Meet the New AMS Executive Director, Stella Kafka

As executive director of the American Association of Variable Star Observers (AAVSO), a nonprofit worldwide scientific and educational organization of amateur and professional astronomers, Stella Kafka utilized a combination of talent, skills, and scientific accomplishments that she now brings to her new role as AMS executive director.

“As the executive director of a nonprofit, I recognize that today’s associations deal with the same volatile and uncertain operating environments as for-profit companies,” Stella notes. “There is increasing pressure to allocate resources effectively, create financial sustainability, and achieve a more significant impact. While we are all focused on improving the world around us and leaving a long-lasting positive legacy, the AMS needs to run efficiently and effectively to better serve our community.”

Stella obtained her B.Sc. degree in physics from the University of Athens, Greece, and her master’s and Ph.D. in astronomy, with a double minor in physics and geophysical sciences, from Indiana University in Bloomington. There she received the Hollis and Grete Johnson Award for Excellence in Graduate Student Research. After completing her Ph.D., Stella held a series of prestigious postdoctoral positions and fellowships, first at the Cerro Tololo Inter-American Observatory in Chile, where she received the National Optical Astronomy Observatory Excellence Award, then at IPAC/Caltech, and finally as a NASA Astrobiology Institute Fellow at the Carnegie Institution of Washington.

Stella also brings with her a wealth of managerial experience. In addition to serving as the director of two research and mentorship programs for undergraduates while in Chile, Stella managed editorial, marketing, financial, business development, operations, and production aspects of journals at the American Institute of Physics (AIP). As a journal manager at AIP, Stella successfully oversaw the launch of a new journal and served as a liaison between publishing and research communities.

“I approach my work the same way I approach my life: with integrity, passion, positive attitude, teamwork, a thirst for knowledge, and a sense of humor,” Stella says. “I am open-minded and adaptable to challenges, which are valuable assets in today’s nonprofit world, where we experience a moment of seismic change in which the fault lines are technological, generational, and demographic.”

On top of her research and management abilities, Stella brings an international perspective to her work. After growing up in Greece, she obtained a Proficiency Diploma in the French language (she has one in English, too), pursued higher education in the United States, and worked and traveled in South America (including Chile, Argentina, and Brazil). Stella is fluent in Greek and English and speaks Spanish and French.
“Throughout my career, I’ve had the opportunity to live and work in different countries, interacting with international communities, which broadened my exposure to people from different cultures,” Stella comments. “The beauty about those experiences is that they helped me develop the capacity to operate in a very diverse community; to learn to listen to and understand individuals from backgrounds different than my own. I have personally benefited and grew through collaborating with individuals from all over the world, and I greatly appreciate the different perspectives and valuable experiences I’ve gained.”

“I approach my work the same way I approach my life: with integrity, passion, positive attitude, teamwork, a thirst for knowledge, and a sense of humor.”

Stella enjoys interacting with people of every age and background and has honed her communication skills through mentoring students, classroom teaching, and lectures to professional and public audiences. And then, like all good communicators, she knows when to stop and listen.

“A new start at the AMS is a good time to take stock and make critical decisions for the AMS’s future and role in science and in society, capitalizing on the values we will need to carry us forward: the multifaceted practices of inclusion that are required if we are to be part of the justice and equity we seek to amplify in the world,” Stella notes. “I am honored to be given the opportunity to join the AMS team as executive director, lead AMS to the next chapter of its history, and help advance the atmospheric and related sciences, technologies, applications, and services for the benefit of society.”

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ALLISON WING, Florida State University (FSU) researcher, has been named to Popular Science’s Brilliant 10 list of early-career scientists conducting groundbreaking research in their fields. She was selected for the Brilliant 10 from among hundreds of scientists across varied disciplines who are researching creative solutions to the world’s most pressing problems.

An assistant professor of meteorology in the Department of Earth, Ocean and Atmospheric Science, Wing is recognized for her work on the organization of tropical convection. Cloud response to warming is a big uncertainty in projections of future climate change, and Wing’s research on the role of cloud clusters in climate—including leadership of an international intercomparison of idealized models—hopes to narrow down that uncertainty.

Since arriving at FSU in 2017, Wing has received funding from the National Science Foundation, NASA, and NOAA. She was awarded a New (Early Career) Investigator Award from NASA and an Outstanding Early Career Award from AMS’s Committee on Tropical Meteorology and Tropical Cyclones. Wing also teaches undergraduate courses in atmospheric science and mentors graduate students in tropical and climate science.

