



# THE CLIME



## THIS IS MAJOR

In May 2023, we celebrated a significant achievement within our community when Ferguson "Juice" Dale announced that he had been selected for promotion to the rank of Major in the USMC Reserves. This accomplishment marked Juice's dedication and commitment and his outstanding service to our nation.

The official promotion ceremony took place on August 1st at the National Museum of the Marine Corps in Triangle, Virginia. The ceremony was a heartwarming event, attended by Juice's beloved wife, two sons, parents, and additional family and friends who came together to offer their support and congratulations. It was a testament to Juice's outstanding commitment and the strong bonds he has built in his career and community.

Juice's journey to the rank of Major highlights his tireless efforts, leadership, and the values he upholds. We are honored to have witnessed this moment in Juice's career. And we look forward to the continued success and positive impact he will bring to the USMC Reserves. Congratulations Major Ferguson Dale! You've made us proud, and your endeavors continue to inspire us all.

### *Fellow Ecopreneurs,*

I want to express my gratitude for your continued support. You are reading Volume 2, Issue 1 of The Clime! That's one of several recent milestones and accomplishments for Semper Sky. Our mission to bridge the awareness gap surrounding sustainable aviation has been an incredible journey, and it's thanks to your backing that we've come this far.

We began our journey by recognizing a significant gap in understanding sustainable aviation. We found that very few people were even aware of its existence, and those who were had limited knowledge about its intricacies and potential benefits. This realization became our driving force. One of the major concerns we identified was the lack of sustainable aviation infrastructure. We knew that for sustainable aviation to become a reality, it was crucial to address this infrastructure gap systematically and collaboratively. We understood that this journey would involve forging partnerships step by step. We also recognized the importance of gaining community buy-in for the success of advanced air mobility and sustainable aviation. It became clear that to thrive and positively impact society, we needed to foster support and understanding among communities and stakeholders. We value community support, the development of advanced air mobility, extensive outreach efforts, collaboration with sustainable aviation companies, and our pivotal role in shaping sustainable aviation policy at major conferences.

Our commitment to advancing sustainable aviation policy has led us to a prominent role. We have been asked to lead an infrastructure panel for the American Institute of Aeronautics and Astronautics (AIAA) and the Institute of Electrical and Electronics Engineers (IEEE) at AVIATION 2024 in Las Vegas, Nevada, scheduled between July 28 and August 2. This opportunity will allow us to influence sustainable aviation policy and shape the future of aviation in a more environmentally conscious direction.

Our dedicated team has traversed the United States, visiting locations like Ocracoke, North Carolina; Minneapolis, Minnesota; Grand Forks, North Dakota; San Diego, California; Cape May, New Jersey; Washington, North Carolina; and Stafford, Virginia. In these diverse regions, we've tirelessly worked to raise awareness and inspire support for sustainable aviation and its crucial infrastructure. And we've met some incredible individuals along the way. One such person is Dr. Julia Bodnarik, from the Choctaw Nation of Oklahoma. In this issue, you'll learn more about who she is and what she does. You can also read about some of our recent adventures, meet our fall STEMterns, and get some planet-friendly pumpkin tips.

I extend an open invitation and challenge to fellow ecopreneurs and enthusiasts who share our vision for a more energy-resilient future through sustainable aviation. Together, we can amplify our efforts and create a lasting impact. Join us in spreading the word about sustainable aviation, building essential infrastructure, and fostering a brighter, cleaner future for aviation. Let's take flight towards a sustainable tomorrow, one partnership, one idea, and one action at a time.

Keep Climing,

*Ferguson "Juice" Dale*



# SEMPER SKY CLIMES AND SOARS AT THE INAUGURAL FLYING HY EVENT

On October 10th and 11th, some of the world's foremost experts in hydrogen aviation and sustainable aviation enthusiasts gathered in Grand Forks, North Dakota for the inaugural FLYING HY event.

