



DowFriends Spring Edition

None of us could have predicted the challenges the world would face last year. From a global pandemic to racial tensions, economic uncertainty, flooding in Dow’s hometown and weather ranging from hurricanes to freezes on the Gulf Coast, Dow people continue to endure and step up. We are finding ways to use our resources to support the pressing needs of our people and communities.

Dow retirees and alumni are at the heart of our communities and some of the solutions that got us to where we are today. Check out some of the stories below that highlight the pillars of our ambition to become the most innovative, customer-centric, inclusive and sustainable materials science company in the world.

INNOVATIVE	CUSTOMER-CENTRIC	INCLUSIVE	SUSTAINABLE
<p>Alongside our customers, we create the materials and solutions that transform our world.</p>	<p>We aim to be easy, enjoyable and effective to do business with through all our digital and personal interactions.</p>	<p>We champion a fully inclusive workforce that reflects the world in which we do business, because it’s the right thing and smart thing to do.</p>	<p>In everything we do, we strive for positive impact on society and the planet.</p>

Seek Together™



“I am honored to return to Dow in my new role leading Global Operations and have witnessed an incredible transformation since my 5-year absence from this great company. Dow has just experienced a year unparalleled by any other in recent history. Dow employees have risen to the challenges, continuing to implement new technologies and reduce our waste while working under the limitations of a global pandemic. Our charge for operations is clear: to help achieve our ambition of being the most innovative, customer-centric, inclusive, and sustainable materials science company in the world.”

John Sampson, Senior Vice President, Operations, Manufacturing and Engineering

Dow Total Rewards

Please Note: Total Rewards Changes Do NOT Impact Current Retiree Benefits



THESE CHANGES DO NOT IMPACT YOUR RETIREE OR ALUMNI BENEFITS.

But we are proud of our refreshed Dow Total Rewards and wanted to share how our programs align with our Core Values and meet the needs of our colleagues of our diverse workforce.

Today, Dow announced a refreshed Total Rewards for **active employees**, which includes programs like compensation, paid time off, healthcare benefits, and much more. Dow's ambition is to become the

most innovative, customer-centric, inclusive and sustainable materials science company in the world. Every member of Team Dow plays a role in achieving the Company's goals and is at the heart of our success.

Last year Dow took a close look at the rewards we offer for **active employees** to ensure they remained both competitive and continued to meet the needs of our diverse workforce. The focused effort led Dow to make some important decisions about our rewards and reinforced our commitment to offer equitable and market-competitive programs to all Dow colleagues.

Dow will continue to make a significant investment in a range of programs and resources that employees value with a refreshed look at Dow Total Rewards. Over the next few years there will be changes and enhancements to Dow's programs and plans. **FOR ACTIVE EMPLOYEES (NO IMPACT TO RETIREES)** For example:

- **New Employee Stock Purchase Plan (ESPP):** Dow will be reintroducing an ESPP, pending shareholder approval.
- **Parental Leave & Family Leave:** We will be establishing a global minimum standard for paid time off for new parents and family caregivers.
- **Volunteer and ERG Time Off:** We will be creating a global paid time off policy for employees to engage in ERGs and volunteer in their communities.
- **Wellbeing Portal:** We will be introducing a new website with personalized solutions to support employees physical, mental, financial and social needs.
- **U.S. Retirement Benefits:** We will be updating U.S. retirement benefits to be more consistent across our workforce and heritage companies.
- **Healthcare Assistance:** We will offer financial support for healthcare costs for U.S. employees who qualify, based on their annual pay

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Important information:

Dow will never request information regarding personal credit cards.
If this occurs please inform Dow immediately at 800-344-0661

Defining the “Next Normal” as we emerge from the pandemic means digital

We firmly believe our commitment to advancing digital at Dow will help improve how we serve our customers, transform how we work and open up new growth opportunities.



In 2020, COVID-19 reshaped our lives. One of the biggest changes was the rapid adoption of digital technologies that helped keep us safe, healthy and productive during a time when homes became our primary hub for daily life. Many people stopped going to the office and began working from home. Schools mobilized virtual classrooms to keep teachers and students connected. And social interactions were limited to video chats. As we move toward a post-pandemic world and the “Next Normal,” the tremendous appetite for technology is causing companies like ours to rethink how we work and find new opportunities to connect at the speed of need.

As a company, our commitment to stay connected to each other and our customers never changed. The early investments we made in our digital tools and capabilities kept us working together as a team, innovating with our customers, even improving the customer experience and optimizing our operations. And watching how our team at Dow quickly embraced the use of technology as our new way of working has been a source of pride.

The proof is in the numbers

Our decision to transition to cloud-based solutions two years ago helped us swiftly move to a work-from-home environment. Suddenly, over 80,000 laptops and devices were going mobile. We were conducting 25,000 virtual meetings a day using video capability, allowing our teams to stay connected to our customers and each other despite the physical distance. We engaged with our customers with nearly 25 times the number of webinars and virtual trade shows versus 2019. And we expanded our e-commerce capabilities and introduced GPS shipment tracking, so our customers could easily transact and better monitor deliveries.

