

PASSION FOR KNOWLEDGE

Nazioarteko Zientzia Jaialdia
Festival Internacional de Ciencia
International Science Festival

FINAL DOSSIER

2-7/10
2023

DONOSTIA /
SAN SEBASTIÁN
BILBAO

p4k.dipc.org



Donostia
International
Physics Center



Passion
For
Knowledge

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P4K!

WELCOME

The **Donostia International Physics Center (DIPC)** has once again celebrated the passion for knowledge together with leading figures in science and thousands of citizens. The fifth edition of the **Passion for Knowledge (P4K)** science festival brought together a total of **22,691 people** between 2 and 7 October, spread between Donostia/San Sebastián, its main venue, and other locations, such as Bilbao and Beasain (CAF), combining activities for all kind of audiences. The number of participants reveals a growing interest in discovering the science around us.

The plenary lectures taking place in the afternoons at the Victoria Eugenia Theatre remain the hallmark of the festival. Thanks to the presence of leading international scientific figures, including **7 Nobel Prize laureates**, the public was able to learn first-hand about the advances and discoveries that have revolutionised our understanding of the world. Through the EITB's online channel, this festival transcended the limits of the Victoria Eugenia Theatre, reaching a broader audience that was able to enjoy the lectures from all over the world.

The diverse programme of activities reached out students, teachers, families, the scientific community, and culture enthusiasts in general. One of the highlights of the programme were the encounters between scientists and hundreds of students from the Basque Country. The plenary lectures at the Victoria Eugenia Theatre had a dedicated space for the traditional **Naukas** and **Bertso Passion** sessions, to which this year were added the **Streamers sessions**. The programme also included the **Passion Txiki** mini-festival, designed especially for families, as well as the **Origins of Life** scientific congress, the **training day for PhD students** and the **Ikerbasque Awards** ceremony to recognise outstanding women scientists of the year.

A new venture of this edition was the '**STRØM - Inclusive Astronomy**' exhibition, produced for the Passion for Knowledge festival by DIPC in collaboration with Tabakalera. The project surpassed all expectations with more than 12,000 visitors in a single month. This exhibition was aimed at ensuring access to quality scientific content for all kinds of audiences, especially for people with functional diversity. Through multisensory experiences, people of all ages, students and groups of people with disabilities were able to get closer to basic concepts of astronomy and also discover the cutting-edge research in the field of astrophysics and particle physics that is being carried out in the Basque Country, in a fun and interactive way.

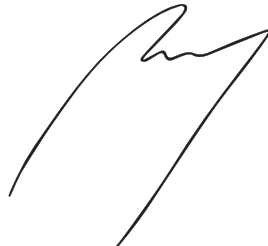
Everything seems to indicate that science will continue to play a key role in the world's social and economic advancement. Addressing global challenges, such as climate change or the advent of disruptive technologies, requires not only investing in excellent research, properly informed societies are also needed. Science, more than ever, must be accessible to the general public.

The Passion for Knowledge festival aims to promote critical thinking and contributes to the scientific culture. At DIPC, we will continue to work on growing our scientific heritage and providing new opportunities to bring together science and society.



Pedro Miguel Etxenike

President of P4K 2023
President of DIPC
Emeritus Professor of the Universidad
del País Vasco / Euskal Herriko
Unibertsitatea (UPV/EHU)



Ricardo Díez Muiño

President of P4K 2023
Director of DIPC
Ikerbasque Research Professor







PLENARY LECTURES

The plenary lectures are the hallmark of the festival. In this edition, **16 renowned figures** in science, including **7 Nobel Prize laureates**, offered public lectures every afternoon at the Victoria Eugenia Theatre in Donostia/San Sebastián, and participated in the sessions at the Euskalduna Conference Centre (Bilbao) on 3 October and at CAF (Beasain) on 5 October.

For a week, audiences of all ages were able to learn first-hand about the latest discoveries in areas as diverse as the detection of life on other planets, quantum physics, artificial intelligence and biodiversity, and of course, the unexpected breakthrough in messenger RNA research, which finally led to one of the main vaccines against Covid-19, developed in record time.

All the lectures were accompanied by simultaneous interpretation into Basque, Spanish and English and were streamed via eitb.eus (on EITB Kosmos and the EITB YouTube channel). The lectures in the three languages are available on DIPC YouTube channel.

The opening ceremony of the festival took place on 2 October at the Victoria Eugenia Theatre. The festival began with a performance by the dance company Kukai Dantza and was attended by top officials in the Basque Government.

