

Work/Careers

reports to their advantage, says Joyce Chen, an economist at the Ohio State University (OSU) in Columbus. Chen says she negotiated a 20% pay raise in 2017 after a check of salary data revealed that she wasn't paid as much as male colleagues in her department. The experience inspired her to take a closer look at the salaries at her institution. She co-authored a 2019 paper showing that male tenure-track faculty members at the university earned 11% more than their female counterparts, even after controlling for factors such as experience and department (J.J. Chen and D. Crown *Am. J. Agric. Econ.* **101**, 1337–1352; 2019).

Systemic changes

Chen, who is currently the chair-elect of the OSU's President and Provost's Council on Women, doesn't know whether gender was a

factor in her low pay. The issue certainly didn't come up during the salary review, when she had to justify a pay rise on the basis of her experience and qualifications. Universities could avoid such negotiations by being proactive about salary disparities, she says. "Whoever is making salary decisions needs to justify every case where there's a greater-than-5% disparity between people of comparable ranks," she says. "If they can't justify it, they need to remedy it."

The 2020 listing of chief executives of the 500 biggest US companies, compiled by *Fortune* magazine, includes just 37 women, comprising 7.4% of the total. And according to the most recent figures from the US Bureau of Labor Statistics, female chief executives in the United States earned an average of \$105,300 in 2019, whereas their male counterparts earned

an average of nearly \$130,800, a difference of some \$25,500.

The Eos Foundation report also laid out steps that universities can take to close the gender gap in top earners, including setting equity benchmarks, publicizing the results of regular audits and prohibiting questions about salary history during the hiring process. Those questions make it harder for women who are underpaid in their first jobs to catch up, Silbert says.

While the current system is in place, Silbert says women might need extra training in negotiation to get the salaries they deserve. But real change, she says, should start at the top. "It's not a great workplace if you bring in two people and you give one person a higher salary because he happened to negotiate for it," she says. "That's no way to run a business."

HOW BALLET PREPARED ME FOR RESEARCH

Constructive criticism and dogged perseverance help to polish the performance of dancers and scientists alike. **By Aisling Roche**

When I was 15, I was selected to dance a solo in my ballet school's annual recital performance. I was ecstatic: this was the culmination of years of hard work. I memorized the dance my teacher had choreographed, and spent the next few weeks pushing back the furniture in our living room so I could practise until I was sure my execution was perfect.

"I think we'll cut the starting sequence down," my teacher said when I took the floor. "And perhaps we can rearrange the turning section, it's just not working."

Devastated, I returned to my living room, determined to adjust and prepare my limbs to my teacher's satisfaction. Week in, week out, I practised and incorporated the feedback from my teacher and peers, until finally, my dance was ready for the public. I realize now, 13 years on, that this was my first brush with the process of using feedback and criticism to grow and improve.

An essential part of training to be a researcher is becoming accustomed to this cycle of draft–critique–redraft. The 'one-and-done' model of exams and assignments in schools and undergraduate degrees rarely prepares you for this kind of assessment. It's a vulnerable feeling presenting work you are proud of, only to receive a barrage of comments and corrections from your supervisor or colleagues. The years I spent dancing in front



Ballet dancers thrive on critical feedback.

of classmates and dance-studio mirrors was valuable preparation. There is no flawless first draft, and even the best work warrants tweaking by collaborators. Once you can overcome your initial defensiveness, you realize that getting feedback is a valuable, generative process and the only way to become a better scientist.

Confidence boost

An appreciation of constructive criticism wasn't the only way that dancing prepared me to be a research scientist. The many performances I did then gave me the confidence to speak in front of conference audiences, for instance.

And the dogged, daily practice required to achieve difficult steps such as pirouette spins and grand jeté jumps helped me, I think, to develop the resilience needed in research. You must come back every day ready to tackle the subject once more, knowing that the small steps you make will eventually build up to something special.

Finally, as every PhD student knows, sometimes you just really need a break. Every Thursday throughout my graduate studies, I left the laboratory behind. For the 90 minutes of my dance class, I never once thought of pipettes, pHs or papers, I could just have fun. I think we all need something we love to lose ourselves in once in a while when working on a research project.

I finished my PhD research more than a year ago, and started a job as an analytical development scientist at a gene-therapy company in London. I quickly realized that constructive criticism is no less important to my progression and growth just because I'm in industry. I've made it a priority to seek out feedback and apply the criticism I receive in each of my roles as I develop as a researcher. And yes, I still do ballet, even if just around the lab, waiting for my samples to run.

Aisling Roche is an analytical development scientist at Meira GTX, a gene-therapy company in London.

JAVIER TORRES/AFP/GETTY