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Sesión D3 – Los Highly Cited Researchers y Research Fronts

Anne Delgado

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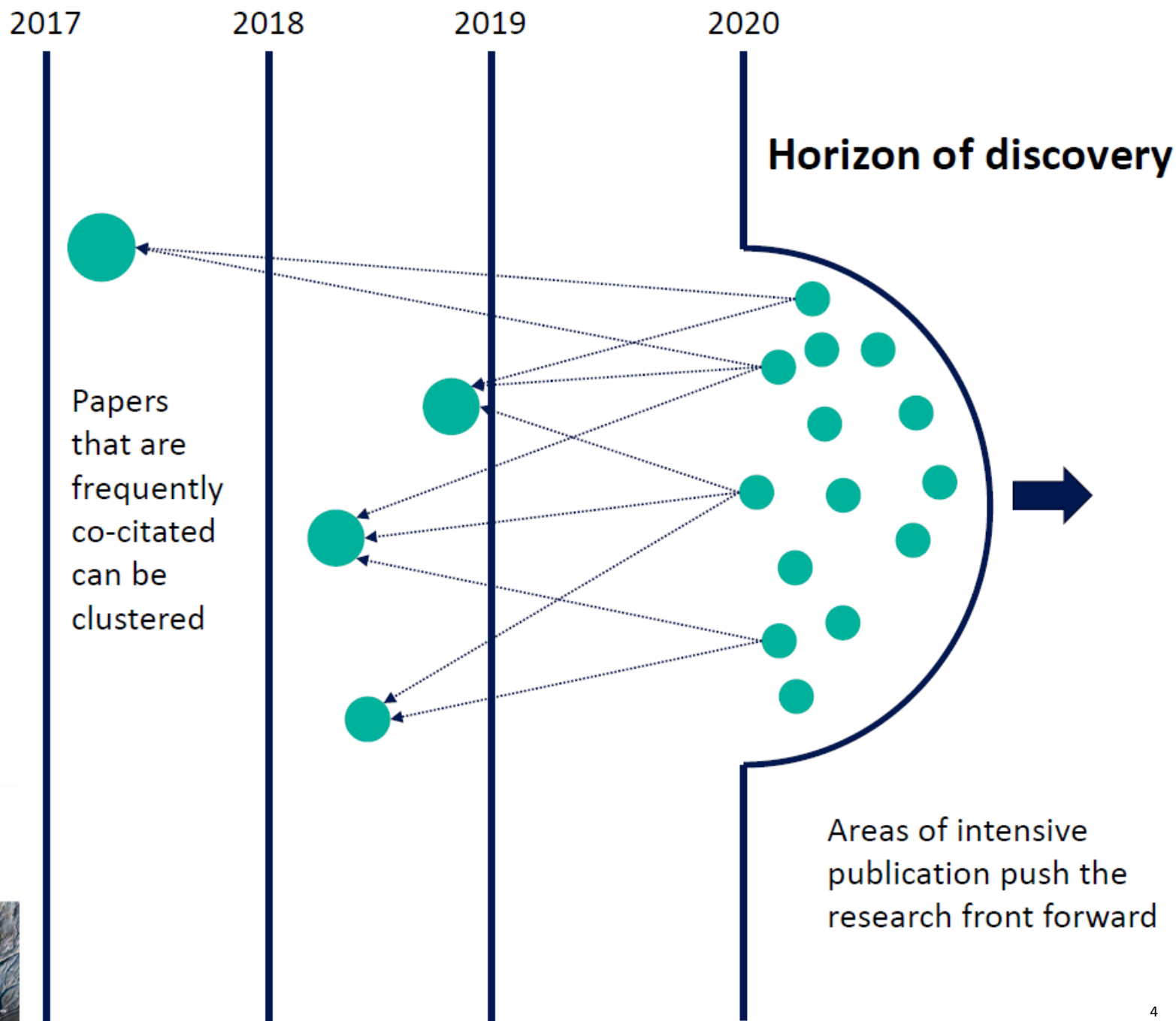- Nuestro programa de reconocimiento a los investigadores