Wing earned a doctorate in atmospheric science from the Massachusetts Institute of Technology in 2014 and conducted her postdoctoral studies at Columbia University’s Lamont-Doherty Earth Observatory before joining the faculty at FSU. She earned a bachelor’s in atmospheric science from Cornell University in 2008.

Wing’s research has been published in numerous scholarly journals, including the Journal of Advances in Modeling Earth Systems, Proceedings of the National Academy of Sciences, Geophysical Research Letters, the Journal of Climate, and the Journal of the Atmospheric Sciences, among others.
MEET THE AMS

Richard Clark
2022 AMS President

Richard Clark’s involvement in AMS began as a graduate student and grew out of a desire to be an active participant in a professional society as well as an appreciation for its history and legacy.

“I knew of AMS having met Athelstan Spilhaus through his son Karl when I was a textile chemist and he the director of the Northern Textile Association,” he remembers. “Since joining as a student member, I’ve had the privilege of serving with many dedicated members as part of boards, STACs, the AMS Council from 2008 to 2011, and now as AMS president.”

Richard is an AMS Fellow and the recipient of the 2008 AMS Teaching Excellence Award (now the Edward N. Lorenz Teaching Excellence Award).

While being involved in AMS was a straightforward decision, according to Clark, a more circuitous route to this point in his career would be hard to envisage. Having a passionate interest in all things space since elementary school, he attended Point Park College as a first-generation Vietnam-era student pursuing majors in both chemistry and mathematics while working full-time to pay for college. Drafted into the U.S. Army, he spent his training as a meteorological observer at Ft. Sill, Oklahoma.

“My tour of duty at the White Sands Missile Range (WSMR) in New Mexico involved launching radiosondes in support of scientific experiments such as the Mars Viking Lander and high-altitude balloon-borne cosmic ray studies,” Richard explains. “Being at WSMR gave me access to the base technical library where I must have read nearly every book on astrophysics, high-energy particle physics, and planetary science.”

Returning to college with a newfound sense of purpose—and funding through the GI bill—he finished his degrees and continued on to the graduate program in astronomy at Penn State, with a special interest in solar physics. But after three semesters of working full-time in order to pay tuition, he put graduate school on the back burner and spent the next seven years working as a textile and water-quality chemist, started a family, raised hogs, and was nearly self-sufficient on 20 acres in northern Pennsylvania.

His desire to pursue an advanced degree in atmospheric sciences led Richard back to school at the University of Wyoming, where he worked under Tom Parish and Al Rodi.

“Three days after arriving in Laramie, I was off to Ponca City, Oklahoma, to take part in an airborne investigation of the Great Plains Low-level Jet (GPLLJ),” Richard notes. “As a graduate student, the opportunity to fly on the Wyoming King Air research aircraft and have the responsibility of managing the data systems was exhilarating.”

The data collected during the first summer constituted the bulk of the observations he used for both his M.S. and Ph.D. in atmosphere sciences.

“I would like my students to know that nothing gives me more pleasure than seeing them learn and prosper. Their success is the essence of why I’m here and the capstone of my career.”
“The four-plus years that I spent at Wyoming stands as one of the highlights of my life,” Richard says.

Today, Richard is 34 years into a career at Millersville University as a chair of the Department of Earth Sciences for 20 years, a professor of meteorology, and program coordinator for an M.S. in integrated scientific applications and a new graduate certification in space weather and environment: science, policy, and communication.

“I can honestly say that I’m as thrilled to walk into a classroom of undergraduate meteorology students and engage them on the topics of thermodynamics, radiative transfer, and boundary layers and turbulence as I was when I was a new faculty member,” he says. “Millersville has allowed me to engage in my passion for solar physics and astronomy by teaching a course for science education majors called Earth in Space, and an advanced course in space weather and environment, which serves as a capstone to our academic minor in heliophysics and space weather.”

Richard notes that “I owe much of my inroads into leadership positions to the late Russell DeSouza, who with the support of Rick Anthes, then UCAR president, brought Millersville into the UCAR/NCAR community through the UCAR Academic Affiliates Program (AAP).” After DeSouza passed away in 1997, Richard took on his position as AAP representative, which led to his involvement in Unidata.

