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TODAY'S STE REVOLUTIONARIES



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BRIDGING ENVIRONMENTS AND BUILDINGS

EK WHYE'S UNIQUE JOURNEY INTO URBAN SUSTAINABILITY



As he settles comfortably into the couch, the setting is an apt reflection of Ek Whye's life – a harmonious blend of nature and structure. His journey into civil engineering and sustainability is far from typical; it's a pathway carved by a deep-seated love for nature, an early fascination with wildlife, and a keen interest in the mechanics of the world around him.

Born to a family who instilled in him a love for the outdoors, Ek Whye's childhood was marked by explorations and discoveries. A pivotal moment came with a gift from his father – a small fish tank. But it was more than just a gift; it was a challenge, a puzzle to solve. As he recalls, "We were out of our depth initially, with the fish struggling to survive. But through research and trial and error, we created a self-sustaining ecosystem." This early experience sparked Ek Whye's interest in the delicate balance of nature and the role humans play in it.

This environmental passion set the groundwork for Ek Whye's future, yet the exact path wasn't immediately evident. Initially drawn towards careers in wildlife conservation, where his heart first found its calling, he soon realised that a more expansive field like engineering offered not just a wider variety, but also a deeper complexity of opportunities to explore, innovate, and make an impact. "Even if I don't become a pure structural engineer," he muses, "the logical and systematic thinking developed in engineering is incredibly versatile."

This decision was not made lightly. His first port of call was his then-girlfriend, now wife. A finance professional, she served as both a sounding board and a compass, offering alternative perspectives that complemented his more linear way of thinking. "Sometimes, I get fixated on a single path," he admits, "but she opens up new avenues of thought for me."

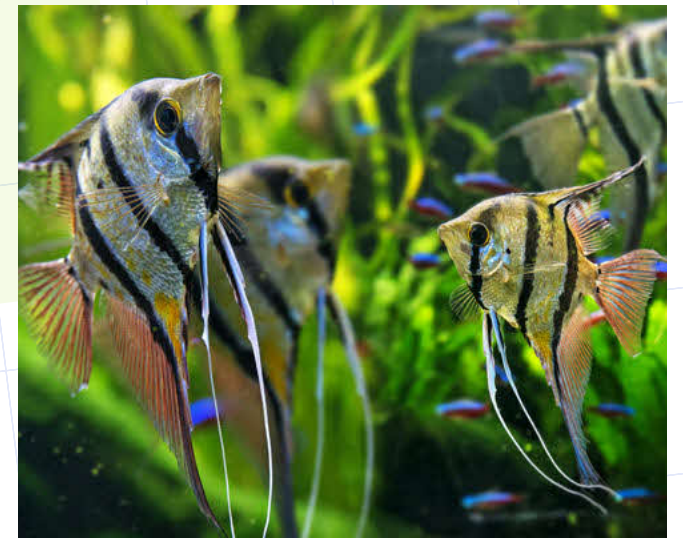


Image: Shutterstock

We were out of our depth initially, with the fish struggling to survive. But through trial and error, we created a self-sustaining ecosystem.

What truly affirmed his choice was his internship at JTC. Here, he discovered that the field of estate development and engineering held immense potential for influencing sustainable practices. The role of a developer, he realised, was not just about building factories but about envisioning and crafting spaces that harmonised with their environment. This revelation solidified his decision to pursue civil engineering, seeing it as a conduit to make a real difference in the world of sustainable development.



Image: Shutterstock

In his role at JTC, Ek Whye has been instrumental in developing a decarbonisation road map for Jurong Innovation District. His multifaceted work, underpinned by a commitment to sustainability, allowed him to make noteworthy contributions for a diverse range of projects. These include undertaking a study on the embodied carbon footprint of industrial buildings based on their construction materials and methods, developing projections on the carbon emissions of new industrial estates based on land-use breakdown and development phasing, and more. "It's about finding a balance between development and the environment," he says, his eyes alight with passion.

Ek Whye's formative years were also defined by his involvement in Scouts. He enthusiastically describes the excitement of constructing life-sized structures, an experience that unknowingly steered him toward a career in engineering. "During my first camp in Secondary 1, I watched a group of seniors raising a towering flagpole, nearly two and a half stories tall, and initially, I thought, 'This is crazy. Keep me as far away as possible!'" Eager to distance himself from the perceived danger, he soon had a change of heart. As he observed them engage in 'Pioneering'—an activity where wooden scaffolds are used to construct bridges, playgrounds, and other creative structures of up to 10 metres wide—he began to appreciate the process: "The coordination, planning, technical design, and the immense teamwork that goes into building these structures fascinated me."



