



MINISTERIO DE CIENCIA E INNOVACIÓN



#### Web of Science - Formación organizada por FECYT

Sesión D3 – Los Highly Cited Researchers y Research Fronts

Anne Delgado 25/03/2022



#### Sesión D3 – Los Highly Cited Researchers y Research Fronts

- ¿Qué es un Research Front?
- Lo que significa ser un Highly Cited Researcher
- Nuestro programa de reconocimiento a los investigadores



#### Sesión D3 – Los Highly Cited Researchers y Research Fronts

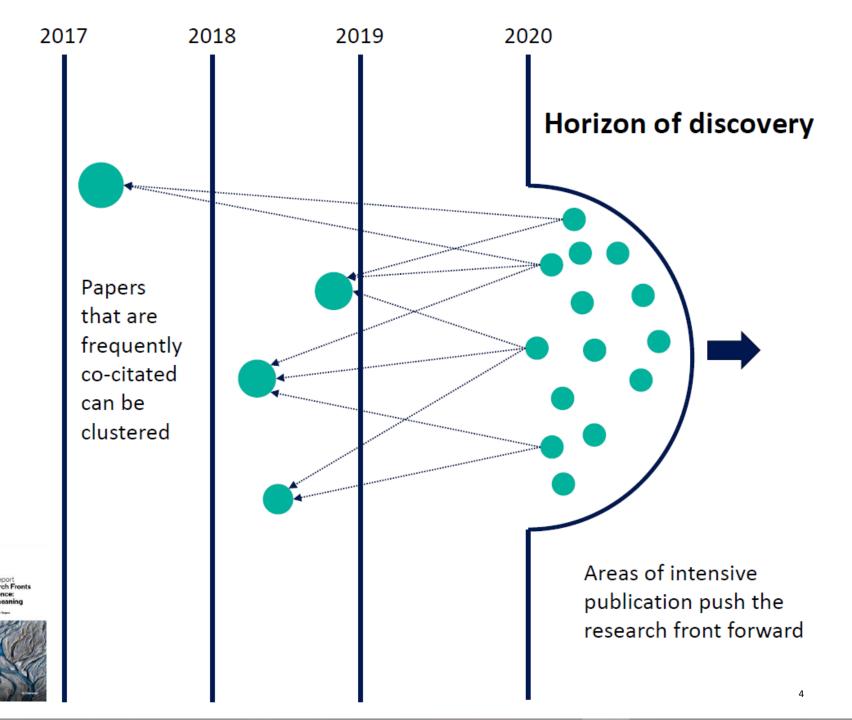
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#### **Research Fronts**

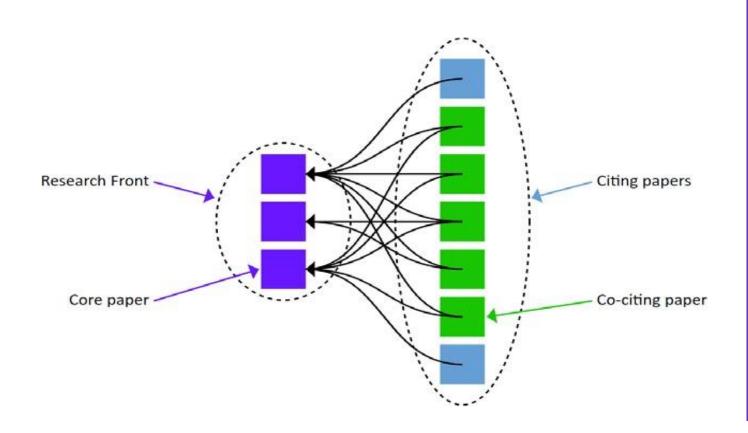
At the horizon, intensive publication activity can be detected and grouped according to the previous research that was cited (aka co-citation)

The most highly cited papers serve a landmarks, allowing us to cluster related research into Research Fronts – areas of intensive publication on the leading edge of scientific discovery