DONOSTIA/ SAN SEBASTIÁN, VICTORIA EUGENIA THEATRE

Masters of ceremony:
Javier Aizpurua, Ikerbasque Professor at DIPC
Alaitz Ochoa de Eribe, Journalist at Elhuyar

Simultaneous interpretation: **EU/ES/EN**

All the videos are available on DIPC YouTube channel

Monday
2 Oct

Opening Ceremony

Iñigo Urkullu, President of the Basque Government
Eider Mendoza, General Deputy of Gipuzkoa
Eneko Goia, Mayor of Donostia/San Sebastián
Pedro Miguel Etxenike, Professor Emeritus at the UPV/EHU and President of DIPC

Özlem Türeci, Biotechnology, BioNTECH, Germany
Molecular communication with the immune system (EN)

Donna Strickland, Photonics, University of Waterloo, Canada
Generating high-intensity, ultra-short optical pulses (EN)

Tuesday
3 Oct

Juan Ignacio Cirac, Quantum Physics, Max-Planck-Institut für Quantenoptik, Germany
Quantum technologies: from Schrödinger's cat to a new era in computing (ES)

Sandra Myrna Díaz, Biodiversity and Climate Change, Universidad Nacional de Córdoba, Argentina
About plants and people: vegetal biodiversity and its connections with human beings (ES)

Didier Queloz, Astrophysics, University of Cambridge, U.K.
The exoplanet revolution (EN)

Wednesday
4 Oct

Francesca Ferlaino, Quantum Technologies, Universität Innsbruck, Austria
Atoms approaching absolute zero temperature: the hardware of future quantum technologies (EN)

Maria Vallet-Regí, Biomaterials, Universidad Complutense de Madrid, Spain.
Biomaterials: what are they and why we need them (ES)

Jean-Marie Lehn, Supramolecular Chemistry, Université de Strasbourg, France
Steps towards complex matter: chemistry! (EN)

Thursday
5 Oct

Joaquín Gorrochategui, Indo-European Linguistics, Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU)
On comparative linguistics and the origin of Basque language (EU)

Interview with the astronomer who discovered the pulsar (EN/ES)

Jocelyn Bell-Burnell, Astrophysicist, University of Oxford

Pedro Miguel Etxenike, Physicist, DIPC, Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU)

Jack Szostak, Ageing and Artificial Life, University of Chicago, USA
From DNA breaks and telomeres to the origins of life: endless fascinating puzzles in science (EN)

Friday
6 Oct

Dario Gil, Quantum Computing, IBM Research
What's next in quantum computing (ES)

Cristina Uriarte, Scientific Policy, Basque Government
Facing Basque Country's future: the transforming path of research and innovation (ES)

Jean-Pierre Sauvage, Molecular Machines and Motors, Université de Strasbourg, France
Molecular machines and motors: from biology to chemistry (EN)

Saturday
7 Oct

Adela Cortina, Ethics and Philosophy, Universidad de Valencia, Spain
Ethics and technology (ES)

George Smoot, Cosmology, Donostia International Physics Center (DIPC), Lawrence Berkeley National Laboratory, USA
Current cosmology (EN)

BILBAO, EUSKALDUNA
CONFERENCE CENTRE

Simultaneous interpretation: **EU/ES/EN**

All the videos are available on DIPC YouTube channel

Tuesday
3 Oct

Francesca Ferlaino, Quantum Technologies, Universität Innsbruck, Austria
Atoms approaching absolute zero temperature: the hardware of future quantum technologies (EN)

Jean-Marie Lehn, Supramolecular Chemistry, Université de Strasbourg, France
Steps towards complex matter: chemistry! (EN)

ENCOUNTERS WITH STUDENTS

One of the star activities of Passion for Knowledge is the popular **Encounters top@DIPC - Zientziarekin solasean!**, an event in which Nobel laureates and other leading scientists meet up with hundreds of secondary students of the Basque Country. The main aim of the encounters is to awaken young people's curiosity in relation to science and to inspire them to pursue a career in this field.

The encounters took place in Donostia/San Sebastián and Bilbao and brought together 451 students and teachers from 91 schools.

In a relaxed, friendly atmosphere, the students had the chance to talk to renowned figures in science and to address their doubts and questions directly to them. The most interesting question received a prize thanks to the special collaboration with **Telefónica** and **EDP Foundation**, members of DIPC Board of Partners.

CIC nanoGUNE and **CFM (CSIC-UPV/EHU)** collaborated in the organisation of the encounters with students, along with the **Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU)**.

