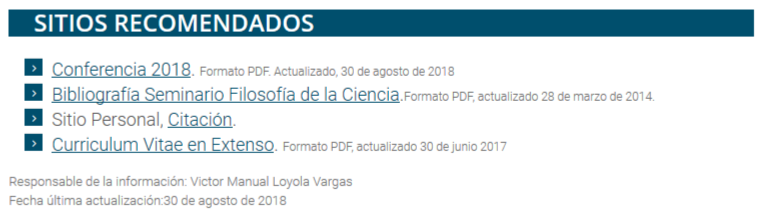
Ya decidí ser científico ¿y ahora qué hago?

Leonardo Da Vinci
Aristotle
Galileo Galilei

http://downloads.bbc.co.uk/tv/scienceclub/wallpapers/sc_wall12_music2_1920x1080.jpg

En dónde encontrar el pdf de la plática



SITIOS RECOMENDADOS

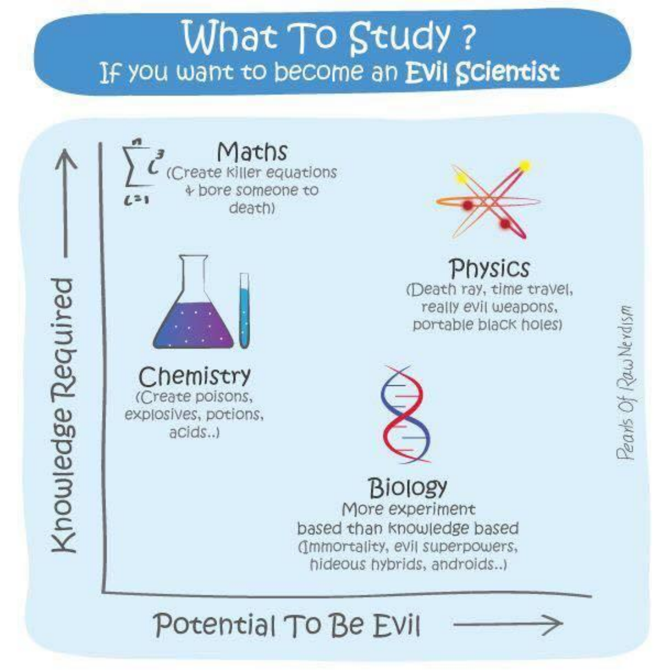
- Conferencia 2018. Formato PDF. Actualizado, 30 de agosto de 2018
- Bibliografía Seminario Filosofía de la Ciencia. Formato PDF, actualizado 28 de marzo de 2014.
- Sitio Personal, Citación.
- Curriculum Vitae en Extenso. Formato PDF, actualizado 30 de junio 2017

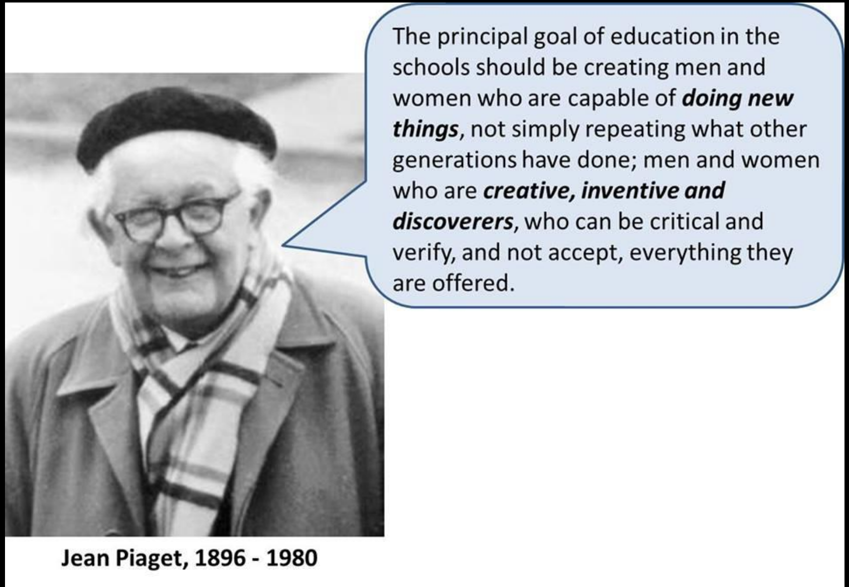
Responsable de la información: Victor Manual Loyola Vargas
Fecha última actualización:30 de agosto de 2018

https://www.cicy.mx/unidad-bioquimica-y-biologia-molecular-de-plantas/investigador/[victor-manuel-loyola-vargas](https://www.cicy.mx/unidad-bioquimica-y-biologia-molecular-de-plantas/investigador/victor-manuel-loyola-vargas)

http://www.CHRISTOON.COM
YOU MIGHT CALL THEM SCIENTISTS, BUT FOR ME THEY ARE "PAPARAZZI"!
KAMAROWSKI

CUANDO ENTRAS A LICENCIATURA
CUANDO SALES DEL DOCTORADO


What To Study ?
If you want to become an Evil Scientist
Maths
(Create killer equations & bore someone to death)
Physics
(Death ray, time travel, really evil weapons, portable black holes)
Chemistry
(Create poisons, explosives, potions, acids..)
Biology
More experiment based than knowledge based
(Immortality, evil superpowers, hideous hybrids, androids..)
Knowledge Required
Potential To Be Evil
Pearls Of RawNerdism



The principal goal of education in the schools should be creating men and women who are capable of ***doing new things***, not simply repeating what other generations have done; men and women who are ***creative, inventive and discoverers***, who can be critical and verify, and not accept, everything they are offered.

Jean Piaget, 1896 - 1980

El inicio/Colaboración con el ITM/14-02-1986

Primer cuerpo directivo del CICY

Manuel L. Robert

Luis del Castillo Mora

Carlos Huitrón Vargas

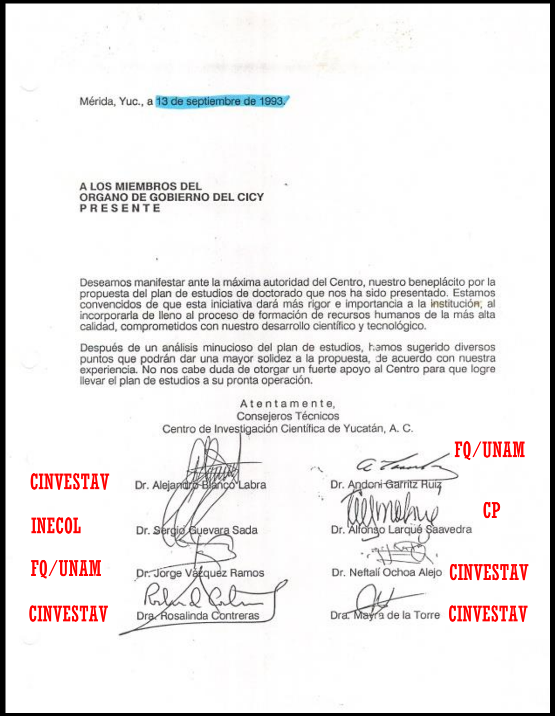
Roger Orellana Lanza

Carlos Cruz Ramos

Primera generación MC ITM/CICY

Gregorio Godoy Hernández, Lizbeth Castro Concha, Miriam Monforte González, Carlos Talavera May, Francisco Espadas y Gil, Carlos Castillo Pompeyo, Irma Trejo Canché y Luis Aldana Burgos.

Un poco de historia



Mérida, Yuc., a 13 de septiembre de 1993.

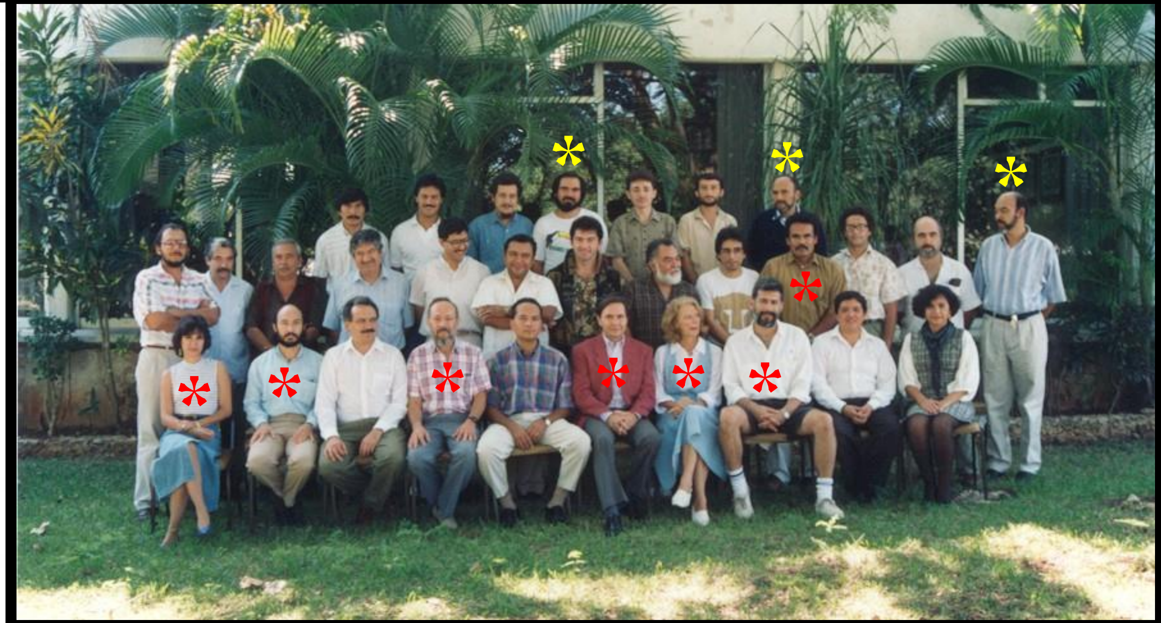
A LOS MIEMBROS DEL
ORGANO DE GOBIERNO DEL CICY
PRESENTE

Deseamos manifestar ante la máxima autoridad del Centro, nuestro beneplácito por la propuesta del plan de estudios de doctorado que nos ha sido presentado. Estamos convencidos de que esta iniciativa dará más rigor e importancia a la institución, al incorporarla de lleno al proceso de formación de recursos humanos de la más alta calidad, comprometidos con nuestro desarrollo científico y tecnológico.

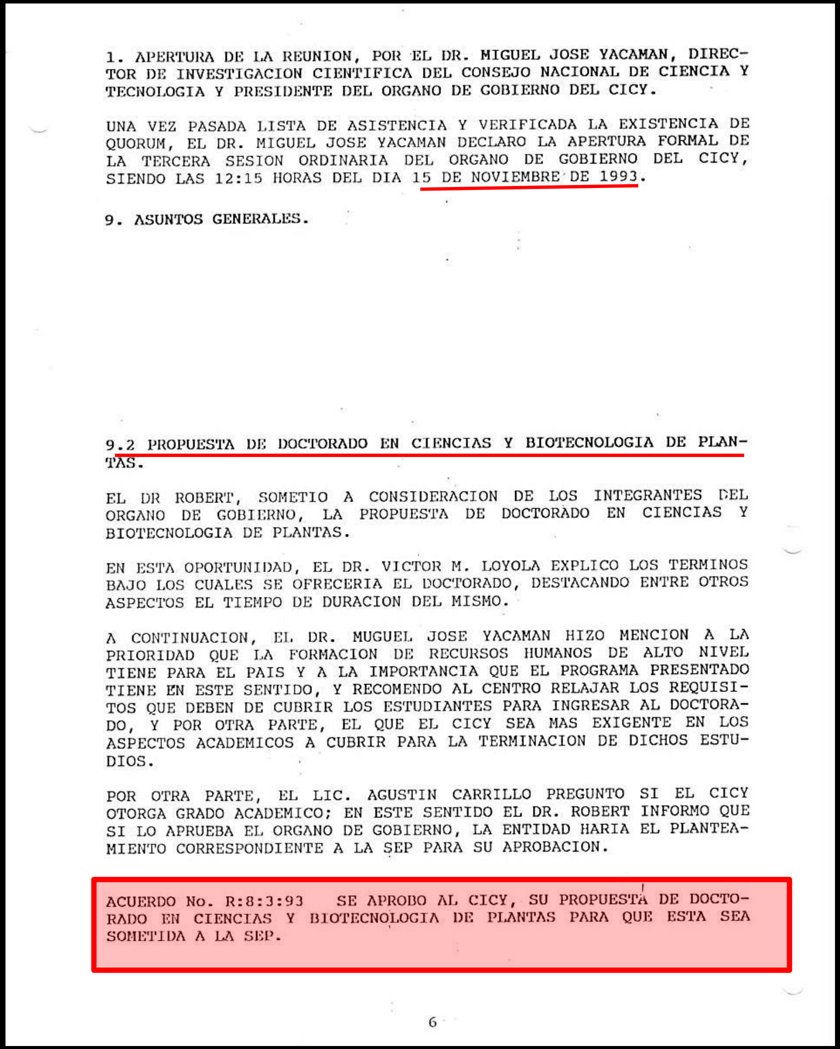
Después de un análisis minucioso del plan de estudios, hemos sugerido diversos puntos que podrán dar una mayor solidez a la propuesta, de acuerdo con nuestra experiencia. No nos cabe duda de otorgar un fuerte apoyo al Centro para que logre llevar el plan de estudios a su pronta operación.

Atentamente,
Consejeros Técnicos
Centro de Investigación Científica de Yucatán, A. C.

CINVESTAV Dr. Alejandro Blanco Labra
Dr. Andoni Garritz Ruiz FQ/UNAM
INECOL Dr. Sergio Guevara Sada
Dr. Alfonso Larqué Saavedra CP
FQ/UNAM Dr. Jorge Vázquez Ramos
Dr. Neftalí Ochoa Alejo CINVESTAV
CINVESTAV Dra. Rosalinda Contreras
Dra. Mayra de la Torre CINVESTAV



Diciembre de 1993



1. APERTURA DE LA REUNION, POR EL DR. MIGUEL JOSE YACAMAN, DIRECTOR DE INVESTIGACION CIENTIFICA DEL CONSEJO NACIONAL DE CIENCIA Y TECNOLOGIA Y PRESIDENTE DEL ORGANO DE GOBIERNO DEL CICY.

UNA VEZ PASADA LISTA DE ASISTENCIA Y VERIFICADA LA EXISTENCIA DE QUORUM, EL DR. MIGUEL JOSE YACAMAN DECLARO LA APERTURA FORMAL DE LA TERCERA SESION ORDINARIA DEL ORGANO DE GOBIERNO DEL CICY, SIENDO LAS 12:15 HORAS DEL DIA 15 DE NOVIEMBRE DE 1993.

9. ASUNTOS GENERALES.

9.2 PROPUESTA DE DOCTORADO EN CIENCIAS Y BIOTECNOLOGIA DE PLANTAS.

EL DR ROBERT, SOMETIO A CONSIDERACION DE LOS INTEGRANTES DEL ORGANO DE GOBIERNO, LA PROPUESTA DE DOCTORADO EN CIENCIAS Y BIOTECNOLOGIA DE PLANTAS.

EN ESTA OPORTUNIDAD, EL DR. VICTOR M. LOYOLA EXPLICO LOS TERMINOS BAJO LOS CUALES SE OFRECERIA EL DOCTORADO, DESTACANDO ENTRE OTROS ASPECTOS EL TIEMPO DE DURACION DEL MISMO.

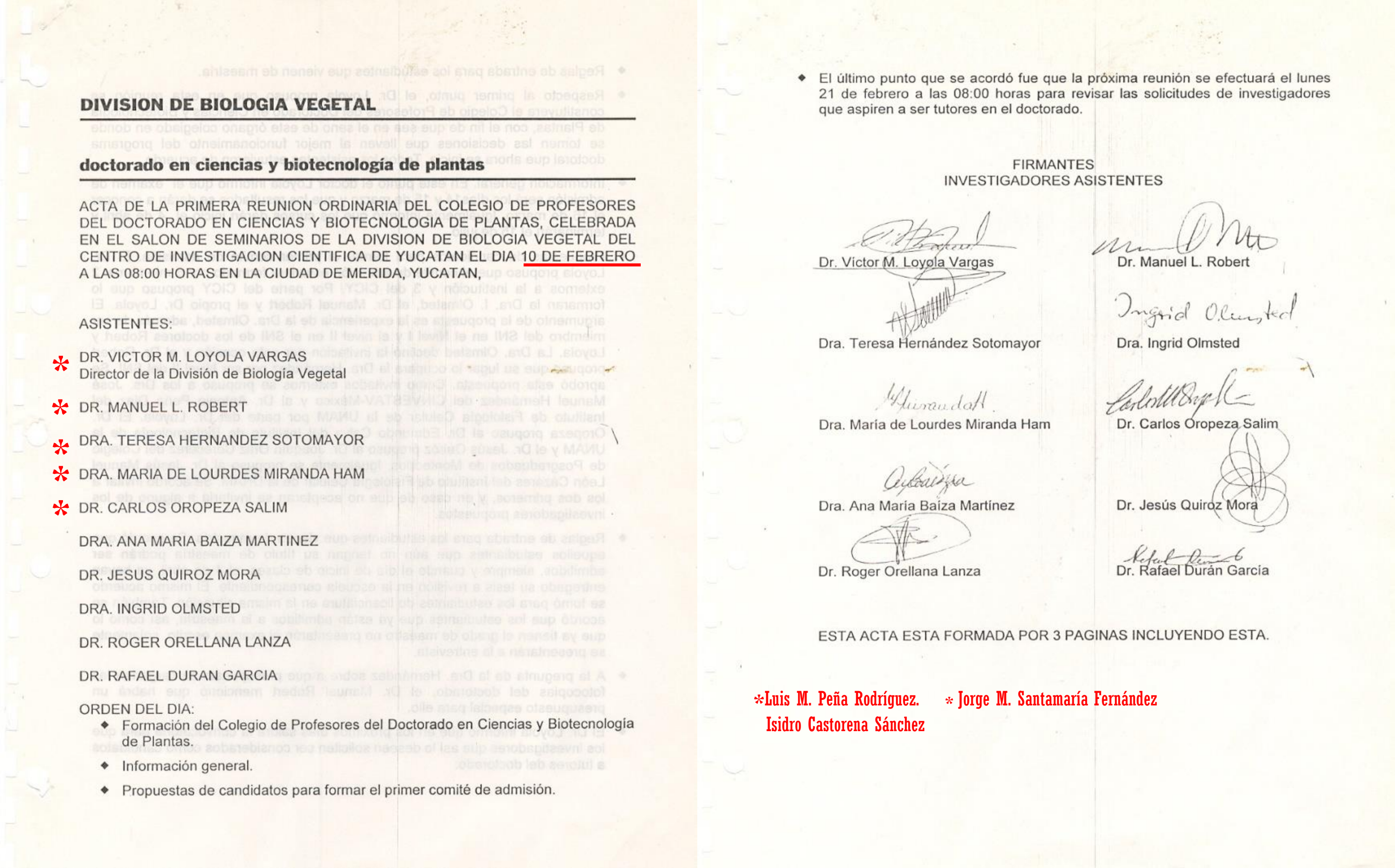
A CONTINUACION, EL DR. MUGUEL JOSE YACAMAN HIZO MENCION A LA PRIORIDAD QUE LA FORMACION DE RECURSOS HUMANOS DE ALTO NIVEL TIENE PARA EL PAIS Y A LA IMPORTANCIA QUE EL PROGRAMA PRESENTADO TIENE EN ESTE SENTIDO, Y RECOMENDO AL CENTRO RELAJAR LOS REQUISITOS QUE DEBEN DE CUBRIR LOS ESTUDIANTES PARA INGRESAR AL DOCTORADO, Y POR OTRA PARTE, EL QUE EL CICY SEA MAS EXIGENTE EN LOS ASPECTOS ACADEMICOS A CUBRIR PARA LA TERMINACION DE DICHOS ESTUDIOS.

POR OTRA PARTE, EL LIC. AGUSTIN CARRILLO PREGUNTO SI EL CICY OTORGA GRADO ACADEMICO; EN ESTE SENTIDO EL DR. ROBERT INFORMO QUE SI LO APRUEBA EL ORGANO DE GOBIERNO, LA ENTIDAD HARIA EL PLANTEAMIENTO CORRESPONDIENTE A LA SEP PARA SU APROBACION.

ACUERDO No. R:8:3:93 SE APROBO AL CICY, SU PROPUESTA DE DOCTORADO EN CIENCIAS Y BIOTECNOLOGIA DE PLANTAS PARA QUE ESTA SEA SOMETIDA A LA SEP.

6

Un poco de historia



DIVISION DE BIOLOGIA VEGETAL

doctorado en ciencias y biotecnología de plantas

ACTA DE LA PRIMERA REUNION ORDINARIA DEL COLEGIO DE PROFESORES DEL DOCTORADO EN CIENCIAS Y BIOTECNOLOGIA DE PLANTAS, CELEBRADA EN EL SALON DE SEMINARIOS DE LA DIVISION DE BIOLOGIA VEGETAL DEL CENTRO DE INVESTIGACION CIENTIFICA DE YUCATAN EL DIA 10 DE FEBRERO A LAS 08:00 HORAS EN LA CIUDAD DE MERIDA, YUCATAN,

ASISTENTES:

* DR. VICTOR M. LOYOLA VARGAS
Director de la División de Biología Vegetal

* DR. MANUEL L. ROBERT

* DRA. TERESA HERNANDEZ SOTOMAYOR

* DRA. MARIA DE LOURDES MIRANDA HAM

* DR. CARLOS OROPEZA SALIM

DRA. ANA MARIA BAIZA MARTINEZ

DR. JESUS QUIROZ MORA

DRA. INGRID OLMSTED

DR. ROGER ORELLANA LANZA

DR. RAFAEL DURAN GARCIA

ORDEN DEL DIA:

- Formación del Colegio de Profesores del Doctorado en Ciencias y Biotecnología de Plantas.
- Información general.
- Propuestas de candidatos para formar el primer comité de admisión.

- El último punto que se acordó fue que la próxima reunión se efectuará el lunes 21 de febrero a las 08:00 horas para revisar las solicitudes de investigadores que aspiren a ser tutores en el doctorado.

FIRMANTES
INVESTIGADORES ASISTENTES

Dr. Victor M. Loyola Vargas — Dr. Manuel L. Robert

Ingrid Olmsted

Dra. Teresa Hernández Sotomayor — Dra. Ingrid Olmsted

Dra. María de Lourdes Miranda Ham — Dr. Carlos Oropeza Salim

Dra. Ana María Baiza Martínez — Dr. Jesús Quiroz Mora

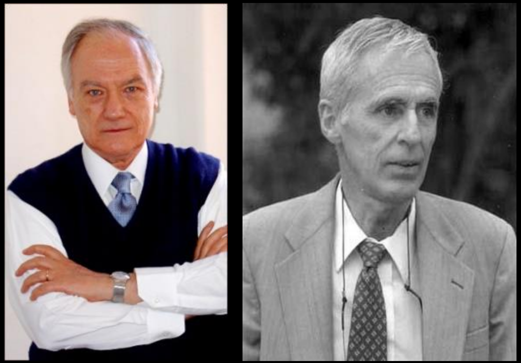
Dr. Roger Orellana Lanza — Dr. Rafael Durán García

ESTA ACTA ESTA FORMADA POR 3 PAGINAS INCLUYENDO ESTA.

*Luis M. Peña Rodríguez. * Jorge M. Santamaría Fernández
Isidro Castorena Sánchez

Un poco de historia

Inicio de cursos del doctorado/04-abril-1994

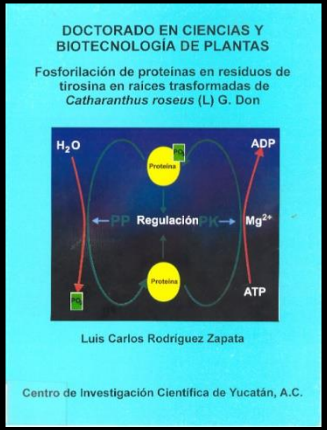


Marcelino Cereijido (CINVESTAV), Antonio Peña Díaz (IFC/UNAM), Teresa Hernández Sotomayor, Manuel Robert Díaz y Víctor M. Loyola Vargas. 14-15/03-1994; 11/13.

Primera generación doctorado CBTP

Primera generación doctorado RN/1996

Primera generación MC/1996



DOCTORADO EN CIENCIAS Y BIOTECNOLOGÍA DE PLANTAS

Fosforilación de proteinas en residuos de tirosina en raices trasformadas de *Catharanthus roseus* (L) G. Don

Luis Carlos Rodriguez Zapata

Centro de Investigación Científica de Yucatán, A.C.

MAESTRIA EN CIENCIAS Y BIOTECNOLOGIA DE PLANTAS

Estudio sobre la distribución intraplanta y dispersión del amarillamiento letal en el cocotero mediante el uso de la reacción en cadena de la polimerasa

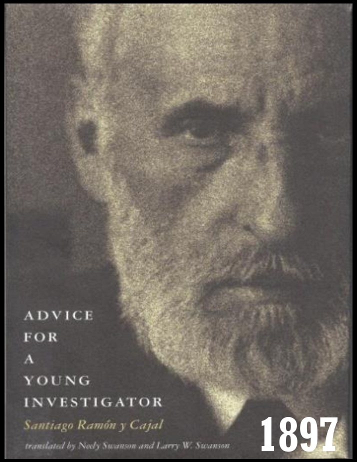
Iván Isidro Córdova Lara

Centro de Investigación Científica de Yucatán, A.C

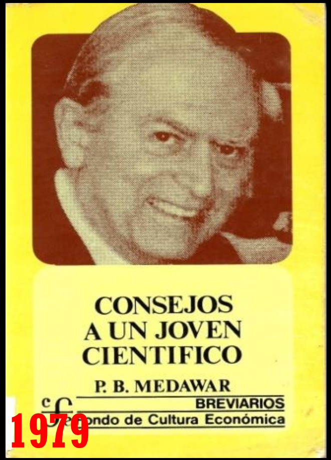
- Introducción
- Lecturas
- Ser estudiante de postgrado
- Escoger el supervisor
- Escoger un problema real
- Sigue las reglas de la ética
- Usa tu tiempo inteligentemente
- Aprende a escribir artículos y proyectos
- Ve el mercado laboral

Víctor M. Loyola Vargas
vmloyola@cicy.mx

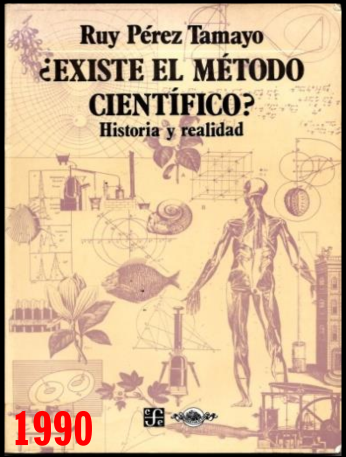
Las lecturas (Los diez del CICY)


ADVICE
FOR
A
YOUNG
INVESTIGATOR
Santiago Ramón y Cajal
translated by Neely Swanson and Larry W. Swanson

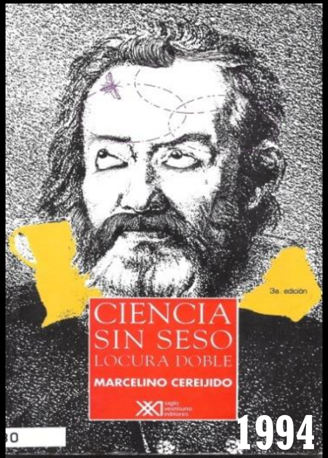
1897


CONSEJOS
A UN JOVEN
CIENTIFICO
P. B. MEDAWAR
BREVIARIOS
Fondo de Cultura Económica

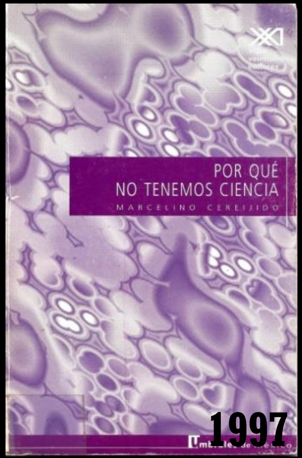
1979


Ruy Pérez Tamayo
¿EXISTE EL MÉTODO
CIENTÍFICO?
Historia y realidad

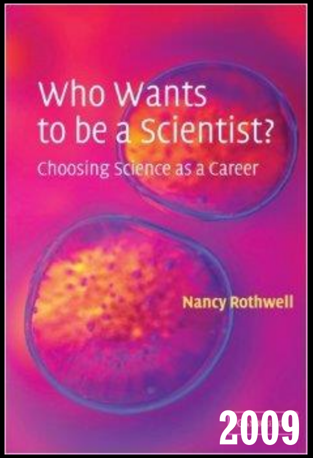
1990


3a. edición
CIENCIA
SIN SESO
LOCURA DOBLE
MARCELINO CEREIJIDO

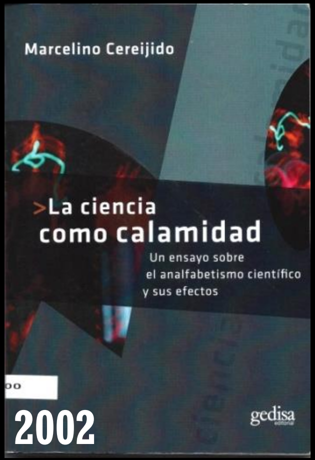
1994


POR QUÉ
NO TENEMOS CIENCIA
MARCELINO CEREIJIDO

1997


Who Wants
to be a Scientist?
Choosing Science as a Career
Nancy Rothwell

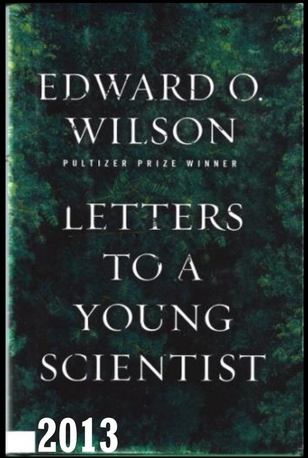
2009


Marcelino Cereijido
>La ciencia
como calamidad
Un ensayo sobre
el analfabetismo científico
y sus efectos
gedisa

2002

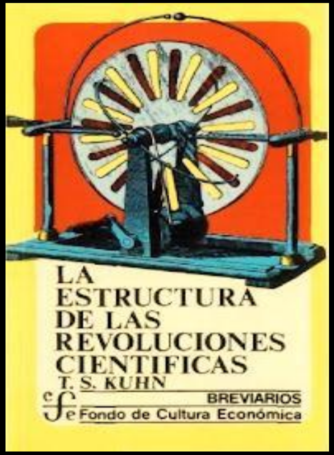
Books; those more valuable of all valuable things.

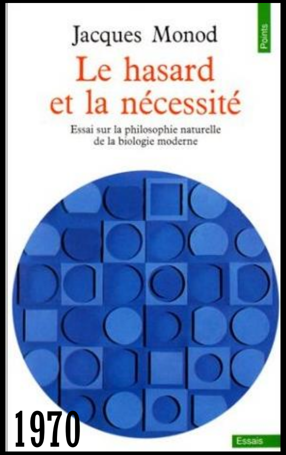
Darwin to Catherine Darwin (1833)


EDWARD O.
WILSON
PULITZER PRIZE WINNER
LETTERS
TO A
YOUNG
SCIENTIST

2013

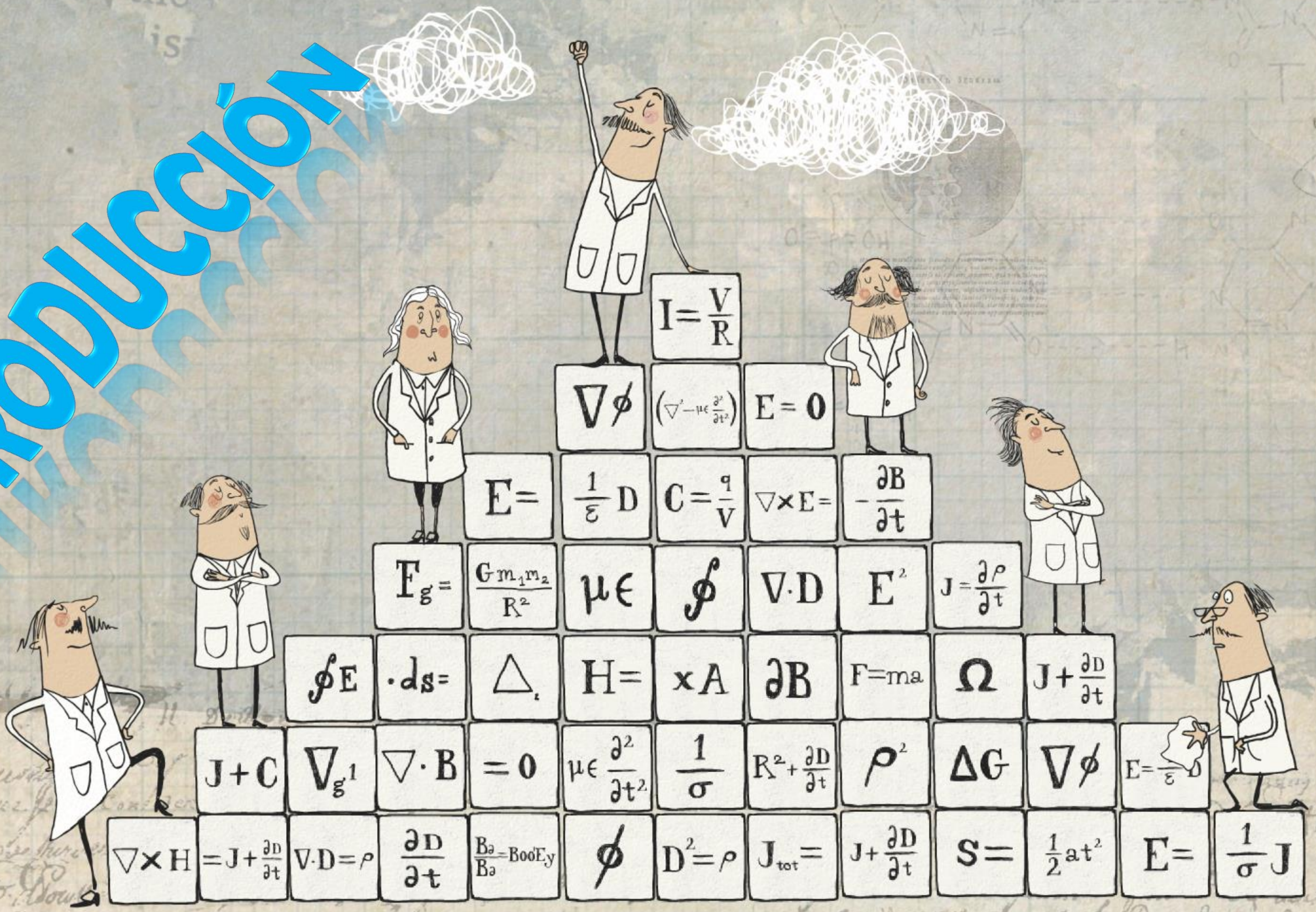
MARIO
BUNGE
siglo veinte
la ciencia
su método
y su
filosofía

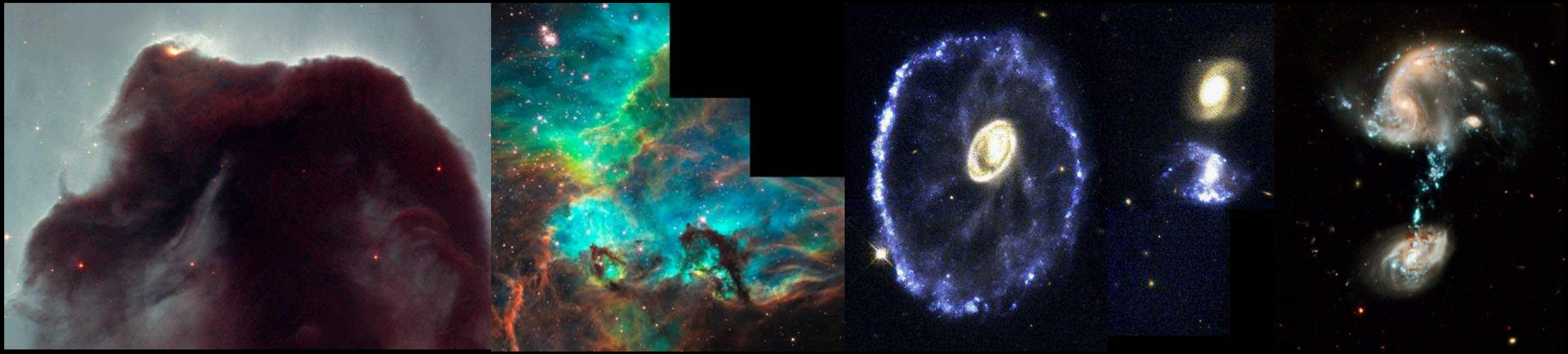

LA
ESTRUCTURA
DE LAS
REVOLUCIONES
CIENTIFICAS
T. S. KUHN
BREVIARIOS
Fondo de Cultura Económica


Jacques Monod
Le hasard
et la nécessité
Essai sur la philosophie naturelle
de la biologie moderne
Points
Essais

1970

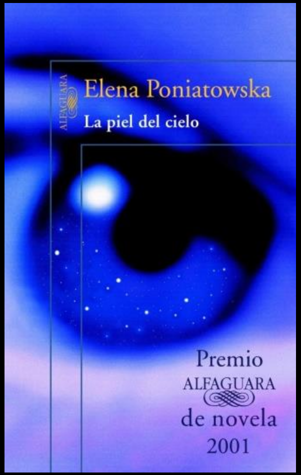
INTRODUCCIÓN


$I=\frac{V}{R}$
$\nabla\phi$
$\left(\nabla^2-\mu\epsilon\frac{\partial^2}{\partial t^2}\right)$
$E=0$
$E=$
$\frac{1}{\varepsilon}D$
$C=\frac{q}{V}$
$\nabla\times E=$
$-\frac{\partial B}{\partial t}$
$F_g=$
$\frac{Gm_1m_2}{R^2}$
$\mu\epsilon$
$\oint$
$\nabla\cdot D$
E^2
$J=\frac{\partial\rho}{\partial t}$
$\oint E$
$\cdot ds=$
$\triangle$
$H=$
$\times A$
∂B
$F=ma$
Ω
$J+\frac{\partial D}{\partial t}$
$J+C$
∇_g^1
$\nabla\cdot B$
$=0$
$\mu\epsilon\frac{\partial^2}{\partial t^2}$
$\frac{1}{\sigma}$
$R^2+\frac{\partial D}{\partial t}$
ρ^2
ΔG
$\nabla\phi$
$E=\frac{1}{\varepsilon}D$
$\nabla\times H$
$=J+\frac{\partial D}{\partial t}$
$\nabla\cdot D=\rho$
$\frac{\partial D}{\partial t}$
$\frac{Ba}{Ba}=BooEy$
ϕ
$D^2=\rho$
$J_{tot}=$
$J+\frac{\partial D}{\partial t}$
$S=$
$\frac{1}{2}at^2$
$E=$
$\frac{1}{\sigma}J$



- Mamá ¿allá atrás se acaba el mundo?
  - No, no se acaba.
  - Demuéstramelo.
  - Te voy a llevar más lejos de lo que se ve a simple vista.
- ¿Entonces lo que veo, mamá, es sólo una parte insignificante de la totalidad?

