

Inforum 2013 – Sekce: **Cesty a podpory hodnocení**

Koordinátor sekce: Ivana Laiblová Kadlecová, Knihovna Akademie věd České republiky

Čas a místo: 21. 5., 14:00 - 15:40 osluchárna D

Nadstavbové služby portálu Medvik pro podporu evaluace vědy a výzkumu ve zdravotnictví

Autor: Filip Kříž, Národní lékařská knihovna

Spoluautoři: Lenka Maixnerová, Helena Bouzková, Eva Lesenková, Ondřej Horsák, Adéla Jarolímková (NLK), Petr Lesný (Karlova univerzita, 2. lékařská fakulta)

Časopisy vydávané ústav AV ČR ve světových citačních databázích

Autor: Iva Burešová, Knihovna AV ČR, v. v. i.

Spoluautoři: Mgr. Hana Tomanová - Knihovna AV ČR, v.v.i., Oddělení elektronických informačních zdrojů

Inforum 2013 – Sekce: **Cesty a podpory hodnocení**

Koordinátor sekce: Ivana Laiblová Kadlecová, Knihovna Akademie věd České republiky
Čas a místo: 21. 5., 14:00 - 15:40 osluchárna D

Nadstavbové služby portálu Medvik pro podporu evaluace vědy a výzkumu ve zdravotnictví

Autor: *Filip Kříž*, Národní lékařská knihovna

Spoluautoři: Lenka Maixnerová, Helena Bouzková, Eva Lesenková, Ondřej Horsák, Adéla Jarolímková (NLK), Petr Lesný (Karlova univerzita, 2. lékařská fakulta)

Časopisy vydávané ústavy AV ČR v e světových citačních databázích

Autor: *Iva Burešová*, Knihovna AV ČR, v. v. i.

Spoluautoři: Mgr. Hana Tomanová - Knihovna AV ČR, v.v.i., Oddělení elektronických informačních zdrojů

Trendy a vývoj vědeckého publikování

Autor: *Lucie Vavříková*, Elsevier

Inforum 2013 – Sekce: **Cesty a podpory hodnocení**

Koordinátor sekce: Ivana Laiblová Kadlecová, Knihovna Akademie věd České republiky
Čas a místo: 21. 5., 14:00 - 15:40 osluchárna D

Nadstavbové služby portálu Medvik pro podporu evaluace vědy a výzkumu ve zdravotnictví

Autor: *Filip Kříž*, Národní lékařská knihovna

- **Spoluautoři:** Lenka Maixnerová, Helena Bouzková, Eva Lesenková, Ondřej Horsák, Adéla Jarolímková (NLK), Petr Lesný (Karlova univerzita, 2. lékařská fakulta)

Časopisy vydávané ústavy AV ČR v e světových citačních databázích

Autor: *Iva Burešová*, Knihovna AV ČR, v. v. i.

Spoluautoři: Mgr. Hana Tomanová - Knihovna AV ČR, v.v.i., Oddělení elektronických informačních zdrojů

Trendy a vývoj vědeckého publikování

Autor: *Lucie Vavříková*, Elsevier

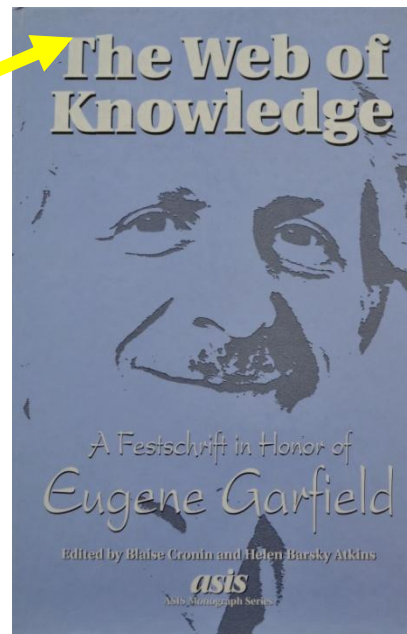
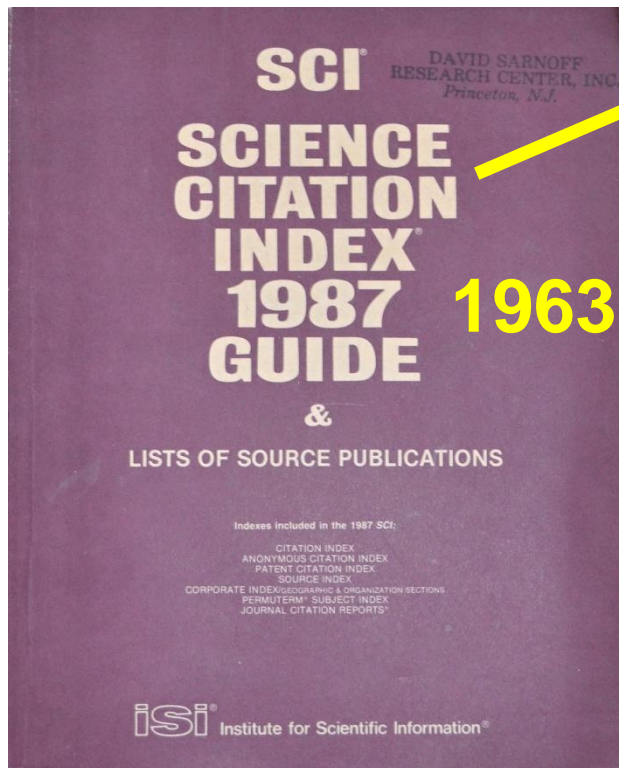
Citační kultura – Cesta od citačního rejstříku ke scientometrii

Autor: *Milan Špála*, Karlova Univerzita a v Praze

1 Science Citation Index

jeho základy, principy a jeho podíl
na kvalitě výzkumu

1. vydání 1963 – letos 2013: 50 let výročí



První české odezvy na vydání
Science Citation Index (1963)

BUREŠ·J.:·Ohlas·vědeckých·prací·Vesmír·46·(5):·151-151,·1964.¶

KORYTA·J.:·Ohlas·vědeckých·prací·Vesmír·46·(5):·151-151,·1964.¶

Science Citation Index –

**jeho základy, principy a jeho podíl
na kvalitě výzkumu**

1. vydání 1963 – letos 2013: 50 let výročí

Science & Technology

Information Technology

Information explosion

**New trends in publication (Open
Access)**

2 Genealogie citačních rejstříků

1955 E.Garfield : „*Citation indexes for science: a new dimension in documentation through association of ideas*“
Science 1955 (122) :108-11.

Ukazuje na vývoj citačního rejstříku ze systému informačního vyhledávání k nástroji na hodnocení výzkumu.

1972 E.Garfield : „Citation analysis as a tool in journal evaluation“.
Science 1972 (178) :471-479.

Ukazuje na možnost citační analýzy k hodnocení sledovaného časopisu při využití počtu citací.