ENCOUNTERS IN BILBAO, BIZKAIA ARETOA UPV/EHU

Tuesday
3 Oct

Session language: **EU/ES/EN**
Simultaneous interpretation: **EU/ES/EN**
**All the videos are available on DIPC
YouTube channel**

Guest scientists:
Donna Strickland, Photonics, Nobel Prize in Physics 2018
George Smoot, Cosmology, Nobel Prize in Physics 2006

Hosts:
Javier Benito, Director Telefónica Euskadi
Eva Ferreira, Rector of the Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU)
Moderator:
Pedro Miguel Etxenike, Emeritus Professor of the Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU), and President of DIPC
Presenter:
Idoia Mugika, Communications Manager of CFM (CSIC-UPV/EHU)

ENCOUNTERS IN DONOSTIA/ SAN SEBASTIAN VICTORIA EUGENIA THEATRE

Friday
6 Oct

Session language: **EU/ES/EN**
Simultaneous interpretation: **EU/ES/EN**
**All the videos are available on DIPC
YouTube channel**

Guest scientists:
Jean-Marie Lehn, Supramolecular Chemistry, Nobel Prize in Chemistry 1987
Jack Szostak, Ageing and Artificial Life, Nobel Prize in Physiology or Medicine 2009
Maria Vallet-Regí, Smart Biomaterials, Rey Jaime I Prize 2018

Host:
Izaskun Simon, Head of the EDP Foundation
Moderator:
Pedro Miguel Etxenike, Emeritus Professor of the Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU) and President of DIPC
Presenter:
Itziar Otegui, Communications Manager of CIC nanoGUNE



451
students and
teachers



91
schools



STRØM EXHIBITION

This year, the Passion for Knowledge 2023 festival opened the doors to inclusion with an innovative astronomy exhibition that presented accessible tactile, audio and audiovisual experiences, kindling the curiosity of thousands of people. The **STRØM – Inclusive Astronomy** exhibition was conceived and produced by DIPC in collaboration with **Tabakalera** and **Morgancrea**, and received 12,548 visitors between 4 and 31 October at Tabakalera.

Due to the high demand, the guided tours organised in collaboration with Tabakalera's **Medialab** were extended throughout the month of November, allowing more schools and groups of people with disabilities to visit the exhibition. There were 50 organised visits in total, attended by 909 people.

The STROM programme of complementary activities also included a series of talks and a roundtable discussion organised by DIPC and **Kutxa Fundazioa**; the aim was to promote the participation of people who normally have limited access to the dissemination of science. Medialab also organised 6 workshops mainly targeted towards children.

In addition, researchers from **DIPC's cosmology and astrophysics group** were present at the exhibition every Tuesday and Thursday in October, answering questions and explaining their field of research. 'STROM - Inclusive Astronomy' was conceived as an itinerant exhibition that aims to travel throughout Spain, and even abroad, to bring science and knowledge closer to all audiences, in line with the mission of the Passion for Knowledge festival.



12,548
visitors





NAUKAS PASSION

As every year, the Passion for Knowledge public programme included the already well-known Naukas Passion sessions, organised in collaboration with the popular online science communication platform Naukas, and the support of the **Chair of Scientific Culture of the Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU)**.

On 5 and 6 October, the Naukas' characteristic dynamic format of short talks once again filled the Victoria Eugenia Theatre, offering the audience its particular vision of science in a fun and original way.

DONOSTIA / SAN SEBASTIÁN,
VICTORIA EUGENIA THEATRE

Presenter: **Javier Peláez**
Simultaneous interpretation: **EU/ES/EN**
All the videos are available on DIPC
YouTube channel

Thursday
5 Oct

Lectures:

Enrique Borja, Physics/Philosophy
The pleasure of not understanding (ES)

Clara Grima, Mathematics,
Universidad de Sevilla
I believe you and I don't see you (ES)

Iñigo Olalde, Archaeogenetics,
Universidad del País Vasco / Euskal
Herriko Unibertsitatea (UPV /EHU)
*How a Neolithic family was
organised 6000 years ago?* (ES)

Almudena M. Castro, Physics and
Aesthetics

The threads of the rainbow (ES)

Joaquín Sevilla, Science of Everyday
Life, Universidad Pública de Navarra
(UPNA)

*Guidelines for sleeping well on any
planet* (ES)

Isabel Moreno, Climate Change
To the future with no return? (ES)

Friday
6 Oct

Lectures:

Susana Escudero, Forensic
anthropology and genetics, Canal
Sur & **Guillermo Peris**, Forensic
anthropology and genetics,
Universitat Jaume I de Castellón
JB55: 19th century vampires (ES)

Marga Sánchez Romero,
Archaeology, Universidad de
Granada

*Women - what people thought
about us: archeology and
discourses of inequity* (ES)

Ignacio López-Goñi, Yeasts and
Bacteria, Universidad de Navarra
The first miracle of Jesus (ES)

Iñaki Úcar, Scientific Method/Biases,
Universidad Carlos III de Madrid
The day Maxwell missed the gorilla
(ES)

Gemma del Caño, Food
*When alcohol was able to save a
life* (ES)

BERTSO PASSION

DONOSTIA / SAN SEBASTIÁN,
VICTORIA EUGENIA THEATRE

Simultaneous interpretation: **EU/ES/EN**
All the videos are available on DIPC
YouTube channel

The tradition of *bertsolarismo* has flourished over the centuries, captivating hearts with its passion, ingenuity and ability to create poetry in an instant, picking up the pulse of different social issues and concerns. As a result, it has become one of the Basque Country's most unique and acclaimed cultural activities.

