



Spectrum



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For a decade, no one believed he found a planet outside solar system

By Lucas Tan on the Straits Times on January 19, 2023



Swiss Nobel laureate Didier Queloz, 56, speaking to young participants at the 11th Global Young Scientists Summit at the Singapore University of Technology and Design on Tuesday, January 17, 2023

Photo: National Research Foundation Singapore

SINGAPORE – He was the first to discover a planet outside the solar system, but his work was dismissed for a decade before being rightfully recognized with the 2019 Nobel Prize in Physics.

Delivering the opening lecture of the 11th Global Young Scientists Summit at the Singapore University of Technology and Design on Tuesday, Professor Didier Queloz shared about his scientific journey as an astronomer.

He specializes in exoplanets, looking for planets that orbit sun-like stars outside the solar system.

he Swiss Nobel laureate was the harbinger of the exoplanet revolution, which has catalyzed the discovery of more than 5,000 exoplanets to date.

Yet, even he and his supervisor, Professor Michel Mayor, doubted their own discovery in 1995.

“Nobody was expecting a planet back then, so it was a big surprise when I saw the data. I found the planet and said: ‘What’s going on?’ I thought something was wrong with the equipment, but after checking, I realized there really was something orbiting that star,” Prof Didier, 56, told The Straits Times in an interview.

“First I had to convince Michel that I was right, then the scientific community, which was really tough. For the next 10 years, nobody believed it, so it was a rough time for me as a young scientist,” said Prof Didier, who was a PhD student at the University of Geneva at that time.

“Only when the physics was more understood and established did people start to realize, oh, that guy did it.”

Prof Didier’s discovery of a class of giant gas planets closely orbiting their parent star, known as hot Jupiters, upset existing theories about the formation of the solar system and other planetary systems. Hot Jupiters contradicted predictions that only rocky planets orbit near the parent star, while larger gas planets do so further away.

Before his findings, theories were based only on observations made in the solar system. Astronomers are now working on theories that account for the migration of gas giants from outer to inner orbits.

“The first shock was that the theory was incomplete, nobody would have guessed that planets such as gas giants could move around in their system. The second shock was that we (the solar system) may not be the dominant structure in the universe.”

Prof Didier, who is currently a professor of physics at the University of Cambridge’s Cavendish Laboratory, plans to continue leading the hunt for Earth-like exoplanets that might support life.

However, current detectors are not sensitive enough to do so.

“I’m a bit upset by the fact that we have not found an Earth-like planet, so I’m helping to set up a new kind of equipment to detect these exoplanets. I would also like to establish a chemical pathway for paving the way for looking for life on other planets. I have teamed up with chemists, geochemists, biochemists and earth scientists to collaborate in this area.”

When asked what he feels is the main takeaway from his success, Prof Didier credited his “obsessive curiosity” that enables him to persevere with his beliefs and ignore the naysayers. He aims to continue probing for the next astronomical breakthrough.

“We believed we were the center of the universe. We believed everything was orbiting around us. We believed the solar system was this... then we realized the universe is expanding and so on. I’d expect that our next breakthrough will be one where we find life plenty in the universe, where we realize how boring and insignificant we are.”

The summit, organized by the National Research Foundation and being held from Jan 17 to Jan 20, features lectures and panel discussions with 21 eminent scientists, including Nobel laureates and winners of the Millennium Technology Prize, awarded by independent foundation Technology Academy Finland.

Creating peace clubs in Nigerian schools

Posted on January 19, 2023 by Eyerusalem Azmeraw, Project Officer, UNESCO IICBA, and Pietro Uzochukwu Macleo, Chair of the Rotary Nigeria National Peacebuilding and Conflict Prevention Committee and Peace Chair for the Great Britain and Ireland – Nigeria Rotary Intercountry Committee

In February 2022, we joined together with other colleagues to organize a workshop in Nigeria on preventing violent extremism

We meet calendar months’ 2nd & 4th Saturdays at GPT Group, JC 25, Salt Lake, Kolkata 700098 at 6.00 PM

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among young people. Conflict and violence have long been prevalent in the country, with youth recognized as having a role in preventing extremism. Our aim was to address violent extremism and its underlying causes among youth by strengthening the ability of teachers to deal with these issues.