Image: Shutterstock

Paying it forward, Ek Whye has now come full circle with Scouts and serves as a mentor for the youth alumni section. His volunteer work provides a welcome escape from the stresses of the corporate world. "The corporate environment can be quite stressful at times," he notes. "It's nice to immerse yourself back into the school environment. Being able to contribute to the learning and growth of my juniors is also very rewarding."

Despite the demands of his profession, Ek Whye has found time to reconnect with his love for music, particularly the keyboard. "Playing the keyboard provides a counterbalance to my structured work life," he reveals. "It's where I find harmony." On top of that, he enjoys long introspective walks with his wife, who, after delicate negotiation, has allowed three tanks' worth of fish to coexist in their cosy HDB flat, where their maintenance has become another of the couple's meditative routines.



Image: Dunman High Crane Scout Group

At home, Ek Whye's connection to nature is evident in his dedication to maintaining the freshwater aquariums. "Each aquarium is a microcosm of the natural world," he explains. "They constantly remind me of the importance of balance in ecosystems."

Looking forward, Ek Whye envisions a future where engineering and sustainability are intrinsically linked. He dreams of creating projects that are carbon-conscious and well-adapted against climate change, epitomising his belief in a world where development coexists harmoniously with nature. His advice to young aspirants in the field of Science, Technology, and Engineering (STE) in Public Service is grounded in humility and the willingness to learn. "It's a field where practical experience counts as much as, if not more than, academic knowledge," he advises.

Ek Whye's story is the chronicle of a man who, guided by his passions, carved a niche in an ever-evolving world. His journey, beginning with a childhood curiosity for nature's intricacies, led him to a career where he could merge his love for the environment with innovative engineering. In an era where career trajectories are often rigid, his journey is a vivid reminder of the power of passion-driven career choices and the impact of embracing versatility in one's professional life.



Image: JTC

IN NATURE'S DEFENCE

DR ANNA WONG'S JOURNEY INTO THE WORLD OF WILDLIFE FORENSICS



As dawn breaks, Anna's day begins with an act of affection, as tender as it is telling—a series of loving kisses bestowed upon her cats. This heartwarming ritual, far from being a mere morning routine, is a window into the soul of a woman whose life is a symphony of compassion, resilience, and unwavering dedication to fighting illegal wildlife trade. Anna, the Acting Senior Director of Wildlife Trade at the National Parks Board (NParks) and Acting Group Director of Community Animal Management under the Animal & Veterinary Service, a cluster of NParks, is not just a guardian of nature; every chapter of her life narrates an enduring love for animals and a bold fight against the odds in combating illegal wildlife trade.

Anna's path to wildlife conservation took shape early on. Her childhood dream was to be a veterinarian, inspired by an encounter with a limping stray dog. "I think I was probably in primary three or four then, when I decided that I wanted to help these animals," she reminisces. This moment transcended a passing childhood fancy, planting the seeds for a career dedicated to animal welfare.

Throughout her journey, Anna's sister was a beacon of support, encouraging her to pursue her passions and do what she felt was right. This unwavering familial support not only nurtured Anna's dedication to animals but also played a crucial role in steering her towards her eventual career in Public Service.