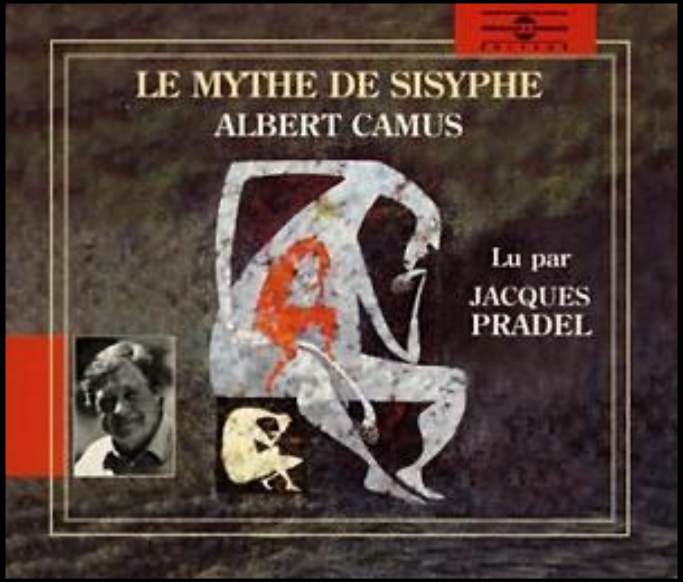
Elena Poniatowska Amor, La Piel del Cielo, (2001)


Elena Poniatowska
La piel del cielo
ALFAGUARA
Premio
ALFAGUARA
de novela
2001

El inicio

- Toutes les grandes actions et toutes les grandes pensées ont un commencement dérisoire.
  - Albert Camus. Le Mythe de Sisyphe, (1942).

Les Murs Absurdes

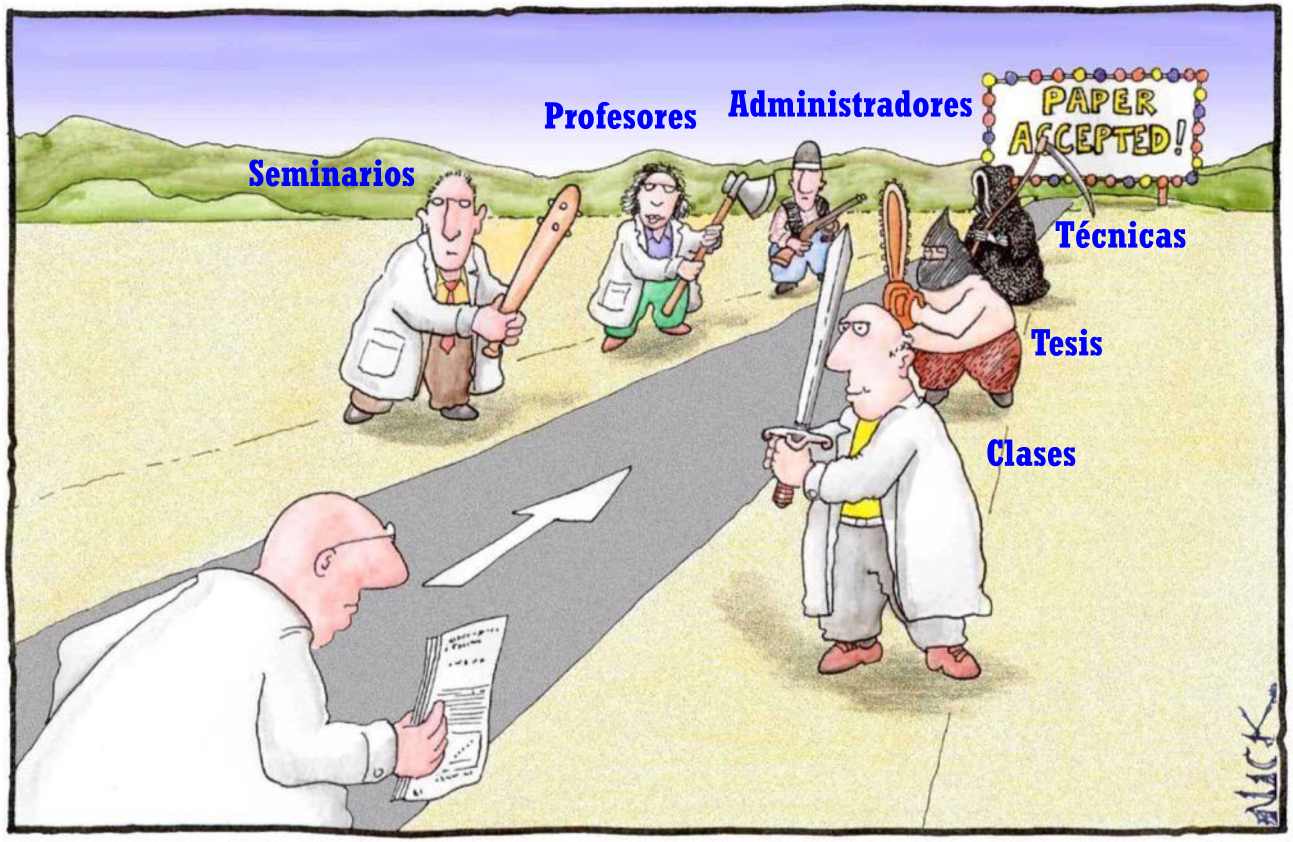

LE MYTHE DE SISYPHE
ALBERT CAMUS
Lu par
JACQUES
PRADEL

Combate

The Nobel Prize in Literature 1957: *"for his important literary production, which with clear-sighted earnestness illuminates the problems of the human conscience in our times".*

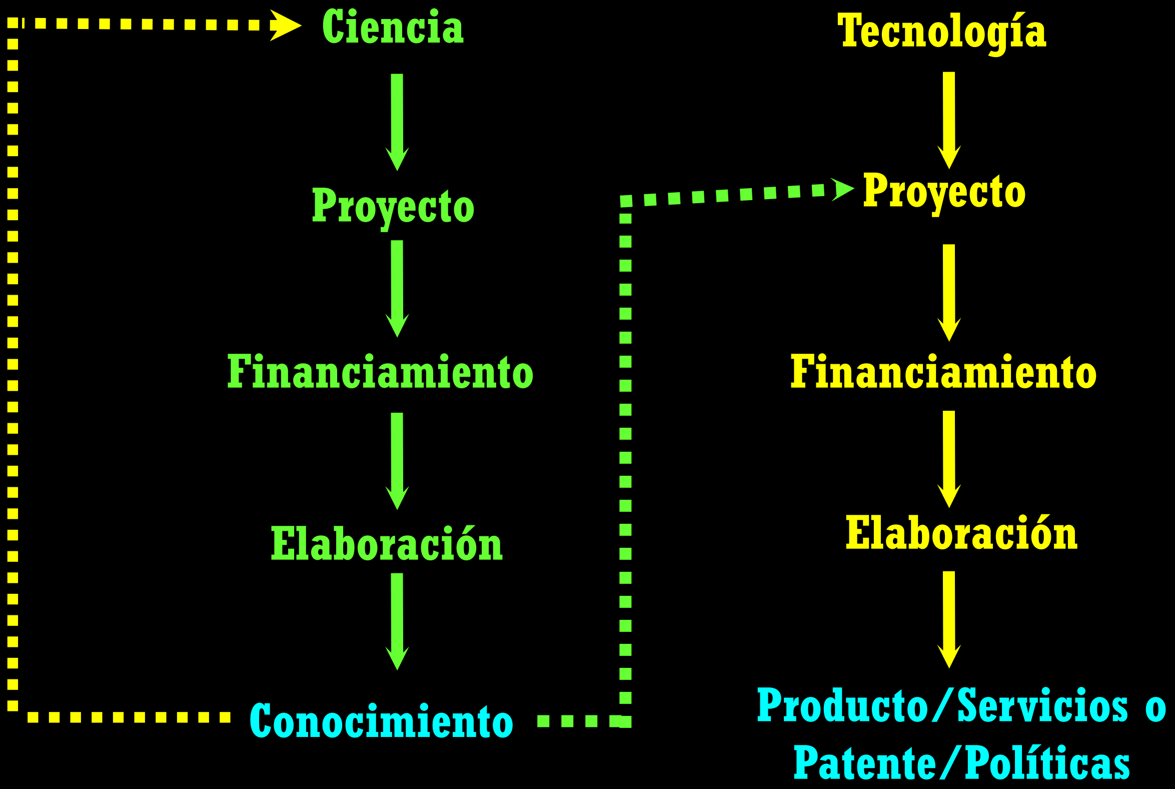
http://www.nobelprize.org/nobel_prizes/literature/laureates/1957/

Primer día de clase


PAPER ACCEPTED!
Seminarios
Profesores
Administradores
Técnicas
Tesis
Clases
NICK

Ciencia y Tecnología

Aristóteles contemplando el busto de Homero (1662)



Ciencia

Proyecto

Financiamiento

Elaboración

Conocimiento

Tecnología

Proyecto

Financiamiento

Elaboración

Producto/Servicios o Patente/Políticas

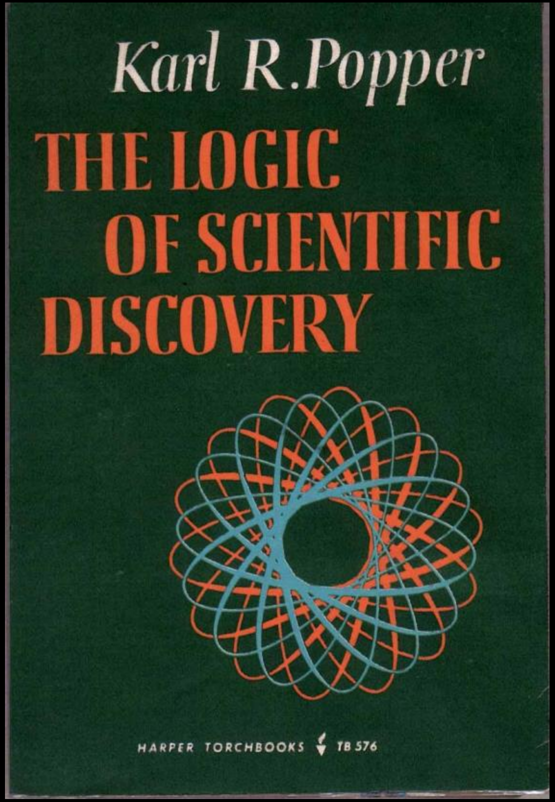
El filósofo en meditación (1632)

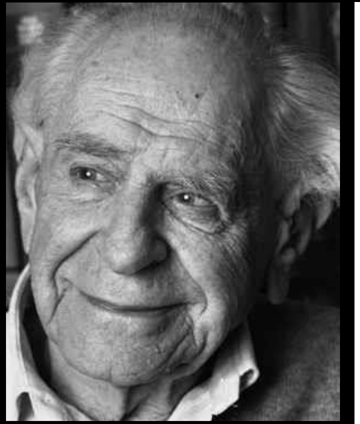
Es una actividad creativa por excelencia, cuyo objetivo es la comprensión de la naturaleza y cuyo producto es el conocimiento.

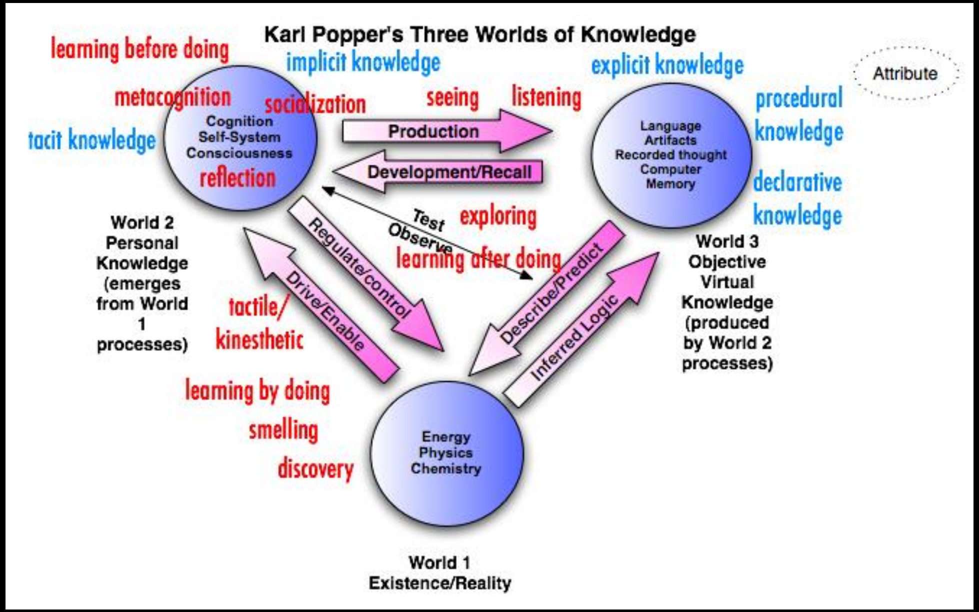
Es una actividad, igualmente creativa y transformadora cuyo objetivo es el aprovechamiento de la naturaleza y cuyos productos son bienes de consumo o de servicio.

Karl R. Popper (1902 – 1994)

Logik der Forschung (1934)


Karl R.Popper
THE LOGIC OF SCIENTIFIC DISCOVERY
HARPER TORCHBOOKS TB 576




Karl Popper's Three Worlds of Knowledge
learning before doing
implicit knowledge
explicit knowledge
Attribute
metacognition
socialization
seeing
listening
procedural knowledge
tacit knowledge
Cognition
Self-System
Consciousness
reflection
Production
Development/Recall
Language
Artifacts
Recorded thought
Computer
Memory
declarative knowledge
Test
Observe
exploring
learning after doing
World 2
Personal
Knowledge
(emerges
from World
1
processes)
Regulate/control
Drive/Enable
tactile/
kinesthetic
Describe/Predict
Inferred Logic
World 3
Objective
Virtual
Knowledge
(produced
by World 2
processes)
learning by doing
smelling
discovery
Energy
Physics
Chemistry
World 1
Existence/Reality

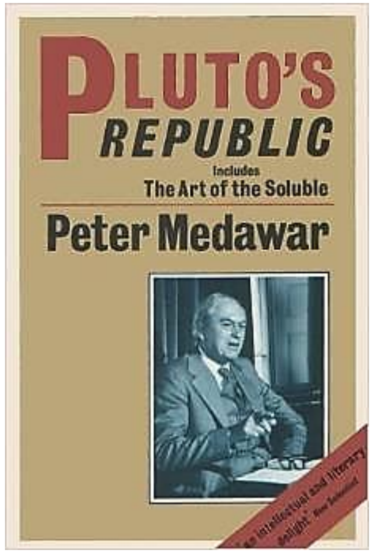
El conocimiento científico no avanza confirmando nuevas leyes, sino descartando leyes que contradicen la experiencia. A esto Popper le llama falsifibilidad.

Logik der Forschung (1934)

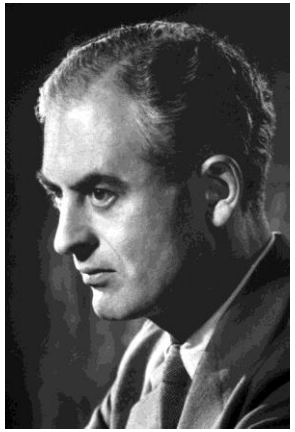
Hacer ciencia

- Debes tener más de una cuerda en tu arco y estar dispuesto a aceptar un NO por respuesta, si la evidencia apunta en esa dirección.

El arte de lo soluble.

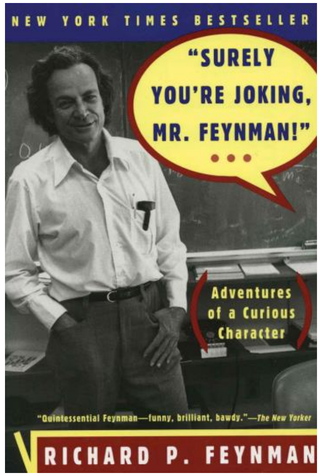

PLUTO'S
REPUBLIC
includes
The Art of the Soluble
Peter Medawar
"an intellectual and literary delight" New Scientist

The Nobel Prize in Physiology or Medicine 1960. "*for discovery of acquired immunological tolerance.*"



The Nobel Prize in Physiology or Medicine 1960. NobelPrize.org. Nobel Media AB 2018. Wed. 22 Aug 2018. <https://www.nobelprize.org/prizes/medicine/1960/summary/>

The Nobel Prize in Physics 1965. "*for their fundamental work in quantum electrodynamics, with deep-ploughing consequences for the physics of elementary particles*".


NEW YORK TIMES BESTSELLER
"SURELY YOU'RE JOKING, MR. FEYNMAN!"
Adventures of a Curious Character
"Quintessential Feynman—funny, brilliant, bawdy."—The New Yorker
RICHARD P. FEYNMAN

http://www.nobelprize.org/nobel_prizes/physics/laureates/1965/feynman-facts.html

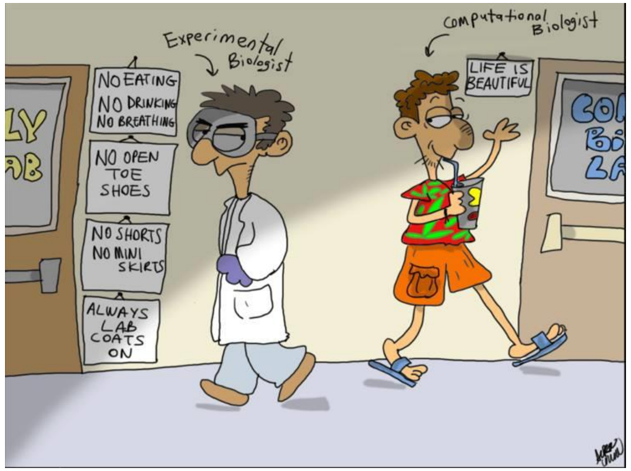
Las preguntas

- ¿Qué hace un investigador?
- ¿Por qué la investigación que estás haciendo le importa a la gente de la calle?
- ¿Cuándo te pones a trabajar?

Alfred Boucher. Franc La Philosophie de l'Histoire

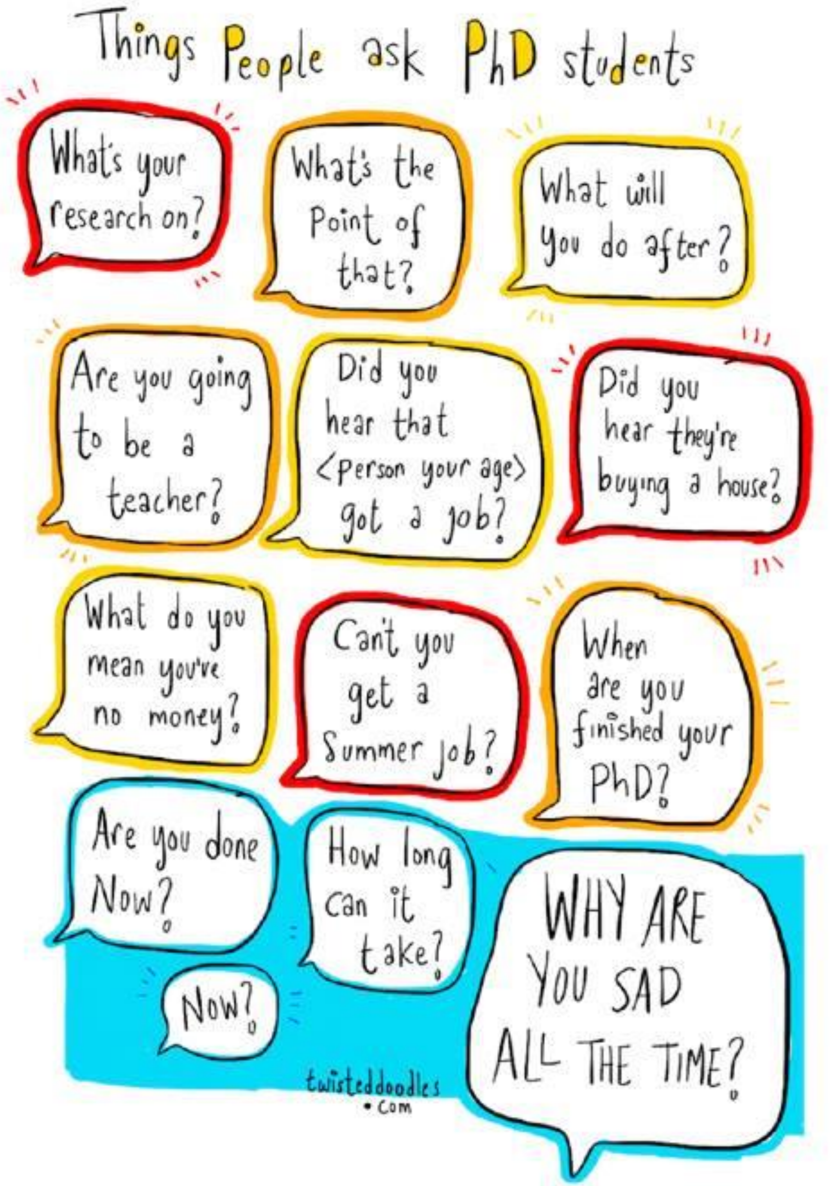
Como fallar

- No tener confianza en sí mismo.
- Nunca ser lo suficientemente original para ser una estrella.
- No tener grandes expectativas.
- Escribir malos proyectos.
- Aceptar cargas administrativas.
- Esconderse en los rincones sin atreverse a hablar con los ponentes y los peces gordos.
- Trabajar un estándar de pocas horas a la semana.
- Estar terriblemente aburrido con su trabajo.

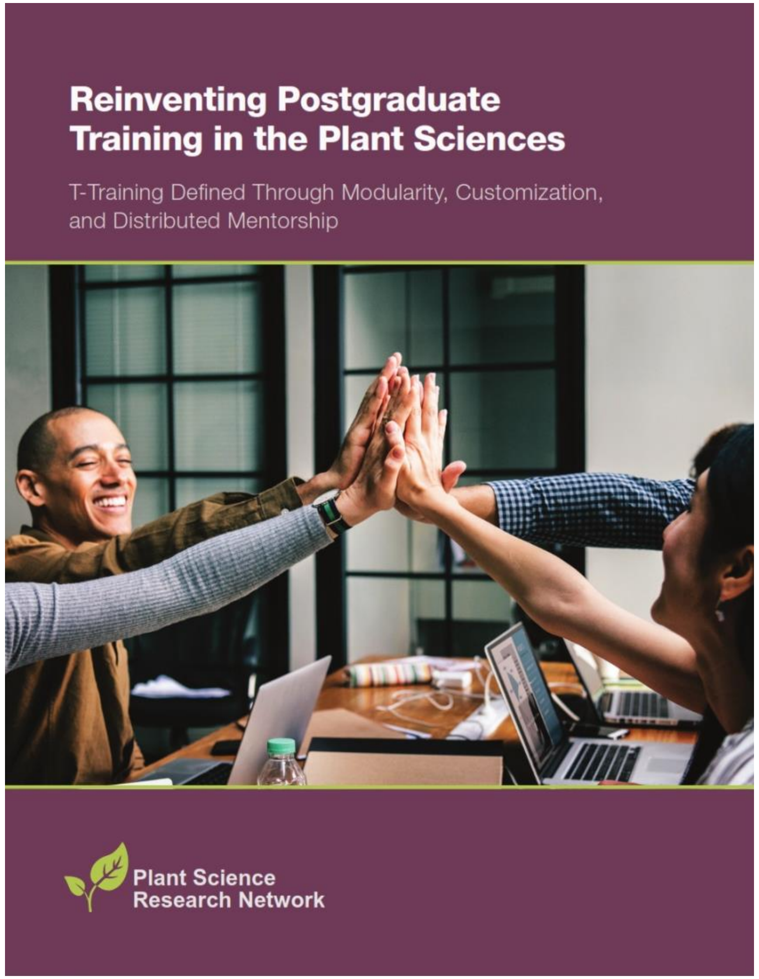

Experimental Biologist
Computational Biologist
NO EATING
NO DRINKING
NO BREATHING
NO OPEN TOE SHOES
NO SHORTS
NO MINI SKIRTS
ALWAYS LAB COATS ON
LIFE IS BEAUTIFUL

Se un excelente estudiante

- Escoge un director de tesis y un lugar para estudiar.
- Escoge un problema real para estudiar.
- Sigue las reglas de la Ética.
- Usa tu tiempo de forma inteligente.
- Aprende a escribir artículos y proyectos de investigación.
- Estar al pendiente del mercado laboral.


Things People ask PhD students
What's your research on?
What's the Point of that?
What will you do after?
Are you going to be a teacher?
Did you hear that <Person your age> got a job?
Did you hear they're buying a house?
What do you mean you're no money?
Can't you get a Summer job?
When are you finished your PhD?
Are you done Now?
Now?
How long can it take?
WHY ARE YOU SAD ALL THE TIME?
twisteddoodles.com

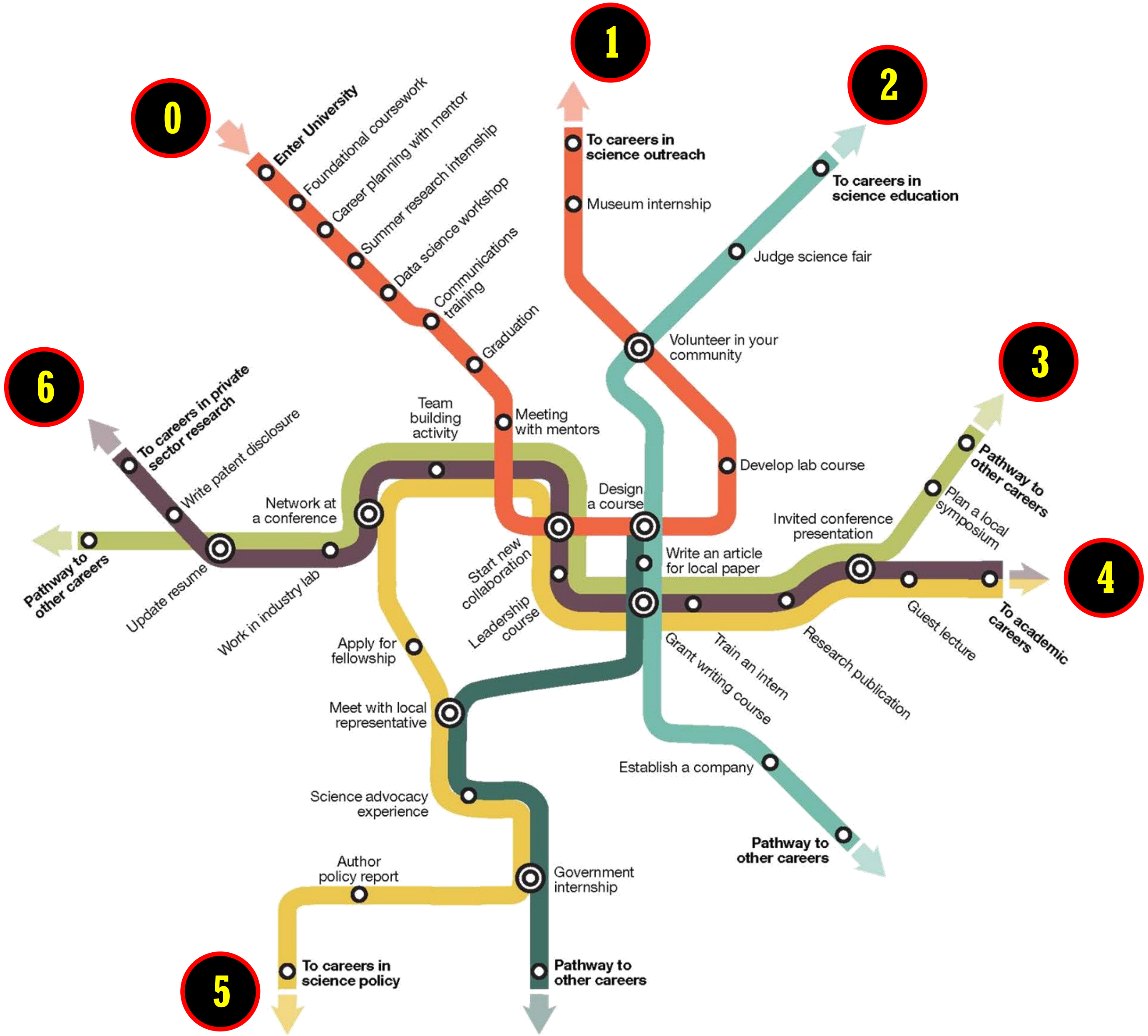
Imaginando la ciencia en el 2035



Reinventing Postgraduate Training in the Plant Sciences

T-Training Defined Through Modularity, Customization, and Distributed Mentorship

Plant Science Research Network


0
1
2
3
4
5
6
Enter University
Foundational coursework
Career planning with mentor
Summer research internship
Data science workshop
Communications training
Graduation
Meeting with mentors
To careers in science outreach
Museum internship
Volunteer in your community
Develop lab course
To careers in science education
Judge science fair
Team building activity
Design a course
Pathway to other careers
Plan a local symposium
Invited conference presentation
Write an article for local paper
Guest lecture
To academic careers
Research publication
Train an intern
Grant writing course
Start new collaboration
Leadership course
To careers in private sector research
Write patent disclosure
Network at a conference
Pathway to other careers
Update resume
Work in industry lab
Apply for fellowship
Meet with local representative
Establish a company
Pathway to other careers
Science advocacy experience
Author policy report
Government internship
To careers in science policy
Pathway to other careers

UBBMP **Bioquímica y Biología Molecular de Plantas**
CICY

https://community.plantae.org/document/5024087219996984616/reinventing-postgraduate-training-in-the-plant-sciences

How to Pick a Graduate Advisor

Ben A. Barres[1,*]
[1]Stanford University School of Medicine, Department of Neurobiology, Fairchild Building Room D235, 299 Campus Drive, Stanford, CA 94305-5125, USA
*Correspondence: barres@stanford.edu

http://dx.doi.org/10.1016/j.neuron.2013.10.005

- ¿Por qué algunos estudiantes talentosos tienen éxito como científicos mientras que otros no?
  - Para la mayoría de los estudiantes, seleccionar un buen mentor de investigación es la clave.
- Lo que un estudiante nunca debería hacer.
  - No se debe seleccionar un asesor solo porque él o ella es el único investigador en su universidad que trabaja sobre el tema específico que consideras que te interesa (generalmente, lo que sea que se haya trabajado en un laboratorio de pregrado).

Escoge un director de tesis

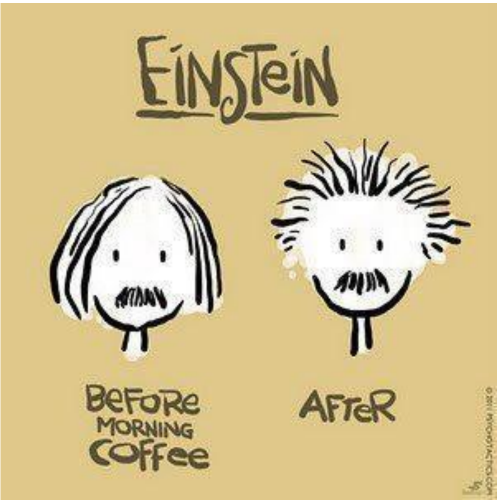
- ¿Cómo puedo identificar a los asesores que son buenos científicos?
  - Primero y muy importante nunca asumas que solo porque un miembro de la facultad tiene un trabajo en una buena universidad, es un buen científico.
- El sello distintivo de un buen científico, por lo general, es que hace preguntas importantes y realiza pasos mecanísticos o conceptuales para responderlas.
- Una cosa simple que los estudiantes pueden hacer es una búsqueda de GA y asegurarse de que tu potencial asesor esté publicando trabajos de investigación en buenas e importantes revistas y que da el crédito correspondiente a sus estudiantes.

Escoge un buen director de tesis y un lugar para estudiar

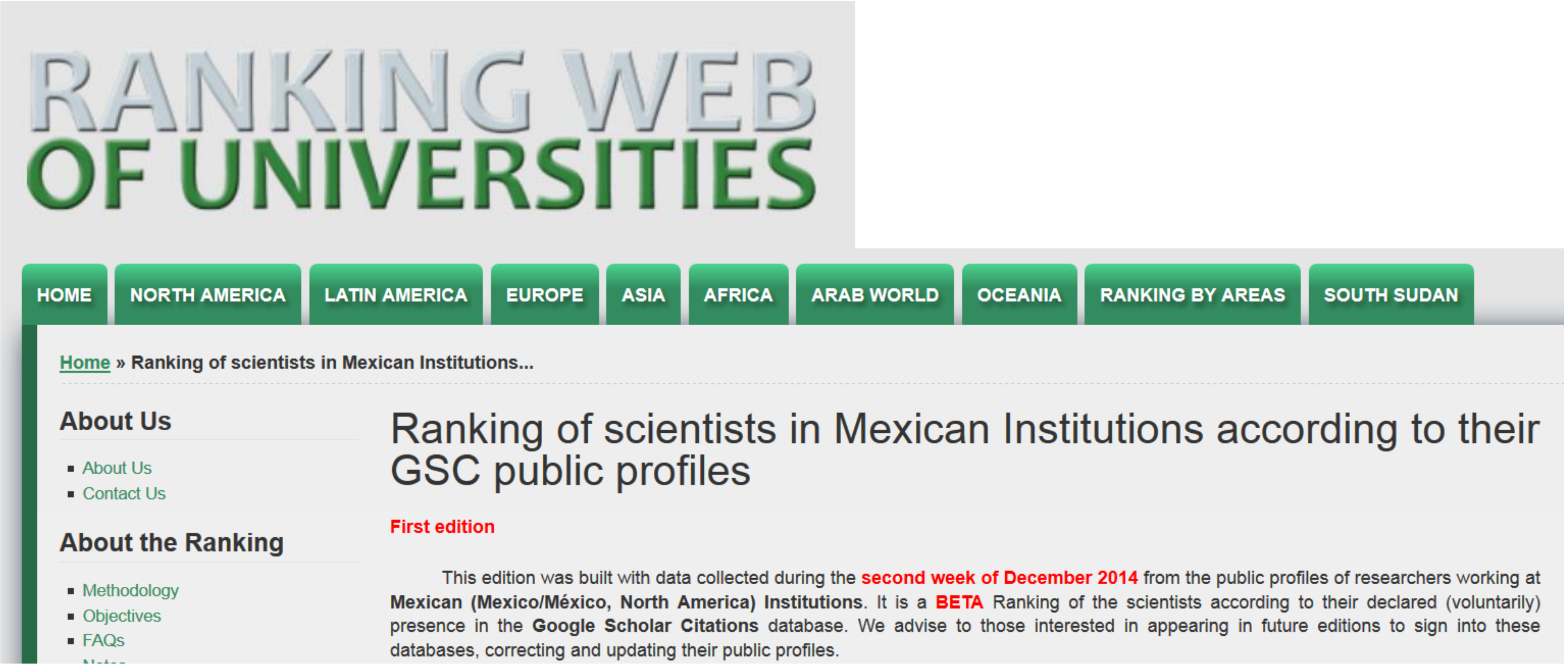
- Prueba rotaciones de laboratorio en diferentes áreas.
  - De modo que, como primer paso para encontrar un buen director, crea una lista de posibles asesores en su campo general de interés, amplia en términos generales en lugar de centrada en un tema de investigación muy específico.
  - ¡Después de todo, el objetivo de obtener un doctorado es aprender la diferencia entre ciencia buena y mala y aún no has aprendido a hacerlo!
- Solo hay dos o tres criterios de importancia: capacidad científica y de asesoría. Pasión por la ciencia.

Escoge un director de tesis

- Si bien la calidad de los trabajos de investigación es primordial, el número también es importante. Si tu posible asesor no ha publicado un documento de investigación BUENO en más de 3 años, éste es un signo de advertencia serio.
- Otra medida de la productividad general y el impacto del trabajo de un científico como un todo se conoce como el índice H.



Escoge un buen director de tesis


RANKING WEB OF UNIVERSITIES
HOME
NORTH AMERICA
LATIN AMERICA
EUROPE
ASIA
AFRICA
ARAB WORLD
OCEANIA
RANKING BY AREAS
SOUTH SUDAN

Home » Ranking of scientists in Mexican Institutions...