1964 E.Garfield : „Science Citation Index: a new dimension in indexing“ .
Science 1964 (144) :649-54.

Uživatelé SCI zaujati indexováním řízenými klíčovými slovy tj. Permuterm Subject Index a KeyWords Plus

1977 E.Garfield : „*Citation indexing for studying science.*“
Nature 1977 (227) :669-671.

První seznam 50 nejcitovanějších autorů z SCI. 1/3 z nich odpovídala Nobelistům a téměř všichni měli vysoký impakt, který připouštěl, že by se jimi mohli stát (tzv. Nobel class).

1964 E.Garfield, Sher IH, Torpie RJ: „*The Use of Citation Data in Writing History*“.
ISI, 1964.

Idea mapování vědy, založená na propojovacích vlastnostech citací realizovaná na historiografii DNA pomocí softwaru *HistCite*.

THE USE OF CITATION DATA
IN WRITING THE HISTORY OF SCIENCE

December 31, 1964

Eugene Garfield, Ph.D., *Director*
Irving H. Sher, Sc.D., *Director of Research*
Richard J. Torpie, *Research Associate*

© Copyright 1964
by the
Institute for Scientific Information Inc.
Philadelphia, Pennsylvania, USA

All rights reserved. This book, or parts thereof,
may not be reproduced in any form without per-
mission of the publisher.

Library of Congress Catalog Card Number 64-66453

Printed in the United States of America

I. FOREWORD

Can a computer write the history of science? Probably not in the sense usually implied. However, the research reported herein is a preliminary attempt to understand and define some basic problems that must be solved if computers are ever to aid the historian of science -- no less supplant him. In this study it was necessary to select a recent important scientific breakthrough which was based on the cumulation of years of diverse scientific achievement. For this reason we selected the discovery of the DNA code. For a concise historical description of the events, we then selected "The Genetic Code," a book by Dr. Isaac Asimov which describes the major scientific developments that eventually led to the duplication in the laboratory of the process of protein synthesis under control of DNA.

The choice of the genetic code as our case study was not fortuitous. Major breakthroughs in the field of molecular biology occurred at a time which coincided with the completion of our first extensive experimental citation indexes, the *Genetics Citation Index (1)* and the *1961 Science Citation Index (2)* from which part of the GCI was extracted. The availability of pertinent citation data made practical the testing of citation indexing for constructing historical maps and evaluating individual scientific events.

The history of citation indexing for the purposes of disseminating and retrieving information has been extensively described elsewhere (3). A suggestion for its use in historical research came as early as 1955 (4). However, the use of citation data for constructing historical maps was given great impetus by Dr. Gordon Allen when he prepared a bibliographic citation network diagram demonstrating the chronological relationship and citational linkages among a group of papers on the staining of nucleic acids. Allen's citation network diagram provided a useful model of scientific literature and simultaneously provided, in a two-dimensional topological display, the historical development of the subject matter covered by the fifteen papers in his bibliography. (6) The availability of large files of computer-generated citation indexes and the experience derived in their preparation made practical the possibility of testing the usefulness of this approach in studying history.

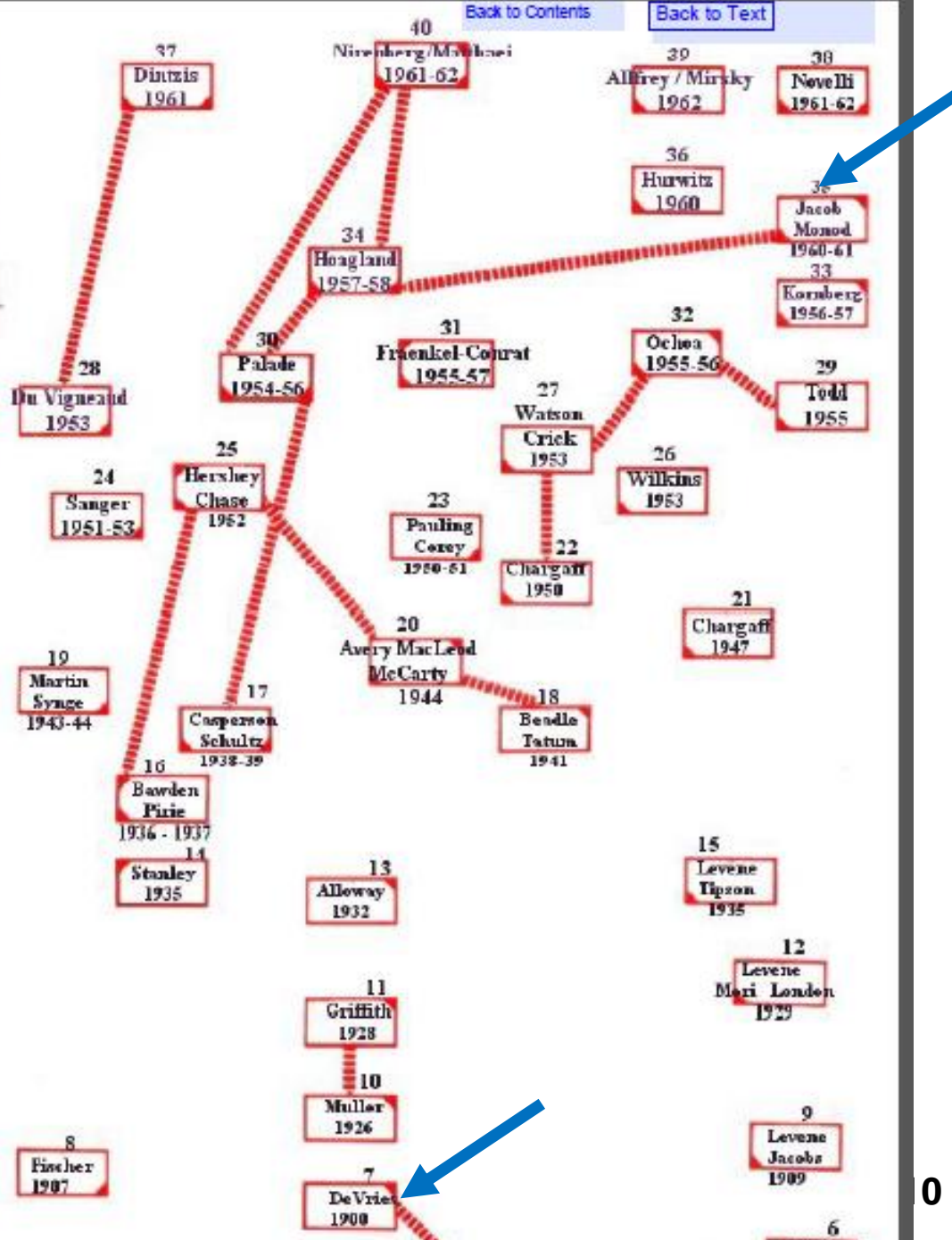
The methodology developed here will hopefully prove useful to the historian and others interested in tracing the origins of discovery and creativity. It consisted of two steps.

