is only the beginning and looks forward to a fulfilling career as a water/wastewater professional.

#### **Career Advice to My Younger Self**

*What would you tell your younger self about your career development?*

I often say to students or fellow young professionals that you should be comfortable with being uncomfortable. Personal and professional growth is an accomplishment and a willingness to face a challenge, and succeed, head-on. There is never an expectation for you to know everything, but it is a fair and reasonable expectation that you try. Of course, it is easy to let self-doubt or the risk of failure consume us, but it is only when we are uncomfortable that we are truly pushing the boundaries of what we are able to achieve.

For me, I struggled with public speaking – and I still do! But I had a research adviser who helped me articulate my thoughts; I had (and still have) project managers who offered me the opportunity to lead client meetings and workshops, and mentors that helped me find my voice and the confidence to use it. I stumbled through my first workshop, but each one got a little easier and eventually I found my stride. And I continue to seek opportunities to improve my public speaking skills because it is a learning process – not a milestone – by participating in trainings, helping others and practicing!

#### **Mentoring**

*How did a mentor help you? How are you paying it forward?*

I would not be where I am today without the mentorship from some of the most passionate and skilled industry professionals.

Every Friday for over three years I would have a 30-minute one-on-one check-in discussion with my research adviser. This first mentor-mentee relationship set the course of my career, but more importantly, it demonstrated to me what makes the relationship successful. My adviser challenged me to ask and solve more complex research questions, motivated me to improve my written communication skills, and offered me the opportunity to collaborate with researchers in other departments and at other universities. My adviser did all of this because I did the work – I put in the time and was hungry for more. I have carried this expectation with me in my professional career and it has afforded me the opportunity to develop and maintain strong relationships with other professionals whom I admire.

To me a mentor is a motivator, a teacher and a role model. So, to pay it forward, I seek to exemplify these qualities when collaborating with other young professionals, especially interns. Working with interns has been one of the most rewarding experiences for me because it is an opportunity to pull back the curtain on engineering and share experiences with others. It has challenged me to prioritize my workload differently by allocating time to prepare, teach and review another’s work (and not just my own). In doing so, I can help young professionals build their technical skillset while improving my own delegation and communication skills.

#### **Organizational Support**

*How did your organization support you to be successful in your position?*

Carollo supports me to be successful by investing in me. Below are just a few examples of investment opportunities.

#### **Building Strong Relationships**

Carollo is committed to building strong relationships between colleagues, peers and clients. Every Monday at 9 a.m. our mid-Atlantic region joins a Microsoft Teams call; it is relatively informal, typically just a check-in for all employees where we discuss workload, business development, and other noteworthy news that we want to share with one another. For me, it has demonstrated Carollo’s value of building a community of working professionals and offering an opportunity to strengthen our team.

#### **Engagement and Mentoring**

Carollo engages and mentors young professionals throughout a project lifecycle to help sharpen their technical skills. In my experience it means that an answer or resolution is just a phone call away, and moreover, it offers me an opportunity to learn and collaborate with industry experts. I can work on the preliminary size and cost for a wastewater pumping station one day, and then discuss design implications of a stormwater hydraulic model the next. Building these relationships across our various service lines coupled with Carollo Engineers’ Education Center, which provides on-demand technical training, allows me to contribute continually and meaningfully to project work.

#### **Commitment to Quality**

Carollo demonstrates a commitment to high quality work, and therefore, deliverables are subjected to a company-standard quality review. As a young professional I appreciate this commitment

because it creates a collaborative and transparent working environment between team members with various levels of experience. It also offers an opportunity for me to receive constructive feedback and improve. In turn I am mentored on a weekly basis, if not more!

## Inspiration

*What inspires you most about what you do?*

Inspiration comes from impact. My teacher for advance placement (A.P.) chemistry invited an Engineers Without Borders volunteer to our classroom. By the end of the guest lecture, I understood that a water/wastewater professional is more than a “number cruncher.” We are problem solvers. We are innovators. We are stewards of the environment. We are community members and advocates. Therefore, the problems we solve and the solutions we deliver are for all of us. And I could not wait to get to work!

This philosophy – that inspiration comes from impact – has continued to motivate me. Currently I am supporting a large-scale stormwater management and resiliency program for a waterfront community. We are developing solutions to mitigate flooding, but also to meet and deliver community expectations for revitalization, redevelopment and preservation of historic character. So yes, we “crunch numbers” but that is only a small fraction of what we do; we work directly with those affected including community advocacy and interest groups, business owners and municipal employees. Building these relationships has helped us understand their problems, sensitivities, and vision so we can all work toward a common goal.

## Vision

*What is your vision of the water workforce in the future?*

During the 2021 annual meeting I participated in the discussion panel “Women of Water Event – Reflect, Protect & Connect”. Our current NYWEA president, Lauren Livermore, facilitated the panel and it truly embodied my vision for the water workforce moving forward. It amplified women’s voices, one of many underrepresented groups in our industry, through open and honest dialogue.

Like many of the women on the panel, I am incredibly proud of my professional accomplishments and yet, I constantly question whether I am worthy of them. My greatest challenge to date: impostor syndrome. And the panel demonstrated that “... the only way to stop feeling like an impostor is stop thinking like an impostor.” It is not an easy feeling to overcome but this virtual event reaffirmed to me that I am not alone in my feelings. The “Women of Water” is a community, and communities can make change. So, my vision for the water workforce is as follows:

1. Empowered to make a positive and lasting impact on our communities and the environment.
2. Equitable to create safe spaces and opportunities for underrepresented/underserved groups in management, leadership and operations.
3. Sustainable to identify, inspire, and mentor the next generation of industry professionals.



## Member Spotlight

### Hannah Rockwell, Engineer



Photo credit: Ashley Johnson

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*“No opportunity is off-limits.”*

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Hannah Rockwell is a water resources engineer in Rochester, New York, where she works on a range of wastewater and drinking water projects for clients throughout the Northeast. After growing up in Michigan, she graduated from the University of Michigan and moved to Rochester to take her first full-time engineering job with Arcadis. This summer marks six years for Hannah both in Rochester and with Arcadis. She’s spent this time creating community within and outside of her career and comments that she’s learned more than she could have imagined in that time. Hannah loves using her technical knowledge and personal relationships to solve problems and make the communities she works in better places.

Hannah is passionate about the outdoors and spends much of her time outside of work running trails training for ultramarathons and backcountry hiking. She is involved with a local running store where she helps others train and participates in trail workdays to improve the natural areas that she loves. Hannah’s professional and personal connections to the environment inspire her to be a better community member, engineer, and person.

## Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

I have always had a passion for the outdoors and protecting the environment. Combining that with my fascination with building things and problem-solving, environmental engineering was a clear path for me! I was fortunate enough to have mentors who steered me toward consulting based on my interests and unique skills, even when I did not know where my career would take me.

While at the University of Michigan completing my environmental engineering degree, I sought out a wide range of experiences including research projects, student engineering teams, consulting internships, and even served as a campus tour guide. These experiences helped me figure out what I was interested in and – as importantly – what did not interest me. Reflecting on these experiences, I realized consulting was the perfect fit for me. It allows me to combine the technical information I enjoyed learning with the public speaking, problem-solving skills, and attention to detail that I continually work to improve.

I made the move to New York from Michigan to take my current water resources engineering position and haven’t looked back! My time with Arcadis and in Rochester has been spent developing new skills, learning about the industry, exploring my interests, and obtaining my professional engineering license, all while working on exciting local and regional projects that have kept me engaged and enthusiastic about my career.

My passion and drive for the work that we do and the impact we can make has allowed me to advance within the company and mentor numerous junior staff and interns along the way. Just like

*continued on page 14*

*continued from page 13*

working as a teaching assistant in school, I love the opportunity to support others in their journey and encourage their personal and professional growth.

## **Pivot Points**

*What fuels your passion?*

I am fueled by my passion to never stop learning new things, help others advance in their careers, and leave a lasting impact on the communities where I work, live and explore. While engineers do highly technical work, I am energized by the people I interact with and the collective contributions we can make.

Additionally, I have spent a significant amount of time in the New York wilderness, and these experiences have solidified for me the importance of our profession in protecting the environment for our communities and the generations to come. Knowing I can contribute to this cause fuels my passion to consistently bring my best to everything I do and seek out the best team members for all my endeavors.

## **Drivers**

*What has helped propel your career?*

Curiosity has helped me to continually learn and grow throughout my career. By asking questions of mentors within and outside of my project teams I have gained insight into their career paths, learned of the opportunities available to me, and had the ability to expand my own project and technical skills.

I enjoy talking to and collaborating with others, which has made client interaction a priority goal of mine. I bring my attention to detail and responsiveness to all of these interactions which has opened doors for me and helped to propel my career. These skills are often overlooked in engineering education and are invaluable in our profession.

I was also strongly encouraged early on in my career to become involved in a local professional organization – NYWEA! Through my involvement in the Genesee Valley Chapter, I have made great connections with others in the field and have been afforded the opportunity to give back to the community. I was elected to the GVC Board in 2019 and the state-level Certification Committee in 2020. This experience has broadened my horizons and propelled my career in ways that would not have been possible without the connections I have made and opportunities I have been given as part of the organization.

## **Career Advice to My Younger Self**

*What would you tell your younger self about your career development?*

If I could offer one piece of advice to any new college graduate (my past self included), it would be that no opportunity is off-limits. You will be your own best advocate and should pursue your interests with passion and be open to those interests evolving over time. However, building a network of folks who will champion you and offer you support for exciting opportunities will take you much farther than you can go on your own. Take the time to invest in your own network through professional organizations and your mentors; it will pay dividends over time.

## **Being an Effective Role Model**

*What makes you an effective role model in workforce development?*

As a role model and mentor, I believe it's critical to have uninterrupted time to listen to and help others as they develop their own paths and careers. Approaching mentorship with compassion, hon-

esty, and the sharing of personal experiences can make a lasting impact on everyone involved that extends far beyond the individual conversations you have.

Additionally, it's important to see people you can relate to in the roles you want to take on. While more women are joining the profession, we are still underrepresented. It's important to take the extra time to reach out to find female mentors for yourself and actively seek out other women entering the field to help them build their own networks and successful careers.

## **Organizational Support**

*How did your organization support you to be successful in your position?*

Arcadis has supported my career development from my first day on the job through opportunities to work on a wide range of projects, exposure to many mentors at different experience levels, and encouragement to become involved in NYWEA as well as attend (and eventually present at) conferences. This has been invaluable as my knowledge and positions have changed over time. I encourage anyone entering the field to ask interviewers tough questions about these topics to ensure their growth and success are supported.

I have also been encouraged to become involved in the community outside of my career and to take time for my personal life. This support of work-life balance has made me a better professional, afforded me time to explore passions outside of work, and allowed me to accomplish some of my bucket list goals including running the Grand Canyon Rim to Rim to Rim in 2019.

## **Inspiration**

*What inspires you most about what you do?*

I am inspired by the people in our industry – engineers, operators, municipal staff and academic researchers. They have dedicated their careers to protecting the environment through their work. These individuals make a difference in their communities every day, and I am proud to call them my colleagues and friends. Not only do we all work together to protect the environment and public health, which often goes unseen by the public, we also provide a vital service to our communities. This work brings me satisfaction and a passion for all the challenges ahead of us.

## **Vision**

*What is your vision of the water workforce in the future?*

In the future I hope to see a more diverse and open water workforce that more closely resembles the communities we serve. Bringing people together with diverse backgrounds, perspectives, and ideas will make a positive contribution to our industry! While we have come a long way overall, we still have a significant amount of work to do to increase diversity across all groups, particularly among operators. I am excited to see how NYWEA facilitates the development of this workforce through programs including early exposure to the field, reduced barriers to entry, and scholarships.



# Then and Now: Women Engineers' Perspectives on Changes and Challenges in the Field Since the 1970s

by Laura Ettinger, Nicole Conroy and William Barr II

*Understanding the career trajectories and experiences of women who came of age during the 1970s may help institutions develop better means of supporting female engineers today.*

The number of women in engineering continues to be relatively small, and even when women enter the field, they often do not stay. Researchers have explored why these problems persist and have offered many suggestions for changing the landscape, yet problems with recruitment and retention remain, and solutions seem elusive. Although women engineers, particularly those who have been in the profession a long time, are in excellent positions to see the problems and to suggest ways to create a more welcoming and inclusive profession, they have rarely been engaged in seeking solutions. In our project, funded by the National Science Foundation, we address this limitation by inviting women engineers to share their stories (NSF 2017).

Our research assesses a pivotal generation of pioneering American women engineers who graduated from college in the 1970s. In that decade young women, encouraged in part by the women's movement and changing social expectations, flocked into higher education and, to a much lesser extent, engineering. These female students, although not the very first women to enter engineering, were the beneficiaries of new affirmative action laws and, unlike their predecessors, they were part of a small but growing cohort of women engineers. The percentage of women earning undergraduate degrees in engineering grew at a rapid rate from less than 1% in 1970 to 9% in 1979 (*American Association of Engineering Societies 1981*). Understanding the career trajectories of these women may help institutions to develop better means of supporting female engineers.

## Project Overview

The results presented here are part of a larger, ongoing mixed-methods study on North American women engineers who graduated from college in the 1970s. This data, from 244 participants' responses to open-ended questions on a nationwide survey, included (a) perceptions of challenges for new and experienced women engineers today and (b) how challenges have changed over time, as well as (c) advice for young women engineers.

To be eligible for the survey, a participant had to: identify as a woman, have grown up or worked in North America, have earned an undergraduate degree in the 1970s, and have majored in engineering or worked as an engineer at some point in her career. Demographic information of participants can be seen in **Table 1**.

Because the proportion of racial and ethnic minorities is small, the race/ethnicity of the respondents is not noted in the results below, except when a respondent discusses it.

## Influences

In response to the questions "What influenced you to choose a degree and/or career in engineering?" and "What is one of the most satisfying things about being an engineer?" survey respondents reported that they were often drawn to engineering as a result

**Table 1. Demographic Information of Survey Participants.**

Variable	(%)
<b>Race**</b>	
White . . . . .	93
Asian/Asian American . . . . .	2
Latino(a)/Hispanic . . . . .	2
African American/Black . . . . .	1
Other . . . . .	3
<b>Where did you grow up?</b>	
In the U.S. . . . .	91
Outside the U.S. . . . .	9
<b>Undergraduate degree</b>	
Engineering . . . . .	82
Math/Science/Computer Science . . . . .	13
Other . . . . .	5
<b>Primary employment industry</b>	
Manufacturing . . . . .	22
Education . . . . .	20
Consulting . . . . .	8
Electric, Gas, Sanitary Services . . . . .	5
Transportation . . . . .	4
Construction . . . . .	3
Public Administration . . . . .	3
Health Care . . . . .	2
Technical Sales . . . . .	2
Communications . . . . .	2
Other . . . . .	29

Notes: Sample demographic information (N = 244)  
\*\*Participants could select "all that apply"; thus, the total exceeds 100%.

of a love and/or aptitude for math and science or because of encouragement by others in "a time of space and science." They continued to enjoy the opportunity to solve challenging problems, to do meaningful and varied work, to work with smart colleagues, and to help others in a prestigious field where they could be financially successful.

## Challenges Then and Now

The open-ended, multipart survey question: "In your experience, what is one of the greatest challenges faced by young women engineers? By experienced women engineers? To what extent do you believe the challenges have changed over time?" yielded especially rich answers.

Some respondents distinguished between the challenges facing young versus experienced women engineers, while others did not. Regardless, the challenges facing women engineers mentioned most frequently can be divided into three themes:

- 1) Not getting respect.
- 2) Not fitting in.
- 3) Work/family balance.

*continued on page 16*

### **Challenge #1: Not Getting Respect.**

The most frequently mentioned of the challenges (32% of respondents who answered this question) was not getting respect from peers and supervisors. This was also expressed as not being taken seriously, not being heard, having to prove oneself repeatedly, and people not believing that women can be engineers.

One survey respondent suggested that women engineers do eventually gain respect, but they have to do extra work to get it:

“In mentoring young female engineers, I have found that they face most of the same problems that all women faced in the workforce when I started working and when I retired. Some male colleagues did not/do not respect the opinion or work of a female engineer, regardless of her experience or education. Until they experience the female engineer being competent and respected by others in the organization, they are disrespectful and do not listen or respond appropriately.”

Some explained that women “have to work twice as hard” as men to prove themselves. Or, as another woman put it, “women engineers will be fully part of the field when mediocre female engineers are accepted as easily as mediocre male engineers.” She wasn’t sure whether this has occurred, as she left the workforce following the birth of her children and a lack of quality child care.

### **Challenge #2: Not Fitting In.**

Twenty-two percent of the respondents who answered this question said that one of the greatest challenges experienced by women engineers was and remains not fitting in. They articulated this as a feeling of being left out; isolation; being told they didn’t belong; being an oddity; and not having access to “good old boys networking.”

A number of women said this was especially difficult when they were younger because women engineers were so unusual then.

“When I was a young engineer, my biggest challenge was convincing others on the job that I was more than a temporary freak show.”

Many women explained that the challenges of not fitting in have continued.

“The biggest challenge is being reminded that women will never be considered or accepted as true engineers. We are ‘women engineers.’ People don’t refer to a man as a ‘man engineer,’ he’s an engineer. We are constantly reminded that we don’t truly belong. I don’t believe that this challenge has changed overtime [sic].”

### **Challenge #3: Work/Family Balance.**

The third most frequently reported challenge (21% of respondents who answered this question) was work/life or work/family balance, with three interrelated components.

First, according to the respondents, supervisors and peers often see women differently once they have caregiving responsibilities.

As one respondent noted: “Being a member of the ‘model minority’ [Asian American respondent] I have encountered a LOT of subtle discrimination. When my mother got ill, my female boss demoted me so that ‘You can take care of your mother.’ I didn’t have a choice.” Her boss assumed that the role of an Asian American woman was to care for her elderly parent.

Second, many women faced difficulties trying both to do their jobs and care for their families. As one respondent explained, one “of the biggest challenges remain[s] ... work-life balance (particularly timeout for children or elder care). The young women engineers that I talk with face virtually the same child care problems that I did 30 years ago!”

Third, some women altered their career paths because of their family situations. A number of respondents said that once women have children, they are not able to compete with men who are in the same careers because they (the women) have more on their plates. Therefore, one woman advised:

“If you have a family, providing the flexibility to manage it will still be primarily the mother’s role. Don’t skip the family because of this, but just be aware of it. Don’t consider yourself a failure when this reality strikes.”

At the same time, a few women noted that either they or others chose not to have children because they felt they could not combine career and children.

The three components of this challenge are related because what appears to be personal choice (i.e., the decision not to seek out certain opportunities) is often constrained by external factors beyond a woman’s control.

### **Gender Bias Decreasing?**

Wide-ranging perspectives emerged on how the challenges of engineering have changed. The most frequent answer was a variation of “progress is slow.” Respondents indicated that some progress has occurred, but women still face discrimination and bias.

“The greatest challenge for me was continuing to believe in myself when all the messages I was getting was [sic] that I would never be taken seriously or promoted or given raises, or even hired at the same rate as men who were clearly less qualified and not as smart as I was. That get’s [sic] seriously annoying. Also being asked to do that in a dress. That last part has changed.”

“The challenges have lessened a bit over time with more visible

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and capable women in leadership positions, but many of the issues faced by young women engineers are remarkably similar to those I faced nearly 40 years ago.”

Many noted that the bias has become more subtle. “It’s still an old boys club at the top. It takes generations to change this. The challenges are subtle, ingrained and, to some extent, subconscious. It’s gradually getting better but there are numerous glass ceilings along the way.”

In the words of another respondent, this kind of institutional bias “can really hurt young women because it can take them years to recognize it, by which time they may have lost a lot of ground.”

However, not all of the women reported that “progress is slow.” Some women maintained that prejudices due to gender no longer exist, or never existed. Others said that things have gotten dramatically better for women engineers or that they have an advantage now.

“Today, young women engineers are more accepted mostly because there are just more of them. It’s easier to get their foot in the door. Younger male engineers are also use[d] to working with women because they went to school with them. Therefore, they don’t think much of it, or why it use[d] to be such a big deal.”

“When [I] first started, it was like you weren’t even in the room. Now, it is not a ‘thing’ that the young men or women even notice when working. [M]any young women are in management – not upper, yet – and have husbands at ‘home.’ Nice to see attitudes and behaviors changing.”

A few said that things are harder for women today. Several noted that the persistence of gender bias varies by industry.