In this new edition of the Passion for Knowledge festival, **Bertso Passion** brought together some of the best exponents of *bertsolarismo* on 4 October at the Victoria Eugenia Theatre. For an hour, the audience had the chance to admire the beauty of improvised poetry and enjoy the verbal dexterity of these masters of verse.

Wednesday
4 Oct

Bertsolaris:

Amets Arzallus

Andoni Egaña

Nerea Ibarzabal

Maialen Lujanbio

Gai-jartzailea:

Maite Berriozabal

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FINAL
DOSSIER

PASSION FOR
KNOWLEDGE

PASSION TXIKI

During the weekend, **Passion Txiki** filled the festival with energy and emotion. This section of the festival, designed especially for children and their families, immersed us in a world of discovery and fun, with activities programmed in different locations of Donostia/San Sebastián. Passion Txiki had the special collaboration of the **Centre for Materials Physics** (CFM, CSIC UPV/EHU) and **Kutxa Fundazioa**.

The programme included workshops, amazing science experiments and games that inspired the imagination and the scientific thinking of the participants.

Saturday
7 Oct

I RESEARCH

Science circuit

Mad Science presented a series of educational, hands-on and fun activities aimed at children to bring them closer to the world of science.

11:00-12:00, 4-12 years, Basque

Sala Club,
Victoria Eugenia
Theatre

THE LIFE OF A STAR

Science show

A group of scientists working in a laboratory receive a telegram alerting them of a visit from a star.

12:30-13:30, 4-12 year, Basque

7,8,28 Oct

JAKINLAB

Family workshop

These sessions combined science with philosophy for the enjoyment of families and participants of different generations.

Kutxa Fundazioa
Kluba, Tabakalera

7 OCT/28 OCT
17:00-19:00,
6-10 years, Basque

8 OCT
11:00, 6-10 years,
Spanish

STREAMERS SESSIONS

This year, the Passion for Knowledge festival welcomed a new section. National science Streamers took the stage of the Victoria Eugenia Theatre to share their particular perspective on various scientific topics.

The first session was conducted by the mathematician **Eduardo Saenz de Cabezón**, creator of the YouTube channel "Derivando" and professor at the Department of Mathematics and Computer Science at the Universidad de La Rioja; he interviewed **Sara García-Alonso**, a researcher specialising in cancer and the first Spanish woman selected as a member of the 2022 promotion of ESA Astronauts Reserve.

On the closing day, it was the turn of **José Luis Crespo**, better known as QuantumFracture for his successful YouTube channel. With his characteristic sense of humour, he used the triangle to review concepts of geometry and cosmology, getting more than a few smiles from the audience.

DONOSTIA / SAN SEBASTIÁN, VICTORIA EUGENIA THEATRE

Simultaneous interpretation: **EU/ES/EN**
All the videos are available on DIPC
YouTube channel

Tuesday
3 Oct

From cancer research to space exploration (ES)

Eduardo Sáenz de Cabezón interviewed **Sara García-Alonso**, CNIO Researcher and member of the ESA Astronaut Reserve.

Molecular Biology and Space Exploration

Saturday
7 Oct

One triangle. Plenty of science (ES)

José Luis Crespo, Physicist and founder of the QuantumFracture channel

Mathematics and Physics



272
participants



1,387
participants





CAF LECTURE

As part of the Passion for Knowledge festival, a special session was programmed at the headquarters of **CAF** (Construcciones y Auxiliar de Ferrocarriles), member of the Board of Partners of DIPC from its very beginnings.

The creator of molecular motors and the 2016 Nobel Prize in Chemistry, **Jean-Pierre Sauvage**, delivered a lecture on the varied and promising applications of molecular motors and machines in various scientific and technological fields, ranging from nanotechnology and nanorobotics, medicine and targeted therapy, catalysis and chemical synthesis, information storage and retrieval, right up to molecular electronics and energy.

Thursday
5 Oct

Jean-Pierre Sauvage, Molecular Machines and Motors, Université de Strasbourg, France
Molecular machines and motors: from biology to chemistry (EN)

All the videos are available on DIPC YouTube channel

ON ZIENTZIA

On Zientzia is a project to promote the creation of documentary-type audiovisual content in which the participation of the general public plays a key role. **Elhuyar** and **DIPC** are the organisers of this competition, which also has the collaboration of the science popularisation programme Teknopolis, produced by Elhuyar for the Basque public television. In its 13 editions, On Zientzia has built up a public archive of **over 850 audiovisuals**.