Citation Index Prepared from the 65 (NCI)

[Back to Contents](#) [Back to Text](#)

Cited Reference Author	First Author of Citing Nodal Paper	Reference Year	Reference Publication Year or Nodal
J.H. Matthaei's Article in Proc. Natl. Acad. Sci. 47: 1580 1961	HARTIN R	61	J BIOL CHEM
Was Cited in Nodal Article by H.W. Nirenberg in Proc. Natl. Acad. Sci. 47:1588 1961.	NIRENBERG HW	61	P N A S
④ References in Which J.H. Matthaei Was First Author (Heading Above) Were Cited A Total of ⑤ Times. ① Was A Self Citation	MATTHAEI JH	61	BIOCHEM BIOPHYS I
	NIRENBERG HW	61	FED P
	NIRENBERG HW	61	P N A S
	NIRENBERG HW	61	FEDERATION P
	KAMEYAMA T	61	P N A S
	NIRENBERG HW	61	NATL ACAD SCI
	NIRENBERG HW	61	NATL ACAD SCI
	NIRENBERG HW	61	INT C BIOCH MO
	NIRENBERG HW	61	P N A S
	MATTHEWS REF	54	NATURE
	OCHOA S	54	FED PROC
	MAURY P	59	J AM CHEM SOC
	MATTHAEI JH	59	P N A S
	MAVOR JH	21	SOC EXP BIOL MI
	MULLER HJ	21	BR J EX B-R
	MULLER HJ	21	SCIENCE N S
	MULLER HJ	23	BR J EX B-R
	MULLER HJ	23	GENETICS
	MULLER HJ	24	GENETICS
	MULLER HJ	24	BR J EX B-R
	MAXIMOW AS	28	ARCH EXP ZELLFOR
	PALADE GE	54	EX MED
	MAXWELL ES	54	ARCH BIOCHEM
	OCHOA S	54	FED PROC
	KORNBERG A	54	ARCH BIOCHEM BIOD
	JHU MCP I	55	FED P
	OCHOA S	55	FED PROC
	MAYZEL W	75	CENTRABL MED WIS
	FLEMMING W	77	ARC MIX A
	FLEMMING W	77	CENTRABL MED WIS
	FLEMMING W	77	ARC MIX A
	FLEMMING W	77	CENTRABL MED WIS
	FLEMMING W	77	ARC MIX A
	MCDAIN A	33	NATURE
	STANLEY WH	33	SCIENCE

Asimov's Implied Historical Connections



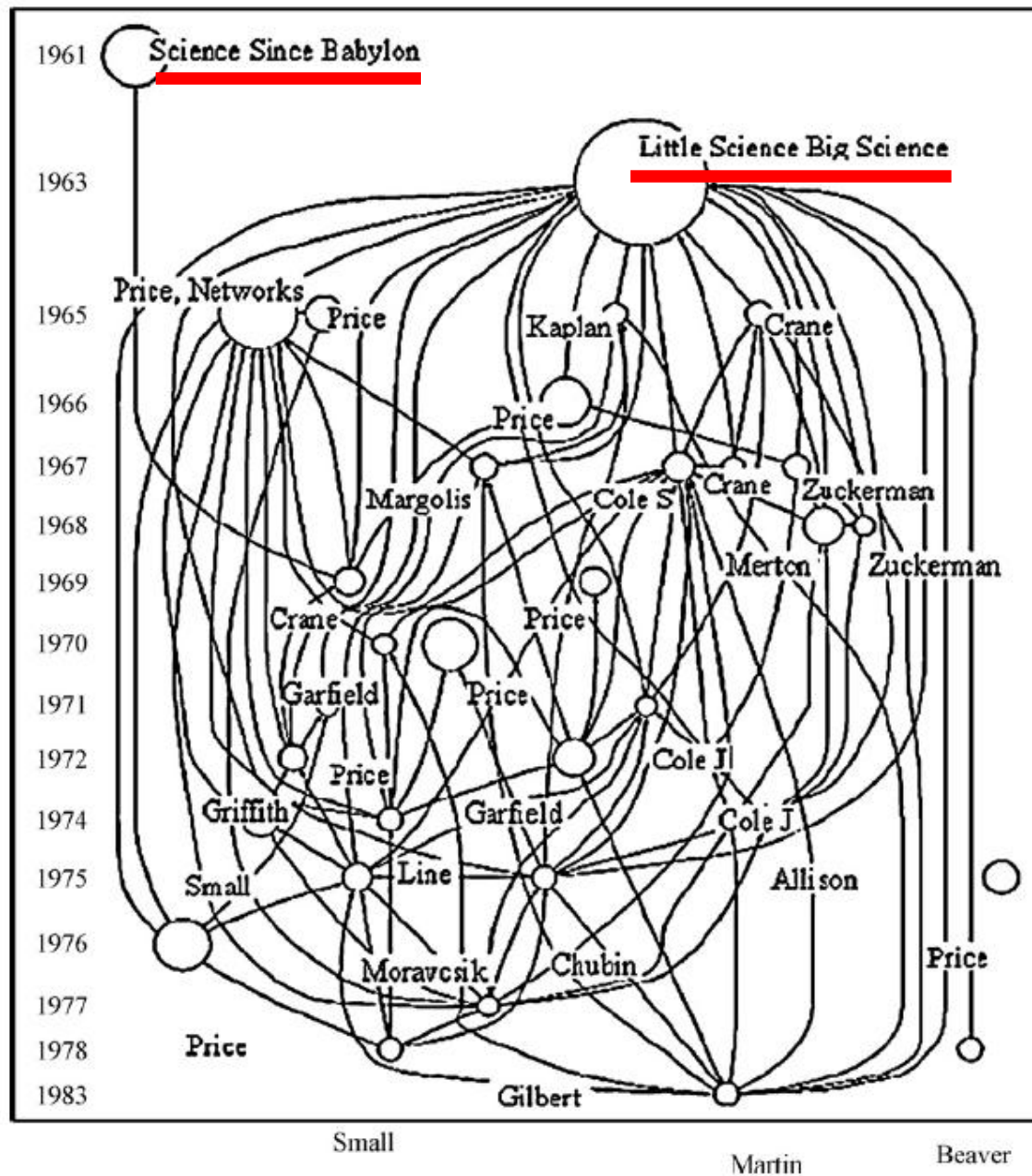
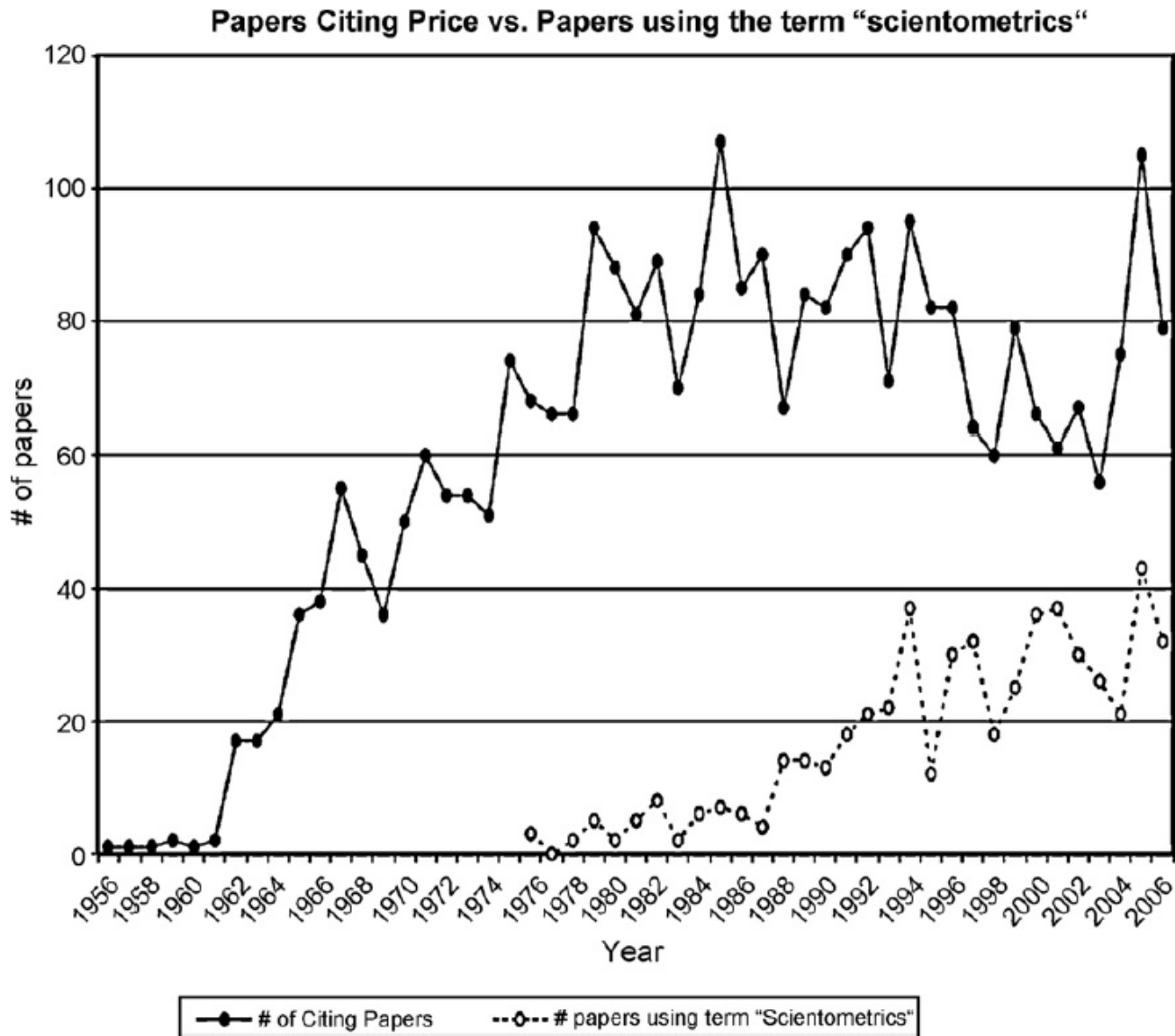