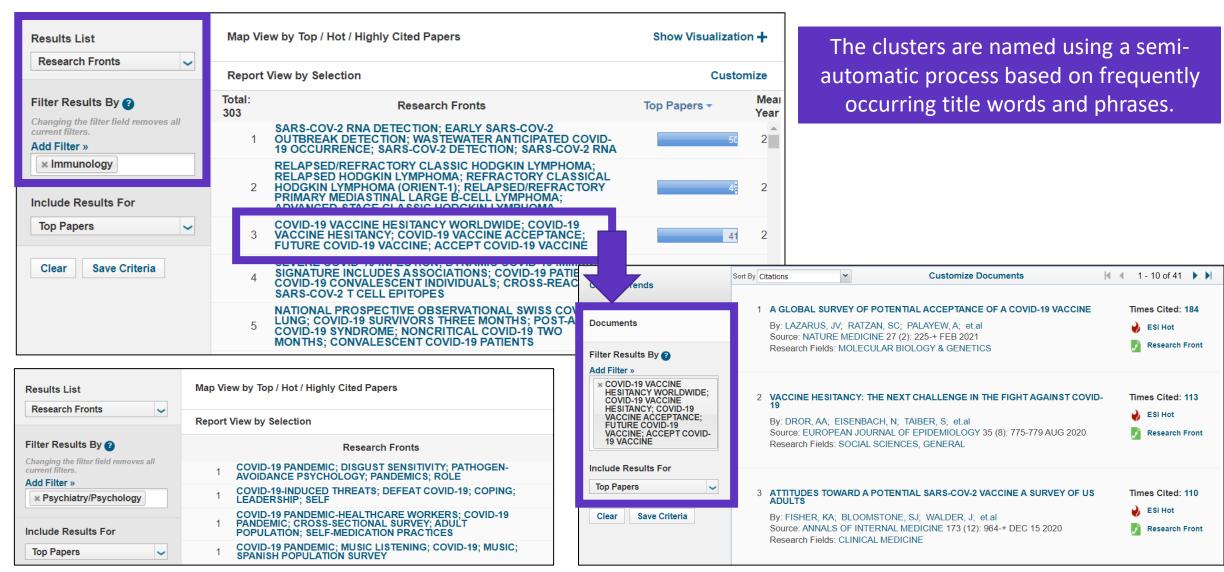
#### What is a Research Front?



- A subset of recent literature (the current year and prior five years – 2014-2019) from Essential Science Indicators (ESI) is selected for analysis.
- With clusters of highly cited papers in place, we form a set of core papers for each Research Front and attach the set of cociting papers, those that are more recent and at the leading edge.
- Field Classification: Research fronts are assigned to the 22 broad fields based on the field of the most frequently occurring journal in the front.



#### **Research Fronts in Essential Science Indicators**





#### More resources

- Clarivate and the Chinese
   Academy of Sciences
   Release Annual Joint Report
   to Identify 171 Research
   Fronts
- Find the report "Research Fronts 2021" here

## Identifying Research Fronts in the Web of Science: From Metrics to Meaning

Discover hot and emerging research areas to shape your institution's strategic direction

Research evaluators and policymakers frequently use quantitative measures based on publication and citation data as a complement to expert peer review to inform assessment and strategic decision-making. While ranks and scores have their uses, they are limited in revealing many aspects of research activity and different dimensions of contributions.

Thanks to advances in the handling and visualization of very large datasets, it is possible to see – and visit – the leading edge of scientific and scholarly research through science mapping and data visualization. This includes locating individuals, institutions, funders, and journals within this landscape and evaluating organizational participation in different areas, as well as changes over time.



Due to the volume of research published worldwide, and complexity of organizational and researcher networks, it can be challenging to identify early breakthroughs and understand the extent to which your organization is participating in the leading edge of science. In this report, we explore how you can easily track emerging research areas to help shape your institution's strategic direction. Stay ahead of the curve by using Research Front data derived from the Web of Science<sup>TM</sup> to inform and improve your research assessment.



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## **Highly Cited Researchers 2021**

November 16, 2021

Approximately 6,600 scientists are named
Highly Cited Researchers in 2021.

They have demonstrated significant influence through the publication of multiple highly cited papers within 2010-2020.



# Highly Cited Researchers 2021: How nations and institutions foster exceptional performance



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DAVID PENDLEBURY

Head of Research Analysis at the Institute for Scientific Information
Clarivate

Today we unveil our annual list of <u>Highly Cited Researchers</u><sup>™</sup>. We congratulate some 6,600 scientists and social scientists for demonstrating significant influence among their peers in their chosen field (or fields) through the publication of multiple highly cited papers during the last decade. These highly cited papers rank in the top 1% by citations for field and year from 2010 – 2020.



#### What it means to be a Highly Cited Researcher

#### **Highly Cited Researchers** https://recognition.webofscience.com/awards/highly-cited/2021/ 2021 recipients Methodology **FAQs** Recognizing the true pioneers in their fields over the last decade, demonstrated by the production of multiple highly-cited **Executive summary** papers that rank in the top 1% by citations for field and year in the Web of Science<sup>TM</sup>. Of the world's scientists and social scientists, Highly Cited Researchers truly are one in 1,000. Experts from the Institute for Scientific Resources Information™ provide exclusive insight Executive summary into the list of Highly Cited Researchers 2021, including the methodology, country, • Download archived lists of Highly Cited Researchers and institutional breakdowns, and much • Download media press kit. For other media enquires email isi@clarivate.com more. Download the report Award Categories Institution Region Clear all



#### What it means to be a Highly Cited Researcher

2021 recipients Methodology FAQs

#### Overview

#### Total of Highly Cited Papers over the past 10 years

- The Highly Cited Researchers™ list from Clarivate™ identifies scientists and social scientists who have demonstrated significant influence through publication of multiple highly cited papers during the last decade.
- Researchers are selected for their exceptional performance in one or more of 21 fields (those used in the <u>Essential</u> <u>Science Indicators™</u>, or ESI) or across several fields.
- All Highly Cited Researcher records are reviewed. Factors such as recognition of researchers with substantial influence in several fields keeps the list of Highly Cited Researchers and relevant.