During the Passion for Knowledge festival, screenings of the best videos were programmed in different venues, such as the Vitoria Eugenia Theatre and the Leidor Cinema in Tolosa.

The audience was able to enjoy the screening of the following award-winning videos from previous editions of the competition:

Partículas celtiberas / Celtiberian particles

L.G. Juanes. Special mention 2022.

Argiztapen artifizial... naturala? / Artificial Illumination... natural?

Alain Sorazu, Alfredo Rodríguez, Kimberlyn Fonseca Pérez y Morgane Goyens. Best popularisation video 2022.

¿Por qué no podemos tomar un ibuprofeno cada 4 horas pero sí alternarlo con paracetamol? / Why can't we take an ibuprofen every 4 hours but we can alternate it with paracetamol?

Yasia Dolisnea. Best popularisation video 2021.

Mina edo pikantea? / Hot or Spicy?

Ane Ibarгойen Alvarez. Best video in Basque 2023.

Loquita por sus huesos/ Crazy about bones

Daniel González Escudero. Best popularisation video 2023.

Todos los vídeos en www.onzientzia.tv

TRAINING FOR PhD STUDENTS

The Passion for Knowledge festival programme included a **training day for PhD students**, which took place on the morning of 5 October at the Miramar Palace. The activity was organised within the framework of the **Summer Courses of the Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU)** in collaboration with **Euskampus**.

The day combined a training slot followed by a special encounter with the French chemist and father of supramolecular chemistry **Jean-Marie Lehn**, winner of the 1987 Nobel Prize in Chemistry, and the British astrophysicist and pulsar discoverer **Jocelyn Bell Burnell**, winner of the 2018 Breakthrough Prize.

DONOSTIA / SAN SEBASTIÁN,
MIRAMAR PALACE

UPV/EHU
SUMMER COURSES

Thursday
5 Oct

"Navigating the scientific journey: career and societal impact"

Moderator: **Silvia Bonoli**, Ikerbasque Research Associate at DIPC. Accompanied by **Julieta Barrenechea** and **Igor Campillo** (Euskampus Fundazioa).

Official opening: **Itziar Alkorta** (Director of the UIK) and **Igor Campillo** (Director of the Euskampus Fundazioa)

Session 1: Discussion and reflection

Session 2: Conversation with **Jean-Marie Lehn** and **Jocelyn Bell**

Conclusions and Closing Ceremony. **Ricardo Díez-Muiño** (Director of DIPC)

ORIGINS OF LIFE

The scientific congress **Origins of Life Donostia Meeting 2023** brought together a hundred or so renowned international researchers specialising in the chemical processes that gave rise to our existence. The congress was part of the Passion for Knowledge 2023 festival programme and took place at the Miramar Palace (Donostia/San Sebastián) from 2 to 4 October, as part of the **Summer Courses of the Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU)**.

This gathering was the final event of the European **Marie Curie ITN** project focusing on the physical and chemical roots of **ProtoMet** metabolism, but it was also open to the entire community dedicated to the origin of life. The conference programme ranged from contributions relating to "proto-metabolic systems" to more conceptual or philosophical aspects on open questions that remain of interest to the scientific community.

The gathering was a resounding success, not only in terms of participation (90 attendees from Europe, North America, Asia and Australia), but also in terms of the quality of the lectures, oral communications and posters, and the fruitful discussions and exchanges between the people who attended the meeting.

www.oldm2023.org



86
participants



90
participants



RECOGNITION OF WOMEN RESEARCHERS

The **Ikerbasque 2023 Awards** ceremony took place within the framework of the Passion for Knowledge 2023 Festival. This recognition, which is awarded annually by the **Department of Education of the Basque Government** and **Ikerbasque**, gives visibility to the work of women researchers in the Basque Country as an example and inspiration for new generations of researchers. The awards ceremony took place on 2 October at the Victoria Eugenia Theatre, as part of the opening session of the Passion for Knowledge festival. This year's winners were:

Alicia Alonso, Professor of Biochemistry and Molecular Biology at the UPV/EHU, received the award from **Özlem Türeci**.

Ainhoa Magrach, Ikerbasque Research Professor at the BC3, Basque Centre for Climate Change, received the award from **Sandra Díaz**.

Sara Barja, Ikerbasque Research Associate at the UPV/EHU and at the Materials Physics Center, received the award from **Donna Strickland**.