By necessity and the resilience of our people, the pandemic showed the capacity of our 123-year-old company to truly be a *digital* company.

Taking lessons forward

Our rapid shift to a remote work environment also taught us valuable lessons for the future -- lessons about reinventing the customer experience, about the value of agility and real-time insights, as well as the importance of designing and leveraging technology to help employees work more seamlessly and intuitively.

As we look beyond the pandemic, digital transformation will continue to be center stage in driving innovation, long-term value creation and productivity. That’s why we’re accelerating our investments in breakthrough capabilities that harness the power of digitalization.

Accelerating our digitalization investments

Building on our solid foundation, Dow **recently announced** plans to further advance our digitalization efforts by investing in three key areas:

- **Innovation:** To more quickly respond to evolving consumer and customer needs, we will continue to implement digital tools to accelerate materials science innovation. This will include exploiting **machine learning** and **advanced modeling techniques** in our product development processes. We also will ramp up the use of digital collaboration platforms and sentiment analysis to guide new product development and identify market trends.
- **Customer experience:** We will further enhance our **e-commerce** buying and fulfillment experience for our customers. We will do this by broadening our **on-line product catalog** and infusing new responsive technologies to improve the on-line buying experience.
- **Manufacturing:** To enhance productivity, reliability and safety, we are adopting additional real-time digital manufacturing insights, operational data intelligence and demand sensing by further investing in **robotics, artificial intelligence** and **analytics technologies**.

A modern way of working

To be successful, investing in digital also means investing in people. The focus shouldn't be on technology alone, but also how technology fosters greater collaboration, eliminates silos and elevates performance. This requires a cultural shift. As we accelerate our digital transformation, we will encourage our people to embrace new ways of working, seek learning opportunities and develop their skills as new tools and practices come along.

We firmly believe our commitment to advancing digital at Dow will help improve how we serve our customers, transform how we work and open up new growth opportunities. As we emerge from the pandemic, we know there may be other disruptions that will become part of our "Next Normal." But we'll be ready. Our digital acceleration better positions us to face the challenges ahead and thrive – no matter what comes our way.

Dow and Under Armor partner for breakthrough shoe launch

Dow delivered Under Armour's fastest time to market for a shoe launch and breakthrough shoes for an NBA star. Check out the [Forbes article](#) below.



The moment NBA star Stephen Curry felt the grippy nature of the new Flow cushioning material from Under Armour, he knew he wanted it for his signature sneaker line. So, even as Under Armour unveils the UA Flow Velociti Wind, a running shoe with an all-in-one cushioning-plus-outsole design that eliminates the rubber outsole and combines it with a new patented upper technology, the brand has already shown the versatility of its new Flow material in basketball's Curry Flow 8.

"The pie in the sky goal was what Flow now is," says Tom Luedecke, Under Armour's creative director of footwear innovation. "We still call it a unicorn foam because it was an audacious ask for it do everything that it does."

While ground-contact foams aren't entirely new, they usually come in a stiffness, durability and traction that don't hold up to rubber. Those were compromises Under Armour didn't want to make with Flow. Using the brand's partnership with chemical experts Dow, the same group behind UA's HOVR cushioning technology, the companies worked together to develop Flow— thanks to new acquisitions on the Dow side and additives and mixes from Under Armour—to strip away excess underfoot and create what the brand calls a durable, comfortable and grippy material. The lucky breakthrough came, Luedecke says, with Dow's team merging on the chemistry side with new partners and then pairing those abilities with the engineers at Under Armour.

“When you talk to runners, they just want to feel like the wind is at their back at every stride,” says Doug Smiley, senior product line manager of high-performance run footwear for Under Armour. “The essence of a great running experience is the absence of sensation. Flow puts you closer to the ground and eliminates what is not essential.”

The new ground-contact foam created opportunities to remove clunky laminations and stiffness so “the shoe moves the way the foot wants to move, the foot dictates what the shoe needs to do. It is a mindset of getting out of the way.” Flow comes as a temperature-stable cushioning offering a responsive ride with just as good, if not better, traction than rubber, according to Under Armour's mechanical and wear testing data.

The Flow material started as a lightweight racing shoe. But when UA engineers within the Baltimore-based brand's Portland, Oregon, office experimented with the material on hardwood within the biomechanics lab, they found exceptional grip. Luedecke recalls sprinting around center court of the hardwood in tight circles, realizing the material could go beyond racing flats. When the team met with Curry in 2019, they showed him early iterations of Flow. “Stephen said ‘I want this for my next shoe,’” Luedecke says. “We were going as fast as absolutely possible to make sure this experience gets delivered ASAP.”

Curry says the Flow offers “innovation where I feel like I can do whatever I want to do.”