Participants of a workshop in Nigeria designed to prevent violent extremism among youth.

A woman draws a cloud on a pink sheet of paper while several other people around a table watch

Through a train-the-trainers model, we empowered learners to critically examine their beliefs, values, and knowledge in order to develop critical thinking. We relied on transformative pedagogy, a holistic educational approach that engages learners as whole persons in collaborative and participatory activities for peacebuilding. The approach creates a sense of interdependence and interconnectedness among people who are learning to live together.

About 500 participants attended, with 110 passing the optional exam at the end of the training and thereby qualifying as Positive Peace Ambassadors. Rotary, UNESCO's International Institute for Capacity Building in Africa (IICBA), the African Union Youth for Peace Programme (AU Y4P), Arigatou International, and the Institute for Economics and Peace collaborated on the training with funding from the Government of Japan.



The first week focused on the key components of Positive Peace and current conditions in Nigeria, an ethnically, religiously, and culturally diverse country with some 500 languages. Protracted violent conflicts and insecurity are one of the most pressing and critical issues across the country, as set out in the Global Peace Index and Positive Peace reports. Participants in the training deepened their understanding of the Institute for Economics and Peace's eight pillars of Positive Peace.

The second week focused on the role of education in peace- and resilience-building as well as on the prevention of violent extremism. Participants discussed the role of education and proposed ways to facilitate genuine participatory and collaborative learning while increasing the level of engagement from community stakeholders – especially youth. We used the youth guide on peacebuilding and preventing violence in Africa developed by UNESCO IICBA, which is also available in Arabic and French.

The training in Nigeria was part of a multi-country initiative managed by UNESCO IICBA, but the Nigeria component also emerged from previous work by the Rotary Nigeria Peace Commission. The Commission consists of national, zone, and state coordinators across every state in Nigeria along with more than 5,000 volunteers across the country. It promotes Activating Positive Peace in Nigeria through social change interventions. An independent evaluation suggests that the multi-country program has been successful. Participants in Nigeria were enthusiastic as well. Here is what one participant said:

"The training was a major departure from the tradition training model. It was context-specific, with clearly outlined steps leading to tangible results. Upon completion, I found that I could apply most of what I learned in virtually all areas of human endeavor. I immediately engaged the Blade Martial Arts Taekwondo Academy within my sphere of influence, and the feedback from parents and students have been nothing but rewarding." BAMA FRANCIS UCHECHUKWU

What's next for Nigeria? We're currently talking with the Federal Ministry of Education of Nigeria on the possibility of establishing Peace Clubs in primary, secondary and tertiary educational institutions nationwide. If the Federal Ministry grants its authorization for this initiative, funding will be needed to expand the program.

We are organizing a webinar on 13 February to share lessons learned from this project in Nigeria and elsewhere. If you would like to participate, please register here. We are also considering putting together a proposal for a global grant that could receive matching funds from The Rotary Foundation. If your Rotary club or district might be interested, please contact us at pietrouzo@gmail.com and a.eyerusalem@unesco.org. And if you would like us to make a presentation about this initiative to your club or district, let us know!

Vocational Service: nurturing more responsible, sustainable, prosperous communities

Posted on January 19, 2023 by Ellina Kushnir, Service and Engagement Manager at Rotary International



Members of the Rotary Club of La Porte, Texas, USA, perform household repairs.

Vocational service, embedded in our history and guiding our future, is the foundational cornerstone of Rotary. As Rotarians and Rotaractors, we hold a dual responsibility: represent our occupations within our club and exemplify the ideals of Rotary in our professional work and workplaces.

Vocational service guides us to hold ourselves and each other to high ethical standards in our professional lives and in our

personal lives, to recognize the value of all occupations, to bring our ideals of doing good in the world to our professional lives, and to lend our professional skills to in service to our communities.