  Context = 21 fields from Essential Science Indicators

  of which would detract from true community-wide research influence—may lead to an author being excluded from the list.

  Approximately 6,600 researchers are named Highly Cited Researchers in 2021—some 3,800 in specific fields and about

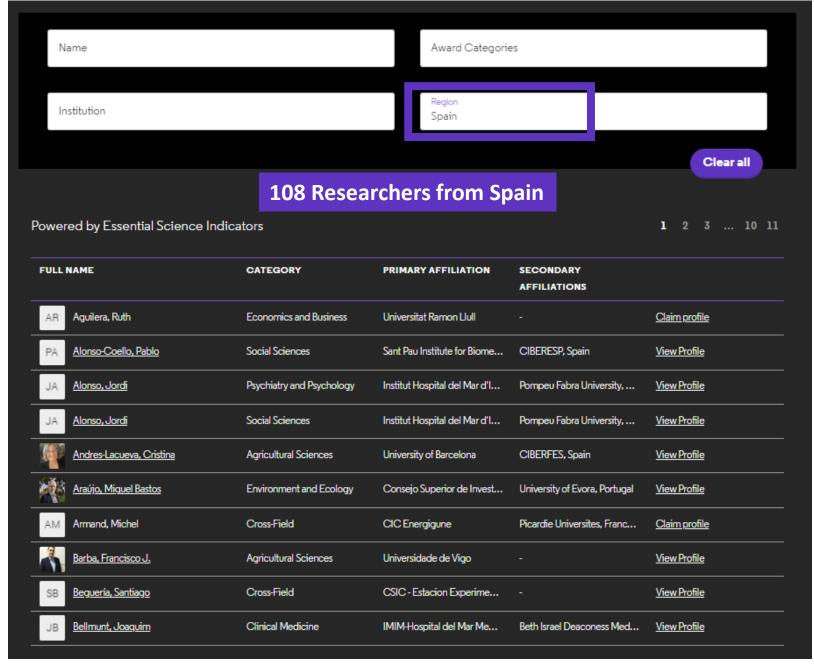
  2,800 for cross-field performance. This is the fourth year that researchers with cross-field impact are identified. The

  recognition of researchers with substantial influence in several fields keeps the list of Highly Cited Researchers

  contemporary and relevant.
- The number of researchers selected in each field is based on the square root of the population of authors listed on the field's highly cited papers. The number of those with cross-field influence is determined by finding those who have influence equivalent to those identified in the 21 fields.
- For the 2021 Highly Cited Researchers analysis, the papers surveyed were the most recent papers available to us—those published and cited during 2010-2020 and which then ranked in the top 1% by citations for their ESI field and year (the definition of a highly cited paper).
- The threshold number of highly cited papers for selection differs by field, with Clinical Medicine requiring the most and Pharmacology/Toxicology the least.



## **Highly Cited Researchers 2021**





#### **Highly Cited** Researchers 2021

Awards appear automatically in each researcher's profile in the Web of Science



#### Maestre, Fernando T. <sup>⋄</sup>





Top peer reviewer

University of Alicante

Web of Science ResearcherID: A-6825-2008 ①



#### View public profile

See a complete view of this researcher's scholarly contributions, including peer review and editorial work.

#### About

Maestre, Fernando T. Published names (i) Maestre, FT Maestre, F. T. Torices, Ruben Maestre, FernandoT. Show more

Organizations (i) 2001-2021 Universitat d'Alacant

> Universidad Rey Juan Carlos 2005-2020

2012-2014 Universidade de Coimbra

2013-2013 Super Ciencias Expt & Tecnol Univ Rey Juan Carlos

Universidad de Valladolid 2012-2012 Show more

**Awards** 

Highly Cited Researcher in the field of Environment and Ecology - 2021

Highly Cited Researcher in the field of Environment and Ecology - 2020

Highly Cited Researcher in the field of Environment and Ecology - 2019

Highly Cited Researcher in the field of Cross-Field - 2018

Top reviewers for Agricultural and Biological Sciences - September 2016

Show less

Other Identifiers (i)



https://orcid.org/0000-0002-7434-4856



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#### Researcher Recognition

#### https://clarivate.com/webofsciencegroup/solutions/researcher-recognition/

#### **Highly Cited Researchers**

Of the world's scientists and social scientists, Highly Cited Researchers truly are one in 1,000. These pioneers in their fields represent the most influential researchers who have published multiple papers frequently cited by their peers that rank in the top 1% of citations for field and year in the Web of Science.