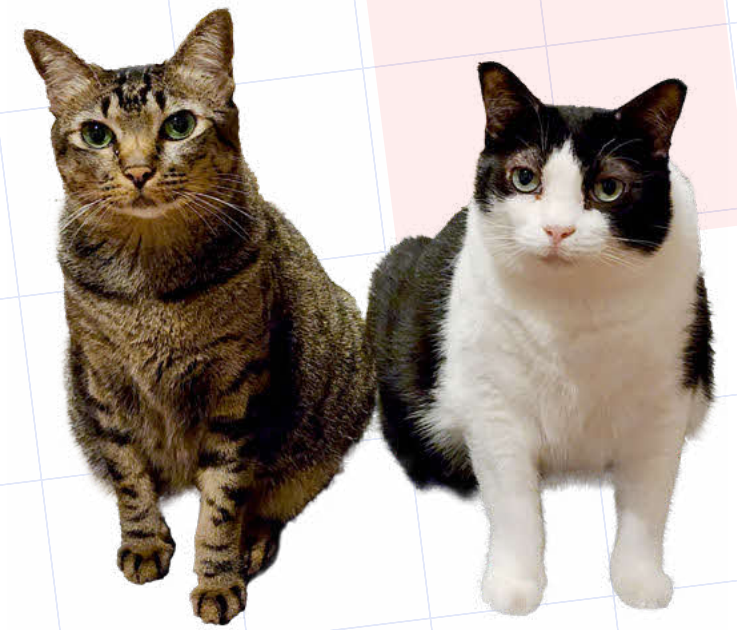


Image: Anna Wong

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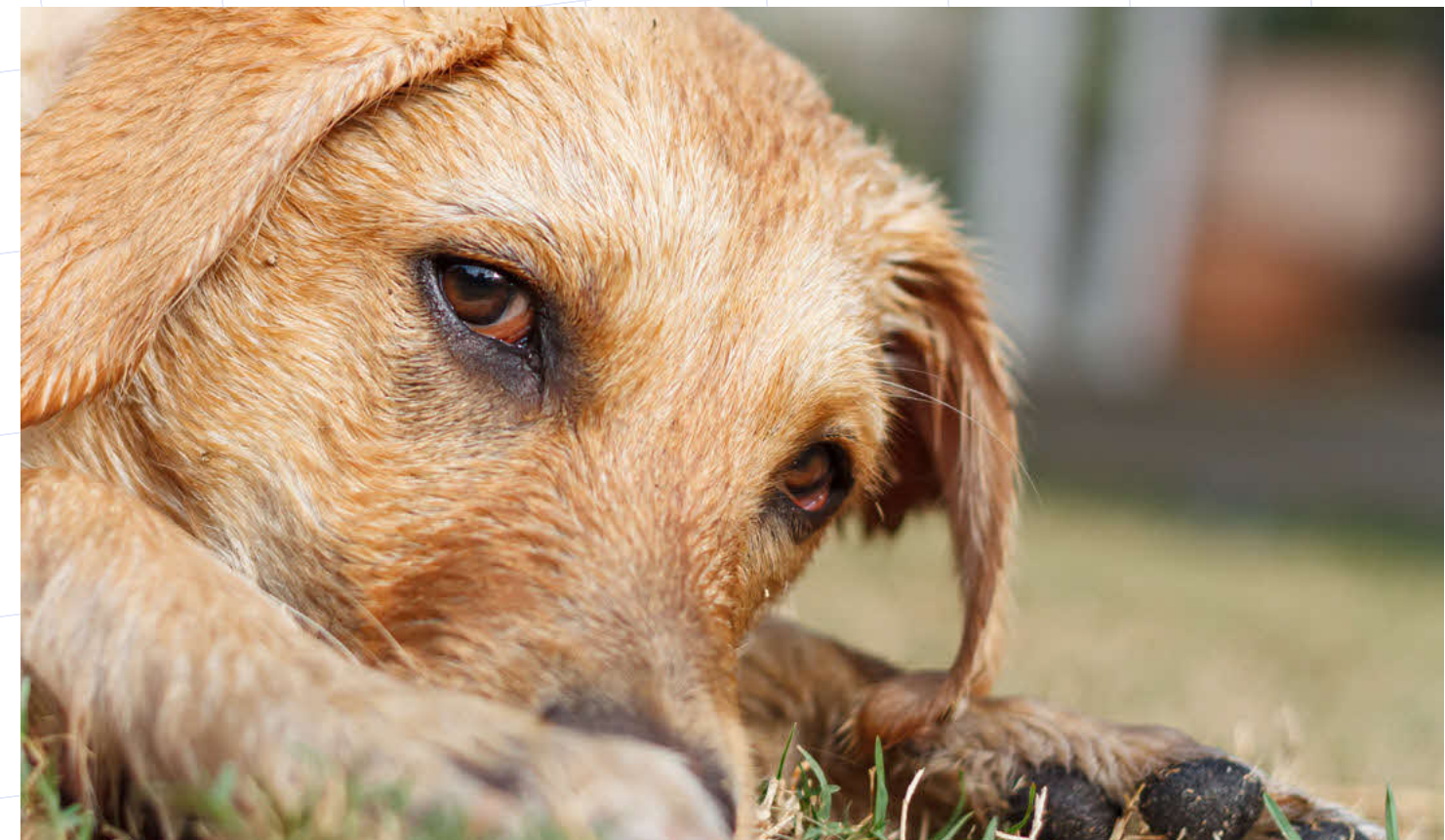


Image: Shutterstock



Image: National Parks Board

Returning to Singapore with a veterinary degree, Anna embarked on a unique career path in the Public Sector. She immersed herself in the intricacies of animal disease surveillance, investigations and import-export regulations. "I ventured into the realm of import-export, immersing myself in learning about the regulations governing this area. That chapter of my career spanned three years," she shares. This experience was a crucial stepping stone that eventually led her to her current role at NParks.

At NParks, Anna's role goes beyond traditional wildlife trade regulation. She is at the forefront of Singapore's battle against illegal wildlife trade, a fight that demands a deep understanding of international laws and a proactive approach to conservation. It's in this challenging environment that Anna's enduring optimism shines brightest.

One of her most significant achievements at NParks was the interception of a massive haul of illegal wildlife products—a testament to her team's dedication and her leadership. Despite the emotional weight of such seizures, Anna focuses on the positive outcomes, using her optimism to uplift her team and reinforce the importance of their work.

