



For Women
in Science



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FONDATION
L'ORÉAL

2025
INTERNATIONAL
AWARDS

SUMMARY

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A word from *Jean-Paul Agon*

CHAIRMAN OF L'ORÉAL,
PRESIDENT OF THE FONDATION L'ORÉAL



The future of science in general – and the place of women scientists in particular – is currently being undermined by challenges to funding, academic freedom, and research. These major impediments to progress are in addition to the many persistent obstacles women face throughout their careers: prejudice, ostracism, and discrimination. In 2024, the recipients of the prestigious Nobel Prize in science were exclusively male. Yet again, and once too many.

In this context, the Fondation L'Oréal reaffirms its longstanding and unwavering support for science and the community of women scientists, to amplify their voices and together lead the fight for equality. Because research has been in our company's DNA since its inception. Because equality and inclusivity are at the heart of our model. Because we firmly believe that advancing science means advancing society.

Time is of the essence: there is an urgent need to support, alert, and inspire the next generation.

The Fondation L'Oréal has been recognized for many years as a leader in the fight for equality and the rightful place of women. A new era begins in 2025 with the appointment of Ezgi Barcenás as Chief Executive Officer of the Foundation. I am convinced that her inspiring leadership, combined with the Foundation expertise of Pauline Avenel-Lam, appointed Executive Director, will be major assets in accelerating and

intensifying the Foundation's actions focused on science, especially with younger generations.

This is an ongoing commitment that we have been pleased to carry out, for over 27 years, with UNESCO. I would like to acknowledge the immense quality of our partnership and pay tribute to the vision, courage, and determination of Ms. Audrey Azoulay, its Director-General. Her support for the cause of women in science has been exemplary and invaluable, and her contribution decisive in establishing it as the answer to the major challenges of our time.

Together, we are proud that the *For Women in Science* programme has provided human and financial support to more than 4,700 researchers in over 140 countries. Proud that the L'Oréal-UNESCO *For Women in Science* International Awards honors and highlights this year 5 eminent researchers embodying both diversity and excellence, as you can read in this press kit. We are also proud of the holistic approach we have developed to promote and defend the place of women in science, across all generations. This approach enables us to support accomplished researchers as well as young girls who are questioning their career paths, through our *For Girls in Science* programme, which we intend to expand in the coming years.

More than ever, science illuminates the future. And women and girls in science carry hope.

A word from Audrey Azoulay

DIRECTOR-GENERAL OF UNESCO



To confront the complex challenges that our world is currently facing, we must mobilize the greatest minds of humanity – something we cannot do if half of the world’s population continues to face barriers in advancing within the sciences. Our scientific community must reflect the rich diversity of humanity, ensuring that no one is left behind.

As the United Nations specialized organization for the sciences, UNESCO has long championed scientific progress and the vital role of women in driving it forward. Our Organization works to ensure that science is a truly collective endeavour, in which women are not only participants, but also leaders.

UNESCO has an extensive network of initiatives and educational programmes, aiming to make our vision of gender equality in science a reality. This includes empowering women scientists through training, recognition and international cooperation, as we have been doing since 1993 through UNESCO’s Organization for Women in Science for the Developing World – providing a platform for women scientists across Africa, Asia and Latin America.

Such efforts are essential, given the persistent global gender gap in science: women still represent just one in three researchers worldwide and hold only 12% of seats in national science academies. Moreover, only one in four of the world’s top 200 higher education institutions is led by a woman, while the business sector, with a global median female representation of just 29.7%, has the lowest gender balance within the science and innovation ecosystem.

These disparities stem from deeply entrenched structural and cultural barriers, such as unequal access to quality education, exclusionary workplace cultures and a lack of mentorship. These obstacles persist at every stage of a scientific career.

Created 27 years ago to address this imbalance, the L’Oréal–UNESCO *For Women in Science* Programme has become a benchmark for recognizing the contributions of women scientists and celebrating excellence on an international scale.

This unique partnership has now supported more than 4,700 women researchers at all stages of their careers, and boasts over 50 national and regional Young Talents programmes. Among the 137 laureates of the Programme’s prestigious International Awards, seven have gone on to win Nobel Prizes.

This year’s International Awards, honouring achievements in Physical Sciences, Mathematics and Computer Science, are especially timely, as we are celebrating the International Year of Quantum Science and Technology. With 80% of quantum companies reportedly lacking female leadership, and women accounting for fewer than 2% of job applicants in the quantum sector, it is vital that we increase women’s representation in these emerging fields that are shaping our future.

The 2025 laureates embody brilliance and pave the way for a whole new generation of women scientists. Their resilience and achievements remind us of what is possible when barriers are dismantled, talent is nurtured, and the glass ceiling is shattered. UNESCO is proud to stand alongside them and remains deeply committed to building a future where science is inclusive, equitable and accessible to all.

INTERNATIONAL AWARDS

The outstanding contribution of women to science

Each year since 1998, the Fondation L'Oréal and UNESCO have honoured five brilliant female scientists, promoted their work globally, and empowered them to act as role models for aspiring women scientists and future generations. The Laureates have been recognized for their scientific achievements and remarkable contributions to advancing research on a global scale. To support women-led scientific excellence in addressing societal needs worldwide, one Laureate from each of the following five regions is awarded annually: Africa and the Arab States, Asia and the Pacific, Europe, Latin America and the Caribbean, and North America.

