espol® Dean´s Office for Research

espol®
AND ITS RESEARCH
2025

Credits

Elaboration
Dean's Office for Research

Direction
Ángel Diego Ramírez Mosquera, Ph. D.

Technical team
Glenda Sánchez, M. Sc., Econ. Daniel Silva

Design and layout
Gina Paola Ortiz Paucar, Mtr.

Information
Dean of Research, Academic Units, Institutional Research Centers, Research Centers attached to Units OTRI, Scopus

Content

Introduction

The Escuela Superior Politécnica del Litoral (ESPOL) is a leading institution of higher education in Ecuador, founded in 1958. The institution has 2 campuses in Guayaquil, "Gustavo Galindo," where its eight faculties are located, and the "Las Peñas" campus, where the business school is located. There are 32 undergraduate programs and 68 graduate programs.

ESPOL has been accredited by the Council for Quality Assurance in Higher Education (CACES for Consejo de Aseguramiento de la Calidad de la Educación Superior). In addition, most of its undergraduate programs have received international accreditations, such as ABET, while AASC and AMBA have accredited some of its graduates.

In 2025, ESPOL is confirmed as Ecuador's number one higher education institution, with the QS World University Rankings: Latin America & The Caribbean 2026 placing ESPOL among the 50 best universities in Latin America (+14 positions compared to the previous year). According to the QS World University Rankings 2026, ESPOL ranks among the top 951-1000 universities worldwide.

The Times Higher Education Impact Rankings 2025 rank ESPOL #1 in Ecuador in the overall ranking of the Sustainable Development Goals (SDGs). Likewise, the university ranks #1 in the country in SDG 14 (Life below water). This ranking also positions ESPOL as a national leader in Computer Science.

The Scimago Institutions Rankings 2025 (SIR) ranks ESPOL as the best university in Ecuador in the following areas: Arts and Humanities, Business, Management and Accounting, and Social Sciences. In addition, the university ranks first nationally in the sub-areas of Aquatic Science, Industrial and Manufacturing Engineering, Education, Geography, Planning, and Development.

The QS University Rankings By Subject recognizes ESPOL for the second consecutive year as the only Ecuadorian university to enter the Engineering & Technology ranking.

For the fourth consecutive year, it leads in the Agriculture and Forestry category and remains in the Business and Management Studies category; for the third consecutive year, it is the national leader in the Computer Science and Information Systems and Electrical and Electronic Engineering categories; and for the fifth consecutive year, it remains in the Engineering – Petroleum category.

In the latest edition, it also entered the Art & Design and Economics & Econometrics categories, becoming the only university nationwide to achieve this distinction.

The UI GreenMetric World University Rankings 2024, which aim to measure sustainability policies at universities worldwide and evaluate fields related to environment and infrastructure, energy and climate change, waste, water, green transportation, and education and research, ranked ESPOL #1 nationally and 121st globally.

Mission

We are a public institution of higher education of excellence that cooperates with society by training professionals of integrity, conducting research, and innovating to improve the quality of life and promote sustainable development.

Vision

To be a community with an innovative educational model and impactful research, one that responds quickly to the needs of the region, promoting human development and sustainability.

Strategic Objective of Research and Innovation

Strategic Objective 5:
Ensure that at least 25% of ESPOL publications appear in high-impact journals or conference proceedings (Decile 1 [top 10%] according to the CiteScore source ranking), of which at least 70% must be in collaboration with research institutions by 2027.

Tactical Objective 5.1

Ensure that at least 20% of ESPOL professors produce research results with very high scientific impact by December 2027.

Tactical Objective 5.2

Have at least 80 students enrolled in doctoral programs in ESPOL by December 2027.

Tactical Objective 5.3

Achieve at least 15 R&D projects in collaboration with high-impact international researchers, solving current and emerging global problems by December 2027.

Message from the authorities

Cecilia Paredes Verduga, Ph. D.
Rector of ESPOL

Carlos Monsalve Arteaga, Ph. D.
Vice-Rector of Research,
Development and Innovation

"Thanks to the sustained commitment of the polytechnic community throughout 2024, ESPOL has once again consolidated its position as the best public university in Ecuador, according to the QS World University Rankings and the Times Higher Education Impact Rankings. In addition, we have been recognized among the 50 best universities in Latin America according to the QS Latin America & The Caribbean 2026 ranking. These recognitions reflect the effort and dedication of those of us who are part of ESPOL and strengthen our commitment to contributing to Ecuador's sustainable development and improving the quality of life of its citizens.

In 2024, we executed 482 research projects, of which 13% were conducted in collaboration with institutions ranked among the top 200 global universities by the QS World University Rankings. This effort has been key to strengthening our scientific and technological capacity and generating relevant knowledge to address the country's great challenges. We also raised $1.98 million in non-repayable external funds to fund the institution's research activities.

This result reflects the trust that various national and international organizations place in ESPOL to deliver relevant, evidence-based solutions to the country's challenges. The resources obtained strengthen our capacity to develop multidisciplinary projects with a tangible impact on society, in line with our commitment to Ecuador's sustainable development.

This document compiles the most relevant results of ESPOL's research during 2024, demonstrating our ongoing dedication to developing high-impact research, transferring knowledge and results, establishing strategic alliances with national and international institutions and experts, and continuing to consolidate a scientific culture at the service of the country."

Authorities and Institutional Offices related to the research

Rector:

It is the first executive authority of ESPOL, which has the power to exercise legal, judicial, and extrajudicial representation; to preside over the highest collegiate body in a mandatory manner and those bodies indicated in this Statute and internal regulations, in the exercise of its responsible autonomy; and to perform its functions on a full-time basis.

- **Rector:** Cecilia Paredes Verduga, Ph. D.
- **Email:** rectora@espol.edu.ec
- **X:** @cparedesverduga
- **Tel:** 04 2 269269, ext. 1100

Vice Rectorate for Research, Development, and Innovation (R&D&i):

Its functions include organizing and coordinating matters to training related to doctoral programs through the Doctoral School coordinating, supervising, and evaluating the proper functioning of the R&D&i management units and R&D&i centers; organizing and coordinating, at the tactical level, matters related to research and innovation and their interrelations with teaching and linkages; and designing and promoting strategies for disseminating and publicizing research, development and innovation programs, projects and activities.

- **Vice-Rector of R&D&i:** Carlos Monsalve Arteaga, Ph. D.
- **Email:** monsalve@espol.edu.ec
- **X:** @CarlosMonsalveA
- **Tel:** 04 2 269269, ext. 1118

Dean's Office for Research:

This is the administrative office responsible for managing requests for financial support to attend national and international scientific events, financing publications in indexed journals, supporting researchers in the formulation of proposals for internal or external funding calls, conducting project reviews submitted to the project management platform, and managing internships, among others.

- **Dean of Research:** Ángel Ramírez Mosquera, Ph. D.
- **Email:** aramire@espol.edu.ec
- **X:** @aramirez1979
- **Tel:** 04 2 269269, ext. 1304

Dean's Office of Liaison:

It is the administrative Unit in charge of establishing the relationship between ESPOL and citizenship through the different ways of action and intervention. It mainly coordinates the development of community service and business practices that enable the polytechnic community to recognize the realities of future professional environments and to pursue practical solutions that lead to welfare and social transformation.

- **Dean of Liaison:** Adriana Santos Ordoñez, Ph. D
- **Email:** psantos@espol.edu.ec
- **X:** @lasantos30
- **Tel:** 04 2269 269, ext. 1283

Research Result Transfer Office (OTRI):

Its mission is to evaluate, protect, manage, transfer, and advise on the commercialization of the results of R&D&i (knowledge and technology), ensuring compliance with international, national, and institutional intellectual property policies and supporting the use of good practices for the transfer and management of intellectual property by the ESPOL community.

- **Director:**
  Daynet Sosa Del Castillo, Ph. D.
- **Email:**
  dasosa@espol.edu.ec
- **Tel:** 04 2269 269, ext. 240

Relevant collegiate bodies and committees

Polytechnic Council:

It is the only collegiate body of co-governance and the highest authority at ESPOL.

ESPOL Research, Development, and Innovation Commission (R&D&i):

The R&D&i Commission is an advisory body responsible for designing processes and actions on issues related to R&D&i that is not governed by the principle of co-governance.

Research Commission:

It is an advisory body responsible for the orientation and coordination of research activities at ESPOL. which is not governed by the principle of co-governance.

Research Ethics Committee:

It acts as a body at the service of the community and assumes the general functions of information, discussion, guidance, and control in the area of Ethics of research, development, and innovation (R&D&i), Bioethics, Ethics of research in human beings, and Ethics of research in animals.

ESPOL in numbers

08 Faculties

01 Business school

35 Degree programs

70 Graduate programs
(includes 3 doctorates)

1030 Professors:
Ph.D.: 271

129 Research technicians

38 Research groups

9068 Undergraduate students

1453 Graduate students

09 Institutional research centers

03 Research centers linked to academic units

01 Institutional center for academic support for research

282 Undergraduate students in research projects:
Students in research programs: 128
Students in research assistantships: 117

19 Graduate students in research projects

ESPOL Research in Numbers in Period 2020– 2024

2666

Publications

21945

Received citations

8.23

Citations per publication

1835

Publications with international co-authors

37

Publications in journals ranked in the top 1% of CiteScore

2.03%

Publications in collaboration with companies, 0.85% above the Ecuadorian average (1.18%)

16.80%

Publications in journals in the top decile of CiteScore, 2.82% above the Ecuadorian average (13.98%)

1447

Publications in quartile 1 and 2 journals

861

Ongoing research projects

$8.665.249,24

External research funds raised and allocated to ESPOL

ESPOL's Priority Research Areas

1. Supply chain and logistics

Optimize urban transportation systems; address maritime transportation problems. And guarantee efficient management and strengthening of supply chains. This is to ensure the operability of organizations and to monitor merchandise throughout all production phases.

2. Digital technologies

Develop technological solutions that improve the quality of education, health, social, and emotional well-being; solutions to improve telecommunications infrastructure and performance; and the use of data analytics to determine market trends and technologies in the country.

3. Sustainable and innovative industry

Develop industrial applications for the sustainable use of local natural resources, ensure compliance with health and safety protocols, reduce waste production and improve efficiency.

4. Economic development

Conduct research aimed at the reactivation of economic activity; determine mechanisms to mitigate the impacts of external factors on social welfare; develop and strengthen entrepreneurship, in addition to studying entrepreneurial activity and its challenges in the country.

5. Agriculture and aquaculture production and its processing

Improve agricultural and aquacultural production levels through traditional techniques and biotechnology. Reduce pollution from agriculture and aquacultural activities; take advantage of rejected products; develop sustainable technologies for aquaculture, agriculture, and livestock industry; diagnose and control diseases in plants and animals.

6. Environment, climate, and disaster risk reduction

Improve knowledge and prediction of climate variability and measures to prevent, reduce, and mitigate the impacts of climate change. Also, strengthen social resilience in response to multi-hazards. Reducing water pollution and water shortages, as well as assessing air quality.