Fig. 2. Historiograph of 33 most-cited works in the collection of papers citing Price from 1956 to 2006.

Ref 1



Ref 1

Fig. 1. Papers citing Price versus papers using the term “Scientometrics,” from 1956 to 2006.

3 Citační indexování – Jeho teorie a aplikace v přírodních vědách, v technologii a vědách humanitních.

Eugene Garfield & spolupracovníci

Citation Indexing—Its
Theory and Application
in Science, Technology,
and Humanities

Eugene Garfield 1979

Institute for Scientific Information 1983

Foreword by Robert K. Merton

R. K. Merton

Derek J. de Solla Price

P. F. Wouters

1979 E.Garfield : „Citation indexing: Its theory and application in
1983 science, technology and humanities“,
J. Wiley, N.Y., 1979; Philadelphia ISI, 1983;

Foreword by R.K.Merton

Toto Garfieldovo dílo je ukázkou, jak lze, a jak je třeba, vědecky pracovat v oblasti biblio-, resp. sciento- metrie. Po 16 letech od vydání prvního svazku Sci. Cit. Indexu (1963), jež vyplnil systematickými a exaktními studii, prokázal (1979) jeho výhody, nedostatky i chyby. Současnost v nové generaci citačních rejstříků (Web of Science) mu dává plně za pravdu, i díky rozvoji informační technologie (viz Scopus).

Bez citační analýzy bychom dnes neměly popsány resp. prokázány, mimo jiné následující pojmy (část 1):

Invisible college popsáný pomocí kociční analýzy (p.144);

Objasnění úspěšnosti metodologických prací jako O. H. Lowryho metoda (1951) v letech 1961-1975 50.000 citací (p.246);

Vliv mnohoautorství na publikační produktivitu (p.243);

Prognózování Nobelových cen (p. 64);

Fenomén zapominání (noncitedness) p.247);

Předčasné objevy ve vědě (p.246);

Citační analýza a udělování definitivy (p.71, 240);

Přínos knihy „*Citation Indexing*“ ke kvalitě výzkumu (část 1):

- SCI používán jako součást (!) hodnotícího procesu;
- umožňuje kontrolu legitimacy použitých referencí;
- usnadňuje cíleně vyhledávat i v pramenech z jiných oborů;
- napomáhá zavádět principy z SCI do SSCI a hlavně do A&HCI;
- potvrdil počet citačních ohlasů jako legitimní indikátor signifikace výzkumu;
- postupné zavádění SCI (resp. Web of Knowledge) jako celonárodní nástroj;

(pokračování)

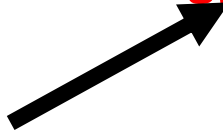
(dokončení)

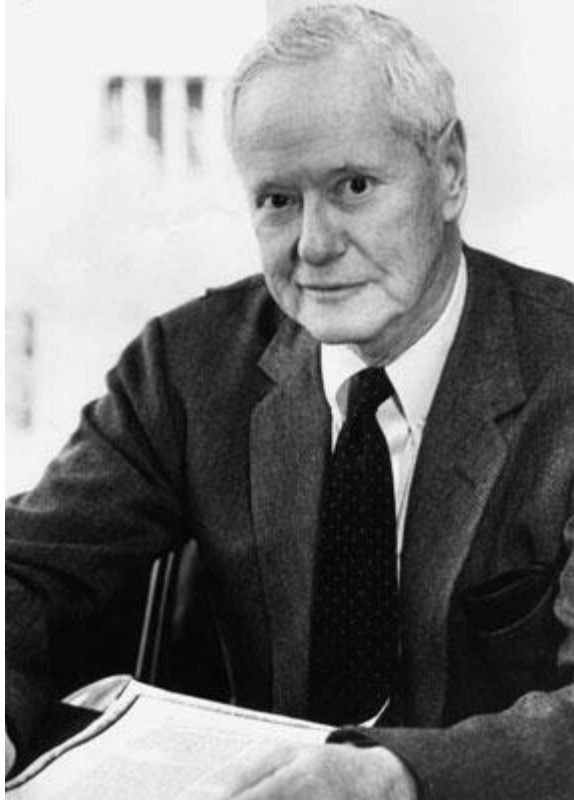
- vzestup společenského uplatnění citační analýzy ji dělá přijatelnou jako obecnou teorii „kumulace výhod“ (1) resp. principu, že „úspěch rodí úspěch“ (2) .

[1] Price D. J. D (1976) *A General theory of bibliometric and other cumulative advantage processes.*

J Amer Soc Inf Sci 27 :292-306.

[2] Merton R K (1973): *The Matthew effect in science.* In: Storer N W (ed): *The Sociology of science*, Chicago Univ Press, :439-459.





