

Anna Rice

Genetics and Bioinformatics



Hello to the Naamat USA and Naamat Canada donors,

My name is Anna Rice, I am 33 years old, and I am a PhD student in Tel Aviv University, studying Bioinformatics. In the past, I have been a flight simulator officer in the Israeli Air Force and served my country for more than 4 years. My current rank is Captain and I still serve in active reserve service, to this day.

I started my academic path ten years ago. At first, I was not sure whether to study Medicine or some other scientific field and eventually started my studies in the Integrated Program of Life & Medical Sciences in Tel Aviv University. Then, during the third year of my studies I took an introduction course to Bioinformatics and felt that *this was meant to be*. Bioinformatics is a field in which we study biology and various biological processes using the computer. The advances in technology in biological fields have led us to an accumulation of many types of data, including sequencing data, ecological data, and many more. This amount of data requires the usage of computational power and this is where Bioinformatics fills this gap. After completing my Masters in computational biology I went on to my PhD studies.

In my research I aim to unravel key evolutionary questions regarding polyploid plants. Polyploids are organisms that have a duplicated genome – instead of having two copies of their genome, they have three or more copies, and the scientific community seeks to find whether this phenomenon gives these organisms an evolutionary advantage. Interestingly, polyploid plants are of major importance since many of the plants we use in our everyday lives are in fact polyploids (for instance, wheat, banana, cotton, coffee, etc.). My main project focused on mapping where polyploid plants reside across the globe and underpin the ecological factors that have driven their distribution. This included building a massive database of millions of plant species observations, together with their localities and environmental characteristics of their habitats. One of my findings showed that apart from the classical hypothesis of temperature being the strongest driving factor of the distribution, it is accompanied, to a higher extent, by the growth form and life cycle of the flora in question. This is the first time that such questions were addressed on a global scale and presented as a whole. This project was published a few months in the prestigious journal *Nature Ecology & Evolution* and I am proud to say that so far the responses we get about it are very enthusiastic. I also work on other projects that are involved in assembling biological databases and developing some statistical tools for biological analyses.

Performing a PhD research requires a great amount of effort. As a PhD student you usually develop strong feelings about your research – you nurture it, invest most of your time in it, experience its rises and falls, it does not always go the way you hoped it would, and it takes a long time before you see it flourish. In a way, it resembles to bringing up children, and

indeed, I often refer to my PhD as *my third child*. I have two sons – Jonathan is almost four and Ethan is almost one. They are my *real* achievement and contribution to the world. Combining my research together with trying to raise them to be good people is not an easy task, but it is for sure a very fulfilling one. Jonathan often asks me how my day at work was and I find it difficult to explain a four-year-old the ups and downs of a research. But one thing he knows for sure – I love what I do.

I would like to convey my deepest gratitude to you, the donors of Naamat USA and Naamat Canada. Your support and empowerment are invaluable, especially for us, young women in the beginning of our scientific careers. Although there are some *winds of change* and we do see more and more senior female scientists in academia, scientific fields and positions are still predominantly occupied by men, which sometimes makes it more difficult for us women to be integrated in this world. Your support helps us to *break the glass roof* that is sometimes placed over our heads, and for that we thank you.