7. Health, welfare, and human development

Conduct research on technological developments that are important for the country's public health. Also, to evaluate the nutritional value of traditional foods and study people's nutrition in Ecuador.

8. Education and communication

Adapt to the constant changes in society by incorporating ICTs in the learning process. Develop proprietary technology that improves connectivity and the use of intelligent systems. Communicate the development of technologies that contribute to social welfare.

9. Energy efficiency, renewable energies, and alternatives

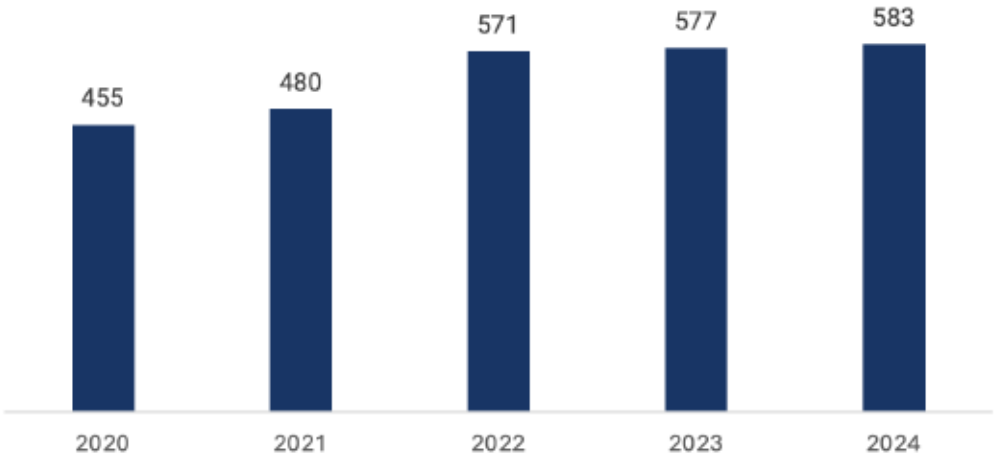
Develop technologies and materials that enable the efficient use of energy and the reduction of fuel used in the production processes. To quantify the available resources and energy demand at the industrial and consumption levels that facilitate decision-making. Study the impact of heat islands on society.

10. Development of Basic Sciences

To contribute to the development of the research system in basic sciences to generate cutting-edge scientific knowledge capable of facing national challenges and subsequent technological applications.

Publications and citations

Evolution of publications per year



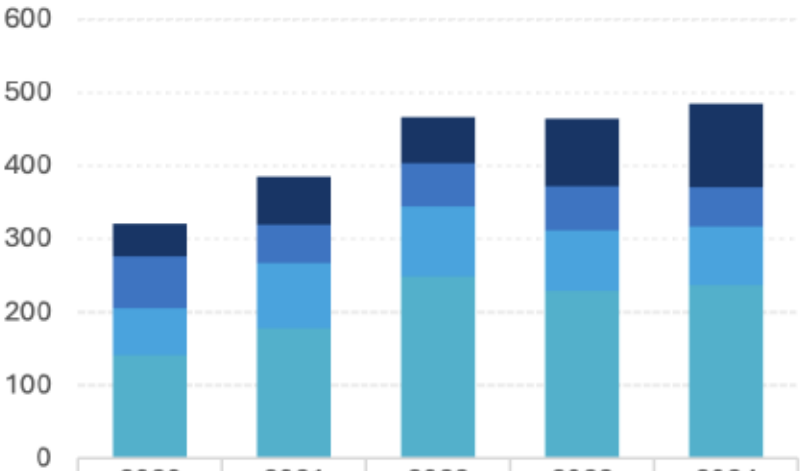
***Data corresponds to the period 2020-2024.**

*Publications of type Erratum and Retracted are excluded

Source: SciVal (Accessed: June 9, 2025)

Elaboration: Dean's Office for Research – ESPOL

Publications per Quartile



	2020	2021	2022	2023	2024
Q4 (top 76% - 100%)	45	66	64	91	114
Q3 (top 51% - 75%)	72	52	59	61	53
Q2 (top 26% - 50%)	64	89	95	83	81
Q1 (top 25%)	141	179	249	229	237

***Data corresponds to the period 2020-2024, and journals are ranked according to CiteScore Percentile criteria**

* Publications of type Erratum and Retracted are excluded

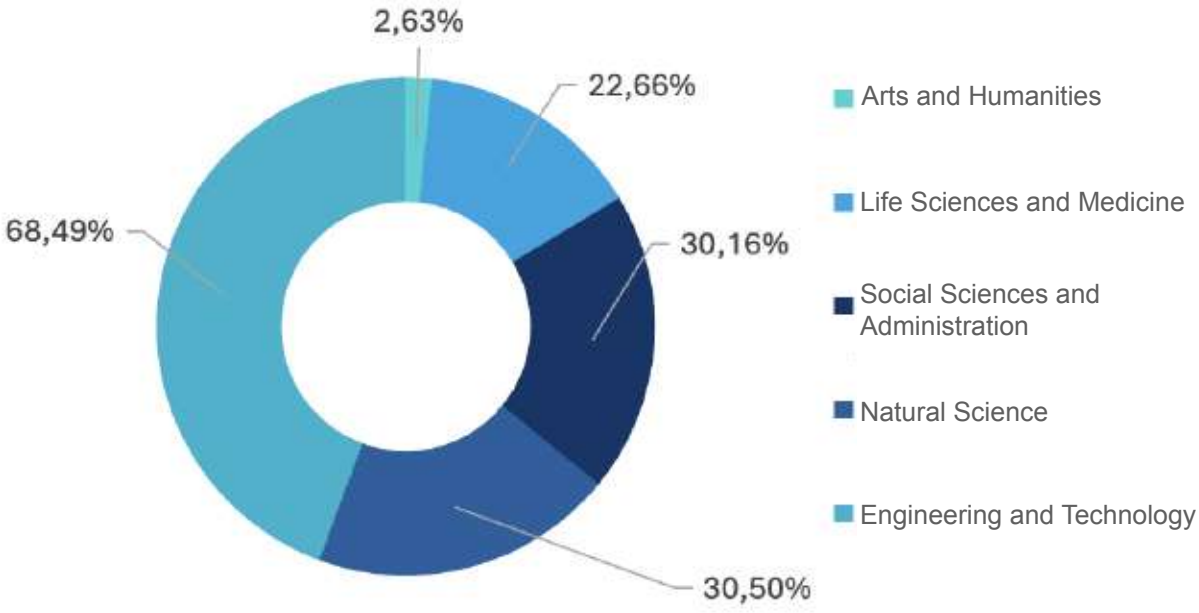
Source: SciVal (Accessed: June 9, 2025)

Elaboration: Dean's Office for Research – ESPOL

Since 2020, ESPOL has increased its scientific production, reaching 2666 publications indexed in Scopus during the period 2020-2024, of which 2124 are in journals ranked by CiteScore. For the last 3 years, annual scientific production has exceeded 550 publications.

Of the 2124 publications in journals classified according to CiteScore Percentile criteria, 68.13% correspond to articles published in high-quality journals (Q1 and Q2). Of the 574 publications reported in 2024, 65.57% are in Q1 and Q2 quartile journals. It should also be noted that the number of publications in the highest quality quartile has increased considerably compared to previous years.

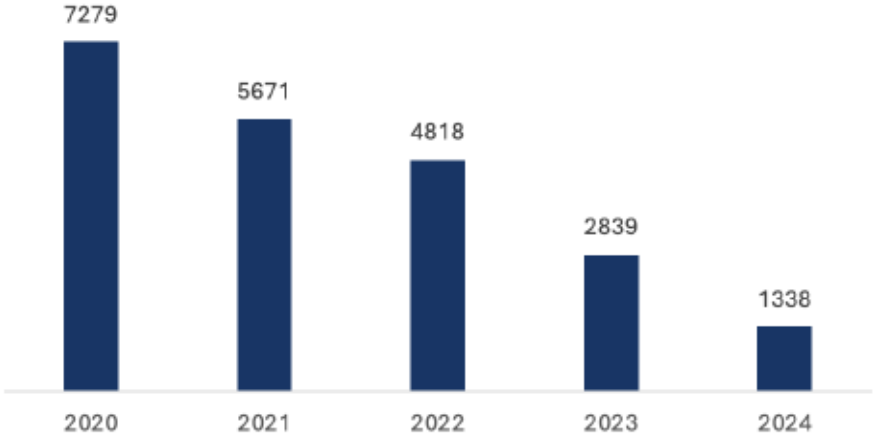
Publications by research area



*** Data corresponds to the period 2020-2024, and journals are ranked according to QS**
* Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

ESPOL publications are concentrated in the following areas defined by QS: Engineering and Technology (68.49%), Natural Sciences (30.50%), Life Sciences and Medicine (22.66%), Social Sciences and Administration (30.16%), and Arts and Humanities (2.63%).

Evolution of citations per year



Note: These are always the years in which the articles were published and do not refer to the years in which citations were received.

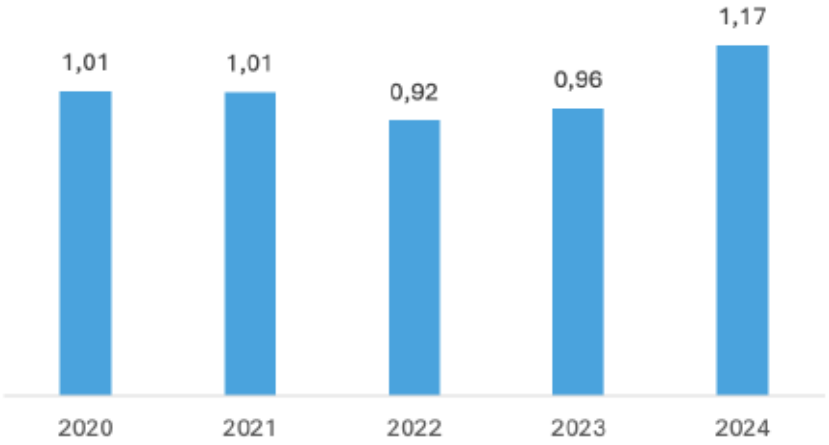
***Data corresponds to the period 2020-2024.**

*Publications of type Erratum and Retracted are excluded

Source: SciVal (Accessed: June 9, 2025)

Elaboration: Dean's Office for Research – ESPOL

Evolution of Field Weighted Citation Impact (FWCI) per year



Note: These are always the years in which the articles were published and do not refer to the years in which citations were received.