Robert King Merton

July 4, 1910, Philadelphia
Febr 23, 2003, New York City
Temple University,
Advancements in Sociology



Derek J. de Solla Price

January 22, 1922, Leyon UK
September 3, 1983, Princeton USA
Univ. of London, Univ. of Cambridge, Yale
University, Univ of Singapore 1948
Antikythera mechanism-analog computer
Exponetial growth of science-Price's Law
„father of scientometrics“

Poprvé tento efekt v bibliometrii uvedl Merton [1]. Matoušův efekt se může např. projevit i v knihovnách při objednávání nových časopisů nebo kumulací budoucích výpůjček u knihy, která byla již dříve často půjčována (Bensman [2]). Matoušův efekt se může označovat také jako *halo efekt* a D. J. D. Price na něm vytvořil **teorii dějů kumulační výhody** [3]. Stručně to lze vyjádřit jako „**úspěch rodí úspěch**“ (*success breeds success*). To je případ knihy autora, jehož knihy se dobře prodávají, takže i jeho nová kniha má naději se stát bestsellerem, protože stále více čtenářů autora zná a on se tak stává dominantním mezi ostatními spisovateli [4].

[1] MERTON RK: The Matthew effect in science. *Science*, 159 :56-63, 1968.

[2] BENSMAN SJ: Journal collection management as a cumulative advantage process. *College & Research Libraries*, 46 :37-54, 1985.

[3] PRICE DJ DE S: A general theory of bibliometric and another cumulative advantage processes. *J. Amer. Soc. Inform. Science*, 27 :292-306, 1976.

[4] NOVÝ ZÁKON, Evangelium dle sv. Matouše, 25, 14 - 30. Ekumenický překlad, Ústřední církevní nakladatelství, Praha, 1979.

Ref 19: Price Derek J de Solla: Networks of Scientific Papers: The pattern of bibliographic references indicates the nature of the scientific research front. *Science*, 149(3683) :510-515, 1965.

V současné době máme zpracované citační studie vytvořené na počítači na základě velké a reprezentativní literatury. Umožňují citační analýzu zcela jiným způsobem než až dosud bylo dosavadní indexací možné, a to pomocí „výzkumných front“.



Eugene "Gene" Garfield
September 16, 1925, NY City
PhD, Univ. of Pennsylvania
Information scientist
Institute of Scientific Information,
Philadelphia,
„Science Citation Index“



Paul Wouters
Centre for Science and Technology
Studies, Leiden University
Citation analysis – bibliometrics
Scientometrics – virtual knowledge
e-science

Garfield E.:

Fast Science vs. Slow Science, Or Slow and Steady Wins the Race

The Scientist, 4 (8): 14-14, 17 Sept 1990

„Neočekávaný objev, je velmi vzácná výjimka; většina pokroku ve vědě závisí na dlouhodobém, neustálém, metodologickém výzkumu. Nejde o to opatřit si náměty jako pro televizní headliny nebo dokudramata, ale ve většině případů se věda ubírá touto obtížnou a pomalou cestou“.

4 Citační rejstříky

rozšiřování

vyhledávání

hodnocení

vědeckých a výzkumných informací v závislosti na rozvoji technologie

Current Contents

This week's Citations Classics

<http://citationclassics.org/>

Citation Classics

[Essays on Citation Classics](#)

[Essays on Most-Cited Papers](#)

Short History of *Citation Classics* Commentaries

Eugene Garfield

From 1977 to 1993, four thousand *Citation Classic Commentaries* were published in *Current Contents*. The full texts of these mostly one-page articles are now available in an open access server at :

<http://garfield.library.upenn.edu/classics.html>

During the past two years my assistant Meher Mistry has processed and indexed these commentaries. The website includes a year-by-year directory from 1977 to 1993. Once you reach the yearly sub-directory, there is a chronological listing of the commentaries published each year. To find a particular author, word, or subject, you use the FIND command on your browser. This will take you to the title of the commentary and from there you can access the pdf version of the commentary itself.

January 12, 1987

Volume 15 Number 2

CURRENT CONTENTS®

Clinical Medicine

(ISSN 0891-3358)

(formerly Clinical Practice)

INCLUDING

Allergy • Anesthesiology • Cardiology • Clinical Psychiatry & Psychology
 Dentistry • Dermatology • Epidemiology • Gastroenterology
 General & Internal Medicine • Geriatrics & Gerontology • Hematology
 Medical Technology & Laboratory Medicine • Neurology • Obstetrics & Gynecology
 Oncology • Ophthalmology • Orthopedics • Otorhinolaryngology • Pediatrics • Pharmacy
 Physical Medicine & Rehabilitation • Radiology & Nuclear Medicine
 Respiratory Medicine • Sports Medicine • Surgery • Urology

Citation Classics®:

Lapin I P & Oxenkrug G F. Intensification of the central serotonergic processes as a possible determinant of the thymoleptic effect.
Lancet 1:132-6, 1969.

Current Comments®:

Why Are the Impacts of the Leading Medical Journals So Similar and Yet So Different? Item-by-Item Audits Reveal a Diversity of Editorial Material

ISI®

Institute for Scientific Information®

3501 Market Street, Philadelphia, Pennsylvania 19104 U.S.A.

December 11, 2000

Volume 43

Number 50

CURRENT CONTENTS®

Life Sciences

INCLUDING

Biochemistry • Biophysics • Cell Biology
 Chemistry • Endocrinology • Molecular Medicine
 Genetics • Immunology • Microbiology • Molecular Biology
 Neurosciences • Nutrition • Oncology
 Pathology • Pharmacology/Pharmaceutics
 Physiology • Toxicology

ISI®

Institute for Scientific Information®

3501 Market Street, Philadelphia, PA 19104 U.S.A.

BIOCHEMICAL ENGINEERING

- High level secretion of recombinant human serum albumin by fed-batch fermentation of the methylotrophic yeast, *Pichia pastoris*, based on optimal methanol feeding strategy. K. Kobayashi, S. Kuwae, T. Ohya, T. Ohda, M. Ohyama, K. Tomomitsu280
- Effective onion vinegar production by a two-step fermentation system. J. Horiuchi, T. Kanno, M. Kobayashi289
- Efficient preparation of optically active ketoprofen by *Mucor javanicus* lipase immobilized on an inorganic support. K. Kato, Y.F. Gong, T. Saito, H. Kimoto332

PLANT BIOTECHNOLOGY

- Regioselective acylation of flavonoid glucoside with aromatic acid by an enzymatic reaction system from cultured cells of *Ipomoea batatas*. N. Nakajima, K. Ishihara, H. Hamada, S. Kawabe, T. Furuya347