About Us

- About Us
- Contact Us

About the Ranking

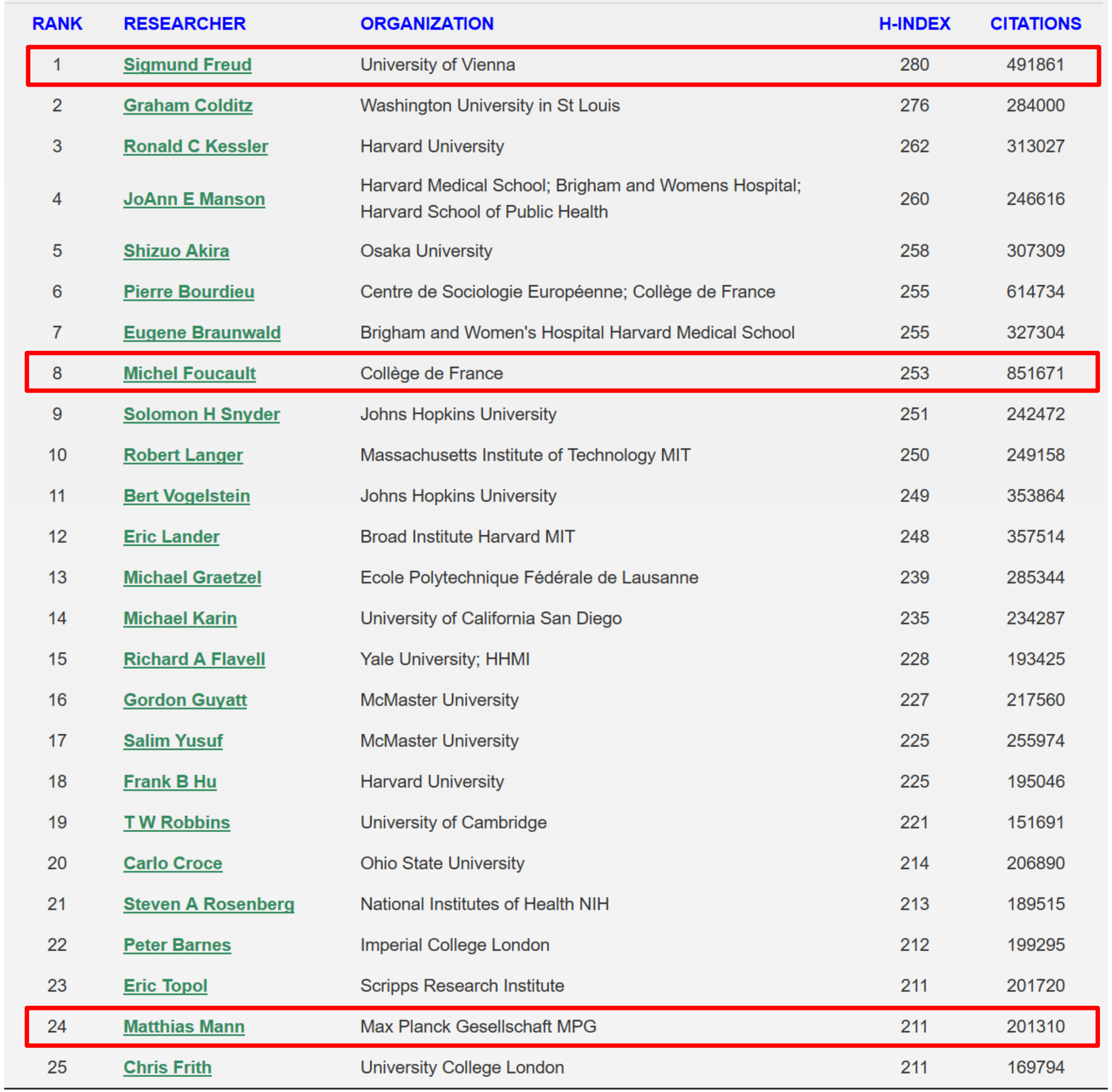
- Methodology
- Objectives
- FAQs

Ranking of scientists in Mexican Institutions according to their GSC public profiles

First edition

This edition was built with data collected during the **second week of December 2014** from the public profiles of researchers working at **Mexican (Mexico/México, North America) Institutions**. It is a **BETA** Ranking of the scientists according to their declared (voluntarily) presence in the **Google Scholar Citations** database. We advise to those interested in appearing in future editions to sign into these databases, correcting and updating their public profiles.

http://www.webometrics.info/en/node/63



RANK	RESEARCHER	ORGANIZATION	H-INDEX	CITATIONS
1	Sigmund Freud	University of Vienna	280	491861
2	Graham Colditz	Washington University in St Louis	276	284000
3	Ronald C Kessler	Harvard University	262	313027
4	JoAnn E Manson	Harvard Medical School; Brigham and Womens Hospital; Harvard School of Public Health	260	246616
5	Shizuo Akira	Osaka University	258	307309
6	Pierre Bourdieu	Centre de Sociologie Européenne; Collège de France	255	614734
7	Eugene Braunwald	Brigham and Women's Hospital Harvard Medical School	255	327304
8	Michel Foucault	Collège de France	253	851671
9	Solomon H Snyder	Johns Hopkins University	251	242472
10	Robert Langer	Massachusetts Institute of Technology MIT	250	249158
11	Bert Vogelstein	Johns Hopkins University	249	353864
12	Eric Lander	Broad Institute Harvard MIT	248	357514
13	Michael Graetzel	Ecole Polytechnique Fédérale de Lausanne	239	285344
14	Michael Karin	University of California San Diego	235	234287
15	Richard A Flavell	Yale University; HHMI	228	193425
16	Gordon Guyatt	McMaster University	227	217560
17	Salim Yusuf	McMaster University	225	255974
18	Frank B Hu	Harvard University	225	195046
19	T W Robbins	University of Cambridge	221	151691
20	Carlo Croce	Ohio State University	214	206890
21	Steven A Rosenberg	National Institutes of Health NIH	213	189515
22	Peter Barnes	Imperial College London	212	199295
23	Eric Topol	Scripps Research Institute	211	201720
24	Matthias Mann	Max Planck Gesellschaft MPG	211	201310
25	Chris Frith	University College London	211	169794

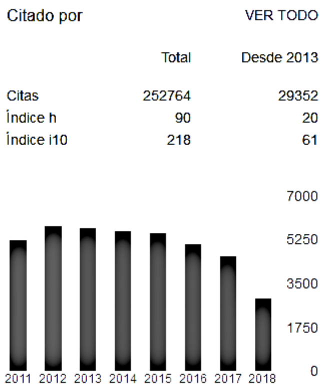
http://www.webometrics.info/en/node/58

2,610 Investigadores altamente citados ($h \geq 100$)

Abril 2018

En el año 2005, el físico de la UC/San Diego, Jorge Hirsch, propuso el índice *h* para medir la citación de los investigadores

Oliver H. Lowry



Citado por VER TODO

	Total	Desde 2013
Citas	252764	29352
Índice h	90	20
Índice i10	218	61

RANKING WEB OF UNIVERSITIES

Scopus

ELSEVIER

WEB OF SCIENCE™

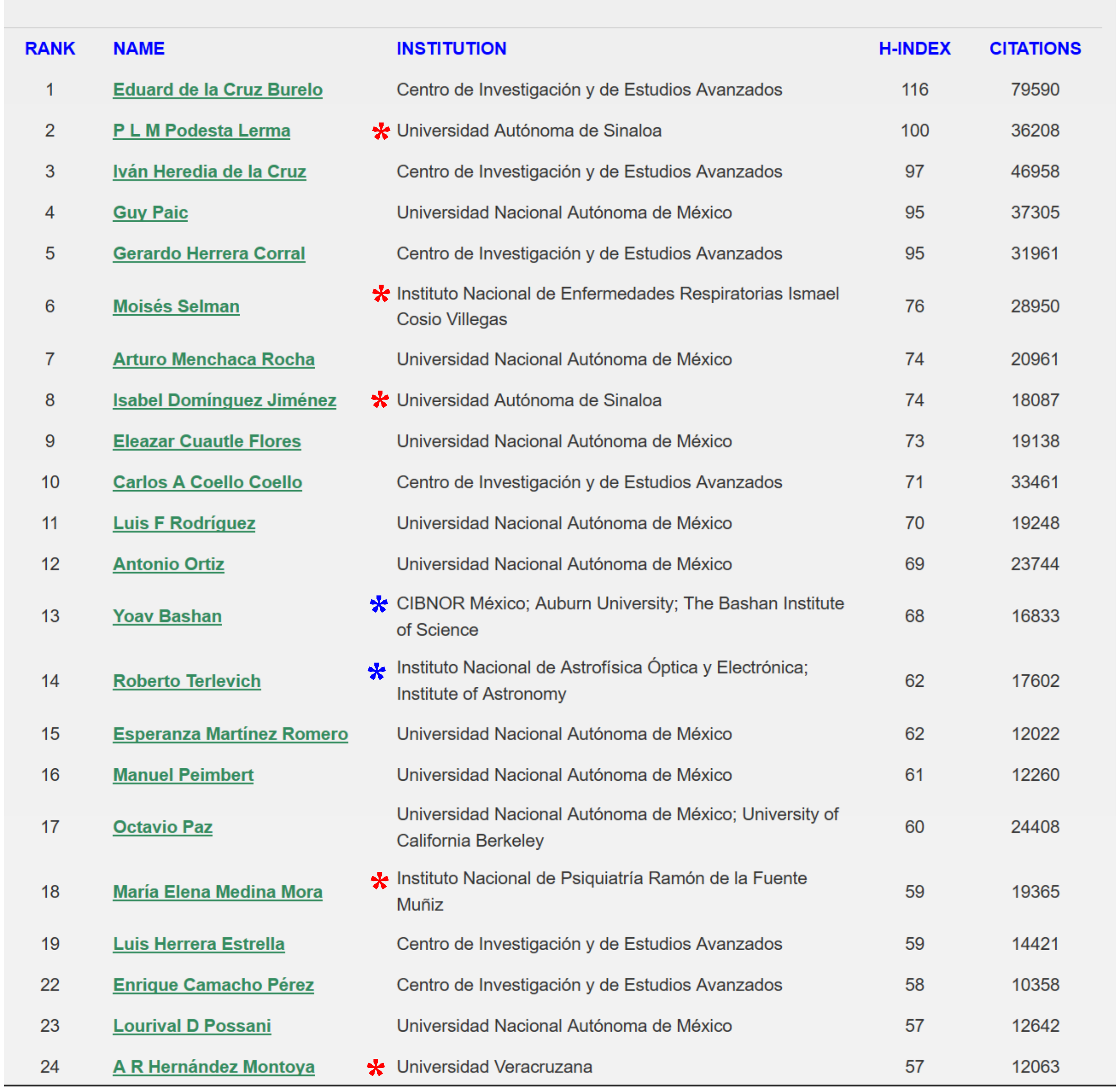
THOMSON REUTERS™

Google scholar

RANKING WEB OF UNIVERSITIES

México

Noviembre 2016



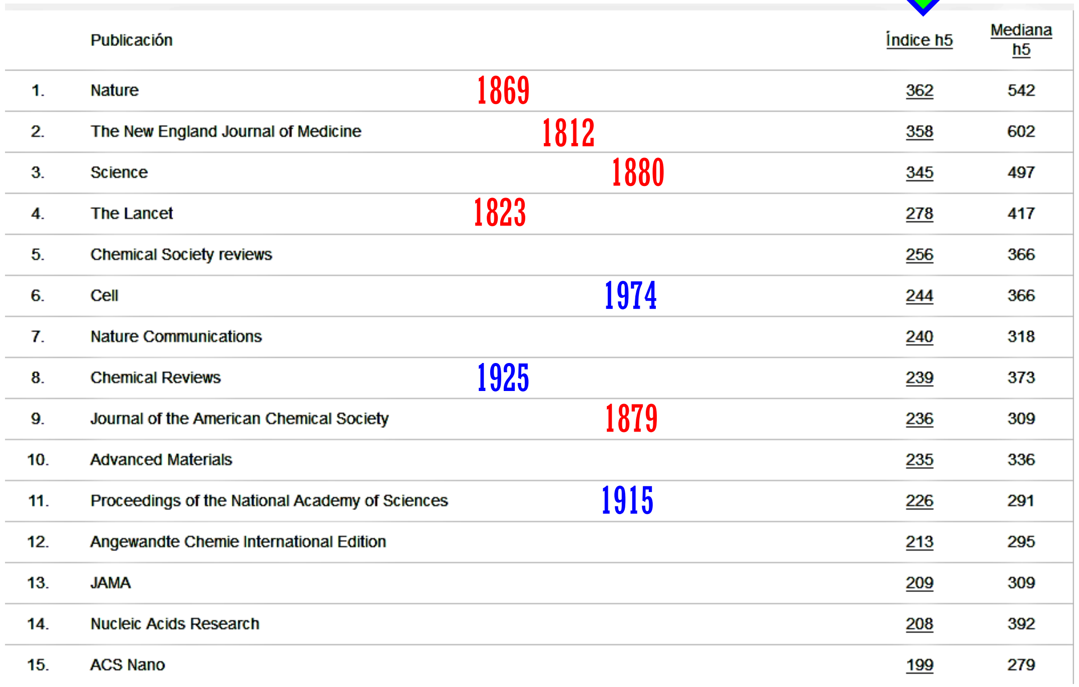
RANK	NAME	INSTITUTION	H-INDEX	CITATIONS
1	Eduard de la Cruz Burelo	Centro de Investigación y de Estudios Avanzados	116	79590
2	P L M Podesta Lerma	* Universidad Autónoma de Sinaloa	100	36208
3	Iván Heredia de la Cruz	Centro de Investigación y de Estudios Avanzados	97	46958
4	Guy Paic	Universidad Nacional Autónoma de México	95	37305
5	Gerardo Herrera Corral	Centro de Investigación y de Estudios Avanzados	95	31961
6	Moisés Selman	* Instituto Nacional de Enfermedades Respiratorias Ismael Cosio Villegas	76	28950
7	Arturo Menchaca Rocha	Universidad Nacional Autónoma de México	74	20961
8	Isabel Domínguez Jiménez	* Universidad Autónoma de Sinaloa	74	18087
9	Eleazar Cuautle Flores	Universidad Nacional Autónoma de México	73	19138
10	Carlos A Coello Coello	Centro de Investigación y de Estudios Avanzados	71	33461
11	Luis F Rodríguez	Universidad Nacional Autónoma de México	70	19248
12	Antonio Ortiz	Universidad Nacional Autónoma de México	69	23744
13	Yoav Bashan	* CIBNOR México; Auburn University; The Bashan Institute of Science	68	16833
14	Roberto Terlevich	* Instituto Nacional de Astrofísica Óptica y Electrónica; Institute of Astronomy	62	17602
15	Esperanza Martínez Romero	Universidad Nacional Autónoma de México	62	12022
16	Manuel Peimbert	Universidad Nacional Autónoma de México	61	12260
17	Octavio Paz	Universidad Nacional Autónoma de México; University of California Berkeley	60	24408
18	María Elena Medina Mora	* Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz	59	19365
19	Luis Herrera Estrella	Centro de Investigación y de Estudios Avanzados	59	14421
22	Enrique Camacho Pérez	Centro de Investigación y de Estudios Avanzados	58	10358
23	Lourival D Possani	Universidad Nacional Autónoma de México	57	12642
24	A R Hernández Montoya	* Universidad Veracruzana	57	12063

Docente
INICIANDO
el año escolar
Docente
FINALIZANDO
el año escolar

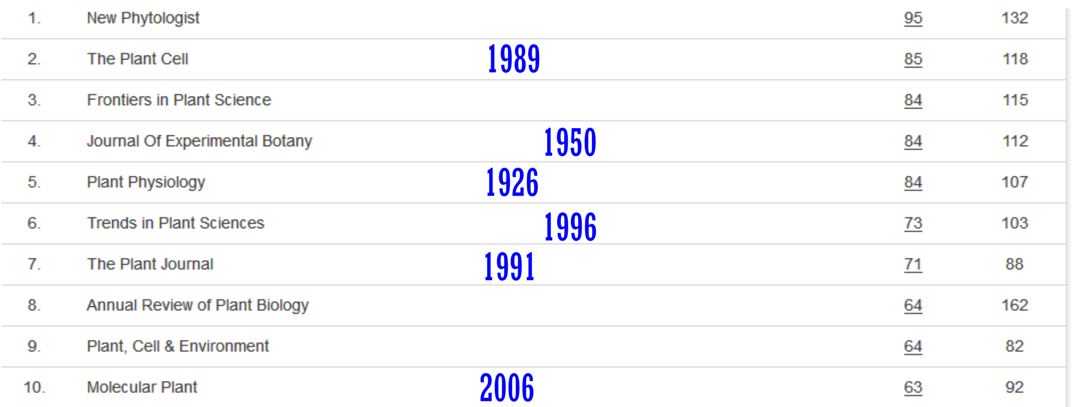
http://www.webometrics.info/en/node/63

2014 - 2018

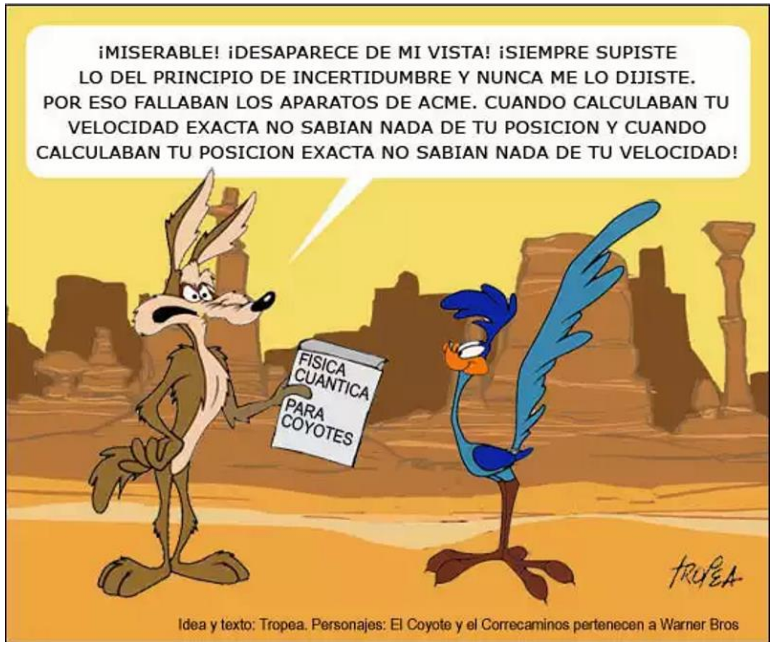
Google scholar



	Publicación		Índice h5	Mediana h5
1.	Nature	1869	362	542
2.	The New England Journal of Medicine	1812	358	602
3.	Science	1880	345	497
4.	The Lancet	1823	278	417
5.	Chemical Society reviews		256	366
6.	Cell	1974	244	366
7.	Nature Communications		240	318
8.	Chemical Reviews	1925	239	373
9.	Journal of the American Chemical Society	1879	236	309
10.	Advanced Materials		235	336
11.	Proceedings of the National Academy of Sciences	1915	226	291
12.	Angewandte Chemie International Edition		213	295
13.	JAMA		209	309
14.	Nucleic Acids Research		208	392
15.	ACS Nano		199	279



1.	New Phytologist		95	132
2.	The Plant Cell	1989	85	118
3.	Frontiers in Plant Science		84	115
4.	Journal Of Experimental Botany	1950	84	112
5.	Plant Physiology	1926	84	107
6.	Trends in Plant Sciences	1996	73	103
7.	The Plant Journal	1991	71	88
8.	Annual Review of Plant Biology		64	162
9.	Plant, Cell & Environment		64	82
10.	Molecular Plant	2006	63	92


¡MISERABLE! ¡DESAPARECE DE MI VISTA! ¡SIEMPRE SUPISTE LO DEL PRINCIPIO DE INCERTIDUMBRE Y NUNCA ME LO DIJISTE. POR ESO FALLABAN LOS APARATOS DE ACME. CUANDO CALCULABAN TU VELOCIDAD EXACTA NO SABIAN NADA DE TU POSICION Y CUANDO CALCULABAN TU POSICION EXACTA NO SABIAN NADA DE TU VELOCIDAD!
FISICA CUANTICA PARA COYOTES
TROPEA

Idea y texto: Tropea. Personajes: El Coyote y el Correcaminos pertenecen a Warner Bros

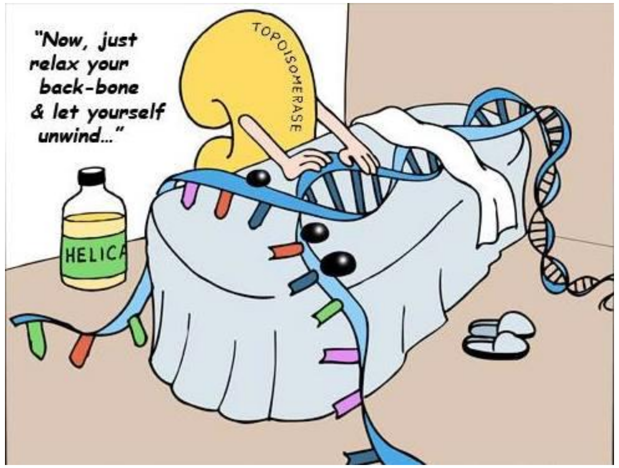
CICY UBBMP Bioquímica y Biología Molecular de Plantas

Seleccionar un buen director es esencial

- En segundo lugar, un alumno puede aprender mucho sobre la productividad y los logros de investigación de un asesor potencial simplemente leyendo el CV del asesor.
  - No debes ser tímido para solicitar el CV de un posible asesor.
- Otra medida objetiva de la calidad de la ciencia que se está haciendo un laboratorio es si han establecido apoyos financieros.
- Pregúntale al coordinador del programa y/o al director de tesis de licenciatura por su consejo sincero sobre miembros del personal de tu interés.

Buenos directores

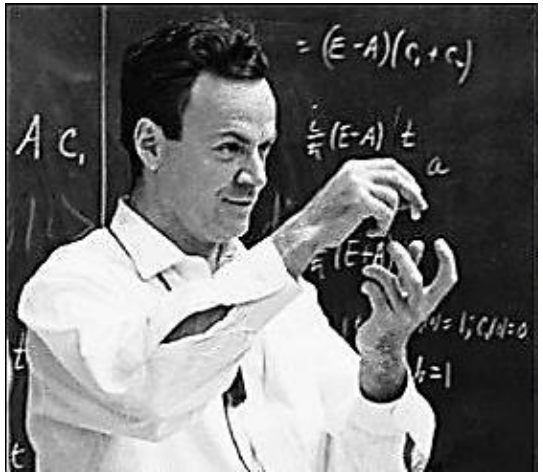
- Una de las tareas más importantes de un asesor es ayudar a su alumno a formular una pregunta buena y manejable y luego guiar gentilmente al alumno para que formule buenos experimentos para abordar dicha pregunta y, al mismo tiempo, alentar al alumno a ser cada vez más independiente con el tiempo.
- Un buen director no pone a su alumno a trabajar en una pregunta científicamente trivial.


"Now, just relax your back-bone & let yourself unwind..."
TOPOISOMERASE
HELICA

NO PRETENDO IMPRESIONARTE
α-pineno
PERO SOY QUÍMICO

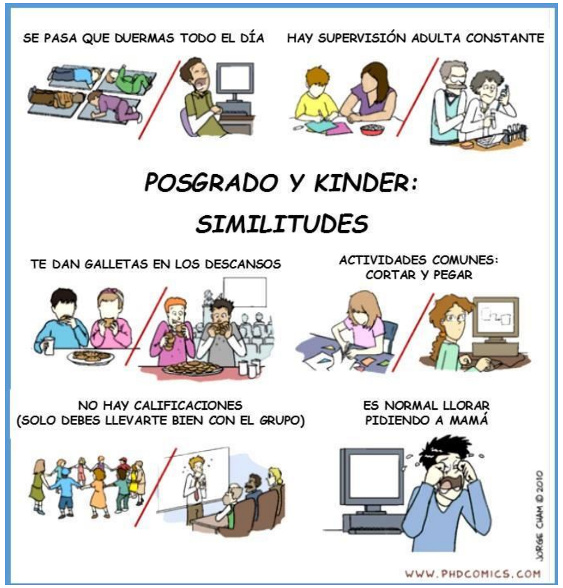
Buenos directores de tesis

- **Buenos directores:**
  - Discute sobre Ciencia.
  - Te enseña a diseñar buenos experimentos.
  - Te ayuda a interpretar y analizar los datos.
  - Te enseña a escribir artículos y proyectos.
  - Te enseña a leer artículos.
  - Te ayuda a practicar tus pláticas.
  - Te proporciona orientación.
  - Discute sobre el ambiente que rodea a la Ciencia.

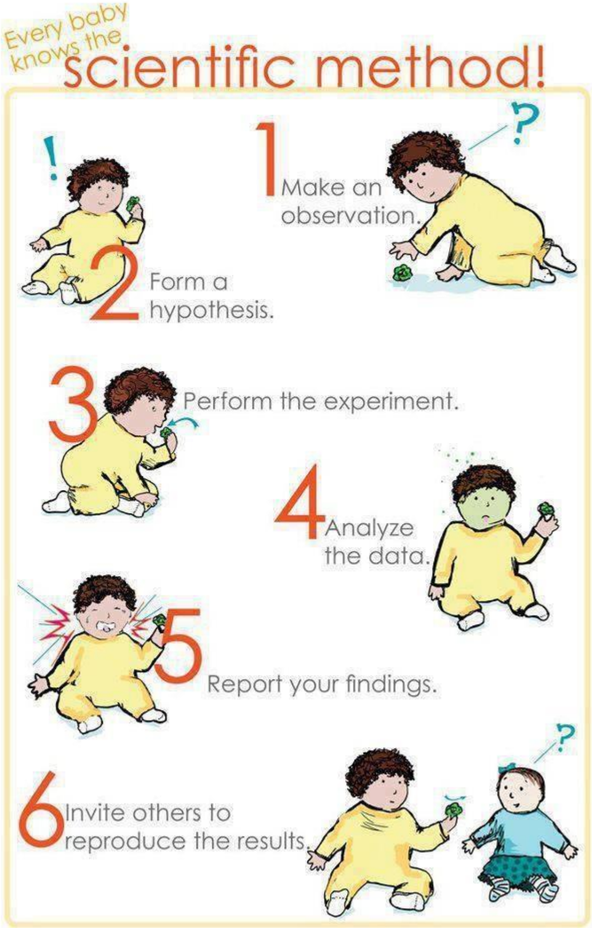


Buenos directores de tesis

- ¿Las reuniones de laboratorio son discusiones grupales en las que todos contribuyen con sus pensamientos e ideas, o es principalmente un momento en que el mentor dicta a los estudiantes qué deben hacer a continuación?
- Por último, y lo más importante, es fundamental que determines el historial de éxito de mentoría entre sus estudiantes.


SE PASA QUE DUERMAS TODO EL DÍA
HAY SUPERVISIÓN ADULTA CONSTANTE
POSGRADO Y KINDER:
SIMILITUDES
TE DAN GALLETAS EN LOS DESCANSOS
ACTIVIDADES COMUNES: CORTAR Y PEGAR
NO HAY CALIFICACIONES (SOLO DEBES LLEVARTE BIEN CON EL GRUPO)
ES NORMAL LLORAR PIDIENDO A MAMÁ
JORGE CHAM © 2010
WWW.PHDCOMICS.COM

Mi mamá me Dijo “Ropa o Libros” y Pues naDa espero que no haga mucho frío.

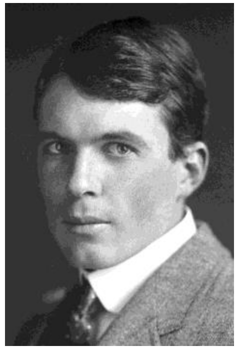

Every baby knows the scientific method!
1 Make an observation.
2 Form a hypothesis.
3 Perform the experiment.
4 Analyze the data.
5 Report your findings.
6 Invite others to reproduce the results.

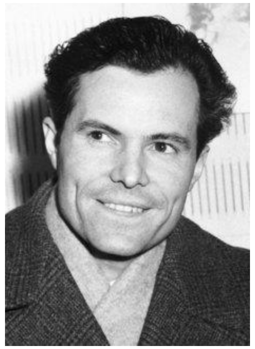
Los malos mentores

- Él (o ella) nunca menciona los nombres de sus estudiantes cuando presenta su trabajo en una charla o solo los menciona en una larga lista en letra pequeña al final de la charla.
- Él no practica las charlas de los estudiantes con ellos.
- Pone dos estudiantes en el laboratorio en el mismo proyecto para que compitan entre sí.
- Él te dice qué experimentos debes hacer.
- Insiste en escribir los trabajos de investigación en lugar de permitir que el alumno lo escriba y luego lo edite con él.
- Él permite que los documentos de los estudiantes (TESIS) se asienten en su escritorio (a veces durante años, a veces nunca los revisa).

Estudiantes de doctorado ganadores del Premio Nobel

- Marie Curie née Sklodowska (PN 1903). Radio
- William Lawrence Bragg (PN 1915). Cristalografía. 26 años.
- Frederick G. Banting (PN 1923). Insulina. 32 años.
- Rudolf Ludwig Mössbauer (PN 1961). Efecto Mössbauer.
- Jacques Monod (PN 1965) (JMB >16,000). Regulación EG.
- Carol W. Greider (PN 2009) (Cell >22,000). Telomerasas.
- Marc Wilkins, Macquarie University, Sydney, Proteómica (1994).





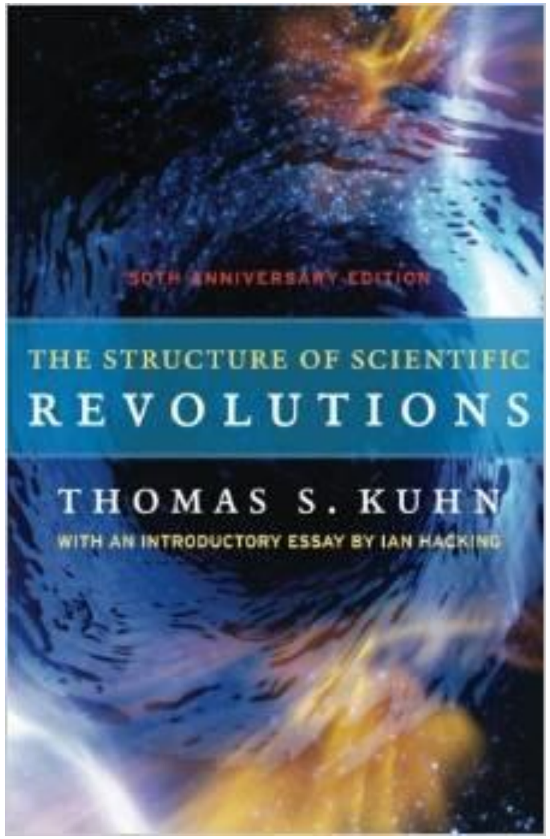
THÈSES

A LA FACULTÉ DES SCIENCES DE PARIS

PARIS.

Thomas S. Kuhn (1922-1996)

- El ensayo que sigue es el primer informe completo publicado sobre un proyecto originalmente concebido hace casi quince años. En ese momento yo era un estudiante graduado en física teórica ya a la vista del final de mi disertación.

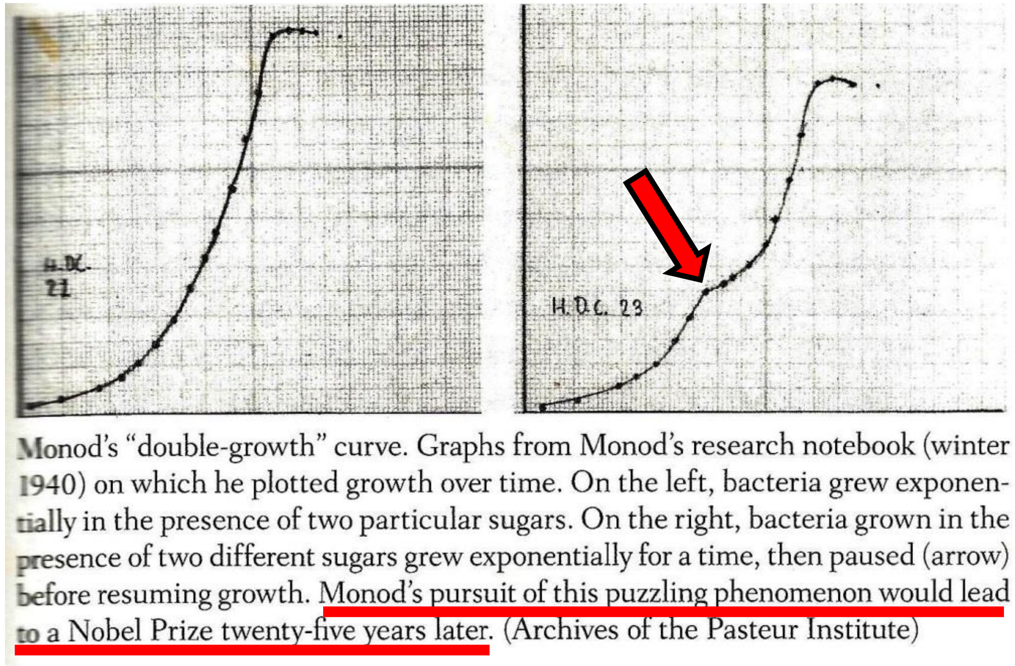

50TH ANNIVERSARY EDITION
THE STRUCTURE OF SCIENTIFIC
REVOLUTIONS
THOMAS S. KUHN
WITH AN INTRODUCTORY ESSAY BY IAN HACKING

Jacques Lucien Monod

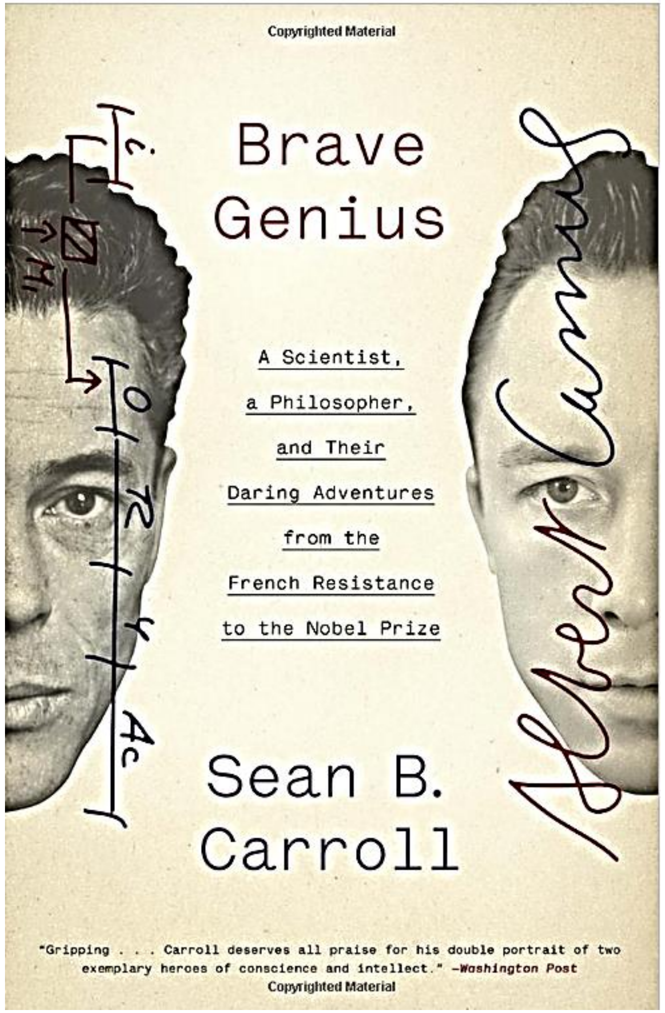
1 azúcar

2 ≠ CH

Pág. 133


H.D.C. 21
H.D.C. 23

Monod's "double-growth" curve. Graphs from Monod's research notebook (winter 1940) on which he plotted growth over time. On the left, bacteria grew exponentially in the presence of two particular sugars. On the right, bacteria grown in the presence of two different sugars grew exponentially for a time, then paused (arrow) before resuming growth. Monod's pursuit of this puzzling phenomenon would lead to a Nobel Prize twenty-five years later. (Archives of the Pasteur Institute)


Copyrighted Material
Brave Genius
A Scientist, a Philosopher, and Their Daring Adventures from the French Resistance to the Nobel Prize
Sean B. Carroll
"Gripping . . . Carroll deserves all praise for his double portrait of two exemplary heroes of conscience and intellect." –Washington Post
Copyrighted Material

¿PQ la bacteria pausa su crecimiento si va a usar el 2° CH?

André Lwoff. Podría ser una adaptación enzimática.

Cambió la relación de los dos CH en el medio: 1:3, 1:1, 3:1.

Propuso que uno de los CH podría estar inhibiendo el uso del otro.

Lwoff se impresionó. La Sorbona no. Lo que Monod está haciendo no le interesa a la Sorbona.