## Advice for Young Women

In response to the question, “What advice would you give to a young woman who is thinking about or pursuing a career in engineering,” 36% of respondents stated enthusiastically that young female engineers should either “Do it!” or “Go for it!” In fact, only two women said they would discourage women from pursuing engineering careers.

For some of the pioneers, becoming an engineer extends beyond the satisfaction of the profession, and for others, skills translated into employment in other fields altogether. As one woman noted, an engineering degree “gives you flexibility to work in a variety of capacities and in a variety of industries.”

While supportive, some pioneers argued that young women need more than a degree to prepare for the challenges they may face; “being yourself” and having “thick skin” were suggested as important coping strategies.

“Be persistent about it and never give up. Having a stubborn streak also helps. This is still true: a woman has to be twice as good as a man to be considered half as good. However, this is not difficult.”

Others stressed the importance of finding a supportive network. “Understand the story of women engineers, the battles they faced, the barriers they broke and how the tactics they used to move forward can help you as you progress. Use the ‘Old Girls Network’ – it does exist. The Society of Women Engineers is a good place for that, but so are other technical societies in your field. There are women there who might have encountered a similar situation that can help.”

Some likewise advised identifying both male and female mentors early on.

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**“Today, young women engineers are more accepted mostly because there are just more of them. It’s easier to get their foot in the door. Younger male engineers are also use[d] to working with women because they went to school with them. Therefore, they don’t think much of it, or why it use[d] to be such a big deal.”**

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“Find a good mentor, maybe multiple mentors both male and female and in engineering and not in engineering.”

Others suggested that young women engineers should not focus on “looking for discrimination. It may exist, but it’s not productive to analyze every interaction for signs of discrimination.”

Despite acknowledging the difficulties that women are likely to face in engineering, many of the pioneers implored young women to “follow your passion” of problem-solving to enact change.

“I encourage young women to do it if they care about solving the world’s problems. An engineering education provides a strong basis for studying a situation [or] figuring out how to make it better, so even if they ultimately decide to pursue a different field, they will have a fabulous foundation for decision making for the rest of their lives.”

Yet, again, others were quick to remind future female engineers of the gender-related troubles they may face.

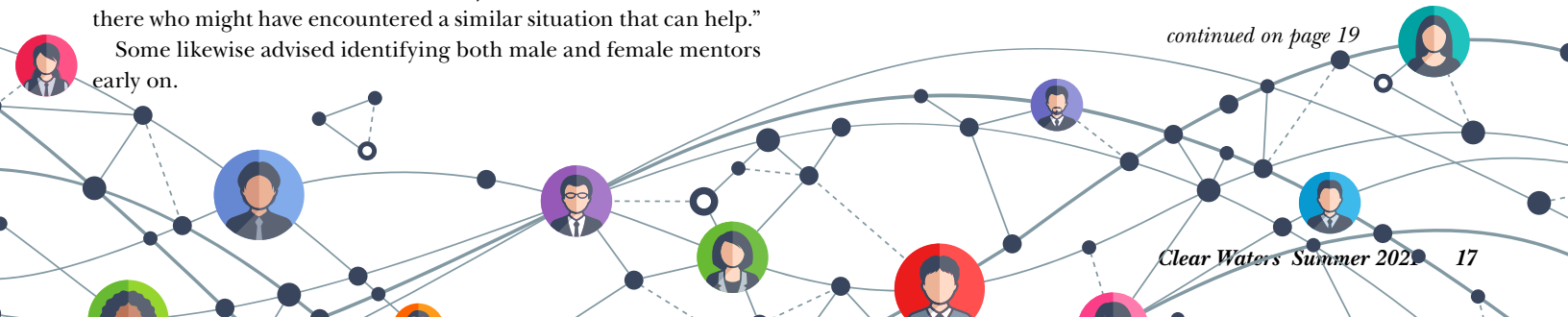
“I would encourage them to follow their passions but also be honest that mechanical, electrical, and aerospace engineering are still a ‘man’s world’, and they need to be prepared for that.”

In sum, while some pioneers debated the impact of gender-based discrimination on young women’s futures, others advised that women engineers can succeed by following their passions, securing marketable skills, and through mentorship and networking.

## Discussion and Common Themes

Survey respondents overwhelmingly recommended that young women pursue engineering degrees or careers. However, most of the pioneers also reported that they faced a number of challenges, some of which they still see in engineering. While many suggested that things had improved for women in engineering since the 1970s, others emphasized that “progress is slow.” The three most frequently cited challenges – not getting respect, not fitting in and work/family balance – are connected. When you don’t fit in, whether it’s because you actually don’t fit in, you’re told you don’t fit in, or you feel you don’t fit in, you have to prove yourself repeatedly. This is what Joan C. Williams, J.D., et al. call the “prove-it-again bias,” referring to the many studies that show that “women and people of color often need to be more competent than white men in order to be seen as equally competent” (Williams, et al. 2016).

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The challenges of not getting respect and not fitting in are connected to the third challenge: work/family balance. Work/life balance will inevitably be a challenge for women so long as institutions devalue their contributions.

## Recommendations

Our preliminary findings suggest that although the engineering landscape has changed for women over time, it is far from equitable. To work toward the goal of greater gender inclusivity in engineering, we offer three primary recommendations: mentoring, interdisciplinary approach and empathy and action.

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**“Today’s young women in engineering are, in a sense, still pioneers, so learning from the women who came before them can demonstrate that the young women’s experiences are neither irrelevant nor isolated incidents.”**

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### Mentoring

Pioneers cited the importance of finding a supportive network and multiple male and female mentors. The Society of Women Engineers and other engineering organizations have long advocated and promoted mentorship. We recommend that engineering organizations create mentoring programs, based on social science research and with appropriate training for mentors and mentees, which tap specifically into the experiences and perspectives of late-career and retired women engineers. As evidenced by their rich survey responses, pioneering women engineers have valuable experiences and wisdom to share, and a desire to do so. Today’s young women in engineering are, in a sense, still pioneers, so learning from the women who came before them can demonstrate that the young women’s experiences are neither irrelevant nor isolated incidents. We also recommend that mentoring programs acknowledge that women need different types of mentoring at different stages of their careers and lives.

### Interdisciplinary Approach

Engineering has been trying for decades to increase the number of women in the profession. We recommend taking an interdisciplinary approach to this problem, as well as to address the cultural challenges facing not just engineering, but many other professions, as evidenced, for example, by the recent #MeToo and #TimesUp campaigns. Social scientists can provide an interdisciplinary framework to help dismantle the complex, structural challenges women have faced and continue to face in engineering, and that may otherwise feel insurmountable.

### Empathy and Action

The pioneers have generously told us their powerful stories. Their stories have the potential to create empathy and provoke necessary action.

We recommend that these stories be used to create “empathic unsettlement” – what we’re calling “empathy and action” – a concept from Dominick LaCapra, Ph.D., that suggests we should try to feel another’s struggle (empathy) while realizing that we cannot fully understand what someone else experiences. Therefore, we

must be willing to be unsettled by both empathizing and knowing that fully doing so is not possible (LaCapra 2013). For the profession to become more inclusive and to realize its full potential, senior management in particular, most (though not all) of whom are male, must be willing to listen for and examine their own unconscious biases. In leading these discussions by example, both men and women in positions of influence will be more willing and able to create an environment in which discussions of unconscious biases focus on questioning stagnant institutional practices.

## Conclusion

The pioneering women engineers who responded to our survey discussed both the satisfaction and success they experienced in their careers, as well as the challenges they faced and those that continue in the profession. Given the changes in laws (in hiring, sexual harassment and family leave, for example) and culture since the 1970s, it seems like women engineers should be celebrating their collective progress, and many are. The hard-to-identify challenges rooted in gender bias, however, resulted in many of the women saying: “things have changed, but ...”

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*Laura Ettinger is an associate professor of history at Clarkson University. She received her Ph.D. in history, as well as a graduate certificate in women’s and gender studies, from the University of Rochester. The author of *Nurse-Midwifery: The Birth of a New American Profession* (The Ohio State University Press, 2006), Dr. Ettinger’s research focuses on the history of women, gender and the scientific, technological and medical professions. She received a National Science Foundation grant for 2017-2018 to study American women engineers who graduated from college in the 1970s. Nicole Conroy is a lecturer in human development and family studies at The University of Vermont. She received her Ph.D. in child and family studies from Syracuse University, as well as a graduate certificate in women’s and gender studies. Dr. Conroy’s research and teaching focus on the interrelationships between individuals, families, and sociocultural contexts that shape development, with a special focus on intimate partner violence. William Barr II is a research assistant at Clarkson University, working with Laura Ettinger, Ph.D., on her project “Breaking Ground: American Women Engineers from the Baby-Boom Generation.” He graduated summa cum laude from The State University of New York at Potsdam in May 2017 with majors in history, literature and sociology, and a minor in women’s and gender studies. Barr planned to pursue a doctorate in sociology in the fall of 2019.*

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## Member Spotlight

### Pamela Elardo, Engineer and Operator

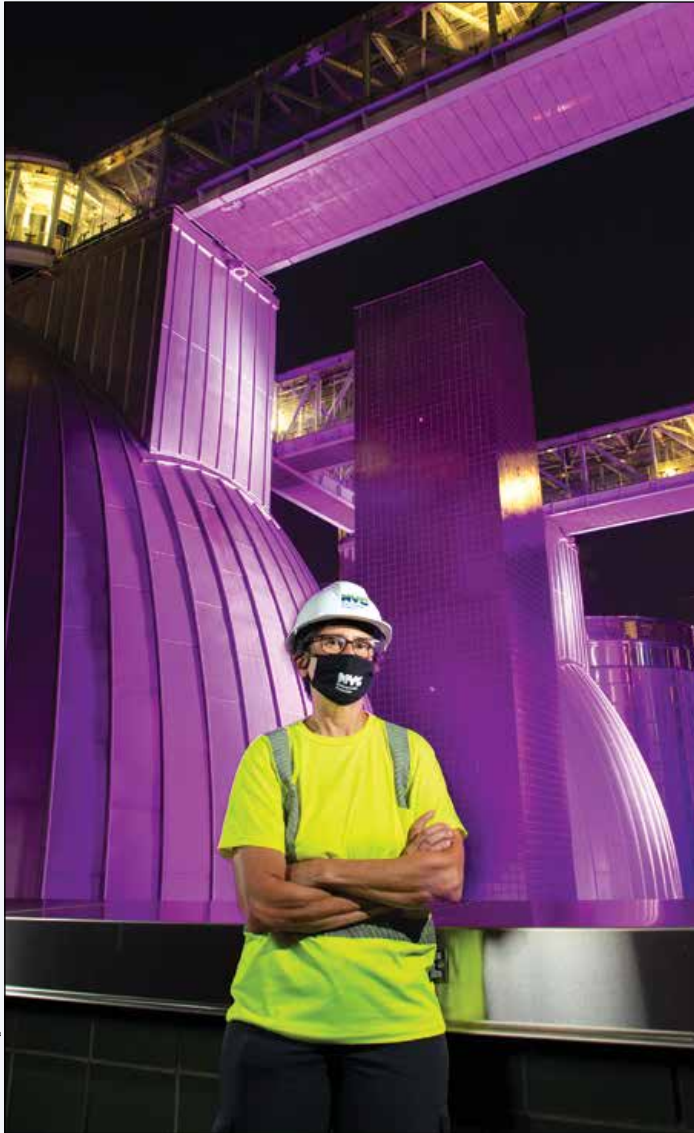


Photo credit: Jean Schwarzwalder/DEP

*“We save lives, all day every day.”*

Pam Elardo has identified as an environmentalist since the third grade and grew to become a leader in wastewater resource recovery. She began as an engineer in the U.S. Peace Corps, then joined the Washington State Department of Ecology. Her next stop was the King County Wastewater Treatment Division, and she now serves as the deputy commissioner for the New York City Department of Environmental Protection Bureau of Wastewater Treatment (NYC DEP BWT). Pam keeps involved in international sanitation programs, is a professional engineer, and enjoys being a licensed Grade 4 wastewater treatment plant operator.

#### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

See life chart below. It says it all. I figured out early that I loved and was good at math and science. The rest is her-story!

#### Pivot Points

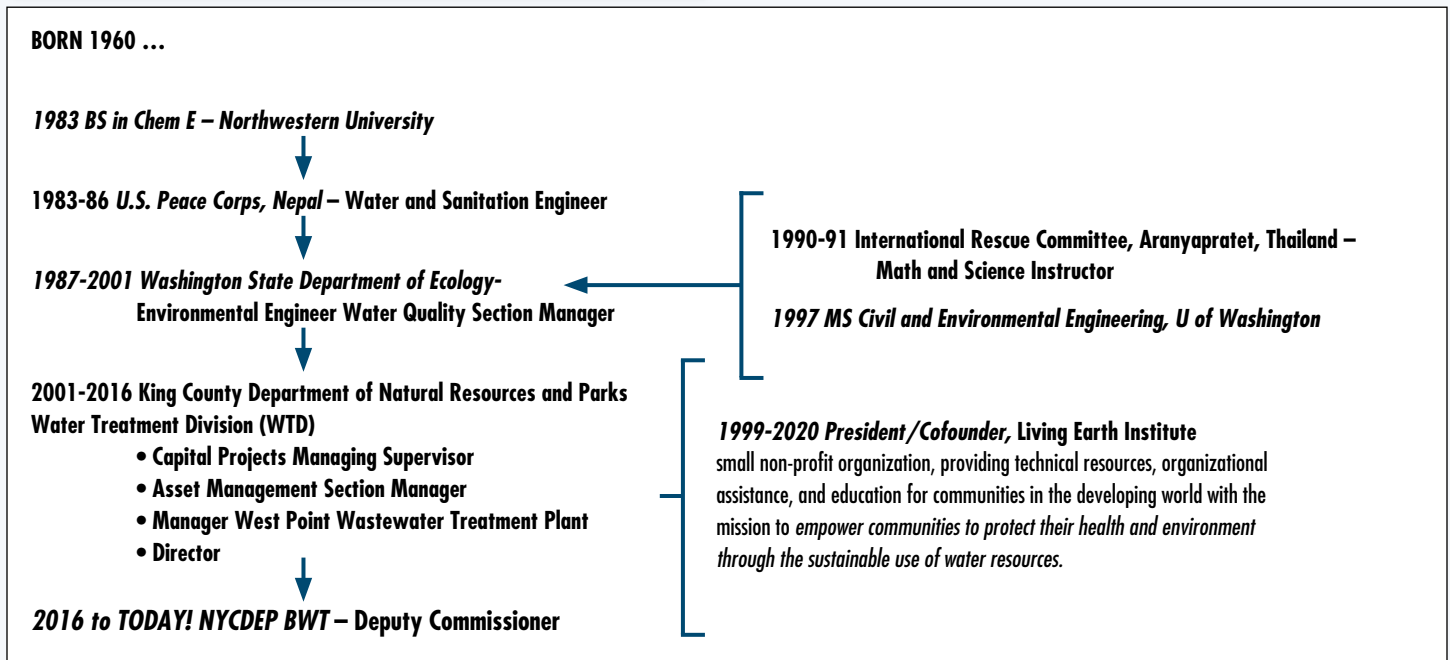
*What fuels your passion?*

Protecting public health, enhancing the environment, and creating resources from wastewater fuel my passion. I am also focused on our NYC DEP BWT becoming leaders in resource recovery and the circular economy, as well as in equity and social/environmental justice related to our work.

#### Greatest Challenges

*What have been your greatest challenges, and how did you overcome them?*

I entered my professional life at a time when women were not common in male-dominated academic and professional environments. Like all women and other minorities in that setting, challenges range from assumptions that others place on us related to our capability to more outright forms of discrimination or harassment.



## Drivers

*What has helped propel your career?*

I am driven by the passion of the work that we do and its importance to the communities we serve.

## Career Advice to My Younger Self

*What would you tell your younger self about your career development?*

I would tell myself, "You are in for a great ride! This sector will take you places you never imagined, and you will have positive impacts on individuals, the environment and surrounding communities."

## Mentoring

*How did a mentor help you? How are you paying it forward?*

I have gleaned a lot of wisdom through extracting and following what I find best in many people I have worked with and learned from along the way. I constantly want to help those coming up in our industry, particularly women, minorities and anyone who feels like they don't fit in for any reason. I want to be the person that I wish I had to look up to when I was beginning in my career.

## Being an Effective Role Model

*What makes you an effective role model in workforce development?*

I care about my work and my staff, and I express this caring frequently.

## The Coronavirus Pandemic Effect

*How has the pandemic changed your mindset on your career development or work-life balance?*

As a leader late in my career, I needed to be a solid leader through this crisis. In fact, the pandemic created an even stronger drive in me to protect the people who are in the field, working on the front lines of our industry. The overall stress of the experience, while not over yet, has brought the senior leaders on my team closer together, and I know that we benefit from that as we face current and new challenges ahead.

## Organizational Support

*How did your organization support you to be successful in your position?*

Having grown my career primarily outside of New York City, I came with a lot of perspective on how to improve our business as a public utility. For example, in my Bureau I found Organizational Development/Human Resources was undervalued, and when I first started, this role was absent from my leadership team. I pushed the approval authorities hard to get an OD/HR director under me and make it part of how we think and plan in all aspects of our work. I also created a Business Enterprise Systems Directorate under me so we can adopt and advance standard and best-industry practices to improve all aspect of service delivery more reliably and cost effectively.

## Inspiration

*What inspires you most about what you do?*

We save lives, all day every day. Through our work, we also bring ecological improvements to our waterways that have been long lost. Our work is the reason we have whales and dolphins back in New York Harbor!

## Vision

*What is your vision of the water workforce in the future?*

I have a vision of a diverse, dedicated, technologically advanced, and emotionally intelligent water workforce that is innovative and inspired to meet the challenges for our changing planet.



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8:45 am-4:10 pm

**Women of Water Summit**

Downtown Renaissance Hotel  
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**November 4, 2021**

1:00 pm-2:30 pm

**Basic Math for Wastewater and  
Water Operators Webinar Part 2\***

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**November 9, 2021**

1:00 pm-3:00 pm

**Anaerobic Digestion  
& Biogas Utilization,  
Master Class Webinar Part 1 of 2**

Virtual via Zoom

**November 16, 2021**

1:00 pm-3:00 pm

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## Member Spotlight

# Claire Baldwin, Organizational Management Specialist



Photo credit, Claire Baldwin

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*“Say yes to a winding pathway.”*

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Claire Baldwin, D.P.S., is a specialist in organizational management and effectiveness. Her doctoral studies have included topics such as industrial psychology, emotional intelligence, team dynamics and enhancement behavior in performance. She has also worked in the design and construction industry for over 30 years in various roles. These functions have included environmental planning, owning an electrical contracting firm, and most recently working as a management consultant for the last decade and a half with CDM Smith. Claire has expertise in industrial and labor management and is a certified mediator, internationally certified facilitator and change management certified, as well as being a Scrum Master in lean methodology.

Claire’s career was grounded in urban and regional planning with the attendant environmental, technical, regulatory, and financial aspects but has expanded over time to address larger business leadership challenges in the water and wastewater industry. Her clients have included such organizations as: New York City Department of Environmental Protection, Philadelphia Water Department, Federal Emergency Management Agency, Environmental Protection Agency, Texas Department of Transportation and more recently the Institute of Water Resources for the U.S. Army Corps of Engineers.

### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

I have always had an interest in how things fit together and work as systems and embraced the opportunity to work in an industry that deals with a core human need – water! As an early career person, I wasn’t aware of the many different facets of this industry and the many ways in which I could contribute. The diversity of projects and the people who contribute to this field have kept me engaged for many years and energized about the twists and turns in my career journey.

Oddly, it has been the very wide-ranging number of roles I have held that have allowed me to build a body of knowledge and understanding of our industry. Thus, I have found that saying yes to a winding pathway has been both interesting and powerful in advancing throughout my career.

While I have not taken any major breaks in my career, I have been lucky enough to have flexibility through remote work, which has allowed me to attend to both family obligations and work demands. But I have come to understand that there is often not a “balance” in the work/life balance and being comfortable with that has been a critical key to success.

### Career Advice to My Younger Self

*What would you tell your younger self about your career development?*

I would tell my younger self to have more confidence in what I understand and know. Being often the only woman in the meetings

when I began this journey, I sometimes lacked conviction in my own advice and career direction based on unfounded beliefs I held. So I would coach myself to take a closer look at my successes and what they were really attributed to in reflecting on my skill set.