A RIGOROUS SELECTION PROCESS

More than
460 nominations
from scientists
FROM NEARLY 75 COUNTRIES

A total of
65 shortlisted
REPRESENTING 5 GEOGRAPHICAL REGIONS
Selected by 64 eminent scientists
(Peer-review jury)

Selection of the
five Laureates
BY THE INTERNATIONAL JURY



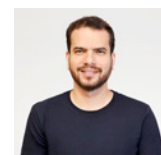
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It was a real privilege to be part of the jury for the 2025 edition of the L'Oréal-UNESCO International Awards. From among many brilliant submissions in all the relevant geographical areas and fields of research, we have selected five laureates who embody scientific excellence in all its diversity. Their work reminds us that progress towards a science where the question of gender equality will no longer arise is an essential objective for society.”

ARTUR ÀVILA,
 PRESIDENT OF THE 2025 INTERNATIONAL JURY
 IN PHYSICAL SCIENCES, MATHEMATICS AND COMPUTER SCIENCE

2025
 JURY

PHYSICAL SCIENCES, MATHEMATICS AND COMPUTER SCIENCE

The five laureates were selected by a distinguished international scientific jury.



PRESIDENT OF THE JURY

**Professor
 Artur Àvila**

BRAZIL
 MATHEMATICS

Professor at the Institute of Mathematics of the University of Zurich, Switzerland, Extraordinary Researcher at IMPA (Instituto de Matemática Pura e Aplicada), Rio de Janeiro, Brazil, 2014 Fields medal winner



**Professor
 Rajaâ Cherkaoui**

MOROCCO
 PHYSICS

Professor of Nuclear Physics at the Faculty of Science of the Mohammed V University, Morocco, 2015 L'Oréal-UNESCO Laureate



**Professor
 Assaf Naor**

UNITED STATES OF AMERICA
 MATHEMATICS &
 COMPUTER SCIENCE

Professor of Mathematics at Princeton University, United States of America



**Professor
 Ingrid Daubechies**

UNITED STATES OF AMERICA
 MATHEMATICS

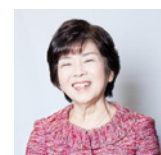
Professor of Mathematics and Electrical and Computer Engineering at Duke University, United States of America, 2019 L'Oréal-UNESCO Laureate



**Professor
 Catherine Ngila**

KENYA
 CHEMISTRY

Executive Director of the African Foundation for Women and Youth in Education & STI (AFoWYESTI), Former Deputy Vice Chancellor in charge of Academic and Student Affairs (DVC-AA) at Riara University, Kenya, and Visiting Professor of Chemical Sciences at the University of Johannesburg, South Africa, 2021 L'Oréal-UNESCO Laureate



**Professor
 Maki Kawai**

JAPAN
 CHEMISTRY

President of the National Institute of Natural Sciences, Director General of the Institute for Molecular Sciences, President of Chemical Society, Member of the Science Council, Professor Emerita at the University of Tokyo, Japan, 2019 L'Oréal-UNESCO Laureate



**Professor
 Fernando Quevedo**

GUATEMALA
 PHYSICS & ASTRONOMY

Professor of Theoretical Physics at the University of Cambridge, Department of Applied Mathematics and Theoretical Physics (DAMTP), United Kingdom



**Professor
 Eugenia Kumacheva**

CANADA
 CHEMISTRY

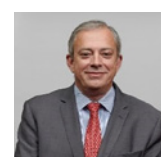
Distinguished Professor of Chemistry and Canada Research Chair in Advanced Functional Material at the University of Toronto, Canada, 2009 L'Oréal-UNESCO Laureate



**Professor
 Alaa Salem**

EGYPT
 EARTH SCIENCES

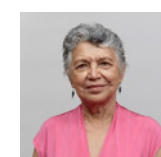
Professor of Earth and Environmental Sciences at the Department of Earth Sciences, Faculty of Sciences of the Kafrelsheikh University, Egypt



**Doctor
 Frederic Leroy**

FRANCE
 PHYSICS

Expert in Analytic Physics & Chemistry and former Director, Strategic Foresight at L'Oréal Research and Innovation, France



**Professor
 Silvia Torres-Peimbert**

MEXICO
 ASTRONOMY & SPACE SCIENCE

Professor at the Institute of Astronomy of the National Autonomous University of Mexico, Mexico, 2011 L'Oréal-UNESCO Laureate

2025 LAUREATES



LAUREATE FOR AFRICA AND THE ARAB STATES

Professor Priscilla Baker

Professor of Chemistry, University of the Western Cape, Cape Town, South Africa.

Rewarded for her outstanding contribution in the field of highly sensitive electrochemical microensors for detecting contaminants in the environment, with applications in pharmaceuticals, food, health and energy. Her dedication as a mentor in analytical electrochemistry has empowered students and early-career scientists to undertake innovative research projects in this field.



LAUREATE FOR ASIA AND THE PACIFIC

Professor Xiaoyun Wang

Chen-Ning Yang Professorship, Institute for Advanced Study, Tsinghua University, Beijing, China.

Rewarded for her significant contribution to cryptography and cryptographic mathematics, critical for secure data communication and storage. Her breakthrough work showed essential flaws on hash functions, which are widely used in communication protocols and led to the invention of the new hash function standards. Today, these standards are used for bank cards, computer passwords, and e-commerce. The visibility of her revolutionary work has encouraged many female students to pursue a research career in mathematics and network security.