La píldora

STEROIDS. XXII. THE SYNTHESIS OF 19-NOR-PROGESTERONE

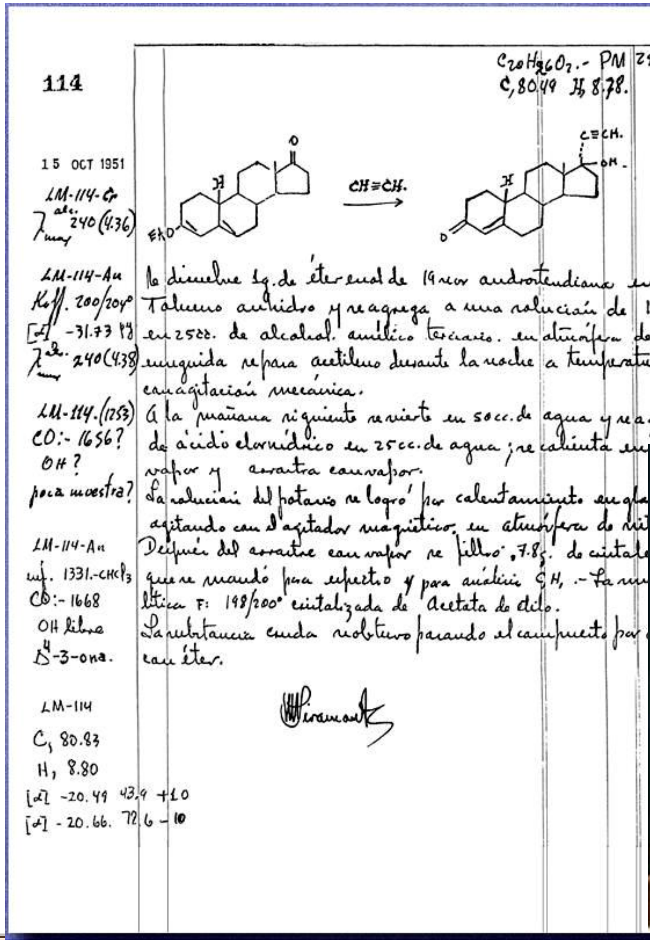
Sir:

In 1944, Ehrenstein[1] reported the twelve-step degradation of strophanthidine in 0.07% yield to a resin, $[\alpha]_D$ +89°, believed to be 19-norprogesterone (IIIb). The material represented a mixture of stereoisomers, most likely possessing the "unnatural" configuration[2] at C-14(β) and C-17(α) and was reported[3] to exhibit the same biological activity as progesterone. Subsequent work[4] has shown that the "unnatural" configuration at C-14 and C-17 *per se* does not confer progestational activity and it remained, therefore, to be seen whether the lack of an angular methyl group at C-10 in IIIb was responsible for this pronounced biological effect, so surprising in view of the extreme specificity of this type of hormonal activity.[2a]

A modified[5] Birch reduction[6] on 3-methoxy-17-
acet
$^{2,5(10)}$-19-
nor-
), (m.p.
135-
roform),
no s
free hy-
drox
$C_{21}H_{32}O_2$:
C, 7
und: C,
79.3
without
isola
ochloric
acid
(IIIa),

(1)
(2)
Org. Chem.

Luis Ernesto Miramontes Cárdenas


114

$C_{20}H_{26}O_2$.- PM 298.41
C, 80.49 H, 8.78.

15 OCT 1951

LM-114-Gr
$\lambda_{max}^{alc.}$ 240 (4.36)

EtO
CH≡CH.
C≡CH.
OH.
O

LM-114-An
Koff. 200/204°
[α] -31.73 Py
$\lambda_{max}^{alc.}$ 240 (4.38)

Se disuelve 5g. de éter enol de 19 nor androstendiona en 25cc. de Tolueno anhidro y se agrega a una solución de 1g. de Potas en 25cc. de alcohol amílico terciario. en atmósfera de Nitrógeno enseguida se pasa acetileno durante la noche a temperatura ordinar con agitación mecánica.

LM-114.(1253)
CO:- 1656?
OH?
poca muestra?

A la mañana siguiente se vierte en 50cc. de agua y se agregan 30 de ácido clorhídrico en 25cc. de agua; se calienta en vapor y arrastra con vapor.

La solución del potasio se logró por calentamiento en gla agitando con el agitador magnético, en atmósfera de ni

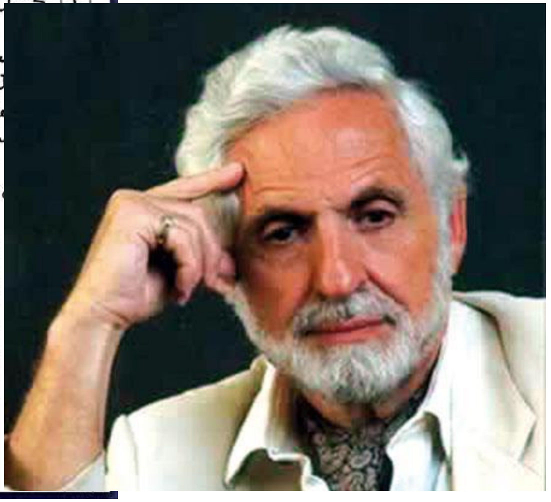
LM-114-An
inf. 1331.-$CHCl_3$
CO:- 1668
OH libre
Δ^4-3-ona.

Después del arrastre con vapor se filtró, 7.8g. de cristal que se mandó para espectro y para análisis C H, .- La mu lítica F: 198/200° cristalizada de Acetato de etilo.

La substancia cruda se obtuvo pasando el compuesto por con éter.

Miramontes

LM-114
C, 80.83
H, 8.80
[α] -20.49 43.4 +1.0
[α] -20.66. 72.6 - 10



Miramontes L., Rosenkranz G., Djerassi C. Steroids. XXII. The synthesis of 19-nor-progesterone, JACS, 73(7): 3540-41, (1951).

The pill (noretisterone)

United States Patent Office

2,744,122
Patented May 1, 1956

1

2,744,122

Δ^4-19-NOR-17α-ETHINYLANDROSTEN-17β-OL-3-ONE AND PROCESS

Carl Djerassi, Birmingham, Mich., and Luis Miramontes and George Rosenkranz, Mexico City, Mexico, assignors, by mesne assignments, to Syntex S. A., Mexico City, Mexico, a corporation of Mexico

No Drawing. Application November 12, 1952, Serial No. 320,154

Claims priority, application Mexico November 22, 1951

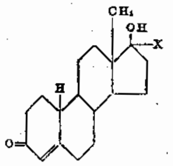
4 Claims. (Cl. 260—397.4)

:lates to cyclopentanophenan-
ı process for the preparation

present invention relates to
3-one compounds, having 17α-
nts and to a process for pro-

ıtion of Djerassi, Rosenkranz
ımber 250,036, filed October 5,
ɔvel process for the production
; set forth in this application,
ɛn found to be even stronger
han progesterone itself.
present invention, it has been
ɛcribed in detail in the afore-
' be applied to produce com-
ɛries, namely, Δ^4-19-norandro-
ɛting the 3-keto group of this
ation of a suitable enol ether
etail and reacting the resultant
reagents, there may then be
ɛthylandrosten-17β-ol-3-one or
sten-17β-ol-3-one. The first
s more pronounced androgenic
e methyltestosterone and the
ds exhibits more pronounced
its homologue ethinyltestoster-

npounds of the present inven-
ɛsented by the following struc-

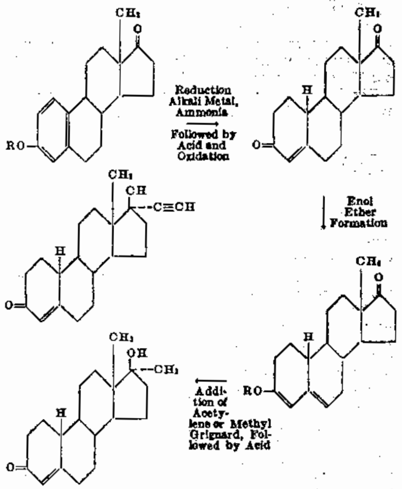


In the above formula X is selected from the group consisting of C≡CH and CH_3.

Compounds as exemplified by the foregoing formula

2

may be produced in accordance with the process outlined by the following equation:


CH₃
O
RO
Reduction Alkali Metal, Ammonia
Followed by Acid and Oxidation
H
Enol Ether Formation
OH
C≡CH
RO
Addition of Acetylene or Methyl Grignard, Followed by Acid
CH₃

In the above equation R represents a lower alkyl radical, as for example methyl or ethyl, and R^1 represents a lower alkyl radical such as ethyl or methyl or a benzyl radical or any of the other groups which are customarily used as part of an enol ether customarily used for the protection of the 3-keto group of steroids. Thus, in the alternative rather than an alkyl or benzyl enol ether as shown benzyl thioenolethers may be utilized in the present reaction or other thioenolethers.

In practicing the process of the present invention, a suitable 3 lower alkyl ether as for example 3-methoxyestrone is dissolved in a suitable solvent such as anhydrous dioxane. Thereafter anhydrous liquid ammonia and an alkali metal, such as lithium or sodium metal, are added to the mechanically stirred solution. The stirring is continued for a short period, as for example one hour, and a quantity of ethanol is then added. When the reaction is complete and the blue color produced disappears, water is then added. The ammonia is then evaporated on a steam bath and the product collected with 2 l. of water. Extraction with a suitable solvent, such as ether, and ethyl acetate followed by evaporation to dryness under vacuum, produced a yellow oil. The oil thus obtained was then dissolved in a suitable solvent, such as methanol, and refluxed with a mineral acid, such as hydrochloric acid, for approximately one hour. After purification, extraction and so forth, the product obtained was a yellow oil having an ultraviolet absorption maximum characteristic of a Δ^4-3-ketone. The last-mentioned yellow oil was then oxidized as by adding chromic acid in acetic acid to a

---

3

George Rosenkranz (d) y Luis E. Miramontes (i), (2001, UNAM).

trated under vacuum (20 mm.). The residue was extracted with ether, washed to neutral and evaporated to dryness. The residual semi-crystalline product (7 g.) was chromatographed over alumina and the fractions eluted with ether yielded 3.2 g. of Δ^4-19-norandrosten-3,17-dione having a melting point of 163°–167° C.

Example II

Following the method described in Example I, but using 15 g. of sodium instead of lithium, extcatly the same results were obtained.

Example III

A solution of 2 g. of Δ^4-19-norandrosten-3,17-dione and 0.4 g. of pyridine hydrochloride in 50 cc. of benzene free of thiophene was made free of moisture by distilling a small portion 4 cc. of absolute alcohol and 4 cc. of ethyl orthoformate were added and the mixture was refluxed during 3 hours. 5 cc. of the mixture were then distilled and after adding an additional 4 cc. of ethyl orthoformate the refluxing was continued for two hours longer. The mixture was evaporated to dryness under vacuum and the residue was taken up in ether, washed, dried and evaporated to dryness. The residue was crystallized from

4

hexane-acetone and then from ether to give $\Delta^{3,5}$-19-nor-3-ethoxy-androstadien-17-one with a melting point of 140°–142° C., $[\alpha]_D$—83,05°, ultraviolet absorption maximum at 242μ(log ϵ4.4).

Example IV

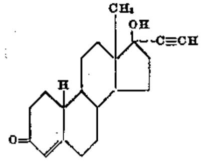
A solution of 1 g. of $\Delta^{3,5}$-19-nor-3-ethoxy-androstadien-17-one in 10 cc. of anhydrous ether was added to a solution of 10 g. of methyl magnesium bromide in 25 cc. of anhydrous ether and the mixture was refluxed during two hours and then poured in water, acidified with 50% hydrochloric acid to pH 1 and left standing for one hour. The product was extracted with ether, washed to neutral, dried and evaporated to dryness. Several crystallizations from ether-hexane yielded Δ^4-19-nor-17α-methylandrosten-17β-ol-3-one with a melting point of 154°–156° C., $[\alpha]_D$+30.3°, ultraviolet absorption maximum at 240μ(log ϵ4.32).

Example V

1 g. of potassium metal was dissolved in 25 cc. of tertiary amyl alcohol by heating under an atmosphere of nitrogen. 1 g. of $\Delta^{3,5}$-19-nor-3-ethoxyandrostadien-17-one in 25 cc. of anhydrous toluene was added and nitrogen was passed during 15 minutes. Then acetylene (especially dried and purified) was passed during 14 hours through the mechanically stirred solution, at room temperature. The mixture was poured in water, acidified to pH 1 with dilute hydrochloric acid, heated on the steam bath for 30 minutes and then subjected to steam distillation to remove the organic solvents. The residue was filtered, dried and recrystallized several times from ethyl acetate. The Δ^4-19-nor-17α-ethinylandrosten-17β-ol-3-one thus obtained had a melting point of 198°–200° C. (in sulphuric acid bath), 200°–204° C. (Kofler), $[\alpha]_D$—31.73°, ultraviolet absorption maximum at 240μ(log ϵ4.38).

We claim:

1. A process for the production of a compound having the following formula:



which comprises reducing a lower alkyl ether of estrone with an alkali metal in liquid ammonia followed by hydrolysis with a mineral acid and oxidation with chromic acid to form Δ^4-19-norandrosten-3,17-dione, selectively forming a 3-enol ether of said dione and treating said ether with acetylene in the presence of an alkali metal alkoxide, followed by hydrolysis with a mineral acid.

2. The process of claim 1 wherein the alkali metal is lithium.

3. The process of claim 1 wherein the alkali metal is sodium.

4. Δ^4-19-nor-17α-ethinylandrosten-17β-ol-3-one.

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211,653	Switzerland	Jan. 16, 1941

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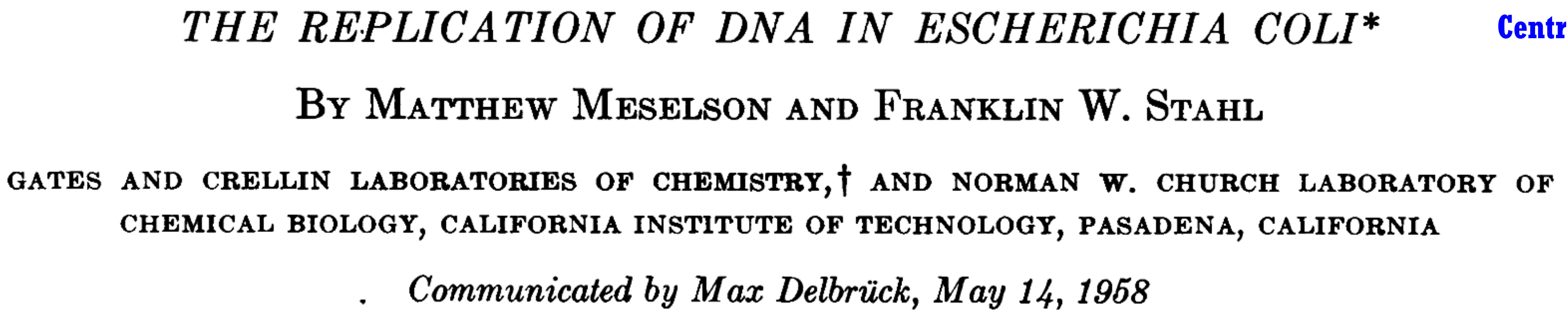
Birch: Jour. Chem. Soc., 1950, 367–68.

ADN síntesis. Matthew Meselson/Franklin W. Stahl



*THE REPLICATION OF DNA IN ESCHERICHIA COLI**

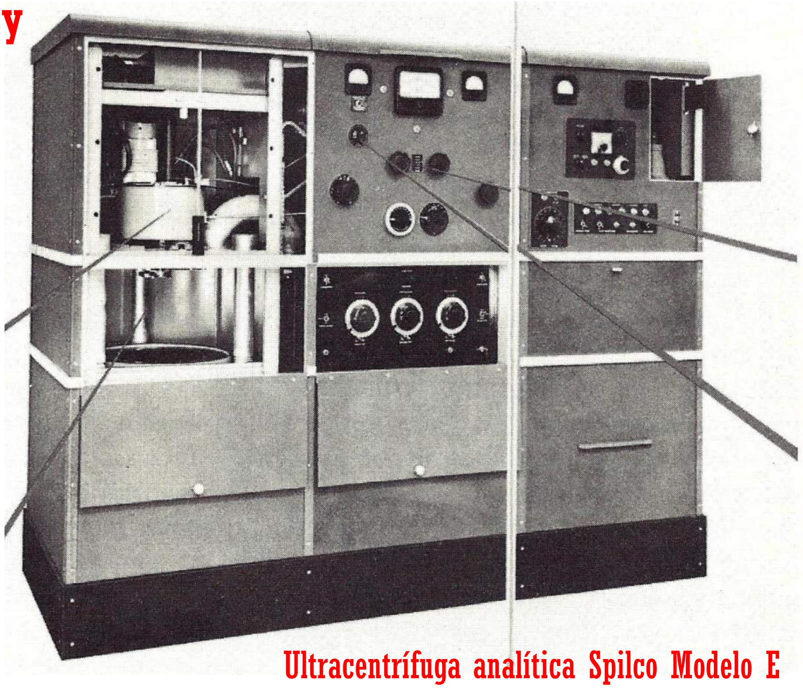
BY MATTHEW MESELSON AND FRANKLIN W. STAHL

GATES AND CRELLIN LABORATORIES OF CHEMISTRY,† AND NORMAN W. CHURCH LABORATORY OF CHEMICAL BIOLOGY, CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA, CALIFORNIA

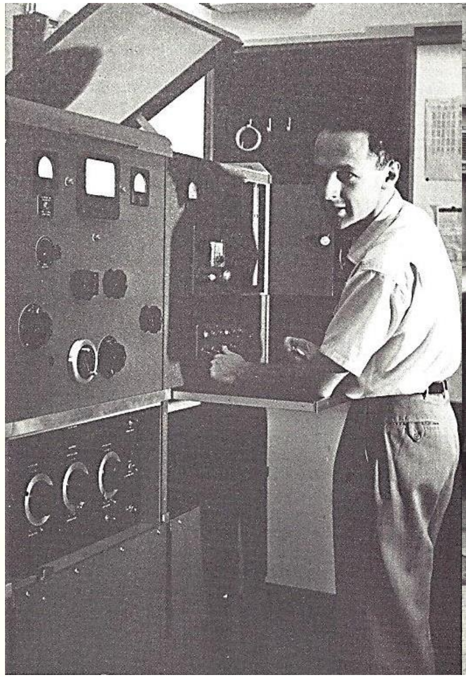
Communicated by Max Delbrück, May 14, 1958

Centrifugación en gradiente

Daisy

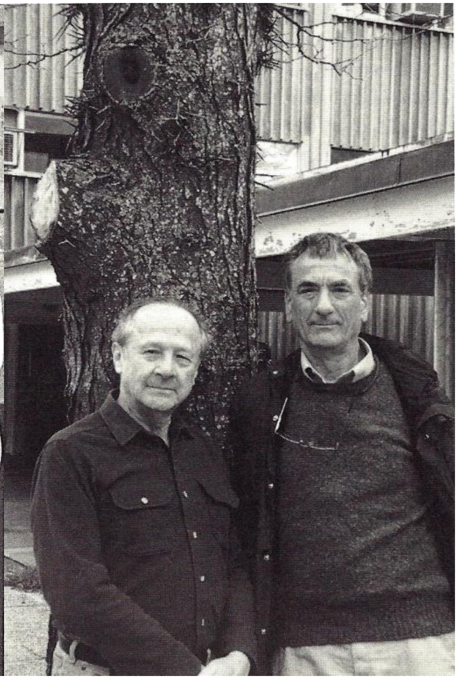


Ultracentrífuga analítica Spilco Modelo E



Matthew Meselson

1996. Woods Hole



Matthew Meselson/Franklin W. Stahl

UBBMP Bioquímica y Biología
Molecular de Plantas
CICY

1576

Meselson M, Stahl FW (1958) The replication of DNA in *Escherichia coli*. Proc Natl Acad Sci (USA) 44: 671-682.

Matthew Meselson/Franklin W. Stahl. Síntesis del ADN

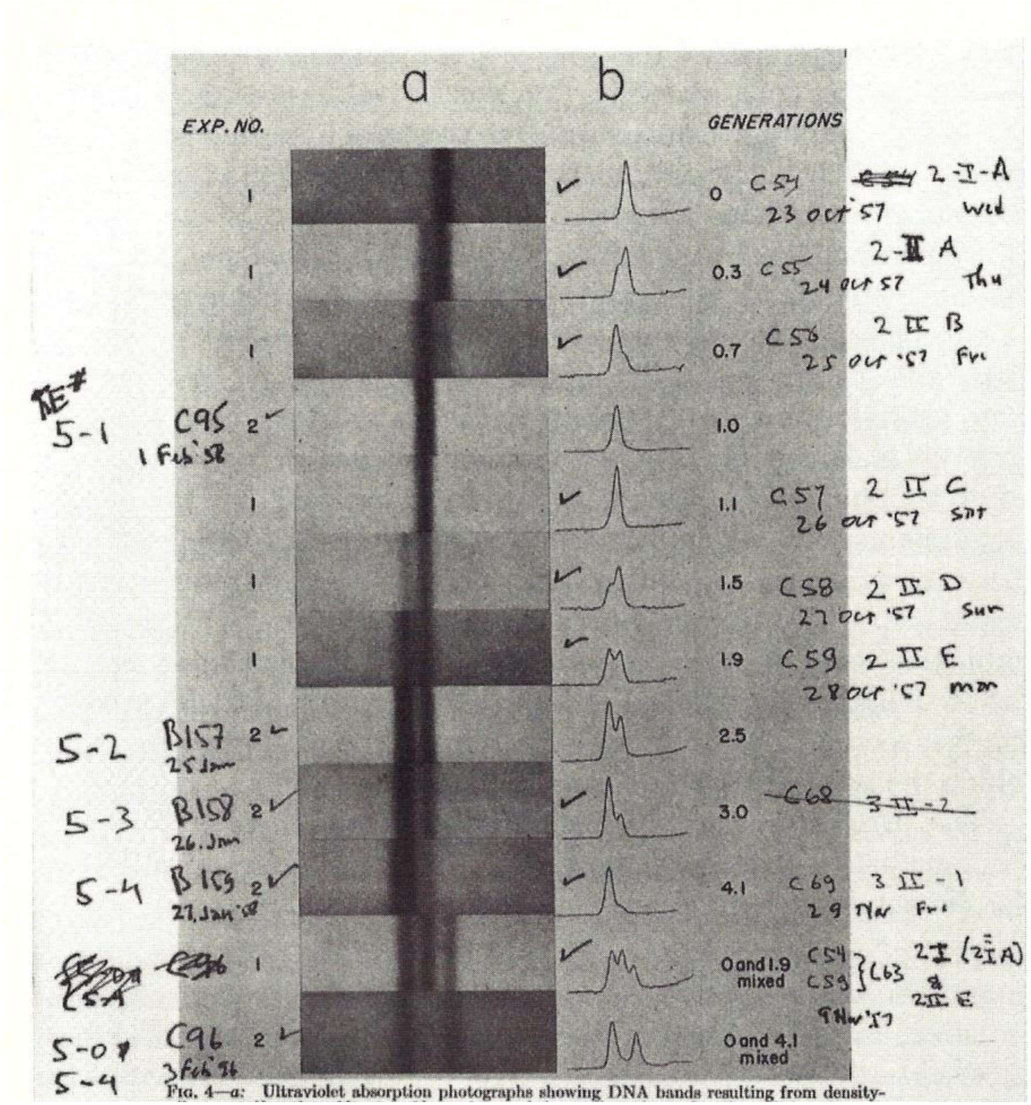


FIG. 4—*a:* Ultraviolet absorption photographs showing DNA bands resulting from density-

Fig. 11.6

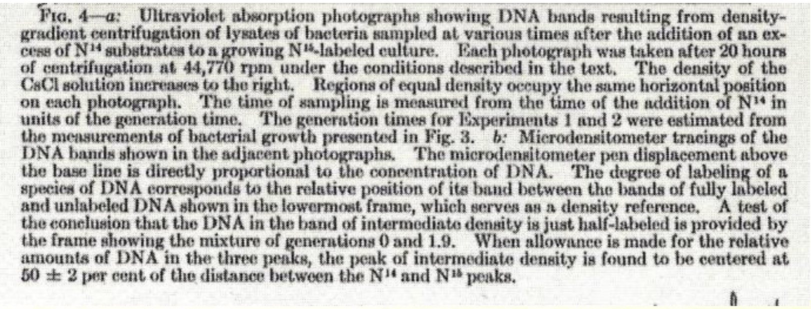
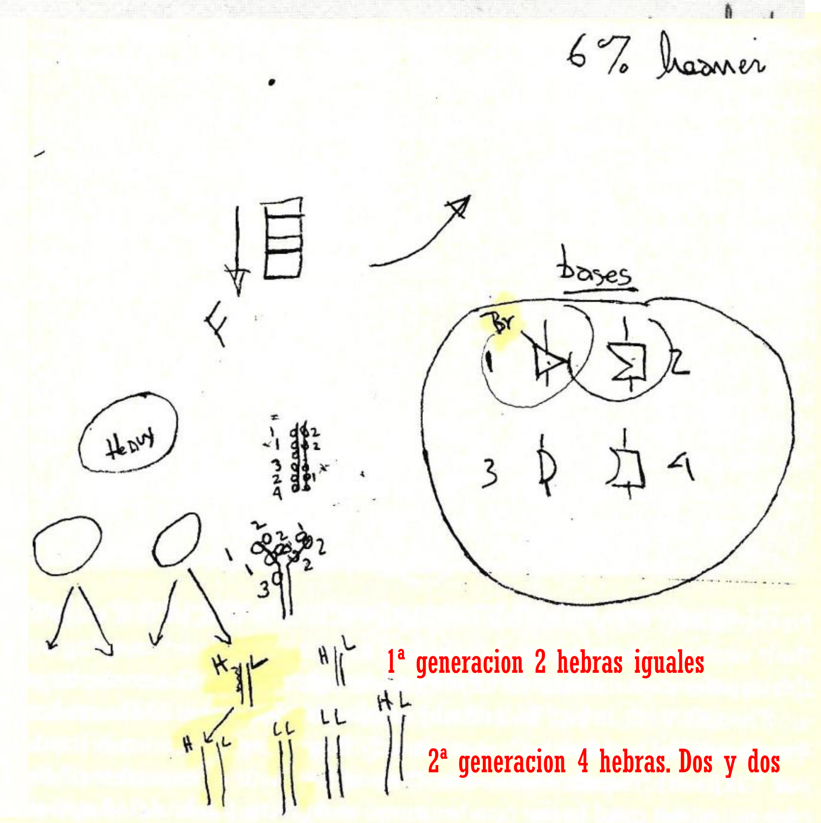


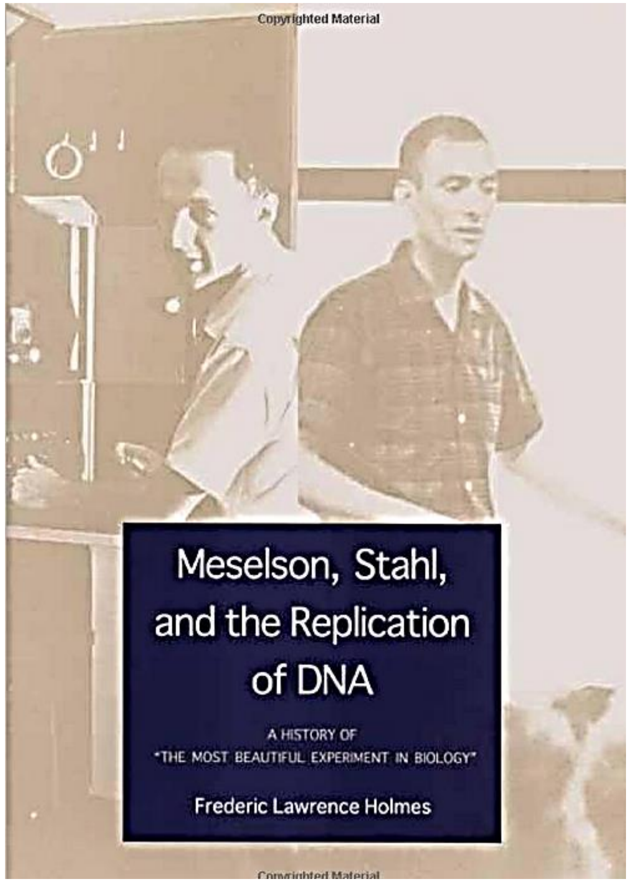
FIG. 4—*a:* Ultraviolet absorption photographs showing DNA bands resulting from density-gradient centrifugation of lysates of bacteria sampled at various times after the addition of an excess of N^{14} substrates to a growing N^{15}-labeled culture. Each photograph was taken after 20 hours of centrifugation at 44,770 rpm under the conditions described in the text. The density of the CsCl solution increases to the right. Regions of equal density occupy the same horizontal position on each photograph. The time of sampling is measured from the time of the addition of N^{14} in units of the generation time. The generation times for Experiments 1 and 2 were estimated from the measurements of bacterial growth presented in Fig. 3. *b:* Microdensitometer tracings of the DNA bands shown in the adjacent photographs. The microdensitometer pen displacement above the base line is directly proportional to the concentration of DNA. The degree of labeling of a species of DNA corresponds to the relative position of its band between the bands of fully labeled and unlabeled DNA shown in the lowermost frame, which serves as a density reference. A test of the conclusion that the DNA in the band of intermediate density is just half-labeled is provided by the frame showing the mixture of generations 0 and 1.9. When allowance is made for the relative amounts of DNA in the three peaks, the peak of intermediate density is found to be centered at 50 ± 2 per cent of the distance between the N^{14} and N^{15} peaks.



1ª generacion 2 hebras iguales

2ª generacion 4 hebras. Dos y dos

Fig.7.2. Diagrammatic representation of DNA replication sketched on centrifuge log (slightly darkened by drawing over faint original lines)



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Meselson, Stahl, and the Replication of DNA

A HISTORY OF "THE MOST BEAUTIFUL EXPERIMENT IN BIOLOGY"

Frederic Lawrence Holmes

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Comité examinador

Linus Pauling. Químico

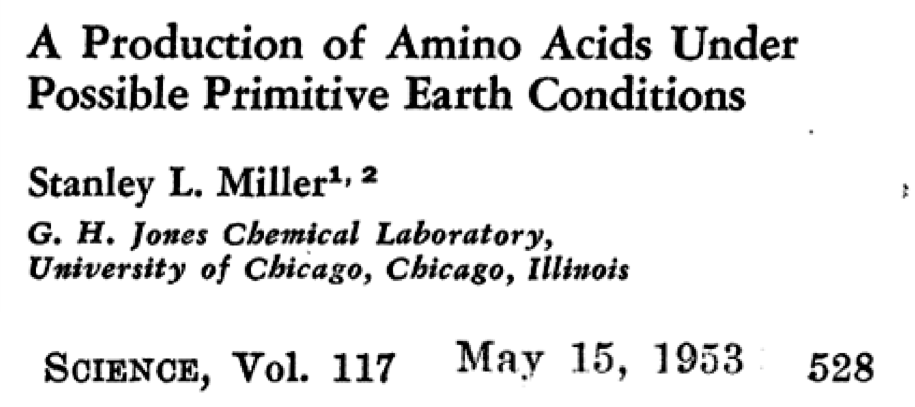
Jerry Vinograd.

Richard Feynman. Físico

Harden McConnell. Físico-químico

Dan Campbell. Inmunólogo

Moléculas orgánicas en la tierra primitiva

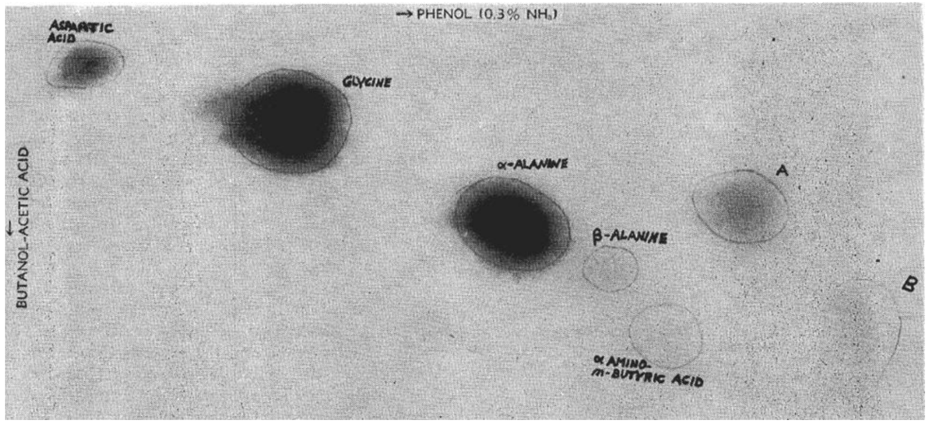


A Production of Amino Acids Under Possible Primitive Earth Conditions

Stanley L. Miller[1, 2]

G. H. Jones Chemical Laboratory,
University of Chicago, Chicago, Illinois

SCIENCE, Vol. 117 May 15, 1953 528


→ PHENOL (0.3% NH₃)
ASPARTIC ACID
GLYCINE
α-ALANINE
A
β-ALANINE
B
α AMINO-n-BUTYRIC ACID
← BUTANOL-ACETIC ACID

3208

Bada J. L. y A. Lazcano, Prebiotic soup -- Revisiting the Miller experiment, Science, 300(5620): 745-746, (2003).

Miller SL (1953) A production of amino acids under possible primitive Earth conditions. Science 117: 528-529.

California Institute of Technology, Pasadena, Calif., U.S.A.

Fast Reconnaissance Missions to the Outer Solar System Utilizing Energy Derived from the Gravitational Field of Jupiter[1]

By

G. A. Flandro

With 16 Figures

VOL. 12, NO. 4, 1966
(*Received April 18, 1966*)

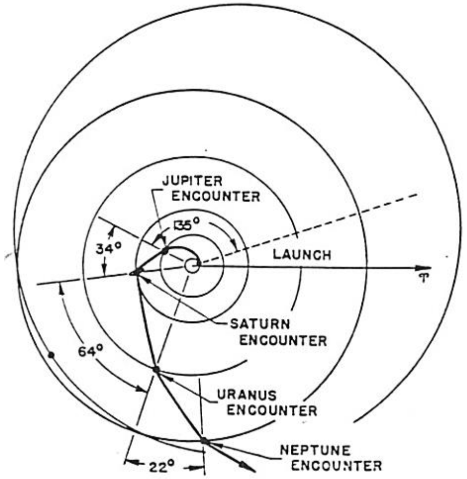
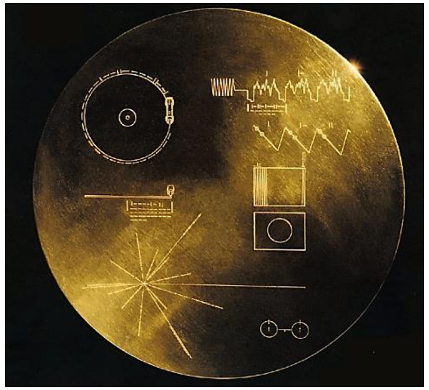
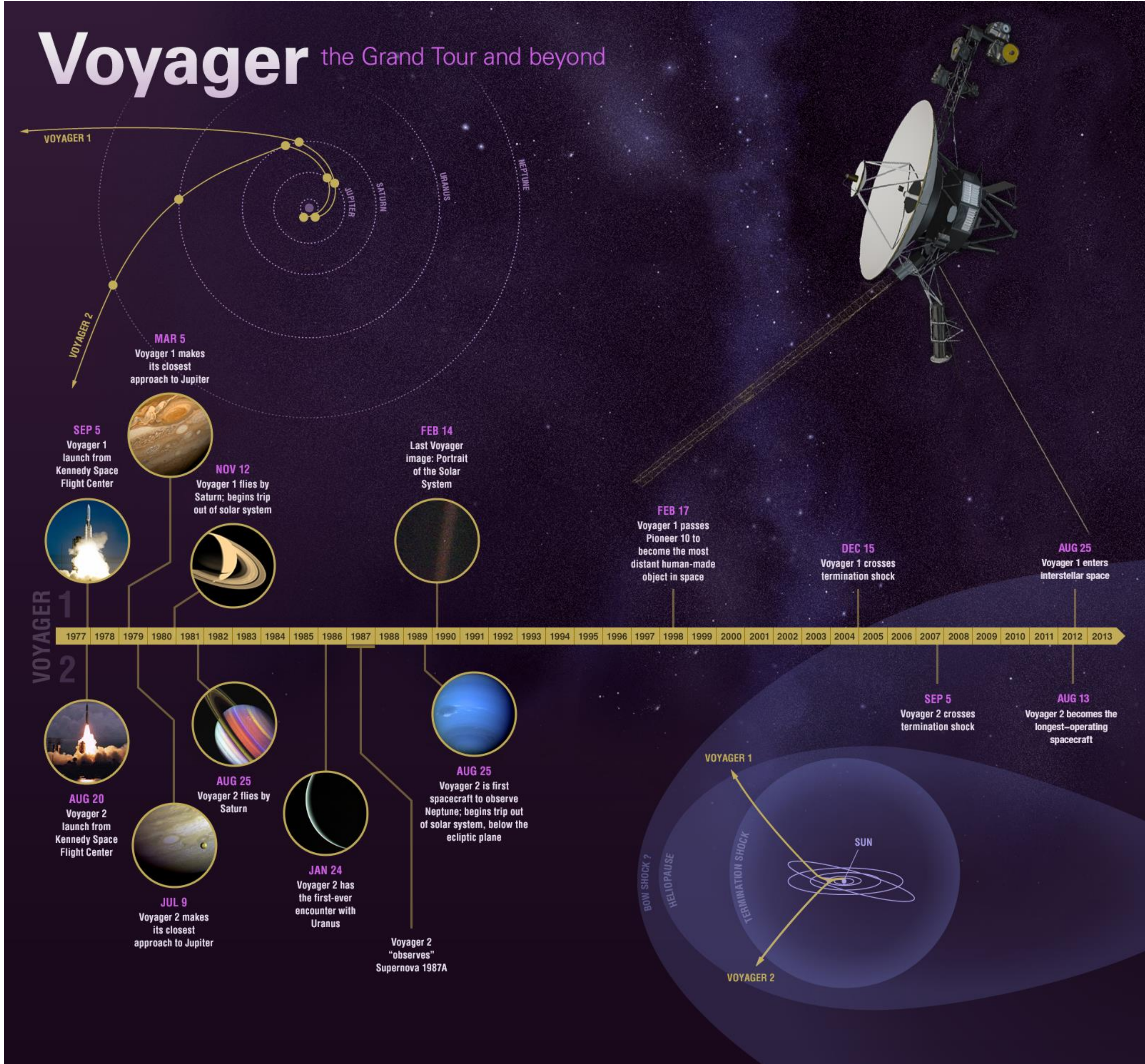

JUPITER
ENCOUNTER
135°
34°
LAUNCH
♈
SATURN
ENCOUNTER
64°
URANUS
ENCOUNTER
NEPTUNE
ENCOUNTER
22°

Fig. 14. Typical planetary constellation for 1978 Earth–Jupiter–Saturn–Uranus–Neptune Mission



Graduate Study
and Researc

Verano (1964) en el JPL (NASA)



Voyager the Grand Tour and beyond

VOYAGER 1
VOYAGER 2
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SATURN
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NEPTUNE
VOYAGER 1
VOYAGER 2
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2012
2013
VOYAGER 1
VOYAGER 2
SUN
BOW SHOCK ?
HELIOPAUSE
TERMINATION SHOCK