***Data corresponds to the period 2020-2024.**

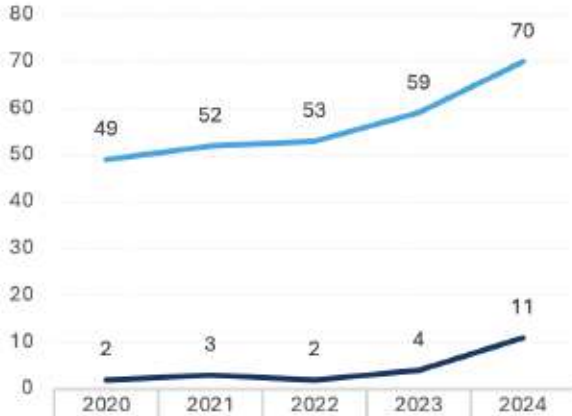
*Publications of type Erratum and Retracted are excluded Source: SciVal (Accessed: June 9, 2025)

Elaboration: Dean's Office for Research – ESPOL

The number of ESPOL publications cited by various authors fluctuated between 2020 and 2024. However, it is noteworthy that publications from 2020 received a higher number of citations compared to articles published in more recent years. This is mainly due to publications focused on COVID-19, as well as the fact that publications from previous years have had more time to be cited.

Regarding the Field Weighted Citation Impact (FWCI), ESPOL registered a significant increase in the last year, reaching 1.17. This indicates that the impact of citations weighted by subject area is above the global average.

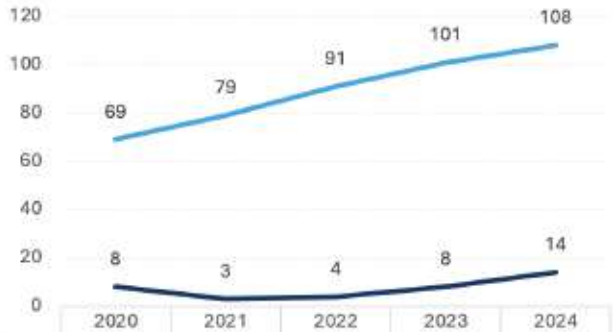
Percentage of Publications among the 10% most cited according to CiteScore



	2020	2021	2022	2023	2024
Publications in top 10% of journals according to CiteScore	49	52	53	59	70
% Publications in top 10% most cited journals	10,7%	10,8%	9,2%	10,2%	12%
Publications in top 1% most cited journals	2	3	2	4	11
% Publications in top 1% most cited journals	0,4%	0,6%	0,3%	0,7%	2%

***Data corresponds to the period 2020-2024.**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

Publications in top 10% of journals according to CiteScore



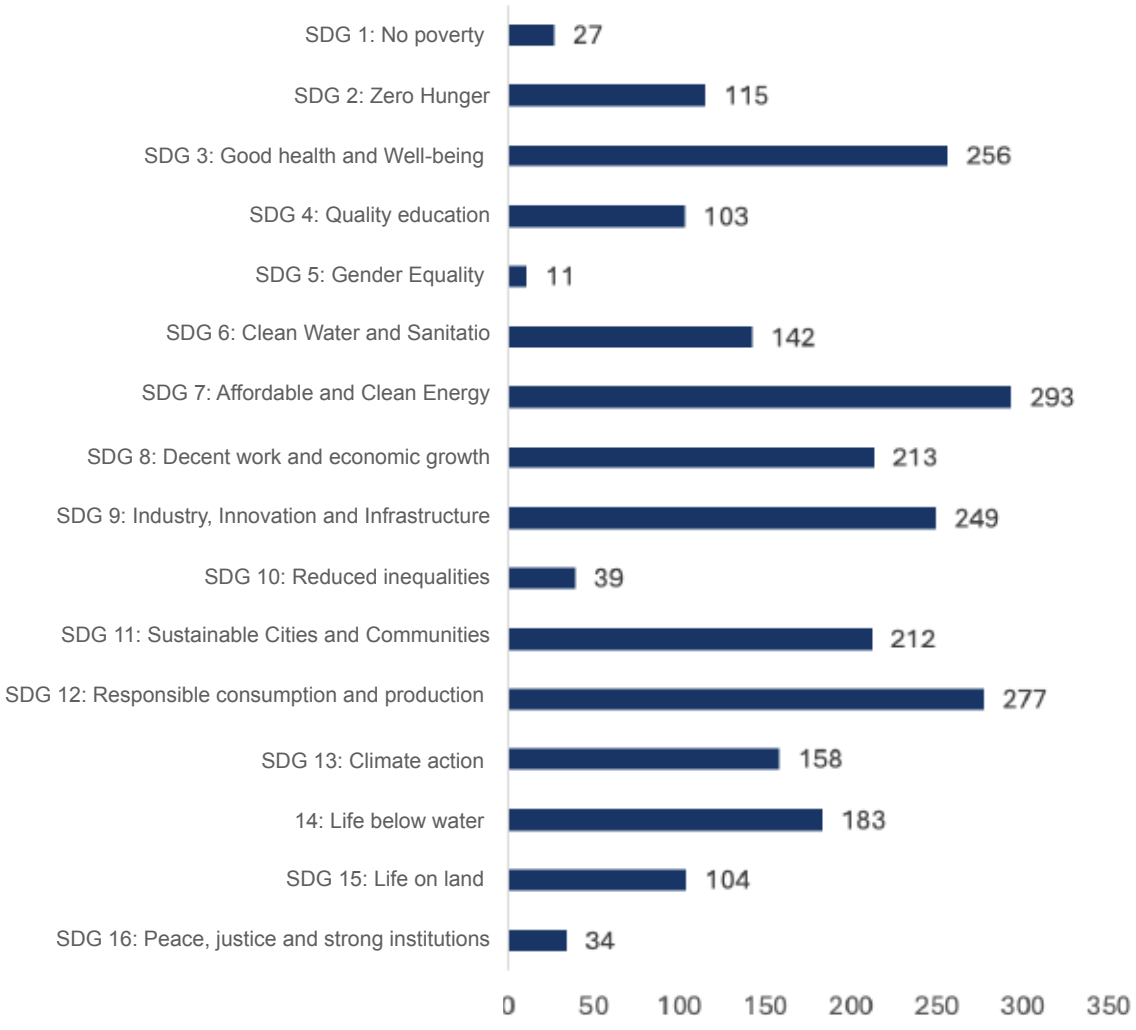
	2020	2021	2022	2023	2024
Publications in top 10% of journals according to CiteScore	69	79	91	101	108
% Publications in top 10% most cited journals	15,16%	16,46%	15,94%	17,50%	18,52%
Publications in top 1% most cited journals	8	3	4	8	14
% Publications in top 1% most cited journals	1,76%	0,63%	0,70%	1,39%	2,40%

*** Data corresponds to the period 2020-2024, and journals are ranked according to CiteScore Percentile**
Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

Around 10.6% of publications by ESPOL researchers are among the top 10% most cited worldwide during 2020-2024. During the same period, around 16.72% of scientific output is indexed in sources within the top 10% according to CiteScore, with an annual increasing trend in the percentage of publications in the first decile, reaching 18.52% in 2024.

ESPOL registered a total of 283 publications among the top 10% most-cited worldwide during the period from 2020 to 2024. In addition, the number of publications indexed in sources within the top 10% according to Citescore has grown significantly since 2020, with the last two years standing out as the annual production of very high-quality scientific publications exceeded 100.

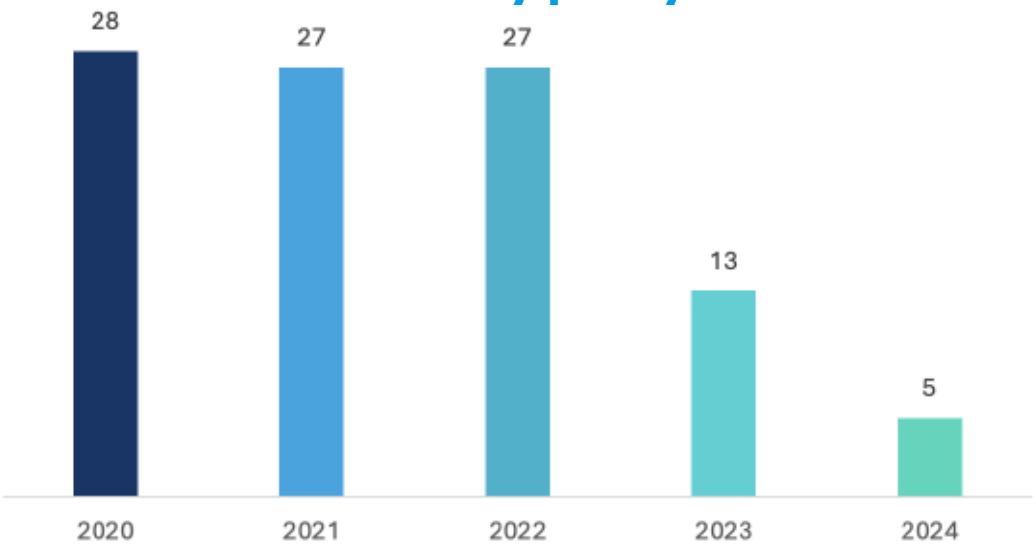
It is also noteworthy that by 2024, publications that are among the top 1% most cited worldwide and those indexed in the top 1% of CiteScore sources recorded a significant increase compared to previous years.



***Data corresponds to the period 2020-2024.**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

During the period from 2020 to 2024, ESPOL has publications in all 16 Sustainable Development Goals (SDGs) reported by SciVal, with 293 articles published related to SDG 7 in first place, followed by 277 articles related to SDG 12 in second place, and SDG 3 in third place, where ESPOL has 256 articles published.

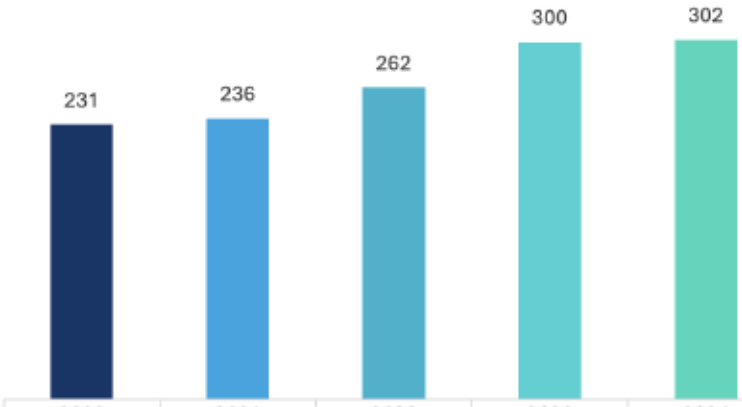
Publications cited by policy documents



Note: These are always the years in which the articles were published and do not refer to the years in which citations were received.
***Data corresponds to the period 2020-2024.**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

100 policy documents have cited ESPOL's scientific output during the same period from 2020 to 2024, with the largest number of publications cited by this type of document being articles from 2020, 2021, and 2022.

