

# Postgraduate Certificate Health Sciences Research



## Postgraduate Certificate Health Sciences Research

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/information-technology/postgraduate-certificate/health-scienses-research](http://www.techtute.com/us/information-technology/postgraduate-certificate/health-scienses-research)

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# 01

# Introduction

Health Sciences in its wide range of specialties are related to technological development. This is because it is increasingly common to find management, analysis and control tools related to the IT sector in the health care field, but which have been adapted to the needs of professionals in this area (for diagnosis, for treatment or for the management of certain clinical issues). It is, moreover, a field in continuous expansion, in which the limits of its growth have not yet been established. For this reason, having a program specialized in Health Sciences research is a significant asset that will undoubtedly open the doors to a career path with multiple opportunities and with ample possibilities of achieving professional success.





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*Specialize in the field of research in Health Sciences and implement to your skills the management of the most complex and effective tools in the health informatics field with this Postgraduate Certificate”*

The inclusion of technology in the field of Health Sciences is becoming more and more frequent, especially in the area of research. This is an area that increasingly demands the presence of computer scientists specialized in the use of the main tools for the search, management and analysis of databases, which has led to the opening of a wide range of opportunities for these professionals.

Based on this, TECH has considered it necessary to develop a program that allows them, in a 100% online way, to know in detail the advances that have been made in this field. As a consequence, this Postgraduate Certificate in Health Sciences Research arises, a dynamic, innovative and multidisciplinary program with which the graduate will acquire specialized knowledge about the resources and materials that must be mastered to participate in a study project. Through 180 hours of diverse content, the computer scientist will be able to delve into the handling of more than 20 different databases, search engines and platforms, as well as the control of current legislation. Additionally, they will work on aspects such as public communication and project financing, so that they can assume the leadership of any syllabus with guaranteed success.

In this way, they will be specializing in an area with great expectations for the future, in which they will find an infallible job opportunity. TECH will provide them with all the material they need to achieve even their most ambitious goals, from the best syllabus, to diverse content to delve in a personalized way in the different aspects of the same. All this through an academic experience without schedules or classes, and which can be accessed from any device with Internet connection, without limits, without stress and with the endorsement of one of the largest and best faculties of Computer Science in the world.

This **Postgraduate Certificate in Health Sciences Research** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ Case studies presented by experts in Health Sciences Research
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*A 100% online academic experience that will enable you to develop research projects in different health areas through the most sophisticated informatics strategies"*

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*You will have access to the Virtual Campus 24 hours a day throughout the week, without limit and through any device with Internet connection”*

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

The design of this program focuses on Problem-Based Learning, in which the professional will have to try to solve the different professional practice situations that will arise throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

*Would you like to expand your list of scientific resources for bibliographic search in research? This Postgraduate Certificate will provide you with more than 10 tools to achieve it.*

*You will work extensively on the management of WOS and JCR, with special emphasis on the recommendations for their use in each case.*



# 02 Objectives

The development of this Postgraduate Certificate has been carried out with the aim that the graduate who accesses it can acquire specialized knowledge on the methods and techniques of research in the field of Health Sciences. To this end, they will have 180 hours of the best theoretical, practical and additional content. Additionally, another of TECH's goals with its programs is to allow students to improve their professional skills, something that is guaranteed to be achieved with the course of this academic experience.





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*Are you looking for a program that works in depth on today's most effective search engines and platforms? Choose this Postgraduate Certificate and you will acquire the most specialized knowledge possible"*



## General Objectives

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- ◆ Develop key concepts of medicine that serve as a vehicle to understand clinical medicine
- ◆ Examine the ethical and best practice principles governing the different types of research in health sciences
- ◆ Identify the real clinical applications of the various techniques
- ◆ Provide the necessary resources to practically apply all the concepts in the modules
- ◆ Determine the importance of medical databases
- ◆ Determine the different types and applications of telemedicine
- ◆ Delve into the most common ethical aspects and regulatory frameworks of telemedicine
- ◆ Analyze the use of medical devices
- ◆ Collect e-Health success stories and mistakes to avoid

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*A program designed for you to achieve even your most ambitious academic objectives and, therefore, the career goals you have always pursued”*