The image shows the interior of a grand, ornate theater. The architecture is highly detailed, featuring multiple levels of balconies with intricate carvings and decorative moldings. The lighting is warm and golden, highlighting the textures of the wood and the depth of the shadows. A large, white, right-angled triangle is superimposed over the center of the image, pointing towards the bottom right. The text 'PLENARY SPEAKERS' is printed in a bold, black, sans-serif font within the white triangle. In the background, a person is visible on a lower level, possibly a stagehand or technician, adding a sense of scale and activity to the scene.

PLENARY
SPEAKERS



Jocelyn Bell Burnell

Astrophysicist

Breakthrough Prize 20188

University of Oxford

Discoverer of pulsars

In 1967 she discovered a series of extremely regular radio wave signals, which were then called LGM (Little Green Men), referring to the remote possibility that they were extraterrestrial life attempting to communicate. They were eventually proven to come from neutron stars and were named pulsars. This scientific discovery was acknowledged by the Nobel Prize in Physics in 1974, but despite being the first person to observe pulsars, Bell was not awarded this distinction. In 2018 she received the Breakthrough Prize for her scientific contributions.



Juan Ignacio Cirac

Quantum Physics

The Prince of Asturias Award 2006

Max-Planck-Institut Für Quantenoptik

One of the pioneers of the quantum computer

Juan Ignacio Cirac is the director of the Max Planck Institute for Quantum Optics, winner of the 2006 Prince of Asturias Award and the 2013 Wolf Prize. This physicist has proposed some of the most important ideas for applying quantum physics to computing, and is one of the masterminds of the quantum computer. His research focuses on the quantum information theory and the development of quantum computing systems.



Adela Cortina

Ethics and Philosophy

National Essay Prize 2014

Universidad de Valencia

Ethics to confront intolerance

Philosopher, emeritus professor of the Universidad de Valencia, member of the Royal Academy of Moral and Political Sciences, director of the Etnor Foundation and winner of the 2014 Jovellanos International Essay Prize, she has written more than fifty books on the theory of ethics. A fierce determination emerges from her work: to apply ethics to life.



Sandra Myrna Díaz

Biodiversity and Climate Change

Princess of Asturias Award 2019

Nobel Peace Prize 2007

Universidad Nacional de Córdoba

Defending "the web of life" in the face of the climate crisis

Winner of the Princess of Asturias Award for Research in 2019 for her fight against climate change and defence of biodiversity, Sandra Myrna Díaz is a scientific reference in the field of ecology, specifically in botany. She has played a leading role in the theoretical development and practical implementation of the concept of functional diversity, how affects ecosystem properties and its social significance.



Francesca Ferlino

Quantum Technologies
Feltrinelli Award 2017

Universität Innsbruck

Discoverer of a new state of matter: simultaneously solid and liquid

Winner of the Schrödinger Prize and the Feltrinelli Award for young scientists, this Neapolitan specialist in quantum physics led a research team at the Universität Innsbruck that achieved a milestone in science: the discovery of a new state of matter with both solid and liquid properties at the same time. This fluid has the structure of a crystal, but the particles inside 'flow' like a liquid when they are delocalized. She is currently exploring quantum phenomena in atomic gases at very low temperatures.



Dario Gil

Quantum Computing
Vice President of IBM and Director of IBM Research

IBM Research

Leader of the world's largest quantum computing laboratory

Vice President of IBM and Director of IBM Research, the research division responsible for developing quantum computing. IBM Research has over 3,000 scientists spread across 12 labs in six continents and the mission to lead the computing of the future, taking in to account advances in artificial intelligence and quantum computing.



Joaquin Gorrochategui

Indo-European Linguistics
Professor of Indo-European Linguistics

**Universidad del País Vasco /
Euskal Herriko Unibertsitatea (UPV/EHU)**

The fortunate (sorioneku) discovery of the Irulegi hand

The Professor of Indo-European Linguistics at the Universidad del País Vasco / Euskal Herriko Unibertsitatea (UPV/EHU) Joaquin Gorrochategui is one of the people in charge of investigating the Irulegi hand. The discovery of this unique, exceptional item is of great importance, not only for the Basque language, but also for all the ancient scripts and languages of the Iberian Peninsula.



Jean-Marie Lehn

Supramolecular Chemistry
Nobel Prize in Chemistry 1987

Université de Strasbourg

Father of supramolecular chemistry

Nobel Prize in Chemistry in 1987 for his work on the chemical basis of "molecular recognition", i.e. how molecules recognise each other and are selectively bonded with each other, a fundamental aspect in biological processes. His work led to the definition of "supramolecular chemistry", or chemistry beyond the molecule, focusing on complex entities formed by the association of two or more chemical species.



Didier Queloz

Astrophysicist

Nobel Prize in Physics 2019

University of Cambridge

Discoverer of the first exoplanet

Nobel Prize in Physics in 2019 for discovering the first exoplanet, a planet outside the Solar System, in 1995. Since then, his group has contributed to the discovery of more than 250 extrasolar planets, developing the astronomical instruments and experimental techniques for this purpose.