Visit Highly Cited Researchers 2021

#### **Citation Laureates**

This small group of highly cited scientists and economists represents a research elite whose influence is comparable to that of past and future Nobel Prize recipients, as attested by exceptionally high citation records within the Web of Science.

Visit Citation Laureates 2021

#### **Eugene Garfield Award**

Each year, this international award recognizes an early career researcher in scientometrics developing innovative techniques in citation analysis that deepen our understanding of scientific and scholarly communication.

Visit Eugene Garfield Award 2021



#### **Citation Laureates explained**

**NEWS** 

SEPTEMBER 22, 2021

5 MINUTE READ

## Clarivate Unveils Citation Laureates 2021 – Annual List of Researchers of Nobel Class

Share this article



This year's list includes 16 new Citation Laureates from institutions in six countries: France, Italy, Japan, Korea, Singapore, United States

59 Citation Laureates named by the Institute for Scientific Information have gone on to receive a Nobel Prize

#### Determining a Nobel level of influence

Since 2002, Clarivate has named Citation Laureates in the areas recognized by the Nobel Prize: Physiology or Medicine, Physics, Chemistry and Economics. These researchers have laid the foundations for their fields, often pioneering whole new areas of science and paving the way for those who have come after them. Citation Laureates also exhibit exceptional levels of citation among their peers and have often produced multiple highly cited papers.

However, a high level of citation is only a prerequisite for selection on this prestigious list. While we say that citations at high frequency reflect contributions that have been influential in some way, we also maintain that citation data should be combined with qualitative information and human judgement. In order to do this, we analyze:

- **Discovery**: whether the authors of the highly cited papers were the primary discoverers within their research topic
- Awards: whether the researchers have received international or national awards for this research
- **Nobel 'taste'**: whether the identified achievements 'make sense' alongside past choices
- **Timing**: whether the topics would likely receive attention or if they are 'too similar' to recent Nobel prizes or 'too soon' (Nobel recognition typically comes 20 years or more after a published discovery or contribution)



#### **Successful Nobel Predictions**

Since the inception of the Citation Laureates in 2002, our analysts have identified 60 eminent scientists and economists who went on to receive the Nobel Prize.

#### Jennifer A. Doudna **Facts**



Jennifer A. Doudna The Nobel Prize in Chemistry 2020

Born: 19 February 1964, Washington, DC, USA

Affiliation at the time of the award: University of California, Berkeley, CA, USA

Prize motivation: "for the development of a method for genome editing."

Prize share: 1/2

#### Emmanuelle Charpentier Facts



© Nobel Prize Outreach. Photo:

Emmanuelle Charpentier The Nobel Prize in Chemistry 2020

Born: 11 December 1968, Juvisy-sur-Orge, France

Affiliation at the time of the award: Max Planck Unit for the Science of Pathogens, Berlin, Germany

Prize motivation: "for the development of a method for genome editing."

Prize share: 1/2

A Programmable <u>Dual-RNA-Guided</u> DNA Endonuclease in Adaptive **Bacterial Immunity** (Science, 2012)

Prize motivation: "for the development of a method for genome editing." The CRISPR/Cas9 gene scissors can lead to new scientific discoveries, better crops and new weapons in the fight against cancer and genetic diseases.



#### **Eugene Garfield Award for Innovation in Citation Analysis**

## **2021 Award Winner** Elena Pallari

Elena Pallari is exploring the impact of methodological research for clinical trials. Her project proposal is to evaluate research output of the UK Medical Research Council Clinical Trials Unit between 2000 and 2020 to assess the impact of its methodology papers.

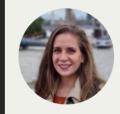
Read the interview

#### About the Award

The award amount is \$25k USD, paid in a single instalment.

In addition to the award, Clarivate provides the successful applicant with research access to a selection of the Web of Science data.

A review committee evaluates applications for novelty, utility and innovation, and announces the winner publicly in September/October each year.



#### Elena Pallari

Post-graduate researcher, University College London, Clinical Trials and Methodology

**United Kingdom** 

#### **How to Apply**

**Apply now** 

To apply, please fill in this form by Friday July 1, 2022.

The award winner will be notified by September 2, 2022.

Read the Terms and Conditions here.

Applications opened till July 1, 2022





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