Participation of women affiliated with ESPOL

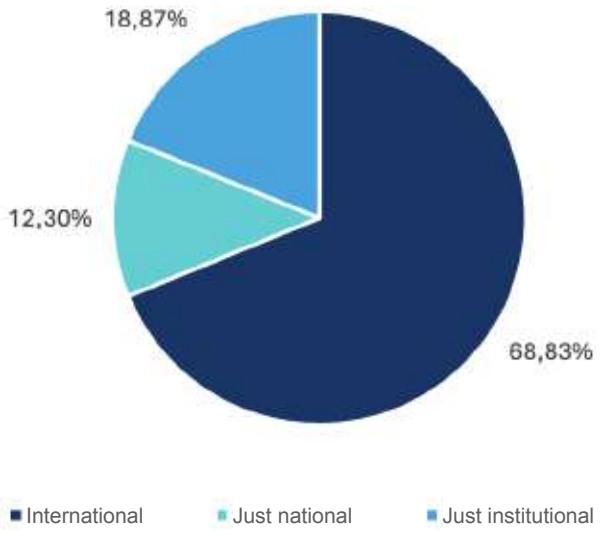


	2020	2021	2022	2023	2024
Publications with at least one female co-author affiliated with ESPOL	231	236	262	300	302
% of publications with at least one female co-author affiliated with ESPOL	50,77%	49,17%	45,88%	51,99%	51,80%

***Data corresponds to the period 2020-2024.**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

Over the last five years, the contribution of female polytechnic students to ESPOL's scientific output has grown significantly, reaching a total of 1,331 publications between 2020 and 2024, with an average participation rate of 49.92%. The year 2024 stands out in particular, with more than 300 publications authored or co-authored by women affiliated with ESPOL.

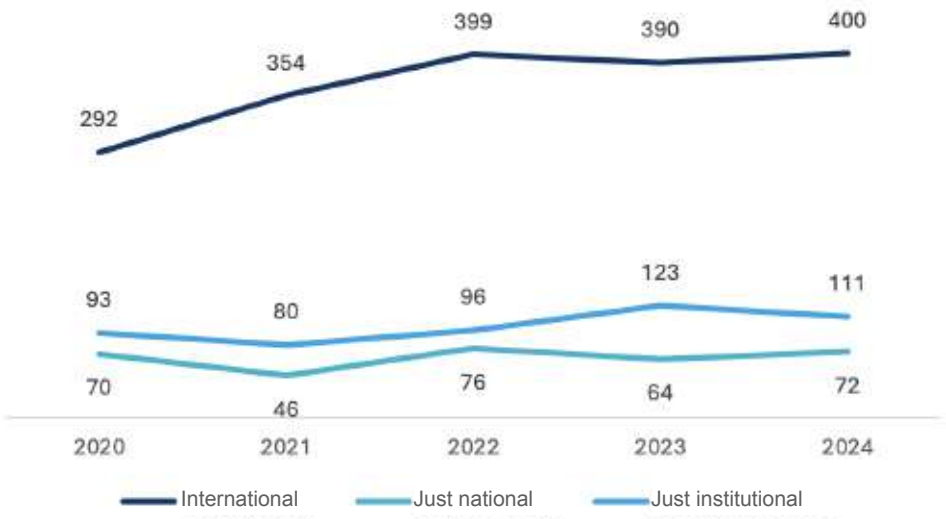
External collaborations



***Data corresponds to the period 2020-2024.**
Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

The graph above shows the percentage of publications co-authored by ESPOL researchers with researchers from international and national institutions, as well as with colleagues from the same institution, during the period 2020 to 2024. It is noteworthy that 68.83% of ESPOL's total scientific output was in collaboration with international institutions.

Annual evolution of publications by type of collaboration



***Data corresponds to the period 2020-2024.**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

Between 2020 and 2024, ESPOL's international collaborative publications grew from 292 to 400, reflecting its efforts to consolidate global networks. This progress not only broadens the scope of its research but also lays the foundation for future joint projects.

Institutions that collaborate with the Escuela Superior Politécnica del Litoral

***Data corresponds to the period 2020-2024.**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

ESPOL focuses most of its international collaboration in Europe, working with 468 institutions in that region; this is followed by North America, where it has collaborated with 305 institutions, and in Latin America with 218 institutions; likewise, ESPOL has collaborated with institutions in Asia-Pacific, the Middle East, and Africa with 196, 46, and 43 institutions, respectively.

10 international institutions with the most co-authored publications

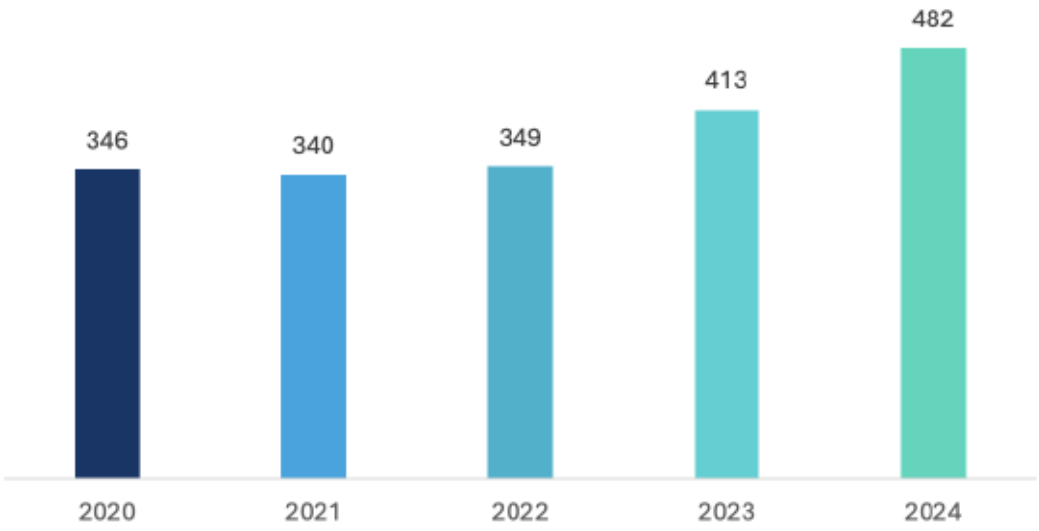
Institution		Country	Co-authored publications	Citas	Citations per publication	Weighted citations in the field
GHENT UNIVERSITY	Ghent University	Belgium	120	1199	10	1.03
	Technical University of Madrid	Spain	80	728	9.1	0.96
CSIC	CSIC	Spain	72	1094	15.2	1.6
CVC	Computer Vision Centre	Spain	53	865	16.3	2.08
UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH	Polytechnic University of Catalonia	Spain	52	730	14	1.65
cnrs	CNRS	France	48	677	14.1	1.13
Instituto Geológico y Minero de España	Instituto Geologico y Minero de Espana	Spain	48	761	15.9	1.75
PONTIFICIA UNIVERSIDAD CATÓLICA DE VALPARAÍSO	Pontificia Universidad Católica de Valparaíso	Chile	43	464	10.8	1.59
IVIC INSTITUTO VENEZOLANO DE INVESTIGACIONES CIENTÍFICAS	Instituto Venezolano de Investigaciones Científicas	Venezuela	42	162	3.9	0.48
	Universidade Federal do Pará	Brazil	40	520	13	1.21

***Data corresponds to the period 2020-2024.**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

De las 10 instituciones que más publicaciones ha realizado en coautoría con investigadores de la ESPOL, 7 de estas son instituciones europeas y 3 de Latinoamérica. Estos datos muestran el compromiso de la ESPOL por generar redes de contacto de calidad con la comunidad científica internacional.

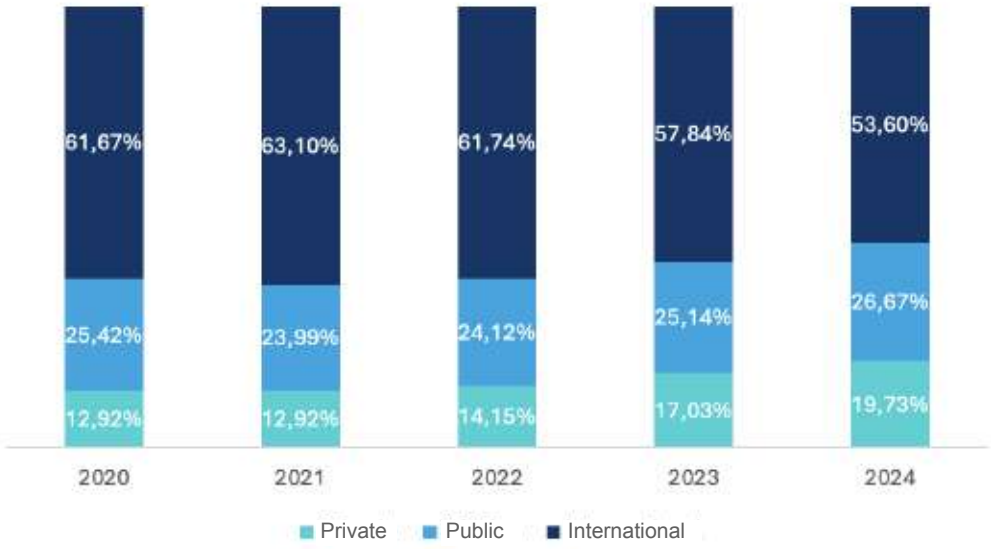
Projects and external research funding

Evolution of the number of projects in progress



***Data corresponds to the period 2020-2024 and refers to completed and ongoing projects.**
Source: Accountability Reports (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

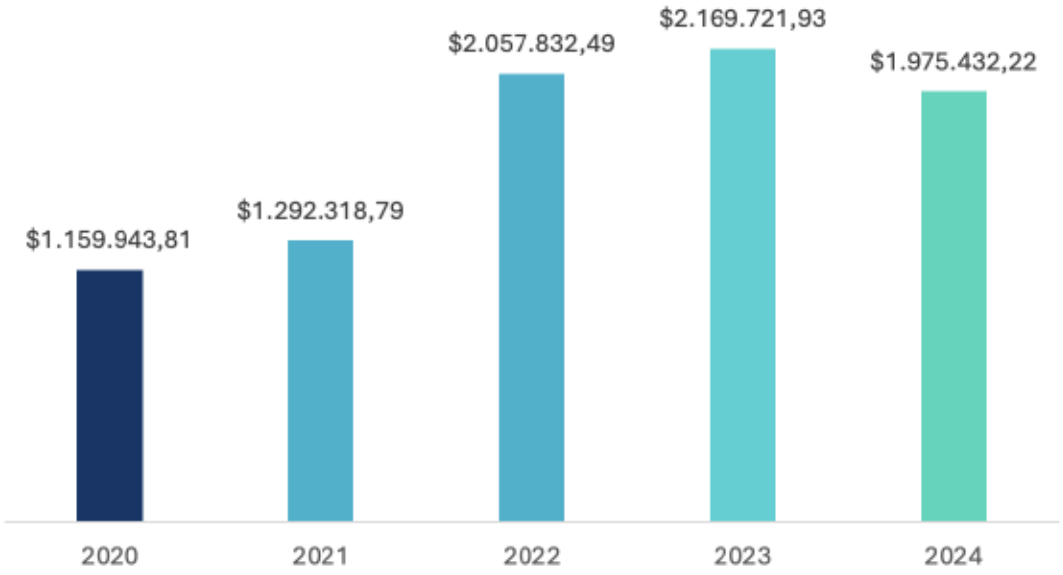
Distribution of projects according to type of collaboration (private, public, international)



***Data corresponds to the period 2020-2024, and corresponds to completed and ongoing projects**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

Between 2020 and 2024, ESPOL collaborated on over 300 research projects with private and public sector institutions in Ecuador and with international organizations. The majority of these collaborations originated internationally, followed by those with Ecuadorian public entities and private companies.