LAUREATE FOR EUROPE

Professor Claudia Felser

Director and Scientific Member, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany.

Rewarded for her pioneering work at the crossroads of physics, mathematics and chemistry that led to the discovery and creation of new magnetic materials with great promise for future green energy technologies. Her visionary approach has paved the way for the new field of “topological quantum chemistry” and sparked a revolution in the field of relativistic matter. Her outstanding dedication and impact have built a bridge from fundamental science to real-world challenges in data storage and green energy technologies. She is a leading figure in communicating the relevance of science to the public, including by encouraging and mentoring young generations, especially women, to pursue a career in science.



LAUREATE FOR LATIN AMERICA AND THE CARIBBEAN

Professor María Teresa Dova

Professor at Physics Department, Faculty of Exact Sciences, National University of La Plata, and Senior Researcher at National Scientific and Technical Research Council (CONICET), La Plata, Argentina.

Rewarded for her key contributions to high energy physics including the discovery and characterization of the Higgs boson, the search for new physics and her remarkable work in the study of cosmic ray physics. Her leadership in the field and her exceptional dedication to mentoring young scientists have inspired a new generation and led Argentina to play a major role in experimental physics worldwide.



LAUREATE FOR NORTH AMERICA

Professor Barbara Finlayson-Pitts

Distinguished Professor Emerita, Chemistry Department and Founder/Co-Director, Atmospheric Integrated Research Institute, University of California, Irvine, United States of America.

Rewarded for her groundbreaking research revealing new processes in the formation of air pollution as photochemical smog, she established the molecular basis of reactions at the interfaces between atmosphere and airborne particles. Her unique ability to translate fundamental findings into real-life applications have led to seminal contributions to public policy and regulations on atmospheric chemistry, ultimately improving air quality. Her enthusiasm made her a passionate and remarkable professor and mentor.

Professor Priscilla Baker

ANALYTICAL CHEMISTRY



*Professor of Chemistry,
University of the Western Cape,
Cape Town, South Africa*



Professor Priscilla Baker is recognised for research in analytical chemistry to create highly sensitive electrochemical microsensors for detecting contaminants in the environment. Her work leverages advanced nanomaterials and has practical applications across health, food safety, energy, and the pharmaceutical sector. A notable innovation from her laboratory includes wearable monitoring devices for non-communicable diseases. By printing electronic systems directly onto garments such as t-shirts, she and her team are providing with her team non-invasive, user-friendly solutions that deliver real-time health insights. These wearable technologies are designed to assist medical professionals in tailoring treatments, improving health outcomes, and enhancing the quality of patient care. Her dedication as a mentor in analytical electrochemistry has also empowered students and early career scientists to undertake innovative research projects in this field.

"Nanotechnology has the potential to revolutionise many industries, from electronics to drug delivery," she says. "My primary focus is ensuring that

my scientific discoveries serve the public good, through better monitoring and diagnostic tools. Whether it's reducing pollution, improving access to safe water, or enabling faster medical diagnosis, the impact of this research extends far beyond the laboratory. The dream is becoming ever more achievable and we are excited to be leaders in this space for Africa."

Professor Baker's real-time health monitoring devices for illnesses such as heart disease, tuberculosis, diabetes and cancer, enable a targeted, preventative and tailored approach to treatment. These innovations enable continuous tracking from early onset through to disease progression, allowing for a more personalized and preventive approach to treatment.

Rising above challenges to emerge as a leading woman in science

As the only girl in a family of six siblings in a fairly conservative society, she grew up watching her brothers freely pursue their ambitions. Yet, she was determined to carve her own path in science

and, with the support of her parents, she did just that. This meant breaking established boundaries for girls at the time and stepping boldly into a more progressive future. “I salute my parents for trusting the daughter whom they had raised, investing in my future and supporting me in all my choices, without understanding what they could reasonably expect in return,” she says. Inspired by the scientific breakthroughs of the 1960s, particularly in medicine and space exploration, she came to believe that knowledge and courage could lead to extraordinary achievements.

Professor Baker’s early education took place under the serious constraints of racially segregated South Africa, with limited resources in the classroom. However, the commitment of her teachers and the benefits of small science classes helped her to thrive academically. She went on to become the first African woman to earn a BSc in Physical Oceanography from the University of Cape Town.

Despite this milestone, her participation in fieldwork was restricted due to racial and gender discrimination. Without appropriate hygiene facilities and in the face of prevailing biases on research vessels, she was excluded from oceanography’s practical components. “The crew were not ready to welcome a person of colour as a professional on board,” she says. “So I decided to opt for analytical chemistry, excelling in this programme from the outset, including in the practical research, which involved analysing rainwater and air samples.” In 2003, she became the first full-time female academic appointed to the Department of Chemistry at the University of the Western Cape, with the encouragement of a supportive male professor.

Beyond this, Professor Baker has also been recognised by the prestigious South African Research Chairs SARChI Initiative, which seeks to promote excellence in research and innovation among South Africa’s public universities. She is among less than 6% of women of African origin to receive a SARChI award.