Without rubber, designers had to rethink traction patterns, discarding herringbone and using a proprietary process complete with digital mapping to create Flow-specific traction for basketball and running that expanded up the side of the shoe's cushioning.

For the UA Flow Velociti Wind, Flow pairs with the new patented Warp upper featuring 3mm-thick nylon and polyester blended bands. With breathable material spaced between the bands, the lightweight upper comes extremely flexible and breathable, but with enough lock down to keep the wearer on the Flow footbed, from heel strike to toe-off. Using biomechanical testing, Under Armour wanted to ensure the foot was held in from the heel pocket to the push-off phase of a run, but all in a minimal design.

“They are like little seatbelts on the upper pulling you down,” Luedecke says, adding Warp will offer the “next big upper technology” across sports categories. “How the tape is laid out, they get out of the way and collapse when not in use and are in tension at specific points.”

The UA Flow Velociti Wind launches globally March 3 and signifies a new pillar for the brand. Smiley says to expect running versions with different uppers in late 2021 and continued opportunities with the material in 2022. The brand expects basketball to also “take a big leap in the next year or two” using the Flow technology.

Aesthetically, Under Armour used color and gradients to show off the design lines of the Warp upper while highlighting the look of the Flow bottom. “We don’t want to hide the technology,” Smiley says. “We are launching two new technologies. We want to amplify the experience.”

Global African Affinity Network champions write the history that they want to see



Look closely at the present you’re constructing. It should look like the future you’re dreaming.
- Alice Walker

Although history is typically measured by big moments, history is made every day by people who recognize they can make a difference. During this Black History Month, our Global African Affinity Network (GAAN) employee resource group is celebrating members who recognize the importance and value of an inclusive workplace and world, and are actively making it happen.

Our first-ever GAAN Champion Awards recognize employees who advocate for racial equality, cultivate talent at Dow and in the communities where we live and do business, drive positive change within Dow and volunteer and engage in their communities. Award winners were nominated and selected by their peers.

Action is the antidote

Author Alice Walker said: “Look closely at the present you’re constructing. It should look like the future you’re dreaming.” In a world where systemic racism and inequality are all too real, our champions understand that we all share a responsibility as part of Team Dow and as community members to put our unique perspectives and talents into action - action we take to create a more inclusive world.

Here’s how our GAAN Champions are making an impact:

- **Advocacy:** Eneias Sousa, a cost accountant for Dow Polyurethanes at our Terneuzen site (The Netherlands), has been a tireless advocate for GAAN on two continents – Latin America and Europe. In Brazil, he worked on setting up a mentoring program between Dow and Zumbi dos Plamares University. He also hosted forums during Black Awareness Month and led an inclusion workshop with the Latin American leadership team. When a career move took him to The Netherlands in 2019, he didn’t skip a beat. Within a short period of time, he helped launch GAAN EMEA (Europe, Middle East, Africa and India). And despite the pandemic, he has continued to encourage open dialogue on race by hosting virtual coffee break conversations.
- **Build & Retain:** Bola Oshin, a finance manager for Dow Industrial Solutions in Midland, Michigan, is passionate about identifying, developing and retaining Black talent for Dow. She has taken the lead in recruiting Black students for finance roles at Dow through the

National Black MBA Association, National Association of Black Accountants and our own Dow Diamond Symposium. She also mentors Dow Finance interns and coaches employees to participate in career mapping. But that's not all; she wants new employees to feel truly welcome and settled in their communities. To encourage a sense of belonging, she has invited new employees to developmental events, community picnics and into her home for dinner. She has even organized baby showers for new employees with no families nearby.

- **Cultural Awareness:** Elieth Batista Fonseca, an environmental, regulatory and compliance specialist in Brazil, is taking action to cultivate a culture where differences are valued and celebrated. Representing the Brazil chapter of GAAN, she has participated in creating workshops and training sessions for employees as part of Inclusion Week Brazil and a GAAN-sponsored workshop called "Inclusion Has All Colors." She also has led "Fight Against Racism" awareness sessions at two Brazil sites and worked with non-governmental organizations on issues of diversity and inclusion.
- **Volunteerism:** Melanie Robinson is an improvement engineer at our St. Charles Operations site in Louisiana. Since her early days at Dow, when she became a Dow STEM ambassador, she has inspired minority students to pursue STEM careers. For more than five years, she has worked with the Young Leadership Council, Junior Achievement and Dow to hold at least two STEM events per year. These events have included career fairs and classroom visits at urban schools, in which STEM professionals shared their career paths and engaged students in STEM activities. In addition, she has engaged students in hands-on science experiments and initiated plant tours at her site – all to inspire the next generation of scientists and engineers.

By promoting inclusivity, encouraging open dialogues, challenging norms, inspiring the next generation of leaders and rolling up their sleeves to give back to their communities, our GAAN Champions are taking actions to create the history that they want to see – and the world needs.