Organized by HYSKY, FLYING HY offered a deep dive into the potential of hydrogen aviation. Participants, ranging from tech experts to regulatory specialists, engaged in discussions covering technology, infrastructure, regulatory policies, and emerging investment opportunities in the hydrogen aviation industry. To enhance the experience, HYSKY secured guest speakers from outside the hydrogen aviation field, including celebrities and pilots. These speakers shared their insights and ideas, providing valuable perspectives on the future of hydrogen and sustainable aviation.

One highlight of the summit was the session on October 11th, titled "Building for the Future: Transforming Airports with Hydrogen Infrastructure." Semper Sky's owner, Ferguson "Juice" Dale was among the presenters. Juice shared his extensive knowledge and expertise, discussing the transformative power of hydrogen infrastructure in airport settings and his vision for a future where airports use hydrogen not only as a fuel source but as a catalyst for reshaping the entire aviation landscape. His session provided insight into the innovative strides made by Semper Sky and highlighted the pivotal role of hydrogen in building airports of the future. The Vertical Flight Society (VFS) played a significant role as a Black sponsor, emphasizing their commitment to innovation and the transformative capabilities of hydrogen aviation.

FLYING HY was also a celebration of progress. Presentations on cutting-edge technologies left attendees in awe, while lively panel discussions navigated the complex terrain of regulatory policies, shedding light on the path forward for hydrogen aviation. Additionally, the event served as a unique platform for networking, fostering collaborations and sharing insights that will help shape the future of aviation.



## SEMPER SKY CO-SPONSORS AND ATTENDS THE 2023 DRONE TECH SUMMIT

We are excited about our success as a proud sponsor at the 2023 Airport (OCW) 2nd Annual Drone Technology Summit & Air/Drone Show.

The event, which took place on October 13-14, 2023, at Washington-Warren Airport, showcased cutting-edge advancements in drone technology and featured distinguished speakers, such as Jeffrey Vincent, Executive Director of the UAS Integration Office at the FAA. Throughout the day, the summit offered a diverse range of presentations, live demonstrations, and community sessions. Highlights included drone demonstrations by industry leaders Nir Schweizer and Kyle Stacy, shedding light on recreational RC airplanes and heavy-lift capabilities with drones, respectively.

Semper Sky made a significant impact with a presentation on sustainable aviation delivered by Ferguson "Juice" Dale. The audience showed great interest in Semper Sky's commitment to environmentally friendly aviation practices.

The crowd also enjoyed aerobatic performances by twelve-time U.S. National Aerobatic Champion, Rob Holland. The event also featured insightful community sessions addressing the modernization of Washington-Warren Airport and exploring drone educational opportunities for youth and underrepresented communities. For added enjoyment, attendees participated in family-friendly activities like pumpkin painting, a Tech & STEM Expo, Drone Simulator (Zephyr), Drone Soccer, and a Planetarium in the Hangar (Courtesy of IBX STEM). Workforce development opportunities and a variety of food trucks complemented the atmosphere.

As the event came to a close, Semper Sky extended gratitude to all participants, sponsors, and attendees for making the event a success. Semper Sky is proud to have contributed to a technology summit that fosters innovation, education, and community engagement in drone technology.



Juice (center) posed with Semper Sky's fall STEMterns. Ava Verzosa, Christopher Riley, Jack Vietmeyer, and Ava Warren attended the event and documented their experiences.

# FROM THE TRAIL OF TEARS TO THE HEART OF DRONE TECHNOLOGY

## Choctaw Nation is an Established Leader in Aviation Initiatives

Ferguson "Juice" Dale, the owner of Semper Sky, recently attended and presented at the inaugural FLYING HY event in Grand Forks, North Dakota. At this event, Juice had the opportunity to meet and engage with Dr. Julia Bodnarik, the Officer of Advanced Technology Initiatives (ATI) for the Choctaw Nation of Oklahoma (CNO). Interestingly, their encounter took place just days after Indigenous Peoples Day. And after speaking further with Dr. Bodnarik, The Clime learned that the third-largest recognized Native American tribe in the United States is making substantial contributions to the nation's aviation technology landscape.