### Mentoring

*How did a mentor help you? How are you paying it forward?*

While I seldom had formal mentors, I had the good fortune to know a few people who freely shared advice and experience, which was invaluable to me. To pay it forward I seek out people who I see are at junctions in their own career and offer them focused coaching over a one-year period so they can navigate those critical decision points with the success they desire.

### The Coronavirus Pandemic Effect

*How has the pandemic changed your mindset on your career development or work-life balance?*

I have had the good fortune of being able to work from home for over a decade before the pandemic, so my mindset hasn’t changed as an older worker. But now the broader industry can see that you can effectively work from home and have high impact, which is opening doors for me that were previously closed. I would say that it is critical to build your networks early in your career, though often that is difficult without face-to-face conversation that the workplace supports so I would encourage others to keep that as a key activity in the coming months and years.

### Inspiration

*What inspires you most about what you do?*

Peculiarly for me, designs and plans that do not reflect the diverse needs of all stakeholders fuels my passion as our space and environment is a shared asset of all members of the community. Historically designs often reflect systematic bias in all its ugly forms “... as Moses’ transgressions, like acres of sterile public housing towers, parks, and playgrounds for the rich and comfortable, and highways that sundered working-class neighborhoods and dispossessed a quarter of a million people” (*The Power Broker: Robert Moses and the Fall of New York* by Robert Caro). Therefore, the more recent trends of inclusion and equity have been highly valuable and will improve the way we experience our collective world.



# Organizational Culture and Its Impact on Leadership Opportunities for Women

by Rachel Anne Hendricks

## Gender Imbalance in Leadership Roles

It is not uncommon that some professions have a high percentage of women in the general work population but low representation in positions of leadership (Heinz, Nelson, Sandefur, & Laumann, 2005; Hull & Nelson, 2000; Marschke, Laursen, Nielsen, & Rankin, 2007; Morahan, Rosen, Richman, & Gleason, 2011; National Association of Women Lawyers, 2017; Sanchez & Thornton, 2010). Morahan et al. (2011) affirm that scientists, physicians who treat humans, and dentists in academic health centers do not have a proportional rate of females entering the professional workforce to women in leadership roles within that profession. Similarly, women educators also do not hold an equivalent share of leadership roles, either principalships or superintendentcies in K-12 education (Sanchez & Thornton, 2010).

## Organizational Culture

The theory of organizational culture can provide clarity to the existence of the gender disparity phenomena. Organizational culture describes a system of shared understanding of organizational members that determine their actions as an entity (Mitrović, Grubić-Nešić, Milisavljević, Melović, & Babinková, 2014). Every organization has values, rituals, and practices that develop over time (Smircich, 1983), helping to define employee perceptions and actions (Shadur, Kienzle, & Rodwell, 1999).

There is much evidence to suggest that leadership behavior and personality can be a significant source of influence on organizational culture due to their responsibility and authority (Peterson, Smith, Matorana, & Owens, 2003; Tsui, Zhang, Wang, Xin, & Wu, 2006). O'Reilly, Caldwell, Chatman and Doerr's (2014) research suggested that the personality of a top leader can shape organizational culture.

One type of organizational culture is the concept of a gendered organization and it was first introduced by Acker (1990). The researcher highlighted the advantages that the masculine norm brings to power and hierarchical organizational structure. She stated that the gendered way of doing things is imbedded in the structural and ideological organizational aspects making a job masculine or feminine. O'Neil, Hopkins and Bilimoria (2008) and Ayman and Korabik (2010) have also remarked that assumptions about leaders and the contributions to leadership are typically male-normed. The concept of a masculine or feminine job does not necessarily match the gender of the worker (Acker, 1990).

Patriarchal systems have influenced access and equity in the workplace around the world (Hofstede, Hofstede, & Minkov, 2010). Organizations often recognize achievement, build incentives, and decide promotions using definitions of worth that reflect a male-gendered leadership culture (Helgesen & Johnson, 2010). Within the organization, this structure influences the behaviors, experiences and beliefs of the individuals, influencing their expectation and evaluation of leadership (Longman, Daniels, Bray, & Liddell, 2018).

If a workplace devalues women's contributions, they can threaten the identity of their female workers (Derks, van Laar, Ellemers, & de Groot, 2011). Women can respond to this by either joining together collectively to achieve goals or by going alone to improve

their standing individually. One can pursue personal and collective goals at the same time, but a group response may endanger an individual outcome (Ellemers & van Laar, 2010). The reverse may also occur where an individual response may minimize chances for group advancement. Although this is an effective individual tactic, this strategy in turn solidifies the masculinity of the professions and reproduces aspects of the culture that undervalues femininity and women (Derks et al., 2011; Miller, 2004; Rhoton, 2011). The continued masculine organizational culture positions itself as a barrier to women in leadership.

The gender imbalance in leadership roles is impactful due the lack of diversity. Research has shown that the presence of diverse perspectives promotes new ideas for innovation, improvements to systems and cooperation (Aronson, 2002; Chisholm-Burns, 2008). The benefit of diversity can potentially create opportunities for the appreciation of a variety of cultures, lifestyles, professional experiences and intellectual abilities (Aronson, 2002; Chisholm-Burns, 2008).

The effect and societal cost of the lack of gender diversity has been studied in various industries. On corporate boards, Simpson, Carter and D'Souza (2010) conclude the potential to find quality board members increases when women are included. They also suggest that women provide a unique point of view that results in better decisions and increased financial performance. McInerney-Lacombe, Bilimoria and Salipante (2008) state that group dynamics of communication, interpersonal interactions and decision-making is altered when women are included on boards leading to more creative, innovative, and nontraditional decisions creating better board performance. Lau and Murnighan (1998) suggested that more diverse opinions are generated with women on boards. Simpson et al. (2010) posited that qualified women deserve the right to serve on boards and the sexism against women serving on boards is a social justice issue.

A woman's diminished potential for facilitating change is another cost to society when discussing gender inequality (Rosener, 1990; Tannen, 1995). Extensive research has been conducted evaluating the gender differences in leadership styles (Eagly, Johannesen-Schmidt, & van Engen, 2003; Eagly & Johnson, 1990; Tannen, 1995; van Engen & Willemsen, 2004). Initial questions focused on whether women could lead at all. Over time these research questions have evolved into examining how and if men and women lead differently and if one gender is more effective at leading than the other. Historically, individuals' perceptions of men and characteristics of leadership were similar, and perceptions of women and characteristics of leadership were markedly different (Schein, 1973; Schein & Mueller, 1992; Schein, Mueller, Lituchy, & Liu, 1996). Women are judged against male traits and norms (Chliwniak, 1997; Monroehurst, 1997), although, when women become prototypical leaders as defined by male traits they are still seen as less legitimate than their male counterparts (Vial, Napier, & Brescoll, 2016).

Rosener (1990) was one of the first to link gender with a difference in leadership style. Rosener described women as using a transformational leadership style to motivate followers to move from self-interest to group interest through broader goals. This was contrasted with men leading from a transactional leadership



style that focused on position-based power using rewards and penalties. Tannen's (1995) research was consistent with Rosener but noted that working women centered on relationships and collaboration while men centered on power and their ability and knowledge. Further research suggests that women who combine inspirational motivation and individualized attention may have increased leadership success (Vinkenburg, van Engen, Eagly, & Johannesen-Schmidt, 2011).

### **The Glass Ceiling Effect**

The term "glass ceiling" first appeared in an article from the Wall Street Journal (Hymowitz & Schellhardt, 1986). The metaphor suggests that although women can enter managerial hierarchies, they will, at some point, reach an invisible barrier that will block further advancing progress in their career (Baxter & Wright, 2000). The idea of the glass ceiling implies that barriers to promotion intensify as women move up the managerial hierarchical ladder. The implication is that during hierarchical upward movement the barriers to promotion become increasingly severe for women as compared to men. This phenomenon has also been described as the "sticky floor" (Tesch, Wood, Helwing, & Nattinger, 1995), and the "glass door" (Cohen, Broschak, & Haveman, 1998).

### **Challenges Leading to the Glass Ceiling**

Many studies have attempted to identify what barriers exist that lead to the "glass ceiling." Certain barriers are engrained in societal cultures and economies while other barriers are characteristic of an industry or organizational culture (Bain & Cummings, 2000). Some of the barriers noted include gender stereotyping and bias, lack of support for work-life balance, lack of equal access for opportunities such as networking and mentoring, and lack of supervisor support (Kalaitzi, Czabanowska, Fowler-Davis, & Brand, 2017; Westring et al., 2012).

### **Gender Stereotyping and Bias**

Stereotypes are generalizations about a group of people that are applied to individuals merely because they belong to that group (Heilman, 2012). Gender can be described as an established system of social practices for organizing males and females as different in socially meaningful ways (Ridgeway & Smith-Lovin, 1999) and can be applied to stereotypes in both descriptive and prescriptive ways (Burgess & Borgida, 1999; Eagly & Karau, 2002; Heilman, 2001). Descriptive gender stereotypes label what women and men are like while prescriptive gender stereotypes label what women and men should be like (Heilman, 2012). Both types of stereotyping are considered gender harassment (Swim, Hyers, Cohen, & Ferguson, 2001) as well as sexism in action (Hall, Christerson, & Cunningham, 2010).

The utilization of both forms of gender stereotyping can negatively affect a woman's career progress (Heilman, 2012). By promoting negative expectations about a woman's performance, descriptive gender stereotyping creates a perceived incompatibility between the woman's attributes and the attributes necessary to succeed in a traditionally male role. Descriptive stereotypes about women persist in characterizing women as kind, dependent, and nurturing or having communal traits while men are agentic or being logical, independent and strong (Carnes, Bartels, Kaatz, & Kolehmainen, 2015). This gender stereotype has disadvantaged women in agentic career paths like science, math, and leadership as their presumed communal traits will be less applicable to the job duties and therefore women will be less competent and prone

to failure.

Prescriptive gender stereotypes standardize the behavior expectations of men and women which results in devaluing women who disrupt gender norms (Heilman, 2012). When women assert themselves to employ influence outside of traditionally female domains, there are reactions that impose negative penalties on them for violating the expected order (Carnes, Bartels, et al., 2015; Heilman, 2012; Ridgeway, 2001). A women's success in an area historically reserved for men can have social penalties causing them to be unpopular, shunned and negatively regarded (Heilman, Wallen, Fuchs, & Tamkins, 2004). Women in these roles have been identified as cold (Wiley & Eskilson, 1985) and/or having interpersonal problems (Heilman, Block, & Martell, 1995) as compared to their male counterparts. They may be described as "bossy," or "domineering" (Carnes, Bartels, et al., 2015; Heilman, 2012; Ridgeway, 2001). These reactions, in turn, reduce their ability to gain support with their directives.

Gender stereotyping directly supports gender bias (Heilman, 2012). There are two types of gender bias, overt and implicit, noted by Carnes, Bartels, Kaatz and Kolehmainen (2015). Overt gender bias is the act of treating someone based upon a preconceived notion of their gender characteristics. For example, believing that women are less committed to their careers than men.

Implicit gender bias can be elusive because usually the individual is unaware that they are holding the bias (Carnes, Bartels, et al., 2015). In fact, implicit bias may conflict with one's personal values even while it is affecting opinions and actions. Presumptions about disparities in competence can be tied to gender differences.

Heilman, Wallen, Fuchs and Tamkins' (2004) research testing reactions in men and women working on a male gender-typed job supported the concepts of both descriptive and prescriptive gender stereotyping. Their quasi-experimental study involved students of both genders evaluating both male and female candidates for employment in a leadership position at a company that manufactured airplane components. The findings demonstrated that participants viewed a woman performing a male-gendered job as less competent and less likable when there was ambiguity about how successfully the woman performed the job.

Carnes, Bartels, et al.'s (2015) study of how gender influenced medical residents' experience leading cardiopulmonary resuscitation (CPR) events is another example of gender stereotyping and gender bias. The researchers interviewed the residents and found that both male and female residents described the ideal CPR leader as being logical, strong and independent. Several female residents described that being the CPR leader was stressful due to a fear of defying female gender norms. Many female residents had a fear of sounding "bossy" though none of the male residents interviewed felt this way. Heilman (2012), Ridgeway (2001), and Carnes, Bartels, et al. (2015) argue that these legitimacy reactions create many sequential devaluations that slows or can even stop a woman's advancement and their ability to achieve leadership positions.

### **Work-Life Balance**

The compatibility of work and family issues on women has been extensively studied (Ceci & Williams, 2011; Cochran et al., 2013; Fritsch, 2015; Morrison, Rudd, & Nerad, 2011; Springer, Parker, & Leviten-Reid, 2009; Wolfinger, Mason, & Goulden, 2008). Fritsch's (2015) study, interviewing 12 successful women academics, noted

*continued on page 26*

continued from page 25

that when women had spouses/partners and children, women held more responsibilities for the home (such as childrearing and housekeeping) than men, making work-life balance more difficult for women. Societies tend to adhere to a sexual division of labor, where different tasks are assigned to men and women (Padavic & Reskin, 2002). These labels influence the job assignments as well as employers' and workers' expectation of what kind of work they should be performing. The American workplace historically has been shaped around a male career model established in the 19th century when men worked out of the home and women stayed home attending to the needs of children and housework.

A demonstration of the gender imbalance on work-life balance was shown by Wolfinger et al.'s (2008) investigation. Their quantitative study reviewed 14 years' worth of data collected regarding gender and family formation on academic employment after receiving a Ph.D. There were three independent variables, each representing a separate career stage between receipt of Ph.D. and full professorship namely, Ph.D. to tenure track, tenure track to tenure, and tenure to full professorship. The research revealed that women were less likely to obtain tenure-track employment. Women with a child under six were 22% less likely to obtain a tenure-track position. Also, compared to a married man, a married woman had a 12% lower chance of acquiring an academic job.

#### **Equal Access to Opportunities**

Women have been kept out of informal networks while in their career path (Gardiner, Tiggemann, Kearns, & Marshall, 2007). While formal networks are defined relationships between workplace employees interacting to perform particular tasks, informal net-

works are more flexible connections among workplace individuals where the content discussed may be work-related, social, or a combination of both (Ibarra, 1993). These networks provide information that aids in career advancement such as research grant awareness, procedures and writing support (Gardiner et al., 2007).

In a meta-analysis of 40 published articles, O'Brien, Biga, Kessler and Allen (2010) evaluated whether experiences are different for protégés based on their gender and their mentor's gender. O'Brien et al. (2010) found that when mentors were available to both men and women, they received similar amounts of career support. The authors also assessed the mentor's gender and found that males report serving as a mentor more often than females do, but female mentors provided more psychosocial support than their male counterparts.

Cohen et al. (1998) found that within the human surgical academy, 46% of the residents identified a lack of mentoring as a barrier to career advancement. When female academic surgeons did have an opportunity to have a mentor, Seeman et al. (2016) reported that 89% of the mentors were men. Moreover, in their survey of 81 women surgeons in academic settings, 54% of the participants indicated that they wished they had a better mentoring experience. When discussing the specifics of mentoring, many of the women stated that they wished they had more women as mentors to help them navigate the intricacies of their career path as well as provide advice on how to juggle a work-life balance. O'Brien et al.'s, (2010) meta-analysis shows that the difference in psychosocial support may provide the assistance that Seeman et al.'s (2016) female participants wished that they had received.



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## Recommendations

It is important to recognize that organizational cultures reflect the values and norms of previous and current leaders of the organization (Schein, 2017). These values and norms influence both the formal and informal structures, human resource systems, and leadership of an organization (Gelfand, Nishii, Raver, & Schneider, 2007). As such, organizational leadership, and the indications and attitudes that leaders relate about leadership and gender roles are powerful (Schein, 2017). Members of the organization adjust their behavior to match that of the leader which results in further shaping of the organizational culture.

Leaders should also consider how their actions impact the organizational culture of their institution by looking at Schein's (2017) work in organizational culture and embedding mechanisms. All the embedding mechanisms are used by leaders simultaneously to create and sustain organizational culture of an institution. By altering behavior, leaders can change the organizational culture of their organization.

An embedding mechanism noted by Schein (2017) involves leaders communicating what is important to them and what they measure and control. Leaders should consistently notice, communicate, measure, and attempt to control the gender disparity phenomenon present within their organization. They could do this with frequent communication to all employees describing the gender parity initiatives and by assessing and benchmarking how the organizational culture affects and responds to the gender disparity phenomenon.

How leaders allocate resources is another of Schein's (2017) embedding mechanisms. Leaders should allocate resources that would improve opportunities for women that are stifled by the barriers noted in the literature. For example, resources could be allocated to review and revise hiring practices, measure the dimensions of organizational culture that affect women employees within their specific industry, as well as to provide resources that help support work-life balance. Work-life balance resources could include initiatives such as flexible schedules, more mentoring opportunities by female mentors, and family-care support.

Another embedding mechanism from Schein's (2017) organizational culture theory that leaders should consider is deliberate role modeling, teaching and coaching. While formal teaching, such as classroom or seminars, are helpful to create a cohesive message to many people, informal teaching, such as mentoring, coaching and on-the-job training (Cunningham & Hillier, 2013), are more powerful teaching mechanisms to establish organizational culture (Schein, 2017). As such, leaders should be available for informal communication while performing tasks. Leaders in higher positions should make themselves available to these informal opportunities by being present in the variety of workspaces. Not only will the employees have contact with the leader, but the leader can also communicate and demonstrate the importance of gender equity practices firsthand.

Leaders should also consider another of Schein's (2017) embedding mechanisms: how leaders select, promote and excommunicate members. Being aware of the implicit bias of hiring people like themselves is imperative for leaders. Hiring for "culture add" instead of "culture fit" will help change the demographics and expand the diversity of an organization.

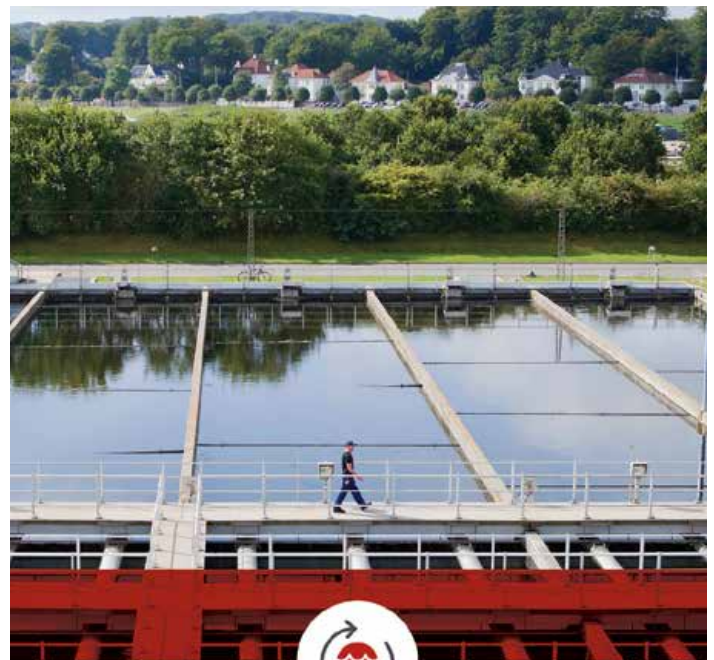
By looking at how other similar organizations have improved barriers to women in their organizational culture and by examining what specific actions leaders can take, gender equity can

occur. It is important to note that Schein's (2017) embedding mechanisms interact and reinforce each other if the leader's own beliefs, values and assumptions are consistent. Leaders should demonstrate consistency to establish or change the organizational culture of the institution to being one of greater gender parity.

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*Rachel Anne Hendricks, EdD, CVPM, LVT, SHRM, SPHR-SCP, is the hospital administrator at a veterinary hospital in Central New York and has over 20 years of experience in veterinary medicine. Previously, she was a practice consultant for the American Animal Hospital Association consulting with and speaking at over 400 veterinary hospitals and veterinary colleges in Northeast Canada and the United States. She also speaks on human resources and organizational culture topics at national veterinary conferences. Dr. Hendricks earned her Ed.D. in executive leadership from St. John Fisher College in 2019. Her dissertation topic focused on the effect organizational leadership has on the gender disparity in veterinary leadership. She is a licensed veterinary technician (LVT) as well as a certified veterinary practice manager (CVPM). In 2010 she received her Senior Professional in Human Resources (SPHR) certification and in 2015 her Society for Human Resources Management Senior Certified Professional (SHRM-SCP) certification. She currently serves on three nonprofit boards for her community. She may be reached at rah03456@sjfc.edu.*

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## Member Spotlight

# Kenya Lewis, Human Resources Management Certified Professional



Photo credit, Kenya Lewis

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*“What I do isn’t just my job – it is who I am.”*

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Kenya Lewis, MM, SHRM-CP, has worked for New York City for over 20 years. For 16 years she worked with the New York City Department of Parks and Recreation (NYC Parks); this tenure included 10 years in training, professional development and employee engagement and recognition programs. She joined the New York City Department of Environmental Protection in October 2017 as director of Organizational Development, Human Resources & Personnel Administration for the Bureau of Wastewater Treatment (BWT). In this capacity she oversees personnel, payroll, timekeeping, administration, facilities management, professional development and safety and compliance training for nearly 1,800 employees.