Going big: Now is the time for a bold, durable strategy for climate protection



As President Joe Biden took office yesterday, our nation faces critical and urgent issues: a global pandemic, extraordinary economic challenges and political unrest following the siege on the U.S. Capitol.

Yet, as one of his first acts in office, the President rejoined the Paris Agreement. While the U.S. has made substantial progress on CO₂ emissions, this move signals to the rest of the world that the United States will once again engage and collaborate in reducing carbon emissions to stave off the worst impacts of climate change. Its message also should be a reminder that, while our nation faces the immediate task of recovery, we must work for transformative change. Now is the time to act – act boldly, to move our nation toward a net-zero economy.

Climate change is already causing more frequent and severe weather across the United States. Our communities and businesses face threats to infrastructure, ecosystems, health and the economy if global warming is allowed to continue, according to a comprehensive [National Climate Assessment](#). There is a real and calculable cost to inaction, a cost that only worsens over time. However, our borders do not insulate us from the impacts of climate change; it is a global challenge. Partnering with

our allies – across business, government and society – to level the global playing field and ensure alignment on credible, effective, and long-lasting solutions will be critical.

By seizing the moment and going big with durable policies and investments that are equal in their ambition to the climate challenges we face, we can help secure a more stable and prosperous future for the entire planet.

Fast-forward to decisive action

Decarbonization will require big changes in almost every sector of the economy – and breakthrough technology and levels of infrastructure investment not seen in the United States in decades. This is a big opportunity for the United States. Central to these efforts is the transition to all forms of clean energy. But the clean energy technologies that are required to get to a net-zero economy are at different stages of development and have not reached commercial scale. Government policies and incentives are needed to accelerate the development of the required clean energy that will support this transition.

In addition to supporting the aims of the Paris Agreement, the United States should lead by example, adopting a credible, durable, competitively sustainable and comprehensive climate strategy for the world to follow. The strategy must aim to reduce, avoid and mitigate emissions, while increasing resilience and adaptation to climate change.

Actions should include:

- **Government policies that accelerate the development of all forms of clean energy.** Incentivizing innovation can drive emissions reductions at low cost, while also helping find optimal pathways for transforming our power sector and overcoming infrastructural and technological challenges related to renewables. For example, renewables can work for electricity demand in homes and vehicles, but many manufacturers require constant, very high temperatures to make products, which today can only be provided by coal, gas, hydrogen or nuclear energy. We will need all forms of clean energy to transform across all sectors.
- **A market-based, economy-wide price on carbon.** This could be one of the most effective policies to address climate change. An emissions trading system (ETS) could provide a smart framework to reduce carbon emissions and has proven to be a cost-effective carbon reduction policy in nearly 40 countries.
- **Strategic investments in infrastructure.** Although a price on carbon is not a silver bullet, we need to direct those funds to invest in process and technology breakthroughs and make strategic infrastructure investments. The private sector alone cannot create a net-zero U.S. economy without the full advantage of public investment from funds collected via a price on carbon.

These actions not only will move us closer to achieving a net-zero economy, but also will create jobs and boost U.S. competitiveness.

The role of business

While government must lead the way in the transition, companies also have a meaningful role to play. Recognizing the risks and opportunities, many companies, including Dow, already have taken major steps to reduce their climate impact and help achieve the vision of net-zero. In June, we accelerated our commitment to climate protection by [announcing new targets](#) that will help us lead the industry toward carbon neutrality, in line with the Paris Agreement.

Our actions aren't only aimed at reducing emissions, but investing and innovating technologies that contribute to a low-carbon society, such as materials for lightweight cars, building insulation and solar panels. In fact, many Dow products help lower our customers' emissions by more than the carbon emissions used to produce them. Companies like Dow have a unique role because our products are an important part of the strategy to achieve a net-neutral global economy.

So, what is needed to meet the global challenge of climate?

We need national policies that harness market forces and mobilize investment and innovation. We also need partners – the world needs to come together.

Yes, this work and these investments will have real costs, but so do the runaway costs of inaction. One study has estimated that, if emissions remain unchecked, losses related to just four areas – hurricane damages, energy costs, water costs, and residential costs stemming from sea-level rise – could equal 1.4 percent of GDP by 2025. The benefits – on the other hand – are numerous: new jobs, stronger U.S. competitiveness, improved public health, enhanced national and global security, and the preservation of vital ecosystems.

Now is the time to do what is necessary. Now is the time to work together and make the smart choices.

Now is the time to be bold and go big in investing in global climate protection.

We should all choose to challenge on International Women's Day

March is Women's History Month; an annual declared month to celebrate the countless accomplishments of women in history and today.

Today is 2021 International Women's Day carrying the theme: 'Choose to Challenge'. Let's hear from Margherita Fontana (Global Strategic Planning & Governance Procurement Director and Chair of Dow's Global Women's Inclusion Network) and Howard Ungerleider (Dow President and Chief Financial Officer and executive sponsor Dow's Women's Inclusion Network), how we can call out gender bias and promote equality, in a global effort to help advance an inclusive world through the empowerment of women.