SEP 5
Voyager 1 launch from Kennedy Space Flight Center

MAR 5
Voyager 1 makes its closest approach to Jupiter

NOV 12
Voyager 1 flies by Saturn; begins trip out of solar system

FEB 14
Last Voyager image: Portrait of the Solar System

FEB 17
Voyager 1 passes Pioneer 10 to become the most distant human-made object in space

DEC 15
Voyager 1 crosses termination shock

AUG 25
Voyager 1 enters interstellar space

AUG 20
Voyager 2 launch from Kennedy Space Flight Center

JUL 9
Voyager 2 makes its closest approach to Jupiter

AUG 25
Voyager 2 flies by Saturn

JAN 24
Voyager 2 has the first-ever encounter with Uranus

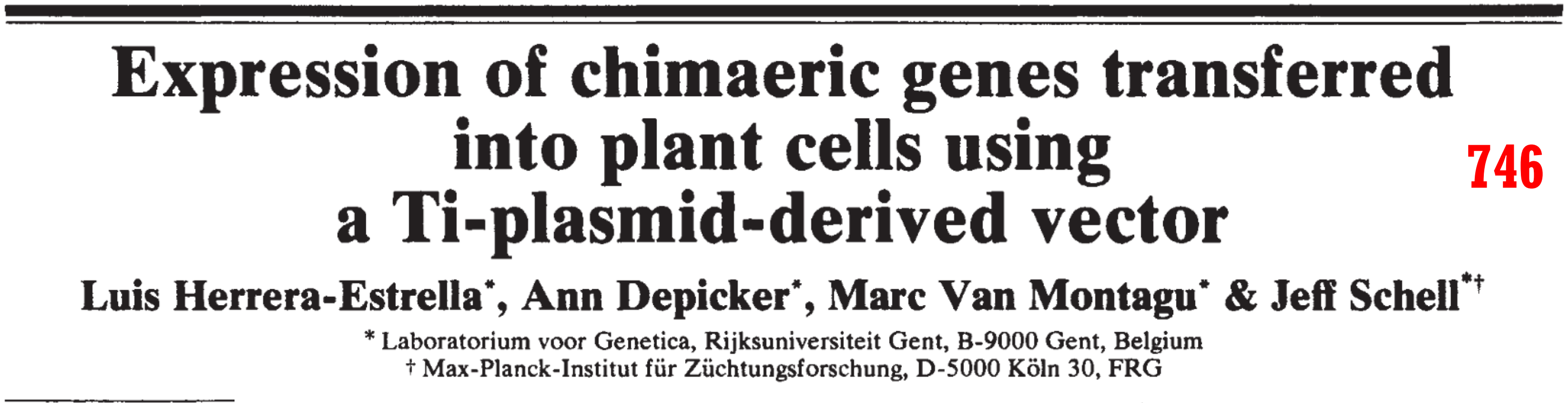
Voyager 2 "observes" Supernova 1987A

AUG 25
Voyager 2 is first spacecraft to observe Neptune; begins trip out of solar system, below the ecliptic plane

SEP 5
Voyager 2 crosses termination shock

AUG 13
Voyager 2 becomes the longest-operating spacecraft

Luis Herrera Estrella. Transformación



Expression of chimaeric genes transferred into plant cells using a Ti-plasmid-derived vector

Luis Herrera-Estrella*, Ann Depicker*, Marc Van Montagu* & Jeff Schell*†

* Laboratorium voor Genetica, Rijksuniversiteit Gent, B-9000 Gent, Belgium
† Max-Planck-Institut für Züchtungsforschung, D-5000 Köln 30, FRG

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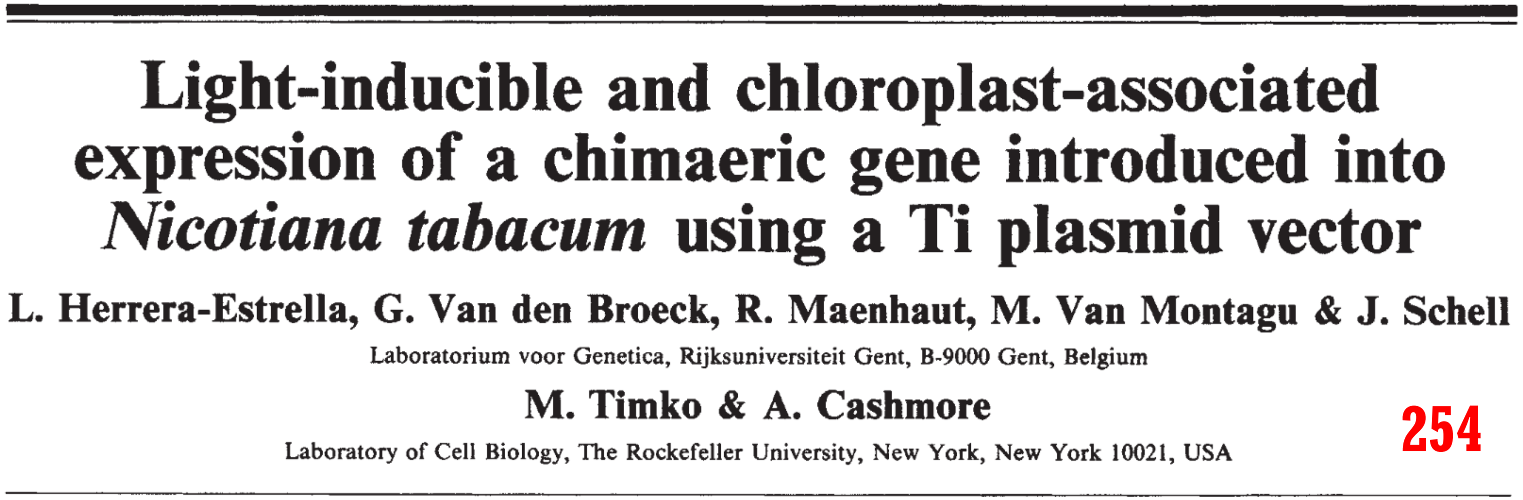

Light-inducible and chloroplast-associated expression of a chimaeric gene introduced into *Nicotiana tabacum* using a Ti plasmid vector

L. Herrera-Estrella, G. Van den Broeck, R. Maenhaut, M. Van Montagu & J. Schell

Laboratorium voor Genetica, Rijksuniversiteit Gent, B-9000 Gent, Belgium

M. Timko & A. Cashmore

Laboratory of Cell Biology, The Rockefeller University, New York, New York 10021, USA

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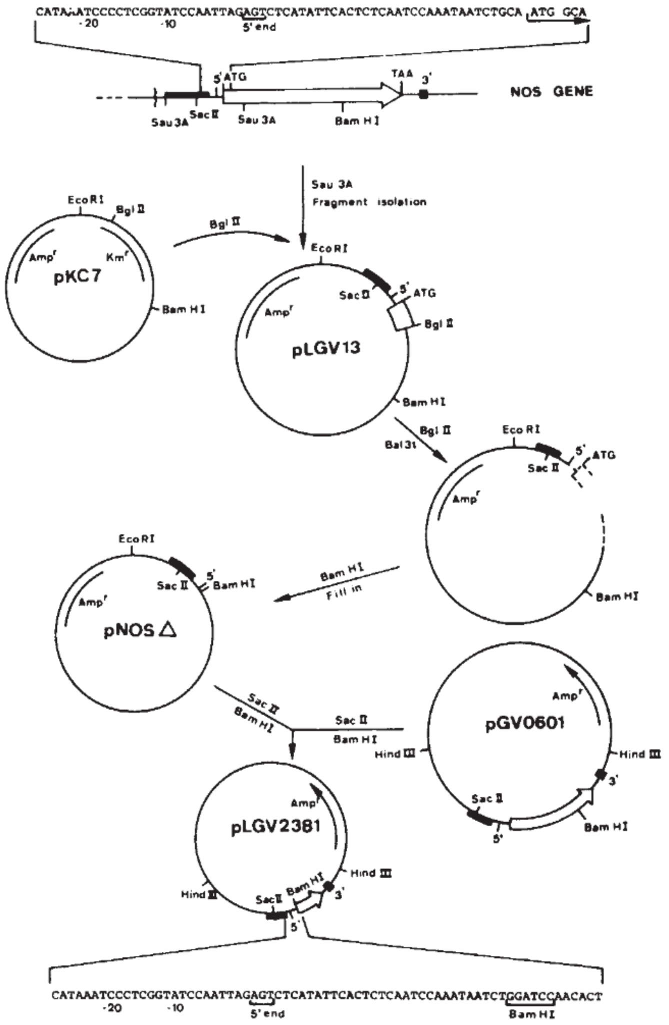
CATAAATCCCCTCGGTATCCAATTAGAGTCTCATATTCACTCTCAATCCAAATAATCTGCA ATG GCA
-20
-10
5' end
5' ATG
TAA
3'
NOS GENE
Sau 3A
Sac II
Sau 3A
Bam H I
Sau 3A
Fragment isolation
EcoRI
Bgl II
Amp^r
Km^r
pKC7
Bam H I
Bgl II
EcoRI
Sac II
5' ATG
Amp^r
Bgl II
pLGV13
Bam HI
Bgl II
Bal 31
Eco RI
Sac II
5' ATG
Amp^r
Bam HI
Bam HI
Fill in
EcoRI
Sac II
5' Bam HI
Amp^r
pNOS △
Sac II
Bam HI
Sac II
Bam HI
Amp^r
pGV0601
Hind III
Hind III
3'
Sac II
5'
Bam HI
Amp^r
pLGV2381
Hind III
Hind III
Sac II
Bam HI
3'
5'
CATAAATCCCTCGGTATCCAATTAGAGTCTCATATTCACTCTCAATCCAAATAATCTGGATCCAACACT
-20
-10
5' end
Bam HI

Herrera-Estrella L, Depicker A, Van Montagu M, Schell J (1983) Expression of chimaeric genes transferred into plant cells using a Ti-plasmid-derived vector. Nature 303: 209-213.

Herrera-Estrella L, Van den Broeck G, Maenhaut R, Van Montagu M, Schell J, Timko M, Cashmore A (1984) Light-inducible and chloroplast-associated expression of a chimaeric gene introduced into *Nicotiana tabacum* using a Ti plasmid vector. Nature 310: 115-120.

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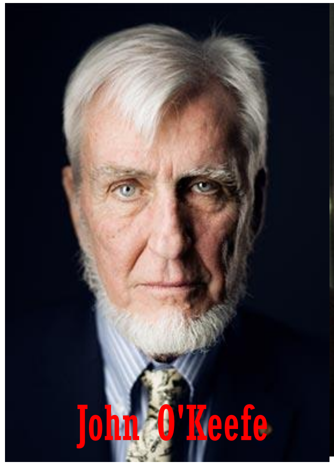
F. Sherwood Rowland

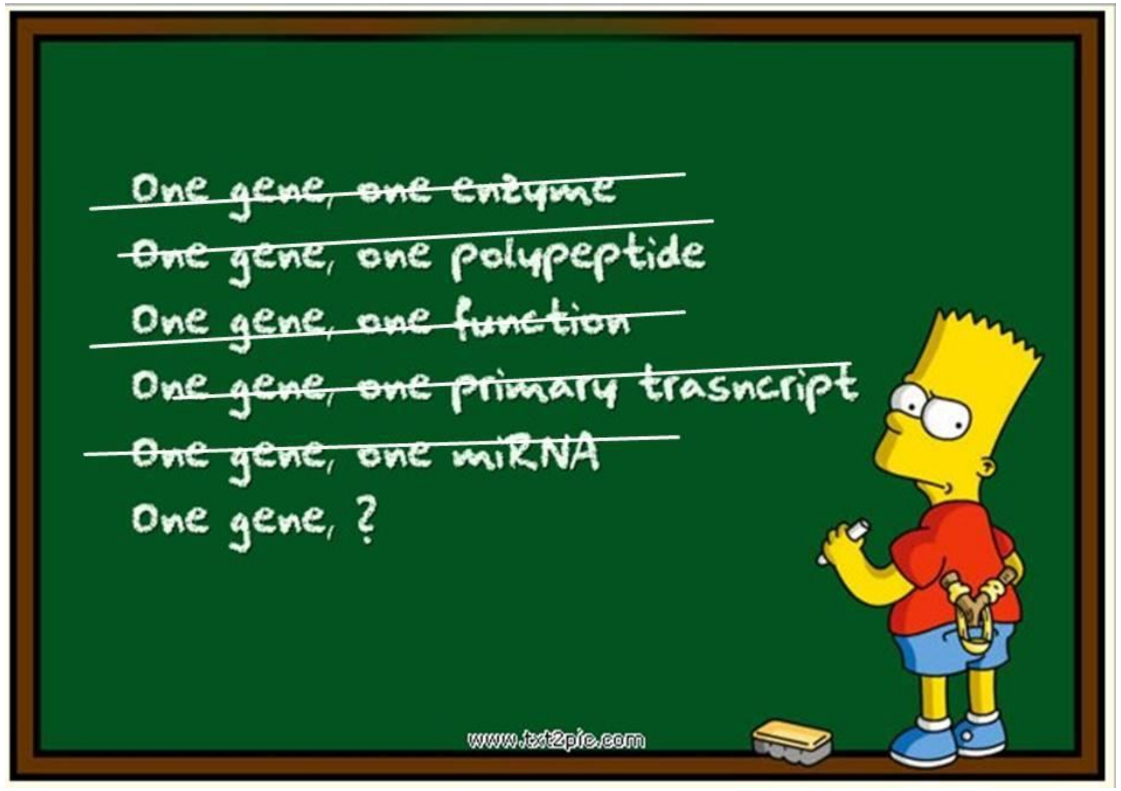

John O'Keefe

http://www.nobelprize.org/nobel_prizes/chemistry/laureates/1995/rowland-facts.html

Escoge un problema real para estudiar

"No preguntes qué experimento puedes hacer, pregúntate qué experimento debes hacer y luego encuentra la manera de hacerlo"

Ian Sussex



~~One gene, one enzyme~~
~~One gene, one polypeptide~~
~~One gene, one function~~
~~One gene, one primary trasncript~~
~~One gene, one miRNA~~
One gene, ?
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Hypothesis
Experiment
Analyze Data
Conclusion
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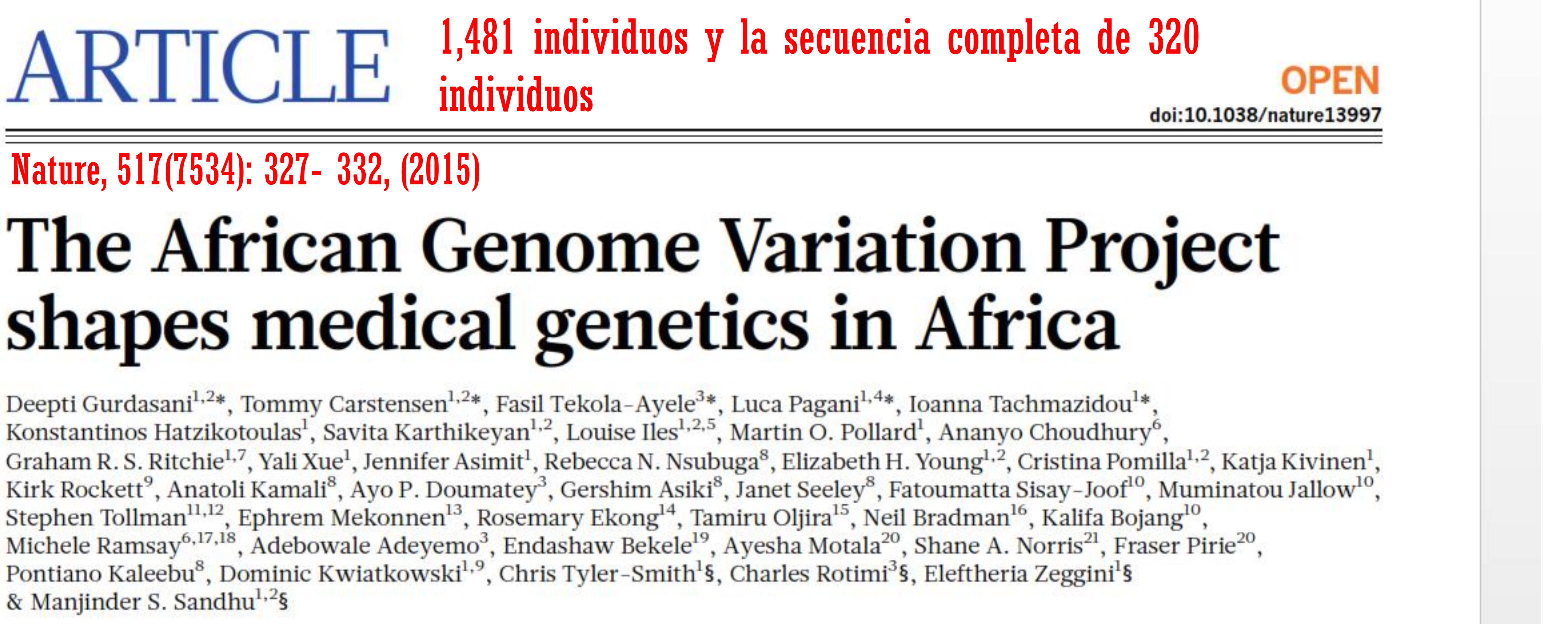
KEEPS YOU FROM BELIEVING ONLY WHAT YOU WANT TO BELIEVE

Megaciencia



ARTICLE

1,481 individuos y la secuencia completa de 320 individuos

OPEN

doi:10.1038/nature13997

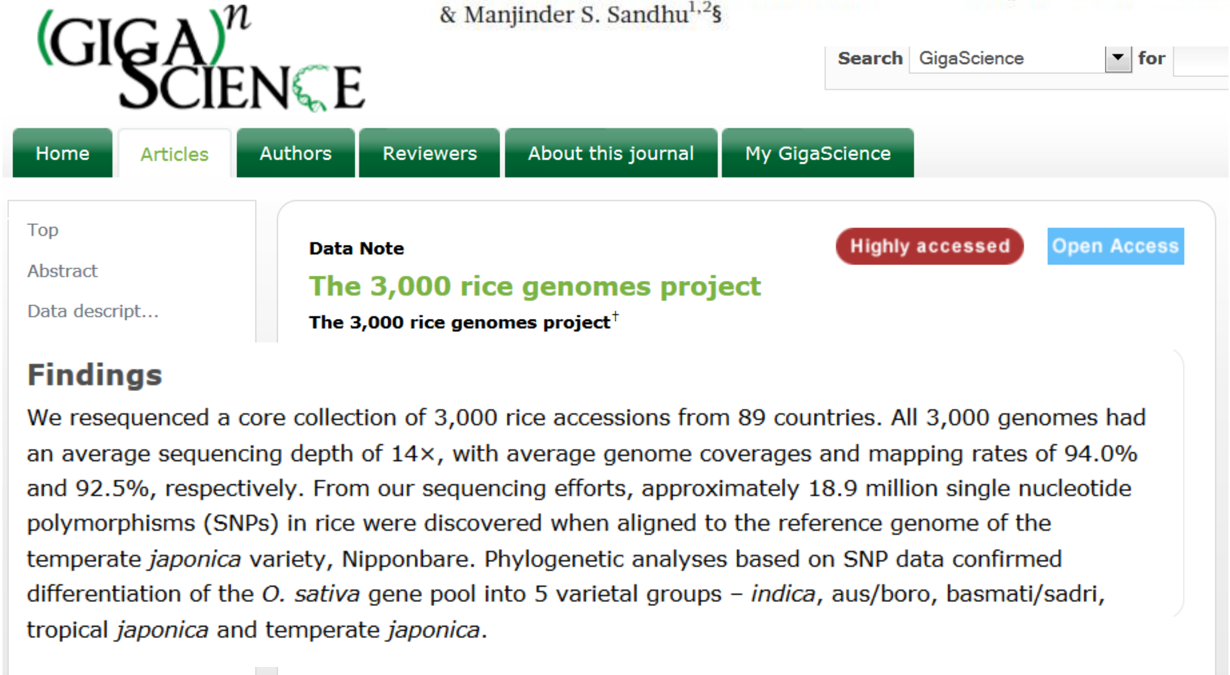
Nature, 517(7534): 327- 332, (2015)

The African Genome Variation Project shapes medical genetics in Africa

Deepti Gurdasani[1,2]*, Tommy Carstensen[1,2]*, Fasil Tekola-Ayele[3]*, Luca Pagani[1,4]*, Ioanna Tachmazidou[1]*, Konstantinos Hatzikotoulas[1], Savita Karthikeyan[1,2], Louise Iles[1,2,5], Martin O. Pollard[1], Ananyo Choudhury[6], Graham R. S. Ritchie[1,7], Yali Xue[1], Jennifer Asimit[1], Rebecca N. Nsubuga[8], Elizabeth H. Young[1,2], Cristina Pomilla[1,2], Katja Kivinen[1], Kirk Rockett[9], Anatoli Kamali[8], Ayo P. Doumatey[3], Gershim Asiki[8], Janet Seeley[8], Fatoumatta Sisay-Joof[10], Muminatou Jallow[10], Stephen Tollman[11,12], Ephrem Mekonnen[13], Rosemary Ekong[14], Tamiru Oljira[15], Neil Bradman[16], Kalifa Bojang[10], Michele Ramsay[6,17,18], Adebowale Adeyemo[3], Endashaw Bekele[19], Ayesha Motala[20], Shane A. Norris[21], Fraser Pirie[20], Pontiano Kaleebu[8], Dominic Kwiatkowski[1,9], Chris Tyler-Smith[1]§, Charles Rotimi[3]§, Eleftheria Zeggini[1]§ & Manjinder S. Sandhu[1,2]§

nature biotechnology

Clementina, mandarina, pomelo, naranja dulce y naranja agria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Data Note

The 3,000 rice genomes project

The 3,000 rice genomes project†

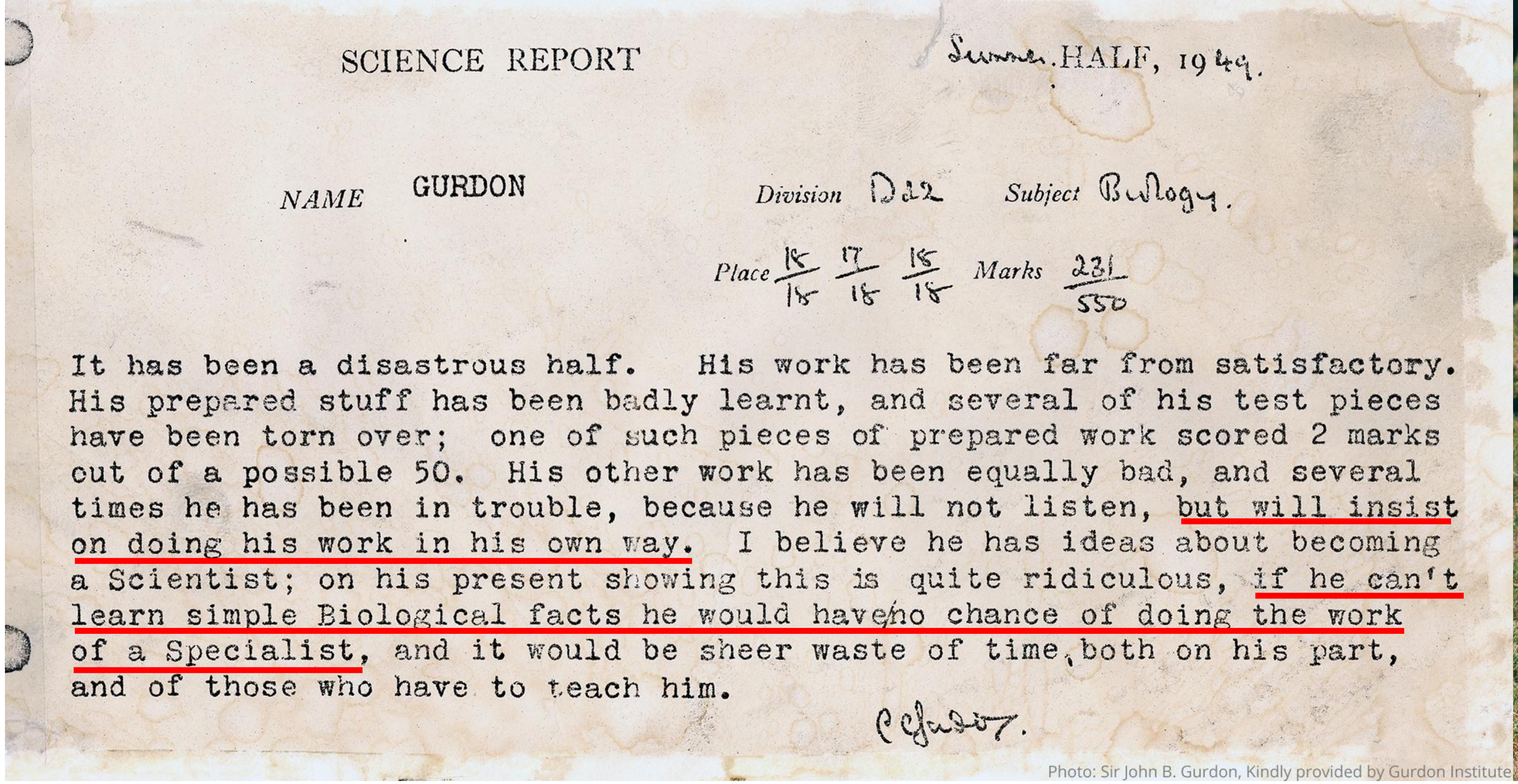
Findings

We resequenced a core collection of 3,000 rice accessions from 89 countries. All 3,000 genomes had an average sequencing depth of 14×, with average genome coverages and mapping rates of 94.0% and 92.5%, respectively. From our sequencing efforts, approximately 18.9 million single nucleotide polymorphisms (SNPs) in rice were discovered when aligned to the reference genome of the temperate *japonica* variety, Nipponbare. Phylogenetic analyses based on SNP data confirmed differentiation of the *O. sativa* gene pool into 5 varietal groups – *indica*, aus/boro, basmati/sadri, tropical *japonica* and temperate *japonica*.

Does DNA act as a telephone line?
Mutations enhancing leukemia development
A stable gold support gives sharper resolution
Science
12 DECEMBER 2014
AAAS
SPECIAL ISSUE
Avian genomes
Sequencing across the bird species tree

48 especies de aves

Nunca te des por vencido



SCIENCE REPORT Summer. HALF, 1949.

NAME GURDON *Division* D22 *Subject* Biology.

Place 18/18 17/18 18/18 *Marks* 231/550

It has been a disastrous half. His work has been far from satisfactory. His prepared stuff has been badly learnt, and several of his test pieces have been torn over; one of such pieces of prepared work scored 2 marks out of a possible 50. His other work has been equally bad, and several times he has been in trouble, because he will not listen, but will insist on doing his work in his own way. I believe he has ideas about becoming a Scientist; on his present showing this is quite ridiculous, if he can't learn simple Biological facts he would have no chance of doing the work of a Specialist, and it would be sheer waste of time, both on his part, and of those who have to teach him.

Photo: Sir John B. Gurdon, Kindly provided by Gurdon Institute

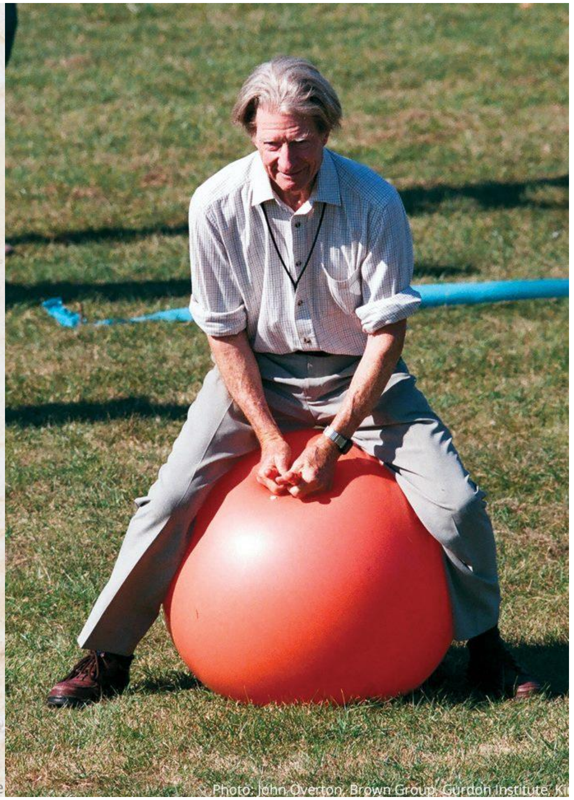


Photo: John Overton, Brown Group, Gurdon Institute, Ki

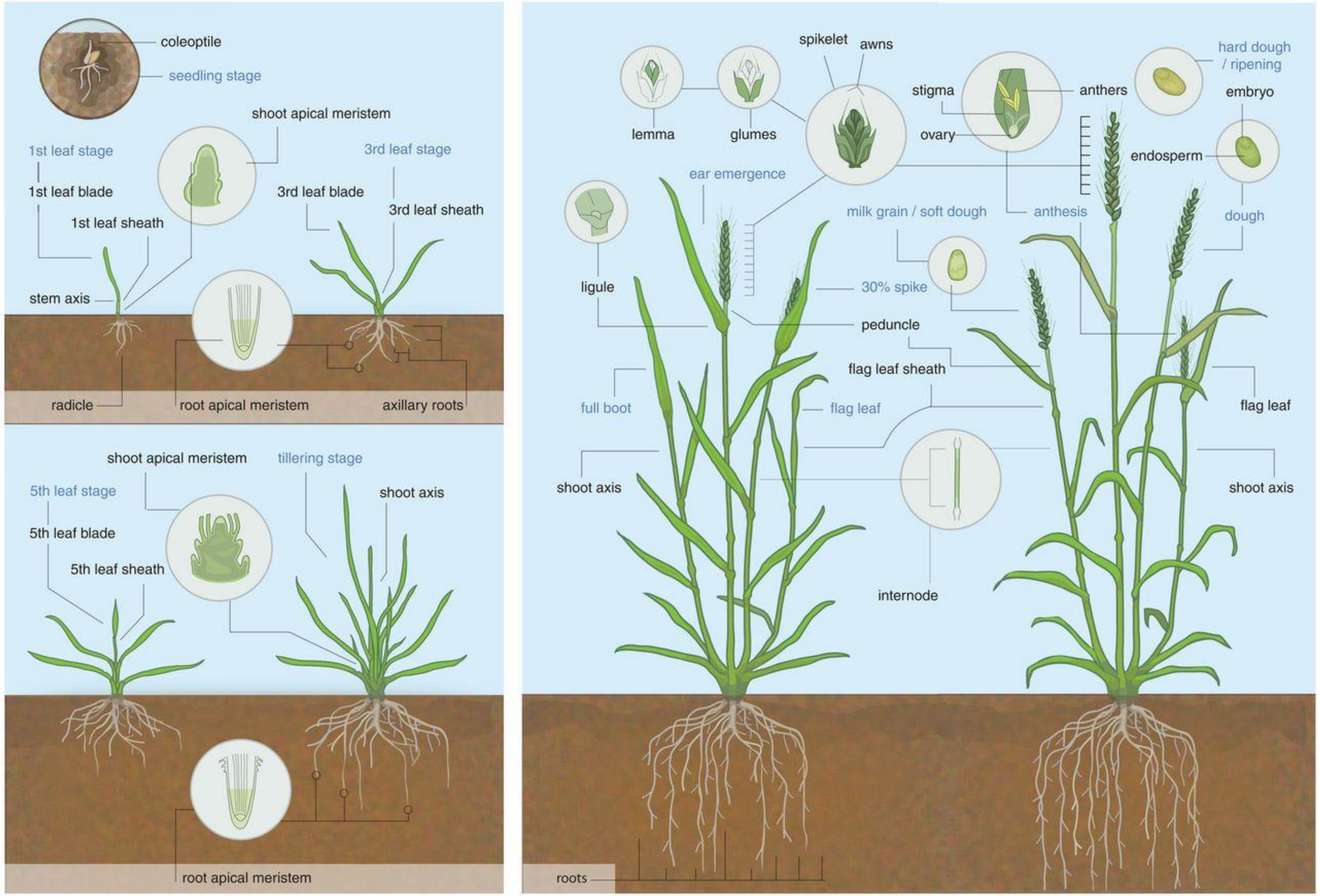
Prize motivation: "*for the discovery that mature cells can be reprogrammed to become pluripotent.*"

Premio Nobel 2012 en fisiología o medicina

Despite his teacher's opinion that he couldn't learn simple biological facts, John Gurdon managed - in a classical experiment in 1962 - to replace the immature cell nucleus in an egg cell of a frog with the nucleus from a mature intestinal cell. This modified egg cell developed into a normal tadpole. The DNA of the mature cell still had all the information needed to develop all cells in the frog.

Sir John B. Gurdon – Facts. NobelPrize.org. Nobel Media AB 2018. Mon. 20 Aug 2018. <https://www.nobelprize.org/prizes/medicine/2012/gurdon/facts/>

Autoformación


coleoptile
seedling stage
shoot apical meristem
1st leaf stage
1st leaf blade
1st leaf sheath
3rd leaf stage
3rd leaf blade
3rd leaf sheath
stem axis
radicle
root apical meristem
axillary roots
shoot apical meristem
tillering stage
5th leaf stage
5th leaf blade
5th leaf sheath
shoot axis
root apical meristem
spikelet
awns
lemma
glumes
stigma
ovary
anthers
hard dough / ripening
embryo
endosperm
ear emergence
milk grain / soft dough
anthesis
dough
ligule
30% spike
peduncle
flag leaf sheath
full boot
flag leaf
flag leaf
shoot axis
shoot axis
internode
roots

Ramírez-González R. H. et al., The transcriptional landscape of polyploid wheat, Science, 361(6403):eaar6089, (2018).

Un momento Eureka

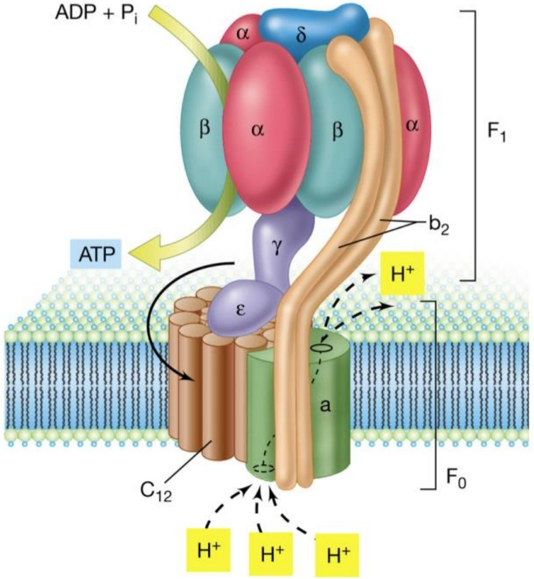
Prize motivation: "for their elucidation of the enzymatic mechanism underlying the synthesis of adenosine triphosphate (ATP)."

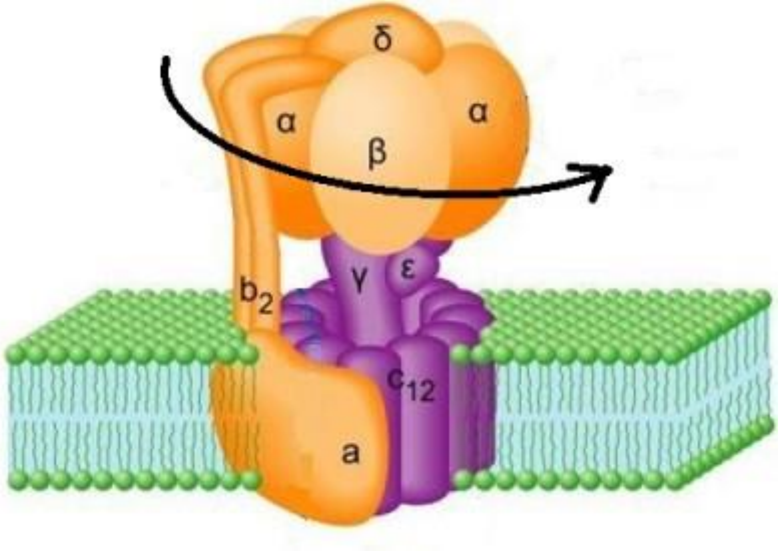
Paul Delos Boyer (1918-2018). Premio Nobel 1997 en química

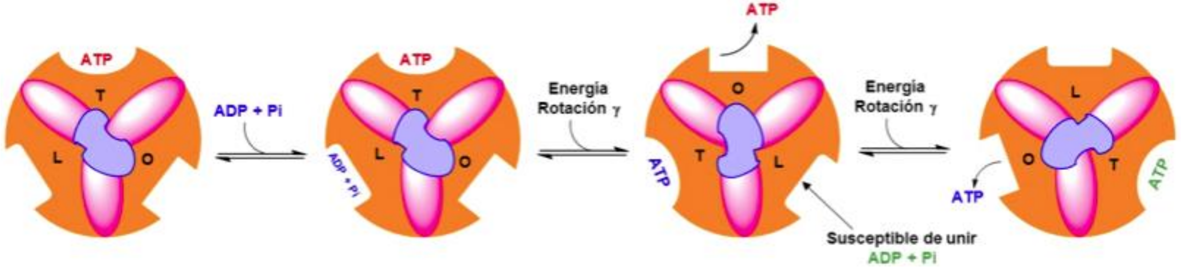
We were attending a UCLA seminar in 1972 when I noticed that he wasn't paying attention to the speaker. Afterwards, Paul approached us in a very excited state. This was surprising because he was known for his calm demeanour. He confessed that he had spent the hour thinking about old unexplained data. He asked: "What would you say if I told you that it doesn't take energy to make ATP at the catalytic site of ATP synthase," (as was universally held at the time) "but rather that it takes energy to get ATP off the catalytic site?" This was a eureka moment.