During January, Vocational Service Month at Rotary, we reflect on how our professional lives and skills complement and enhance our service to communities:

- The Rotary Club of Asaba Metropolitan in Nigeria hosts an annual microcredit project offering interest-free microloans to select female entrepreneurs in the Asaba region of the Delta State. In 2022, 19 women with farming and trading businesses received microloans. Since the projects' inception three years ago, participating women have been able to start or grow their businesses and make a better living for their families.
- Rotary members in Turkey and Belgium are preparing a vocational Rotary Friendship Exchange in 2023 for a group of five young professionals to learn about the tourism industry in both countries. Participants will be home-hosted by Rotary members and will be reciprocated with both countries taking turns hosting visitors and arranging educational opportunities in the tourism and hospitality sector.
- The Rotary Club of Nagpur Vision, India, hosted a workshop on marketing techniques for aspiring entrepreneurs in the beauty and design sectors. 40 select participants join the workshop for lectures, coaching, and support to help grow their businesses through improved marketing strategies.

Here are five ideas to help you blend your professional skills and service work through Rotary:

1. Work with your club to create a recognition program for socially consciousness, responsible businesses in your community. Establish rigorous criteria for considering businesses and award visible recognition to one, or multiple, select establishments that meet your established standards.
2. Host a friendly debate or interactive workshop about hypothetical ethical dilemmas that your club or community may face. Work through possible outcomes and create expectations and processes for how dilemmas will be handled when they arise. View past ethical dilemma discussions for inspiration and come up with ones that are relevant to your club and community.
3. Join the Rotary Means Business Fellowship to learn about and support fellow Rotary members' businesses and to share about your own.
4. Explore how your profession is practiced in another country and share how yours is practiced in your community by participating in a vocationally oriented Rotary Friendship Exchange. Contact your district Rotary Friendship Exchange committee to get involved.
5. Lend your skills as a mentor to fellow clubs planning service projects in your area of specialization. Contact your district international service committee to join your district's Resource Network and mentor clubs locally, contact a Rotary Action Group to offer your expertise internationally, or consider lending your skills through the TRF Cadre of Technical Advisers.

The Vocational Service in Action handbook provides additional ideas and resources to incorporate these ideals into your professional life and service activities.

Transforming our food systems for healthy people, environment, and economies

By Juergen Voegele, Vice President for Sustainable Development at the World Bank on January 17, 2023



Dry corn field. Photo credit: Shutterstock

A cornfield dries out. Under the World Bank Group Food Systems 2030 program, we are supporting countries to transform their food systems with the goal to achieve zero hunger by 2030.

As the world continues to grapple with the food crisis, we need to remember that this problem didn't emerge overnight. The war in Ukraine accelerated and triggered more attention to the crisis, but food prices and global hunger were already on the rise even before the war. Climate change, among others, has been a major driver of these worsening trends. Ironically, although global food production has nearly quadrupled between 1961 to 2020 and increased by 50% between 2000 to 2020, more people than ever before are going hungry.

The situation we face today requires a sharper focus than ever on transforming our food systems to make them more sustainable while feeding a growing global population. A well running food system will help build human capital, lift communities out of poverty, and improve climate resilience. Instead, our global food system generates an estimated \$12 trillion in hidden social, economic and environmental costs each year, including being the source of nearly 1/3 of global greenhouse gas emissions. It also drives consumer choices towards unhealthy foods by keeping healthy food prices too high.

The business-as-usual path is unacceptable. We need a systemic shift in our approach to agriculture and food systems to transform how we produce, transport, and consume food.

The upcoming 2023 Global Forum for Food and Agriculture in Berlin, one of the largest gatherings of agriculture ministers and experts from all around the world, provides an excellent opportunity to discuss options, share experiences, and agree on concerted actions to make food system transformation a reality. One key shift we need to make is the use of agriculture support. Globally, the support provided to agriculture and food exceeds \$700 billion a year. While this support is needed, much of it is poorly targeted – farmers receive only 35 cents of each dollar and support often encourages production practices that are unsustainable.

There are options for governments to repurpose current agricultural support – mostly used for price support, input subsidies and direct payments to producers – and instead use them to implement environmentally friendly policies and incentivize farmers' uptake of climate smart agriculture practices. Public financing can also be used to help reduce risks of private sector investments that meet higher social and environmental standards. Support can also be used to incentivize new technologies that have already shown promise, such as

cattle feed additives that reduce greenhouse gases, or for rice-production techniques that reduce methane emissions. Adopting appropriate policies would reduce price distortions, promote resilient and sustainable productivity growth, and strengthen value chains. This, in turn, will improve food security and nutrition, bolster farmer incomes, and secure better value for money in public programs.