## Specific Objectives

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- ◆ Examine the fundamentals of medical imaging technologies
- ◆ Develop expertise in radiology, clinical applications and physical fundamentals
- ◆ Analyze ultrasound, clinical applications and physical fundamentals
- ◆ Delve into tomography, computed and emission tomography, clinical applications and physical fundamentals
- ◆ Determine how to manage magnetic resonance imaging, clinical applications and physical fundamentals
- ◆ Generate advanced knowledge of nuclear medicine, differences between PET and SPECT, clinical applications and physical fundamentals
- ◆ Discriminate noise in the image, reasons for it and image processing techniques to reduce it
- ◆ Present image segmentation technologies and explain their usefulness
- ◆ Gain a deeper understanding of the direct relationship between surgical interventions and imaging techniques
- ◆ Establish the possibilities offered by artificial intelligence in recognizing patterns in medical images, and thus deepen innovation in the field

03

# Course Management

In its commitment to offer the best academic experiences, TECH has selected for this Postgraduate Certificate a faculty specialized in bioinformatics and biomedical engineering. This is a team of professionals with a wide and extensive experience in the direction and management of research projects in the field of Health Sciences, so they know in detail its intricacies, as well as the most effective strategies to obtain the best possible results. All this will be reflected in the syllabus which, of course, has been designed by themselves.



A close-up photograph of a white microcentrifuge. The rotor is visible, holding several small, clear plastic vials with blue caps. The background is blurred, showing the interior of the centrifuge. The image is partially obscured by a teal and white geometric overlay.

“

*The teaching team has selected case studies based on real situations, so that you can work actively and dynamically on perfecting your professional skills"*

## Management



### Ms. Sirera Pérez, Ángela

- Biomedical Engineer Expert in Nuclear Medicine and Exoskeleton Design
- Designer of specific parts for 3D printing at Technadi
- Technician of the Nuclear Medicine Area of the University Clinic of Navarra
- Degree in Biomedical Engineering from the University of Navarra
- MBA and Leadership in Health care and Medical Technology Companies

## Professors

### D. Beceiro Cillero, Iñaki

- ♦ Biomedical Researcher
- ♦ Collaborating Researcher at AMBIOSOL Group
- ♦ Master's Degree in Biomedical Research
- ♦ Degree in Biology by the University of Santiago de Compostela



# 04

## Structure and Content

In its commitment to offer the best academic experiences, TECH has selected for this Postgraduate Certificate a faculty specialized in bioinformatics and biomedical engineering. This is a team of professionals with a wide and extensive experience in the direction and management of research projects in the field of Health Sciences, so they know in detail its intricacies, as well as the most effective strategies to obtain the best possible results. All this will be reflected in the syllabus which, of course, has been designed by themselves.





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*The teaching team has selected case studies based on real situations, so that you can work actively and dynamically on perfecting your professional skills"*

## Module 1. Research in Health Sciences

- 1.1. Scientific Research I. The Scientific Method
  - 1.1.1. Scientific Research
  - 1.1.2. Research in Health Sciences
  - 1.1.3. The Scientific Method
- 1.2. Scientific Research II. Typology
  - 1.2.1. Basic Research
  - 1.2.2. Clinical Research
  - 1.2.3. Translational Research
- 1.3. Evidence-Based Medicine
  - 1.3.1. Evidence-Based Medicine
  - 1.3.2. Principles of Evidence-Based Medicine
  - 1.3.3. Methodology of Evidence-Based Medicine
- 1.4. Ethics and Legislation in Scientific Research. Declaration of Helsinki
  - 1.4.1. The Ethics Committee
  - 1.4.2. Declaration of Helsinki
  - 1.4.3. Ethics in Health Sciences
- 1.5. Scientific Research Results
  - 1.5.1. Methods
  - 1.5.2. Rigor and Statistical Power
  - 1.5.3. Scientific Results Validity
- 1.6. Public Communication
  - 1.6.1. Scientific Societies
  - 1.6.2. Scientific Conferences
  - 1.6.3. Communication Structures
- 1.7. Funding in Scientific Research
  - 1.7.1. Structure in Scientific Projects
  - 1.7.2. Public Financing
  - 1.7.3. Private and Industrial Funding