It is International Women's Day today. Margherita, can you explain why it is important that we raise awareness for this day?

I believe that raising awareness about global challenges such as gender inequality, lack of equal opportunities or gender pay gap is the first important step to solve these societal challenges. The missed global business opportunity of gender discrimination in the workplace and civil society amounts to the trillions of dollars, which is too relevant to be overseen... Celebrating International Women's Day helps tremendously to shed light and attract attention to these unsolved issues!

Howard, Women's History Month celebrates the contributions of women to events in history and contemporary society. What does this this month mean to you and what does it mean to Dow?

Each of us can certainly think of a woman who has had a meaningful impact in our lives – a family member, a coach, a teacher, a leader, a colleague, or friend... And at Dow, whether in our labs and manufacturing plants, in the field or in an office, across the globe Dow women are doing incredible work to advance our ambition to be the most innovative, customer centric, inclusive and sustainable materials science company in the world. We recognize and celebrate these contributions every day – but Women's History Month gives us the opportunity to shine a light on the women who make Team Dow so successful.

Margherita, the theme of this year's International Women's Day is 'Choose to Challenge'. What is your perspective on what should be challenged in the corporate world?

We should challenge the pace at which the changes in terms of Inclusion and Diversity are being implemented across corporations and countries. In a world moving at a very high speed, whereby we all experience daily changes in the way we produce, consume and live, we cannot be satisfied to wait another 100+ years to achieve equality in the workplace and in society... I know this may sound surreal, but without bold commitments and stepping forward, our grand-, grand children would still need to address the equality gap!

Howard, from your experience, how can all contribute to challenging the status quo to fight gender bias and inequality, even if you don't identify as she/her/hers?

The data shows that gender equality makes good business sense, but beyond it's also just the right thing to do! Gender equality makes our families and communities stronger. Gender equality is not a just a women's issue -- all play a critical role in creating an inclusive workplace and in eliminating gender bias. I recognize that – and that's one of the reasons why I'm honored to be the executive sponsor for Dow's Women's Inclusion Network (WIN).

One of the pillars of our WIN strategy is to engage allies. We work with several organizations – including EY and its Power Up program. In Power Up, all - regardless of identification, sit together and talk about the experiences that women have in the workplace. These conversations help give allies a different perspective and can help them recognize how their behavior can either contribute to a more inclusive workplace – or could be a potential roadblock. Resources like those offered from Catalyst's Men Advocating Real Change (MARC) program can help all at Dow fundamentally improve their impact as advocates for change.

I'm personally committed to doing all I can in my community and in Dow to help ensure that every member of Team Dow has equal opportunity to pursue their goals and ambitions.

Margherita, why do you choose to challenge and what do you aspire these challenges to result in?

I aspire to help close the gender gap and drive equality both in the workplace as well as in the community I live. I am a strong believer that we need to encourage more girls and women to step into STEM fields of studies and work. To solve the world biggest challenges such as climate change, reducing waste, eliminating poverty, we need a diversity of minds at the design and implementation table. I have studied STEM disciplines, which has been a key enabler in my career because of the many avenues I could choose to explore. Therefore, I am investing my time and resources to challenge our biases, provide mentorship and sponsorship to young girls and women to encourage them to dream big and to fulfill their ambitions.

What about you, Howard?

I choose to challenge because ensuring the talents and unique perspectives of women are included at every level of our company is key to our success. I am proud that we've made great strides in gender equity, but there is more to do... As part of our effort to align with Dow's ambition and become a leader in equitable and inclusive offerings, we recently announced that beginning in the second half of 2021, we will be establishing global minimum standards for paid time off for new parents and family caregivers. These changes will include increases in paid time off in many countries around the globe and will be aligned with local regulations. In addition, we believe all colleagues should be able to afford their healthcare coverage and related costs they may incur when they need care. Beginning in 2022, Dow will offer discounted healthcare premiums for U.S. employees who qualify, based on their annual pay. These are important steps to allow our Dow Team to thrive.

We found a meaningful way to measure and deliver loyalty-building customer experiences that contribute to making collaboration and growth with Dow *easy, enjoyable* and *effective*.

At Dow, we began our CX transformational journey in 2018, learning and building on Dow Corning's systematic approach to serving customers and scaled it to Dow's larger enterprise and extended customer base. We focused on listening to our customers through our annual survey, understanding their pain points using journey mapping, and acted quickly on their feedback. This has become our mantra of sorts; we follow this cycle to continue learning and improving.

We have now entered a point in our journey where we need to understand how our CX efforts measure in comparison to other organizations in our space.

And, after thorough exploration of practices throughout the advanced manufacturing and chemical sector, I kept coming up empty. A variety of CX measures do exist, but they mostly capture Business to Consumer (B2C) experiences. Those don't fit B2B because our customer journeys are different and often much more complex.