Promoting inclusive, impactful science

“We are building a population of researchers who are trained to be excellent in their chosen path, but flexible enough to collaborate and complement each other in pursuit solving greater challenges,” Professor Baker says. “I’m also pleased to be

leading multi-racial student groups, promoting a fairer, more inclusive approach to science, which is fundamental to innovation.”

Inclusion is a core value for Professor Baker, particularly having grown up in South Africa, under apartheid. She is committed to empowering students from all backgrounds to contribute meaningfully to the field of analytical electrochemistry. Her laboratory actively involves young researchers in the development of integrated prototype devices that address pressing local and global needs, while also helping to tackle the shortage of skilled scientists in South Africa. The smart electrochemical systems developed by Professor Baker and her team also play a vital role in supporting South African’s development goals.

Through workshops open to post-graduate students from across Africa, she conceptualised a range of non-invasive, wearable sensors designed to detect biomarkers, biological molecules found in bodily fluids that indicate disease or physiological changes. Her work has attracted international interest, prompting her to apply for funding to transform this concept into reality.

Inspiring future generations of women scientists

Balancing her scientific career with family life, Professor Baker has sought balance in arts and sport activities, particularly horse riding. By openly sharing her experiences and challenges with her students, she serves as a role model, encouraging young women to overcome gender stereotypes and pursue their full potential in science.

To the next generation of scientists, she offers this advice: “Our value as women, and as scientists, is not determined by the times we stand before you on a stage, but rather on the stages that we help build to elevate others. Dedication, integrity and kindness will ultimately enable nations to thrive.”

“*My primary focus is ensuring that my scientific discoveries serve the public good, through better monitoring and diagnostic tools.*”



Professor Xiaoyun Wang

APPLIED MATHEMATICS



*Chen-Ning Yang Professorship,
Institute for Advanced Study,
Tsinghua University, Beijing, China*



Advancing cryptography to safeguard the digital world

Professor Xiaoyun Wang is recognized for her groundbreaking research in cryptography, the science of securing information and network security based on mathematics. Her pioneering work exposed the critical vulnerabilities in the most widely-used hash function standards MD5 and SHA-1. Hash functions ensure data integrity, which is fundamental in preventing digital fraud and cyber-attacks. They are widely used in today's high technology world including online banking credentials, passwords, personal messages, e-commerce transactions and government communications. She develops new mathematical methods to break certain hash functions. This groundbreaking work led to the creation of stronger security standards, such as SM3 in China and SHA-3 in the United States of America, which were adopted internationally.

Earlier in her career, Professor Wang was awarded the 2006 L'Oréal-UNESCO *For Women in Science* Young Talents National Award in China. Since 2022, she has served as a jury member for the programme and continues to inspire young women in science by encouraging careers in mathematics and cryptography.

Over the past two decades, she has specialized in lattice-based cryptography, a cutting-edge field. Imagine it as building sturdy digital locks using advanced mathematics. These locks are designed to be so strong they can even withstand attacks from the incredibly powerful quantum computers of the future. She also led her team to design the cryptographic algorithm Scloud+, a more secure encryption method, based on particularly challenging mathematical problems. Beyond this, her team which includes several outstanding women scientists have developed two innovative blockchain protocols, Dashing and Dyno, which facilitate infrastructures such as the cross-border digital currency platform mBridge.

Professor Xiaoyun Wang explains that “the rich mathematical problems of cryptography are beyond people’s imagination, making it an endlessly inspiring field of research”. She says: “My dream is to protect the security of the digital world by applying advanced cryptographic techniques and promote the progress of cryptography through fundamental theoretical innovation. I look forward to making a further positive impact in safeguarding critical areas such as digital finance and artificial intelligence.”

A lifelong passion for mathematics

Excelling in physics during high school, Professor Wang initially aspired to become a physicist, before deciding to study mathematics at Shandong University. During her graduate stage, she majored in analytic number theory at the beginning then she transitioned to cryptography following the suggestion of her advisors Professor Chengdong Pan and Professor Xiuyuan Yu. She completed her PhD thesis on public-key cryptography that is one of two branches of modern cryptography. “This was an important turning point in my career – I knew that cryptography would be a permanent research focus in my life,” she recalls.

Professor Wang’s interest in science began in early in life. Her father, a teacher in a middle school, nurtured her curiosity and encouraged her to become a scientist, drawing inspiration from Marie Curie. He even gave her brothers names reminiscent of radium and platinum. Her mother also played a pivotal role, instilling in her the values of hard work, integrity, and compassion.

Global recognition and collaboration

Professor Wang’s breakthrough discoveries impressed the cryptography community. Her first announcement of the attacks on several hash functions including MD5, earned standing ovations at the international Crypto 2004 conference in the United States of America. Seven months later, five leading cryptographers, including three Turing Award winners, announced Professor Wang’s SHA-1 attack on her behalf. Professor Adi Shamir, the winner of both Turing Award and Wolf Prize in Mathematics,

commented that the finding would ‘create big waves’, while the Turing Award winner Professor Ronald L. Rivest described the breakthrough as ‘stunning’. Professor Wang has hosted renowned cryptographers in China and actively participated in leading global conferences. Now as a professor at Tsinghua University’s Institute for Advanced Study, she leads a strong cryptography research team and encourages young scientists to pursue international collaboration to further push the boundaries of innovation.