I ventured into the realm of import-export, immersing myself in learning about the regulations governing this area.

Anna credits her cheerfulness to her upbringing. "I believe it stems from my family, particularly my parents, who taught me that there's always a silver lining and that things happen for a reason," she says. This outlook has been her anchor in navigating the complexities and challenges of her field.

Looking ahead, Anna dreams of integrating cutting-edge technology into enforcement efforts. She envisions a world where advancements like real-time animal tracking can significantly bolster efforts against poaching and illegal wildlife trade. "Mass real-time tracking of all animals in the world could enhance protection of these animals and deter poaching," she envisages, a reflection of her belief in the synergy between technology and conservation.

Away from the rigours of her job, Anna maintains a deep connection with nature and prioritises self-care. Her choice in literature, often featuring cats, is a whimsical yet heartfelt expression of her dedication to animal welfare.

For those aspiring to make an impact, Anna emphasises the importance of broadening one's horizons. "I think it's good to go overseas and see what they're (scientists in other countries) doing," she advises, highlighting the value of gaining diverse perspectives. Anna's advice to budding conservationists is rooted in her own experiences—to explore the world, understand different cultures and perspectives, and find one's own path in making a difference.

Anna's story carries a universal message—that passion, coupled with a positive outlook, can lead to impactful change. Her journey is a testament to the fact that with the right attitude and a heart full of compassion, one can turn even the most challenging situations into opportunities for growth and positive impact.