There is an opportunity to create a more universal, reliable benchmark for measuring CX in our sector that would enable us to drive improvements in the customer experience across the industry. A first step to get there was to create a space to discuss the approach with others in the value chain.

Introducing a Customer Experience Consortium

Last year, Ernst & Young (EY) and Dow launched a [Customer Experience Consortium](#) that brings together stakeholders across the value chain to establish a common CX metric and shared methodology for measurement. Our goal is to establish a metric robust enough to function as a cross-industry benchmark, that has audit quality and can be reported to our own Board of Directors and the analyst community with transparency.

Internally, we recognized an important milestone when we announced our CX goals were to be integrated into our Environmental, Social and Governance (ESG) reporting to investors. It shows how CX is delivering more value for Dow, our shareholders, and, ultimately, all our stakeholders. Since we can demonstrate that investing in CX enables growth and higher value, we can help this new sector wide CX metric deliver new-found value to our entire sector.

My colleague at EY, Bernard Kang, Pricing & Commercial Analytics practice leader, helped develop the advanced approach to measuring CX and launch this cross-industry consortium. Bernard shared that he is "excited about leveraging this collaborative approach to helping companies understand how they can measure CX and ultimately serve their customers more effectively."

In the spirit of collaboration, we are sharing a series of articles we put together with Customer Experience insights that draw from Dow's CX journey so far.

Supporting STEM learners with online learning during the pandemic



When the COVID-19 pandemic hit and many schools moved classes online, teachers rapidly had to adjust to remote instruction. One of the biggest challenges for high school science teachers has been finding ways to transfer labs to a virtual space.

Recognizing that educators need extra resources during this challenging time, Dow has engaged on many fronts to support virtual learning. The most recent

example is providing financial support toward the expansion of free chemistry learning resources – including virtual labs, tutorials and simulations – to high school teachers and students through Carnegie Mellon University’s [Open Learning Initiative](#) (OLI). Since March 2020, Carnegie Mellon University (CMU) has been offering free introductory general chemistry courses through its OLI platform. The grant will help those courses remain free throughout the academic year and provide enhanced resources to reach a larger and more diverse group of students and teachers.

“Dow is committed to the promotion of [STEM](#) education and creating equitable opportunities for students,” said Dave Parrillo, vice president of R&D at Dow and an executive sponsor to CMU. “Teachers and students need innovative options for advanced chemistry courses at the high school level during the pandemic, and we are excited to be able to bring CMU’s resources to those who may not otherwise have had access.”

Taking chemistry labs online

Typically, a lot of learning in chemistry is hands-on. Students often are inspired and learn problem-solving skills in laboratory environments where they see firsthand the transformations that can occur when they follow an experiment. But how do teachers effectively make the leap and transfer real-world learning to a virtual world?

When the pandemic hit, CMU Chemistry Professor David Yaron knew he could provide answers. Since 2000, he and his colleagues have run the [ChemCollective](#), a collection of virtual labs, simulations and tutorials. In 2019, ChemCollective resources were incorporated into full courses, Chemistry 1 and 2, on CMU’s OLI platform. The courses include built-in tools to help teachers make sure their students understand the concepts they are teaching.

“With additional funding, we can provide more resources by moving more virtual lab activities to our ChemCollective site on OLI, which is a much more stable platform,” Yaron said.

A key to virtual lab activities is to challenge students to think critically about the chemistry that is involved. For example, one of CMU’s virtual labs asks students to predict the solubility of copper chloride at different temperatures then test their predictions by creating the solution on their screens. By generating their own data, students must think about the relationship between solubility and temperature.

“Our activities have been designed, tested and refined over the past 20 years to enable students to reason like scientists, understand connections between chemistry and their lives, and apply their

knowledge to design and interpret experiments, even when physical labs are not available,” Yaron said.

Expanding access to STEM learners

Since March 2020, more than 3,500 new students have enrolled in the OLI chemistry courses. This semester, there are 140 class sections taught by 87 teachers. The courses have provided a much-needed resource for teachers who have had to rapidly adjust to new ways of instructing students.

While the sudden move to virtual instruction created an immediate and urgent need, virtual STEM resources such as CMU’s chemistry courses can continue to help significantly enhance science teaching and learning – even after the pandemic. In fact, the [National Science Teachers Association](#) supports and encourages the use of e-learning experiences for science students, as well as for science educators engaging in professional learning in the traditional, informal, or online learning environment.

“We’re committed to providing diverse learners with equitable access to high-quality STEM courses and learning experiences,” said Parrillo. “By supporting the development of high-quality, affordable and accessible resources such as CMU’s online chemistry courses, we can help students become better at learning and educators become better at teaching.”

[Learn more](#) about how Dow is investing in future by equipping students with the STEM skills needed for the jobs of tomorrow.