The Choctaw Nation is in the process of creating a unique aviation testing facility in the southeastern region of Oklahoma. CNO's journey into aviation technology began in May 2018 when they became the sole tribal government in the FAA's Unmanned Aircraft Systems (UAS) Integration Pilot Program (IPP). Their commitment was reaffirmed in October 2020 when they joined the FAA BEYOND program, establishing themselves as national leaders in emerging aviation technology.

Dr. Bodnarik, who assumed her role on August 25, 2023, is the pioneer in her esteemed position. She shared her mission of working with emerging aviation technologies and acting as a bridge between universities, corporate partners, colleges, and even NASA. She also spoke on her team's plan to establish an Advanced Technology Institute aimed at high school juniors and seniors, as well as college freshmen and sophomores. This institute would foster partnerships with local higher education institutions and offer certificates upon program completion. The expected launch is about two years from now.

Dr. Bodnarik elaborated on the inspiration behind Choctaw Nation's foray into aviation technology. She explained that their decision to invest in aviation technology was driven by a critical need. With a troubling surge in nationwide traffic fatalities in 2021, reaching levels not seen since World War II, and a 21% increase in traffic deaths in Oklahoma in 2019, it became evident that ground transportation was becoming unsustainable. "We decided that we had this 44,600-plus-acre ranch. And we wanted to get into advanced technology, but we wanted to have something that would make a minimal impact on the land. So, we decided to get into uncrewed aircraft systems," said Dr. Bodnarik.



*Photos Courtesy of Dr. Julia Bodnarik*  
*Dr. Julia Bodnarik recently joined Choctaw Nation's burgeoning department of Advanced Technology Initiatives as Officer of ATI. She has ambitious goals and a clear plan for success.*

# FROM THE TRAIL OF TEARS TO THE HEART OF DRONE TECHNOLOGY

## Choctaw Nation continued

Choctaw Nation's vast land now serves as a secure hub for the research, development, testing, and evaluation of emerging drone technologies. One of the most promising aspects of this endeavor is drone delivery in healthcare logistics. Dr. Bodnarik stated, "We will be able to do medicine and emergency deliveries within the Choctaw Nation of Oklahoma. There are many rural areas with poorly maintained roads. So, if we can respond quickly to accidents, deliver necessary medications, transport medical samples, or go between clinics, that's what we aim to achieve." Their commitment to medical logistics and cargo transportation remains a top priority. However, their ambitions extend beyond this. Dr. Bodnarik noted that Choctaw Nation achieved a significant milestone by initiating the first true public 22-mile beyond visual line of sight (BVLOS) flight in June 2023. They have also submitted a Department of Transportation Smart grant for a BVLOS corridor from Atoka, OK, to McAlester, OK, with expansion plans on the horizon. Dr. Bodnarik stressed the importance of FAA waivers and the Skyline aviation monitoring system as Choctaw Nation actively explores aviation corridors along interstates and railroads.

Another of Choctaw Nation's advancements is the construction of a 35-acre aviation testing complex at the Choctaw Daisy Ranch, situated between Daisy and Stringtown, OK. Dr. Bodnarik refers to this location as "conveniently remote" as it is within approximately one and a half to two hours of several local airports, combining accessibility with a sense of privacy and seclusion. The groundbreaking for the complex occurred on October 24th, beginning with phase zero and phase one sites. The phase zero site already includes a building with offices, dormitories, and a cabin for accommodating people during the week. "In addition, we have a 50-foot helipad on-site, along with two 30-foot drone pads. We are also in the process of constructing a 300-foot runway and additional 50-foot drone pads, which will double as helipads," said Dr. Bodnarik. They have two hangars, each equipped with four bays, and the ambitious facility is expected to be completed within 18 months. It will be open to the public, and as it expands, Dr. Bodnarik envisions an increase in employment opportunities for the local community.