Another challenge is that the global food system is highly complex and fragmented. Despite significant increases in output, the system is inefficient and wasteful, with abundance and hunger living side by side. At the heart of these failures is a lack of access to information among farmers and within markets, where inflexible systems promote high transaction costs.

Better use of data and digital technology can help connect the world's 570 million farms to 8 billion consumers. Data-driven digital agriculture can help improve crop yields, reduce waste, lower costs, and decrease pollution, all of which go a long way in reducing inequality and global hunger.

But there is no one-size-fits-all solution. Each country has its own set of challenges and needs to identify options and strategies to achieve its desired outcomes. Ultimately transforming food systems to deliver better development outcomes requires country-specific, local analysis – backed by multi-stakeholder dialogues to include all voices in the policy-making process.

Under our Food Systems 2030 program, the World Bank is supporting countries to transform their food systems with the goal to achieve zero hunger by 2030. The program is funded with support from Germany, the UK, the European Commission and the Bill and Melinda Gates Foundation. We are working with 25 countries, seeking country-specific entry points for repurposing agriculture policies and support, creating business models to stimulate private sector financing, promoting climate smart agriculture, applying digital innovations, and strategies to make healthy nutritious diets more affordable.

The World Bank Group and our many partners stand ready to work with governments and partners by sharing knowledge of policies and investments that work to transform the global food system. And the Global Forum can be a place for those working in food and agriculture to share compelling experiences in our efforts to achieve the triple wins of food systems transformation: healthy people, environment, and economies.

Brief outline of the Global Grant 1991152

Purpose: 'Fight against Anemia in Women'

Objectives: Treat women of Anemia by screening and treatment and prevent by educating them

Title: 'Matri-Raksha' - protection of mothers

Scope of work: Provide screening camps, minor and major surgeries, medicines, awareness training, healthcare professional training and providing diagnostic equipment at community health centers

Coverage: Both districts of 24 Parganas, West Bengal, India

Sponsors: Rotary clubs of Salt Lake Metropolitan Kolkata of District 3291, India and Nidau-Biel, Biel-Bienne, Biel-Buttenberg of District 1990, Switzerland:

Grant Partners: Rotary Foundation India, the Rotary Foundation of Rotary International,

Associates: Related Government and civic bodies, NGO's

QUOTE

A good book is the best of friends, the same today and forever.
Martin Farquhar Tupper

UNWIND

You can forget about going to heaven because it's sin to look that good.

Reply: You can be sure of going to hell. Your stupidity will assure you of a place!

Birthdays of members in January 2023

PP Uma Shankar Agarwal on January 9, 2023

VP Indrakumar Bagri on January 10, 2023

Club Treasurer Ashok Kumar Surana on January 10, 2023

PP Dr Aruna Tantia on January 19, 2023

Anniversaries of members in January 2023

Spouse Sushila & Treasurer Ashok K Surana on January 19, 2023

Spouse Dr Nandita & PP Dr Ankush Bansal on January 28, 2023

January is Vocational Service Month

TAILPIECE

An Old TB Vaccine Might Help Stave Off Diabetes, Cancer Alzheimer's, and More

The BCG vaccine might assist in preventing a range of major diseases
By Viviane Callier, freelance science writer on January 19, 2023 in Scientific American



An Old TB Vaccine Might Help Stave Off Diabetes, Cancer Alzheimer's, and More

Packing ampoules of the BCG (bacillus Calmette-Guérin) vaccine for tuberculosis in 1931. Credit: FPG/Getty Images
The bacillus Calmette-Guérin vaccine against tuberculosis—or simply BCG—is the oldest vaccine in the world that is still currently in use. Millions of infants in Africa and Asia receive the inoculation each year.

The vaccine provides effective protection against tuberculosis (TB), a leading cause of infectious disease deaths worldwide, second only to COVID. Its development began in Lille, France in 1900, when Albert Calmette, an army physician, was working with Camille Guérin, a veterinarian, to understand how TB was transmitted. The team cultured TB bacteria on potato slices and found that after several passages of the microbes from one slice to a fresh one, they became less virulent over time. The researchers started to vaccinate calves with this live, weakened form of TB to protect cattle. By 1921, after 231 passages, the TB strain was stable and nonvirulent for all animals they tested it on.