Dow and The Nature Conservancy celebrate 10 years of groundbreaking collaboration to value nature in business strategy

On January 24, Dow and The Nature Conservancy (TNC) celebrated the 10-year milestone of their unique collaboration to demonstrate the business case for valuing nature in business decisions. The guiding premise of the collaboration is built on the concept that incorporating ecosystem services can lead to better business and conservation outcomes.



“Dow’s collaboration with TNC has enabled a decade of groundbreaking work that is changing the relationship between business and nature, generating significant value and sparking lasting change,” said [Jim Fitterling](#), Dow’s chairman and chief executive officer. “A sustainable business strategy can only be achieved by looking at how a company’s decisions affect both its bottom line and the well-being of its communities. The Nature Conservancy has been an incredible partner on this journey, and we look forward to continuing to unlock value for nature and business together.”

“A decade ago, TNC and Dow embarked on this collaboration as unlikely partners with a common goal—to demonstrate nature’s immense value to business,” said [Jennifer Morris](#), CEO, The Nature Conservancy. “We’ve built a strong relationship grounded in science, implementing on-the-ground projects and developing new tools to drive progress. It’s been exciting to see Dow’s culture change as

the company has embraced integrating nature into decision making, and we look forward to expanding our work together in the years to come.”

This work is an example of how companies and organizations from different sectors can work together to drive change and serve as a model for how other companies can incorporate nature into their business practices and increase investment in protecting nature’s valuable resources. Dow and TNC share a common commitment to science, which serves as the foundation for the work. All learnings and [results are reported publicly](#).

During the early work of the collaboration, the teams conducted robust scientific studies at Dow sites to show that nature-based solutions can be good for business and better for nature, such as how [reforestation can be a cost-effective approach for ozone control](#) and that [marshes can protect coastal assets against sea-level rise and storms](#).

Then, the work focused on developing and sharing the tools and methodology needed for companies to build nature into their everyday practices. The first tool to come out of the collaboration was the [Ecosystem Services Identification & Inventory Tool](#), or ESII Tool (pronounced “easy tool”), released in 2016. The ESII Tool allows users to quickly and effectively generate information on the ecosystem service performance of a specified landscape. The tool is available for [free download](#).

Inspired by the collaboration’s success, Dow launched its [Valuing Nature Goal](#) in 2015, as part of its [2025 Sustainability Goals](#), with the aim to value nature in capital, real estate business development and new products. TNC helped frame the goal and has helped put in place processes to implement a methodology for evaluating ecosystems at Dow sites. Dow is more than halfway toward its target to deliver \$1 billion in net present value from projects that deliver both environmental and financial value.

Key Nature Projects Stemming from the Collaboration

From living walls to wetlands, here are a few examples of projects that were implemented by Dow through its Valuing Nature Goal:

- [Aratu, Brazil](#) : Used a “living wall” solution to stabilize a slope with a natural engineered technology that incorporates native plants. By creating this “living wall” instead of using traditional steel and concrete, Dow reduced carbon emissions by 90% and reduced impact to the local forest, while also reducing costs by \$1.6 million versus the least expensive of the alternatives.
- [Seadrift, Texas](#) : In the aftermath of Hurricane Harvey, TNC helped Dow orchestrate a prescribed burn to ensure wetlands recovered quickly and efficiently from salt intrusion, re-establishing an existing constructed wastewater treatment wetland, originally built by Dow in 1995.
- [Midland, Michigan](#) :Using the ESII Tool, the team proposed a nature-based solution in lieu of a traditional method of capping to convert an ash pond to a 23-acre conservation wetland with recreational amenities. The restoration improves ecological functions and reintroduces more than 25,000 plants, supports biodiversity and improves water and air quality, while saving \$2 million over the life of the project.

Dow and TNC will continue to define opportunities aligned to sustainability and conservation priorities, such as water resilience, coastal resilience, climate adaptation and carbon reduction. The collaboration will continue to help Dow advance its new, ambitious [sustainability targets](#), announced in June 2020, and put the Company on a path to achieve carbon neutrality by 2050 and increase the Company’s positive impacts on society, its customers and its business.

Dow wins three 2021 BIG Innovation Awards from the Business Intelligence Group



Dow announced it has received three innovation awards from the Business Intelligence Group (BIG) for breakthrough technologies. BIG's Innovation Awards recognizes organizations, products, and people that are bringing new ideas to life in innovative ways.

“Our innovations continue to position Dow to deliver differentiated products and solutions for our customers, bringing value to our shareholders and addressing some of the world's greatest challenges.” said A.N. Sreeram, senior vice president of Research and Development and chief technology officer for Dow. “Our scientists and engineers use Dow's unique-to-the-world capabilities to deliver market-driven solutions to our customers that are simultaneously better

performing and more sustainable. It is great that the Business Intelligence Group is again recognizing the impact of Dow's innovative products.”