Under Dr. Julia Bodnarik's leadership, the Choctaw National of Oklahoma remains at the forefront of emerging aviation technology. From revolutionizing healthcare logistics to promoting sustainable aviation, the CNO's initiatives are shaping the future of aviation. Dr. Bodnarik concluded with a poignant reminder of the CNO's historical significance. She said that progression from relocation during the Trail of Tears, to the immense loss of lives, to their rise as leaders in drone technology, marks a history of resilience.

“ We're always committed to safety in our operations, ensuring that everything is done properly and that everyone flying is certified. We have built-in safeguards through our monitoring system, including weather monitoring. ”

-Dr. Julia Bodnarik



*In October, the Choctaw Nation of Oklahoma held a groundbreaking ceremony for their state-of-the-art Emerging Aviation Technology Center. The ambitious facility is expected to be completed in approximately 18 months.*

# HARVESTING BRIGHT MINDS

## meet our fall STEMterns

On September 18th, Semper Sky's new class of interns: Christopher Riley, Ava Verzosa, Jack Vietmeyer, and Ava Warren, began their fall STEMternship. The group, accompanied by Internship Coordinator Margo Cianchetta, attended a virtual kickoff event on September 20th. Subodh Nayar, Senior Business Counselor at the Mason Small Business Development Center, was the guest speaker. Nayar shared insights on entrepreneurship and addressed topics like "The Future of Customers and Consumer Behavior," "Introducing the Mason Small Business Development Center & Marketing Tutorial," and "Grabbing Attention in a Crowded Digital World." (continued on next page)

### about me...



I hold a commercial pilot's certificate



I thoroughly enjoy race cars.



I am the youngest of six siblings.

“Specifically in sustainable aviation I'm eager to learn more about electric aircraft and hybrid aircraft and what the future will hold for flight with them.”

**Talk about your academic background and what motivated your interest in STEM and/or sustainable aviation.**

I'm studying Aerospace Management: Flight Operations. I hold a commercial pilot's certificate, and I am currently working on getting my multi-engine add on. Being a pilot, I naturally started to look into sustainability surrounding aviation.



**Christopher Riley**  
Averett University, Senior

**Where do you see yourself in the future, particularly in terms of contributing to sustainable aviation or STEM fields?**

I hope to understand and teach others about the impact sustainable aviation can have on the environment. Specifically in my career, I want to focus on how sustainable aviation will make its way into the large-scale commercial market and how that will impact consumers.

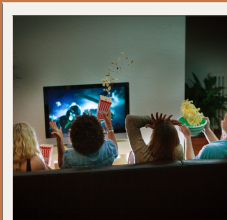
### about me...



I play lacrosse.



I am an avid reader.



I love horror and action movies.

“I want to be a pilot and work with engineers on creating more efficient infrastructure for sustainable fuel.”

**Talk about your academic background and what motivated your interest in STEM and/or sustainable aviation.**

I am currently a full diploma International Baccalaureate student. I am taking the most rigorous courses available at my school. My interest in STEM has increased because of an essay I wrote about artificial intelligence in diagnosing and treating mental disorders.



**Ava Verzosa**  
Mountain View High School, Senior

**What specific aspects of sustainable aviation are you most excited to explore during your internship?**

I am very interested in the future adaptation of cryogenic fuels. I find the infrastructure issues fascinating and I want to learn more about effective storage and usage for the fuels.

# HARVESTING BRIGHT MINDS

## continued

Guided by Dr. Marty Bradley, the STEMterns are participating in eight two-hour virtual class sessions, which will include lectures, discussions, assignments, and feedback. They'll delve into sustainable aviation technologies, expand their aerospace knowledge, and explore potential career paths. Their eight-week journey has already featured an immersive experience at the Second Annual Drone Technology Summit and Air/Drone Show in Washington, North Carolina.