Kenya holds an undergraduate degree in sport management from the University of Massachusetts, a master’s degree in management from the University of Phoenix, a professional certification in human resource management from Pace University and is a Society of Human Resource Management Certified Professional (SHRM-CP). Kenya is a Queens, New York, native currently residing in Jamaica Hills.

### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

After graduating with a degree in sport management, I became a sports and events coordinator with NYC Parks where I spent a decade developing and coordinating activities for children across the city. I hired and trained hundreds of college and summer youth workers each season. In this role I was able to hone my skills in personnel management, procurement and event planning. I also had the opportunity to give many students their first full-time jobs post-graduation and mentor them at the start of their careers; this is where I learned I had a knack for developing talent.

To cultivate this, I pursued my graduate degree in management science, a curriculum that included the study of human capital, risk management, organizational development and the science of human behaviors in the workforce. The program awakened my interest in workforce development, which led to the role of deputy director of training. As deputy director, I expanded the NYC Parks leadership program and worked to change the perception of training within the agency. My goal was to shift the focus from mandatory training to elective and skills-building courses. I focused on project management and career development and created an exciting catalog that increased training requests by 50% in the second year. As we focused on ways to grow and modernize training, I set my sights on process improvements that led to Lean Six Sigma training, and the human resource management course at Pace University that led to my SHRM certification.

With these tools in hand, I was ready to pursue a role in human resources management that encompassed all my passions. In 2017

I was hired as director of Organizational Development for BWT, a role that has allowed me to combine my years of personnel management and workforce development experience, and studies in organizational development.

My journey has taken a different path than I envisioned it at graduation, but it is a role that fits my personality. What I do isn’t just my job – it is who I am. I’ve been helping and motivating people for as long as I can remember. It simply took me some time to figure out how to make it a career. I was lucky to have a supervisor who encouraged me to explore my passion and to figure out how to put it all together. He also showed me how important emotional intelligence and empathy are to the work that we do each day. I try to honor what he taught me by passing it on to others, and by continuing to push people to reach their potential as he pushed me.

I’ve learned a lot about human resources management over the years, the art of understanding people, their passions, and even their contentment when it comes to careers. I also learned to navigate the bureaucracy and multilayered processes inherent in a large organization.

Early on, two things fueled me daily: my personal fear of failure and my first budget meeting, where the manager said that the BWT has never – and will never – reduce its vacancies below 1%. The idea struck a chord with me such that I shared it with my team, and we hammered away at that notion until December 2019, when we hit the mark!

And then ... the COVID-19 pandemic struck shortly after, and we all know what happened next. The world stopped for a global pandemic, but 1,500 members of our workforce did not stop. They did not have a work-from-home option. Our city needed them to provide vital services, and they needed us, for our guidance and our support. And I’m proud to say that we did not let them down then, and I do not intend to let them down now.

### Vision

*What is your vision of the water workforce in the future?*

The men and women of BWT Operations put their mental and physical well-being at risk this year, so I am committed to doing my part to provide some relief. This begins by replenishing our diminished workforce, where we have 126 vacancies and 648 eligible retirees. The pressure is on to hire, to train, and to retain so when I’m asked where to begin, my answer to this is the same as it was on my first day: a two-tiered approach.

Tier One: Tackle the low-hanging fruit to produce immediate results, by replenishing the Operator titles to give us room to promote up and creating a leadership development program as a platform to assess potential leaders and inspire talent (retention).

Tier Two: Develop partnerships to keep the talent pipeline flowing with the support of the labor unions, by partnering with colleges, schools and trade school programs to help to prepare qualified applicants for the next operator exams, partnering with local high schools to promote water workforce opportunities, and increasing the recruitment base for veterans, women, and minorities through expanded promotion of the civil service system.

The difference between now and where we were four years ago, is that we’ve already achieved successes, so I am confident that together we can do it again.

## Member Spotlight

# Dolores Hewitt, Environmental Health and Safety Specialist



Photo credit, Miracle Studio, Laramont, NY

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*“Changes must be embraced not feared.”*

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Dolores Hewitt is an environmental health and safety specialist at the New York City Department of Environmental Protection (NYCDEP) 26th Ward Wastewater Resource and Recovery Facility (WRRF). In this capacity she works closely with the facility's operations staff to ensure compliance with city, state and federal regulations regarding environmental, health and safety with the overarching aim of facilitating employee safety and environmental compliance. This allows her to be directly involved in the daily operations of the facility, with firsthand knowledge of the intricacies of the tasks and activities that employees undertake, and the hazards associated with those tasks and the working environment.

This position also allows her to use her previous experiences in wastewater process operations and management to positively impact and support those employees who are among those at the forefront of ensuring a cleaner and sustainable New York City, to enrich the environment and protect public health for all New Yorkers.

Dolores considers herself a natural leader who thrives on taking initiatives and often looks for opportunities to serve and grow in this way. This character trait led her to pursue graduate studies in China and professional development studies in municipal wastewater treatment in Japan, which have without a doubt added to the dimension of contribution she makes in her current role.

### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

I have a background in engineering, having done undergraduate studies in chemical and process engineering, and graduate studies in environmental engineering. My affinity for the sciences started in high school in my native country, the island of Jamaica. As my love for chemistry and processes increased, I pursued tertiary education in this area and was introduced to wastewater treatment and management, as well as industrial safety in those studies. My major projects for both undergraduate and graduate studies had direct involvement with wastewater treatment, and so this led to the start of a career in municipal wastewater treatment operations and management, with Jamaica's National Water Commission, the agency with responsibility for water supply and wastewater treatment in Jamaica.

My entire professional career has been in the water/wastewater and environmental industries. So naturally, when I immigrated to the U.S., I sought to continue my career in this area. I had the privilege of being involved in operations during the startup of NYCDEP's Croton Water Filtration facility, which was very impactful for me, to be learning from and working alongside seasoned and experienced water professionals in a facility of such magnitude, with far reaching contributions to the livelihood of New Yorkers. Presently, here I am, back in wastewater, not directly in operations but in an area that is equally important in achieving the goals of

wastewater treatment – environmental health and safety (EH&S).

### Pivot Points

*What fuels your passion?*

Making a difference and serving well are what fuel my passion for anything I do. These values are at the core of who I am and carry over to whatever sphere of life I am involved in. There may not be recognition and acknowledgment from some, but at the end of the day I must live with myself knowing that I did my best in contributing to something that is for the greater good and will have an impact on generations to come.

### Greatest Challenges

*What have been your greatest challenges, and how did you overcome them?*

When I started at the 26th Ward WRRF six years ago, there was significant outstanding noncompliance in a number of EH&S areas unearthed through previous walkthroughs and audits. I sought the help of the facility's management at the time in addressing those issues that were within their capacity to address while reaching out to others within the Bureau of Wastewater for assistance on those that fell within their purview. We were able to reduce those outstanding noncompliances by over 60% within my first six months on the job.

Another challenge that I consider noteworthy is while attempting to bring our petroleum and chemical bulk storage (PBS/CBS) portfolio into compliance I ascertained that we had registration with the state for a different chemical product than what we were actually using. I reached out to the PBS/CBS Section for assistance, and it was discovered that registration was not required for the current product being used, and this was the case for all the wastewater facilities in the bureau.

### Drivers

*What has helped propel your career?*

I consider myself a lifelong learner and seize opportunities to learn even when it may not be directly involved with my immediate role. This allows me to engage with a wide cross-section of individuals with a variety of skills and experiences over time during my career. I also seek opportunities for professional development within and outside of my career field. Much of that which is done outside are transferable skills and are being used in some way in my career.

The support, acknowledgment, and confidence in what I do from leaders that I have had the pleasure and privilege of serving under and working alongside have also been instrumental in shaping my career.

### Career Advice to My Younger Self

*What would you tell your younger self about your career development?*

Don't be afraid to get off track and try something that stirs you in your innermost being outside of your chosen academic field. There is nothing to lose and lots to gain by following your inner convictions.

## Being an Effective Role Model

*What makes you an effective role model in workforce development?*

I believe that my commitment to excellence in what I do, loyalty to making a difference and a passion for integrity make me an effective role model.

## The Coronavirus Pandemic Effect

*How has the pandemic changed your mindset on your career development or work-life balance?*

With COVID there has not been a real mindset change for me regarding career development. If anything, it has enhanced the mindset of changes must be embraced – not feared or shunned. EH&S is a very dynamic field, and this has been highlighted even more with COVID, where we experienced quite a number of shifts and pivots to deal with something we never experienced before.

Work-life balance has always been important to me and that has not changed. We are able to care for others and contribute well to work when we make ourselves and those that are important to us a priority, while being intentional about it.

## Organizational Support

*How did your organization support you to be successful in your position?*

I believe an organization does not exist in a vacuum but consists of people and those people shape the culture of the organization. With that being said, any organizational support is really people support. So, in this regard, I am very mindful and appreciative of the efforts of the former facility manager, Ravi Basant, to make me feel involved, ask my opinion on issues and trust me with assignments that are not directly under EH&S.

I am also grateful for the training opportunities that the NYCDEP and the Bureau of Water Treatment offer, which have without a doubt empowered me and enhanced the trajectory of my career.

## Inspiration

*What inspires you most about what you do?*

I get to wake up every day and choose to make a positive difference for someone else.

## Vision

*What is your vision of the water workforce in the future?*

My vision is to see diversity at all levels within the water workforce. Diversity brings different experiences, different perspectives and different backgrounds, which translates into real growth. The NYCDEP has put much effort and resources into this process, and I can only envision that this will continue.



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# It's Not What You Think: How to Elevate Women in the Workplace

by Jean Malafronte

With an eye on workforce management and an industry that has been dominated by males, the water and wastewater industry has been making strides in the development and marketing of water sector jobs to the female workforce. It's not a hard sell, since the idea of a career in public health that is always customer focused speaks to all our desires to participate in making the world a better place, regardless of gender. The number of female students in civil and environmental engineering programs at the university level have significantly increased and it seems like more and more women are found in executive level roles or in operations roles that have typically been male dominated.

While these women are more visible, the actual numbers are not increasing the way we think they are. In March 2021, the IBM Institute for Business Value published a report titled "Women, Leadership and Missed Opportunities: Why Organizations' Good Intentions Are Not Good Enough." While this study is related to various technology industries and not specific to the water/wastewater industry, the findings are relatable and should be considered for both public and private organizations where the leadership have made a commitment to prioritize diversity and inclusion goals.

## Gathering Information

To gather information on the state of women in the technology workforce, the authors of the IBM study conducted surveys of more than 2,600 people from November 2020 through January 2021. These people were executives, middle management and professional women that spanned 10 different technology industries and nine geographic regions. Of the 2,600 participants, 429 had also been surveyed in 2019. In addition, a virtual workshop with 3,100 participants was held virtually over two days to capture information and ideas on this topic. The results of these surveys and workshops are compiled in the final IBM report.

## Why Is Workforce Gender Equality a Challenge?

The findings of the surveys and workshops were not encouraging. Despite increased awareness of gender imbalances, the lagging number of women in senior leadership roles has persisted. So, the question was asked: why is this so? With so much discussion and public awareness around the need and desire for gender diversity in leadership, why are the number of women in leadership roles not increasing?

Several programs are being implemented in the workforce to assist with closing this gap. These programs include gender-blind job screening, parental leave, external publication of gender equality pay information, education, retraining opportunities and diversity training with gender topics required for all levels of management. All of these programs are developed with the goal of moving the needle toward equity in the workplace; however, the IBM study outcome determined that these programs are not changing the mindset behaviors that lead to an inclusive and equitable working environment.

Some of these detrimental mindsets that need to be shifted within the employees of an organization include:

- Assumptions that employees prefer to work for a man.
- Assumptions male leaders are unwilling to share leadership

responsibilities with women.

- Assumptions that fewer women want to take on leadership roles.
- Inadequate managerial accountability for promotion of women into leadership roles.
- Society's gender bias or sexism.

These explanations for why we don't see more women in leadership roles reveal that it is not a policy issue, but it's more about the challenge of changing people's minds and a lack of accountability.

## Achieving Workforce Gender Equality Reaps Benefits

To both change people's minds and create a level of commitment to the advancement of women into roles of leadership, some companies have seen measurable benefits to the operation of their organizations by doing the following:

1. Designate the advancement of women as a formal top 10 business priority.
2. View gender inclusivity as a driver of financial performance.
3. Motivate to act – fully support the idea that businesses need to continue making changes to achieve gender equality.

As a result of these actions, these organizations have seen stronger financial performance, more innovation, high customer satisfaction and better employee retention and satisfaction.

## Moving the Needle on Workforce Gender Equality

So... what exactly does your organization (and more importantly YOU) need to do? The IBM study identified five steps and the supporting actions needed to create a breakthrough and to elevate women:

### Step 1: Pair Bold Thinking with Big Commitments

To pair bold thinking with big commitments, an organization needs to treat gender equality and diversity as though your organization's survival depends on it. This requires defining success in clear and concrete terms – you can't know if what you are trying to achieve is being achieved unless it can be measured. Also, drive accountability and don't settle for simply acknowledgment.

### Step 2: Insist on Making Room

Policies that allow for making room include making it a mandate to ask "who's missing" when meetings and decisions are happening. This includes setting the rules of engagement as to what happens next when the voice that is missing is brought into the conversation. Another means of insisting on making room is to reward and recognize those managers and executives that are following the rules of inclusion, while using the lack of inclusion as reasoning for not supporting or advancing others.

### Step 3: Identify Specific, Crisis-Related Interventions

Leadership can pay attention to the junior and middle ranks of the organization to build this equitable workforce. This means put into place job/skills training programs and reentry programs that can be made available to women who may face challenges with entering the workforce. With limited resources and time to implement these programs, use data to understand what works best for your organization so that the programs with the best results are



the ones that continue to be invested in. Show visible commitment through establishing diversity task forces and women's leadership groups within an organization.

#### Step 4: Use Technology to Accelerate Performance

We cannot improve what cannot be measured. This step considers the use of technology to support an understanding of an organization's improvement in changing mindsets and statistics on diversity and inclusion programs. This includes the regular use of surveys to understand what is and isn't working with regards to women's advancement within the organization.

Another technology consideration is how teams work together both remotely and in person to support those employees that need collaboration alternatives while managing family responsibilities.

For the organizations that use job postings to attract candidates for open positions, implement a screening tool or process that reviews job postings for gender, age and ethnicity-biased language so that job postings can be reworded to appeal to a broader spectrum of qualified candidates.

#### Step 5: Create a Culture of Intention

This step includes a personal responsibility of moving from a program mindset to a growth mindset through awareness, understanding and communication. Those in positions of influence need to act as amplifiers, to look for opportunities that enable marginalized voices to be heard, whether this is in meetings, presentations or professional engagement. This culture of intention will be asking people to work in ways different from how they have worked before, which requires each individual to have the courage to embrace discomfort.

### Moving the Needle on Other Diversity and Inclusion Goals

While the IBM study focused on the elevation of women in the workforce, the results of this study are pertinent to other diversity and inclusion goals as well. The mindset shift and steps outlined to achieve that mindset shift also support achieving diversity and inclusion goals for race, religion, cultural background and demographics.

The challenge for the water/wastewater industry is for both large and small organizations with various leadership styles to determine how the recommendations can be applied and implemented. What is clear is that intention and statements will not result in change unless it is met with action in programs, policy and perceptions. What is also clear is that change involves discomfort and that is where the progress happens.

For more details on the IBM study, please download the document at <https://www.ibm.com/thought-leadership/institute-business-value/report/women-leadership-2021>.

*Jean Malafronte is principal owner of Andris Consulting, which provides utility management consulting services to clients in Pennsylvania, New Jersey and Delaware. Jean has over 20 years' experience in the planning and design of wastewater, water and CSO facilities. She is a trained facilitator and supports decision-making through collaborative conversations. Jean can be reached at [jeanm@andrisllc.com](mailto:jeanm@andrisllc.com).*



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## Member Spotlight

# Rosaleen Nogle, Engineer and Operator



Photo credit: Rosaleen Nogle

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*“We are on the front lines of public health and disease prevention.”*

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Rosaleen (Rosey) Nogle is the principal sanitary engineer for the Buffalo Sewer Authority. Rosey is a multistate-licensed professional engineer and a New York state-certified Grade 4 wastewater collection system operator with master’s degrees in both public administration and civil engineering. As the engineering manager for the collection system, Rosey oversees the design and construction of all of Buffalo Sewer’s collection system capital projects including green, gray, and smart sewer projects together with a staff of engineers and inspectors.

Rosey works together with the over two hundred employees of Buffalo Sewer and countless contractors, consultants, and community partners to operate and maintain the existing collection and treatment systems and upgrade them to reduce the occurrence of combined sewer overflows, increase resiliency, address systemic inequities and improve energy efficiency.

As one of six children, Rosey grew up in Fulton, New York, across the street from that city’s Water Pollution Control Center. She now lives in the City of Buffalo’s West Side neighborhood with sons Malachi (5) and Ezekiel (7.5) and husband Michael, who is employed full-time as a stay-at-home dad. In addition to her full-time employment with Buffalo Sewer, Rosey also serves part-time as priest-in-charge at St. Mark’s & All Saints’ Episcopal Church in Buffalo’s Riverside neighborhood.

### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

I grew up in a family of engineers; my grandfather was an engineer, both of my parents were engineers, half of my aunts and uncles are engineers, both of my older cousins, and my older brother all went to college for engineering. I thought about other careers, especially when I saw how much unpaid overtime and overseas travel my father had to do as an engineer. But when I learned that there were engineers who worked in local government, I decided that civil engineering would be a reasonable way forward.

When I started at the University at Buffalo (UB), my first focus was on structural engineering, but when I took a class utilizing a structural modeling program, I quickly discovered that it was a horrible fit. At the same time, I found that I loved the courses I took in soil and fluid mechanics, hydraulics and geotechnical engineering. After a summer internship at the Erie County Health Department reviewing septic system plans, I was hooked on water and wastewater engineering.

In 2000, I started at UB majoring in civil engineering. In 2001, I developed lupus and had to withdraw from my fall classes. Unfortunately, with engineering courses building upon one another, this meant that when I returned to school in the spring, I had to take primarily nonengineering courses. The following summer I was able to work with the Town of Amherst’s Engineering

Department using GPS to locate maintenance holes, pump stations and other infrastructure.

Over the next few years, while earning first a bachelor’s and then a master’s in civil engineering, I took several temporary positions as a teaching assistant and research assistant at UB and as an intern for the Erie County Health Department. In the fall of 2006, as I was planning for a December 2006 graduation from the master’s program and a summer 2007 wedding in Buffalo, I saw a posting for an internship with Erie County’s Division of Sewerage Management and interviewed with Angela Horton and Joe Fiegl. Instead of the part-time fall position for which I interviewed, they offered me a full-time internship position starting Jan. 1, 2007, which I jumped at.

Over the next few months, the internship evolved into a provisional position as a principal engineer’s assistant. I spent the next year and a half in this role, working on regulatory documents, surveying, drafting, inspecting the installation of sewers, pumping stations and maintenance holes, evaluating mechanical systems for an asset management survey, and reviewing connection plans.

In October 2009, I was offered a position as an assistant public health engineer with Erie County’s Department of Health having scored highest in the area on a civil service test for that position. Over the next eight months I worked on review of water and sewer system plans and as the primary regulator for community water supplies throughout several rural townships.

In May 2009, I was offered a transfer from the Department of Health back to the Division of Sewerage Management in the position of assistant public health engineer. Over the next several years, I earned my New York state professional engineer’s license and collection system operator certification while continuing to review sewer connection and extension plans. During this time, I also became the project manager on several capital projects.

In late November 2013, just after I returned to work after the birth of my first son, I was offered a position at the Buffalo Sewer Authority as an associate engineer, a position for which I had taken a civil service exam on a whim a few years prior. On Jan. 4, 2014, I started in this position and worked to revamp and codify the plan review for new development for Buffalo Sewer while also serving as the project manager for the first Long-Term Control Plan compliance capital projects.