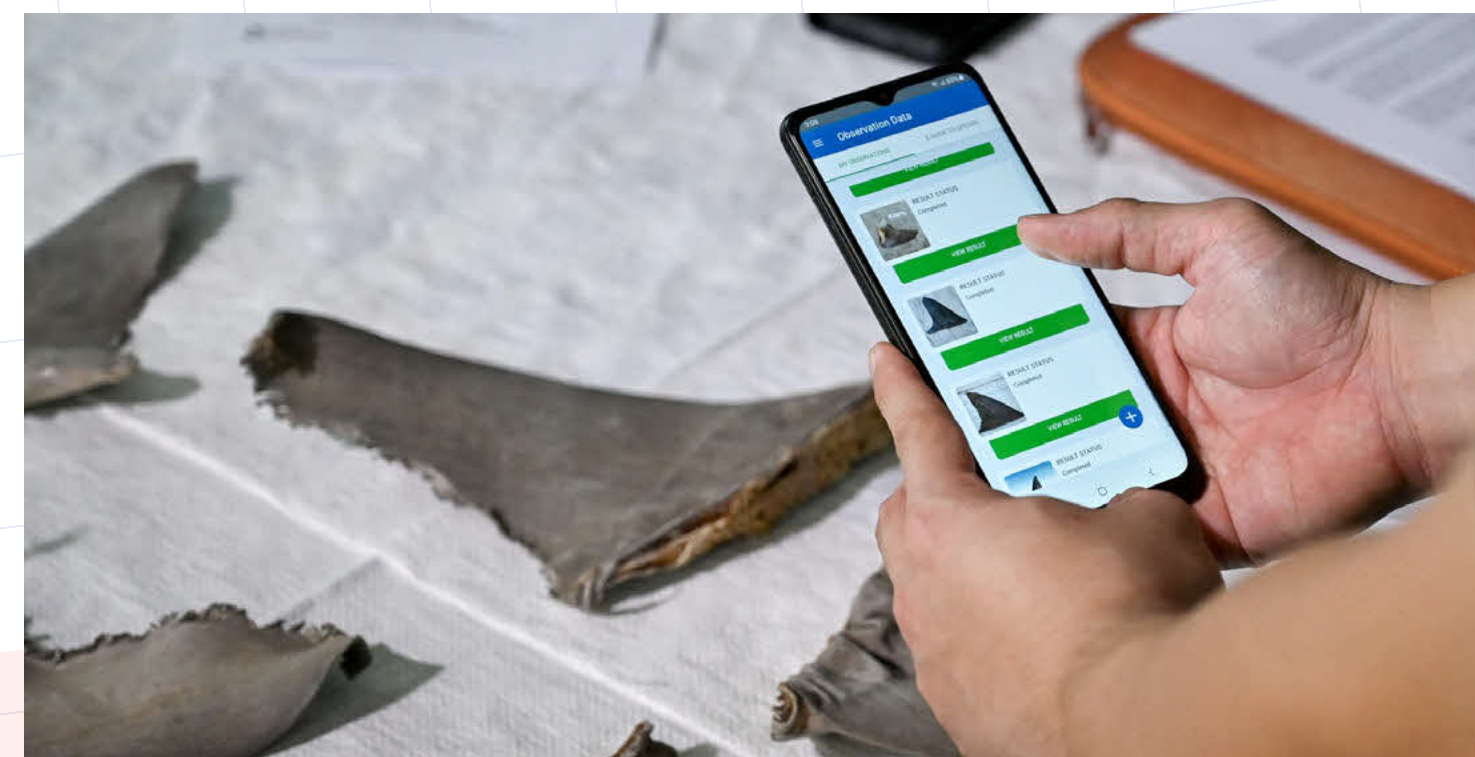


Image: National Parks Board



THE ARTFUL ENGINEER THE BEAUTY OF AUTOMATION WITH NUNTHINEE SUNDARAMUTHI

Water, much like life, doesn't have to follow a straight path. It meanders, adapts, and finds new routes. Nunthinee, a Principal Engineer at PUB, Singapore's National Water Agency, embodies this fluid adaptability in her journey to the heart of water engineering.

For Nunthinee, the world of PUB and water management wasn't a distant, unfamiliar territory; it was woven into the fabric of her early life through her father's role as a lab officer in PUB. As a child, her interactions with PUB were frequent and insightful. "My dad used to talk to us about his work. He'd tell us how the water from our homes gets treated and ends up in the sea," she recounts. These lessons on the beach were more than just casual strolls; they were her early, informal education in the complexities of water management.

Her childhood was marked not by a fascination with water but with the mechanical wonders of the world, a spark that was ignited by Roald Dahl's "Charlie and the Chocolate Factory." This wasn't just a fleeting interest; it was a deep-seated curiosity that would shape her future. Driven by this early love for Dahl's fantastical machines, she was drawn towards mathematics and science, eventually finding her calling in the world of engineering. Her journey through this field, much like a river carving its path, was filled with unexpected twists and enriching turns.

My dad used to talk to us about his work. He'd tell us how the water from our homes gets treated and ends up in the sea. ◀◀◀

Her first pivotal moment came during her undergraduate studies at the National University of Singapore (NUS). "It was an exam where we had to program vending machines," Nunthinee recalls with a smile. This task, seemingly simple, unveiled a world of complexity and creativity. "It was fun – it made me realise how much goes into these everyday things. That's when I knew I wanted to explore control (engineering)."



Image: Shutterstock

This experience transformed vending machines from mere urban background into gateways to a new world. Nunthinee delved into control engineering, a realm where she became the puppeteer of machines, orchestrating their every move. This field merged her love for technology and creativity, enabling her to make machines not just functional but intelligent and responsive.

Her fascination with control engineering naturally extended to the intricate world of semiconductors, the brains behind these machines. To Nunthinee, semiconductors were more than just components; they were the core intelligence that drove the functionality and efficiency of modern technology. She was captivated by how these tiny, sophisticated devices could control complex systems, a perfect intersection of her interests in control mechanisms and technological innovation.



Image: Shutterstock



Image: PUB

When the 2008 recession reshaped the global landscape, Nunthinee found herself reevaluating her career path. With the semiconductor industry facing challenges, she looked towards the Public Sector, a realm made familiar through her father's work at PUB. This decision to pivot into PUB wasn't a mere reaction to external pressures; it was an adaptable response to a changing world. Embracing this new direction, she found herself in a unique position to blend her passion and expertise in control engineering with her father's legacy, charting her own course within the organisation.

Today, as an integral figure at the Tuas Water Reclamation Plant, Nunthinee stands at the forefront of innovation. Her role involves overseeing the construction of the complex control systems that are crucial to the plant's operations. "What fascinated me was the automation part of everything happening around you," she shares. "I never imagined working in the water industry. Unlike potato chips, you don't think of water as being made in a factory." She seamlessly combines her intellectual curiosity with the latest technological advancements, steering the course of water management into new waters.

In this role, Nunthinee has come full circle, connecting her childhood fascination with automation to her professional endeavours. Leading projects that incorporate advanced robotics into water treatment, she has turned her childhood fascination with automated factories into real-world applications.

"Back in 2017, we started designing (to automate and digitalise the used water treatment process and the NEWater production process). We didn't initially specify robots, but as the project evolved, we saw opportunities to integrate robotic arms, transforming how we approached manual tasks," she recalls. Embracing automation and Artificial Intelligence reflects Nunthinee's adaptability and vision, qualities she has nurtured since her days in a computer club, now fully realised in her work at PUB.

Away from the structured world of water engineering, Nunthinee's personal life unfolds like a vibrant tapestry, rich with interests that paint a fuller picture of her than her professional achievements alone could. Music, far more than just a background accompaniment in her workspace, serves as a welcome respite from the meticulous demands of engineering. It's in the melodies and rhythms that she finds a rhythm of her own, a contrast to the precision of her day job.