373FT

JOURNAL OF HUMAN VIROLOGY

ARTICLES AND ABSTRACTS IN ENGLISH

LIPPINCOTT
WILLIAMS &
WILKINS

VOL.3 NO.6 NOV.-DEC. 2000

- Genetic heterogeneity and molecular epidemiology of GB virus C/hepatitis G virus in China. P. An, H. Luo, T. Lu, S.J. O'Brien, C. Winkler299
- The hepatitis C virus NS5B RNA-dependent RNA polymerase activity and susceptibility to inhibitors is modulated by metal cations. M.H. AlaouiSmali, M. Hamel, L. LHeureux, O. Nicolas, D. Billimoria, P. Labonte, S. Mounir, R.F. Rando306
- Perinatally cotransmitted human herpesvirus 6 is activated in children born with human immunodeficiency virus infection. P.J. Joshi, R.H. Merchant, S.L. Pokharankar, K.S. Damania, I.S. Gilada, R. Mukhopadhyaya317
- Development of an in vitro blood-brain barrier model to study molecular neuropathogenesis and neurovirologic disorders induced by human immunodeficiency virus type 1 infection. M. Mukhtar, R.J. Pomerantz324
- Efficacy and safety of didanosine and lamivudine both once daily plus indinavir in human immunodeficiency virus-infected patients. C. deMendoza, V. Soriano, M. PerezOlmeda, R. RodriguezRosado, J. GonzalezLahoz335

372UF

JOURNAL OF MICROBIOLOGICAL METHODS

ARTICLES AND ABSTRACTS IN ENGLISH

ELSEVIER
SCIENCE BV

VOL.42 NO.3 NOVEMBER 2000 (L,A)

- A new tannase substrate for spectrophotometric assay. G. Iacazio, C. Perissol, B. Faure209
- A simple rotating annular reactor for replicated biofilm studies. J.R. Lawrence, G.D.W. Swerhone, T.R. Neu215
- A comparative study on the disintegration of filamentous fungi. J. Taubert, U. Krings, R.G. Berger225
- Rapid detection of fluorescent and chemiluminescent total coliforms and *Escherichia coli* on membrane filters. S.O. VanPoucke, H.J. Nelis233
- Rapid detection, identification, and enumeration of *Pseudomonas aeruginosa* in bottled water using peptide nucleic acid probes. H. Stender, A. Broomer, K. Oliveira, H. PerryO'Keefe, J.J. HyldigNielsen, A. Sage, B. Young, J. Coull245
- Flow cytometry characterisation of *Salmonella typhimurium* mutants defective in proton translocating proteins and stationary-phase growth phenotype. I. Rychlik, L. Cardova, M. Sevcik, P.A. Barrow255
- The use of serologic tests for the diagnosis of chlamydial infections. T. Tuuminen, P. Palomaki, J. Paavonen265
- Method to sensitize bacterial spores to subsequent killing by dry heat or ultraviolet irradiation. G.C. Rutherford, J.S. Reidmiller, R.E. Marquis281

374MR

JOURNAL OF VIROLOGICAL METHODS

ELSEVIER
SCIENCE BV

ARTICLES AND ABSTRACTS IN ENGLISH

VOL.90 NO.2 NOVEMBER 2000

RESEARCH PAPERS

- Rapid small-scale isolation of SV40 virions and SV40 DNA. S.J. Orlando, M. Nabavi, E. Gharakhanian109
- Design and validation of immunological tests for the detection of Porcine endogenous retrovirus in biological materials. D.N. Galbraith, H.T. Kelly, A. Dyke, G. Reid, C. Haworth, J. Beekman, A. Shepherd, K.T. Smith115
- A microtitre plate method for isolation and typing of poliovirus using a Blue-Cell ELISA. D. Samuel, B. Megson, M. Strang, H. Appleton125
- Comparative analysis of TMV-Cg and TMV-U1 detection methods in infected *Arabidopsis thaliana*. S. Pereda, N. Ehrenfeld, C. Medina, J. Delgado, P. ArceJohnson135
- Detection of parvovirus B19 IgM by antibody capture enzyme immunoassay: receiver operating characteristic analysis. S. Doyle, S. Kerr, G. O'Keefe, D. O'Carroll, P. Daly, C. Kilty143
- Shortening of the diagnostic window with a new combined HIV p24 antigen and anti-HIV-1/2/O screening test. S. Brust, H. Duttman, J. Feldner, L. Gurtler, R. Thorstenson, F. Simon153
- Development and evaluation of ELISA procedures to detect antibodies against the major envelope protein (G(L)) of equine arteritis virus. J. Nugent, R. Sinclair, A.A.F. deVries, R.Y. Eberhardt, J. CastilloOlivares, N.D. Poynter, P.J.M. Rottier, J.A. Mumford167
- Comparison of assays to detect cytomegalovirus shedding in the semen of HIV-infected men. C. Diamond, C. Speck, M.L. Huang, L. Corey, R.W. Coombs, J.N. Krieger185
- Production monitoring and purification of EBV encoded latent membrane protein 1 expressed and secreted by recombinant baculovirus infected insect cells. P. Meij, M.B.H.J. Vervoort, C.J.L.M. Meijer, E. Bloemena, J.M. Middeldorp193
- Rapid diagnosis and quantification of herpes simplex virus with a green fluorescent protein reporter system. S.H. Kung, Y.C. Wang, C.H. Lin, R.L. Kuo, W.T. Liu205

374VL

LETTERS IN APPLIED MICROBIOLOGY

BLACKWELL
SCIENCE LTD

ARTICLES AND ABSTRACTS IN ENGLISH

VOL.31 NO.5 NOVEMBER 2000 (L,A)

ORIGINAL ARTICLES

- Conditions for conjugative transposon transfer in *Lactococcus lactis*. G. Blaiotta, D. Ercolini, E. Simeoli, G. Moschetti, F. Villani343
- Survival of *Escherichia coli* O157 in faeces of experimentally infected rats and domestic pigeons. A. Cizek, I. Literak, P. Scheer349
- Isolation and characterization of 23 carbofuran-degrading bacteria from soils from distant geographical areas. D.G. Karpouzias, J.A.W. Morgan, A. Walker353
- Incidence and identification of mesophilic *Aeromonas* spp. from retail foods. K. Neyts, G. Huys, M. Uyttendaele, J. Swings, J. Debever359
- Survival of *Escherichia coli* O157:H7 in potato starch as affected by water activity, pH and temperature. C.M. Park, L.R. Beuchat364
- Rapid differentiation of *Staphylococcus aureus* from staphylococcal species by arbitrarily primed-polymerase chain reaction. M.J. Benito, M.M. Rodriguez, M.G. Cordoba, E. Aranda, J.J. Cordoba368
- Salmonella enteritidis* and aerobic mesophiles in inoculated poultry sausages manufactured with high-pressure processing. J. Yuste, R. Pla, M. MorMur374
- Production and partial characterization of thermostable and calcium-independent α -amylase of an extreme thermophile *Bacillus thermooleovorans* NP54. R. Malhotra, S.M. Noorwez, T. Satyanarayana378
- Bacillus cereus* produces most emetic toxin at lower temperatures. W.J.J. Finlay, N.A. Logan, A.D. Sutherland385

CONTINUED

This Week's Citation Classic

CC NUMBER 1
JANUARY 3, 1983

Bonner W M & Laskey R A. A film detection method for tritium-labelled proteins and nucleic acids in polyacrylamide gels. *Eur. J. Biochem.* 46:83-8, 1974.
[Medical Research Council Lab. Molecular Biol., Univ. Postgrad. Med. Sch., Cambridge, England]

A sensitive fluorographic method is described which enables one to detect ^3H in polyacrylamide gels using X-ray film. The method is also useful for ^{14}C detection, being ten times as sensitive as autoradiography. [The *SCI*[®] indicates that this paper has been cited in over 3,660 publications since 1974.]