In the summer of 2016, I was offered a position as head of the Sewer Maintenance Department to fill an immediate opening while continuing in the title of associate engineer until such time as the title of assistant principal engineer could be approved by the Civil Service department. I started on Halloween 2016 in this role overseeing approximately 35 employees charged with cleaning, repairing and inspecting 850 miles of sewers with an average age of 125 years.

On March 15, 2019, after two and a half years in this position, managing everyday issues and at the same time developing a strategic management plan, I moved into a different role as project manager of capital projects for Buffalo Sewer’s facilities group. In this role, I worked on several strategic planning initiatives while also helping to expedite and develop financing plans for the facility’s side projects.

*continued on page 36*



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On July 1, 2021, I returned to the city hall office in which I started my time at Buffalo Sewer, this time as the principal sanitary engineer, leading the department charged with both the rehabilitation of the existing 125-year-old collection system, but also the implementation of the Long-Term Control Plan.

## Pivot Points

*What fuels your passion?*

My passion for the wastewater industry is fueled by several things. I love the calculations and really digging into a set of two-dimensional plans and envisioning the completed structures and being able to see how they will work, but also how to improve them to make them work better.

But while these exercises bring me great joy and serenity, I also take pride in what we do as an industry and most especially at Buffalo Sewer; we are on the front lines of public health and disease prevention. Throughout the early 19th century, Buffalo was wracked by several waves of cholera, but after most of the city was sewerred between 1880 and 1900, cholera disappeared into the history books. Unfortunately, as the city grew, even the mighty Niagara could not disperse and dilute the sewage to prevent downstream contamination and by the early 1900s, Niagara Falls, New York, had the highest typhoid death rates in the western world, a statistic that was transformed overnight when the primary treatment facility on Bird Island went online in 1938. And over this past year we have all been learning how sewer testing can be crucial to limiting the spread of pandemics like the one that has devastated our entire globe.

In the past year, I have also become ever more conscious of how sewers and strategic efforts to repair and replace them can be used to reinvigorate historically underserved neighborhoods and to support equity and justice and that we are really on the front lines of the battle against climate change.

## The Coronavirus Pandemic Effect

*How has the pandemic changed your mindset on your career development, or work-life balance?*

Over the past year, I have become more aware of the necessity for building redundancy into not only our built systems, but also within our staffing. Many more experienced workers who had talked of retiring in another five or even 10 years seem to be taking an early exit to spend whatever years they have left with their families and pursuing their passions outside of work. At the same time at Buffalo Sewer, we have also experienced the loss of three younger men since last fall, making the fragility of life painfully clear to us all. Additionally, as other employers face similar realities, as an agency whose finances have been deeply affected by the inability of our ratepayers to pay for services over the past year, we find ourselves at a disadvantage during a very competitive labor market. Due to all of these factors, it has become not just a good idea, but a necessity that employees be cross-trained and not dependent upon the continued employment of one individual who for one reason or another might not be there tomorrow.

## Organizational Support

*How did your organization support you to be successful in your position?*

Buffalo Sewer has helped me to be successful in my position by paying for 90% of the cost of tuition of a master's degree in public affairs with a concentration in public administration from one of the best programs in the country. Buffalo Sewer has also been very

generous in encouraging me to participate in professional societies and by encouraging and funding training. But above all, the experience that I have gained by developing permitting policies and getting in on the ground floor with the Long-Term Control Plan, managing the Sewer Maintenance Department and working with the crews and understanding their challenges and processes, and getting to know the treatment facility and help develop the plans and specifications for projects that are going to be completed over the next five years will all be invaluable to my success in my current position.

## Vision

*What is your vision of the water workforce in the future?*

My vision of the water workforce in the future is that it will be representative of the people we serve, and that the community will recognize us for the essential, lifesaving, environment preserving, climate resilient, and justice building work that we do.

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## Member Spotlight

### Shannon Harty, Engineer



Photo credit: Shannon Harty

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*“Challenge your limits.”*

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Shannon Harty, P.E., started out her career as a chemical engineer designing nitric acid plants and quickly realized that, while she loved process design, she didn't want to spend her career designing chemical facilities.

Shannon earned a master's in environmental and water resources from the University of Texas in Austin, a place where she came to truly appreciate the power and value of water. She saw firsthand the devastation that comes from heavy rains causing rivers to rage up and out of their banks – while at the same time, communities were struggling for water withdrawal rights to ensure the drinking water supply for their residents. It was so foreign to her, having grown up in the water-rich northeastern corner of the United States, and it set the course for the next 20 years of her career!

Shannon has had many roles over her career in wastewater: as a consulting engineer doing permitting, design, construction, commissioning and troubleshooting of wastewater infrastructure; as a business owner providing administrative support to village and town sewer systems; and now as acting commissioner of the Onondaga County Department of Water Environment Protection overseeing the Onondaga County sewer system. She loves sewer infrastructure and loves the community she serves!

## Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

After graduate school my first job was for Camp, Dresser and McKee (now CDM Smith), and I worked on a design project at the Walnut Creek Wastewater Treatment Plant, a 75-million-gallon-per-day (at the time!) facility in Austin, Texas. I was responsible for designing new waste-activated sludge (WAS) pumps and the associated piping system. It was a small part of a large project; the

place was ginormous and the first wastewater plant I had ever been to. There was so much stuff to see, and I loved walking the pipe galleries and following process piping. It was chemical engineering with a higher purpose!

## Pivot Points

*What fuels your passion?*

People! There are so many people that wastewater utilities impact, and I think of them all as I go throughout my day:

- The elected officials challenged with managing the “business.”
- The wide range of employees of the Department of Water Environment Protection who I rely on to keep our system operating.
- The customers who depend on us for reliable service and support.
- The residents of Onondaga County who are out enjoying our community waterways, who may not even know that we exist to keep those waters clean.

I feel a sense of duty to them all.

## Greatest Challenges

*What have been your greatest challenges, and how did you overcome them?*

Balancing work and home has been the hardest part of my career. Being a consulting engineer while my two kids were little was brutal; I worked many long days, had a lot of night meetings, and had to travel across New York to meet with clients. My kids spent a lot of time with babysitters, and I couldn't stand it. I needed to be home more and have a reasonable workday, which is how I ended up working for a local municipality. I still work long days because that's my personality, but I don't have night meetings and there's no travel. I have more time home and can be there for my kids' activities.

## Drivers

*What has helped propel your career?*

My vast network of colleagues that span across a wide range of markets. I have the most amazing and diverse group of friends – relationships formed during college, graduate school, and every career step along the way – that I can depend on for guidance and support. Their feedback and insight have been the driving force behind most of my career development. Having so many different perspectives has helped me “see” my limits and where I need to grow.

## Career Advice to My Younger Self

*What would you tell your younger self about your career development?*

“Say Yes!” Every opportunity that comes up, even if you have no clue how to do that job, give it a shot! We grow when we step out of our comfort zone so it's critical to constantly try new things and challenge your limits.

## Mentoring

*How did a mentor help you? How are you paying it forward?*

I had some awesome mentors over the years. The biggest thing they taught me was to slow down and being patient with the process; managing emotions is a large part of being successful at work! I love helping the next generation. I love challenging folks at work to step out of their comfort zone and take on challenges!

## Being an Effective Role Model

*What makes you an effective role model in workforce development?*

I think to be an effective leader, you must appreciate the day-to-day perspective of the jobs that are being performed. My vast work and life experiences allow me to find common ground with all levels of our organization and help me earn my employees' trust so they can be honest about their needs. I believe making the effort to connect with them in person demonstrates how I care about their success and gives them the opportunity to advocate for themselves.

I believe I do a good job of demonstrating the importance of life-long learning and career development. Even as the head of the department, I recognized deficiencies in my leadership skills and sought out programs to help me grow. I'm currently a fellow in the Duke University Nichols School of the Environment Water Innovation Leadership Development (WILD) program, which focuses solely on developing water utility leaders! I believe our community needs each of us to be our very best, no matter what level our job.

## Organizational Support

*How did your organization support you to be successful in your position?*

The County Executive has made infrastructure a central issue on his platform and vision for Onondaga County; our County Legislature has consistently supported that vision and its strategies. They all take the time to listen to our stories and truly understand who we are and what we do and how they can help us. They ask tough questions and make sure that we are using data to support our decision-making process.

## Inspiration

*What inspires you most about what you do?*

My employees and their dedication to our mission. As tough as the last year and half was, I talk to them, and I hear and see so much hope for the future. There is so much opportunity for innovation! I love to hear their ideas for how we can be better, and I know the future is bright.

## Vision

*What is your vision of the water workforce in the future?*

I think the water workforce needs investment at all levels of careers, but I see an urgent need to invest in our skilled trades. We depend on the skilled trades to keep our systems functioning! We need to bring back apprenticeships and certifications for our electricians, mechanics and other maintenance employees! We need more robust training programs to ensure they are set up to learn, grow and climb those career ladders. Another key component to a workforce development is our compensation package. Our salaries and benefits need to be evaluated to make sure we can attract and retain talent. We need to improve the diversity of our workforce – at all levels – to make sure it represents the community to we serve. We must create an inclusive work environment where everyone feels welcome and has a voice.



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# From Private to Public: A Journey from Consulting to Government

by Clement Chung

The email came through in July 2020 from a friend. He knew that I had been keen to put my new-found skills to use since graduating from the executive MBA program at the Rochester Institute of Technology's Saunders College of Business in November 2019. While I had always intended to continue with the company that I was working for at the time, and who had generously supported me through my studies, my friend made me aware of a position that felt like it was the kind of opportunity that comes round only once or twice in one's career. He asked if it sounded like something I might be interested in, and if so, he would help connect me with the employer to set up a meeting. I had no idea if a business degree – on top of 20 years of engineering design and project management experience – would be the right preparation for a role in government, but I was willing to give it a go.

## Working with DES

The position was deputy director for the Department of Environmental Services (DES) at Monroe County, New York. I quickly scanned for information on the role, although I had a fair idea of what it entailed, as I recently collaborated with the previous incumbent on a sewer project for another client. Nevertheless, I was eager to learn more about the organization as a whole, given that my role would include standing in for the director from time to time. I had done some design work for DES as a consultant a few years prior, but it had been some time, and many people I had worked with there had since left, so I treated it as an opportunity to build my understanding from the ground up.

Beyond my interview, the first opportunity I had to learn about DES was a senior staff meeting, where I discovered what each division in the department had going on. Since this was during the height of the COVID-19 pandemic, I was dumbfounded to learn that, on top of the regular duties for which DES was responsible (namely, water resources recovery and collection systems operation, solid waste and recycling, engineering and facilities management, GIS and fleet services), we were also the de facto logistics arm for the county. While the Monroe County Department of Health led the pandemic response efforts, it was DES that coordinated the acquisition, storage and distribution of items such as personal protective equipment (PPE) and rapid test kits. We had mechanics, electricians, and other skilled tradespeople who figured out how to deal with problems that were well out of their wheelhouse, such as the macabre details of setting up temporary morgues. Needless to say, this gave me a new perspective on the staff I was about to lead. At the time I joined, DES was working on setting up vaccination sites, which hopefully would be the final stage in dealing with arguably the most disruptive public health event the world has ever seen. The success of this effort was in large part due to years-worth of meticulous planning for emergency situations.

In my division specifically, I am responsible for oversight of our water resource recovery facilities operations, our environmental laboratory, our industrial waste pretreatment program, our household hazardous waste diversion program, and our stormwater management program, serving approximately 650,000 residents and businesses within Monroe County through our four Pure Waters districts. There are approximately 70 staff who make all this tick, with a range of skillsets from plant operations to laboratory

analysis to public education programming. The one common trait I noticed from day one was how dedicated each and every person was to their jobs, and how well they understood the value of the service they provide to their community. This made my own transition much smoother, as the level of professionalism I experience every day in this workplace is no different to what I would expect in a corporate environment. It gave me the confidence that the management and leadership skills I had honed would be just as effective here as it would in private industry.

## Workforce Challenges

Having said that, the government world is not without its idiosyncrasies and unique challenges and restrictions. In my past consulting role, I had had some experience dealing with the public and the elected officials who represent them. What is new in my role as a public sector manager is the universe of unions and the civil service system. While I am a proponent of strategically assessing needs to attain the organization's mission and allocating the

*continued on page 41*



Monroe County staff and volunteers preparing supplies for vaccination.  
Monroe County



Monroe County staff and volunteers ready after setting up vaccination PODs (point of distributions).  
Monroe County

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**Monroe County DES converted part of its Fleet Center into a Regional Stage-and-Store facility for COVID-19 supplies.** *Monroe County*



**Monroe County DOT Traffic Engineering Technician Don Wiegand dropping off PPE supplies to a nursing home.** *Monroe County*



**Monroe County DES Collection Systems Operator Jake Furtner helping with PPE inventory management at the Monroe County Fleet Center.** *Monroe County*

resources required to address them, seemingly simple tasks in a private company such as promoting employees to recognize the value they bring to the table often seem complicated and opaque in government. My business training taught me to recognize that we operate in an interconnected labor market, so in making a pitch for why someone should want to join our organization, our strength of argument has to exist beyond the salary we can afford to pay him or her. My parents were both government employees in England; the promises that might have attracted their generation (e.g., fringe benefits, job stability) may no longer be enough to appeal to today's millennial and Generation Z workforce.

Through NYWEA's Diversity, Equity and Inclusion Committee we are also exploring whether the structure and conditions of civil service may be affecting our ability to attract a diverse talent pool. For example, the requirements to attain the various levels of wastewater operator certification already place the onus on potential applicants, so we are looking to see if the certification requirements will also satisfy civil service requirements without having to undergo a separate competency examination. In addition, there is anecdotal evidence that civil service examinations do not reflect current industry practice. Therefore, we are seeking a more collaborative approach with the New York State Department of Civil Service to ensure the materials we use to evaluate and prepare our applicants are relevant to our needs as an organization, which includes ensuring our workforce adequately reflects the constitution of the community we serve.

All-in-all, I consider myself to be very lucky to have the opportunity to serve my community in this capacity. I am grateful to have a team that has supported me from the moment I stepped through the door, which was essential since I had so much to learn (and still do). In retrospect, the biggest change to which I have had to adjust is that, as a consultant, I was always solving problems for someone else; now I get to make decisions that have a direct impact on what happens at DES, at the county and in the community. I'm heavily involved in planning activities that will dictate the direction we head in for many years into the future. This is a great responsibility, but also a great privilege. With the support of all of those around me, I am ready for the challenge!

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**Clement Chung, PE, is deputy director for the Monroe County Department of Environmental Services and may be reached at [clementchung@monroe-county.gov](mailto:clementchung@monroe-county.gov).**

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## Member Spotlight

### Kenneth “Corky” Kelsey, Operator

Photo credit: Clint Kelsey



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*“If you are willing to listen, I will teach you what you need to know.”*

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Kenneth “Corky” Kelsey is the New York State Department of Environmental Conservation 4A certified chief water resource recovery operator for Monroe County Department of Environmental Services. He is responsible for maintaining permit compliance at both the 135 MGD Frank E. Van Lare WRRF and the 22 MGD Northwest Quadrant WRRF.

Corky feels blessed to have a wife, son and daughter all of whom enjoy hunting, fishing and the great outdoors almost as much as he does. The silver tsunami tumbled him around for a brief time before he managed to regain his balance and climb back onto that wave himself. Perched atop the crest of that wave he can now see shore approaching and he can only hope that everyone is as prepared for the future as Monroe County DES.

#### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

Growing up as one of the young Cain-raisers in the hamlet of Union Hill with a dangerous amount of time and energy put me squarely in the sights of a local wise man who owned Chamberlain Septic Service and Gordon Beh Excavating. Gordon Beh hired me to initially take care of his pheasants, chukars and bobwhite quail for the summer to keep me out of trouble. I also mowed lawns, cleaned the shop and planted hundreds of trees for him. I even got to help his son Dean scout spots to place tree stands for deer hunting.

Then one day, when a sick call came in, I found myself going from farm field to leach field and just like that a career in wastewater was born. From that day forward I worked installing septic systems and even tagged along on the occasional tank pump out, then took care of the birds late in the day. Before heading off to college for engineering Gordon pulled me aside and gave me this sage advice: “Even in a depression people have to flush!”

Much to the dismay of my parents, after I became bored in college pursuing a degree in electrical engineering, I changed my major and college to get a degree in environmental resource conservation. I just couldn’t see myself being happy sitting behind a computer monitor every day. Little did I know there would be days where I sat behind nine of them!

After college, the Behs struck again, helping to land me a job at the local taxidermy shop. After some time living the good life of working around hunting and fishing without benefits or retirement it was time to settle down. The Beh family seems to know everybody and through a hunting connection I received a call one day and was asked to apply for an assistant operator position with the Town of Ontario Water Utilities. A childhood friend, Jeff Schultz, also happened to work there and after training in the water plant he introduced me to the wastewater plant. It was there that I trained under operators and earned NYSDOH IIA Water and NYSDEC 3A certifications. After Jeff had me trained to run the 1 MGD 3A

WRRF he left to chase bigger money working for a private industry wastewater job. About four years later I had the chance to almost double my income when I found myself working alongside Jeff again in the private sector.

Treating the wastewater from a large creamery in the Southern Tier brought new challenges compared to an extended aeration municipal plant. Being exposed to new treatment technologies and different treatment processes helped to broaden my wastewater experience. After starting with septic tanks moving on to aerobic digesters, I now found myself running high-rate anaerobic reactors. The 1 MGD industrial plant was daily putting out up to 850,000 standard cubic feet per minute of biogas. You haven’t lived until you have run a centrifuge and belt press all while collecting and analyzing plant samples. A 110-mile commute can wear a person down, so I found myself searching for other wastewater employment.

The grey wave was just starting to hit Monroe County and they were looking for help. I started working at Monroe County 12 years ago as an entry level pump and process assistant trainee. Almost immediately I was asked to shadow operator John Wurzbacher so that I could drain his brain of 38 years of experience before he retired in three weeks. Many of the staff were a bit reluctant to share knowledge when I first started but thankfully seasoned operators like “Wurzy,” J.O.B. and Tim Lemcke were open books.

Very quickly I was promoted through the ranks from PPAT to PPA then PPOT to PPO then PCO to assistant chief. Five years ago, I was asked to manage the NWQ WRRF and three years later I became chief of both plants. Thanks to gleaning tidbits of knowledge from operators (regardless of title) the transition up the company ladder was a bit less daunting than being in charge of a 135 MGD facility seemed.

Almost 400 years of experience have retired since I first started here, most before their brains could be picked clean. I enjoy teaching and a good night’s sleep, so selfishly I have adopted the policy of teaching every employee everything I know. In routine meetings I have announced to the staff, “If you are willing to listen, I will teach you what you need to become chief; giving you the knowledge of what to do and when to do it keeps my phone from ringing in the middle of the night.”

Having been raised in a semi-rural area where kids played in the creek, fished farm ponds and explored the woods gave me a great appreciation for the outdoors. I grew up wanting to preserve this way of life by protecting the things I enjoyed. I also enjoyed seeing Irondequoit Bay transform from “pea soup” to a quality fishery with 10 feet of clarity.

Enjoying the outdoors has driven me into this career, with Gordon Beh helping to steer. Today’s world of video games and urban sprawl has reduced the number of potential recruits that could experience life as I knew it. High-paying tech jobs and people not seeing the far-reaching significant impact water resource recovery jobs have on the world are big hurdles we all must overcome. Finding driven applicants willing to do “dirty” jobs for less than what their friends make is a challenge, but we must find them, train them and then retain them. For today’s treatment facilities the future was years ago, when we needed to hire and start training the replacements for today’s retirements.

Talking about tsunamis, after having played a role in recovering over 450 billion gallons of water, the day is quickly approaching when the torch will be passed. A talented pool of operators await to run the next leg in the endless race to save the world one drop at a time.

## Member Spotlight

# Kathleen Esposito, Water Management Professional



Photo credit: Kathleen Esposito

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*“Bring a different perspective.”*

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Kathleen Esposito is a water management professional with 20 years of experience delivering major public work programs in the water environment industry. Kathleen holds a B.A. from Boston University in environmental analysis and policy and a master’s from Brown University in environmental studies where she completed a thesis

on water reuse.