Jean-Pierre Sauvage

Molecular Machines and Motors

Nobel Prize in Chemistry 2016

Université de Strasbourg

Creator of molecular machines: nanorobots

Nobel Prize in Chemistry in 2016 for the design and synthesis of molecular machines. His team devised the first molecular muscle and, together with a team of experimental researchers, created an eight-nanometre object that contracts and relaxes when it receives a signal, and could be used, for example, as an articulated mini-robot.



George Smoot

Cosmology

Nobel Prize in Physics 2006

DIPC, Lawrence Berkeley National Laboratory

Explorer of the origin of the Universe

Nobel Prize in Physics in 2006 for the discovery of the blackbody shape and anisotropy of cosmic microwave background radiation. His studies demonstrated the existence of irregularities in the early Universe shortly after the Big Bang, which led to the subsequent formation of galaxies. This American physicist is currently a DIPC associate.



Donna Strickland

Photonics

Nobel Prize in Physics 2018

University of Waterloo

She revolutionised laser physics

Nobel Prize in Physics in 2018 for her ground-breaking research in the field of lasers. In 1985 she succeeded in creating ultra-short, high-intensity laser pulses without destroying the amplifying material, which made possible to increase the intensity of the laser pulse to levels never before achieved. The types of lasers she has developed have been of great significance in optical research and have resulted in a multitude of medical applications, including corrective eye surgery. She is the third woman in history to win the Nobel Prize in Physics.



Jack Szostak

Ageing and Artificial Life

Nobel Prize in Physiology or Medicine 2009

University of Chicago

At the edge of the creation of life

Nobel Prize in Medicine in 2009 for discovering how strands of repetitive DNA, known as telomeres, protect our chromosomes together with the enzyme telomerase. He is currently exploring the possibility of creating artificial or synthetic life, as well as understanding the origin of life through the mechanisms that made the leap from chemistry to biology possible: the formation of the first molecules that are able to self-replicate.



Özlem Türeci

Biotechnology

Princess of Asturias Award 2021

BioNTech

Key player in the race for the covid-19 vaccine

Özlem Türeci, M.D., is a medical doctor by training, an academic researcher and an entrepreneur. She and her partner, Professor Ugur Sahin, M.D., pioneered nanoparticulate mRNA vaccines, improving their strength and enabling them to be successfully used in humans. She is the co-founder and medical director of BioNTech, where she leads the clinical development of several oncology approaches and supervises more than 30 international clinical trials. Türeci has received dozens of prestigious awards for her work and holds more than 540 international patents.



Cristina Uriarte

Scientific Policy

Commissioner for Science, Technology and Innovation

Basque Government

Innovation, key to the development of the Basque Country

Commissioner for Science, Technology and Innovation of the Basque Government and former regional Minister for Education, Language Planning and Culture, Uriarte holds a PhD in Chemical Sciences. Her mission is to promote science, technology and innovation, fundamental activities to embrace the main challenges that Basque society is facing.



Maria Vallet-Regi

Biomaterials

Rey Jaime I Prize 2018

Universidad Complutense de Madrid (UCM) CIBER-BBN

The bone regenerator

She discovered the potential biomedical applications of mesoporous ceramic materials, specifically in the field of bone regeneration and controlled drug delivery systems. For her ground-breaking contributions in this field she received the Rey Jaime I Award for Basic Research in 2018. She has been the most cited Spanish scientist in the field of Materials Science in the last two decades.