William M. Bonner
National Cancer Institute
National Institutes of Health
Bethesda, MD 20205

November 9, 1982

"Ron Laskey and I met in John Gurdon's Developmental Biology Laboratory in Cambridge. Like many researchers in the early-1970s, we had found that biological samples could be compared much more easily and accurately on polyacrylamide gels formed in slabs rather than tubes. Furthermore, with radioactive samples, the slab gel could be dried onto paper and autoradiographed, thereby eliminating the tedious and sometimes fickle procedure of slicing tube gels into 1 mm thick slices for scintillation counting. Slab gel autoradiography was good for $^{32}\text{PO}_4$, adequate for ^{14}C and ^{35}S , but hopeless for ^3H , since its beta particle was too weak to exit from the gel.

"We had read Randerath's paper¹ on fluorography of ^3H on thin layer plates and therefore suspected that if a scintillant such as PPO could be placed in-

side the polyacrylamide matrix, ^3H could be detected on film. The problem was that PPO is totally insoluble in water, and we felt that the chances of finding a solvent compatible with both PPO and polyacrylamide were close to zero. However, we decided to try anyway, and pulled some solvents off the shelf, one of which was DMSO. We soon found that it could replace the water in the polyacrylamide matrix and in addition could solubilize PPO quite well. We soaked a radioactive gel in DMSO-PPO and put it at -70°C with a piece of film.

"Both Laskey and I were primarily occupied with other projects and had treated these experiments more as a pastime than as a serious endeavor. However, when we developed that film and saw the image, the realization struck us that we had in essence solved the problem. We changed our priorities, and the paper was submitted two weeks before I left the Medical Research Council. Laskey later found that the film response in fluorography was nonlinear, and devised a procedure to make it linear.² Several years later, I devised a sensitive fluorography procedure for such solid supports as thin layer plates, papers, and membranes.³

"This publication has been highly cited because it removed the last major deficiency of polyacrylamide slab gels—the inability to detect ^3H on film. Fluorography is now used with polyacrylamide gel electrophoresis in most areas of molecular biology; indeed, several commercial products for fluorography are available. Recently, suitable water soluble scintillators have been found or developed, which promise to make fluorography even easier."

1. Randerath K. An evaluation of film detection methods for weak β -emitters, particularly tritium. *Anal. Biochem.* 34:188-205, 1970.
2. Laskey R A & Mills A D. Quantitative film detection of ^3H and ^{14}C in polyacrylamide gels by fluorography. *Eur. J. Biochem.* 56:335-41, 1975.
3. Bonner W M & Stedman J D. Efficient fluorography of ^3H and ^{14}C on thin layers. *Anal. Biochem.* 89:247-56, 1978.

This Week's Citation Classic

CC NUMBER 1
JANUARY 10, 1983

Brown J B. A chemical method for the determination of oestriol, oestrone and oestradiol in human urine. *Biochemical J.* 60:185-93, 1955.
[Clinical Endocrinology Research Unit, Medical Research Council, Univ. Edinburgh, Scotland]

This paper described the first chemical method to be developed for the separate measurement of the three classical estrogens: estriol, estrone, and estradiol in the urine of men and nonpregnant women. The specificity, sensitivity, reproducibility, accuracy, convenience, and application of the method were discussed. [The *SCI*[®] indicates that this paper has been cited in over 980 publications since 1961.]

James B. Brown
Department of Obstetrics and Gynaecology
University of Melbourne
Parkville, Victoria 3052
Australia

November 30, 1982

"Estrogen is the most important female hormone. Its measurement provides the key to many studies in human female reproduction including the monitoring of ovarian function in normal and infertile women, the identification of the times of fertility and ovulation during the cycle, the action of contraceptives, the use of fertility drugs, and the achievement of test-tube babies.

"Estrogen assay is also important in the study of cancers of the breast, endometrium, and ovary. The pressing need for a quantitative assay of estrogens in nonpregnant women was well recognized in 1950 and many other groups were engaged on the problem. The method cited was the first to be developed. It thus ranks as a classic biochemical procedure which helped to open up a whole new and important field of research.

"The method measured the then three known estrogen metabolites in human urine. It was developed in the Clinical Endocrinology Research Unit,

MRC, University of Edinburgh, with the expert assistance of H.A.F. Blair. The work qualified me for a PhD degree and was supervised by G.F. Marrian. I was also involved in the development of methods for measuring the other important female hormones and establishing their patterns of production.¹

"The first step in developing the estrogen method involved a thorough study of the highly specific but notoriously unstable Kober color reaction. Four interdependent variables were identified and optimization of these for the two stages of the reaction and for each of the three estrogens provided an exceptionally stable system which became the accepted method for estrogen measurement for many years. Later, Itrich² introduced a solvent extraction step which, with fluorimetry, increased the sensitivity and specificity 10,000-fold.

"The new color method was applied to the development of optimum extraction and purification procedures for the estrogens. A change

procedure was included involving methylation of the estrogens. The methyl ethers were ideally suited to alumina chromatography by which they were separated from one another and further purified. Success was due to meticulous optimization of every step; the elimination of unnecessary manipulations; the recent availability of ground glass joints, clean solvents, and a modern spectrophotometer; and Marrian's support. In collaboration with others, the method was further validated against bioassay, isotope methods, and gas-liquid chromatography. Workers involved included Bauld, Bulbrook, Greenwood, Diczfalusi, Gallagher, Fishman, Preedy, and Kellie. The method with modifications was widely applied, and it was the only one which was clinically viable until the development of radioimmunoassays for plasma estradiol in the 1970s.⁴ For myself, I started as an organic chemist in New Zealand, became a hospital biochemist, and then a reproductive endocrinologist. I am now a professor of obstetrics and gynecology, without ever having delivered a baby. The paper cited is my most important and the measurement of estrogens in biofluids is now widely used in still increasing numbers in the study and treatment of human infertility."

1. Brown J B, Klopfer A & Loraine J A. The urinary excretion of oestrogens, pregnanediol and gonadotrophins during the menstrual cycle. *J. Endocrinology* 17:401-10, 1958.
2. Itrich G. Eine neue Methode zur chemischen Bestimmung der oestrogenen Hormone im Harn. *Hoppe-Seyler's Z. Physiol. Chem.* 312:1-14, 1958.
3. Brown J B & Belscher N A. Current status of estrogen assay in gynecology and obstetrics. *Obstet. Gynecol. Survey* 27:205-35, 1972.
4. Abraham G E, Odell W D, Swerdloff R S & Hopper K. Simultaneous radioimmunoassay of plasma FSH, LH, progesterone, 17-hydroxyprogesterone, and estradiol-17 β during the menstrual cycle. *J. Clin. Endocrinol. Metab.* 34:312-18, 1972.

5 Reference a/nebo citace

5/1 Reference a citace

5/2 Intelektuální transakce

5/3 Články citované a citující

5/4 Multidisciplinarita citačných indexů

5/5 Široký obsah databází

5/6 Retrospektivní a prospektivní vyhledávání.