Our cognitively diverse group will continue to explore sustainable aviation, electric aircraft, and alternative fuels, concluding on November 17th. Semper Sky is happy to foster the growth of these promising interns in the world of STEM and aviation.

### about me...



I do improv comedy.



I am a certified scuba diver.



I love spicy foods.



**Jack Viemeyer**

**University of Virginia, Senior**

“ Spending time with the Semper Sky community has been really valuable. I have never been part of a group of individuals as talented and motivated as the folks involved in Semper Sky. ”

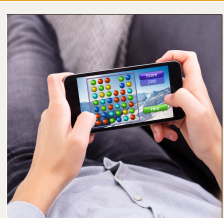
**Talk about your academic background and what motivated your interest in STEM and/or sustainable aviation.**

As an Aerospace Engineering major, I have been pushed to develop strong skills in the physics, mathematics, and design considerations relevant to aerospace.

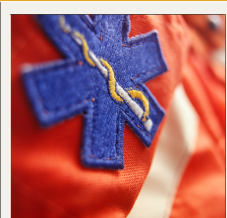
**Are there specific areas within sustainable aviation that you hope to focus on in your future career?**

I would love to work on the design of sustainable air and spacecraft in the future. As an engineer, I would love to do hands-on design work while also making positive contributions to the world.

### about me...



I'm only good at mobile games.



I volunteer as an EMT in training.



I love orange. It's my favorite color.



**Ava Warren**

**Mountain View High School, Senior**

“ New flight technology is an area within sustainable aviation that I hope to focus on in my future career. ”

**Talk about your academic background and what motivated your interest in STEM and/or sustainable aviation.**

I am currently in the full International Baccalaureate program and my favorite class is chemistry. I have always preferred sciences over every other subject and I recently decided I wanted to become a pilot. So with both of those facts in mind, I landed on aerospace engineering as a desired major.

**How do you hope this internship will contribute to your long-term career goals in STEM or sustainable aviation?**

I hope my STEMternship will provide a background for more in-depth information in college. I hope my knowledge of sustainable aviation helps me to be more conscientious of others and my environment while I'm flying.

# TAKE IT EASY

## FIVE FEASIBLE TIPS FOR SUSTAINABLE LIVING

Semper Sky wants to encourage you to clime and embrace sustainable habits. But we know that actively participating in the efforts to prevent and address climate change can feel daunting when you're uncertain about where to begin. If you find yourself overwhelmed by the idea of making substantial lifestyle changes, don't worry. We've outlined five ways for you to ease into sustainable living and contribute to a 50% reduction in emissions by 2030.



### Buy Biodegradable

Buying biodegradable supports sustainability by reducing the environmental impact of products at various stages of their life cycle. Biodegradable packaging and cleaning products reduce waste and minimize water and soil pollution. And biodegradable items with natural and organic ingredients release fewer harmful chemicals into the environment.

- Choose products with biodegradable packaging.
- Use biodegradable cleaning products for your home. Switch to biodegradable bags for shopping or waste disposal.
- Opt for office supplies like pens and notepads made from recycled or biodegradable materials.
- Incorporate biodegradable toiletries such as soap and toothbrushes.
- Look for products that use natural and organic ingredients.

### Choose to Reuse

Replacing disposable items with reusable products promotes sustainability by reducing single-use plastic waste, minimizing the need for paper products, and encouraging the use of durable, rechargeable alternatives. These actions help conserve resources, reduce environmental pollution, and minimize the impact of disposable items on the environment.

- Carry a reusable water bottle made of stainless steel, glass, or BPA-free plastic and reduce the need for single-use plastic bottles.
- Switch to reusable stainless steel, glass, or bamboo straws, and keep one in your bag or at home for use when needed.
- Replace paper towels and disposable wipes with washable cloth towels and rags for cleaning.
- Invest in rechargeable batteries and devices, such as rechargeable flashlights and solar-powered chargers.