Her downtime is often spent in the glow of Netflix's varied offerings or lost in the collective energy of a concert crowd, swaying to the tunes of Sam Smith or eagerly awaiting Ed Sheeran's next soulful performance. The arts clearly hold a special spot in her heart. Even on her travels, Nunthinee makes time for a touch of culture. She fondly recounts the thrill of seeing "Charlie and the Chocolate Factory" in London, a playful reminder of the story that first sparked her love for factories.

When asked if she ever contemplated an alternative career path, like pursuing the literature she adored in secondary school or the sociology that intrigued her in university, Nunthinee responds with conviction, "I wouldn't choose another path. I really enjoy what I do." It is evident that her path is a masterclass in embracing change and nurturing diverse passions. Marked by a commitment to her "dorky 10-year-old" self, Nunthinee's career exudes confidence and a forward-thinking approach, making her a dynamic force in water engineering. Her story serves as a reminder that success often comes from a willingness to embrace change and pursue passions, regardless of how unexpected the path may be.

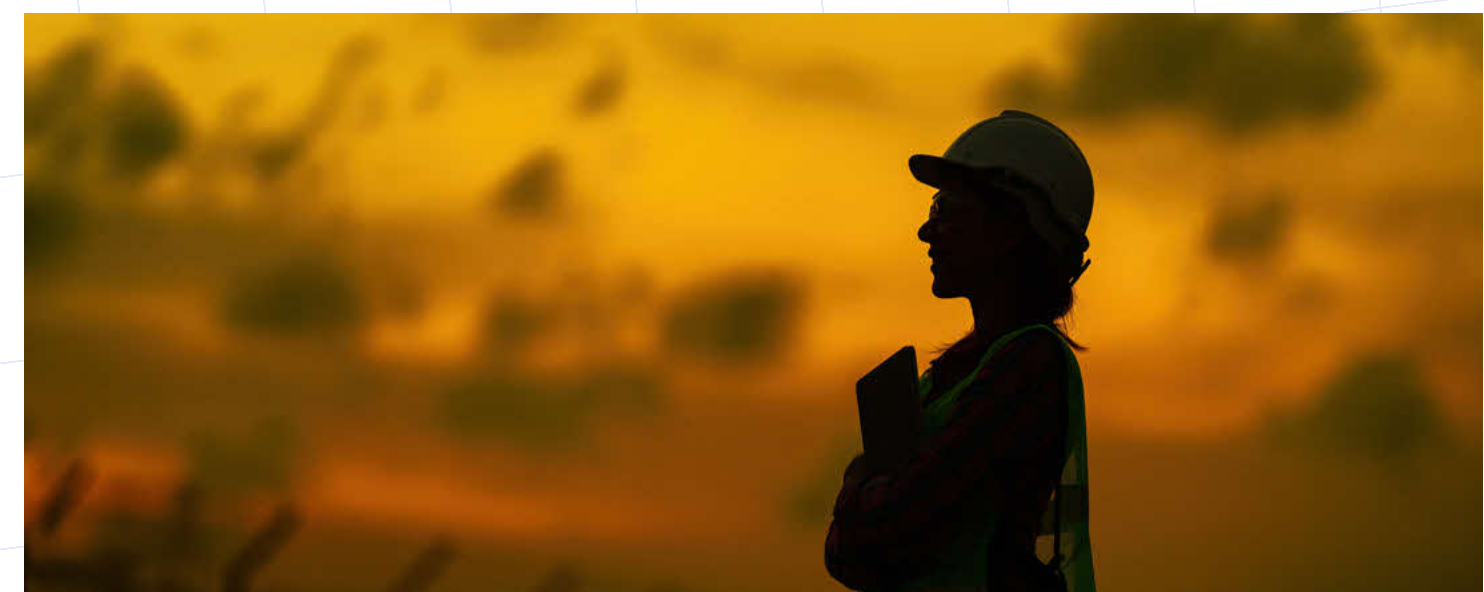
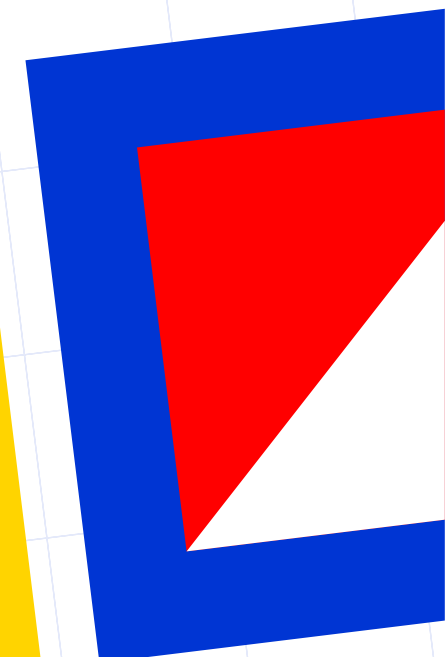


Image: Shutterstock



**DANCING SHOES
TO LAB COATS**
**HUANG YULING'S VIBRANT
PATH FROM DANCE FLOORS
TO PATHOGEN RESEARCH**

It all begins with a cup of Teh C Kosong Peng, setting the rhythm for a day filled with methodical research—donning at least two layers of protective gear, cultivating bacteria, and precise pipetting. This daily ritual often concludes with workout classes with friends or a game of Zelda.