5/7 Autoritativní způsob práce

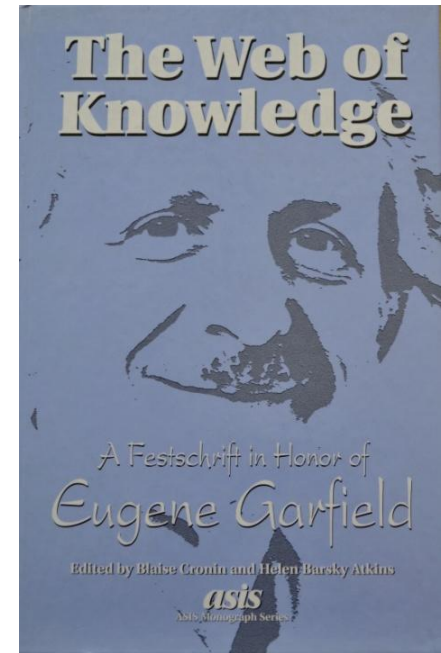
5/8 Citace jako indexační specializace

5/9 Citation Comments

Due diligence”

Prior art

6 Na závěr o snu Gena Garfielda



Wouters P: Garfield as Alchemist.

In: Cronin B., Barsky Atkin H. (Eds.): The Web of Knowledge. A Festschrift in Honor of Eugene Gaerfield. pp. 65-71.

Rád bych uzavřel svůj pohled na Gena Garfielda. Jeho snaha po inovacích byla nejen kombinace konceptu, počítače a literatury. Ale kromě těchto tří věcí k tomu patří i **velký sen**. Tato směs vytvořila zcela nový symbolický vesmír, založený na **významu citace**. Garfield přeměnil olovo (reference) v zlato (citace) při svém hledání kamene filosofů. Nejlépe je ho charakterizovat ne jako chemika změněného na dokumentalistu, ani ne na informačního vědce nebo IT-vynálezce, ale jako představitele bohaté a tvořivé tradice při nejmenším tak staré jaké je samo citační indexování. **Garfielad je alchemista.**

..... of many of his studies. Many of the CWTS staff have known him personally.

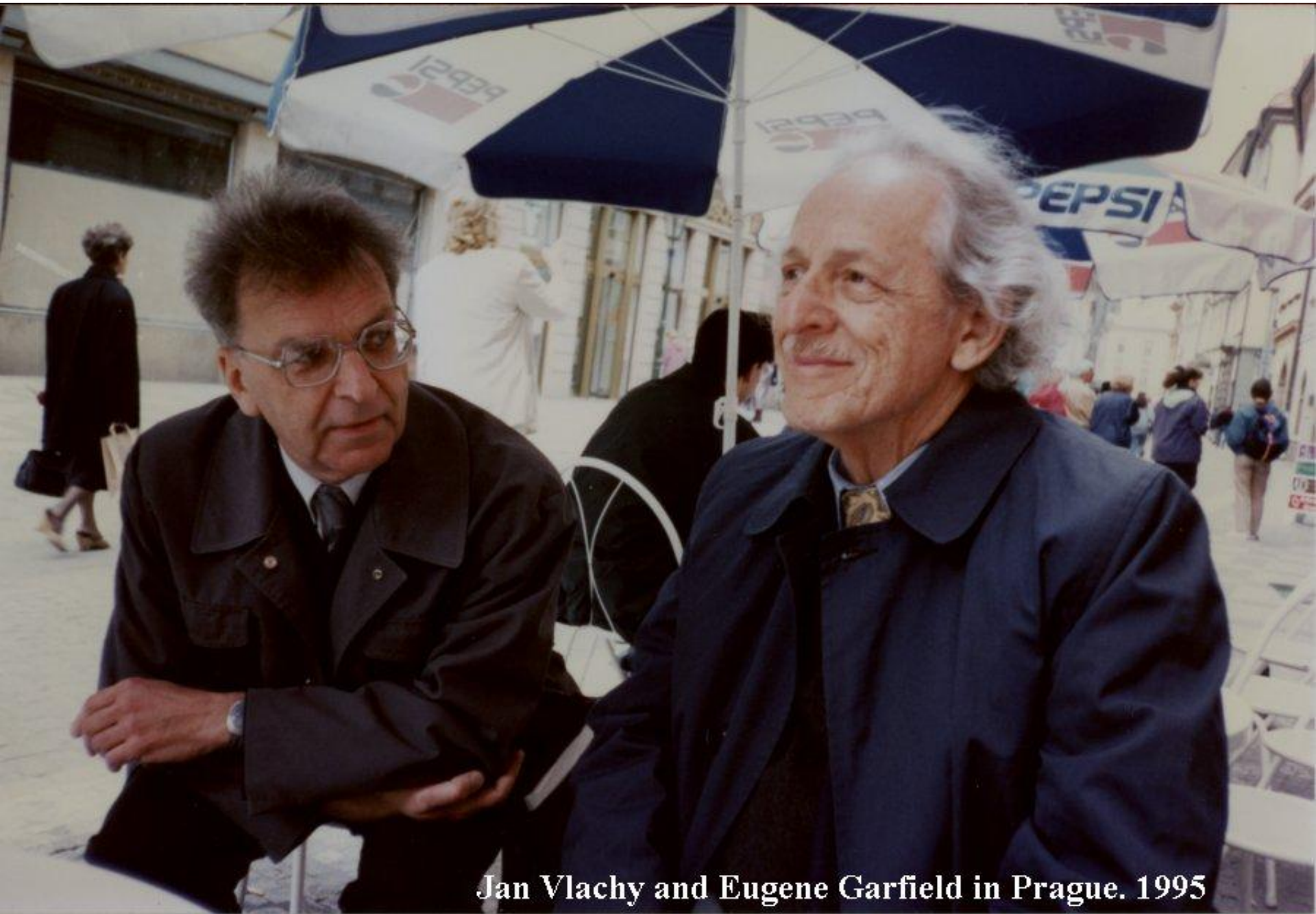
Last September (2009) he still participated in our Leiden "Science and Technology Indicators Conference".

We deeply regret the loss of this unique person.



Universiteit Leiden

Centre for Science and Technology
Studies



Jan Vlachy and Eugene Garfield in Prague. 1995

The Sweet And Bittersweet Experience Of Receiving An Honorary Degree

Author: EUGENE GARFIELD

The Scientist, Vol:9, #13, pg.11, June 26, 1995.

The ceremony was made all the more meaningful by the presence of my son Joshua, as well as Jan Vlachy, the Czech physicist who helped pioneer the development of scientometrics both regionally and internationally.

And for their generous hospitality, I am indebted to my hosts, Frantisek Choc and Milan R. Spala of the Institute of Scientific Information, First Medical School at Charles University.

Děkuji za pozornost!

Kontakt:

Doc. MUDr. Milan Š p á l a, CSc.

Univerzita Karlova, 1. lékařská fakulta



Doubravínova 216/7, 163 00 P r a h a 6.



732 145 471

@-mail

spala.m@seznam.cz

www

<http://info.sks.cz/users/sp/>

