Fascinated by the fundamental processes of self-assembly, I strive to understand the underlying mechanisms that allow the formation of biological ultrastructures and complex machines to function coherently as networks. My first introduction to molecular self-assembly was in my MSc studies, under the supervision of Prof. Ehud Gazit at Tel Aviv University, where I investigated the role of aromatic residues in the self-assembly of short peptides into ultrastructures and hydrogels. Using different techniques I defined their role in the assembly process, as well as their structural and biophysical properties. These studies paved the way for my PhD research, under the supervision of Prof. Itamar Willner at the Hebrew University, where I went on to explore the self-assembly of nucleic acids. By utilizing the specificity and unique features of the DNA sequence, I was able to develop highly sensitive biosensors and innovative molecular machines and DNA-computing systems, which emerge as a powerful tool for smart diagnostic and nanomedicine.

For my postdoctoral training, I wanted to harness my knowledge of molecular self-assembly to fundamental research questions in the field of biomolecular complexes. I joined the lab of Prof. Jonathon Howard at Yale University to investigate the cytoskeleton of the cilia. I was able to develop a novel biochemical technique to purify, for the first time, the building blocks of the ciliary scaffold. This allowed me to gain important insights into ciliary length stability and post-translational modifications. **Based on these works, I received two international postdoctoral fellowships (EMBO and HFSP fellowships), as well as travel awards to present my work at international conferences.** To complement my background in biochemistry and biophysics, I pursued a second postdoc in the lab of Dr. Xiaolei Su at Yale University, where I investigated the assembly of the lymphocyte microvilli of T-cells. While there are some common themes between the cilia and the microvilli, the transition has enabled me to vastly expand my experimental and theoretical toolbox. Moreover, the different perspectives I have gained from these more cell-biology orientated approaches will be invaluable for informing and developing my future research goals.

I recently joined the Azrieli Faculty of Medicine at Bar-Ilan University as a senior lecturer. Accepting this position allowed me to come back to Israel, together with my family, and to support Israel’s northern region, which is in need of medical and technological development. The exceptional academic and research environment at the Faculty will provide the perfect setting to establish my independent research career. Thus, I am confident that I will be able to thrive here, building an innovative, productive, and extramurally funded research program. **In my lab, we will apply interdisciplinary approaches — classic biochemical methods together with nanotechnological techniques — to answer basic questions related to the cilia and associated pathologies (ciliopathies).** We will use cutting-edge microscopy, including Total Internal Reflection Fluorescence (TIRF) microscopy and atomic force microscopy (AFM), as well as microfluidics systems.

As a mentor and an educator, **my goal is to provide my students with an inclusive and supportive learning environment to help them develop as the next generation of Israeli scientists**. For this purpose, I will encourage them to express their scientific creativity and capabilities, develop their skills, teach them new techniques and methodologies, and build their professional network. To further develop my skills as a teacher both in laboratory and academic settings, I have participated in a comprehensive training program for effective college teaching. This program included various workshops that focused on enhancement of teaching skills, as well as tools for **effective in-class and online teaching**. Thus, this training gave me a toolbox for advanced education, and I am committed to my continued development as a mentor and classroom teacher, having **received a Certificate of College Teaching Preparation (CCTP) from the “*Yale* *Poorvu Center of Teaching and Learning*”**. Ultimately, if I can continue to provide the next generation of researchers with the intellectual and practical tools they need to thrive I have succeeded as a scientist.

I believe that academia has also an important role in our society, and we, as part of this society, should expose the public to science and foster the next generation of scientists. Therefore, I have decided to serve as a **student union representative** at Tel-Aviv University, during my graduate studies, and help developing different educational programs together with other activities related to the union. Furthermore, I had the opportunity to volunteer at the Dr. Baruch Zinger Memorial Fund as a **mentor of underprivileged high-school students**. I met with my students on a biweekly basis and helped them with their homework, as well as with the challenges that they faced in school. During our talks, we also discussed science, research, and technology that I hoped to expose and to develop their curiosity. This was an amazing experience that shaped my agenda and helped me to understand how we can make a huge difference in our society.

During my postdoctoral training at Yale University, I **served as a regional manager of ScienceAbroad**, the organization of Israeli scientists abroad. When we first arrived to New Haven there were several groups of Israelis but the interaction between the groups was very limited. I decided to join ScienceAbroad and together with them build a strong Israeli community at Yale. I began to organize professional and social events, for the Israeli scientific community, which was eager for networking and establishing new friendships. Very quickly our events became attractive for many Israelis who worked at Yale, as well as newly arriving postdocs who used it for “soft-landing”. In early 2020, when COVID-19 hit the USA, our community was strong enough to provide support to members of the community who needed comfort. Thus, I find this contribution highly satisfying at all levels.

I asked to join the Azrieli Faculty of Medicine of Bar-Ilan University, also, because I think that academia has a critical part in the development of the periphery. **One of my first requests from the Dean, Prof. Karl Skorecki, was to join the faculty outreach committee**. As a member of the committee, I aim to further promote opportunities for interactions between our scientists and members of the public. This way I would like to increase the accessibility of science to a lay audience, fostering a greater understanding of science and providing the public with greater insights into science-related issues. Similarly, I expect my research group to be involved in outreach activities and provide an inclusive environment for people from different backgrounds.

I am excited to start my independent career and honored by the confidence given me by Bar-Ilan University. I hope that using our interdisciplinary approaches we will be able to gain some important insights into the cilia and harness them for the development of different therapeutics. All in all, I am confident that my training, research plans, as well as social and educational aims, align very well with the mission of the Zuckerman STEM Faculty program.