After graduating, Kathleen joined Metcalf + Eddy’s (now AECOM) Chief Engineer’s Research Group where she focused on cutting edge national research with the U.S. Geological Survey into emerging contaminants in wastewater and receiving waterbodies. Over her 13-year career with AECOM, Kathleen was promoted to associate vice president and dedicated her later years to managing some of New York City Department of Environmental Protection’s (NYCDEP’s) most exciting projects including combined sewer overflows and resiliency.

Kathleen joined NYCDEP four years ago as Chief of Staff to the Bureau of Water Treatment (BWT) Deputy Commissioner Pam Elardo. One year later she was promoted to BWT’s Chief of Contracting and Budgeting, managing the Bureau’s \$265 million annual operating budget. Kathleen is currently transitioning into a new role as Chief of BWT’s Office of Regulatory Strategy.

Kathleen is active in NYWEA, having served on the Metropolitan Chapter Board for two terms, including as the first Young Professional to hold a seat and later as the chairperson. Kathleen lives in Queens with her husband, two children, two kittens and an old dog.

### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

I was the first one in my family to go to college so the decision of what to study was all up to me. My mother raised my sister and I hiking, enjoying the outdoors, and making sure we recycled so environmental science felt like an obvious path to me.

I’ve always worked in wastewater treatment! I interned with Massachusetts Water Resources Authority (MWRA) in Boston when I was an undergraduate. Then I took a job in public health performing soil evaluations for septic systems in Massachusetts. In graduate school I was a Senate Fellow in the Rhode Island statehouse focusing on water resources management policy and completed my thesis on water reuse. From there I came right to work in New York’s rich water industry. I have worked on both the private and public sides of the fence, but I have never strayed – there is too much to do!

### Pivot Points

*What fuels your passion?*

It is important to me that the work I do benefits public health and the environment. One of the major reasons I left private sector consulting to work for NYCDEP was to be closer to that benefit to my fellow New Yorkers.

### Greatest Challenges

*What have been your greatest challenges, and how did you overcome them?*

I have always felt like a stranger in a strange land since I am not an engineer. Jim Anderson, who recruited me to work for him in New York City almost 20 years ago, told me that he wanted me to bring a different perspective and think outside the box about challenging water quality issues. I overcame the challenge by learning as much as I could technically and over the years gained a better understanding of what sets me apart in this space. I am comfortable being uncomfortable because of this experience and that has served me well when I take on a new challenge. I still think of Jim saying that.

### Drivers

*What has helped propel your career?*

Networking with NYWEA has helped me throughout my entire career and I encourage everyone to participate in as many of the organization’s activities as possible! Early in my career I started the Metropolitan Chapter Young Professionals Committee with two other colleagues, and it has flourished into the absolutely amazing group it is today. Establishing relationships with folks in the industry away from specific projects and in a more casual setting at events and conferences is an extremely valuable way to make great connections and – even better – lifelong friendships.

### Career Advice to My Younger Self

*What would you tell your younger self about your career development?*

Yes, you can.

### Mentoring

*How did a mentor help you? How are you paying it forward?*

While I did not have formal mentoring there are several people in the industry that I admired and learned a lot from. I made it a point to try and work with them on projects so I could watch how they formulated, communicated and executed strategy.

Today, I participate as a mentor in NYCDEP’s Mentorship Program and am really enjoying it. The experience has underscored for me how important it is for young professionals to feel they are making an impact in the work they do.

### Being an Effective Role Model

*What makes you an effective role model in workforce development?*

I am your quintessential Gen X female who has worked her tail off to succeed in this industry while at the same time raising a family in the heart of New York City. I respect everyone I work with regardless of role or title, I try to lead by example in terms of organization and delivery and I don’t mind rolling up my sleeves to help.

### The Coronavirus Pandemic Effect

*How has the pandemic changed your mindset on your career development, or work-life balance?*

COVID blew the roof off the work-life balance I had never managed to achieve anyway! No one on my team had ever worked from home and we had to implement electronic systems, convince

staff to let go of paper overnight and develop Standard Operating Procedures to maintain delivery of our work. I am so proud to have worked with such a committed group during this time – NYCDEP can rise to any occasion! In the meantime, my husband went back to the office one month into the pandemic while my children have been home with me in remote school to this day. As much as this period of time has been gut wrenchingly hard with so much collective loss, spending 450 days straight with my children may be the treasure of my lifetime.

### Organizational Support

*How did your organization support you to be successful in your position?*

I have been very fortunate to have supervisors that believe in me and trust me to deliver. I have always felt supported in continuing education, conference attendance and in pursuing licenses and accreditations like my Leadership in Energy and Environmental Design Associate Professional (LEED AP) in Operations and Management (O&M) and Project Management Professional (PMP).

### Inspiration

*What inspires you most about what you do?*

I am so proud to be part of our collective mission to protect New York's water resources environment. As BWT's Deputy Commissioner Pam Elardo says, we are the reason the whales are back in New York Harbor!

### Vision

*What is your vision of the water workforce in the future?*

My vision of the water workforce of the future is a multidisciplinary group that looks like the population it serves. I would love to see more cross-training between designers and operators so we can improve the final product and I have every hope that it will be natural for us to prioritize climate change, sustainability and resource recovery in our day-to-day work.



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## Member Spotlight

### Edward Hampston, Engineer



Photo credit: Ed Hampston

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*“Protecting our water resources fuels my passion.”*

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Edward Hampston, P.E., is the current director of the Bureau of Water Compliance (BWC) in the New York Department of Environmental Conservation’s Central Office Division of Water. BWC administers NYSDEC’s Discharge Monitoring Reporting (DMRs), Sewage Pollution Right to Know (SPRTK), the New York State Wastewater Operator Certification program, and coordinates implementation of the NYSDEC’s State Pollutant Discharge Elimination System (SPDES) Compliance and Enforcement program statewide. BWC also oversees some of the major combined sewer overflow (CSO) projects and reporting for NYSDEC.

Ed has a Bachelor of Science degree in civil engineering from Clarkson University and a Master of Science degree from RPI in environmental engineering. He has 25 years of experience with NYSDEC working in Region 4 and the Central Office in Albany in all the environmental quality programs, with the most recent eight years in Division of Water. In addition, he has seven years of experience in consulting and construction in the private sector.

#### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

My interest in my career started at a very early age through my father, who was a civil engineer and part of the first New York State Construction Grants program when NYSDEC was started. He used the publicly owned treatment works (POTWs) he was aware of to distract us during long drives and initially taught us the treatment processes and then made us recite information back each time we drove past any POTW in upstate New York.

Although I initially didn’t want to follow his path, especially after POTW bingo on the car trips, I was extremely fortunate to have a job with the Town of Colonie Pure Waters Department for four summers before and during college. The director, Joe Chiefari, and other staff like Dave McMorris gave me a thorough education on their entire system through working in the plant lab, on the plant belt filter press, doing process control sampling, and then evaluating the collection system and pump stations. I had the chance to work on new construction inspections as well as dismantling some of the old residential package systems no longer in use. The enthusiasm, knowledge, pride, and team effort of the town led me into civil and environmental engineering and a strong interest in the field. My work with the town on their sludge management led me to my first full-time job post-college with NYSDEC working in solid waste on the residuals management program, which included land application and composting and working with Long Island, New York City, and Westchester as they ended the practice of ocean dumping of sludge.

After working with NYSDEC for about seven years, including some work in Region 4, my wife’s job took us out of state, and I moved into consulting and construction. Eventually we came back

to New York and NYSDEC, where I’ve been since 2003, and specifically the Division of Water, Bureau of Water Compliance since 2013.

#### Pivot Points

*What fuels your passion?*

I’ve really enjoyed the change back to the wastewater side linking back to fond memories of learning from my summers with the Town of Colonie. The public is so unaware of the importance of wastewater collection and treatment systems. Being involved in protecting our water resources and the public, as well as educating the public on wastewater and practical and efficient management of the systems, fuels my passion for my work.

#### Greatest Challenges

*What have been your greatest challenges, and how did you overcome them?*

The public recognition of the importance of wastewater treatment, and their responsibility to contribute whether through money, proper use, or spreading awareness is one of the greatest challenges I perceive, and we try to address it through education on what can be achieved with current resources. A close second in challenges is the lack of funding and other resources provided for this critical field.

#### Career Advice to My Younger Self

*What would you tell your younger self about your career development?*

While I would like to tell my younger self to work a little longer in wastewater operations before moving on to an associated career path, my involvement in operations and later construction and construction management has provided important practical knowledge and project management skills that have been useful in all aspects of my career development. I’d encourage anyone to expand their education and knowledge through field operations and construction at an early point in their career.

#### Vision

*What is your vision of the water workforce in the future?*

Young people and students today seem to have much more recognition of the impact of humans on the world and a desire to contribute toward improving the environment. Combined with their growing up in a world with rapidly advancing improvements in technology, I hope they can more efficiently use resources and contribute more resources to improving our collection and treatment systems and protect our waters.



# Making Sure the Shoes Fit

by Rosaleen B. Nogle

**B**ack in 1976, both of my parents graduated from the University at Buffalo's School of Engineering. My mother was one of only half a dozen women in the entire graduating class and the only woman to graduate that year with a Bachelor of Science in mechanical engineering. Throughout her life, my mom always claimed to be 5 feet, 1¾ inches tall, but that was undoubtedly in heels. Her feet were proportional to her height, which meant that she would have to special order steel toe boots from the local cobbler from a choice of two or three styles produced in her diminutive size. As an engineer, her office clothes that would be suitable for wear on a plant floor at the aluminum and steel mills around Syracuse came from catalogues. There was never anything in-stock in safety stores that would fit the body of a 5-foot-tall mother of six.

Size wasn't the only issue; most women's clothing contains nylon, polyester, spandex or other artificial materials that can cause severe burns when splashed with little droplets of molten metal during heating or transfer. When little droplets of molten metal touch natural materials such as cotton or wool they will singe the material, but not really transfer to flesh underneath. With the artificial materials, the material melts to the skin causing far more severe burns with pieces of the material stuck to the exposed skin, muscle and bones. Fabric choice in this case can be the difference between a little blister and extensive skin reconstruction and intensive care.

Decades later, in 2000 and 2001, I worked in one of those mills as summer help: sweeping floors, driving a forklift and repainting

pipng, walls, and safety signage around the facility. As a laborer, I was assigned light blue shirts and dark blue pants made of non-flammable material. But they never fit; they were designed for men. If I could button the shirts over my upper torso, then they would hang loose or bulk up over my lower torso. The sleeves would be several inches too long, leaving cloth loose to snag on loose nails and spinning machinery. The pants similarly were sized based on length and waist size, which meant that I had the choice between pants that I could not pull up over my legs and hips or that needed to be bunched up in a belt at my waist to keep from falling off, again resulting in loose cloth that could get caught on blades and nails. I luckily never got caught on machinery but did end my summers with various tears from catching a sleeve or the tail of my shirt on a protruding object and I was forever brushing up against wet paint because my clothes were so loose. Additionally, the gloves that I was provided were too large for my hands and would frequently fall off or make the work so difficult that I could not grasp the paint brushes, brooms, and other tools that I was supposed to use.

In 2019, NASA marked a milestone when two women astronauts performed a spacewalk for the first time. Women had been trained and worked as astronauts for decades. As the book and movie *Hidden Figures* makes clear, women, including Black women, have been a vital part of NASA from the beginning. Why did it take 61 years for two women to be able to leave the shelter of a shuttle cabin or space station together at the same time? At first, some NASA officials implied that this delay was due to the lack of strength or physical bearing of the women. However, it soon became clear that NASA had designed the spacesuits for male Air Force pilots in the 1970s. These test pilots were not just universally male, but also stood a minimum of 5 feet, 4 inches tall and frequently in excess of 6 feet. As a result, many of the women accepted into the astronaut corps are too small to safely fit inside the suits, which had not been redesigned since the 1970s. So, it was the spacesuits rather than the women's physical potential that limited their ability to do spacewalking tasks. It was not until 2019 that NASA had two suits available in space that accommodated women's sizes.

All of these cases reflect a reality that many women (and smaller people of other genders) face in our industry and other traditionally male-dominated fields. Protective clothing has traditionally been designed to fit the average male body; sizes for other body shapes have been difficult to find. Employers also face this challenge when hiring women and others, which often goes unrecognized until an individual objection is raised, or an injury occurs. Personal protective equipment (PPE) needs to be provided that fits the workers who are using it and those workers are no longer (if they ever truly were) the same size and shape.

To deny people correctly fitting PPE and thereby preventing them from doing work that they would otherwise be qualified to do can result in claims of sex discrimination and/or of violations of the Americans with Disabilities Act. Both sex and disability are protected classes and both promotions and the ability to qualify for civil service, professional engineering, and operator's exams depends on work experience. If an individual is denied this experience not because of their innate ability or knowledge but because they are not provided with PPE that fits their size and shape, a complaint of discrimination can be made.



Brigid Shea and Edwin Rauch graduating from the University at Buffalo in 1976.  
*Edward A. Shea*



Beyond the legal ramifications, by not providing properly fitting PPE to all employees, the most qualified person for a job may not be able to do the job. Or that person may feel pressured to do a job that is inherently unsafe for them to do without properly fitting PPE. In either case, even if no complaint is ever made, the organization will suffer from decreased employee morale, and mistakes or injuries may result either from a less qualified person performing a task or improperly fitting PPE interfering in the work.

Increasingly, however this issue is being recognized and addressed by suppliers and manufacturers. What was once a niche business is increasingly becoming mainstream. While just a few years ago, smaller sizes and clothing fitted specifically for women's shapes were only available through specialty retailers and manufacturers, more traditional safety suppliers are making and distributing this type of gear. In some cases, it is more expensive due to lower production numbers, but because less material is required it may also be cheaper. Removing PPE barriers will ensure the work is done safely by the most qualified person in the organization.

*Rosaleen B. Nogle, PE, BCEE, PMP, is the principal sanitary engineer with the Buffalo Sewer Authority and may be reached at [rnogle@buffalosewer.org](mailto:rnogle@buffalosewer.org).*



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## Member Spotlight

# Rob DeGiorgio, Engineer



Photo credit, Johanna DeGiorgio

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*“Always remain humble, honest but hungry.”*

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Rob DeGiorgio, P.E., is a vice president with STV Incorporated in their Transportation & Infrastructure Division. Rob graduated from Manhattan College with a bachelor's degree in mechanical engineering and a master's degree in environmental

engineering.

Rob has almost 30 years of experience in engineering and architecture design, management, and construction for municipal and private clients. His technical expertise encompasses sanitary wastewater and clean water processes, transit design and construction, construction management, flood mitigation and resiliency design, green infrastructure, groundwater remediation and stormwater management. He is responsible for managing resources, schedules and project financials while simultaneously managing medium-to-high complexity projects with construction values ranging from \$1 million to over \$1 billion (design-build). Rob is currently managing over \$50 million in construction to make New York City's water infrastructure more resilient and robust.

In addition, Rob is managing the extension of Los Angeles County Metropolitan Transportation Authority (Metro) Purple Line subway to provide a high-capacity, dependable alternative for commuters to travel between downtown Los Angeles and the Westside area. He is the project manager for Section 2, which will traverse 2.6 miles in twin-bored tunnels from Wilshire and La Cienega Boulevards in Beverly Hills to the Century City area of Los Angeles. New stations will be constructed in the City of Beverly Hills and the Century City neighborhoods of Los Angeles. The construction value is \$1.4 billion, and construction is underway.

Rob has been actively engaged in NYWEA for 20 years, serving as a board member, chapter chair and state representative in the Lower Hudson Chapter.

### Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

When I graduated college in the early 1990s there was a strong emphasis in the industry on environmental management and remediation. The Environmental Protection Agency's Superfund Program was going strong. I saw an opportunity to apply my traditional training in mechanical engineering to today's environmental issues. I was interested in remediating soil and groundwater and converting the site from an area of concern to a landscape capable of beneficial reuse. I got involved with a great design firm and worked on remedial designs all over the country. It was incredibly self-gratifying to implement highly complex process designs, and see the results transform the site for redevelopment.

### Career Advice to My Younger Self

*What would you tell your younger self about your career development?*

Communication is critical to career development success. Writing

skills and oral presentation skills are particularly important. You may have the brightest solution but if you cannot communicate it effectively, it may never reach successful fruition. A wise mentor once told me about the Three H's – “always remain humble, honest but hungry.”

### Mentoring

*How did a mentor help you? How are you paying it forward?*

As a father, I found myself repeating a saying over and over, “Gee, I hope my children are fortunate enough to find a great mentor, particularly at the outset of their careers ... like I did.” If not for the patience and leadership of my first few bosses almost 30 years ago, I would not have had nearly as much success. A career mentor is uber-critical; a good one, hopefully early in your career, can help paint an important picture of success. A bad one can be damaging.

To pay it forward, one of my mentors and I were the founding members of Manhattan College's Mentor Program, which has grown from a dozen mentors when it was started 20 years ago, to over two hundred mentors across virtually all educational disciplines. We planted the mentoring seed, and it grew.

### The Coronavirus Pandemic Effect

*How has the pandemic changed your mindset on your career development or work-life balance?*

The coronavirus pandemic certainly had a profound impact on all of us. While the initial directive was to maintain a social distance I think, as we navigate the tail end of this pandemic, we were all brought closer together.

As far as our industry goes, we immediately instituted plans to work from home, and did so efficiently. We donned masks in public forums, and we found yet another reason to put our first-responders, teachers and essential workers on much-deserved pedestals. I am in awe of my peers for their profound perseverance in the face of so much personal loss and adversity. We learned there is not much we cannot overcome, together.

I, for one, prefer an office setting. The camaraderie and the interaction with my team is important, particularly in an industry that requires so much teamwork, and work products that require input from many disciplines. That said, learning the benefits of working from home, was valuable and refreshing. We proved it can be done and, with the right management and infrastructure, it can be done efficiently. That is the definition of ‘work-life balance’ – achieving your career and project goals while maintaining a strong home life. The pandemic taught us our career development is not driven by where you sit, but by how well you engage. We have to deliver our work, whether in an office setting, from home or from outer space; it can be done in countless ways, as long as we genuinely engage with one another, through Microsoft Teams or Zoom, and finally once again, hand-in-hand.

### Inspiration

*What inspires you most about what you do?*

What inspires me most about my work is the legacy. Most of our projects leave behind robust and innovative infrastructure to either protect the public or improve their quality of life. It is gratifying to

see a finished construction product be put into productive use. So many projects go on for decades, and some never reach construction, so we must take pride in the ones that make it. Most of the projects are wildly complex, and it's great fun to stare at a subway station or a water treatment facility and recall all the effort brought forth by so many to make what seems to be the simplest details come to be. Today's emphasis on green infrastructure, natural systems, energy efficiency, self-sustainable buildings, etc. has added an exciting and innovative layer to our industry; I look forward, and look back, with considerable pride.

## Vision

*What is your vision of the water workforce in the future?*

The water workforce is evolving, for some of the reasons discussed above. There is an evolution in the way we manage water, and science and technology are merging. Source protection and treatment through traditional processes, green infrastructure and natural systems are blending together. While water management has always been delivered by scientists, engineers and conservationists, it was done so in sort of a detached way, meaning the "engineered solution" was not thought of in the same light as, say, "natural systems."

Now, take a hotel in downtown Manhattan that has achieved a LEED Platinum rating. Its water treatment is comprised of a membrane bioreactor to convert sanitary wastewater into grey water for recycling, a rain garden to provide treatment and reuse, and a green roof to promote additional water treatment and run-off reduction. Engineered solutions and natural systems have become one. What that means for the water workforce is a much more diverse group of people being involved with water protection. While the traditional engineer with their nuts and bolt solutions will also be a part of water treatment (i.e., membrane systems), the scientists now have solutions being implemented in real-world applications through green infrastructure, wetlands and natural systems. The workforce will come together as one cohesive unit delivering both engineered and natural solutions to water protection.

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## Member Spotlight

### Dan Rourke, Engineer



Photo credit, Caitlin Cavagnino

*"Persistence is key."*

Dan Rourke has been a resident of the Capital District area his whole life. He grew up in Scotia, New York, and attended college at RPI in Troy where he received his Bachelor of Science in civil engineering. Dan then went on to work for Delaware Engineering, an environmental and civil consulting company out of Albany, New York, where he worked on exciting waste-

water projects, like the City of Hudson WRRF upgrade, Town of East Greenbush WRRF upgrade and the Rensselaer County WRRF UV disinfection facility.