Collection of non-reimbursable external research funds allocated to ESPOL



***Data corresponds to the period 2020-2024, and corresponds to completed and ongoing projects**
*Publications of type Erratum and Retracted are excluded
Source: SciVal (Accessed: June 9, 2025)
Elaboration: Dean's Office for Research – ESPOL

In 2020, despite the COVID-19 pandemic, ESPOL raised USD$1,159,943.81 in external research funding. This amount has been increasing in recent years, rising to $1,975,432.22 in 2024. ESPOL has obtained external funding for research projects totaling USD $8,655,249.24 for the period from 2020 to 2024.

ESPOL Research Strengths 2018-2023

Research Strengths

That meet 3 classification factors:

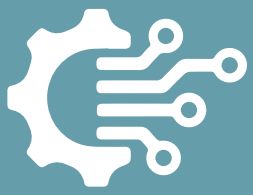
- Quality of scientific output.
- Projects with external funding secured for research.
- Intellectual property (IP) registrations.

Environmental Science

- Health, Toxicology and Mutagenesis
- Environmental Science (miscellaneous)

Engineering

- Electrical and Electronic Engineering



Agricultural and Biological Sciences

- Agricultural and Biological Sciences (miscellaneous)
- Agronomy and Crop Science

Earth and Planetary Sciences

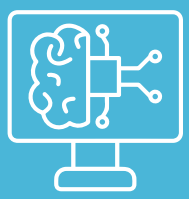
- General Earth and Planetary Sciences

Chemistry

- Analytical Chemistry

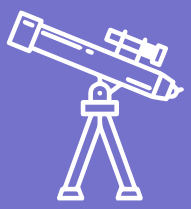
Computer Sciences

- Computer Vision and Pattern Recognition
- Computer Science Applications



Physics and Astronomy

- Instrumentation



Immunology and Microbiology

- Microbiology

Energy

- Renewable Energy, Sustainability and the Environment

Research Strengths

That meet 2 classification factors:

- Quality of scientific output
- Projects with external funding secured for research or

- Quality of scientific output
- Intellectual property (IP) registrations

Earth and Planetary Sciences

- Geochemistry and Petrology

Medicine

- Public Health, Environmental and Occupational Health

Materials Science

- Materials Chemistry

Biochemistry, Genetics and Molecular Biology

- Biochemistry

Decision Sciences

- Information Systems and Management

Business, Management and Accounting

- Tourism, Leisure and Hospitality Management

Research Strengths

That meets 1 classification factor:

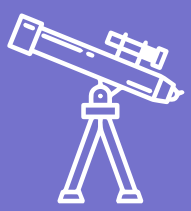
- Quality of scientific output

Environmental Science

- Waste Management and Disposal
- Nature and Landscape Conservation

Physics and Astronomy

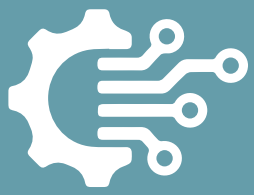
- General Physics and Astronomy



Social Sciences

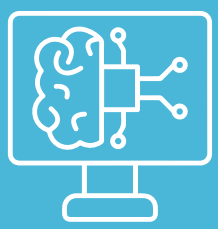
- Cultural Studies
- Development
- Communication
- Transportation
- Health (social science)
- Political Science and International Relations

Engineering



- Media Technology
- Industrial and Manufacturing Engineering
- Control and Systems Engineering

Computer Sciences



- Computer Graphics and Computer-Aided Design
- Software
- Information Systems
- Hardware and Architecture

Mathematics

- Analysis
- Statistics and Probability
- Numerical Analysis
- Modeling and Simulation
- Theoretical Computer Science

Medicine

- Health Informatics

Chemistry

- General Chemistry

Biochemistry, Genetics and Molecular Biology

- General Biochemistry, Genetics and Molecular Biology

Materials Science

- Electronic, Optical and Magnetic Materials

ESPOL Research Centers

Institutional Research Centers

Center for
Water and Sustainable Development

It supports research and development on water problems, considering economic, environmental, ethical, and social responsibility factors.

Director:
Luis Domínguez, Ph.D.
Email:
ldomingu@espol.edu.ec
Contacts:
Tel: 042-269478
X: @CADS_ESPOL
www.cibe.espol.edu.ec

8 Research Partners

14 Publications

13 Ongoing projects

71.4% Publications with international collaboration

28.6% Publications in the Top 10% of journals according to CiteScore

National Center for Aquaculture and Marine Research

It promotes the productive development of aquaculture and the sustainable use of marine biodiversity through research, training, and knowledge dissemination, contributing to the country's scientific, technological, and economic progress.

Director:
Stanislaus Sonnenholzner, Ph.D.
Email:
ssonnen@espol.edu.ec
Contacts:
Tel: 042-916120 Ext: 2018
X: @CENAIM_espol
www.cenaim.espol.edu.ec

19 Research Partners

9 Publications

13 Ongoing projects

1 Intellectual property registration

42.9% Publications in the Top 10% of journals according to CiteScore

37.5% Publications with international collaboration

Center of
Renewable and Alternative Energies

Develops research, transfer, and technological innovation in the areas of renewable energy, energy efficiency, and sustainability.

Director:
Guillermo Soriano, Ph.D.
Email:
gsorian@espol.edu.ec
Contacts:
Tel: 042-269350
X: @CeraEspol

8 Research Partners

23 Publications

27 Ongoing projects

23.5% Publications with international collaboration

50% Publications in the Top 10% of journals according to CiteScore

Biotechnology Research Center of Ecuador

Generates, applies, transfers, and disseminates biotechnological solutions for the agricultural industry of the Ecuadorian coast to support its competitiveness on a global scale, with special emphasis on the banana and cocoa industries, offering high-value-added services to agricultural producers, agribusiness, and the local food industry.

Director:
Juan Manuel Cevallos, Ph.D.
Email:
jmceva@espol.edu.ec
Contacts:
Tel: 042-269782
X: @cibe_espol
www.cibe.espol.edu.ec

26 Research Partners

30 publications

50 Ongoing projects

3 Intellectual property registration

16.1% Publications in the Top 10% of journals according to CiteScore

74.2% Publications with international collaboration

Center for Research, Development, and Innovation in Computer Systems

Researches and develops intelligent technologies through computer vision techniques, robotics, machine learning, and energy systems, which will allow solving problems and potentiate operations for the productive sectors of agriculture, industry, transportation, and energy.

Director:
Boris X. Vintimilla B., Ph.D.
Email:
boris.vintimilla@espol.edu.ec
Contacts:
Tel: 042-269761
X: @CIDIS_ESPOL
www.cidis.espol.edu.ec

8 Research Partners

20 Publications

16 Ongoing projects

28.6% Publications in the Top 10% of journals according to CiteScore

65.2% Publications with international collaboration

Center for Research and Nanotechnology Development

Its scope is Research, Innovation, and Development in Science and Engineering at the nanoscale, with a focus on characterizing materials, their processing, and their synthesis. And the improvement of their properties, considering the possibilities of practical engineering applications, and under the premise of improving the quality of life of the human being and the protection of the environment.

Director:
Víctor Guarochico, Ph.D.
Email:
vhuguaro@espol.edu.ec
Contacts:
Tel: 042-269380
cidna.espol.edu.ec

5 Research Partners

21 Publications

8 Ongoing projects

17.4% Publications in the Top 10% of journals according to CiteScore

76% Publications with international collaboration

Center for
Research and Projects Applied to Earth Sciences

Manages the formulation and execution of Projects of Research, Development, and Services Applied to Earth Sciences, establishing institutional, local, and international cooperation links for research on the rational use of natural resources in a sustainable context.

Director: Fernando Morante, Ph. D.
Email:
fmorante@espol.edu.ec
Contacts:
Tel: 042-269438
X: @CipatEspol
www.cipat.espol.edu.ec

11 Research Partners

43 Publications

18 Ongoing projects

1 Intellectual property registration

13.5% Publications in the Top 10% of journals according to CiteScore

61.5% Publications with international collaboration

Pacific International Center for Disaster Risk Reduction

It contributes to building resilience, reducing the population's vulnerability, improving understanding of risk to prevent new disasters, reducing existing ones and their impacts on the population's quality of life, and advancing sustainable development.

Director:
María del Pilar Cornejo, Ph.D.
Email:
cip-rrd@espol.edu.ec
Contacts:
Tel: 042-269451
X: @CIP_RRD
www.cip-rrd.espol.edu.ec

14 Research Partners

10 Publications

13 Ongoing projects

1 Intellectual property registration

23.1% Publications in the Top 10% of journals according to CiteScore

85.7% Publications with international collaboration

Center of Information Technologies

Creates, innovates, and develops new learning environments through research projects and technological solutions that meet the needs of students and teachers, as well as those of the productive sector, industry, and society in general.

Director: Daniel Ochoa, Ph. D.
Email:
dochoa@espol.edu.ec
Contacts:
Tel: 042-269777 Ext.: 7007
X: @ctiespol
www.cti.espol.edu.ec

10 Research Partners

32 publications

27 Ongoing projects

2 Intellectual property registration

27.3% Publications in the Top 10% of journals according to CiteScore

71.8% Publications with international collaboration

Research Centers affiliated

to Academic Units

Center of Sustainable Technological Development

Faculty of Mechanical Engineering and Sciences Production

Promotes sustainable development by combining technical, environmental, and socioeconomic perspectives, with effective and applied transfer to the community.

Director:
Emérita Delgado Plaza, Ph.D.
Email:
eadelgad@espol.edu.ec
Contacts:
Tel: 042-269350

8 Research Partners

10 Publications

7 Ongoing projects

25% Publications with international collaboration

Center of Economic Research

Faculty of Social Sciences and Humanistic

It generates information, research, analysis, and knowledge in economics and business management to meet the demand and interests of the productive sectors and society as a whole.

Director:

Gonzalo Sánchez, Ph.D.

Email:

edsanche@espol.edu.ec

Contacts:

Tel: 042-269096

X: @CIEC_ESPOL

www.ciec.espol.edu.ec

7 Research Partners

17 Publications

27 Ongoing projects

35.7% Publications in the Top 10% of journals according to CiteScore

78.6% Publications with international collaboration

Center for Digital Industrial Transformation

Faculty of Electric Engineering and Computing

Create digital technologies that arise from the intersection of data processing and computer engineering, oriented to improving the industry's products, processes, and services at a local and industrial level.

Director:

Daniel Ochoa, Ph.D.