IN THE MEDIA



47

ARTICLES IN
THE LOCAL
PRINT PRESS

10

ARTICLES
IN THE
STATEWIDE
PRINT PRESS



65

ARTICLES IN
THE LOCAL
DIGITAL
PRESS

30

ARTICLES
IN THE
STATEWIDE
DIGITAL
PRESS

10

ARTICLES
IN THE
INTERNATIONAL
DIGITAL PRESS



35

MENTIONS
ON LOCAL
RADIO

7

MENTIONS ON
STATEWIDE
RADIO



7

MENTIONS
ON TV



PARTICIPATION OF THE GENERAL PUBLIC

22,695
IN-PERSON
PARTICIPANTS

12,548
VISITORS TO STROM - INCLUSIVE ASTRONOMY
EXHIBITION AND COMPLEMENTARY ACTIVITIES
TABAKALERA

4,410
PARTICIPANTS IN THE PLENARY LECTURES
VICTORIA EUGENIA THEATRE, EUSKALDUNA
PALACE AND CAF BEASAIN

272
PARTICIPANTS IN PASSION TXIKI
VICTORIA EUGENIA THEATRE AND TABAKALERA

451
PARTICIPANTS AT TOP@DIPC ENCOUNTERS
VICTORIA EUGENIA THEATRE AND BIZKAIA ARETOA

86
PARTICIPANTS IN THE PHD TRAINING
MIRAMAR PALACE

596
PARTICIPANTS IN THE BERTSO PASSION SESSIONS
VICTORIA EUGENIA THEATRE

90
PARTICIPANTS IN THE ORIGINS OF LIFE CONGRESS
MIRAMAR PALACE

1,190
PARTICIPANTS IN THE NAUKAS PASSION SESSIONS
VICTORIA EUGENIA THEATRE

1,125
PARTICIPANTS IN THE ON ZIENTZIA SCREENINGS
VICTORIA EUGENIA THEATRE AND TOLOSA

1,387
PARTICIPANTS IN THE STREAMERS SESSIONS
VICTORIA EUGENIA THEATRE

540
PARTICIPANTS IN THE IKERBASQUE AWARDS
VICTORIA EUGENIA THEATRE



12,770
SINGLE HITS IN THE PASSION
FOR KNOWLEDGE WEBSITE

25,517
TOTAL SESSIONS ON THE
PASSION FOR KNOWLEDGE
WEBSITE

78,743
TOTAL VIEWS AT EITB AND DIPC
YOUTUBE CHANNEL

P4K!



2023

PASSION FOR KNOWLEDGE 2023 OPENING CEREMONY

DONOSTIA/ SAN SEBASTIÁN,
VICTORIA EUGENIA THEATRE

The opening ceremony of Passion for Knowledge 2023 was attended by the President of the Basque Government, Iñigo Urkullu; the General Deputy of Gipuzkoa, Eider Mendoza; the Mayor of Donostia/San Sebastián, Eneko Goia; and the President of DIPC Pedro Miguel Etxenike, together with the Director of DIPC Ricardo Díez-Muiño, and representatives from DIPC Board of Partners.

Monday
2 Oct

Iñigo Urkullu, President of the Basque Government

"Passion for Knowledge is an extraordinary initiative. Such important scientists explain complex issues in a simple way. This is simply wonderful. Eskerrik asko [Thank you] for organising this initiative and I am speaking on behalf of Basque society. We are very proud to see auditoriums at full capacity to talk about science; to see young people responding to your invitation and taking an interest in science. Zorionak, bihotzez! [My heartfelt congratulations!] (...) Donostia/San Sebastián... Gipuzkoa... The Basque Country is science. People and knowledge are at the heart of our political vision and our identity as an advanced society."

Eider Mendoza, General Deputy of Gipuzkoa

"Having an advanced Science and Technology network is a fundamental factor in boosting not only a dynamic and innovative economy, but also in strengthening our society in terms of freedom, democracy and equity. I would also like to highlight the work of people dedicated to science and research, work that is often silent and not always recognised, but always fundamental for our society. In this regard, I would especially like to highlight the work of women scientists. We cannot lose the immense talent of women, because science certainly needs them to address the great challenges ahead of us in the future."

Eneko Goia, Mayor of Donostia/San Sebastián

"Donostia is a city of science and knowledge, and I say this with modesty, but also with pride (...) Over the coming months we will be completing the construction of the building that will house one of the six quantum computers in the world. I think this is a significant fact that indicates that in this city there is a first-class scientific substratum. The Donostia International Physics Center is our flagship, and Pedro Miguel Etxenike its admiral. Thanks to your work, our city is a reference point and a place where the stars of the scientific firmament decides to come. I am sure that some of the leaders of the future will be inspired by your idea of spreading and kindling curiosity."

Pedro M. Etxenike, President of DIPC

"The first thing the word science reminds me of is future. Future and optimism. Optimism that problems can be solved. Our future depends on making smart and wise choices about key challenges. Do not be gullible in the face of populist slogans. (...) A society that is interested in what is happening at the frontiers of knowledge creates, as a result, a climate of excellence in dealing with problems that is transmitted by osmosis to all other activities in society. At DIPC we want to advance knowledge and spread it. For science to act as the transforming cultural, economic and social seed in our society, a strategic project and a long-term vision is required."

COMMITTEE



PRESIDENCY

Pedro Miguel Etxenike

President of P4K 2023
President of DIPC
Emeritus Professor of the
Universidad del País Vasco / Euskal
Herriko Unibertsitatea (UPV/EHU)

Ricardo Díez Muiño

President of P4K 2023
Director of DIPC
Ikerbasque Research Professor

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DIPC Outreach and
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PASSION FOR
KNOWLEDGE

Nazioarteko Zientzia Jaialdia
Festival Internacional de Ciencia
International Science Festival

2-7/10/2023

DONOSTIA / SAN SEBASTIÁN
BILBAO



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