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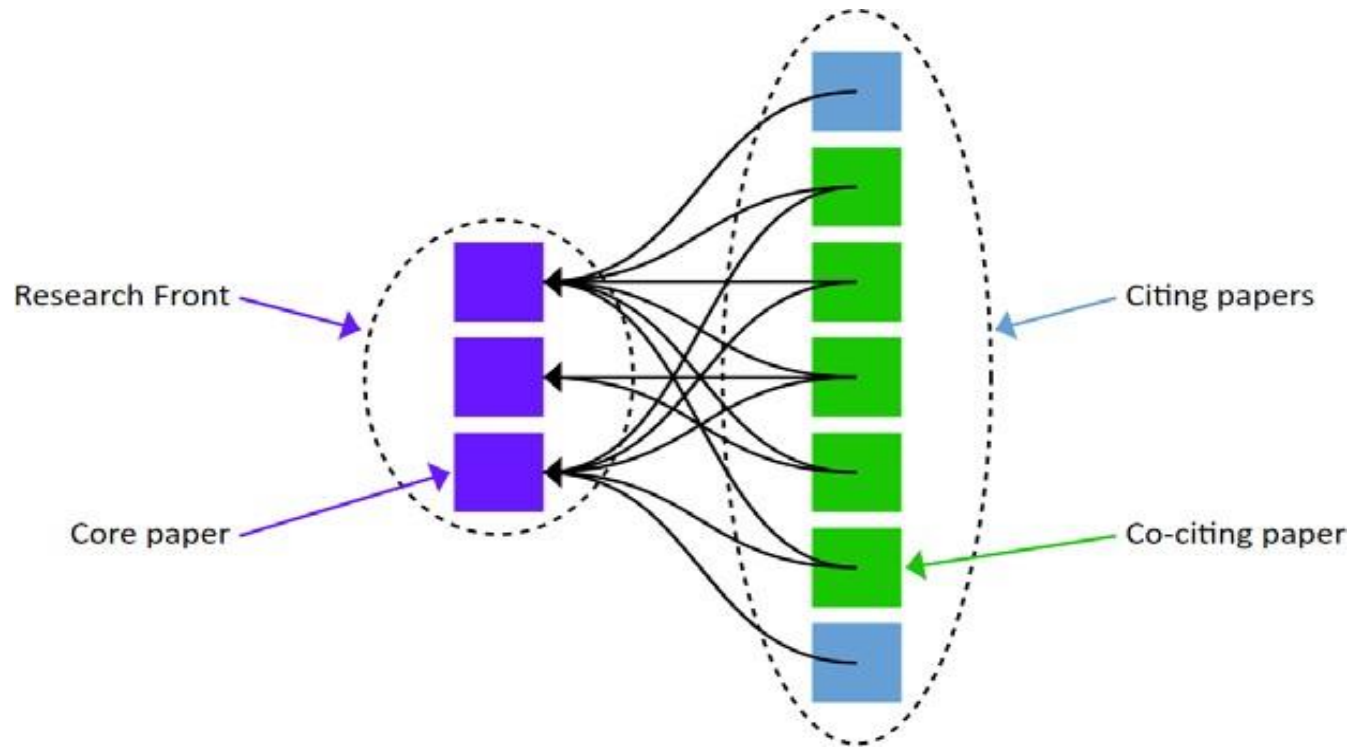- Nuestro programa de reconocimiento a los investigadores

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

2017   2018   2019   2020

Horizon of discovery

Papers that are frequently co-citated can be clustered

Areas of intensive publication push the research front forward

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 co-citing 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

The clusters are named using a semi-automatic process based on frequently occurring title words and phrases.

More resources

- [Clarivate Analytics and the Chinese Academy of Sciences released an annual joint report to identify the hottest and emerging specialty areas in scientific research](#)

- [Find the report "Research Fronts 2020" 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™ 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.

Clarivate™

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

Share this article

DAVID PENDLEBURY

Head of Research Analysis at the Institute for Scientific Information
Clarivate

Today we unveil our annual list of _Highly Cited Researchers™_. 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

What it means to be a Highly Cited Researcher

2021 recipients   **Methodology**   FAQs

Overview

- 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 **Essential Science Indicators™**, or ESI) or across several fields.

- All Highly Cited Researcher records are reviewed. Factors such as re[...] 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.

Total of Highly Cited Papers over the past 10 years

Context = 21 fields from Essential Science Indicators

Clarivate™

Highly Cited Researchers 2021

Highly Cited Researchers 2021

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

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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

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

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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

Clarivate Demonstrates 2021 Nobel Prediction Success in Every Field of Science and Economics 64 researchers named as 'Citation Laureates' have received Nobel honors since 2002

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

© Nobel Prize Outreach. Photo: Brittany Hosea-Small

Emmanuelle Charpentier
Facts

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

© Nobel Prize Outreach. Photo: Bernhard Ludewig

A Programmable Dual-RNA-Guided 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.

Clarivate™

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

Elena Pallari

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

United Kingdom

Every great research initiative

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