Balancing family and a career in science

Professor Wang made the decision to study hash functions when her daughter was a child of about 6 months. Balancing research with new motherhood presented significant challenges, particularly when she had to travel to the university to access a laser printer for her complex tables and equations. Each trip took valuable time away from her work and required alternative childcare arrangements. With the support of her husband and nearly all the family’s savings, she purchased a personal computer and laser printer. This investment significantly improved her efficiency and laid the solid foundation for her later breakthroughs in cryptography.

“Today, many more outstanding women scientists are able to successfully manage family life and research,” she says. “With equal educational opportunities and encouraging support, I’m pleased to see a positive trend in more women delivering excellence in their scientific careers, particularly among women mathematicians in China.”

To future generations of women scientists, she advises: “Pursue your interests without hesitation. You will succeed if you are determined to follow your dream.”

“*My dream is to protect the security of the digital world.*”



LAUREATE FOR EUROPE

Professor Claudia Felser

CONDENSED MATTER PHYSICS



*Director and Scientific Member,
Max Planck Institute for Chemical Physics of Solids,
Dresden, Germany*



Professor Claudia Felser is honoured for her pioneering work in the discovery and development of novel magnetic materials with promising applications in clean energy technologies. As a leading expert in condensed matter physics, the study of how atoms organise into solids and exhibit unique physical properties, she has made significant contributions to the understanding and design of topological quantum materials, which display remarkable electronic and magnetic characteristics.

Her innovative approach bridges fundamental science and real-world applications. In particular, her discoveries in material science are opening new pathways for use in fields such as high-performance computing and pharmaceutical synthesis.

"We are just beginning to unlock the potential of quantum materials". She continues, "Just as plastics revolutionised manufacturing, quantum materials could change how we build, compute and power the world."

Advancing clean energy through materials innovation

Professor Felser is deeply committed to leveraging advanced materials to address the climate crisis. Her current research focuses on next-generation materials, such as topological superconductors, magneto-thermoelectrics, and novel catalysts for energy production, that harness quantum effects to achieve superior performance. These materials have the potential to significantly reduce carbon emissions by improving fuel cell efficiency, capturing CO₂, and converting it into valuable chemicals or fuels.

"My hope is that science and technology can play a fundamental role in addressing climate change, helping us to develop sustainable energy solutions, new materials for carbon capture, and more efficient ways to store and use energy," she says. "Science has always been a driving force for progress, and can help protect our societies, strengthen democracy, and ensure a liveable future for generations."

A lifelong appetite for discovery

From a young age, Professor Felser has always been captivated by science. Inspired by primary school experiments and drawn to physics, chemistry, and mathematics, she pursued her interests despite the gender expectations she encountered as a girl in a male-dominated family. A girls' secondary school provided the freedom and encouragement she needed to fully explore her academic passions. Filled with awe and wonder by the universe, she began to pursue her dream of studying science. Her natural curiosity and sense of wonder about the universe set the stage for a lifelong commitment to research.

Through her international research collaborations, Professor Felser has had the opportunity to build a comprehensive professional network, advance her research and expand her perspectives. After her PhD, for example, she worked at the National Centre for Scientific Research (CNRS) in Nantes, France, where she expanded her scientific horizons, learning about 2D materials and misfit compounds.

A major breakthrough came in 2008 during a research visit to Stanford University. Collaborating with physicist Shou-Cheng Zhang, she demonstrated that Heusler compounds, a unique class of materials, could conduct electricity along their surfaces. This discovery opened new frontiers in quantum materials, with far-reaching implications for data storage, energy harvesting, and next-generation electronics.

Challenging expectations: Motherhood in the world of science

As a woman in science in Germany, Professor Felser faced challenges related to cultural expectations about women's role in the home, and the lack of childcare options to pursue her career, particularly when she became a mother during her PhD studies. In contrast, the research environments in countries such as France and the United States of America, which offered more supportive childcare systems, enabled her to pursue her work more fully.

Empowering the next generation of women scientists

In response to these challenges, and to help foster equality in science, Professor Felser founded the *NAT School Lab* in 2000, a hands-on science programme designed to engage school children, particularly girls, to explore and experiment from an early age. She also co-founded an international workshop with physicist Professor Jairo Sinova to support early-career researchers in quantum materials. This initiative promotes meaningful scientific dialogue and collaboration, offering young scientists a platform to exchange ideas and shape the future of the field. "Seeing young scientists benefit from these opportunities and helping others achieve their goals is one of the most rewarding aspects of my career," she says.

As Vice President of the Max Planck Society, Professor Felser works to advance institutional change by eliminating barriers for women in science. She advocates for policy reforms and mentors international women scientists, supporting them in advancing their careers and securing professorships. She believes that recognising and celebrating the achievements of women scientists is essential to inspiring the next generation of innovators.

"I love science, and cannot imagine doing anything else," she concludes. "Every challenge, whether it was starting on an unexpected academic path, being a woman in science, or raising a child while pursuing a demanding career, shaped my journey."