From there Dan moved to the public sector and became the executive director of the Saratoga County Sewer District (SCSD) in 2015. In his role as the executive director, he is responsible for

ensuring the day-to-day operations as well as planning for future infrastructure investment. Dan works closely with his chief operator and maintenance manager to ensure they are meeting permit requirements and have the tools necessary to keep wastewater flowing throughout Saratoga County. They serve approximately 150,000 constituents, as well as industries such as Global Foundries and Stewart's manufacturing facility.

Dan thoroughly enjoys the ever-changing landscape of the clean water sector and attempting to light the path for others to join this very important workforce.

## Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

I graduated from RPI in 2009 with more knowledge of structural engineering than water resource and environmental engineering. The job market was lackluster, and I was happy to find a job with an environmental firm in need of help with their concrete tank design. Once I got there, I realized I was more interested in what the tank was being used for than in the tank itself and began to learn about the wastewater treatment process. I ended up assisting with process designs and took my professional engineering exam in water resources in 2014. I then took the next step and joined a WRRF as the executive director and really began to appreciate the intricacies of the water workforce, and how expansive of an arena it is.

## Greatest Challenges

*What have been your greatest challenges, and how did you overcome them?*

I have been lucky and have advanced my career to a place where I find myself on the shorter end of the experience spectrum. One challenge has been learning at a pace fast enough that allowed me to intelligently communicate with someone who has been in the wastewater realm for an entire career. I quickly learned that this is a uniquely tight-knit group, and that asking questions to fellow NYWEA members and water professionals allowed me to garner a wide variety of knowledge and ways to look at things. The best part was that they were all extremely willing to help, provide information, and point me in the right direction. They saw someone with similar passion for the work and wanted to help nurture my curiosity, which helped me learn quickly about many topics, ideas and problem-solving techniques.

Another challenge that I have recently faced is the ability to staff our WRRF operations department quickly and efficiently. Working with NYWEA staff and other members we deduced that the civil service exam could be a potential hurdle for mobility within and outside treatment facilities. We worked with New York Civil Service to develop a training and experience equivalent Civil Service exam, expected to launch in 2022, which we are hoping will assist in removing one unnecessary testing burden on operators that already hold a certification from New York state.

## Career Advice to My Younger Self

*What would you tell your younger self about your career development?*

I would make sure to tell myself that persistence is key and when you find something you like to do, start patiently heading in that direction. There is an amount of knowledge in this industry that is almost unfathomable, and it is going to take you years and years to scratch the surface, but don't be discouraged by that. Embrace that, ask questions, and if the response sounds foreign to you, ask

*continued on page 52*

continued from page 51

that person to elaborate. Spend some time getting different perspectives on the same problem – ask your colleagues, your clients, the sales vendors, the facilities that have used it – and then paint the picture of the solution. This takes patience and the ability to cultivate and organize information while understanding the perspective it is coming from. Most of all, be patient with yourself while doing this; the knowledge will come with time and persistence, so persist patiently to where you want to be and don't let discouraging moments pause your progress for too long. It is YOUR progress that is what matters most in YOUR career development.

## Mentoring

*How did a mentor help you? How are you paying it forward?*

I had many people within my professional career and at NYWEA assist me in my development. They taught me the typical technical lessons but also the important skills outside of the office including communication, client interaction, public speaking, planning and seeing the “big picture.” These have been extremely valuable as I move forward in my career. I try to pay this forward by volunteering on NYWEA committees such as the Diversity, Equity and Inclusion committee; attending young professional events to spread some of the same lessons; making myself available for any guidance or questions; and participating in a program in the Capital Region called Rise High. Rise High consists of eighth graders interested in additional educational content on Saturdays in Schenectady, New York. We teach them about water, its effect on the world and the integral part we play in maintaining this finite natural resource.

## Being an Effective Role Model

*What makes you an effective role model in workforce development?*

I try to understand not only the baseline of the workforce needed, but where benefits can be found outside of just “Do we have enough people to perform the work needed?” I am a big proponent of diversity in the workforce. I think improving diversity in the water sector provides multiple positives to those involved. By opening opportunities to people who may not be aware of them, it will result in a stronger water workforce that brings many unique points of view to a field where problem-solving is essential. I know that someone who grew up in a different situation than I did will have different experiences to draw on and will therefore be an asset in coming up with solutions that might not occur to me.

## Vision

*What is your vision of the water workforce in the future?*

I truly believe the water workforce of the future will understand the important work that they do day in and day out. I hope to help in educating the public about what we do, and that this knowledge will lead to excitement across all demographics, socioeconomic statuses, genders and races. Building excitement and continued public outreach is key to developing a diverse workforce. I think this field, born of the Clean Water Act, is a great career opportunity with good wages. I want to spread the message that this is also a sector that affects everyone from everywhere, and the sector should be representative of everyone.

I also envision that technology will continue to be a driving force in innovation in the water sector and the water workforce will absorb more and more computer science people, computer engineers and data analysts.

## Member Spotlight

### Oluwole (OJ) McFoy, General Manager



Photo credit: Buffalo Sewer

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*“Never count yourself out!”*

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Oluwole (OJ) McFoy serves as the general manager of Buffalo Sewer and Chair of Buffalo Water. In this capacity, he is responsible for directing over \$100 million in annual operational funds and \$45 million in capital projects. A steward dedicated to delivering safe and clean water, OJ has focused his career on public service and

meeting the health needs of residents in Buffalo to the world's most precious resource – water.

OJ is a graduate of Clarkson University with a bachelor's degree in civil engineering and a licensed professional engineer with over 20 years of experience. He began his career in consulting and for the past 15 years, has provided focused delivery of projects and equitable policies that have positively impacted the Buffalo community.

Appointed by Governor Andrew Cuomo to the board of trustees for SUNY College of Environmental Science and Forestry in June 2021, OJ also serves on the board of directors for the National Association of Clean Water Agencies and US Water Alliance.

Born and raised in Buffalo, OJ is a die-hard Bills fan! He resides in the Willert Park neighborhood in Buffalo with his wife Monika and their three daughters.

## Career Development Path

*How did you get interested in your career? What path brought you to where you are now?*

Most of high school I wanted to be an architect and graduated with a building technology diploma from Hutchinson Central Technical High School. My senior year I was introduced to civil engineering and found that the skills that I brought were more closely aligned with this profession. I was afforded an opportunity for an internship following high school at a local consulting firm office, who provided yearly internships and a nine-month co-op prior to hiring me following collegiate graduation. The grooming and experience that I received over the years allowed me to easily integrate into the culture and community expectations at the firm. Many of the principals and managers helped to develop the necessary skillsets as I rose through the ranks from project engineer to project manager to client manager to discipline leader.

In 2006, Mayor Byron W. Brown offered me an opportunity to join the Buffalo Sewer Authority and serve as the chief operating officer. I have served in several roles throughout Buffalo Sewer, all of which provided insights into the departmental and division functionality and helped prepare me for my role as general manager.

## Pivot Points

*What fuels your passion?*

As a Buffalonian, born and raised, I bring the love for my city and service to every occasion. My passion for this city, as imperfect as it is, charges my battery and allows me to continue striving to co-create a better Buffalo. Several years ago, we began a water

equity journey, exploring how our responsibility as public health professionals integrates into the services we provide and deliver for our communities. This journey has allowed us to really explore our “Why?” as water sector professionals – and what our service means to the communities we serve.

### Greatest Challenges

*What have been your greatest challenges, and how did you overcome them?*

Never count yourself out! In 2007, when our chief financial officer retired, I was asked to step in and manage Buffalo Sewer’s \$55 million budget. In 2012, when our chief engineer retired, I was called on to develop and deliver a long-term control plan to eliminate the effects of combined sewer overflows. In 2015, when our general manager retired, I was offered the position to serve and have held that role until this day. Each role presented challenges and opportunities, but had I counted myself out before trying, I would not have the experience and life lessons that were gained through acceptance of the roles.

### Mentoring

*How did a mentor help you? How are you paying it forward?*

I was able to serve under an experienced general manager that provided tremendous mentorship, allowing me to be successful in the municipal environment. Currently, I have several formal and informal mentees with monthly and quarterly meetings to touch base. It is often said that wisdom is gained through experience; I believe that it is imperative that the lessons that you have learned are shared with those following in your footsteps.

### Vision

*What is your vision of the water workforce in the future?*

In 2006, when I arrived at the Buffalo Sewer Authority, Black, Indigenous and people of color (BIPOC) made up only 5% of those employed. While we have increased the number of BIPOC by over 500%, we still have work to do to make sure that the Buffalo Sewer workforce reflects the demographics of the City of Buffalo. Our workforce development begins with connecting to the next generation in grades K-8. We have developed our Water Worx curriculum and partnered with local community centers to introduce the water sector to the next generation of operators, technicians, scientists and managers.



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# The Path to the Future: Why Companies Need to Prioritize Diversity, Equity and Inclusion

by *Melvin Bankhead III*

In 2020, America was caught up in whirlwind of protests and public outcry. The murder of George Floyd under the knee of a Minneapolis police officer triggered a backlash that forced the country to open its eyes to the treatment of unarmed Black men by law enforcement. The impact of the subsequent Black Lives Matter protests sparked a growing awareness of similar atrocities against Hispanic, Latinos and trans peoples. The effects of the #MeToo movement continued to be felt, as well, as more women spoke up about the evils of misogyny, sexual harassment and sexual abuse.

Combined, the various movements challenged our perceptions of how different groups experience life in the United States. Social advocacy groups, educators, and corporations escalated their efforts toward a growing understanding and adherence to the principles of diversity, equity and inclusion.

As Catalina Colman, director of Human Resources and Inclusion at Built In tech magazine, put it, employers must plan and work to build meaningful change despite the history of intolerance and injustice that has marginalized underrepresented groups in the workplace for centuries.

“We as employers need to make sure we’re including these individuals and that we’re giving them equity,” Coleman said. “We need to make sure that, not only do they have a job, but they have the same ability to get promoted, to contribute and have the same impact — in the world and in the workplace — as their peers.”

Let’s define our terms:

- **Diversity.** The presence of differences within a given setting. For our purposes, we’ll identify those differences as race, ethnicity, gender, gender identity, sexual orientation, age, religion and disabilities. Differences in personalities, experiences, work skills and education also count.
- **Equity versus Equality.** The Annie E. Casey Foundation defines equity as “the state, quality or ideal of being just, impartial and fair.” It goes on to further explain that equity “involves trying to understand and give people what they need to enjoy full, healthy lives.” By contrast, it defines equality as the attempt to “ensure that everyone gets the same things in order to enjoy full, healthy lives.” It is important to note, however, that while equity looks at what each individual person needs, equality is more of a one-size-fits-all approach that does not ensure the best possible outcomes.
- **Inclusion.** Quite simply, including or being included in a group or hierarchy. The Foundation notes that this is “more than simply diversity and numerical representation,” and that “inclusion involves authentic and empowered participation and a true sense of belonging.”
- **Racism.** Defined by the Oxford Reference dictionary as “the inability or refusal to recognize the rights, needs, dignity, or value of people of particular races or geographical origins. More widely, the devaluation of various traits of character or intelligence as ‘typical’ of particular peoples.”
- **Institutionalized racism.** Also known as systemic racism, this is the intentional or unintentional bias and discrimination against an individual or group of people by society and its institutions.

## Numbers and Reality

Now that we’ve established our terms, let’s look at why companies, agencies, and organizations should pursue diversifying their workforces. Aside from “It’s the right thing to do,” diverse companies directly profit from that socially advanced stance. Indeed, a 2019 McKinsey & Company global study demonstrated that companies where the executive team is diverse were 25% more likely to achieve above-average profitability than their mono-race counterparts. If the diversity is both cultural and ethnic, then the percentage rises to 36%

In addition, diverse companies and organizations:

- Are nearly twice more likely to be innovation leaders in their market.
- Are 70% more likely to successfully penetrate new markets.
- Are more likely to thrive in global markets.
- Gain insights that improve their services.
- Exhibit stronger customer service.
- Build trust and confidence with those they serve.
- Experience greater internal innovation and business growth.
- Demonstrate better product-development performance.
- Are better at problem-solving.
- Experience a 3% to 9% increase in sales revenue, respectively, for every 1% increase in gender and racial diversity.

Another reason to embrace diversity is a simple acceptance of reality. The previously predicted racial diversification of the country is actually preceding more quickly than anticipated. According to the U.S. Census Bureau, America’s white population is declining in numbers, even as Black, Asian and Hispanic/Latino populations are growing. In addition, the racial balance among America’s youth tipped in 2019 when, for the first time, more than half of the nation’s under-16 population identified as a racial or ethnic minority.

Of course, diversity is not simply about race. Gender identity is also a factor. According to a February 2021 Gallup Poll, increasing numbers of Americans now identify as lesbian, gay, bisexual, transgender and questioning and/or queer (LGBTQ). Among adults that number has risen to 5.6%, or 18 million people, since the last such poll in 2017, when the percentage of LGBTQ adults was 4.5%. Also, in 2020, it was discovered that among Generation Z adults (18 to 23 years old), increasing numbers identify as LGBTQ: 1 in 6, or 15.9% of the Generation Z adult population. In the immediately preceding generations – millennials and Generation X – those identifying as LGBTQ were 2% or less.

## Getting Started

Seeking cultural diversity in one’s workforce is a laudable goal. Achieving that goal, however, won’t happen overnight, and will take a great deal of planning, communication and hard work.

A 2020 report by Atlassian, a software development company, notes that, in a tech industry survey, about 80% of respondents said that diversity and inclusion are important. However, the report also noted that, among the companies that participated in the survey, “representation, retention, and sense of belonging among underrepresented groups remains below 30 [%].”

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What accounts for that disconnect?

Quite simply, it isn't enough for a manager or a CEO to say, "From this day forward, we welcome diversity!" Achieving growth in diversity, equity and inclusion requires the following key elements:

- Leadership
- Education
- Outreach
- Recruitment
- Retention

## Leadership

No matter what efforts are launched, the leadership team and managers **MUST** be onboard. Diversity, equity and inclusion (DEI) initiatives cannot be simple "add-ons" to corporate policy. Indeed, said initiatives must become the foundation of everything the organization does. Because of that, leadership and management have to be active, willing participants.

Comic book writer David F. Walker made a similar observation in 2017, noting that total buy-in is needed before any change can be effective:

"I was under the false impression that all we needed was diverse creators working on diverse characters, and we'd be on our way to fixing a lot of problems. No, you also need diverse editors, people in the marketing department who get it, the distribution angle has to get it, retailers have to get it, the comics journalists have to get it. Unless you get all these things to align, you're Sisyphus."

### *The Case of Amherst College*

At Amherst College in Massachusetts, the sustained vision of two successive school presidents since 2003 has achieved the amazing: of the 2021 incoming freshman class, 50.2% are nonwhite. This achievement is notable for a school in a state that, as of 2019, was 80.6% white (non-Hispanic); 12.4% Hispanic or Latino; 9% Black; and 7.2% Asian; and 0.5% Native American.

By contrast, the incoming class is 18% Asian; 17% Black; 17% Hispanic/Latino; and 3% Native American. In addition, 12% of the incoming students are of international origin, and 4% identify as nonbinary.

Matthew L. McGann, Amherst's dean of admission and financial aid, said the increases are the result of changes implemented and sustained by two presidents, Anthony W. Marx (2003 to 2011) and Biddy Martin (2011 to the present). When Marx was hired, non-white enrollment was at 34%. When Martin came aboard eight years later, that number was up to 43%, and she's since raised it to over 50%.

Drawing larger numbers of minority students doesn't happen quickly, McGann said. In fact, it requires a true commitment of resources, because, in the long run, it is the experiences of the new minority students that will influence whether more diverse students are attracted to Amherst College, which is celebrating its 200th birthday this year.

### *The Case of the Virginia Military Institute*

Amherst College demonstrates how a sustained vision by leadership can achieve diversity and inclusion goals. On the other side of the equation, in Lexington, Virginia, the Virginia Military Institute (VMI), according to a recent report, has "traditionally been run by white men, for white men."

New leadership has arrived in the form of Maj. Gen. Cedric T.

Wins, who has announced that "there is no place at VMI for racism, sexism, homophobia, xenophobia, or any other type of discrimination." Indeed, this year alone, VMI has undergone a state-ordered audit of its diversity and inclusion; hired a Chief Diversity Officer; hired Wins, a Black man, as its new superintendent; agreed to remove dedications and memorials to Confederate Gen. Thomas "Stonewall" Jackson; and slightly diversified the executive board.

VMI, however, faces strong headwinds of opposition to its diversity goals. According to the state-ordered audit, "VMI's overall unwillingness to change—or even question its practices and traditions in a meaningful way—has sustained systems that disadvantage minority and female cadets and faculty and has left VMI trailing behind its peer institutions. If VMI refuses to think critically about its past and present, and to confront how racial and ethnic minorities and women experience VMI, it will remain a school for white men."

Indeed, according to the report:

- Racial jokes and slurs on campus are common and are excused by administrators.
- 42% of Black cadets reported that African Americans are discriminated against "a lot."
- Although cadets of color make up only 23% of the student body, they make up 41% of those expelled by the school.
- 14% of female cadets reported having been sexually assaulted at VMI.
- Many female cadets generally expressed a consistent fear of sexual assault or harassment.

In VMI's case, the upper leadership has begun instituting changes to build diversity and inclusion. However, those changes are being fought at the lower levels among faculty and management. This illustrates why it is vital for all levels of an institution to understand, support, and actively work toward leadership's diversity goals. Those incapable of making that shift, which would benefit the organization, should be removed and replaced.

### *Goals for Leadership*

*Start by creating a diverse management team.*

Such a team, made of diverse individuals and points of view, shows potential hires that the organization is not "all talk and no walk" when it comes to creating an inclusive workplace.

*Make sure that senior leadership is on board by holding them accountable for reaching diversity goals.*

"Leadership absolutely matters here," said Everett Harper, CEO of Truss, an engineering firm. "Accountability starts with the CEO. Then, the CEO supports executives and managers in setting and achieving diversity goals. Lots of data from groups like Project Include show that if (diversity and inclusion) is seen as a side project, it will be deprioritized."

*Create a diversity and inclusion policy.*

This helps companies construct recommendations, guidelines, and goals in order to draw new talent, as well as create a more effective and diverse workforce.

*Make diversity and inclusion the foundation of organizational culture.*

"Simply recruiting and hiring diverse candidates is not enough," said Sarah Woods, director of employee experience at Dockyard, a digital product and engineering firm. "The environment must also be welcoming and conducive to all people. It's important to follow





through on your promise of diversity and inclusion and make sure your commitment comes through loud and clear through company programs and communications. A candidate (and anyone, for that matter) should be able to look at your company and understand that inclusivity is ingrained in your organization.”

*Make diversity and inclusion a priority, from the top executives to the lower ranks.*

Ensure that the entire company comprehends the value of diversity in the workplace. Empower the human resources and communications teams to build internal messaging campaigns to educate workers. Be authentic in the work; employees and job candidates will know if you’re just faking it.

*Recruit diverse candidates to expand boards of directors/trustees.*

Again, leadership begins at the top. If your board is looking mono-cultural, it’s time to shake things up by seeking and hiring new directors of diverse backgrounds.

*Review all organizational rules and policies to determine whether they repel diverse candidates.*

Some of the rules and policies that may repel diverse candidates include:

- **Hairstyle.** Rules governing hairstyles tend to discriminate against women and people of color.
- **Dress Codes.** Dress codes can be a problem for people of lower income, who may not be able to afford that new suit.
- **Overtime.** If overtime work is a common occurrence, this could turn off millennial applicants, who tend to seek companies that emphasize a respect for a work/life balance.
- **Rigid Schedule.** A rigid work schedule repels women, who see a flexible schedule as the main cultural value they seek.
- **Long Commute.** As long commutes are a key contributor to why employees quit, consider allowing more remote work, especially as fewer millennials or Generation Z workers see the value in buying a car.
- **Holidays.** Observed holidays should go beyond Christian holidays like Easter and Christmas. Recognize holidays observed by, or that honor, other cultures present in America, such as Kwanzaa, Ramadan, Rosh Hashanah, Juneteenth or the Rev. Martin Luther King Day.

## Education

Education and training will be needed for all levels of workers in the organization or company. Workers who understand the benefits of the changes that are being made are more likely to accept them; those who can’t adapt will be at odds in the redesigned business model.

For example, Pinterest, the social media company, launched strategies such as unconscious bias training for all employees. This type of training is important because it reveals to workers potential biases that they may not be aware that they harbor, as well as methods in which to bypass them.

