



The Rita R. Colwell Impact Fund for the Advancement of Women in Science



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In 2021, OIST and the OIST Foundation established The Rita R. Colwell Impact Fund for the Advancement of Women in Science as an extension of our commitment to support and empower women in science, technology, engineering, and mathematics (STEM) and in response to the global gender gap in STEM-related fields. Around the world, fewer than 30% of researchers are women. In Japan, that number is below 20%. Since the fund was launched, it has raised more than \$50,000 and made its first grants for projects that are currently underway. We are pleased to share the following updates and our gratitude to those who are making them possible.



“I advise all women scientists in the world to keep going. There are a lot of difficulties but it’s not impossible. I want to thank the Rita Colwell Fund for giving me this exceptional opportunity to complete my studies at OIST.”

–Hania Al Tabbaa

Internship Opportunity for Syrian Researcher

OIST’s Light-Matter Interactions for Quantum Technologies Unit has such a diverse group of interns, students, and post-docs, Professor Sile Nic Chormaic calls it a “little United Nations.” Originally from Ireland, Prof. Nic Chormaic is as committed to fostering a comfortable working environment for international students as she is to studying the interaction of light and matter. “We are entering an era of major global turbulence due to climate change, limited harvestable energy resources, wars, and conflicts. Women can play a major role in leading us through these times but are often the first to lose opportunities when economies become more strained,” she says. Recently, Prof. Chormaic helped to bring Ukrainian researchers to OIST, and the Colwell Fund also gave her an opportunity to invite female researchers from Afghanistan to the university. Unfortunately, after two Afghan students were chosen, diplomatic and COVID-related issues prevented them from doing so.

Instead, Hania Al Tabbaa joined Prof. Nic Chormaic’s team from Damascus University in Syria. From June to December 2022, Hania is working on plasmonic trapping and thermal effects within the unit’s NanoBioOptics group. The internship will play an important role in completing her Ph.D., after which she will have several paths to choose from. “I have three choices,” Hania says. “The first, to work as a postdoc to improve my knowledge before I return to my country. The second, which was my dream before I entered the photonics field, is to work for an optical manufacturer. The last choice is return to Syria to help other researchers with the knowledge that I gained at OIST, and of course help other women scientists.”

Giving women like Hania choices for their future is one of the most important outcomes of the Colwell Fund. Prof. Chormaic says, “The Fund allows us to provide education opportunities for young women from disadvantaged regions who will become future leaders with a truly global perspective. Sowing a single seed can yield a field of flowers over time.”



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Portraits of Japanese Women in Mathematics

Professors Reiko Toriumi (Gravity, Quantum Geometry and Field Theory Unit) and Xiaodan Zhou (Analysis on Metric Spaces Unit) saw the Colwell Fund as a means to realize their desire to elevate the visibility of women in mathematics—a traditionally male-dominated discipline.

Inspired by the 2016 photographic exhibition and catalog “Women of mathematics throughout Europe,” Profs. Toriumi and Zhou proposed to showcase Japanese women in mathematics and theoretical physics

using the same creative team: Sylvie Paycha, a mathematician at the University of Potsdam, and photographer Noel Matoff. As with the European project, Paycha will interview female Japanese mathematicians by discussing the research that the interviewee is working on. The interviews will be set in front of the researcher’s blackboard (a very important instrument for mathematicians and theoretical physicists), and Matoff will photograph these moments. “It is a beautiful setup as the interviewed mathematician will be in her own professional element, and Noel can readily capture the natural essence of a mathematician at work,” Prof. Toriumi explains.

The workshop “Women at the intersection of mathematics and theoretical physics meet in Okinawa,” will be held at OIST in March 2023. In addition to scientific topics, the meeting will offer a platform for discussions on women in the global and Japanese scientific communities. During the event, five Japanese conference participants will be photographed and interviewed for the exhibit. Prof. Toriumi hopes this project will contribute to support for and among women scientists. “For me, every encounter with a female mathematician and a female theoretical physicist has been very special and encouraging,” she says. “It is always a gentle yet strong reminder that I am not on my own.”

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Women Scientists Supporting Each Other

Rosalind Franklin’s X-ray crystallography of DNA structure is nowadays commonly acknowledged as a critical contribution to the discovery of DNA double helix structure that won three of her peer male scientists the Nobel Prize in 1962. Today, she has become an emblem of the unconscious bias that female scientists routinely face.

Franklin’s story inspired Prof. Paola Laurino (Protein Engineering and Evolution Unit) to apply for a Colwell grant to create the website “Rosalind Franklin: A Forum for Female Scientists.” The site is designed to both crowdsource wisdom

from senior female professor-researchers around the world and disseminate it online and through printable posters displayed at conferences and shared with graduate students, postdoctoral fellows, and assistant professors. Topics include collaboration, interdisciplinarity, and mentorship.

Prof. Laurino was the recipient of the 2022 Faculty Excellence in Mentoring Award at OIST and hopes that “hundreds of honest observations will help younger colleagues feel clearer, more measured, less alone, less anxious, and open to the expectation that all is possible in time.” Indeed, the project is already garnering international attention. It was presented at the Science Summit at the 77th United Nations General Assembly, in September, as an example of the more inclusive approach to science that the Summit aims to promote globally.

 groups.oist.jp/protein/roz

About Rita Colwell

Dr. Rita Colwell served as the 11th director of the National Science Foundation (1998-2004) — the first woman to hold the position. Her long public and private career has resulted in 63 honorary degrees, the 2005 Order of the Rising Sun Gold and Silver Star (Japan) and the 2006 National Medal of Science (USA). She has been a member of the OIST Board of Governors since 2011.

OIST and the OIST Foundation are deeply grateful to all the donors, faculty, staff, and students who have supported the Colwell Fund.