“*Science has always been a driving force for progress, and can help protect our societies, strengthen democracy, and ensure a liveable future for generations.*”



Professor María Teresa Dova

PARTICLE AND FIELDS PHYSICS



*Professor at Physics Department, Faculty of Exact Sciences,
National University of La Plata, and Senior Researcher at National Scientific
and Technical Research Council (CONICET), La Plata, Argentina*



Discovering new particles to illuminate the origins of our universe

Professor María Teresa Dova is honoured for her work to explore fundamental particles and forces that have shaped our universe. Her work has led to the identification of subatomic particles originated from outer space or produced in the most powerful particle accelerators, whose nature and origins she has uncovered through data collected by the world's largest detectors. In particular, she played a significant role in the historic discovery of the *Higgs boson* at the European Organization for Nuclear Research (CERN). This particle is essential, as it explains how all elementary particles acquire mass, thus enabling the formation of stars, planets, and life itself.

Professor Dova now focuses her efforts on one of the greatest unsolved questions in physics: the nature of dark matter. Her research not only pushes the boundaries of theoretical understanding but also contributes to technological innovations with the potential to impact multiple sectors. "Achieving my goals means studying the laws of physics under the most extreme conditions," she explains. "The universe's highest-energy particles are produced by powerful astrophysical phenomena, but they rarely reach Earth. Therefore,

we build particle accelerators, enabling us to explore the highest energies ever achieved in laboratories and gain profound insights into the fundamental structure of matter. My dream is to be part of another groundbreaking discovery, especially solving the mystery of dark matter, the invisible substance that constitutes a vast portion of the universe's mass. Such a discovery would deepen our understanding of the universe."

From fundamental research to real-world innovation

Professor Dova employs advanced technologies, including artificial intelligence algorithms, high-speed electronics, and creative methods, to process the vast quantities of information generated by her experiments. While the long-term implications of her scientific work are still emerging, its practical applications are already being realised. For example, her expertise in AI and machine learning has potential use in fields such as medical imaging. Her research group also contributes to the development of high-performance electronics for detector systems, which are designed to capture rare and significant particle interactions. These technologies also show promise for applications in communications and real-time signal processing.

From music to physics: A path driven by curiosity

As a secondary school student in Argentina, Professor Dova was drawn to physics and mathematics, while also nurturing a deep love for music and the piano. Reflecting on her academic journey, she notes that the same intellectual curiosity that inspired her to analyse the intricate structures of a Bach fugue eventually led her to explore the fundamental laws of nature. This curiosity ultimately led her to make a transformative decision: leaving her music studies at the National Conservatory to pursue a degree in physics at the University of La Plata.

“As a young girl, I devoured science fiction books, films, and comics, and my favourite characters were always scientists,” she explains. “I was fascinated by how they tackled every challenge with creativity, logic, and the most sophisticated instruments. I wanted to be just like them. At the time, I never imagined that born in a small town near Buenos Aires, I would one day become a scientist. And the passion for discovery and problem-solving has never left me.”

Advancing Argentina’s role in science

Conducting high-level research in Argentina has presented challenges, including limited resources and periods of political instability. Nevertheless Professor Dova has persevered, demonstrating resilience and creativity in advancing scientific excellence from within her home country. For instance, she played a key role in Argentina’s participation in major international collaborations, including the Pierre Auger Observatory, which studies cosmic rays, and the ATLAS experiment at CERN.

While recent decades have seen growing national support for science, Professor Dova emphasizes the importance of sustained investment. “The only way to change course is through strong public investment in science and technology, recognising that progress in modern societies is deeply linked to scientific advancement,” she says.

She also founded an experimental high-energy physics research group at the University of La Plata, providing young researchers with opportunities to work at the forefront of discovery. “We cultivate the next generation of scientists and engineers, equipped not only with technical expertise but also with a profound appreciation for the power of fundamental research to transform society,” she says.

Overcoming barriers to thrive as a woman in science

Throughout her career, Professor Dova has faced gender-based challenges. While applying for a fellowship at the World Laboratory to work at CERN, she was initially denied the opportunity after disclosing she would relocate with her husband and children. “It was a shock to learn I was being rejected simply because I planned to bring my family,” she recalls. Thanks to the support of her professors proposing the intervention of UNESCO, the decision was reversed, and she later received an extended membership, allowing her to continue her experiments from Argentina.

Reflecting on her journey, she says: “None of my achievements have been easy, they have always required a tremendous amount of effort. And the most challenging part was applying for research funding. Looking back, I realise that my male colleagues often had more success in this area. There was little visibility of gender discrimination. So rather than complaining or dwelling on it, I just immediately applied again with new projects.”

Professor Dova is a strong advocate for gender equality in research. In 2014, she became only the third female physicist to reach the highest rank within Argentina’s National Research Council, an institution founded in 1958. “Step by step, we are making progress, and every achievement helps to pave the way for future generations,” she says.

She also views the *For Women in Science* award further contributes to this progress: “This recognition gives me the opportunity to address a broader audience, emphasising the vital role of women in science as a strong, creative, and productive force, pushing the frontiers of knowledge and technology to improve society and advance civilisation.”

To young women aspiring to careers in science, she offers this encouragement: “If your dream is to be a scientist, go for it. Advancing knowledge is highly rewarding. And remember, science thrives on the incredible talent of women.”