UBBMP Bioquímica y Biología Molecular de Plantas
CICY

Cross R. L., Nature 560, 308 (2018)

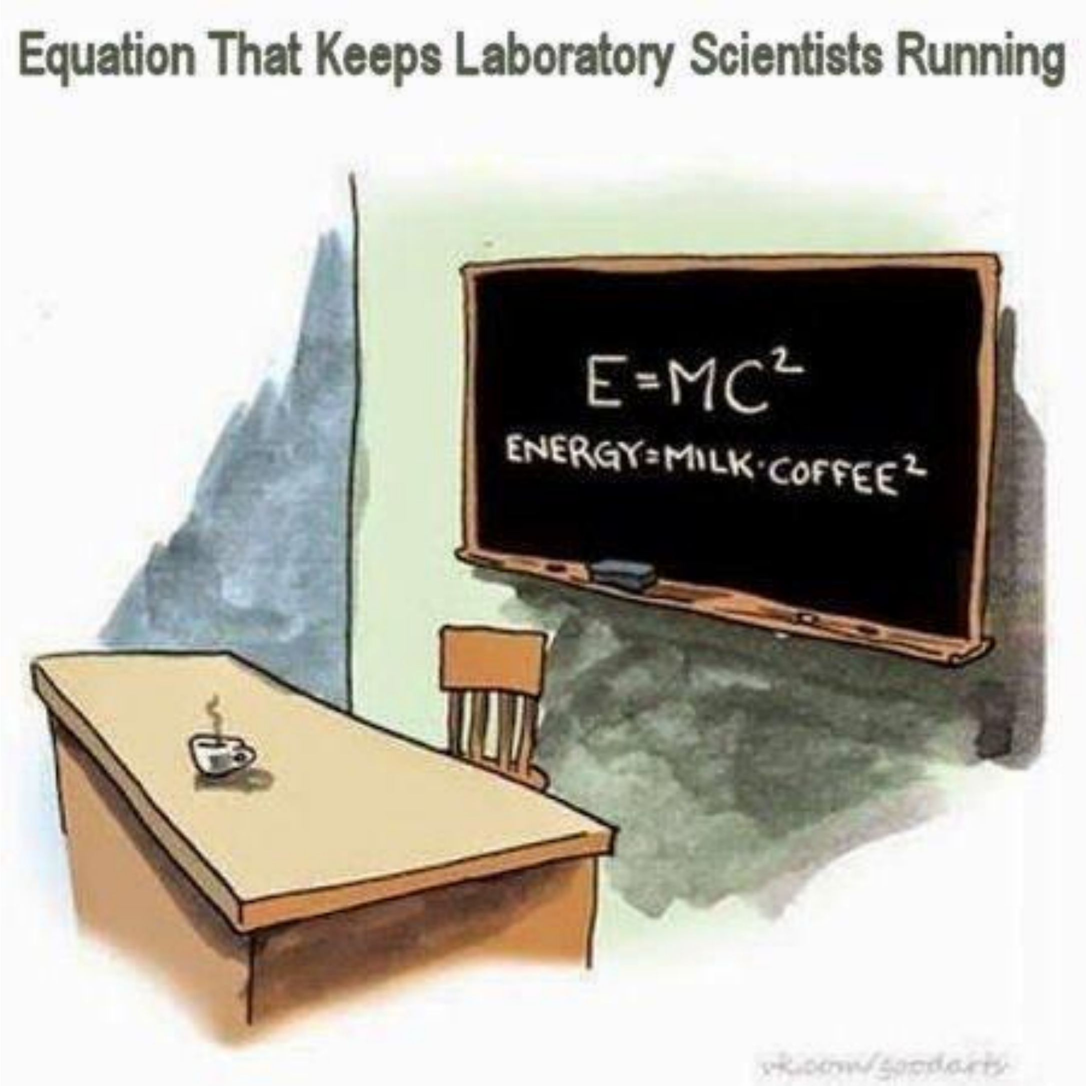

ADP + P_i
α
δ
β
α
β
α
F_1
b_2
γ
ATP
H^+
ε
a
C_{12}
F_0
H^+
H^+
H^+


δ
α
β
α
b_2
γ
ε
c_{12}
a

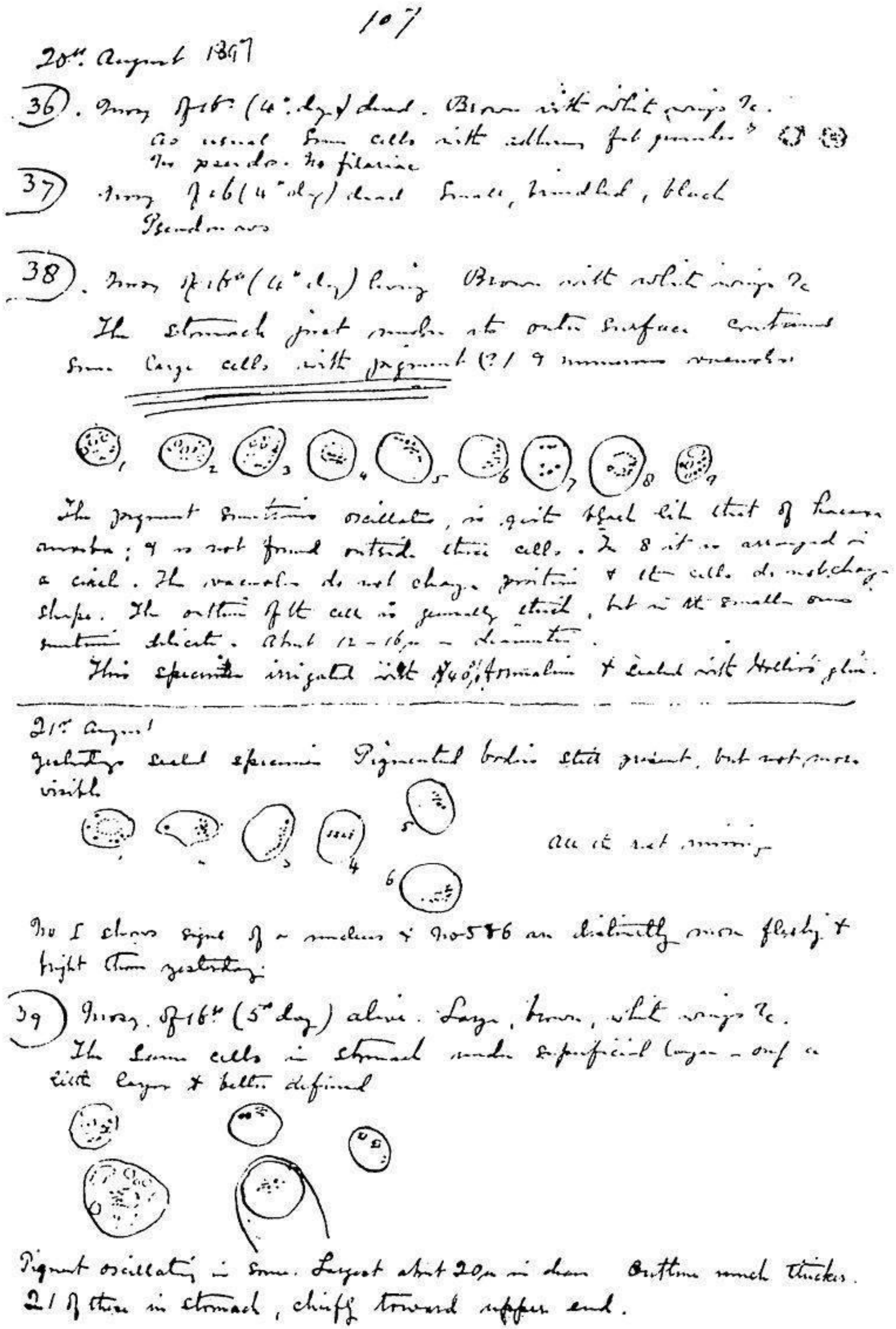

ATP
T
L
O
ADP + Pi
ATP
T
L
O
ADP + Pi
Energía Rotación γ
ATP
O
T
L
ATP
Energía Rotación γ
L
O
T
ATP
ATP
Susceptible de unir ADP + Pi

As is often the case with transformational ideas, early reactions were negative. When the *Journal of Biological Chemistry* rejected our manuscript containing data supporting this concept, Boyer told me without animosity that he could see why they would do that — "It was a very striking claim." The work was published in 1973 in PNAS.

Mantén tu mente abierta


Equation That Keeps Laboratory Scientists Running
$E=MC^2$
$ENERGY=MILK \cdot COFFEE^2$
vk.com/goodarts

Se ordenado



107

20th August 1897

36. Mosq. of 16th (4th day) dead. Brown with white wings &c.
As usual some cells with yellowish fat granules?
No pseudo. No filariae.

37) Mosq of 16th (4th day) dead. Small, brindled, black.
Pseudonavic

38). Mosq of 16th (4th day) living. Brown with white wings &c.
The stomach just under its outer surface contained some large cells with pigment (?) & numerous vacuoles

The pigment sometimes oscillates, is quite black like that of human amoeba; & is not found outside these cells. In 8 it is arranged in a circle. The vacuoles do not change position & the cells do not change shape. The outline of the cell is generally thick, but in the smaller ones sometimes delicate. About 12–16μ in diameter.
This specimen irrigated with 1/40% formalin & sealed with Hollis's glue.

21st August
Yesterday's sealed specimen. Pigmented bodies still present, but not more visible.

All are not moving

No 1 shows signs of a nucleus & Nos 5 & 6 are distinctly more fleshy & bright than yesterday.

39) Mosq. of 16th (5th day) alive. Large, brown, white wings &c.
The same cells in stomach under superficial layer – only a little larger & better defined

Pigment oscillating in some. Largest about 20μ in diam. Outline much thicker.
21 of these in stomach, chiefly toward upper end.

The page in Ross' notebook where he recorded the "pigmented bodies" in mosquitoes that he later identified as malaria parasites.

Ronald Ross

Prize motivation: "*for his work on malaria, by which he has shown how it enters the organism and thereby has laid the foundation for successful research on this disease and methods of combating it.*"

The Nobel Prize in Physiology or Medicine 1902. NobelPrize.org. Nobel Media AB 2018. Mon. 20 Aug 2018. <https://www.nobelprize.org/prizes/medicine/1902/summary/>

El inicio

- El consejo más importante que podemos recibir al iniciar nuestras carreras es trabajar en un proyecto riesgoso, pero excitante.

- El Dr. Marshall W. Nirenberg iniciaba su carrera como investigador independiente en 1959 y escogió como problema para investigar el generar un sistema libre de células para determinar cuál de los dos ácidos nucleicos (ADN o ARN) estimulaba la síntesis de proteínas. Era un problema con un gran riesgo para un investigador joven, pero "por un lado yo quería explorar un problema importante, y por el otro yo tenía miedo de fallar, pero el deseo de explorar era mucho mayor que el miedo a fallar" en palabras del Dr. Nirenberg…..

Nirenberg M., Historical review: Deciphering the genetic code - a personal account, Trends Biochem. Sci., 29(1): 46-54, (2004).

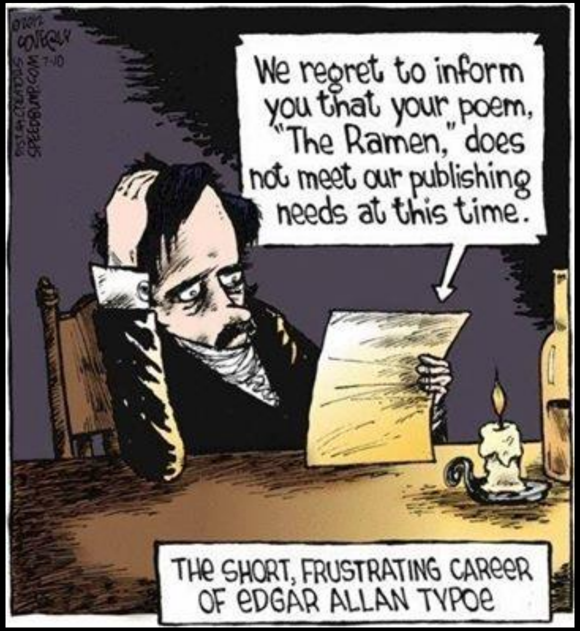
The Nobel Prize in Physiology or Medicine 1968 was awarded jointly to Robert W. Holley, Har Gobind Khorana and Marshall W. Nirenberg "*for their interpretation of the genetic code and its function in protein synthesis*."

Facts. NobelPrize.org. Nobel Media AB 2018. Tue. 28 Aug 2018. <https://www.nobelprize.org/prizes/medicine/1968/nirenberg/facts/>

Rechazo

- La ciencia no es una acumulación de verdades, sino una acumulación de propuestas sensatas hechas con el rigor de un método.

Alfredo López Austin
Profesor emérito de la UNAM

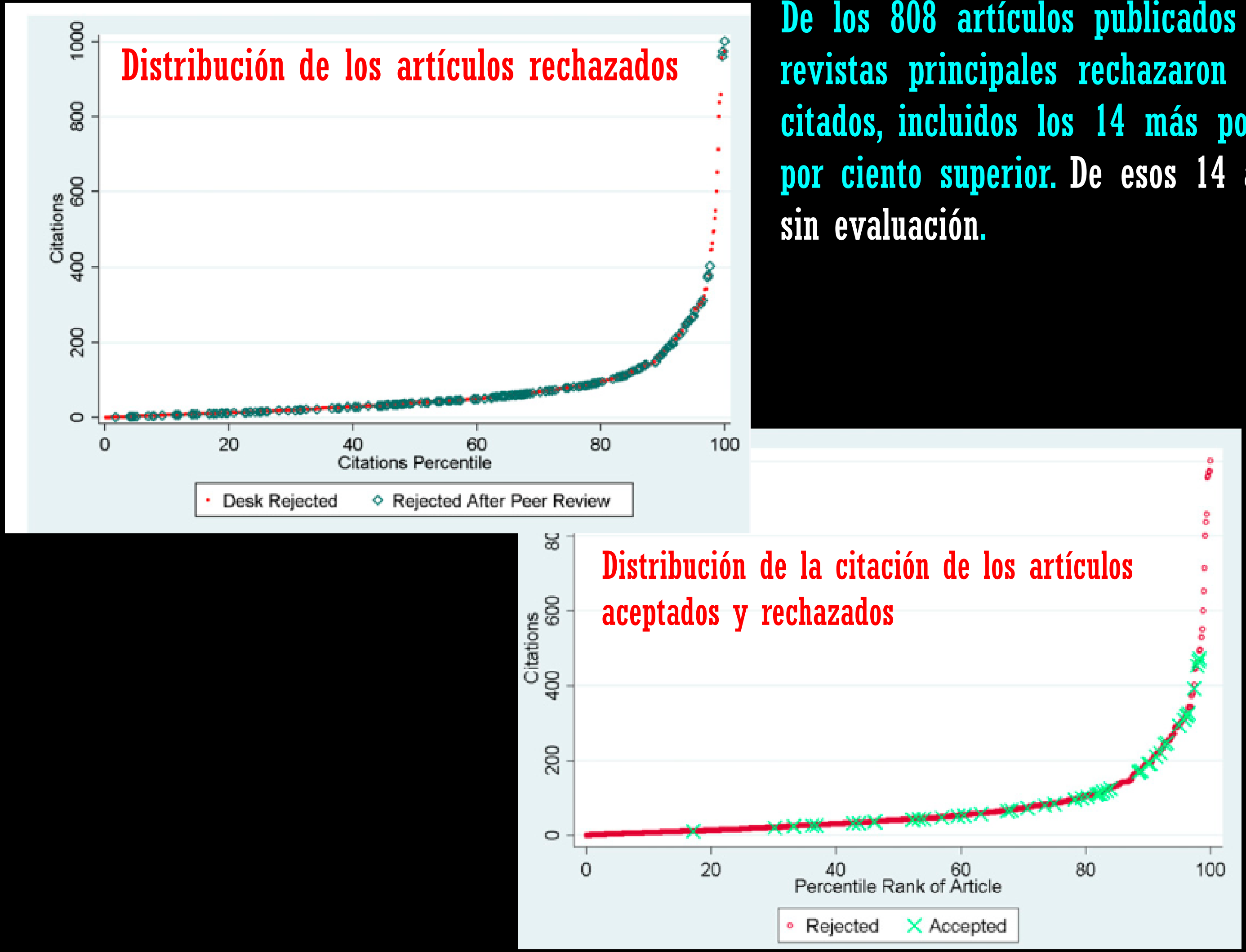

We regret to inform you that your poem, "The Ramen," does not meet our publishing needs at this time.
THE SHORT, FRUSTRATING CAREER OF EDGAR ALLAN TYPOE

Science is the record of dead religions.

Oscar Wilde

Revisión por pares

Houston Rockets & Portland Trail Blazers
1ª ronda (puesto 3), 1984 por Chicago Bulls



Distribución de los artículos rechazados

Distribución de la citación de los artículos aceptados y rechazados

De los 808 artículos publicados en la base de datos, las tres revistas principales rechazaron muchos manuscritos altamente citados, incluidos los 14 más populares; aproximadamente el 2 por ciento superior. De esos 14 artículos, 12 fueron rechazados sin evaluación.

Siler K., K. Lee y L. Bero, Measuring the effectiveness of scientific gatekeeping, Proc. Natl. Acad. Sci. (USA), 112(2): 360-365, (2015).

Historical rejections

Hans Krebs (1953)

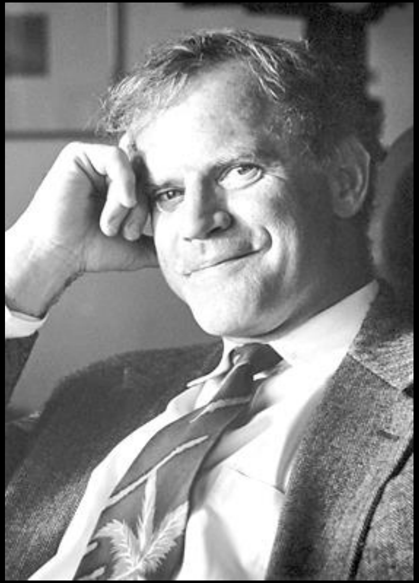
“for his discovery of the citric acid cycle“.

Linda B. Buck (2004)

“For their discoveries of odorant receptors and the organization of the olfactory system“.

Stanley B. Prusiner (1997)

“For his discovery of Prions - a new biological principle of infection".



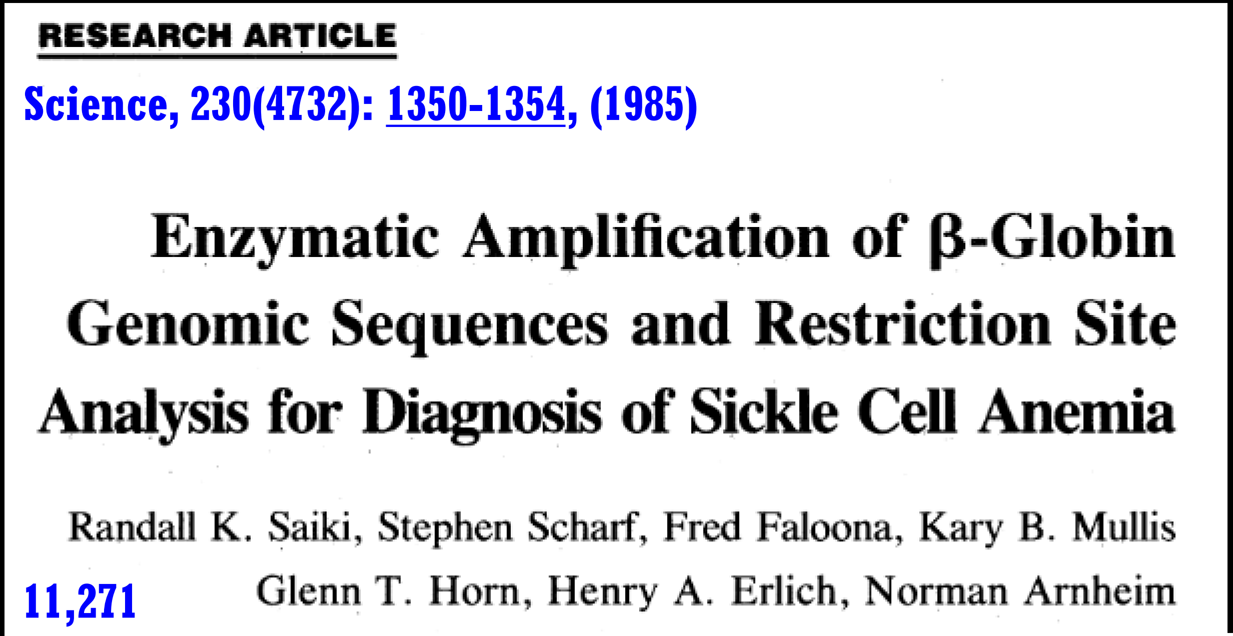
Kary B. Mullis (1993)

“For his invention of the polymerase chain reaction (PCR) method“.

Eugene Parker (1958)

Dynamics of the interplanetary gas and magnetic fields. (3,143)

http://www.nobelprize.org/

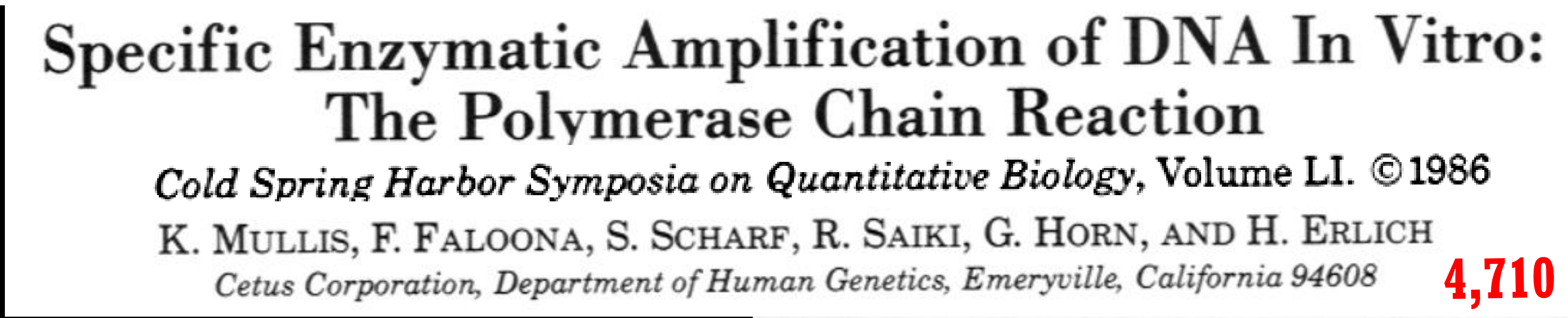

RESEARCH ARTICLE

Science, 230(4732): 1350-1354, (1985)

Enzymatic Amplification of β-Globin Genomic Sequences and Restriction Site Analysis for Diagnosis of Sickle Cell Anemia

Randall K. Saiki, Stephen Scharf, Fred Faloona, Kary B. Mullis
Glenn T. Horn, Henry A. Erlich, Norman Arnheim

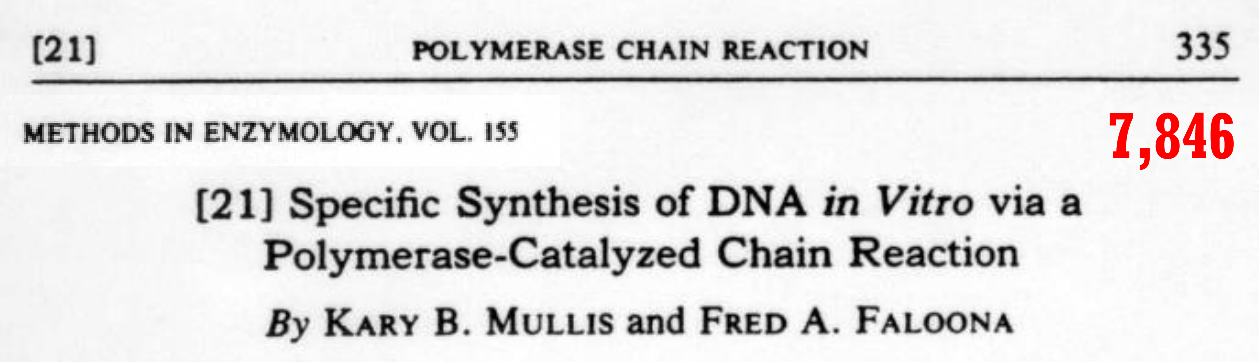
11,271


Specific Enzymatic Amplification of DNA In Vitro: The Polymerase Chain Reaction

Cold Spring Harbor Symposia on Quantitative Biology, Volume LI. ©1986

K. Mullis, F. Faloona, S. Scharf, R. Saiki, G. Horn, and H. Erlich
Cetus Corporation, Department of Human Genetics, Emeryville, California 94608

4,710


[21] POLYMERASE CHAIN REACTION 335

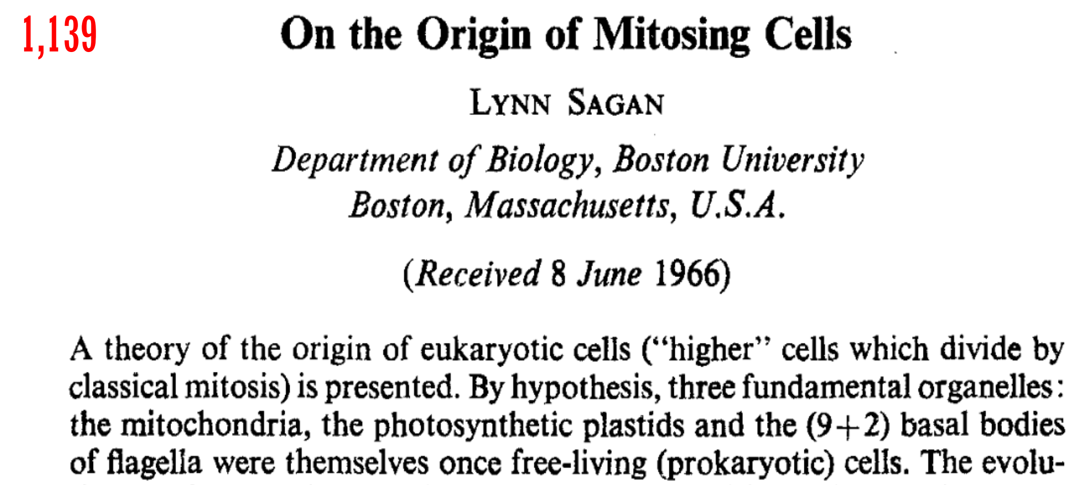
METHODS IN ENZYMOLOGY, VOL. 155

7,846

[21] Specific Synthesis of DNA *in Vitro* via a Polymerase-Catalyzed Chain Reaction

By Kary B. Mullis and Fred A. Faloona

Rechazo. Revisión por pares



1,139

On the Origin of Mitosing Cells

LYNN SAGAN

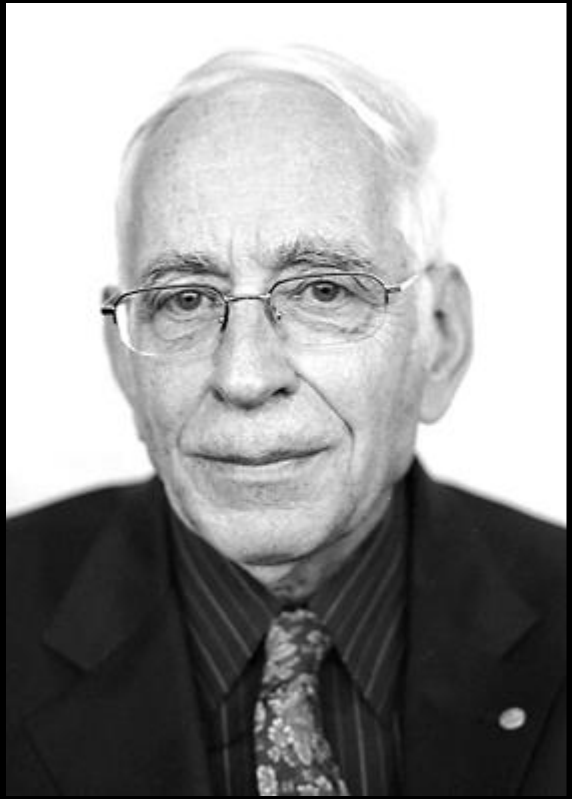
Department of Biology, Boston University
Boston, Massachusetts, U.S.A.

(*Received* 8 *June* 1966)

A theory of the origin of eukaryotic cells ("higher" cells which divide by classical mitosis) is presented. By hypothesis, three fundamental organelles: the mitochondria, the photosynthetic plastids and the (9+2) basal bodies of flagella were themselves once free-living (prokaryotic) cells. The evolu-

Sagan L., On the origin of mitosing cells, J. Theor. Biol., 14(3): 225-274, (1967).

Yves Chauvin (NP 2005)



- "Appliquée ou fondamentale, la recherche est une question de curiosité".

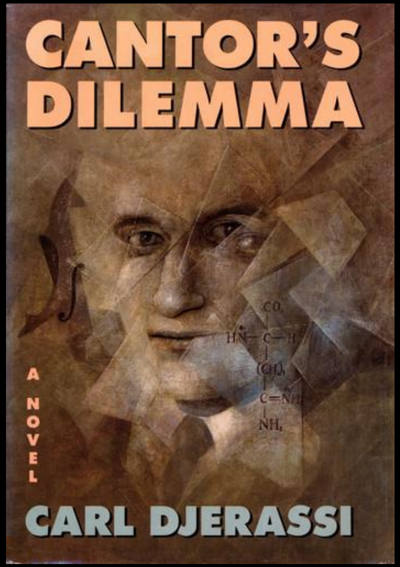
- Él equilibró la investigación fundamental y aplicada, produciendo más de 100 documentos y 130 patentes.
- Cuando Chauvin se retiró del IFP en 1995, vino a trabajar en mi laboratorio de química organometálica de la superficie de la Universidad de Lyon. Regularmente tomaba el tren de las 5 a.m. desde su casa en Tours para estar en la mesa a las 8 a.m.

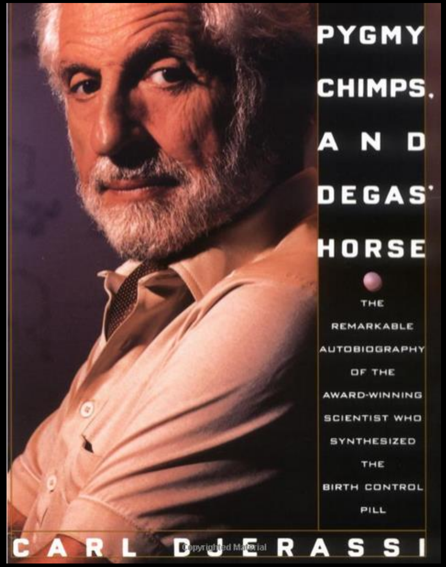
Jean-Marie Basset

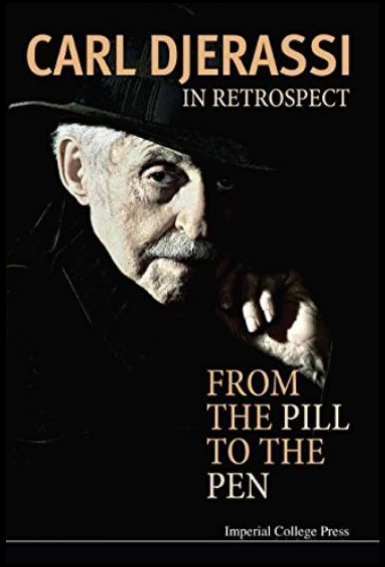
http://www.nobelprize.org/nobel_prizes/chemistry/laureates/2005/chauvin-facts.html

(October 29, 1923 – January 30, 2015)

- Centrándose en las hormonas esteroidales y los alcaloides. Elucidó la estructura de los esteroides, un área en la que publicó más de 1,200 artículos.
- Medalla Nacional de Ciencias (Presidente de los Estados Unidos de América, 1973). Medalla Nacional de Tecnología (Presidente de los Estados Unidos de América, 1991).
- 1,230 Patents.

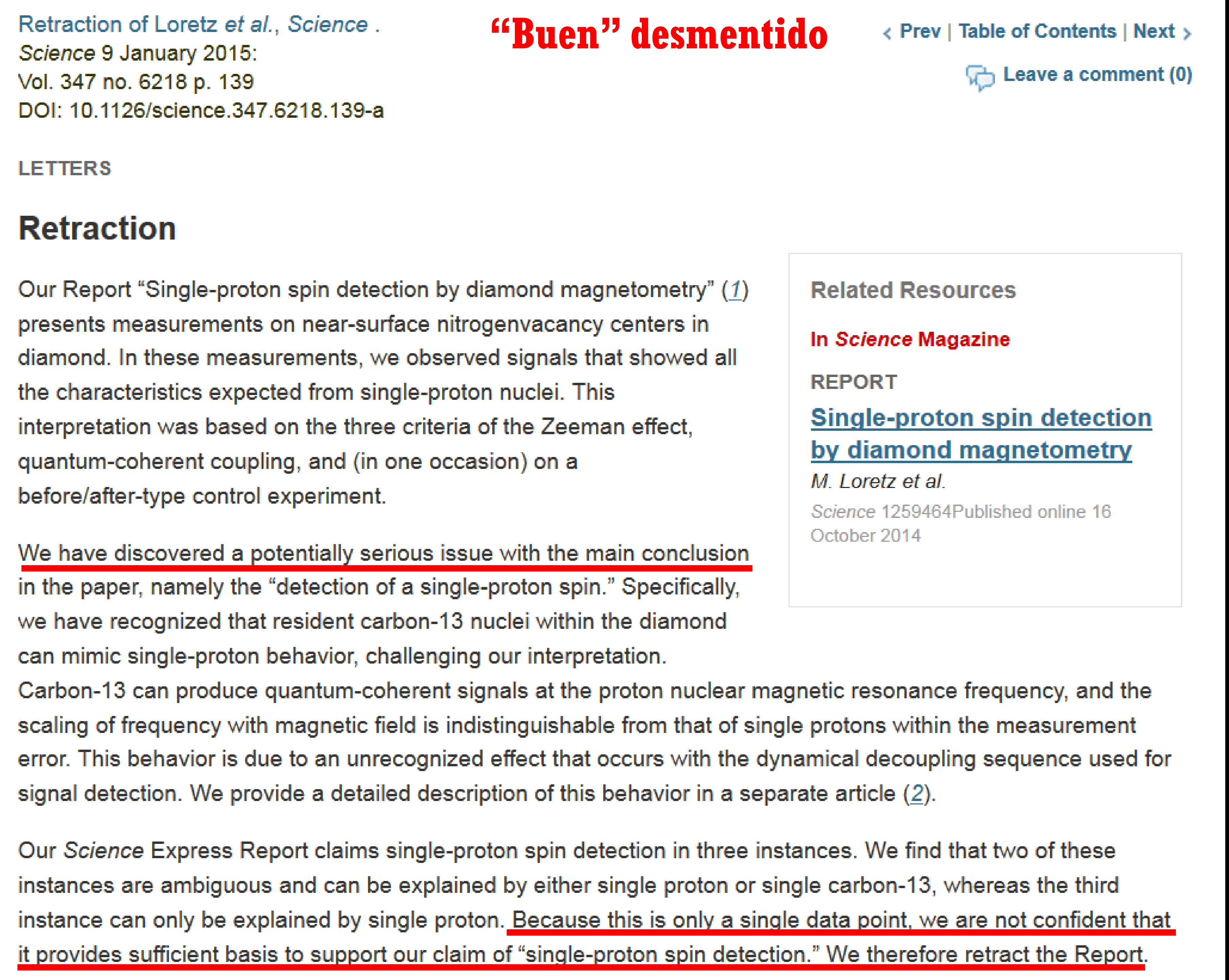

CANTOR'S DILEMMA
A NOVEL
CARL DJERASSI


PYGMY CHIMPS, AND DEGAS' HORSE
THE REMARKABLE AUTOBIOGRAPHY OF THE AWARD-WINNING SCIENTIST WHO SYNTHESIZED THE BIRTH CONTROL PILL
CARL DJERASSI


CARL DJERASSI
IN RETROSPECT
FROM THE PILL TO THE PEN
Imperial College Press

Un problema mayor

“Buen” desmentido



Retraction of Loretz *et al.*, *Science* .
Science 9 January 2015:
Vol. 347 no. 6218 p. 139
DOI: 10.1126/science.347.6218.139-a

LETTERS

Retraction

Our Report “Single-proton spin detection by diamond magnetometry” (1) presents measurements on near-surface nitrogenvacancy centers in diamond. In these measurements, we observed signals that showed all the characteristics expected from single-proton nuclei. This interpretation was based on the three criteria of the Zeeman effect, quantum-coherent coupling, and (in one occasion) on a before/after-type control experiment.

We have discovered a potentially serious issue with the main conclusion in the paper, namely the “detection of a single-proton spin.” Specifically, we have recognized that resident carbon-13 nuclei within the diamond can mimic single-proton behavior, challenging our interpretation. Carbon-13 can produce quantum-coherent signals at the proton nuclear magnetic resonance frequency, and the scaling of frequency with magnetic field is indistinguishable from that of single protons within the measurement error. This behavior is due to an unrecognized effect that occurs with the dynamical decoupling sequence used for signal detection. We provide a detailed description of this behavior in a separate article (2).

Our *Science* Express Report claims single-proton spin detection in three instances. We find that two of these instances are ambiguous and can be explained by either single proton or single carbon-13, whereas the third instance can only be explained by single proton. Because this is only a single data point, we are not confident that it provides sufficient basis to support our claim of “single-proton spin detection.” We therefore retract the Report.