“I always felt that receiving the 2006 Unidata Russell L. DeSouza Award for Outstanding Contributions to the Unidata Community was a tribute to his mentorship and a role model for how to become engaged in the community,” Richard says. “Over the years I’ve had meaningful opportunities to serve in leadership roles like chair of the NCAR Observing Facilities Advisory Panel, President’s Advisory Committee for University Relations, UCAR Advocacy for Science Committee, and as a two-term trustee-at-large to the UCAR Board of Trustees, the first from a non-Ph.D. institution for two terms.”

Richard notes he’s indebted to many people who along the way have provided encouragement and opportunity, including his mother, who would bear cold winter nights to join him at his small telescope and today at 101 years old is still his advocate and critic.

“I also want to acknowledge my wife and colleague, Sepi Yalda, whose advice and perspective gives me insight, personally and professionally,” Richard adds. “And I would like my students to know that nothing gives me more pleasure than seeing them learn and prosper. Their success is the essence of why I’m here and the capstone of my career.”

Richard is grateful to the AMS community for providing him with the opportunity to serve as president.

“As your AMS president, my promise is to be your standard-bearer for the Society,” he states. “I will lead efforts to foster outreach and cross-sector collaboration across the enterprise; promote scientific breadth, diversity, equity, and inclusion; and help to stimulate opportunities for members, especially students. I believe that our shared imperative as a scientific society is to ensure that the next generation is prepared for a world where data profoundly influence every facet of the enterprise and that we continue to move in the direction where data are open, fully accessible, and free of biases. I’m looking forward to steering us through a year focusing on data in all its forms as we pursue the theme of ‘Data: Driving Science; Informing Decisions; Enriching Humanity.’”

—RACHEL S. THOMAS-MEDWID

CONGRATULATIONS to our new leaders, elected to guide the Society forward.

The results of the recent AMS elections are:

2022 President-Elect: Bradley R. Colman
2022 Councilors: Kristen Averyt, Mona Behl, Kandis Y. Boyd, Rachel Hauser, and Bernadette Woods Placky
What is your favorite aspect of what you currently do as a scientist?

Seeing students learn to develop, answer, and communicate their science using the rapidly evolving observational and computing technologies is the most exciting part of being a professor for me. I particularly enjoy leading student experiences during field campaigns, where you can get great hands-on experience on how the atmosphere works—seeing students grow into their research and move on to success.

What are one or two things you do for fun that make you #morethanascientist?

I love to travel and do outdoor activities with my partner and three kids, and of course, take in the unique geography and weather that places around the world experience.

What does a “work-life balance” mean to you?

Sometimes, being a professor is not a 9-to-5 job, especially during intensive field campaigns. Professors are responsible to students to ensure that they get the support they need, but we often also have families that need us. Our often-demanding time commitments make it very important to communicate with my partner about deadlines and travel to ensure that we each have our needs met professionally and personally.
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CROSS-WISE

Gusts Are Down

ACROSS
1. "That ___! That ___! I do not like that ___!"
7. Dome head?
12. Apace
14. Slytherin Snape
17. Strong gale along U.S. Atlantic coast coming from an eponymous offshore storm
18. Number defined as the ratio of kinematic viscosity to thermometric conductivity
19. Tyler Perry's "Diary of a Black Woman"
20. Nobelist Wiesel
22. Evil follower?
23. River islet
24. Solar system models
27. Foehn in western North America
29. Hawk
30. Pink's "God ___ DJ"
33. Word with research or post
35. Regional airflow blowing down the Rhone valley
37. With 49-Down, pieces of unexpected good fortune, and a hint to solving 17-, 27-, 35-, and 60-Across
38. Salmon, after spawning
40. Drag racing org.
41. Smart
43. Having contours of equal precipitation amounts
45. ___
46. Shot refills?
48. Nomadic East African herders
49. What's afoot at the beach?
51. Some QB protectors
53. "Vex" (1996 Maggie Cheung film)
56. Resting place