“*My dream is to be part of another groundbreaking discovery, especially solving the mystery of dark matter, the invisible substance that constitutes a vast portion of the universe’s mass. Such a discovery would deepen our understanding of the universe.*”

”



Professor Barbara Finlayson-Pitts

ENVIRONMENTAL SCIENCE



*Distinguished Professor Emerita, Chemistry Department and
Founder/Co-Director, Atmospheric Integrated Research Institute,
University of California, Irvine, United States of America*



Transforming our understanding of air chemistry to improve air quality and fight climate change

Professor Barbara Finlayson-Pitts is recognised for her groundbreaking research into how chemicals released into the atmosphere react to form new air pollutants and influence climate change. Ambient air pollution presents a major global challenge, contributing to approximately 4.2 million premature deaths annually, according to the World Health Organization, the majority occurring in developing countries. In addition to harming human health, airborne pollutants also damage natural ecosystems and can reduce biodiversity.

Professor Finlayson-Pitts carries out experimental studies in the laboratory to mimic reactions that occur in the atmosphere. Her studies elucidate how fast these reactions are and identifies the reaction products, which is critical input for models of air pollution and climate change. Her research thus plays a vital role in predicting impacts on air quality and climate of different possible future emission scenarios. Notably, her work informs practical and economically viable strategies to address these challenges and improve public health.

"Air pollution and climate change arise from molecules directly emitted from combustion of fossil fuels and other processes, but more importantly, from the reactions of these emissions in our atmosphere," Professor Finlayson-Pitts explains. "To best improve air quality and fight climate change, we must understand which chemicals and reactions have the most significant impact, how rapidly this takes place, and which products are formed. I dream that scientists and engineers will one day be able to leverage these insights to find systemic solutions for a truly sustainable planet."

A lifelong journey of discovery

Professor Finlayson-Pitts' passion for practical science was sparked in childhood by her father, a mechanical engineer. However, she had limited opportunities at that time to explore these interests at school, and instead had to settle for home economics, learning to sew and making her own clothes. "I later realised that my need to 'fix things' would have translated to fixing cars, if I had been a boy," she reflects.

Her path changed thanks to an inspiring secondary school chemistry teacher who she describes as ‘fabulous’ and made the subject logical and approachable. At university, she developed her scientific interests, choosing physics, chemistry, and mathematics. Encouraged by her professors, she found chemistry “intriguing, challenging, and fun.”

“A lecture on the chemistry of the aurora provided the guiding star for the rest of my career, and my fascination with this topic led directly to my PhD studies in atmospheric chemistry,” she adds.

One of her significant scientific breakthroughs came while studying how pollutants interact with salt in air. She discovered that nitrogen oxides, a byproduct of fossil fuel combustion, react with salt particles from sea spray, road salt and from some alkaline lakes to form new, harmful molecules. These absorb sunlight and trigger further chemical reactions, contributing to the formation of smog. Armed with this knowledge, scientists and policymakers are now better equipped to develop strategies for reducing such pollution and improving air quality.

Resilience in science and leadership

While science continues to advance, Professor Finlayson-Pitts highlights the challenges of developing effective solutions due to the scale and intricacy of environmental issues and where scientific evidence is not always accepted or prioritised by decision-makers or segments of the public. Despite this, she remains dedicated to international collaboration, particularly with researchers in Europe and Canada – to rigorously test her hypotheses and deepen our understanding of atmospheric processes.

As a woman in science, Professor Finlayson-Pitts shares that often “I kept my head down and ploughed forward, not looking for signs of challenges unique to being female”. She was fortunate to have had supportive undergraduate mentors who treated all students equally. However, her later experiences told a different story where she faced harassment from male peers in graduate school. As a young, independent scientist, she would sometimes receive dismissive, condescending feedback.

For example, her first paper as an Assistant Professor, even after revisions addressing reviewer comments, was met with scepticism. A reviewer simply stated he “still did not believe the results,” but that it would encourage another researcher (presumably male), to “do it right.” Professor Finlayson-Pitts, however, knew her work was sound: “But of course we were right from the start.”

She has also fought hard to be heard and claim ownership of her own ideas in male-dominated meetings. “As is common with female scientists, if you offer a suggestion, it is often met with silence, until a man says the same thing later in the meeting. When the same idea is then presented as a great discovery as presented by a man, I just say I am glad he agrees with me.” If someone tries to talk over me, again a common occurrence for female scientists, I have learned to either keep talking or say ‘Excuse me, I have not finished!’.

Her final word to aspiring women scientists is to: “Just go for it!”.

“*To best improve air quality and fight climate change, we must understand which chemicals and reactions have the most significant impact, how rapidly this takes place, and which products are formed. I dream that scientists and engineers will one day be able to leverage these insights to find systemic solutions for a truly sustainable planet.*”



27 YEARS OF COMMITMENT TO GENDER EQUALITY IN SCIENCE



27 years championing women in science

For 27 years, the Fondation L'Oréal and UNESCO have joined forces to empower and promote female scientists through the *For Women in Science* programme. This visionary partnership has brought global attention to the gender gap in science by highlighting and celebrating the work of many outstanding female scientists, accelerating their paths to leadership in science, and inspiring the next generation of female researchers. This reflects the Fondation L'Oréal's long-standing commitment to supporting women's rights and fighting for gender equality, which stands as one of UNESCO's two Global Priorities.



The world needs science and science needs women

Today, women remain significantly under-represented in science, accounting for only around 30% of researchers worldwide. Yet we need their talent and perspectives more than ever to develop gender-balanced solutions to the major social, economic and environmental challenges of our time.