Related Resources

In *Science* Magazine

REPORT

Single-proton spin detection by diamond magnetometry

M. Loretz et al.

Science 1259464Published online 16 October 2014

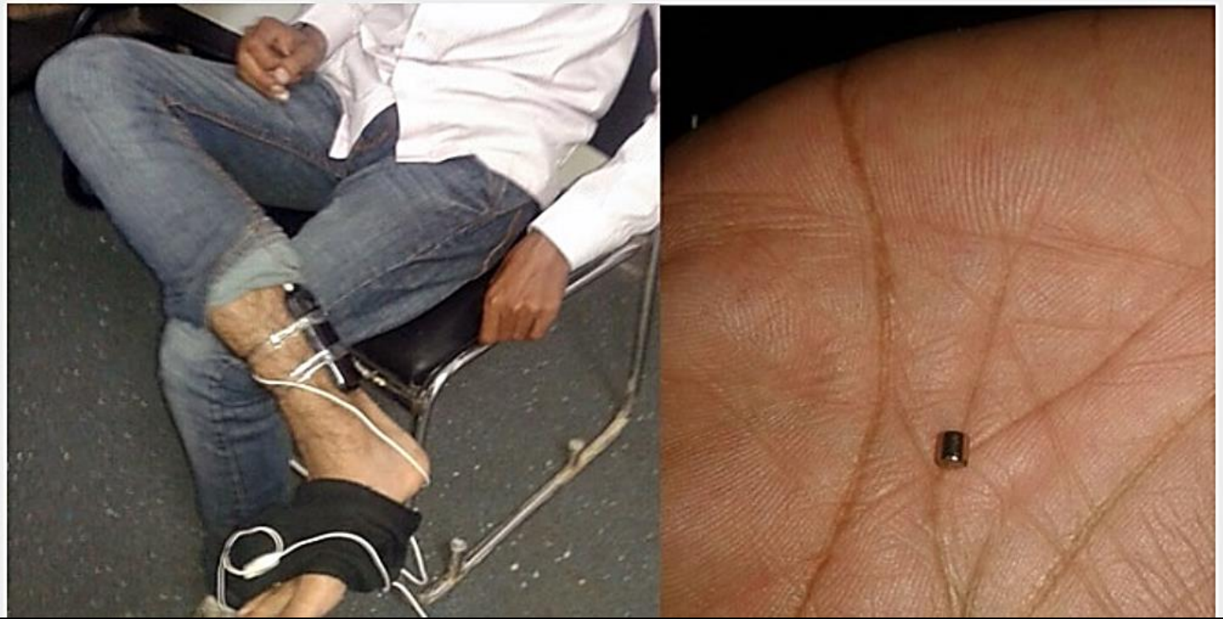
Indian Grandmaster Wins Despite Facing Youth Who Was Strapped With An Elaborate And High-Tech Cheating Setup

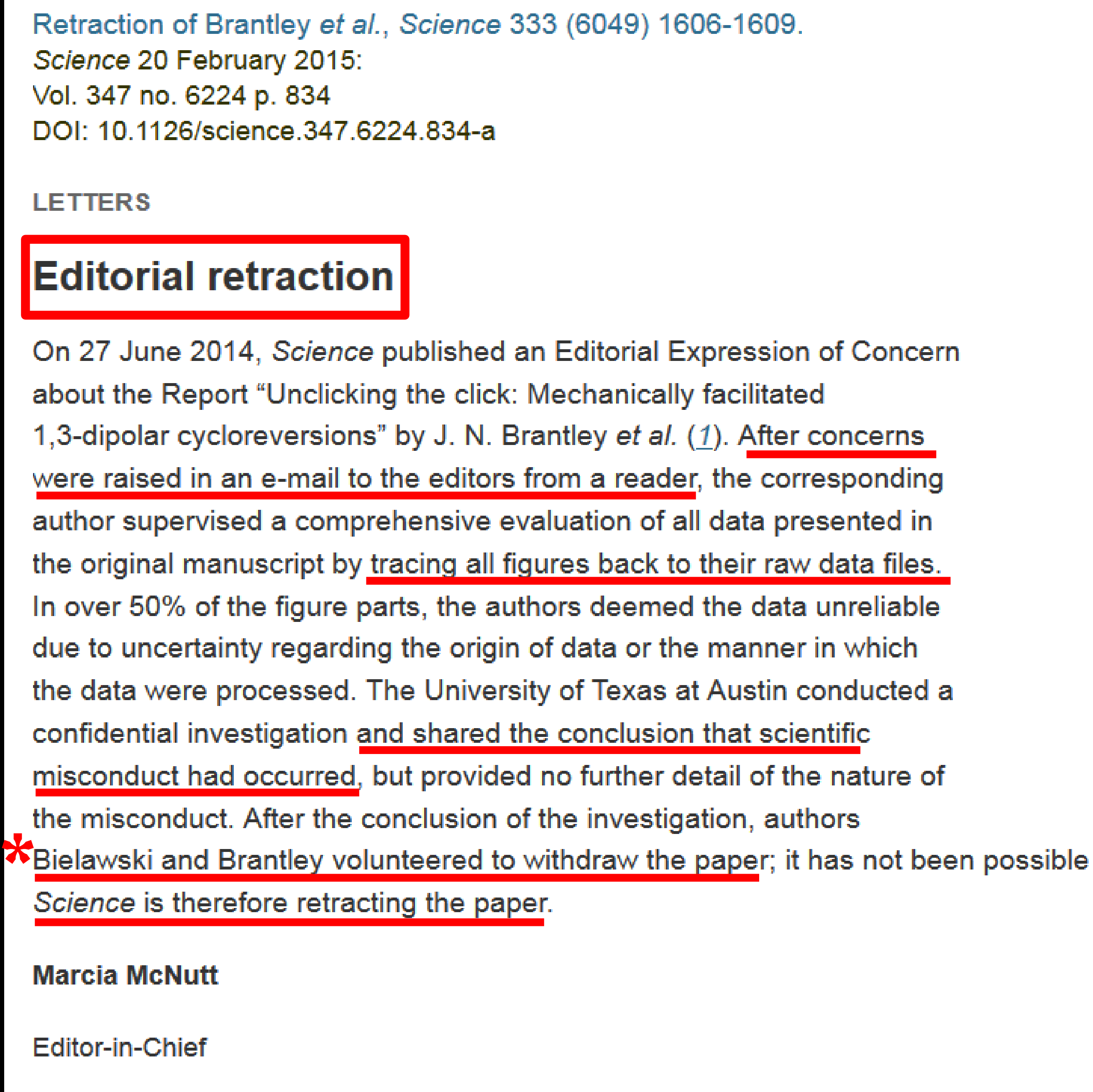
An Indian Grandmaster managed to beat a youth who had come prepared with one of the most elaborate cheating setups every discovered in a chess tournament.

Pravin Thipaey, a celebrated chess-player, won his first tournament in four years, but it wasn't an ordinary victory. The grandmaster had just won not against his opponent, but against a computer that was remotely hooked with him. The cheater had wired himself up, with one of the most ingenious of hacks that would impress even the most skilled of engineers and innovators.

In the fifth round of the inaugural Dr. Hegdewar Open Chess Tournament in Delhi, Thipay, a 55-year-old chess veteran was up against a 19-year-old engineer from Haryana, Dhruv Kakar. But what was supposed to be an easy victory for the seasoned player, turned out to be one of the most hotly contested events in chess history.

Suspecting foul play, despite his victory, Thipaey complained to the authorities who then conducted a body search on Kakar and found him strapped with several mobile phones all over his body and an earphone in his ear. The earpiece was so tiny, authorities had to use magnets to pull the sucker out.





Retraction of Brantley *et al.*, *Science* 333 (6049) 1606-1609.
Science 20 February 2015:
Vol. 347 no. 6224 p. 834
DOI: 10.1126/science.347.6224.834-a

LETTERS

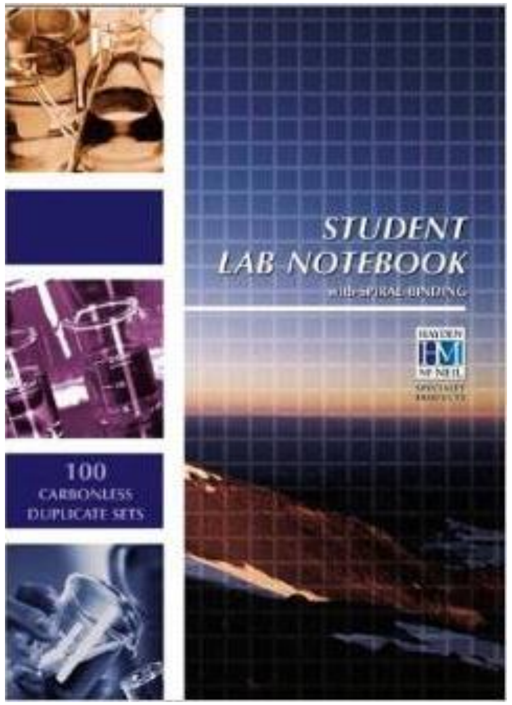
Editorial retraction

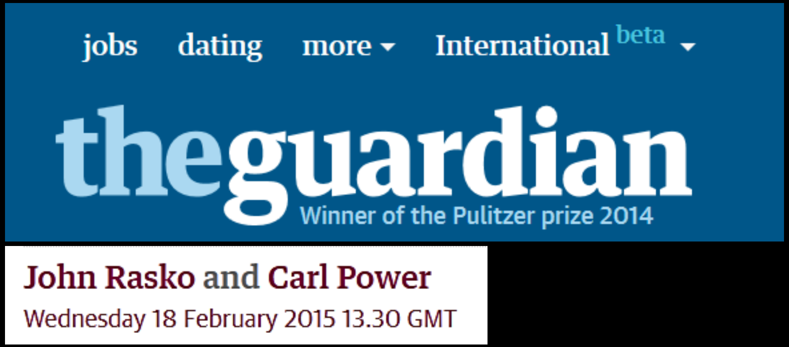
On 27 June 2014, *Science* published an Editorial Expression of Concern about the Report "Unclicking the click: Mechanically facilitated 1,3-dipolar cycloreversions" by J. N. Brantley *et al.* (1). After concerns were raised in an e-mail to the editors from a reader, the corresponding author supervised a comprehensive evaluation of all data presented in the original manuscript by tracing all figures back to their raw data files. In over 50% of the figure parts, the authors deemed the data unreliable due to uncertainty regarding the origin of data or the manner in which the data were processed. The University of Texas at Austin conducted a confidential investigation and shared the conclusion that scientific misconduct had occurred, but provided no further detail of the nature of the misconduct. After the conclusion of the investigation, authors *Bielawski and Brantley volunteered to withdraw the paper; it has not been possible to contact author Wiggins. *Science* is therefore retracting the paper.

Marcia McNutt

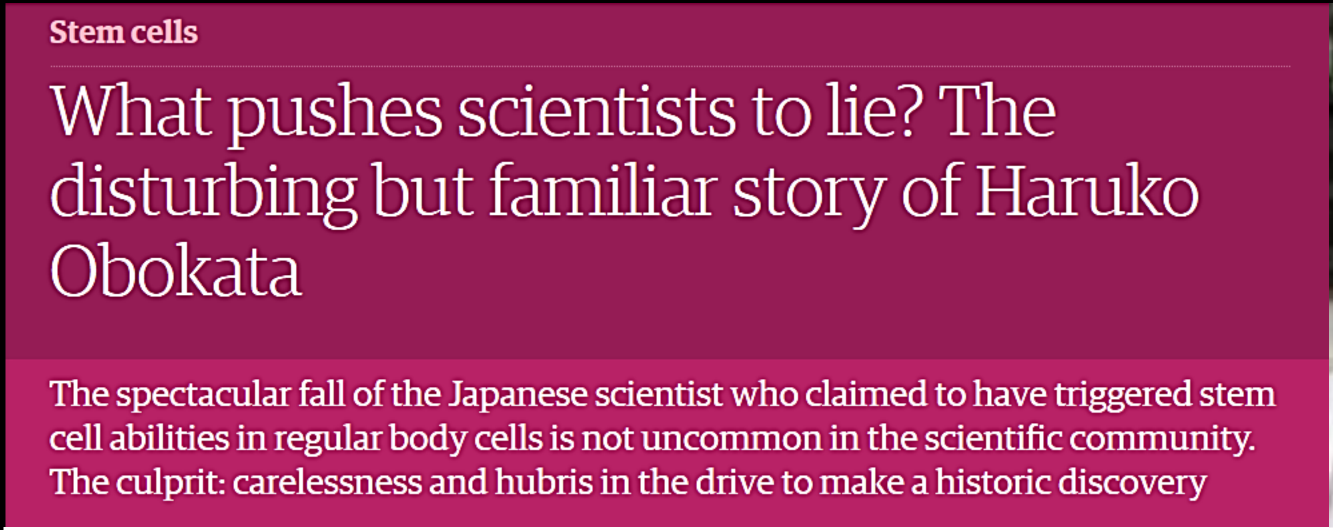
Editor-in-Chief

Lab notebook





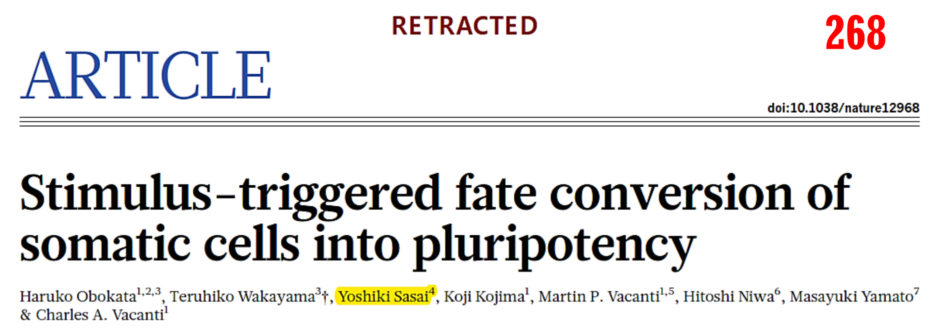
John Rasko and **Carl Power**
Wednesday 18 February 2015 13.30 GMT



Stem cells

What pushes scientists to lie? The disturbing but familiar story of Haruko Obokata

The spectacular fall of the Japanese scientist who claimed to have triggered stem cell abilities in regular body cells is not uncommon in the scientific community. The culprit: carelessness and hubris in the drive to make a historic discovery



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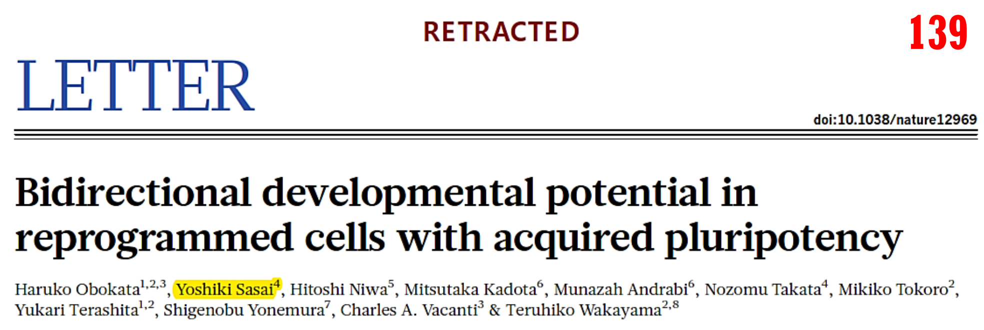
268

ARTICLE

doi:10.1038/nature12968

Stimulus-triggered fate conversion of somatic cells into pluripotency

Haruko Obokata[1,2,3], Teruhiko Wakayama[3]†, Yoshiki Sasai[4], Koji Kojima[1], Martin P. Vacanti[1,5], Hitoshi Niwa[6], Masayuki Yamato[7] & Charles A. Vacanti[1]



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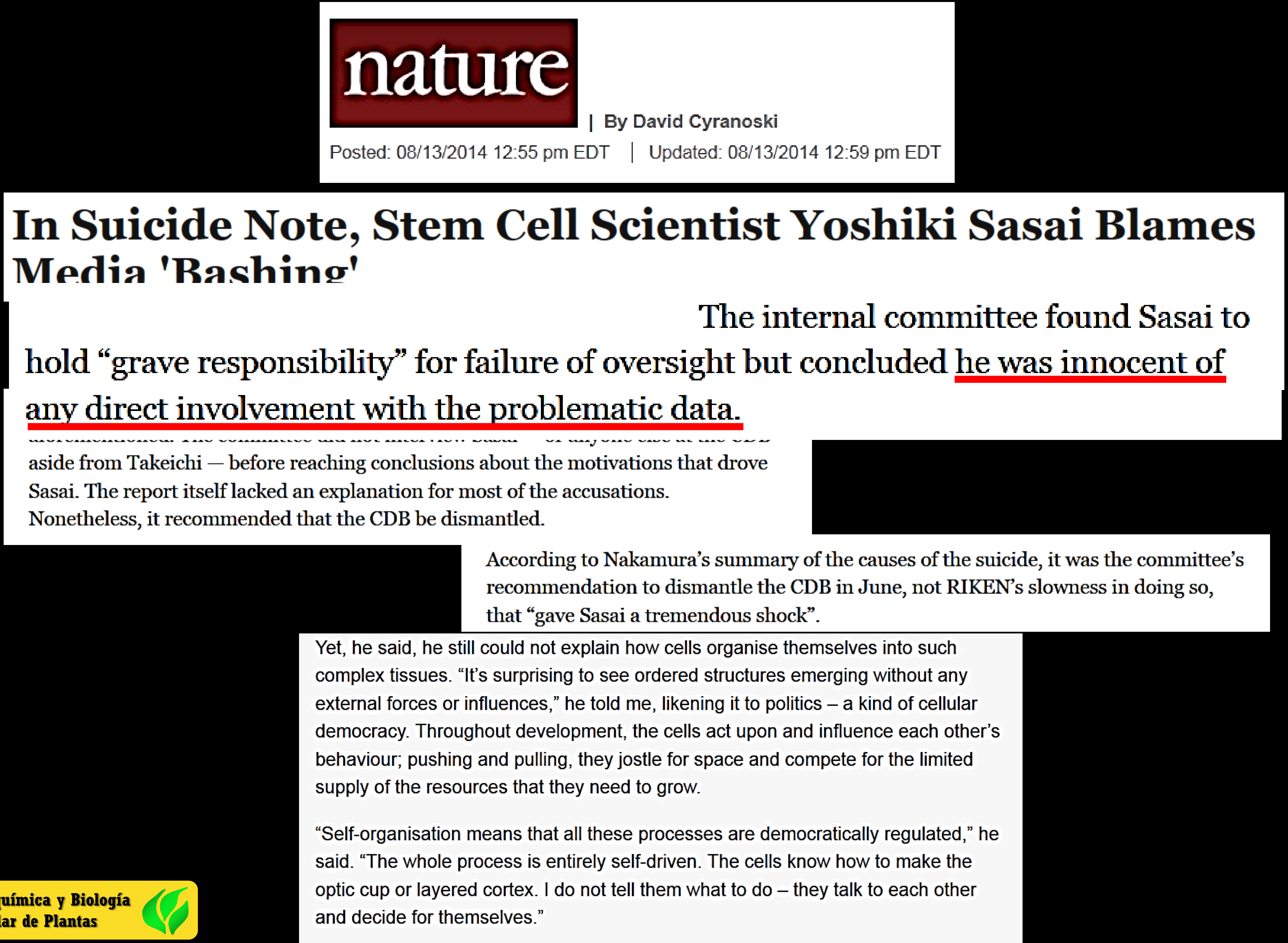
139

LETTER

doi:10.1038/nature12969

Bidirectional developmental potential in reprogrammed cells with acquired pluripotency

Haruko Obokata[1,2,3], Yoshiki Sasai[4], Hitoshi Niwa[5], Mitsutaka Kadota[6], Munazah Andrabi[6], Nozomu Takata[4], Mikiko Tokoro[2], Yukari Terashita[1,2], Shigenobu Yonemura[7], Charles A. Vacanti[3] & Teruhiko Wakayama[2,8]



nature | By David Cyranoski

Posted: 08/13/2014 12:55 pm EDT | Updated: 08/13/2014 12:59 pm EDT

In Suicide Note, Stem Cell Scientist Yoshiki Sasai Blames Media 'Bashing'

The internal committee found Sasai to hold “grave responsibility” for failure of oversight but concluded he was innocent of any direct involvement with the problematic data.

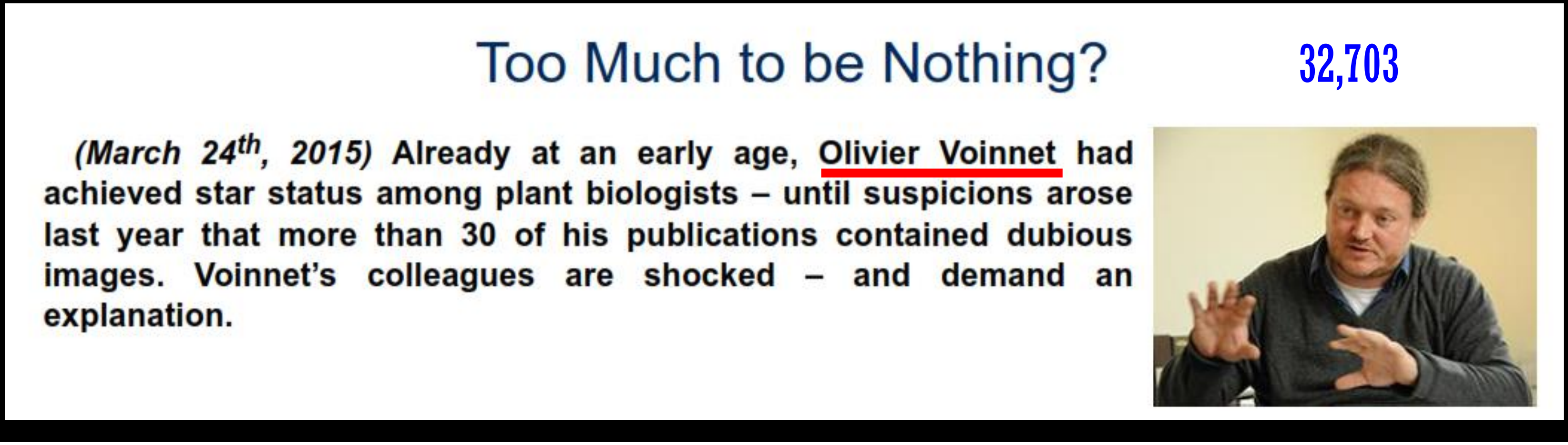
aside from Takeichi — before reaching conclusions about the motivations that drove Sasai. The report itself lacked an explanation for most of the accusations. Nonetheless, it recommended that the CDB be dismantled.

According to Nakamura’s summary of the causes of the suicide, it was the committee’s recommendation to dismantle the CDB in June, not RIKEN’s slowness in doing so, that “gave Sasai a tremendous shock”.

Yet, he said, he still could not explain how cells organise themselves into such complex tissues. “It’s surprising to see ordered structures emerging without any external forces or influences,” he told me, likening it to politics – a kind of cellular democracy. Throughout development, the cells act upon and influence each other’s behaviour; pushing and pulling, they jostle for space and compete for the limited supply of the resources that they need to grow.

“Self-organisation means that all these processes are democratically regulated,” he said. “The whole process is entirely self-driven. The cells know how to make the optic cup or layered cortex. I do not tell them what to do – they talk to each other and decide for themselves.”

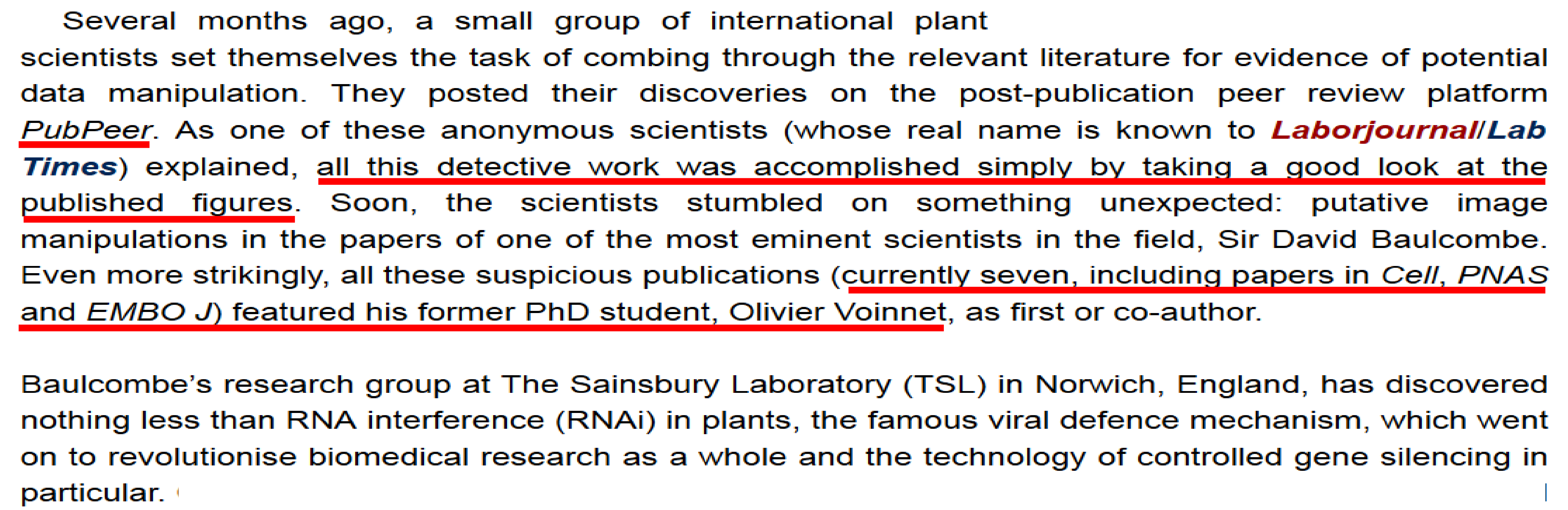
Muy mal



Too Much to be Nothing?

32,703

(March 24th, 2015) **Already at an early age, Olivier Voinnet had achieved star status among plant biologists – until suspicions arose last year that more than 30 of his publications contained dubious images. Voinnet's colleagues are shocked – and demand an explanation.**



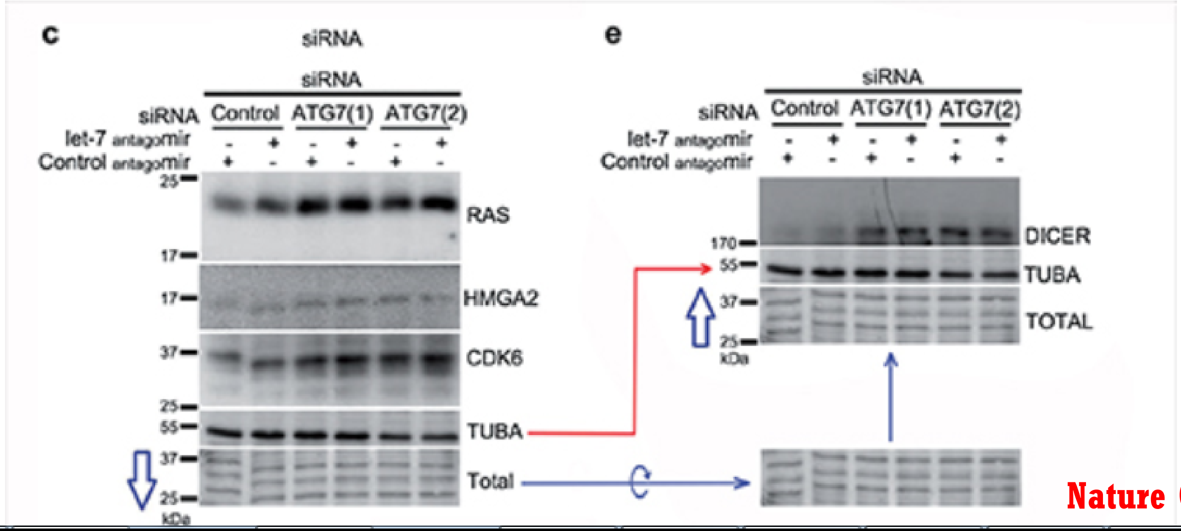
Several months ago, a small group of international plant scientists set themselves the task of combing through the relevant literature for evidence of potential data manipulation. They posted their discoveries on the post-publication peer review platform *PubPeer*. As one of these anonymous scientists (whose real name is known to ***Laborjournal*/*Lab Times***) explained, all this detective work was accomplished simply by taking a good look at the published figures. Soon, the scientists stumbled on something unexpected: putative image manipulations in the papers of one of the most eminent scientists in the field, Sir David Baulcombe. Even more strikingly, all these suspicious publications (currently seven, including papers in *Cell*, *PNAS* and *EMBO J*) featured his former PhD student, Olivier Voinnet, as first or co-author.

Baulcombe's research group at The Sainsbury Laboratory (TSL) in Norwich, England, has discovered nothing less than RNA interference (RNAi) in plants, the famous viral defence mechanism, which went on to revolutionise biomedical research as a whole and the technology of controlled gene silencing in particular.

38,054

Who was responsible?

The search among the multitude of authors for those, who were actually responsible for the criticised figures, proved rather difficult. Many contact requests remained unanswered. Still, when anyone did take a stand, the former colleagues and collaborators pointed towards Olivier Voinnet. Maria Teresa Ruiz placed the responsibility for a problematic figure in Ruiz *et al.* (*Plant Cell*, 10(6):937-46) on her co-author Voinnet. Andrew Hamilton confirmed that the criticised data in Hamilton *et al.* (*EMBO J*, 21(17):4671-9) originated from Voinnet as well. Susana Rivas admitted that the suspicious figure in Voinnet *et al.* (*Plant J*, 33(5):949-56) does contain her own data, though it was assembled by Voinnet. Another former colleague, Yvonne Pinto, declined any responsibility for the incriminated figures in the *PNAS* paper by Voinnet, Pinto & Baulcombe (96(24):14147-52). According to Hamilton, group leader Baulcombe was not personally involved in the compilation of figures at that time.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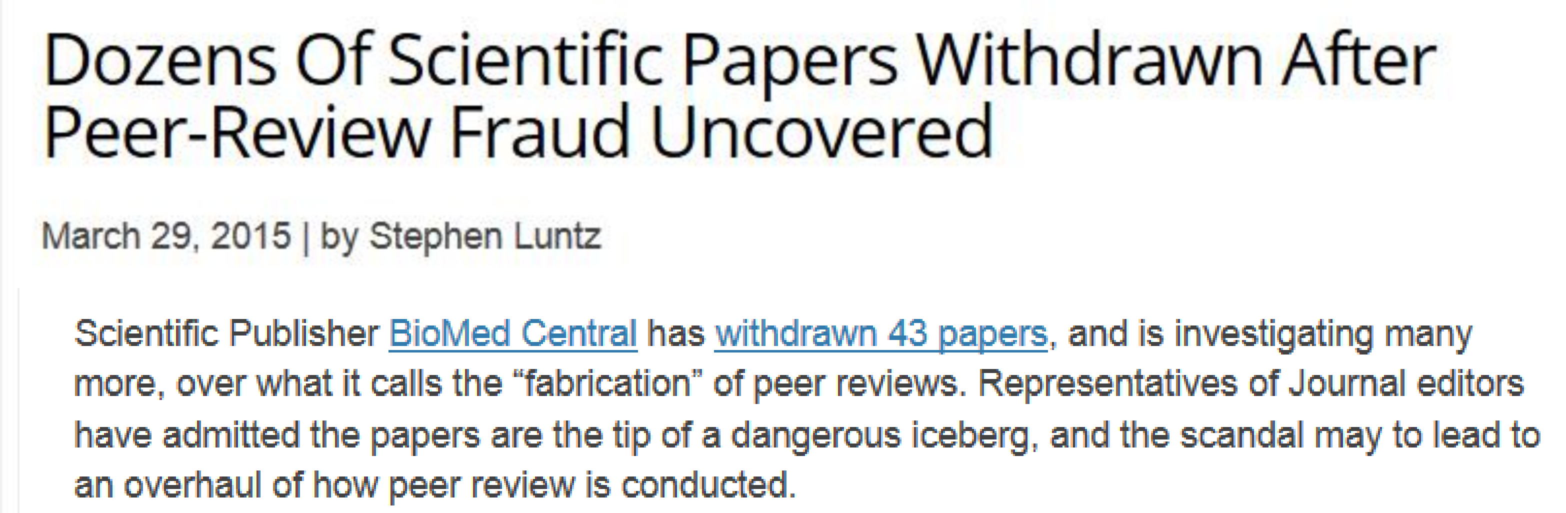
Nature Cell Biology, 14:1314-21, (2012)

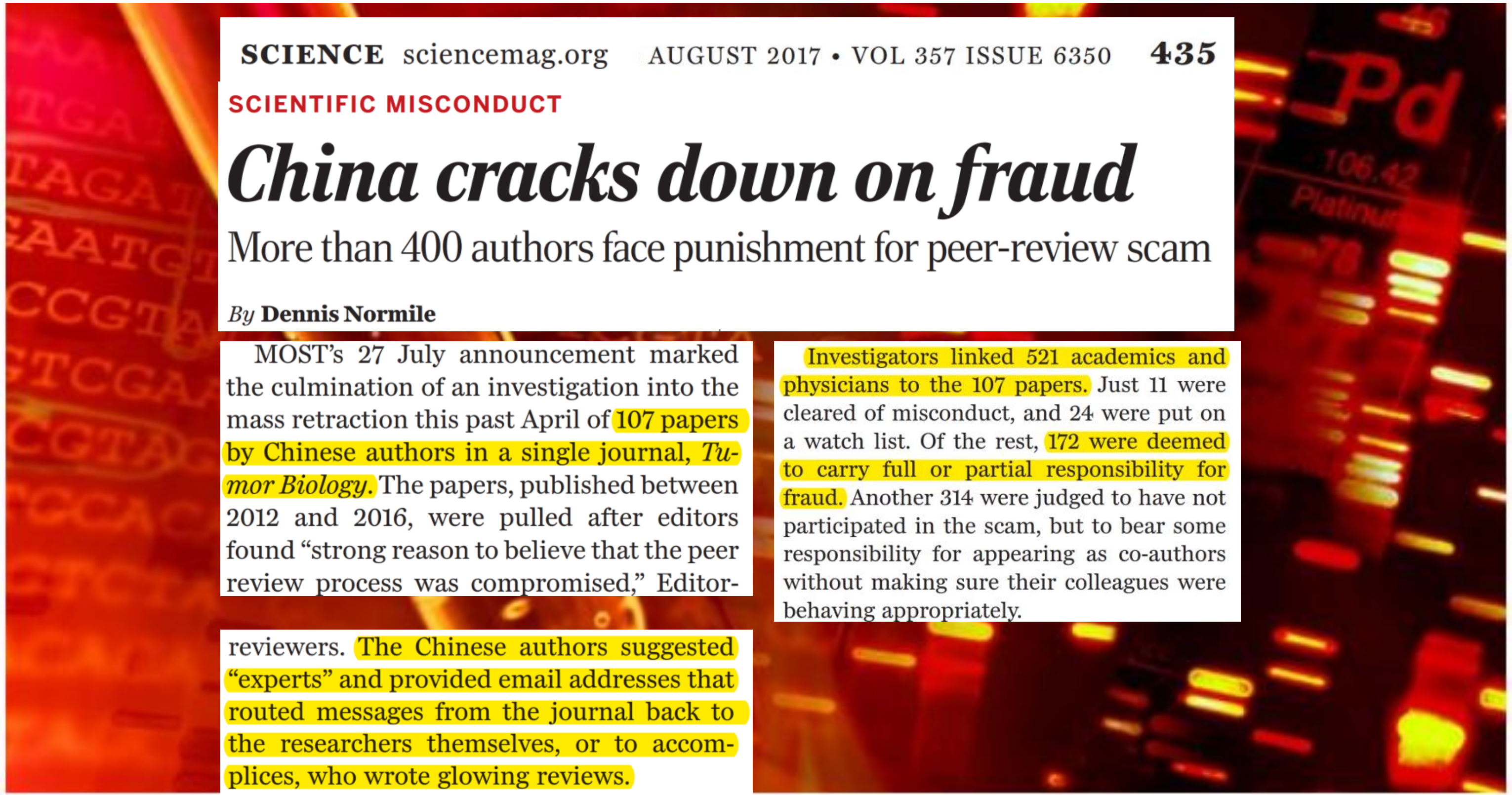
En varias de las 277 revistas que publica BioMed Central los investigadores encontraron la forma de revisar sus propios documentos o los de sus amigos.



Dozens Of Scientific Papers Withdrawn After Peer-Review Fraud Uncovered

March 29, 2015 | by Stephen Luntz

Scientific Publisher BioMed Central has withdrawn 43 papers, and is investigating many more, over what it calls the "fabrication" of peer reviews. Representatives of Journal editors have admitted the papers are the tip of a dangerous iceberg, and the scandal may to lead to an overhaul of how peer review is conducted.



SCIENCE sciencemag.org AUGUST 2017 • VOL 357 ISSUE 6350 **435**

SCIENTIFIC MISCONDUCT

China cracks down on fraud

More than 400 authors face punishment for peer-review scam

By **Dennis Normile**

MOST's 27 July announcement marked the culmination of an investigation into the mass retraction this past April of 107 papers by Chinese authors in a single journal, *Tumor Biology.* The papers, published between 2012 and 2016, were pulled after editors found "strong reason to believe that the peer review process was compromised," Editor-

reviewers. The Chinese authors suggested "experts" and provided email addresses that routed messages from the journal back to the researchers themselves, or to accomplices, who wrote glowing reviews.