DOWN
1. Arabian capital with an apostrophe
2. Early reactor
3. Who is in it for the long haul?
4. Rimed, e.g.
5. Miss. neighbor
6. Lead lead?
7. Aimed at
8. Fine rain falling from an apparently clear sky
10. Cleaves
11. Word on a dollar bill
13. Feather: Comb. form
15. Great Basin native
16. Camera without a parallax prob.
21. What a hot start or a plane taking off does eventually
24. Switch positions
25. Castling piece
26. Genre to rave over?
28. Where to find FAA HQ
30. Babylon portal, or tabloid headline for a 1987 Beatty and Hoffman box office flop?
31. Like penne compared to rotini
32. Rapidly shrinking sea in Central Asia
33. What some kids do with their loot after trick-or-treating
34. Brought back
36. Mexican poet Juana ___ de la Cruz
39. Joe's last name?
42. Actor Penn
44. Jaw
47. What using 49-Across for ice climbing would be an instance of
49. See 37-Across
50. "If I Only Had the Nerve" singer Bert
52. Punchline of SNL's "Church Lady" skit in which Santa is speculated to be this
53. Choler
54. Kurosawa movie inspired by "King Lear"
55. It's flaky
57. NASA Research Center in the Bay Area
59. ___ choy
61. Youngest woman ever elected to Congress, for short

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See page 67 for the answers to this puzzle.
Anne Compolongo, meteorologist from KCCI Des Moines, Iowa, visited the Iowa State University chapter for a broadcast meteorology workshop, where she shared her experience as a broadcast meteorologist and gave advice for pursuing a broadcast career.
The AMS Weather Band reaches beyond our core membership of professionals to engage with anyone eager to learn more about how the atmosphere works. Weather enthusiasts from all over the world and all walks of life are joining now to share, connect, and learn.

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“In college, I was active in the technical sorority, Alpha Sigma Kappa, that women in technical studies and the meteorology program were part of. One of the nice things was the mentorship and the close-knit relationship we had with each other as women, the few of us that were in this field supporting each other through these difficult classes and looking ahead at what our career options were and how we were going to reach those. It was an important part of my undergrad experience and something that I value. I can pick out groups of people in every stage of my career progression that were classmates, and I would attribute a good chunk of my success to them all along the way.”

— Morgan Yarker, Certified Consulting Meteorologist and founder and owner of Yarker Consulting in Cedar Rapids, Iowa, spoke about the value of peer mentors at various stages in her career. For more, listen to the Clear Skies Ahead podcast, with new episodes released every other Tuesday.

Answers to the puzzle on page 63.
This past week and over the next, those worldwide who are alarmed (and many of the merely concerned) by climate change are riveted to the daily news from COP-26, the latest in a multiyear series of global summits on that existential challenge.

Thousands of people have assembled in Glasgow for the event. They span the gamut—from world political leaders to Greta Thunberg to corporate executives to representatives from civil society. Let’s start with the important minority there to conduct United Nations business. They are negotiating and solemnizing the particulars necessary to reduce greenhouse gas emissions, adapt to evolving climate threats, and stand up mechanisms and instrumentalities for financing the whole. Last week, their presidency program focused in turn on the world leaders’ summit, finance, energy, youth and public empowerment, and then nature itself. In the second week they shift attention to adaptation, loss, and damage; gender; science and innovation; transport; and cities, regions, and the built environment.

This first group is vastly outnumbered by others running a so-called Green Zone Programme of Events, offering an eclectic range of contributions from artists, corporations, civil society, universities, government agencies, and other constituencies. All are hoping to garner wider attention to their views, their skills, their needs, and their proposed solutions. An accompanying media frenzy is pushing out video, op-eds, and backstory to the rest of us.

That media coverage is quite diverse in emphasis and focus. Every point of view is finding some outlet. But in one crucial respect the messages are essentially unanimous. They all anticipate that the likely COP-26 outcomes—fossil fuel reductions, caps on methane emissions, afforestation, and the rest—will remain well short of the fixes needed to bound global warming at 1.5°C. Faced with tough choices, nations and their leaders find themselves hesitant to step up.

But an even more worrisome challenge remains unaddressed—indeed (also unanimously) unmentioned. A quick and admittedly subjective assessment of all various agendas, schedules, and sessions for the week finds one topic MIA:

The needed workforce.