- 1.8. Scientific Resources in Literature Searching. Health Sciences Databases I
  - 1.8.1. PubMed-Medline
  - 1.8.2. Embase
  - 1.8.3. WOS and JCR
  - 1.8.4. Scopus and Scimago
  - 1.8.5. Micromedex
  - 1.8.6. MEDES
  - 1.8.7. IBECs
  - 1.8.8. LILACS
  - 1.8.9. BDNF
  - 1.8.10. Cuidatge
  - 1.8.11. CINAHL
  - 1.8.12. Cuiden Plus
  - 1.8.13. Enfispo
  - 1.8.14. NCBI (OMIM, TOXNET) and NIH (National Cancer Institute) Databases
- 1.9. Scientific Resources in Literature Searching. Health Sciences Databases II
  - 1.9.1. NARIC - Rehabdata
  - 1.9.2. PEDro
  - 1.9.3. ASABE: Technical Library
  - 1.9.4. CAB Abstracts
  - 1.9.5. CSIC-Indexes BORRAR
  - 1.9.6. Centre for Reviews and Dissemination (CRD) Databases
  - 1.9.7. Biomed Central BMC
  - 1.9.8. ClinicalTrials.gov
  - 1.9.9. Clinical Trials Register
  - 1.9.10. DOAJ- Directory of Open Access Journals
  - 1.9.11. PROSPERO (Registro Internacional Prospectivo de Revisiones Sistemáticas)
  - 1.9.12. TRIP
  - 1.9.13. LILACS

- 1.9.14. NIH. Medical Library
- 1.9.15. Medline Plus
- 1.9.16. OPS
- 1.10. Scientific Resources in Literature Searching III. Search Engines and Platforms
  - 1.10.1 Search Engines and Multisearch Engines
    - 1.10.1.1. Findr
    - 1.10.1.2. Dimensions
    - 1.10.1.3. Google Scholar
    - 1.10.1.4. Microsoft Academic
  - 1.10.2. WHO International Clinical Trials Registration Platform (ICTRP)
    - 1.10.2.1. PubMed Central PMC
    - 1.10.2.1. Open Science Collector (RECOLECTA)
    - 1.10.2.2. Zenodo
  - 1.10.3. Doctoral Thesis Search Engines
    - 1.10.3.1. DART-Europe
    - 1.10.3.2. Dialnet
    - 1.10.3.3. OATD (Open Access Theses and Dissertations)
    - 1.10.3.4. TDR (Doctoral Theses Online)
    - 1.10.3.5. TESEO
  - 1.10.4. Bibliography Managers
    - 1.10.4.1. Endnote Online
    - 1.10.4.2. Mendeley
    - 1.10.4.3. Zotero
    - 1.10.4.4. Citeulike
    - 1.10.4.5. Refworks
  - 1.10.5. Digital Social Networks for Researchers
    - 1.10.5.1. Scielo
    - 1.10.5.2. Dialnet
    - 1.10.5.3. Free Medical Journals
    - 1.10.5.4. DOAJ
    - 1.10.5.5. Open Science Directory
    - 1.10.5.6. Redalyc
    - 1.10.5.7. Academia.edu
    - 1.10.5.8. Mendeley





- 1.10.5.9. ResearchGate
- 1.10.6. Social Web 2.0 Resources
  - 1.10.6.1. Delicious
  - 1.10.6.2. SlideShare
  - 1.10.6.3. YouTube.
  - 1.10.6.4. Twitter
  - 1.10.6.5. Health Science Blogs
  - 1.10.6.6. Facebook.
  - 1.10.6.7. Evernote
  - 1.10.6.8. Dropbox
  - 1.10.6.9. Google Drive
- 1.10.7. Scientific Journal Publishers and Aggregators Portals
  - 1.10.7.1. Science Direct
  - 1.10.7.2. Ovid
  - 1.10.7.3. Springer
  - 1.10.7.4. Wiley
  - 1.10.7.5. Proquest
  - 1.10.7.6. Ebsco
  - 1.10.7.7. BioMed Centrz

“ *Don't think twice and opt for a program that will elevate your talent to the top of the IT sector and will make you stand out among your peers thanks to your high degree of specialization*”

05

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

### Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“

*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”*



*You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.*



### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“

*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

*The student will learn to solve complex situations in real business environments through collaborative activities and real cases.*

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

## Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all online universities in the world.*