Email:

dochoa@espol.edu.ec

Contacts:

Tel: 042-269825

www.ctd.espol.edu.ec

8 Research Partners

24 Publications

13 Ongoing projects

20% Publications in the Top 10% of journals according to CiteScore

63% Publications with international collaboration

Research Groups by Priority Area

GROUP	PRIORITY AREA									
	Supply chain and logistics	Digital technologies	Sustainable and innovative industry	Economic development	Agriculture, aquaculture, and processing operations	Environment, climate, and disaster risk reduction	Health, welfare, and human development	Education and communication	Energy efficiency, renewable and alternative energies	Basic science development
Big Data										
Bioeconomy										
Algal Bioproducts (BPA)										
Agribusiness Value Chains										
Materials Science and Engineering										
Aquaculture and Fisheries Sciences										
Actuarial Sciences										
Visual Culture, Communication and Decoloniality (CUVICODE)										
Ecology and Assessment of Aquatic Systems										
Energy Efficiency and Renewable Energy of Guayaquil (ENERGY)										
Entrepreneurship, Innovation and SMEs										
Chemical and Biological Study of Bioproducts (ESQUIBIO 2)										
Radiation Physics										
Geosciences										
Geo-Resources and Applications (GIGA)										
Geostructural Sustainable Materials & Innovation Team (GeoSMIT)										
Innovation, Management, Marketing and Knowledge Economy Research (I2Maker)										
Educational Technology and Animation Production for Children (ETAP)										
Industrial Automation and Control Research Group (GIACI)										
Bioengineering Research Group										
Mobile Communications Research Group (GICOM)										
International Taxation and Development Research Group (GIFID)										
Environmental and Human Toxicology Research Group										
Coastal and Marine Tourism and Sustainable Development Research Group										
EcoWatersheds Group										
Marine and Coastal Geosciences Group (GEMAC)										
IDEAL – Food Research and Development										
Sustainable Engineering										
Innovation in Construction Materials										
Technology Integration										
Artificial Intelligence										
Electrical Systems Research (GISE)										
Biodegradable Packaging Research (BIOEM)										
Marketing Analytics Research										
Business Processes and Software										
Applications										
Data Networks and Technological Infrastructure ReDIT										
Sustainable Environmental Remediation (RAS)										

Academic Units

Faculty of
Art, Design, and Audiovisual Communication

Contributes to the integral development of Ecuador through the fields of visual arts, design, and audiovisual communication, which respond to the needs of the artistic and productive sectors of the community.

Dean:
Nayeth Solórzano Alcívar, Ph. D.
Email:
nsolorza@espol.edu.ec
Contacts:
Tel: 043-708250, ext. 2296
X: @FadcomEspol
www.fadcom.espol.edu.ec

9 Professors with research load

21 Ongoing projects (2024)

7 Publications (2024)

25% Publications with international collaboration

2 Intellectual Property Registration

16.7% Publications in the Top 10% of journals according to CiteScore

Faculty of Natural Sciences and Mathematics

Promotes research, links with society, and contributes to the scientific and technological training of future professionals with high academic standards in natural sciences and mathematics, in a transversal way for the whole institution. And, in particular, for our careers and programs in Statistics, Logistics and Transportation, Chemical Engineering, and Mathematics, training grounded in ethical principles, educational innovation strategies, and sustainable development.

Dean:
Erwin Delgado Bravo, Ph. D.
Email:
edelgado@espol.edu.ec
Contacts:
Tel: 042-269269, ext. 1500
X: @FCNM_Espol
www.fcnm.espol.edu.ec

57
Professors with research load

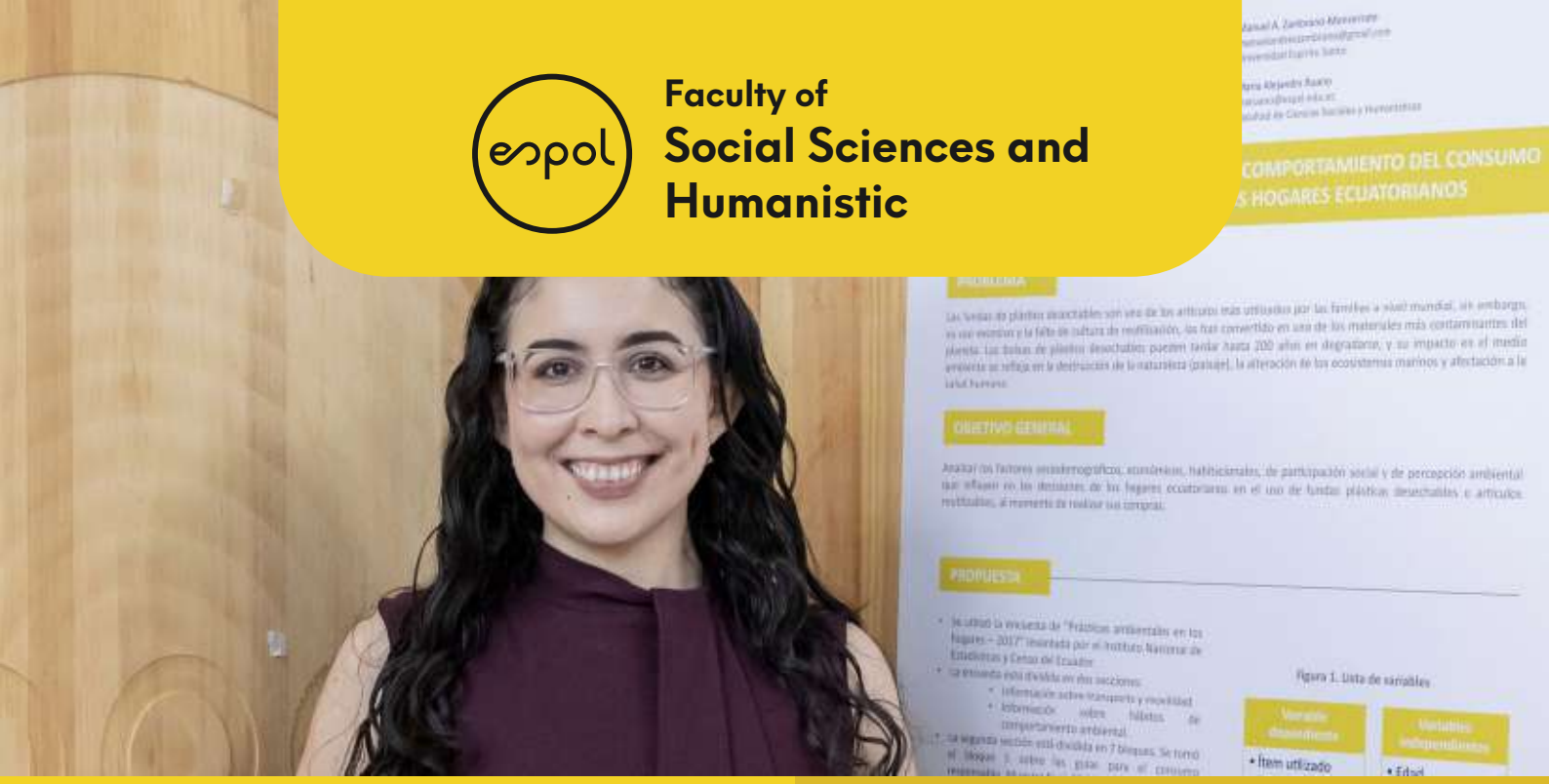
101
Publications (2024)

62.6%
Publications with international collaboration

25%
Publications in the Top 10% of journals according to

85
Ongoing projects (2024)

Faculty of Social Sciences and Humanistic



Cooperate with society to improve the quality of life and promote sustainable and equitable development, through comprehensive and competent professional training, research, and innovation in the fields of social sciences and humanities.

Dean:
Carla Ricaurte Quijano, Ph. D.
Email:
cricaurt@espol.edu.ec
Contacts:
Tel: 042-269269, ext. 1061
X: @FCSHESPOL
www.fcsh.espol.edu.ec

41
Professors with research load

72
Publications (2024)

71.1%
Publications with international collaboration

21.9%
Publications in the Top 10% of journals according to CiteScore

83
Ongoing projects (2024)

Faculty of Life Sciences

Develops basic and applied research and contributes to the training of undergraduate and postgraduate human talent in areas related to life sciences such as health, human nutrition and dietetics, biodiversity, biotechnology, environment, agriculture, and agricultural development.

Dean:
María Jiménez Feijoó, Ph. D.
Email:
mjimene@espol.edu.ec
Contacts:
Tel: 042-269269, ext. 1614
X: @fcvespol
www.fcv.espol.edu.ec

36 Professors with research load

63 Publications (2024)

70.8% Publications with international collaboration

18.8% Publications in the Top 10% of journals according to

93 Ongoing projects (2024)

1 Intellectual Property Registration

Faculty of Engineering in Earth Sciences

Generates, adapts, and transfers knowledge to society related to oil, mining, geological, and civil works activities through research and innovation.

Dean:
Paúl Carrión, Ph. D.
Email:
pcarrion@espol.edu.ec
Contacts:
Tel: 042-269269, ext. 1401
X: @FictESPOL
www.fict.espol.edu.ec

22
Professors with research load

78
Publications (2024)

69.4%
Publications with international collaboration

14.3%
Publications in the Top 10% of journals according to CiteScore

50
Ongoing projects (2024)

Faculty of Electricity and Computing

It develops knowledge in the fields of electrical engineering, electronics and automation, telecommunications, telematics, and computer sciences for the integral development of Ecuador.

Dean:
Jorge Aragundi Rodríguez, Ph. D.
Email:
jaragund@espol.edu.ec
Contacts:
Tel: 042-269269, ext. 1802
X: @espol_fiec
www.fiec.espol.edu.ec

65 Professors with research load

132 Publications (2024)

66.5% Publications with international collaboration

29.3% Publications in the Top 10% of journals according to CiteScore

102 Ongoing projects (2024)

2 Intellectual Property Registration

Faculty of Maritime Engineering and Marine Sciences

It cooperates with society to improve the quality of life and promote sustainable and equitable development through comprehensive, competent professional training, research, and innovation in the fields of maritime engineering and marine sciences.

Dean:
Alejandro Chanabá Ruiz, M. Sc.
Email:
achanaba@espol.edu.ec
Contacts:
Tel: 042-269269, ext. 1454
X: @fimcmespol
www.fimcm.espol.edu.ec

18
Professors with research load

31
Publications (2024)

68.8%
Publications with international collaboration

26.7%
Publications in the Top 10% of journals according to CiteScore

27
Ongoing projects (2024)

Faculty of Mechanical Engineering and Science Production

It trains professionals in undergraduate degrees in Mechanical, Industrial, Mechatronics, Materials, and Food Engineering, emphasizing academic excellence, a solid foundation in the basic sciences, and a curriculum that promotes comprehensive training and an entrepreneurial spirit among its students.

Its main activities focus on teaching excellence, applied research, and the provision of services to meet the requirements of the state and private productive sectors in the aforementioned areas.

Dean:
Rómulo Salazar González, Ph. D.
Email:
rvsalaza@espol.edu.ec
Contacts:
Tel: 042-269269, ext. 1294
X: @espolfimcp
www.fimcp.espol.edu.ec

53 Professors with research load

99 Publications (2024)

57% Publications with international collaboration

25% Publications in the Top 10% of journals according to CiteScore

104 Ongoing projects (2024)

1 Intellectual Property Registration

ESPAE
Escuela de Negocios
espol

It contributes to the generation and dissemination of knowledge together with the business community through Master's programs, and additionally with research and development in the areas of i) entrepreneurship and innovation, ii) administration, iii) sustainability, and iv) value chains in agribusiness.