In addition to instituting educational programs within the company, reaching out to schools is an excellent way to bring training to a new pipeline of diverse job candidates. Partnering with high schools, historically Black colleges and universities (HBCUs), Hispanic-Serving Institutions (HSIs), and vocational schools that serve underrepresented groups, as well as offering targeted scholarships and internships, can help build skills among students that your organization values, as well as create interest in your company. Organizations can reach out to minority groups on college and university campuses in order to identify students that might benefit, as well to help promote the internship and scholarship programs.

IBM, for example, offers an apprenticeship program targets potential candidates from minority groups. The program focuses on long-term professional career growth, comprehensive learning, focused hands-on training, as well as professional mentorship. Such programs can create the “perfect,” well-rounded candidates that companies and organizations are seeking for their workforce.

## Outreach

Companies and organizations will need to think and act outside of their “mental boxes” to succeed. “Business as usual” won’t cut it; nor will, “We’ve always done it this way.” As the social and demographic realities change, so must the company’s goals and methods.

In business, as in life, perception is considered reality. If a potential candidate accesses a company’s website and doesn’t see anyone with whom they identify, they will assume, often correctly, that the company doesn’t value diverse people. Since websites and social media are how most organizations connect to the world, those platforms need to be scrutinized to determine exactly what message – intentional or otherwise – is being presented to the world.

### Create Relevant Online Content

Create online content that is relevant to a variety of audiences. Ensure that imagery on the website and on social media is diverse in terms of race, gender, gender identity, religion, etc. Blog content, in addition to the typical business-related topics, should also prioritize diversity-focused subject matter, as well as “spotlights” that highlight and celebrate the diversity within the workforce. Your organization’s diversity and inclusion statement should be prominently featured on the website. In addition, any efforts and new initiatives toward diversity and inclusion should be highlighted

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via social media. Invite commentary to spark new conversations and new ideas, as well as a way to gauge public response to your efforts.

### ***Leverage Diverse Social Media Platforms***

An easy way to drive interest in your company or organization is to financially support online personalities of diverse backgrounds who present content relevant to your corporate business and/or diversity goals. Given the popularity of TikTok and YouTube, this is a quick way to introduce your organization to the influencers' fans.

### ***Review Your Brand Marketing***

If your brand is offensive or problematic, then it's time to retire it. Too many organizations spend more time defending why a racist or sexist mascot or icon should be "protected," as opposed to actually considering how such efforts are, in the end, self-defeating, and destructive to the company's long-term survival. As a result, groups like the Cleveland Indians baseball franchise, and the Washington Redskins football team, spent years defending their mascots, when they could have saved time and money, as well as attract more diverse audiences, by taking a more inclusive and racially sensitive path. Indeed, in February, PepsiCo announced that its Aunt Jemima brand would be renamed. Similarly, Mars Foods has done the same for its Uncle Ben's rice brand.

"Companies should ... make sure that their branding and marketing efforts are intentionally focused on highlighting the diversity of their organizations to demonstrate their intent around hiring," said Todd Riesterer, chief people officer at LogicMonitor, a cloud-based network performance monitoring firm.

### ***Spotlight Your Commitment***

In January, Apple Inc. unveiled several projects to fight racial injustice, part of its Racial Equity and Justice Initiative, which it is funding with \$100 million. The initiatives will allow Apple to create more opportunities for young people of color, as well as build opportunities for future leaders from diverse backgrounds. Likewise, KPMG vowed to recruit, develop and advance underrepresented talent. Among other efforts, it recruits from Native American Serving Institutions (NASIs) and HBCUs. Microsoft, which has established a Chief Accessibility Officer, set a goal of increasing the number of employees with disabilities.

### ***Ask Your Workers***

Often, leadership and managers can get too focused on the "big picture" issues and miss the more immediate issues. Lower-rank workers, however, deal with those issues daily. Ask them what problems they see, and reward workers for creating solutions to problems that they identify. Always watch for issues that will negatively impact diversity, and work to fix them.

### ***Recruitment***

This is the big gun. Locating and identifying the next generation of diverse workers will require a radical shift in the "way things are done." The old ways are no longer useful and, in fact, can negatively impact the new goals.

"The first step is to take a close look at your barriers to entry," said Maria Cartagena, senior vice president of people operations at Kira System, a machine learning software company. "It could be the way a job posting is written. It could have biased language that could cause candidates to self-select out of the process before it even starts."

### ***Identify and Eliminate Biased Language***

Identify and eliminate biased language from job descriptions and interview questions. Unintentional bias in the job descriptions means that you may repel qualified applicants without ever being aware of it. Some phrases – such as "hacker," rock star," ninja," and "guru" – are perceived as having a male bias. In addition, the typical measures for recruiting candidates can negatively impact your bid to increase diversity. After all, you should care more about the skills and experiences they bring to the table, not their places of employment or who they know. Technologies like Textio can screen job language for potentially biased content. In addition, having clearly defined search criteria, and asking candidates the same questions, can help reduced bias in the interview process.

### ***Make Use of Psychology***

It is also important to keep in mind the very different psychologies at work between men and women. While men, for example, value compensation as their main priority, women are more interested in a work-life balance. Also, women generally won't apply to a position unless they feel 100% qualified. Men, by contrast, will apply if they feel they're only 60% qualified. On top of that, don't be afraid to use personality assessments as a tool to recruit more diverse applicants. A good personality assessment measures an applicant's personality, skills and motivations – and personality scores don't vary from "the norm" for underrepresented peoples, minority group members.

### ***Set Specific Diversity Hiring Goals***

If a particular people group is either absent from or sorely underrepresented in your organization, set specific goals to address this issue.

### ***Be picky, and don't settle.***

When hiring, set a hard deadline on applications. When the deadline expires, search through the applications for the most qualified individuals. If any of those candidates are racially, culturally or gender diverse, interview them first. Recruiters tend to hire the first "great" candidate they find. If the more diverse candidates are at the top of the resume pile, it makes it easier to add diversity to the staff.

### ***Widen the net for the search.***

Advertise for open positions in culturally focused publications and websites. Minority trade groups typically have job placement boards that can be excellent resources for recruiters. Try seeking out veterans, ex-offenders, LGBTQ people, people with autism or people over 40. You can also find good candidates by working with networking groups, alumni groups, HBCUs, HSIs, NASIs, and women's colleges and universities. Also, don't be afraid to look outside of your geographic area for candidates.

### ***Ask your current employees.***

Offer bonuses to employees who recommend diverse job candidates.

### ***Avoid unconscious bias.***

Also known as implicit bias, this is often described as prejudices in favor or against one person or group, as opposed to another, that is perceived as unfair. Ways to avoid this include:

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- Establishing a diverse interview panel. Make sure that those doing the interviewing include a diverse grouping of your employees. That will help avoid unconscious biases in the hiring process.
- Going blind. Remove the names and cultural references on resumes in order to avoid bias toward, for example, candidates with more “ethnic” names. In addition, college names, graduation years and addresses can similarly be scrubbed. This helps you identify high quality candidates because it enables you to more objectively evaluate a candidate’s skills, knowledge and potential to succeed.
- Requiring recruiters to undergo training. Implicit bias training can do wonders to educate recruiters on how to avoid letting their ingrained prejudices impact their hiring judgment.

#### *Shoot recruitment videos.*

Interview executives and employees, and ask them why diversity is important to them, as well as how the organization prioritizes it. Share the videos on the company website and via social media.

#### *Challenge applicants.*

Ask applicants to provide solutions to workplace diversity issues. This way, you’ll learn how a candidate responds to such issues and get new ideas and fresh perspectives on how to resolve such issues.

#### *Build a mentorship program.*

“We believe that a mentoring relationship leads to greater engagement, retention and satisfaction – for mentors, as well as mentees,” said Vina Leite, chief people officer at The Trade Desk, a digital marketing company. “We want our mentor relationships to encourage new team members to be their authentic selves.” The Trade Desk, for example, works with HBCUs and industry trade associations to find diverse candidates.

#### *Throw more people in the pool.*

Research in the Harvard Business Review shows that ensuring that the final candidate pool has one minority and/or one female candidate does not increase the diverse candidate’s chance of being hired. However, having at least two such candidates will sharply increase the odds in their favor. Doing so increases the odds of a female hire by 79%, and the odds of minority hire by 194%.

## **Retention**

After successfully recruiting diverse candidates, then you need to figure out how to keep them. If they don’t feel welcome or valued, they won’t stay. The comic book industry provides a graphic example. In the 1990s, Marvel and DC Comics were the undisputed rulers of the comics industry. However, writers and artists – particularly diverse writers and artists – did not feel that their work or their contributions were valued. They rebelled, leaving the comics kings to form their own rival companies, Image Comics and Milestone Media.

In television, creative force Shonda Rhimes is the brain behind ABC juggernauts “Grey’s Anatomy,” “Scandal,” and “How to Get Away with Murder.” In 2017, she left ABC for Netflix, which, she said, provided “the opportunity to build a vibrant new storytelling home for writers with the unique creative freedom and instantaneous global reach provided by Netflix’s singular sense of innovation.” Her first Netflix creation, “Bridgerton,” was a runaway smash hit.

A distinct advantage of a diverse and inclusive work environment is that workers feel respected and valued. These are key to reducing worker turnover. After all, if your workers aren’t happy, they’ll eventually leave should a better opportunity present itself. Indeed, a study by Deloitte University of nearly 3,800 people – a cross section of genders, ages, sexual orientations and races/ethnicities – found that “83% of millennials are actively engaged when they believe their organization fosters an inclusive culture.” This is an important finding, given the growing percentage of millennials in the workplace as baby boomers and members of Generation X retire.

Previously, we discussed organizational leaders establishing policies that attract diverse candidates. Estée Lauder Companies, for example, offers 20 weeks of gender-neutral, paid parental leave for those adopting or fostering children; six weeks of flexible hours when the employee transitions back to work; \$10,000 in adoption assistance funds; and \$20,000 of coverage toward fertility treatments. The methods work: of Estée Lauder’s global workforce, 85% of its employees are women, and more than half of its executive positions (vice presidents and higher) are also held by women.

Verizon, meanwhile, uses data analysis to scrutinize its workforce diversity, inclusion strategies and employee retention. The company examines whether people of color and women advance in, remain in, or leave jobs in the fields of marketing, media and communications.

Ultimately, the best tool for organizations to retain diverse workers is an open line of communication between the workers and those who make the important decisions that “steer” the organization. Honest, nonjudgmental conversations about policies, race, gender, and all aspects of diversity can go a long way toward maintaining trust between management and the rank-and-file workers.

As previously suggested, offering incentives for employees who identify and/or solve problems that negatively impact diversity and inclusion can also engender more trust. Likewise, tying bonuses to diversity improvement goals can also add to the workers’ buy-in, as they stand to directly benefit from the company’s efforts.

## **Conclusion**

We’ve explored various methods by which an organization or company can achieve increased diversity, equity and inclusion. These recommendations are by no means final. Even as you read this, companies, organizations and consultants are exploring new ways to pursue their goals.

The most important piece of advice? Keep an open mind. People who are different from you also have a way of seeing things differently from you. Just because you don’t perceive a problem doesn’t, in fact, mean that a problem doesn’t exist. You just might be in the wrong place to see it, while someone above or below you in the company may be perfectly situated to perceive the issue, and perhaps resolve it.

As previously discussed, achieving greater diversity, equity, and inclusion in the workplace will take a great deal of work. In this hyperpartisan political environment, it might even seem impossible. For the final word, we’ll close with the words of late “Superman” actor Christopher Reeve:

“At first, dreams seem impossible, then improbable and eventually inevitable.”

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*A former professional journalist, Melvin Bankhead III is the founder of MB Ink Media Services, a boutique strategic communications firm. He is also an adjunct instructor at Hilbert College. He can be reached at [editor@mbinkmedia.com](mailto:editor@mbinkmedia.com).*

References are available on the *Clear Waters* App.

# Operator Quiz Summer 2021 – Certification, Training and Operations

The following questions are designed for individuals/trainees pursuing certification as they prepare to take the ABC wastewater operator test. It is also designed for existing operators to test their knowledge. Each issue of *Clear Waters* will have more questions from a different process of wastewater treatment. Good luck!

1. If the WRRF is graded as a 4A facility, what certification is needed to function as a shift supervisor in the chief's absence?
  - a. 4A
  - b. 4
  - c. 3A
  - d. 3
2. Shortly after a new employee starts, they should receive training in ...
  - a. Confined space
  - b. Lock out/tag out
  - c. Hazard communication
  - d. All of the above
3. A training coordinator should have some technical competency and be familiar with the ...
  - a. Operations
  - b. Maintenance
  - c. Safety
  - d. Management goals
  - e. All of the above
4. The benefits of training from the perspective of a utility include:
  - a. Improved safety
  - b. Improved morale
  - c. Increased productivity
  - d. Better employee retention
  - e. All of the above
5. A large-scale WRRF should be staffed ...
  - a. Eight hours a day
  - b. 12 hours a day
  - c. 24 hours a day
  - d. Long enough to collect samples and perform changes
6. A small-scale WRRF should be staffed ...
  - a. Long enough to collect samples and perform changes
  - b. On a case-by-case basis
  - c. 24 hours a day
  - d. 16 hours a day
7. The chief operator has many critical duties including:
  - a. Planning
  - b. Organizing
  - c. Controlling
  - d. Directing
  - e. All of the above
8. What is the required number of contact hours for renewal of a 3/3A Certification?
  - a. 40
  - b. 60
  - c. 80
  - d. 120
9. How often must you renew your certification?
  - a. Three years
  - b. Four years
  - c. Five years
  - d. Six years
10. The required level of certification you must have is based on ...
  - a. Plant flow
  - b. Number of citizens
  - c. Size of collection system
  - d. Plant scoring

## Answers below.

For those who have questions concerning operator certification requirements and scheduling, please contact Carolyn Steinhauer at 315-422-7811 ext. 3, [carolyn@nywea.org](mailto:carolyn@nywea.org), or visit [www.nywea.org](http://www.nywea.org).



Answers: 1. (a) 4A 2. (d) All of the above 3. (e) All of the above 4. (e) All of the above 5. (c) 24 hours a day 6. (b) On a case-by-case basis 7. (e) All of the above 8. (b) 60 9. (c) Five years 10. (d) Plant scoring.

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As operators, engineers, scientists, academicians and vendors in the water sector, we all serve in a leadership role whether we are at the helm of an organization or serving as an informal water sector ambassador in our communities. While the number of women joining the water sector is increasing, representation at the top levels of leadership is few and far between.

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### Morning Keynote Panel

President Lauren Livermore, Moderator

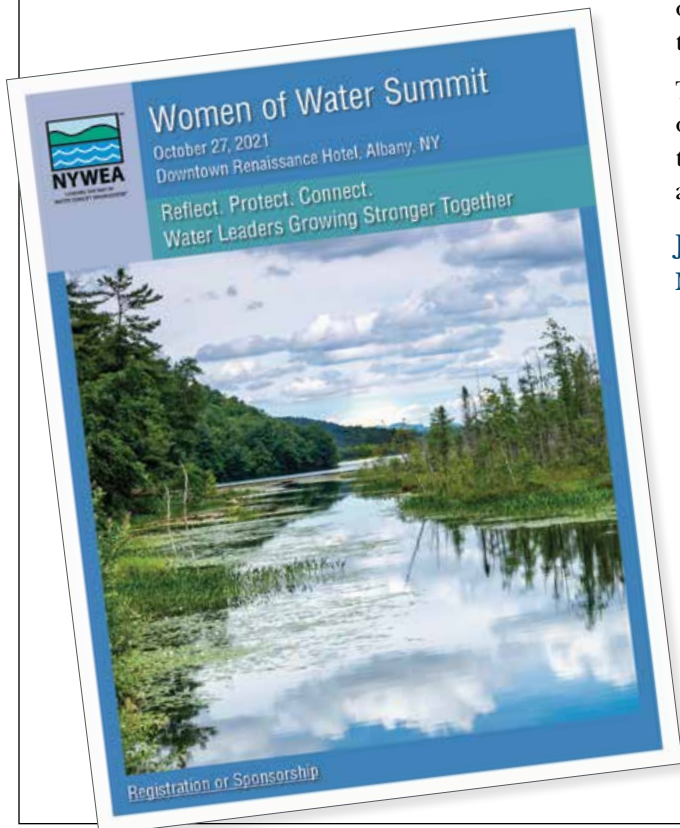
Featuring:

- Pamela Elardo, Deputy Commissioner, NYC DEP
- Jean Malafrente, Principal, Andris Consulting
- Carol Lamb-LaFay, Director, Bureau of Water Permits, NYSDEC
- Katrina Kuh, Haub Distinguished Professor of Environmental Law, Pace University *(Invited)*

### Afternoon Keynote Panel

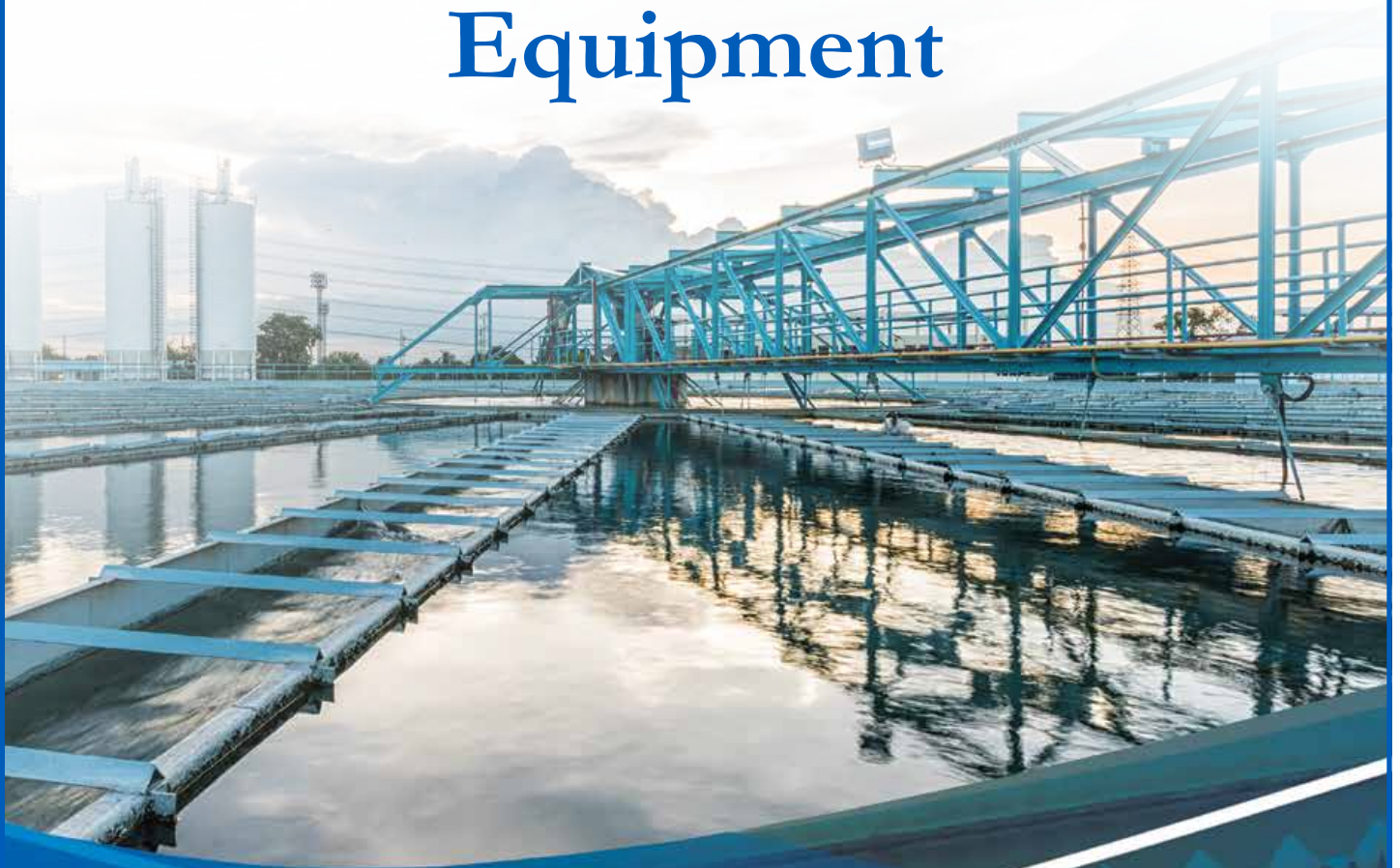
Catherine Flowers, Center for Earth Ethics *(Invited)*

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