Of paramount concern is the lack of the skilled workforce needed to decarbonize the economy. One estimate: to meet a U.S. goal of clean energy by 2035 will require 900,000 workers (a fourfold increase over today’s levels; current growth trends are projected to provide less than half that number). Wind energy companies are also vigorously competing for scarce talent. Engineering skills ranging from energy assessment to project management/design are needed. Offshore projects require additional skill sets and face similar labor shortages. And the challenge doesn’t end there; the need for workforce to operate and maintain the systems coming online poses additional requirements. Consider this single example, from the October 23rd issue of The Economist: the coming shortage of mechanics trained to repair electric vehicles. The U.K. alone is expected to require 90,000 newly trained electric-vehicle mechanics by 2030. This is just one of myriad niche needs facing a global society attempting to innovate itself out anthropogenic climate change.

The glib answer often given in response to this concern is that the needed workforce will come from the nearest neighbors. Oil workers, including offshore oil workers, can be retrained for the wind energy work. Automobile mechanics can be similarly retrained. And so on. But a closer look shows that such redeployment is not trivial. For example, while rotating the tires on an EV should be little different from the task for any other car, work on the electric motor or a 900-volt battery is substantially different from tinkering with a combustion engine.

What might be called climate-change workforce gaps would be problem enough if they were occurring in isolation. But that’s not what’s happening in today’s real world. In 2020, economists predicted a “90% economy” after the global lockdowns. The recovery of restaurants, hotels, bars, and other businesses in the entertainment sectors would be slow. Travel and tourism would also struggle to bounce back. The recovery has in fact been slow, but not because of reduced demand. Instead it has proved to be labor shortages that are forcing these businesses to reduce hours of operation, occupancy, and delay and stretch service provision. Crew shortages are forcing airlines to cancel hundreds of flights. A postpandemic shortage of housing stems in part from shortages of construction labor. Supply chains of every description, from computer chips for automobiles to this year’s Christmas presents, have all been disrupted, again aggravated by corresponding dislocations
in labor supply. In many retail outlets, the product advertising that used to greet customers has been replaced by prominent “We’re hiring!” signs.

(In fact, there is historic precedent for this. Prior to the Black Death, the bubonic plague which killed a third of the European population over the time span of a year or between 1346 and 1353, feudalism held sway. Nobility enjoyed wealth while laborers were held in poverty. But in the years following, the labor shortage gave the serfs the upper hand. The middle class was born.)

The world will successfully decarbonize, build resilience to natural hazards, and protect habitats and the environment only by growing the needed workforce. This in turn requires that governments and peoples develop and implement policy toward this end.

What policies would be beneficial?

A recent AMS Policy Program Study, Who Will Make Sense of All the Data? Assessing the Impacts of Technology on the Weather, Water, and Climate Workforce, provides some preliminary insights. The authors synthesized expert perspectives with published views. All see a future marked by rapid, continual, and sustained innovation and social change.

In particular:

- Proliferating sensors, platforms, and networks are making data more available.
- Advances in chip technology and cloud resources are spurring the uptake of artificial intelligence and machine learning (as well as a shift in the dominant programming language).

These trends hold corresponding implications for the weather, water, and climate workforce:

- Data management and systems-thinking skills are needed.
- Continual innovation favors workers who are adaptable, who can quickly adopt and master new tools.
- The ability to problem-solve and think at a systems level needs to be broadly brought to bear across WWC science.
- Continual development of new technologies will likely also favor workers committed to and comfortable with lifelong learning.
- Workers with these qualifications will be highly sought after not just within the WWC enterprise, but beyond it, posing challenges for employers.
- The challenges go beyond those individual employers can address.

Community-wide, even nationwide policies will be needed:

- These extend both to renewed approaches to K–12 and higher education, as well as continuing training and education for mid- and late-career workforces.
- Here as elsewhere in society, improvement in diversity, equity, and justice is paramount.

Two closing comments. First, policies must necessarily “favor the carrot rather than the stick.” As the postcovid shortage of service workers daily demonstrates, peoples can’t be forced to work at specific tasks. They need incentives, not regulations. And while straight economic incentives are necessary, they will not be sufficient. Work needs to be meaningful, satisfying, productive.

Second, it might seem that the weather, water, and climate workforce is the merest sliver of a much larger workforce that is the one that truly matters. True enough. But consider this: the environmental intelligence that is mined from weather, water, and climate data is the fundamental starting point for guiding some $100T of food, water, and energy infrastructure investments that must be made worldwide over the next 20 years. Otherwise, much of that colossal sum will be directed in wasteful ways. And the world will fail to meet COP-26 targets.

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