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



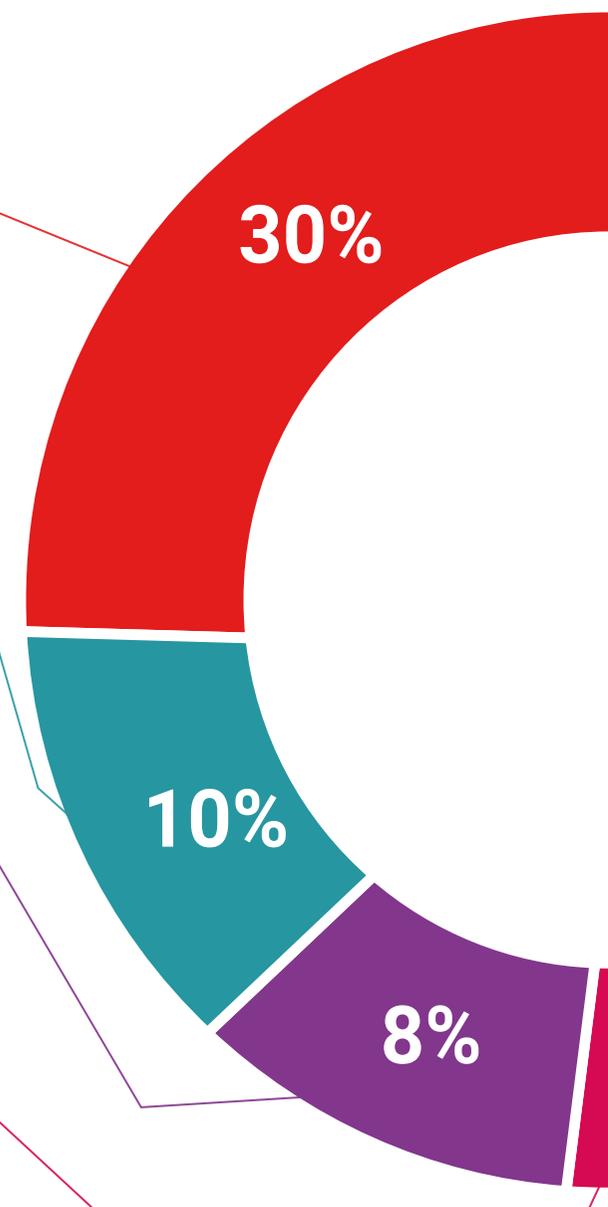
### Practising Skills and Abilities

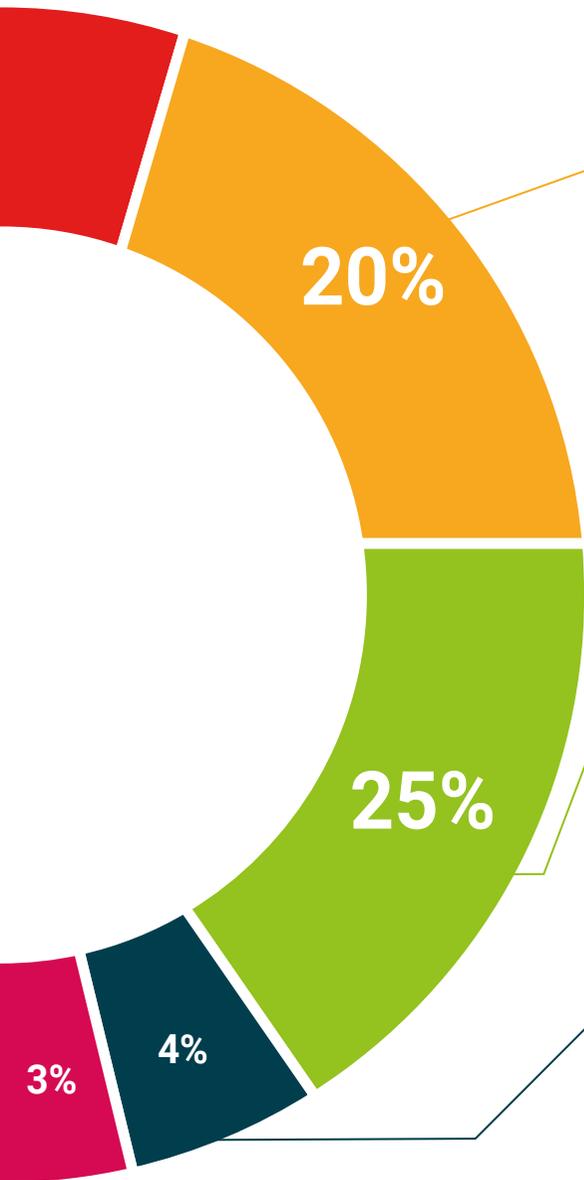
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





### Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



### Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



# 06 Certificate

The Postgraduate Certificate in Health Sciences Research guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"*

This program will allow you to obtain your **Postgraduate Certificate in Health Sciences Research** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Health Sciences Research**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service  
knowledge present quality  
development language  
classroom



## Postgraduate Certificate Health Sciences Research

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