Dean:
María Luisa Granda Kuffó, Ph. D
Email:
mgranda@espol.edu.ec
Contacts:
Tel: 042-081013, 042- 081014, ext: 135
X: @espae
www.espae.edu.ec

10 Research Partners

10 Publications (2024)

11 Ongoing projects (2024)

50% Publications in the Top 10% of journals according to CiteScore

66.7% Publications with international collaboration

ESPOL Research Postgraduate Programs

Research Master's and Doctoral Programs by Faculty

Faculty of Natural Sciences and Mathematics

Masters:
- Engineering Sciences for Water Resource Management
- Physics
- Chemical Engineering

Faculty of Electricity and Computing

Masters:
- Computer Sciences

Doctorates:
- Applied Computer Sciences
- Electrical Engineering

Faculty of Art, Design y Audiovisual Comunication

Masters:
- Art and Technology

Faculty of Ingeniería Marítima y Ciencias del Mar

Masters:
- Marine Sciences

Faculty of Social Sciences and Humanistic

Masters:
- Rural Development
- Economic Sciences

Faculty of Engineering in Earth Sciences

Masters:
- Earth Sciences

Faculty of Life Sciences

Masters:
- Applied Biosciences

Faculty of Mechanical Engineering and Science Production

Masters:
- Food Science
- Mechanical Engineering Science
- Materials and Engineering Science
- Science in industrial engineering systems

Doctorates:
- Engineering

Internal funds for research

AgroConexión Funds: Joining forces between Academia and Agribusiness

Fondos AgroConexión

Uniendo Fuerzas entre la Academia y la Agroindustria

The AgroConexión Funds are an initiative promoted by ESPOL and the Inter-American Development Bank (IDB), managed by the Dean of Research within the framework of the IDB-ESPOL Program "Strengthening the Innovation Ecosystem of the Ecuadorian Coast."

These funds aim to promote the creation of knowledge and innovative solutions that address local and global challenges, driving economic growth by financing scientific research and experimental development (R&D) projects, thereby contributing to innovation in key sectors such as agribusiness, aquaculture, and related areas.

Objectives

General objective

Promote scientific and technological development along the Ecuadorian coastline by financing scientific research and experimental development (R&D) projects, in accordance with program EC-L1261, "Strengthening the Innovation Ecosystem of the Ecuadorian Coastline," financed by the IDB and its project operation framework (MOP).

Specific objectives

a) Promote links and collaboration between ESPOL and public and private institutions that conduct R&D in the country, with users and beneficiaries of the results.

b) Finance the implementation of R&D projects whose results are aimed at obtaining new or improved products, scientific articles, processes, or services to solve problems on the Ecuadorian coast related to agribusiness and aquaculture, including agroforestry, food, and fishing, provided that they are related to ESPOL's priority lines of research and collaboration.

c) Develop greater and better scientific and technological capabilities through the promotion of research and development (R&D) activities that benefit researchers at ESPOL, co-executing institutions, and other social organizations, generating significant economic and social impacts for the Ecuadorian coast.

d)Contribute to the development of the Ecuadorian coast so that the results of the projects are geared towards solving problems in these localities, with social, economic, and productive impacts, and that take advantage of regional capacities and resources, as well as their resilience to climate change.

Winning projects – First call for proposals

Development of a biotechnological tool for generating specialized aromas during cocoa fermentation

The project seeks to minimize inconsistency in the aromatic profile of cocoa by evaluating beneficial microorganisms in the CIBE strain bank and identifying bacteria and yeasts that consistently produce specialized aromas, such as fruity notes of banana and pear or floral notes of roses, which are highly prized in the chocolate market. To this end, the aroma-generating potential of these microorganisms will be evaluated, and a microbial formulation will be developed to improve specialized aromas during the fermentation of National cocoa.

Director: Juan Manuel Cevallos Cevallos, Ph.D.
Company: Compañía Exportadora de Cacao de Aroma y Orgánico CECAO S.A.

New RNAi-based biofungicides for the control of fungal diseases in bananas

The project seeks to develop and deploy new bio-fungicides based on RNA interference (RNAi) to sustainably control black Sigatoka and Fusarium wilt in bananas, two of the main threats to the banana industry. This project proposes using double-stranded RNA (dsRNA), which, by triggering natural gene-silencing mechanisms in pathogens, will reduce dependence on conventional fungicides. In addition, the use of porous nanoparticles will be evaluated to improve the protection and delivery of dsRNA under field conditions.

Director: Pablo Antonio Chong Aguirre, Ph.D..
Company: COMALGRO Cia. Ltda.

Development of a green agricultural input from essential oil distillation waste: Evaluation of its antifungal activity and mineral chelating capacity

The project focuses on the technological development of an antifungal or chelating agricultural bio-input from essential oil distillation waste, responding to the growing need for sustainable alternatives for the natural protection of tropical fruits. The proposed bio-input will make use of waste that would otherwise be discarded, providing an ecological solution to protect tropical crops, which are highly vulnerable to fungal diseases. The objectives include characterizing the residue using liquid chromatography coupled with mass spectrometry to identify metabolites responsible for antifungal and chelating activity; microencapsulating the extract to improve its stability and efficacy; evaluating the product's phytotoxicity in banana plots; and conducting a techno-economic analysis of the final prototype.

Director: Patricia Isabel Manzano Sanana, Ph.D.
Company: Chemie del Ecuador S.A.

ESPOL research initiatives in the media

Food testing initiative

Researchers at ESPOL decided to undertake their own investigation into lead control in processed foods in Ecuador, due to the lack of information and limitations at the Agency for Regulation, Control, and Sanitary Surveillance's laboratory.

Director: Eduardo Chávez, Ph.D.
Email: fchavez@espol.edu.ec

See more here

Biomaterial from fungi

A group of professors and students is promoting a sustainable, fully biodegradable biomaterial made from fungi to replace plastic, which can be used to create a wide variety of objects, such as flowerpots, bricks, furniture, and thermal insulation.

Director: Daynet Sosa, Ph.D.
Email: dasosa@espol.edu.ec

See more here

Tyres for a greener future

An ESPOL project backed by private companies is developing concrete recycled rubber particles to create a sustainable solution that not only improves pavement properties but also helps reduce CO2 emissions.

Director: Natividad García, Ph.D.
Email: nlgarcia@espol.edu.ec

See more here

Crab fishermen learn about the mangrove

Crab fishermen received training at ESPOL on biological organization levels as part of a research project that aims to monitor the natural growth of red mangrove crabs to better understand their biological cycle, with community support.

Director: Alba Calles, Ph.D.
Email: acalles@espol.edu.ec

See more here

Artificial island becomes home to mangroves

In collaboration with companies and universities in Belgium, ESPOl is developing a research project that seeks to measure the effectiveness of mangrove habitats against flooding and coastal erosion, as well as the development of a habitat through the circular reuse of dredged sediments.
Director: Andrea Reyes, Ph.D.
Email: asreyes@espol.edu.ec

See more here

An Algorithm that detects fractures

A researcher at ESPOL, in collaboration with international researchers, developed an algorithm to automate the process of detecting fractures and microfractures in digitized X-ray plates.

Director: Gabriel Helguero, Ph.D.
Email: chelguer@espol.edu.ec

See more here

ESPOL Technology transfer in numbers

50

Projects in collaboration with companies

18

Intellectual property records derived from research (OTRI):

- 5 business secrets
- 5 trademarks and slogans
- 3 industrial designs
- 3 software
- 2 literary works

Academic merit in the field of research

Academic merit in the field of research

2024

Wilmer Carvache Franco, Ph.D.

He obtained his Ph.D. in Tourism and Leisure at Rovira i Virgili University and his Master's degree at the University of Las Palmas de Gran Canaria. His research interests focus on marketing, tourism, sustainability, and innovation.

2023 - 2022

María Alejandra Ruano, M. Sc.

She received her M. Sc. In Economics at the University of Amsterdam. Her research interests revolve around the environment, particularly the economic valuation of ecosystem goods and education, with an emphasis on gender.

2021

Andrés Abad, Robalino, Ph.D

He earned his Ph.D. in Industrial and Operations Engineering from the University of Michigan. His research interests include the Deep Learning, Machine Learning, Data Science, and mathematical optimization in solving

2020

Joseph Páez Chávez, Ph.D.

He obtained his Ph.D. in mathematics at Bielefeld University. His research interests include mathematical modeling and experimental studies of real-world problems, nonlinear oscillations in mechanics, chemistry, and biology, and the modeling and control of infectious and plant diseases.

2019

Carmen Vaca Ruiz, Ph. D.

She obtained her Ph.D. in Information Engineering at the Milan Polytechnic. Her research interests include spatial data mining, machine learning, social computing, and human mobility.

2018

Xavier Ochoa Chehab, Ph. D.

He obtained his Ph.D. in Computer Science from Katholieke Universiteit Leuven (KUL), Belgium, and his Master's in Applied Computer Science from Vrije Universiteit Brussel (VUB), Belgium. He is the vice president of the Society for Learning Analytics Research (SoLAR) and an associate editor of the IEEE Transactions on Learning Technologies.

Academic merit in the field of research

2017

Francisco Novillo Parales, Ph. D.

He obtained his Ph.D. in Signal Theory and Communications and his Master's in Mobile Communications from the Polytechnic University of Catalonia.

2017

Rafael Bermúdez Monsalve, Ph. D.

He obtained his Ph.D. (Magna Cum Laude) and his Master of Science degree, specializing in Biological Oceanography at the GEOMAR Helmholtz Centre for Ocean Research in Kiel, Germany. He is the director of the Plankton Laboratory of ESPOL and coordinator of the Galapagos Marine Research and Exploration Program (GMaRE).

2016

Fabiola Cornejo Zúñiga, Ph. D.

She obtained her Ph.D. (Magna Cum Laude) from the University of Valencia, Spain, and her Master of Food Science from the University of Massachusetts, USA. She is the coordinator of the ESPOL Master of Food Sciences. She is the current general coordinator of the Cereal Research Network and a member of the Ecuadorian Society of Food Technology and the Institute of Food Technology (ITF).

Internal recognition for research carried out at ESPOL

Since 2020, the "Cuartiles Mayores" has been held annually, organized by the ESPOL's Dean's Office for Research. The event seeks to celebrate research and aims to recognize outstanding work in scientific research by professors, academic units, and research centers.

In April 2020, the first edition was held, beginning the tradition of celebrating and rewarding the achievements of the polytechnic community through the presentation of Digital Insignias. Outstanding researchers were recognized in QS areas and sub-areas; in competitive and non-reimbursable fundraising for demand-oriented research; in innovative research; and in international research collaborations. Academic Units and Institutional Research Centers were also recognized for their achievements.