As she delves into her story, it's clear that her path wasn't always destined for the world of pathogens and lab coats. "I wanted to be a dancer," she shares, her eyes lighting up at the memory. "I dedicated over ten years to learning Chinese dance, but eventually, I realised I didn't want my hobby to become my job." Reflecting on her journey, Yuling credits a former teacher, Miss Hazel Chia, and her mother for their significant influence on her life. Miss Chia, her science teacher, ignited her interest in science at a young age. "She made science very interesting, saying it's all around you," Yuling recalls.

This transition to science was further supported by her mother, who had also introduced her to the world of Chinese dance. "I'm very close (to) with my mom; she has always been incredibly supportive," Yuling reflects, her tone imbued with deep respect and admiration. It was her mother who first recognised Yuling's early interest in dance and encouraged her to pursue it.



Image: Shutterstock

Even as her interests evolved, her mother remained her steadfast pillar of support, a confidante to whom Yuling turns at the end of challenging days in the lab or to navigate the complexities of life. This bond they share is laced with a light-hearted rivalry between Yuling and her sister over who is the favoured daughter. Yuling playfully asserts her status as the favourite, humorously reasoning that her proximity, being in Singapore while her sister resides in Melbourne, gives her an edge. "She's living it up in Melbourne, so how can she be the favourite?" Yuling jests, her laughter echoing a family dynamic filled with warmth and humour.



Image: Shutterstock

The onset of the COVID-19 pandemic coincided with her graduation from university, a period of uncertainty and exploration for many. For Yuling, it was an opportunity to delve into a field that was rapidly becoming the centre of global attention. “I was fascinated by the study of host immune responses towards infectious diseases,” she explains, recounting her initial encounter with the work done by A*STAR Infectious Diseases Labs (A*STAR ID Labs). It was this fascination that steered her towards her current role as an A*STAR ID Labs Research Officer where she now tackles bacteria, viruses, and parasites.

In the lab, Yuling’s daily routine is anything but mundane. Working in high containment lab facilities involves stringent safety protocols, something that Yuling admits would have surprised her younger self. “It’s like what you see in movies,” she says, describing the protective gear and discipline required in her line of work. Yet, despite the rigorous nature of her job, Yuling finds joy and camaraderie within the walls of A*STAR. “The people here are incredible. Everyone is friendly and always ready to help,” she reflects, highlighting the often-overlooked fellowship that exists behind scientific discoveries.

Yet, science, much like dance, is an arena where perfection is pursued but seldom attained. Yuling is no stranger to the setbacks and failures that research entails. “We face failure a lot in science,” she admits, recalling a recent incident where her meticulously grown cells got contaminated. “It’s difficult, you know. One speck of bacteria, and it’s all gone,” Yuling explains, her voice tinged with the frustration and disappointment familiar to any researcher.



Image: Shutterstock



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I need to be by myself for a while, let myself grieve over whatever went wrong.

Her coping mechanism involves allowing herself the space to process disappointments—a crucial part of bouncing back with renewed vigour. “I need to be by myself for a while, let myself grieve over whatever went wrong,” she explains. This introspection is vital for Yuling – it’s a pause in the music, a moment of silence before the melody resumes.

As Yuling talks about her future goals, her enthusiasm and inquisitiveness shine through, especially when she speaks about delving deeper into the study of different coronaviruses and understanding their effects on global health. “Coronaviruses have such an ability to create infectious diseases,” she observes, her thoughts eagerly anticipating the potential of her future research endeavours. This scientific curiosity seamlessly blends into her more imaginative musings, as she shifts the topic forward to the alternative realities she likes to envision.

In a blend of thoughtfulness and imagination, she describes her vision of an ideal world. “It might sound super corny,” she says with a light laugh, “but I imagine an alternate universe where everyone is just respectful and nice to each other.” This vision is less about escaping reality and more about reshaping it – she longs for a society where mutual respect and kindness are the norm, not the exception. “I think there’s a lot that could be better,” she muses, reflecting her hope for a future where societal interactions are driven by empathy rather than power dynamics.