Women pursuing scientific careers still face numerous barriers and a relatively small proportion hold leadership positions. This lack of representation prevents and limits their ability to shape and direct important scientific research programmes and projects and to act as visible role models for younger generations. Only 27.5% of senior academic positions in science in Europe are held by women (source: She Figures 2024). Less than 4% of Nobel Prizes for science have been awarded to women since its inception in 1901.

Making a difference

Over the course of 27 years, the L'Oréal-UNESCO *For Women in Science* programme has helped identify and highlight successful role models at the highest level, support young promising talents at the beginning of their careers, and inspire young girls to pursue scientific vocations.



More than 4,700 women scientists have been supported and mentored by the programme. Working in life and environmental sciences, mathematics, engineering and computer science, they are changing the world through their research and serve as inspiring examples for future generations.

Every year, for the past 27 years, the *For Women in Science* International Prize has awarded five distinguished scientists from different regions of the world, bringing the total to 137 international laureates to date.

Seven of the laureates – Ada Yonath, Elizabeth H. Blackburn, Christiane Nüsslein-Volhard, Emmanuelle Charpentier, Jennifer Doudna, Katalin Karikó and Anne L'Huillier – have received a Nobel Prize in science.

We also support over 250 young female researchers each year in their doctoral and post-doctoral career and the *Young Talents* Programs are implemented in over 140 countries.



KEY FIGURES



MORE THAN
4,700
FEMALE SCIENTISTS
SUPPORTED



NEARLY
50
PARTNER SCIENTIFIC
INSTITUTIONS



137
LAUREATES REWARDED
FOR THE EXCELLENCE
OF THEIR WORK
7 OF WHOM HAVE RECEIVED
A NOBEL PRIZE FOR SCIENCE



50
PROGRAMS
COVERING OVER
140 COUNTRIES AND
TERRITORIES



MORE THAN
500
SCIENTISTS INVOLVED
IN SELECTION PROCESS
EACH YEAR

ABOUT THE *Fondation L'Oréal*

The Fondation L'Oréal supports and empowers women to shape their future and make a difference in society. It focuses its action on two main areas: science and inclusive beauty.

Science: encouraging women's scientific excellence and inspiring future generations.

The Fondation L'Oréal is committed to supporting women scientists at every stage of their careers, from sparking vocations at a young age to recognizing excellence in established researchers. This commitment translates into an intergenerational approach and dedicated programmes.

In partnership with UNESCO, Fondation L'Oréal has run the international *For Women in Science* programme since 1998. This programme aims to accelerate the careers of women scientists, remove the obstacles they face, and inspire younger generations to embrace scientific careers. To date, the programme has supported more than 4,700 researchers from over 140 countries, promoting scientific excellence and encouraging many young women to pursue scientific studies.

The Fondation L'Oréal also invests in the future of women in science through its *For Girls in Science* programme. This programme aims to inspire scientific vocations in young girls by raising their awareness of the scientific challenges of tomorrow and introducing them to inspiring female role models. The goal is to support and encourage the next generation of female scientists, giving them the keys to succeed in scientific fields.

Inclusive Beauty: restoring self-esteem and promoting professional integration.

Convinced that beauty contributes to the process of rebuilding lives, the Fondation L'Oréal helps vulnerable women to improve their self-esteem through free beauty and wellness treatments. These treatments help restore their self-esteem and help them regain confidence. At the same time, the Fondation L'Oréal promotes the professional integration of vulnerable women through excellent training in beauty professions. On average, 16,000 women benefit from these treatments each year, and more than 67,000 people have been trained in beauty professions since the programme's launch.

ABOUT *UNESCO*

With 194 Member States, the United Nations Educational, Scientific and Cultural Organization (UNESCO) contributes to peace and security by leading multilateral cooperation on education, science, culture, communication and information. Headquartered in Paris, UNESCO has offices in 54 countries and employs over 2,300 people.

UNESCO oversees a network of more than 2,000 World Heritage sites, Biosphere Reserves and Global Geoparks; networks Creative, Learning, Inclusive and Sustainable Cities; and over 13,000 associated schools, university chairs, training and research institutions.

As the only United Nations organization with a specific mandate in the sciences, UNESCO supports international scientific cooperation, develops international frameworks on the ethics of new technologies and encourages the mobilization of local and indigenous knowledge to meet the major challenges of our time – from climate disruption to the collapse of biodiversity and the fragile health of the ocean.

The Organization, which has made gender equality a cross-cutting priority of its mandate, works to remove the obstacles that prevent women from entering scientific careers, to promote their contribution to research and to encourage equal opportunities in all fields of science, technology, engineering and mathematics.

For more than 25 years, the L'Oréal-UNESCO *For Women in Science* programme has been recognizing scientific excellence among women, supporting emerging talents and inspiring young generations of women researchers. It forms part of UNESCO's wider commitment to promoting science for the benefit of all.

The Fondation L'Oréal and UNESCO would like to express their gratitude to their partners JCDecaux and Paris Aéroport for the support to the *For Women in Science* programme.

A powerful promotional display campaign raising awareness on the importance of women in science will be running in major airports around the world.



All media resources for the L'Oréal-UNESCO *For Women in Science* programme are available on WWW.FONDATIONLOREAL.COM

Follow L'Oréal-UNESCO *For Women in Science* on



FONDATION L'ORÉAL

#FWIS2025 #FORWOMENINSCIENCE