In the second and third editions of Quartiles Mayores, held in November 2021 and 2022, respectively, the research work of undergraduate and graduate students from ESPOL was also recognized with gold, silver, and bronze digital badges.

Students who passed Research Courses I and II with a grade of at least 80% in the evaluation year were also recognized. In the fourth edition, held in December 2023, the Research Centers attached to Academic Units were also recognized for their achievements.

At the fifth edition, held in November 2024, researchers who published in sources ranked in the top 1% by CiteScore were recognized, as were the best support staff in the field of research.

See acknowledgments

Recognition of the Academic Units

2024

Faculty of Mechanical Engineering and Science Production	Academic Unit with intellectual property with the greatest potential impact
Faculty of Life Sciences	Academic Unit with the largest amount of non-reimbursable competitive funds for research Unit with the largest amount of demand-driven research funds
Faculty of Engineering in Earth	Academic Unit with the highest scientific productivity per researcher
Faculty of Electric Engineering and Computing	Academic Unit with the greatest corporate collaboration in its scientific publication
ESPAE	Academic Unit with the highest Field Weighted Citation Impact

2023

Faculty of Engineering in Earth	Academic Unit with the highest scientific productivity per researcher Academic Unit with the highest Field Weighted Citation Impact
Faculty of Social Sciences and Humanistic	Academic Unit with the highest amount of competitive research funding secured Academic Unit with intellectual property with the greatest potential impact
Faculty of Mechanical Engineering and Science Production	Academic Unit with the greatest international collaboration in its publication
Faculty of Electric Engineering and Computing	Academic Unit with greater corporate collaboration in its scientific publications Academic Unit with the highest amount of funds raised by on-demand research Academic Unit with the greatest potential impact of intellectual property

Recognition of the Academic Units

2022

Faculty of Art, Design and Audiovisual Communication	Academic Unit with the highest scientific productivity per researcher
Faculty of Maritime Engineering and Marine Sciences	Academic Unit with the highest amount of funds available for research
Faculty of Mechanical Engineering and Science Production	Academic Unit with the highest Field Weighted Citation Impact
ESPAE	Academic Unit with the greatest international collaboration in its publication
Faculty of Electric Engineering and computing	Academic Unit with the greatest corporate collaboration in its scientific publication
Faculty of Life Sciences	Unit with the largest amount of demand-driven research funds

2021

Faculty of Engineering in Earth	Academic Unit with the highest scientific productivity per researcher
Faculty of Maritime Engineering and Marine Sciences	Academic Unit with the greatest international collaboration in its publication
Faculty of Electric Engineering and computing	Academic Unit with the greatest corporate collaboration in its scientific publication
Faculty of Social Sciences and Humanistic	Academic Unit with the highest Field Weighted Citation Impact
Faculty of Life Sciences	Academic Unit with the highest amount of funds raised for demand-driven research Academic Unit with the highest amount of competitive research funds raised

Recognition of the Academic Units

2020	
Faculty of Art, Design and Audiovisual Communication	Academic Unit with the highest scientific productivity per researcher
Faculty of Maritime Engineering and Marine Sciences	Academic Unit with the highest Field Weighted Citation Impact
Faculty of Mechanical Engineering and Science Production	Academic Unit with the highest scientific productivity per researcher Recognition for technology transfer efforts
Faculty of Life Sciences	Academic Unit with the highest amount of funds collected by research on demand
Faculty of Electric Engineering and computing	Unit with the highest number of competitive funds for research Unit with the greatest corporate collaboration in its publications Recognition for efforts in technology transfer Recognition for efforts in the registration of intellectual property derived from research and development

Recognition to the research centers

2024	**Center of Information Technologies (CTI)**	Research center with the highest Field Weighted Citation Impact
		Institutional research center with the
	Center of Research and Applied Projects in Earth Sciences (CIPAT)	Research center with the highest scientific productivity per researcher
		Institutional Research Center with the highest amount of research funding on demand
	Biotechnology Research Center of Ecuador (CIBE)	Institutional research center with the highest amount of non-reimbursable research funds raised
		Institutional Research Center with intellectual property with the greatest potential impact
	Center for Economic Research (CIEC)	Research center with the highest Field Weighted Citation Impact
		Institutional Research Center with the highest amount of research funding on demand
	Center for Rural Research (CIR)	Affiliated research center with the largest amount of non-reimbursable competitive funds for research
	Center for Industrial Digital Transformation (CTD)	Research center with the highest scientific productivity per researcher
		Research Center with the greatest international collaboration in its publications

2023	**Center of Research and Applied Projects in Earth Sciences (CIPAT)**	Research center with the highest scientific productivity per researcher
		Research center with the highest Field Weighted Citation Impact
	Center of Information Technologies (CTI)	Institutional Research Center with the largest amount of funding raised for demand-oriented research

2023	**Center for Research, Development, and Innovation in Computer Systems (CIDIS)**	Institutional research center with the greatest corporate collaboration in its publication
	Center for Research and Development in Nanotechnology (CIDNA)	Academic Unit with the greatest international collaboration in its publication
	Technology Development Center (CDTS)	Research Center affiliated with the Academic Unit with the Highest Scientific Productivity
	Center for Economic Research (CIEC)	Research center affiliated with the academic Unit with the highest level of international collaboration in its publications
	Center for Rural Research (CIR)	Academic Unit with the largest amount of non-reimbursable competitive funds for research
		Research center with the highest Field Weighted Citation Impact
2022	**Center of Research and Applied Projects in Earth Sciences (CIPAT)**	Research center with the highest scientific productivity per researcher
	Center of Renewable and Alternative Energies (CERA)	Research center with the highest Field Weighted Citation Impact
	Biotechnology Research Center of Ecuador (CIBE)	Academic center with the largest amount of non-reimbursable competitive funds for research
		Institutional Research Center with the highest amount of funding raised for research on demand
		Academic center with the greatest corporate collaboration in its scientific publication
	Renewable and Alternative Energies (CERA) and Center for Water and Sustainable Development (CADS)	Academic center with the greatest international collaboration in its publications
	NNational Center of Aquaculture and Marine Research (CENAIM)	Unit with intellectual property of the greatest potential

2021	**Center for Research, Development, and Innovation in Computer Systems(CIDIS)**	Research center with the highest Field Weighted Citation Impact
	National Center of Aquaculture and Marine Research (CENAIM)	Institutional research center with the highest amount of non-reimbursable research funds raised
		Institutional Research Center with the highest amount of research funding on demand
	Center of Renewable and Alternative Energies (CERA)	Academic center with the greatest international collaboration in its publications
		Research center with the highest scientific productivity per researcher
	Center of Information Technologies (CTI)	Academic center with the greatest international collaboration in its publications

2020	**Center of Renewable and Alternative Energies (CERA)**	Research center with the highest scientific productivity per researcher
	Center of Research and Applied Projects in Earth Sciences (CIPAT)	Research center with the highest Field Weighted Citation Impact
	Center for Water and Sustainable Development (CADS)	Academic center with the greatest international collaboration in its publications
	Biotechnology Research Center of Ecuador (CIBE)	Recognition to the Institutional Research Center for its efforts to register intellectual property derived from research and development
		Institutional research center with the largest amount of non-reimbursable funds for research
	Center for Research, Development, and Innovation in Computer Systems (CIDIS)	Recognition to the Institutional Research Center for its efforts to register intellectual property derived from research and development
		Recognition for efforts in technology transfer

International recognition

Stanford University published a list of the world's most cited researchers, and Ángel Sappa, professor at the Faculty of Electrical and Computer Engineering (FIEC) and researcher at the Center for Research, Development, and Innovation in Computer Systems (CIDIS), stands out in this prestigious ranking.

Every year, the American university compiles a ranking that distinguishes between researchers who obtained the most citations during the previous year and those who have achieved the most citations throughout their careers. Dr. Ángel Sappa appears in the two most recent editions of this ranking, corresponding to 2023 and 2024.

This distinction recognizes the 20 years that the researcher has devoted to investigating the treatment of multispectral graphics, thermal image processing, and 3D image modeling.

In addition, he has also carried out projects in the agricultural and industrial fields, focusing on pattern recognition, thus making him a leading figure in this field.

More information

Events Organized by the Dean's Office for Research

Pares o Nones

This event provides researchers with the opportunity to interact with colleagues from ESPOL in an informal and enriching way, learning more about the research being carried out in other academic units and research centers through posters organized by different areas of knowledge, which allow them to demonstrate their impact in the academic and technological fields.

In the 2024 edition, 75 posters were presented, and 110 researchers participated.

More information

Sembrando ideas

These are a series of talks for the polytechnic community, featuring presentations on various research topics. This forum provides an opportunity for guest professors to present their research findings and to disseminate and exchange ideas with attendees.

In 2024, five episodes of "Sembrando Ideas" were held, covering the following topics:

Applied Artificial Intelligence
Speakers:

- Ángel Domingo Sapa, Ph.D. – FIEC / CIDIS
- José Córdova García, Ph.D. – FIEC / CTD
- Christian Tutivén Gálvez, Ph.D. – FIMCP

Watch recording

Energy Vectors of the Future: Hydrogen and Ammonia
Speakers:

- Christopher Varela Barreno, Ph.D. – FCNM / CERA
- Andrea Boero Vera, M.Sc. – FIMCP
- Mayker Espinoza Andaluz, Ph.D. – FIMCP / CERA

Watch recording

Bioprospección y Biomateriales: Oportunidades para l a Bioeconomía en el Ecuador
Speakers:

- Daynet Sosa Del Castillo, Ph.D. – FCV / CIBE
- Paúl Guillén Mena, Ph.D. – FCNM / CENAIM
- Patricia Manzano Santana, Ph.D. – FCV / CIBE

Watch recording

Sembrando ideas

Education and Development: Artificial Intelligence, Collaboration, and Financial Culture Speakers:

- Katherine Chiluiza García, Ph.D. – FIEC / CTI
- Margarita Ortiz Rojas, Ph.D. – CISE / CTI
- Mariela Méndez Prado, Ph.D. – FCSH

Watch recording

Navigating the Future of Tourism: Women's Empowerment, Social Innovation, and Digital Perceptions
Speakers:

- Wilmer Carvache Franco, Ph.D. – FCSH
- Carla Ricaurte Quijano, Ph.D. – FCSH
- Mathias Pecot, Ph.D. – FCSH

Watch recording

Contacts:
ESPOL
Campus Gustavo Galindo Velasco
Km. 30.5 Vía Perimetral
P.O. Box: 09-01-5863
Fax: (593-4) 2 854629
Switchboard: (593-4) 3708 000 - (593-4) 2269 269
www.espol.edu.ec

X: @espol
Facebook: @espol
Instagram: @espol1

Dean's Office for Research
Campus Gustavo Galindo Velasco
Km. 30.5 Via Perimetral
"STEM" building ground floor
Fax: (593-4) 2 269304
Email: dec_investigacion@espol.edu.ec
www.espol.edu.ec/es/investigacion

X: @DEC_INV_ESPOL
Instagram: @dec_inv_espol

espol® Dean´s Office for Research