Yuling’s vision extends beyond just interpersonal respect to encompass a broader societal change, particularly in how mental health is perceived and discussed. She passionately speaks about the stigma surrounding mental health, drawing from her experiences in both Singapore and Melbourne. “I wish there was a world where, if I tell you, ‘Okay, I’m seeking therapy,’ that’s met with encouragement and support,” she explains.

Her perspective is shaped by her own experiences as a pharmacy technician in the Institute of Mental Health, where she witnessed firsthand the struggles of people her age dealing with mental health issues. “It felt surreal, seeing how we’re on completely opposite sides,” she recalls, emphasising the importance of speaking up and seeking help without fear of judgement. This belief in the power of open conversation and support is a cornerstone of her ideal world, a universe where empathy and understanding reign supreme. Yuling carries this principle into her personal life as well, applying it in both her professional and everyday interactions.

Yuling’s story is not just about her achievements in the field of infectious diseases. It’s a narrative about a young woman who followed her passions, found her calling in the midst of a global crisis, and continues to balance her professional and personal life with a grace that is as admirable as it is inspiring. In a world where paths are often linear and careers predefined, Yuling’s journey stands as a testament to the beauty of exploration, the importance of adaptability, and the joy of finding one’s true calling.

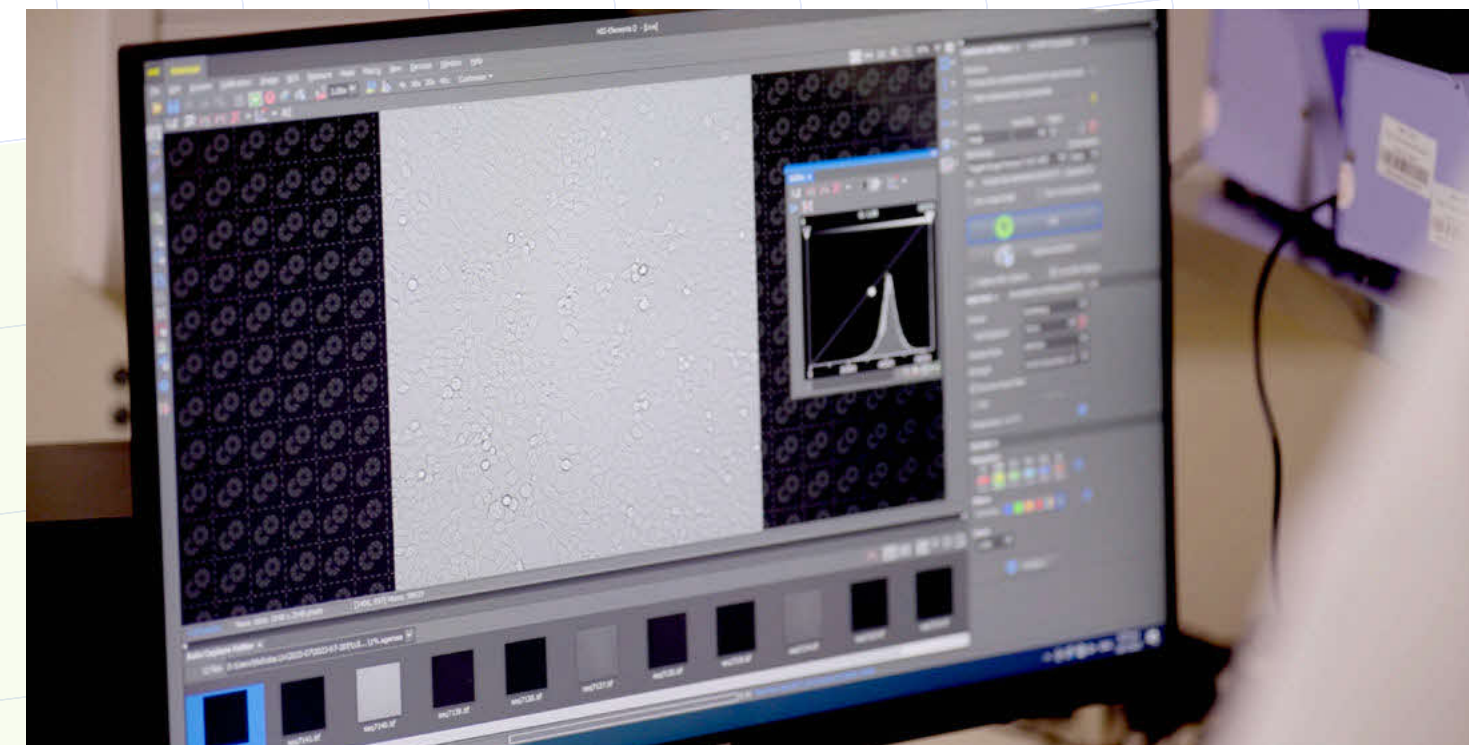


Image: Step+Up Video Series





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