This marks the fifth consecutive year Dow technologies have been awarded BIG Innovation Awards. The award-winning technologies from Dow this year include:

- **DOWSIL™ TC-3065 Thermally Conductive Gel** is a one-part, heat cure silicone based thermally conductive gel positioned as a leading material in optical transceiver in vital 5G telecom and data center applications. The material provides high thermal conductivity with electrical isolation, high extrusion rate (65g/min), high compressibility, no silicone oil bleeding and ultra-low VOC. These unique properties enable use and rework ability of high-power density chipsets and electronic components for a sustainable solution. High thermal conductivity performance (above 6W/mK) requires sophisticated composites engineered with a highly effective filler loading. The ability to combine composites with these high thermal and soft physical properties provides a unique differentiator to optoelectronic manufacturers.
- **DOWSIL™ 993N Structural Glazing Sealant and Catalyst** is a two-component, neutral curing silicone adhesive/sealant formulation specifically developed for the structural bonding of glass, metal and other building components. 993N meets the European standard ETAG002. It exhibits excellent weathering properties and has high resistance to ultraviolet radiation, heat and humidity once cured. This high-modulus sealant has excellent adhesion to a wide range of materials and is the gold standard, proven by many case studies found on dow.com. The new and improved version offers greatly improved elongation and a higher extrusion rate at a great value.
- **Dow: World's First Commercial Polyurethane-Carbon Fiber Spar Cap for New Generation of Wind Blades** - Dow and DowAksa collaboratively debuted a disruptive technology marrying polyurethane chemistry and carbon fiber into a customized process, for a stronger and lighter composite material. Applied into the spar cap in modern wind blades, this technology accelerates our ability to meet the global growth demand for wind power and a sustainable energy future. This novel technology covers the range from chemistry to manufacturing hardware, enabling perfect impregnation of +10 MM carbon filaments, being the first in solving this industry challenge. The novel composite material demonstrated the best properties-productivity balance when compared with incumbent resins. This newly minted material exemplifies the power of science and its boundless potential in helping us build a more sustainable future.

For more information about Dow's innovation engine see [Areas of Expertise](#) and [Awards](#). To view our latest Sustainability Report visit [Highlights and Reporting](#).

COVID-19 timeline of Dow's philanthropic efforts

Crisis reveals character – and this moment in history reveals how much spirit and resilience each of us carry.

COVID-19 also reveals how deeply people and institutions – public and private, local and international – depend on one another. We can't go it alone. Our food supply depends on countless farmers, truck drivers, and grocery store workers.

Healthcare professionals can't save lives safely without supply chains that effectively

distribute Personal Protective Equipment, ventilators, disinfectant, hospital beds, and more.

We've got to keep these resources flowing.

Since the beginning of this outbreak we've engaged with local and international organizations around the world to aid frontline workers and help protect vulnerable populations.

Here is one of our many philanthropic efforts. To view the complete timeline [click here](#).

The pandemic continues to impact our health and safety, our economy, our culture – everything from the way we work to the way we shop...the way we gather to the way we learn. But even through the hardship – Dow continues to find ways to use our resources to support the pressing needs of our people and communities, and we are seeing the positive impacts of our collective efforts.

While 2020 was an extremely challenging year, once again our company values continued to guide us forward.

And now as the pandemic has progressed, we are seeing the toll on, not just our physical health, but our mental health as well. In response to these rising needs, today I am pleased to announce **new mental health investments** in partnership with local and global nonprofits, donating nearly \$500,000 to connect community members and employees to essential services, support, and resources for their psychological safety and wellbeing.

We are collaborating with the following partners for support:

- \$100,000 to **Child Mind Institute** – Providing employees, families and educators around the world with evidence-based mental health resources and tools designed to transform the lives of children and families.
- \$100,000 to United Way efforts in Brazil and Argentina – Including the **Born Learning Program** in Brazil where socially vulnerable children will receive holistic support through nutrition, parenting resources and mental health support. And the **Supporting Caregivers Project** in Argentina where caregivers of school-aged children will be supported with



resources promoting mental health, self-care, and healthy practices aimed at strengthening ties with children.

- \$100,000 to the **Midland County Youth Mental Health Initiative** where educators and youth will receive training and support to respond to mental health crises, including suicide prevention, and training to provide social emotional learning (SEL) curriculum.
- \$150,000 to **2-1-1 Support** in Michigan, Texas, Louisiana, Pennsylvania, Kentucky, West Virginia and Canada where community members will have continued access to expert help, including the essential mental health and human services they need, 24 hours a day, seven days a week.

Including these collaborations, Dow and the Dow Company Foundation have provided a total of **\$4.5MM for COVID relief through 201 grants to 169 different organizations in 32 countries.**

I want to thank all of the front-line healthcare workers tirelessly fighting the pandemic; the teachers and parents and children adapting to an ever-changing environment; our community leaders and nonprofits expending every resource to meet the critical needs of our neighbors; and of course all members of Team Dow for their continued commitment to safely manufacture and deliver the products essential to our way of life.