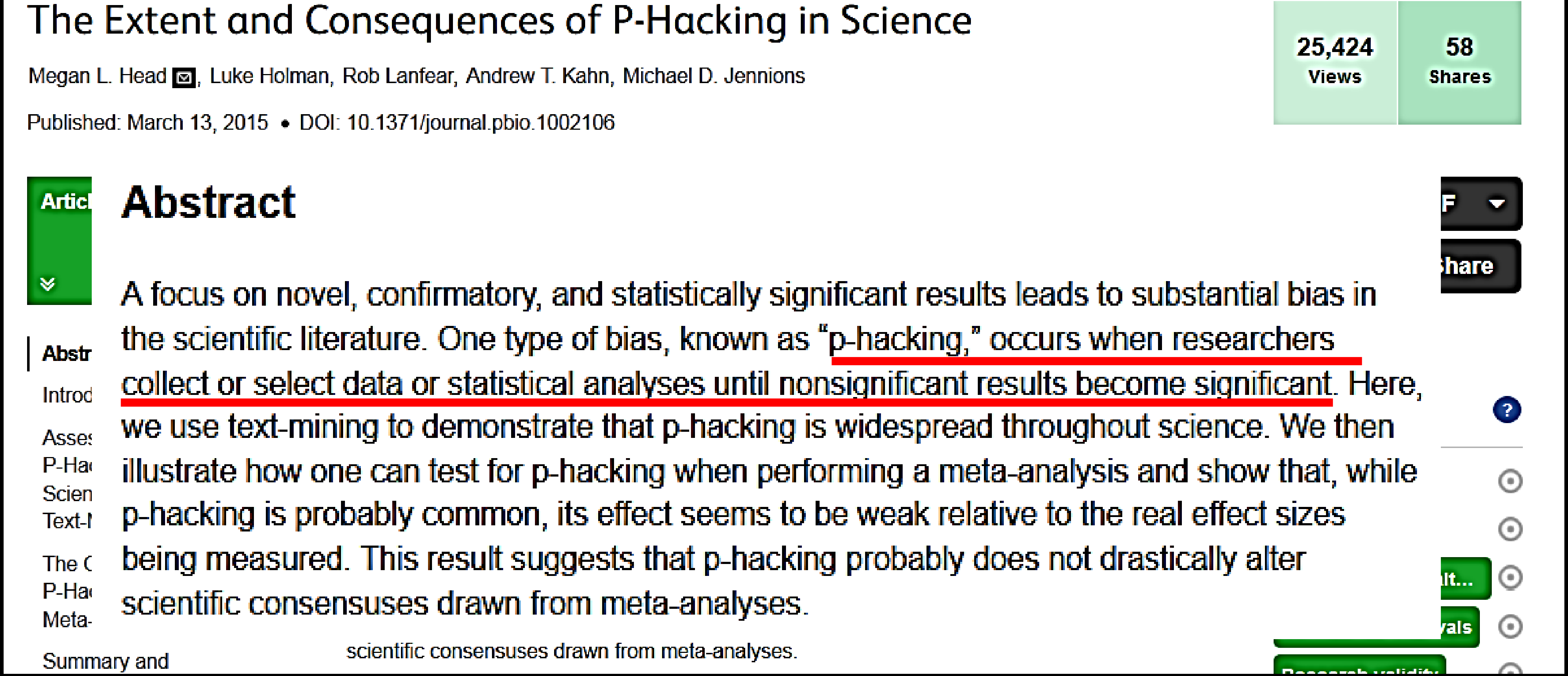
Investigators linked 521 academics and physicians to the 107 papers. Just 11 were cleared of misconduct, and 24 were put on a watch list. Of the rest, 172 were deemed to carry full or partial responsibility for fraud. Another 314 were judged to have not participated in the scam, but to bear some responsibility for appearing as co-authors without making sure their colleagues were behaving appropriately.

Los duos dinámicos

Tú me pones, yo te pongo

http://www.iflscience.com/health-and-medicine/dozens-scientific-papers-withdrawn-probably-more-come

P (*P*-hacking)



The Extent and Consequences of P-Hacking in Science

Megan L. Head, Luke Holman, Rob Lanfear, Andrew T. Kahn, Michael D. Jennions

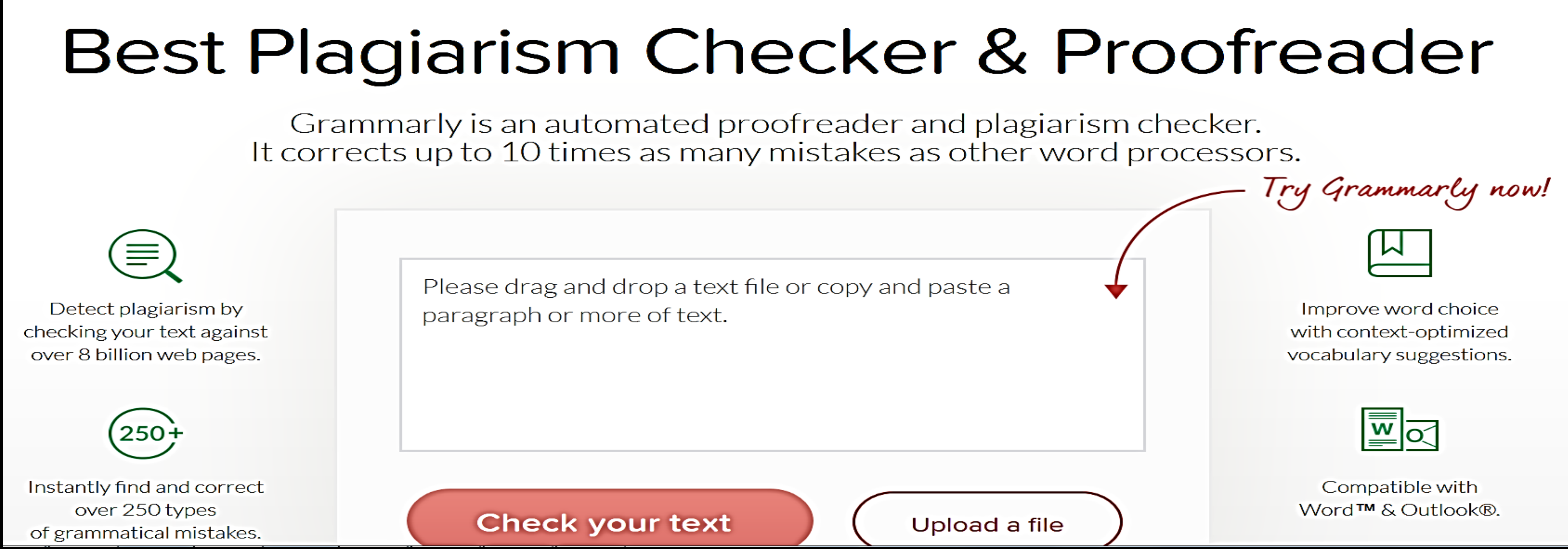
Published: March 13, 2015 • DOI: 10.1371/journal.pbio.1002106

Abstract

A focus on novel, confirmatory, and statistically significant results leads to substantial bias in the scientific literature. One type of bias, known as "p-hacking," occurs when researchers collect or select data or statistical analyses until nonsignificant results become significant. Here, we use text-mining to demonstrate that p-hacking is widespread throughout science. We then illustrate how one can test for p-hacking when performing a meta-analysis and show that, while p-hacking is probably common, its effect seems to be weak relative to the real effect sizes being measured. This result suggests that p-hacking probably does not drastically alter scientific consensuses drawn from meta-analyses.

scientific consensuses drawn from meta-analyses.

Plagiarismo



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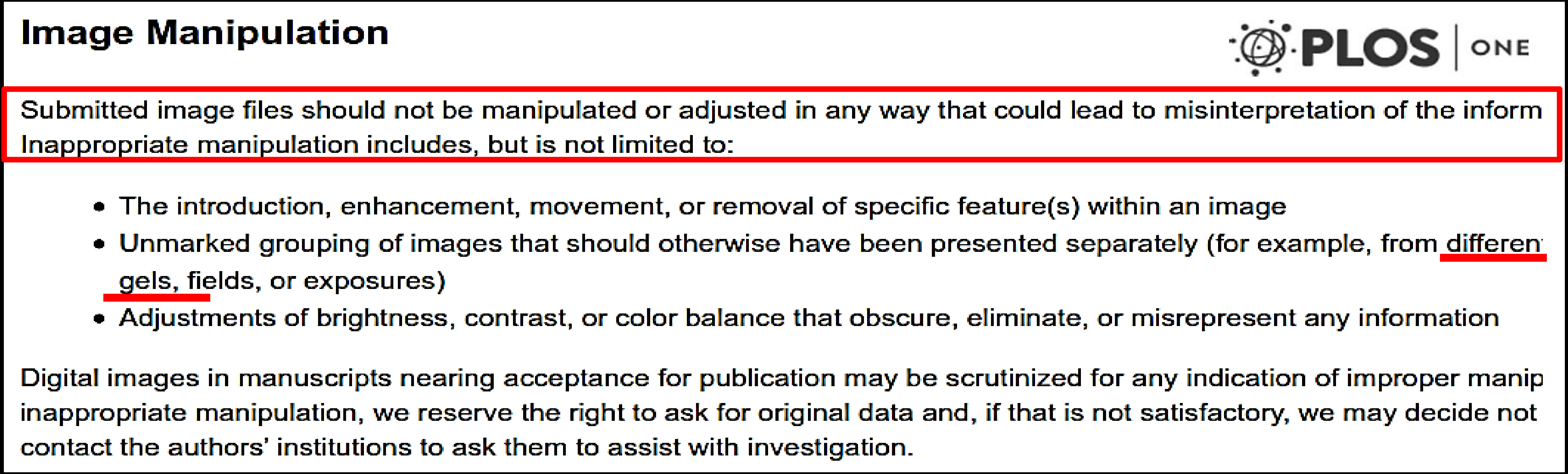

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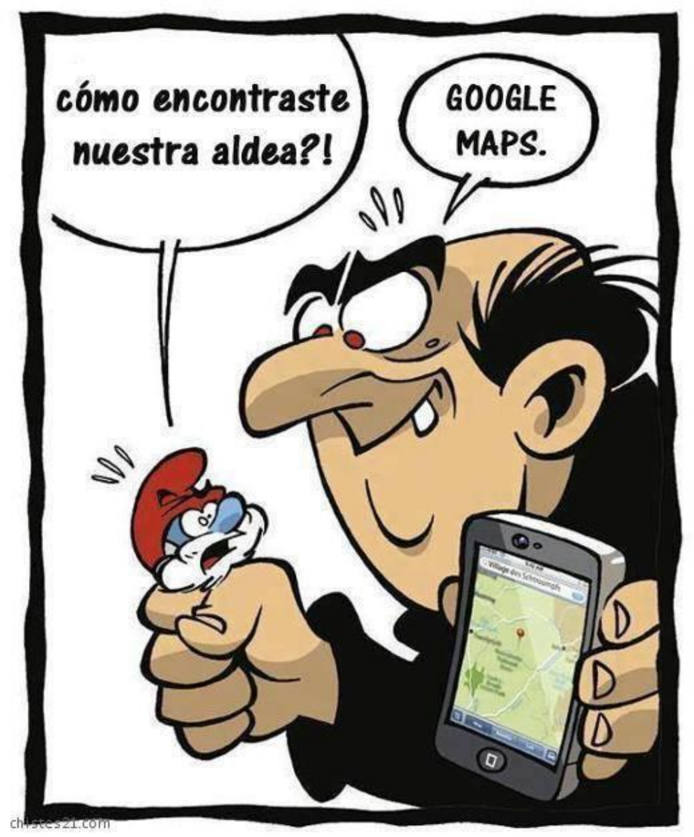
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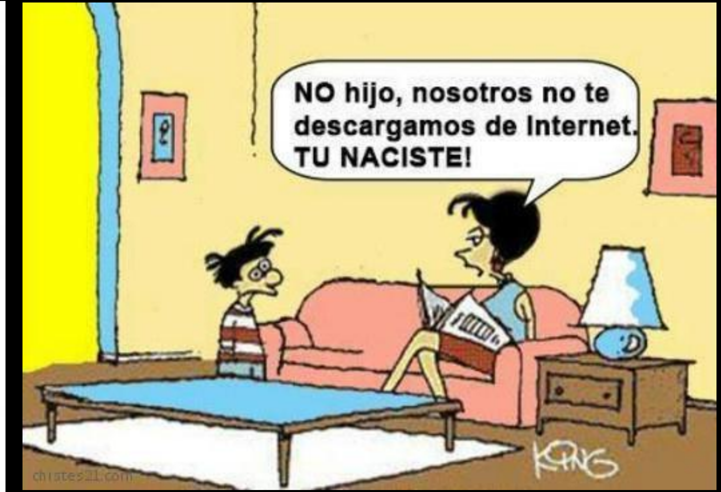
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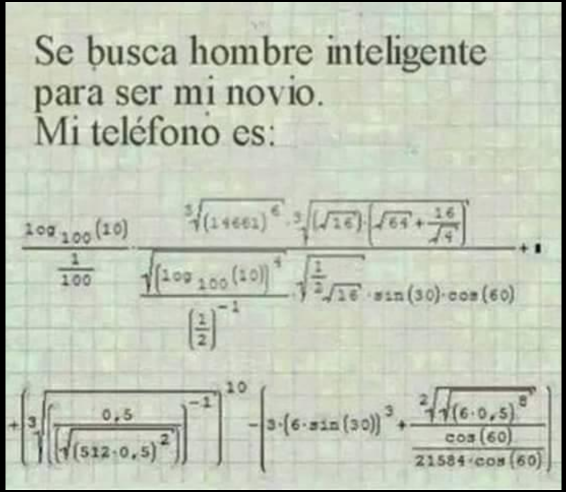

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para ser mi novio.
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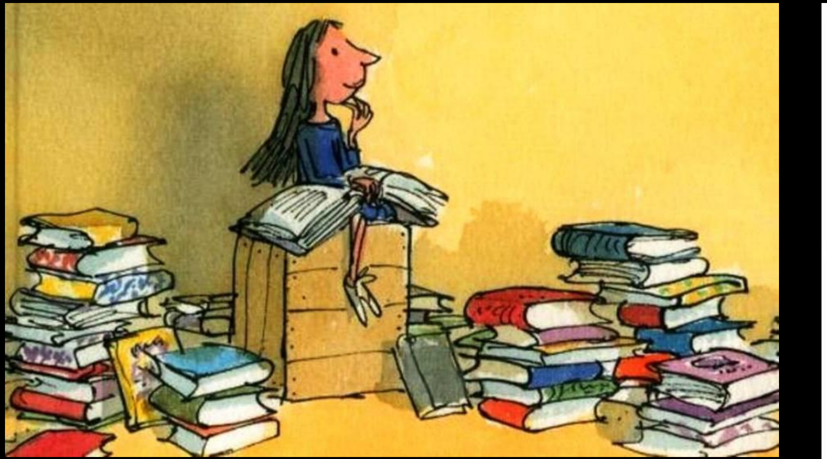

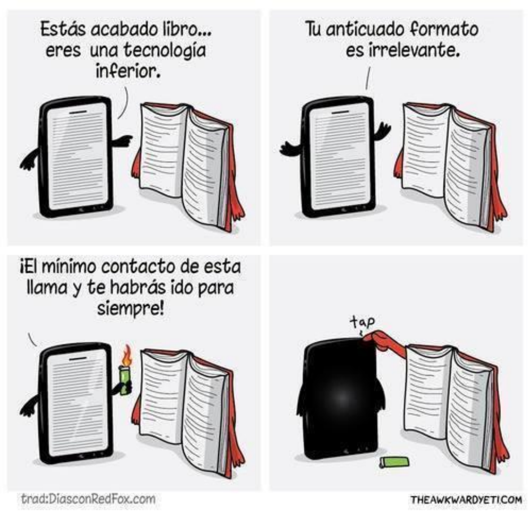
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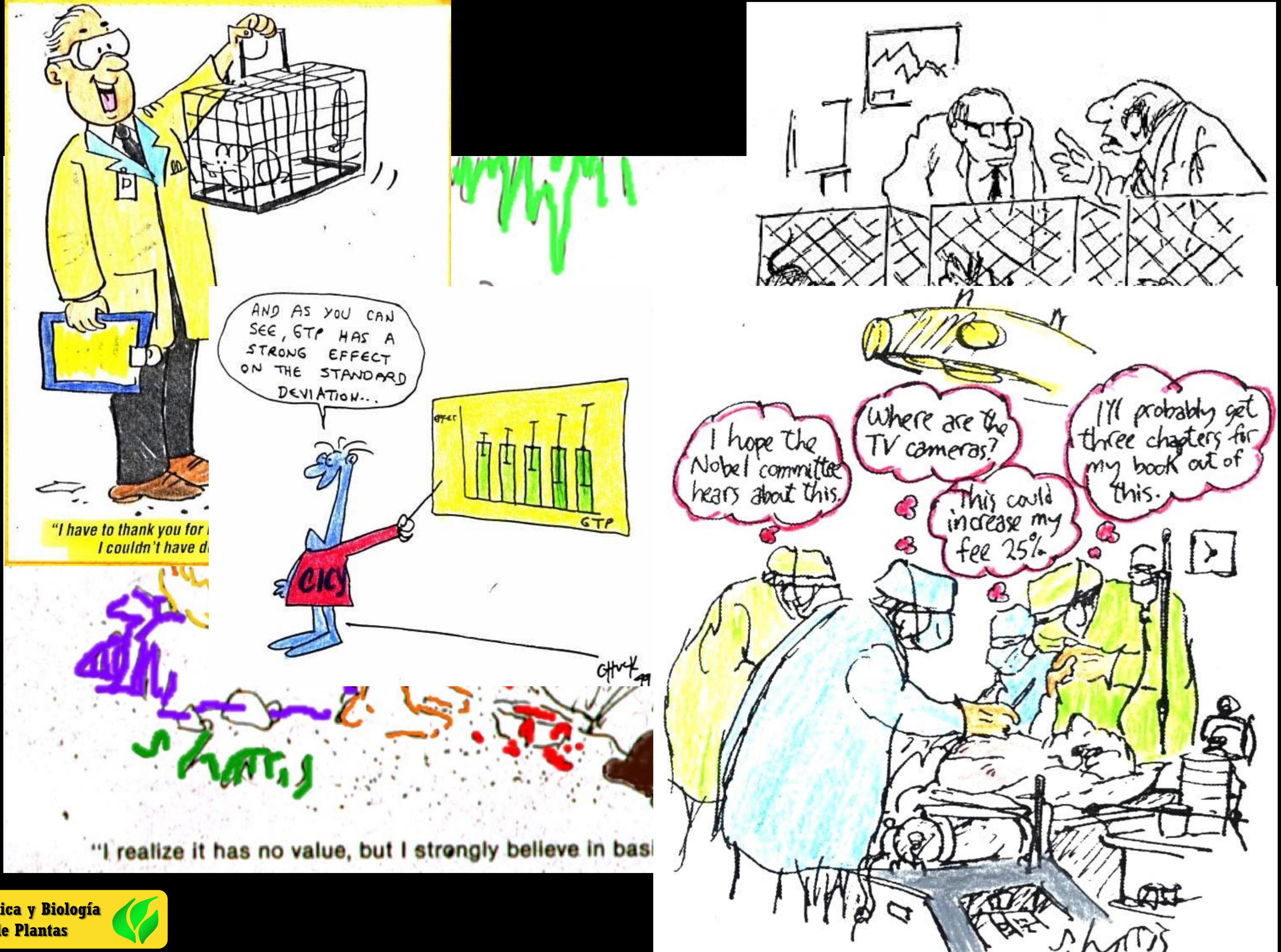
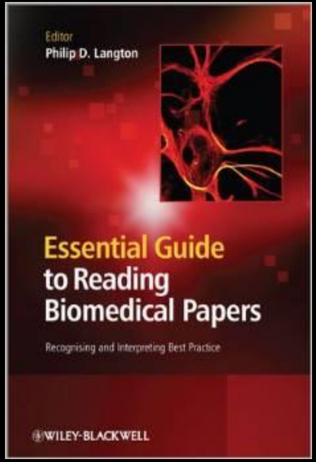

P
AND AS YOU CAN SEE, GTP HAS A STRONG EFFECT ON THE STANDARD DEVIATION...
EFFECT
GTP
CICY
I hope the Nobel committee hears about this.
Where are the TV cameras?
This could increase my fee 25%.
I'll probably get three chapters for my book out of this.
S.harris

"I have to thank you for
I couldn't have d

"I realize it has no value, but I strongly believe in basi

Does this say exactly what you want it to say in the best way possible?

Ian Sussex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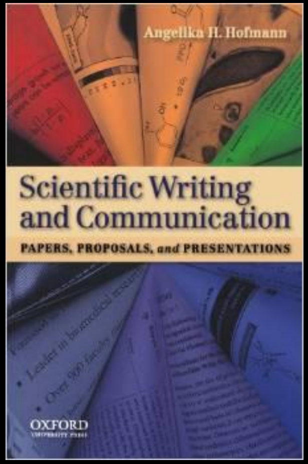
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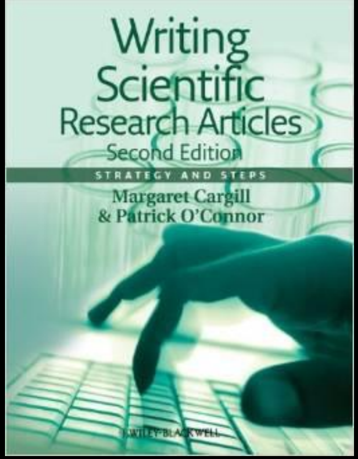
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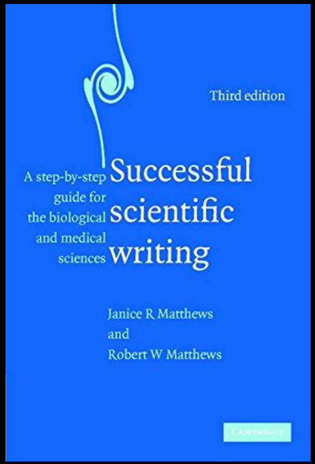
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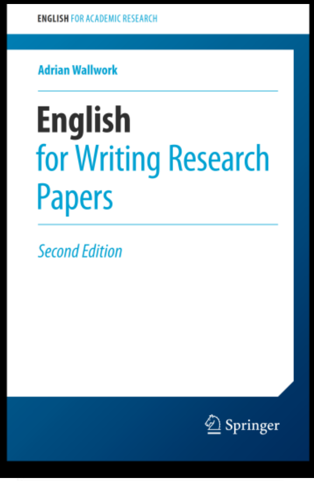
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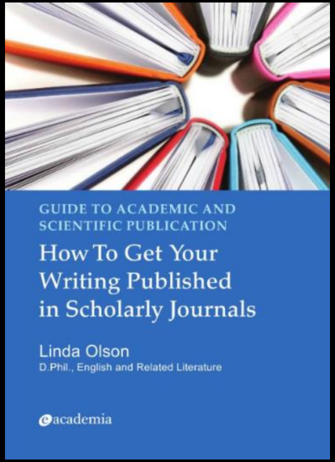
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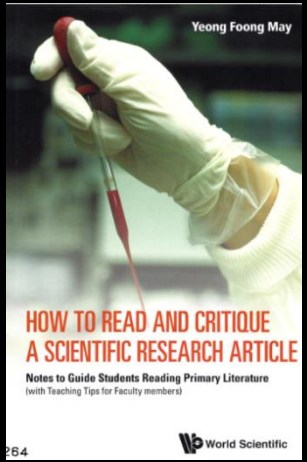
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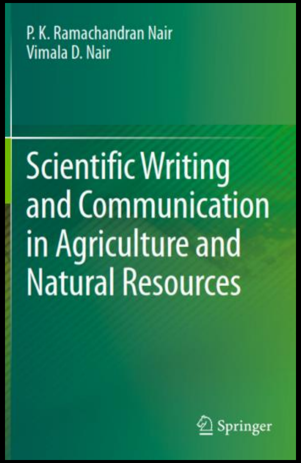
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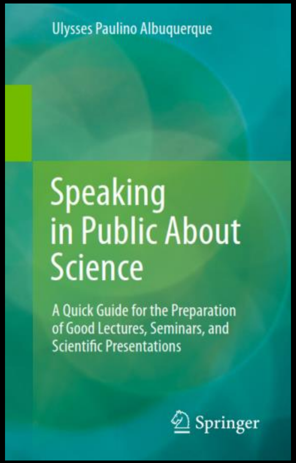
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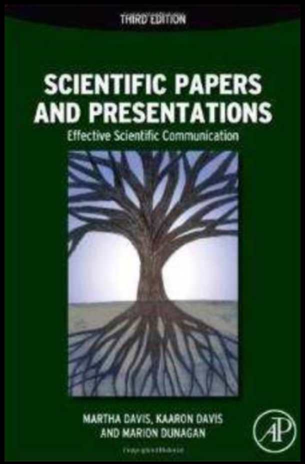
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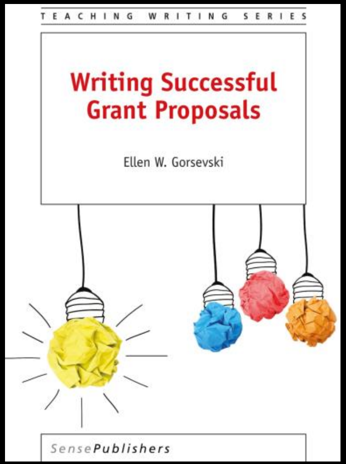
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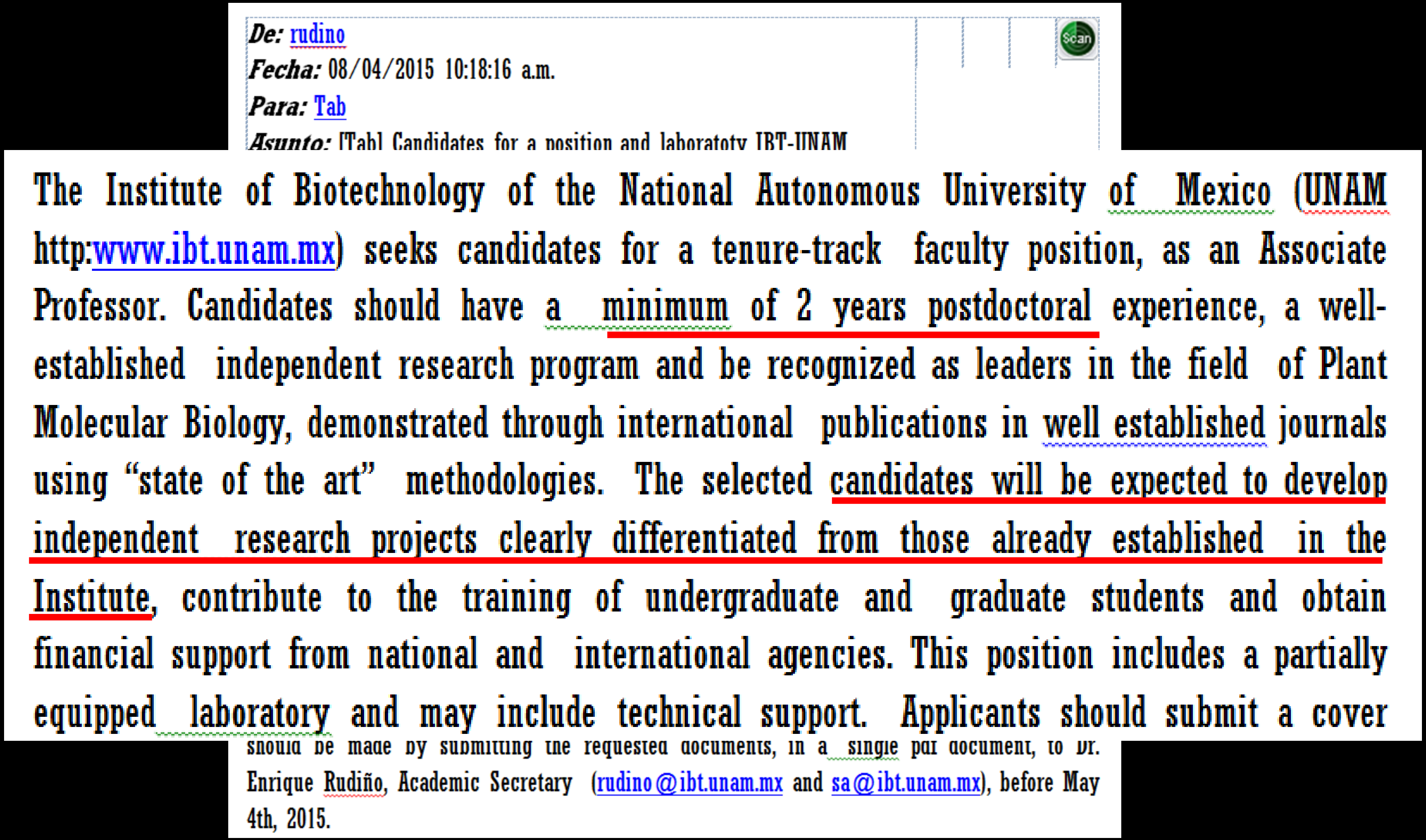
El mercado laboral



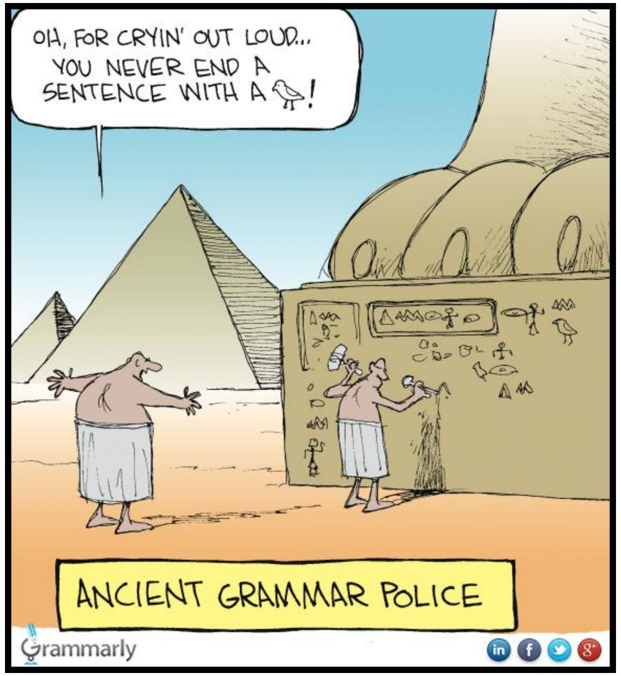
De: rudino
Fecha: 08/04/2015 10:18:16 a.m.
Para: Tab
Asunto: [Tab] Candidates for a position and laboratoty IBT-UNAM

The Institute of Biotechnology of the National Autonomous University of Mexico (UNAM http:www.ibt.unam.mx) seeks candidates for a tenure-track faculty position, as an Associate Professor. Candidates should have a minimum of 2 years postdoctoral experience, a well-established independent research program and be recognized as leaders in the field of Plant Molecular Biology, demonstrated through international publications in well established journals using "state of the art" methodologies. The selected candidates will be expected to develop independent research projects clearly differentiated from those already established in the Institute, contribute to the training of undergraduate and graduate students and obtain financial support from national and international agencies. This position includes a partially equipped laboratory and may include technical support. Applicants should submit a cover

should be made by submitting the requested documents, in a single pdf document, to Dr. Enrique Rudiño, Academic Secretary (rudino@ibt.unam.mx and sa@ibt.unam.mx), before May 4th, 2015.

Como corregir las fallas

- Las correcciones empiezan antes de convertirte en científico.
  - Aprende a escribir y expresarte correctamente en español.
  - Aprende inglés.
  - No mal uses las nuevas herramientas.
  - Interésate en el mundo que te rodea.
  - Estudia Lógica, Ética y Filosofía.
  - Aprende que la Ciencia es parte de la Cultura.
  - No seas un analfabeto científico. Science y Nature.
  - Escoge al mejor director posible en tu campo de interés, no importa que esté en el fin del mundo.
  - No tengas miedo de ir al otro lado del mundo.


OH, FOR CRYIN' OUT LOUD.. YOU NEVER END A SENTENCE WITH A !
ANCIENT GRAMMAR POLICE
Grammarly

Como corregir las fallas

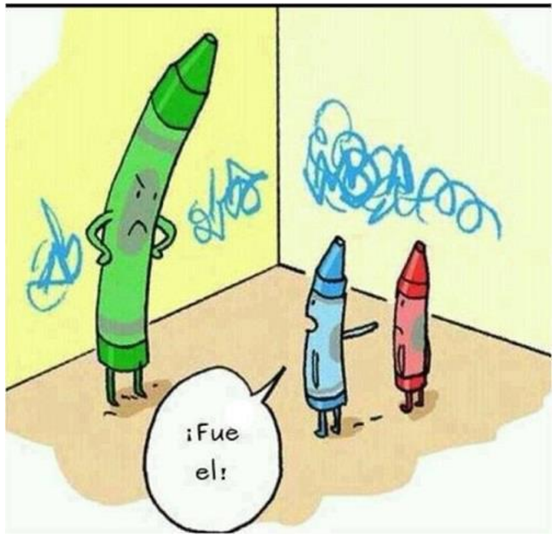
- Encuentra un mentor. Todo científico debe tener a alguien en una posición de poder al que tenga confianza en su capacidad para proporcionar consejo.

- ¡Toma riesgos científicos! ¡Compite! ¡Se ambicioso! ¡Deja la zona de confort!

- Siente la emoción del viaje hacia lo desconocido y date cuenta de que has encontrado algo que nadie más ha visto antes. ¡Eres el primero!

Al inicio de tu carrera

- ¡No dejes de trabajar en el laboratorio!
- No permitas que tus compañeros te llenen de cargas administrativas.
- ¡Exige el apoyo que toda institución le debe a sus investigadores jóvenes!
- Escoge bien a tus alumnos.
- Deja el corazón de pollo para las obras de caridad.

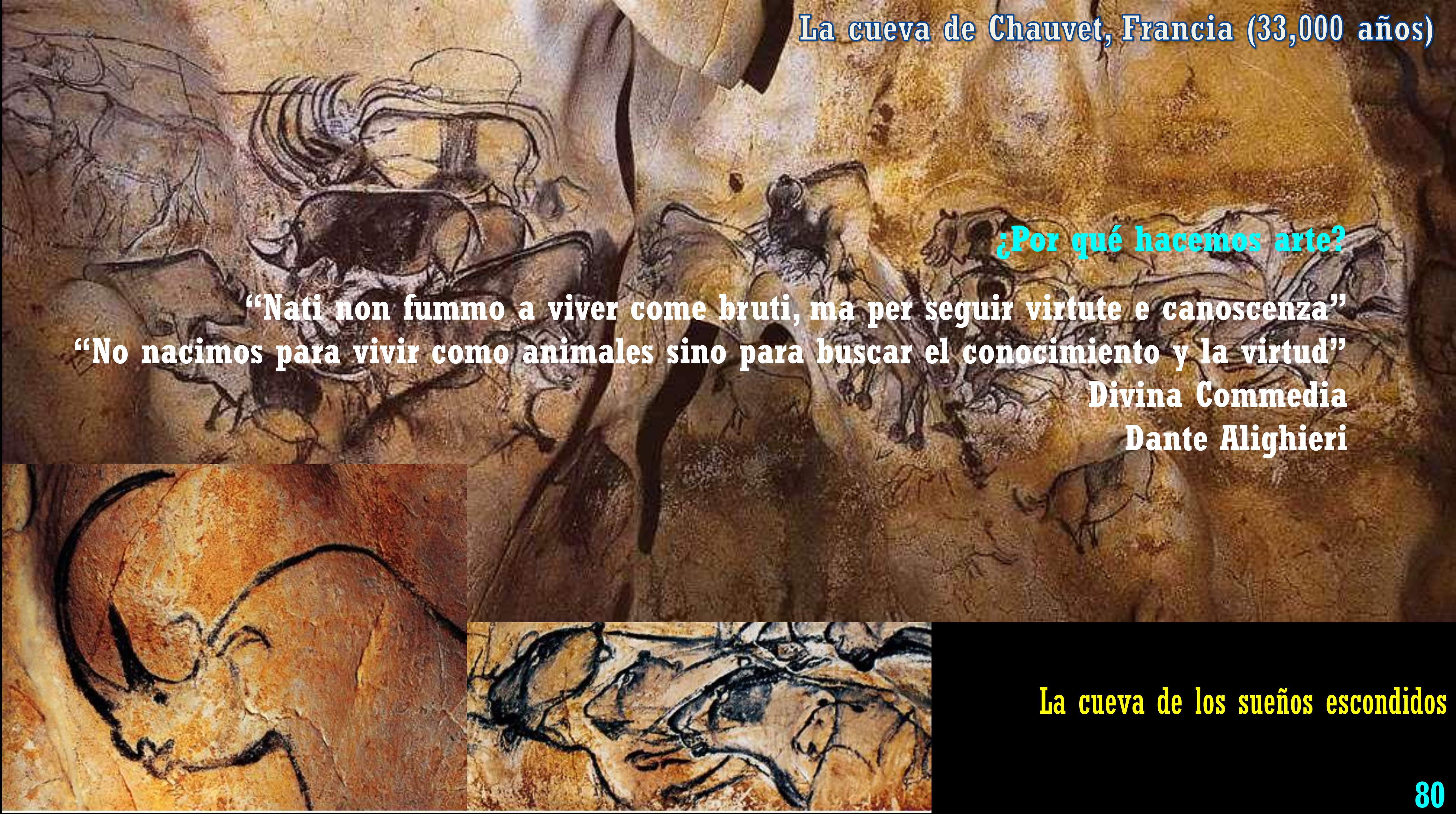


¡¡¡ No hay sustituto para persseguir la mejor ciencia qué tú puedes hacer !!!

Una reflexión final

- Recuerda siempre que tu formación es acerca de TÍ y de tu éxito.
- No dejes de hacer por lo menos una estancia postdoctoral.
- Es muy importante que utilices tu tiempo sabiamente y estés dispuesto a sacrificar, de vez en cuando, algo…..
- ¡¡¡Disfruta tus estudios!!!
- No olvides que lo más importante es la familia, los amigos, los compañeros. Vivir.

La cueva de Chauvet, Francia (33,000 años)



¿Por qué hacemos arte?

“Nati non fummo a viver come bruti, ma per seguir virtute e canoscenza”
“No nacimos para vivir como animales sino para buscar el conocimiento y la virtud”
Divina Commedia
Dante Alighieri

La cueva de los sueños escondidos

En preguntar lo que sabes
el tiempo no has de perder…
Y a preguntas sin respuesta
¿quién te podrá responder?

Antonio Machado

¡¡¡Gracias!!!

¡¡¡Gracias!!!

El mundo mágico de los mayas
Leonora Carrington (1963)

¡Bienvenidos!