Dear Quantum Science and Technology Master's Committee,

As a Physicist and Mathematician, I would like to join Quantum Science and Technology master's program. I am very excited by the opportunity to pursue a master's degree in Theoretical Quantum Physics, under the mentorship of some of the world's best Physicists, since obtaining a PhD and devoting my life to a quantum physics research career are my primary goals.

My research experience and skills come mainly from Internships and my two Bachelor's thesis in Physics and Mathematics. I have always been attracted to the idea of studying all kinds of physical systems, whether theoretical or experimental. Therefore I have always felt the urge to go beyond the lectures and be part of the scientific community. I had the chance to take that step forward in the ATLAS experiment at CERN, as part of Prof. Mario Martínez's group working in the detection of dark matter. Moreover, among other Internships, I have had the pleasure of being part of ICFO twice. During the first time I was involved in The Big Bell Test project supervised by Dr. Marta García-Matos and Dr. Federica Beduini. Later I joined Prof. Morgan Mitchell's group as a Summer Fellow where my project consisted on the construction and sensitivity optimization of a magnetometer. Currently, I am working at GNaM group in the study of the thermoelectrical properties of nanowires under the tutelage of Prof. Javier Rodriguez.

Regarding my background in Quantum Physics, I took two university courses where I acquired the basic notions of its formalism and phenomenology. These contents aroused my interest in the field and motivated me to chose Quantum Information, Quantum Mechanics and Quantum Optics elective subjects which, combined with the degree in Mathematics, have given me a solid knowledge to continue specialization studies in quantum science and technology. In addition, under the supervision of Prof. John Calsamiglia and Dr. Michalis Skotiniotis, I did my Bachelor's Thesis in Physics at GIQ in *Sequential discrimination in continuously monitored quantum systems*. A hallmark of our approach is the use of sequential methods in quantum systems described by stochastic equations.

Starting next fall, I want to take a step forward in my career pursuing the master in Quantum Science and Technology. There are three main reasons why I want to join your program. First, it represents the perfect opportunity to continue developing myself as a scientist but also to continue educating myself as a researcher. The academic quality that offers in such a broad vision of quantum theoretical physics and the active participation of high-technology companies are hard to find in other programs. Secondly, it provides access to PhD positions at the participating institutes and offers a stimulating environment since it is embedded in the Catalonia Quantum Community. Last but not least, I am very interested in learning more about Quantum Information, Statistical Inference, Quantum Communications, Cryptography and Atom-Light Interaction. These topics are covered in the Master's syllabus. Moreover, the possibility to do the Master's Thesis in cutting-edge research groups under the supervision of expert professors such as Prof. John Calsamiglia, Prof. Andreas Winter, Prof. Antonio Acín or Prof. Darrick Chang appeals to me a great deal.

For all of the aforementioned reasons, I believe both my background and goals would fit at Quantum Science and Technology master's program. I am really looking forward to enrolling in a research group and carry out my Master's Thesis. I am enthusiastic, ambitious and ready to work hard.

Thank you for your time and consideration.

Sincerely,

Elisabet Roda Salichs