### Donate

Donating contributes to sustainability by extending the life of items, limiting waste, and supporting humanitarian efforts. Giving provides essential resources to those in need while keeping usable items out of landfills. Reuse of items also reduces the need for new resources.

- Take your items to local charities, thrift stores, or secondhand shops.
- Contact local shelters and community centers to see what they need.
- Send gently used clothing, shoes, and school supplies to local schools or youth programs. Participate in clothing swaps or community sharing events, where you can exchange items with others.
- Give to organizations that collect clothing and household items for disaster relief efforts.

### Pack Light

Lighter loads promote sustainability by reducing the weight and volume of luggage, which directly correlates with lower fuel consumption and carbon emissions during air travel. When passengers pack efficiently, they decrease the overall environmental impact of their journeys. Using travel-size or reusable toiletry containers and opting for digital devices over paper documents further reduce waste and environmental resources.

- Choose a smaller carry-on bag or backpack and only pack the essentials.
- Pack your outfits efficiently to reduce the number of clothes you bring.
- Use travel-size or reusable toiletry containers.
- Store travel documents, maps, and entertainment on digital devices to reduce the need for paper. Carry only what you need and leave unnecessary electronics at home.
- Bring a universal charger to reduce the number of cables.

### Start a Green Routine

Greener grooming is essential for sustainability as it conserves water and reduces waste in daily activities. Switching to reusable facial cleansing items and turning off the tap while brushing or washing your face minimizes single-use waste and reduces water consumption, contributing to a more eco-friendly lifestyle and the preservation of finite resources.

- Limit your time in the shower and consider using a shower timer to help you keep track.
- Use a reusable facecloth or a washable facial cleansing pad instead of disposable wipes or cotton balls.
- Turn off the tap while brushing your teeth or washing your face.
- Use a glass of water to rinse your mouth or face instead.

# GREEN HALLOWEEN

## PLANET FRIENDLY PUMPKINS

Every year, the United States sells 1.5 billion pounds of pumpkins. Most of those large orange orbs are sold in October as we dive deep into Halloween and the autumn season. Many use the iconic, vibrant squash to make their homes, environments, and events more festive. But as celebrations wane, those beloved pumpkins usually end up in the trash. Unfortunately, food waste, in general, generates methane in landfills. So, in a season where mass quantities of a specific food item will ultimately go to waste, even more methane is emitted. Of course, this has significant environmental implications. Luckily, we can still enjoy the season by embracing sustainability and giving our pumpkins a second life.

Here are some eco-friendly ways to make the most of your pumpkins and reduce food waste:

### Preserve Properly

Opt for environmentally-friendly products like vinegar instead of bleach when preserving your pumpkins. This ensures that harmful chemicals don't find their way back into the environment or harm any animals that may nibble on your jack-o-lanterns.



### Go for Green

When decorating your pumpkins, choose eco-friendly or non-toxic paint options. Non-toxic colors are safer for the environment and for those who might come into contact with the decorated pumpkins, like children and pets.

### Make a Pumpkin Pile

Discard your pumpkins in a compost heap. This not only reduces landfill waste but also produces nutrient-rich compost for your garden. If you don't or can't compost, look for pick-up services or drop-off locations near you.



### Return to Nature

Rather than adding to the landfill, consider discarding your pumpkins in a designated area in a field or the woods. As the pumpkins decompose, they contribute valuable organic matter to the soil.

### Try a Tasty Treat

Use the meat of sugar pumpkins to make delicious pastries, breads, or soups. You can also roast pumpkin seeds for a delicious and nutritious snack. Consider serving edible pumpkin flesh to your fur babies. Many dogs enjoy pumpkin as a treat, and it's a healthy addition to their diet. Remove any paint or decorations before offering it to your pets.

