Connecting the Dots: Solving Today's Problems through Content, Technology and the Library

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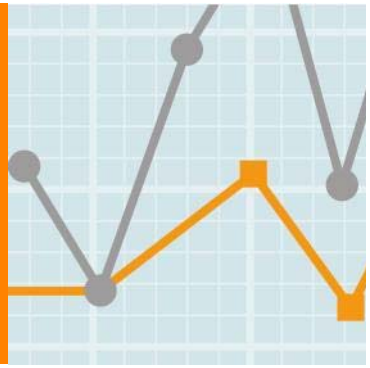
9 May 2017, Valencia

Agenda

- Identifying the Problem
- Supporting Research Through Content
- Supporting Research Through Technology
- Questions

Researchers have Identified the Problem



What is the big challenge?

Pollution – Global View of Research

Scholarly Output
141,346

Field-Weighted Citation Impact
1.10

Views Count
4,283,971

Citation Count
1,029,314

Awards Volume (value)
35,868,787 USD

International Collaboration
30,522

*Source: SciVal Trends

Pollution - Global View pollution Research Output

	Country	Scholarly Output	Views Count	Field-Weighted...	Citation Count
1.	China	30,488	684,265	1.19	250,123
2.	United States	23,408	729,406	1.36	211,855
3.	India	10,334	239,213	0.84	56,367
4.	Germany	6,844	237,779	1.33	58,047
5.	United Kingdom	6,135	258,468	1.67	62,707
6.	Spain	5,962	349,204	1.44	62,493
7.	France	5,327	211,449	1.25	46,228
8.	Italy	5,181	254,227	1.57	46,184
9.	Canada	4,957	196,430	1.28	45,460
10.	Japan	4,658	121,160	1.27	36,944

Pollution- Global View pollution Research Output (By Institutions)

	Institution	Scholarly Output	Views Count	Field-Weighted...	Citation Count
1.	Chinese Academy of Sciences	3,118	67,686	1.28	24,372
2.	CSIC	1,241	93,797	1.74	15,679
3.	Tsinghua University	1,158	32,835	1.52	12,739
4.	CNRS	1,059	44,111	1.31	10,004
5.	Tongji University	987	25,002	1.11	6,679
6.	CNR	956	40,725	1.52	7,151
7.	Zhejiang University	911	24,991	1.31	8,676
8.	Nanjing University	856	25,333	1.47	8,633
9.	Islamic Azad University	812	21,442	1.03	4,987
10.	U.S. Environmental Protection Agency	810	29,204	1.38	7,989

Pollution Research Output – Spain

Scholarly Output
5,962

Views Count
349,204

61,682 46,1[illegible]

Field-Weighted Citation Impact
1.44

Citation Count
62,493

International Collaboration
2,723

Collaboration

International Collaboration

Publications co-authored with Institutions in other countries

Spain:
45.7%

Academic-Corporate Collaboration

Publications with both academic and corporate affiliations

Spain:
0.9%

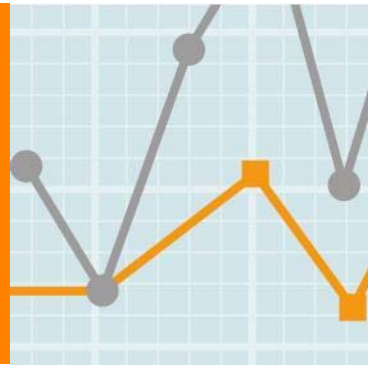
Top 15 keyphrases

Based on 5,962 publications

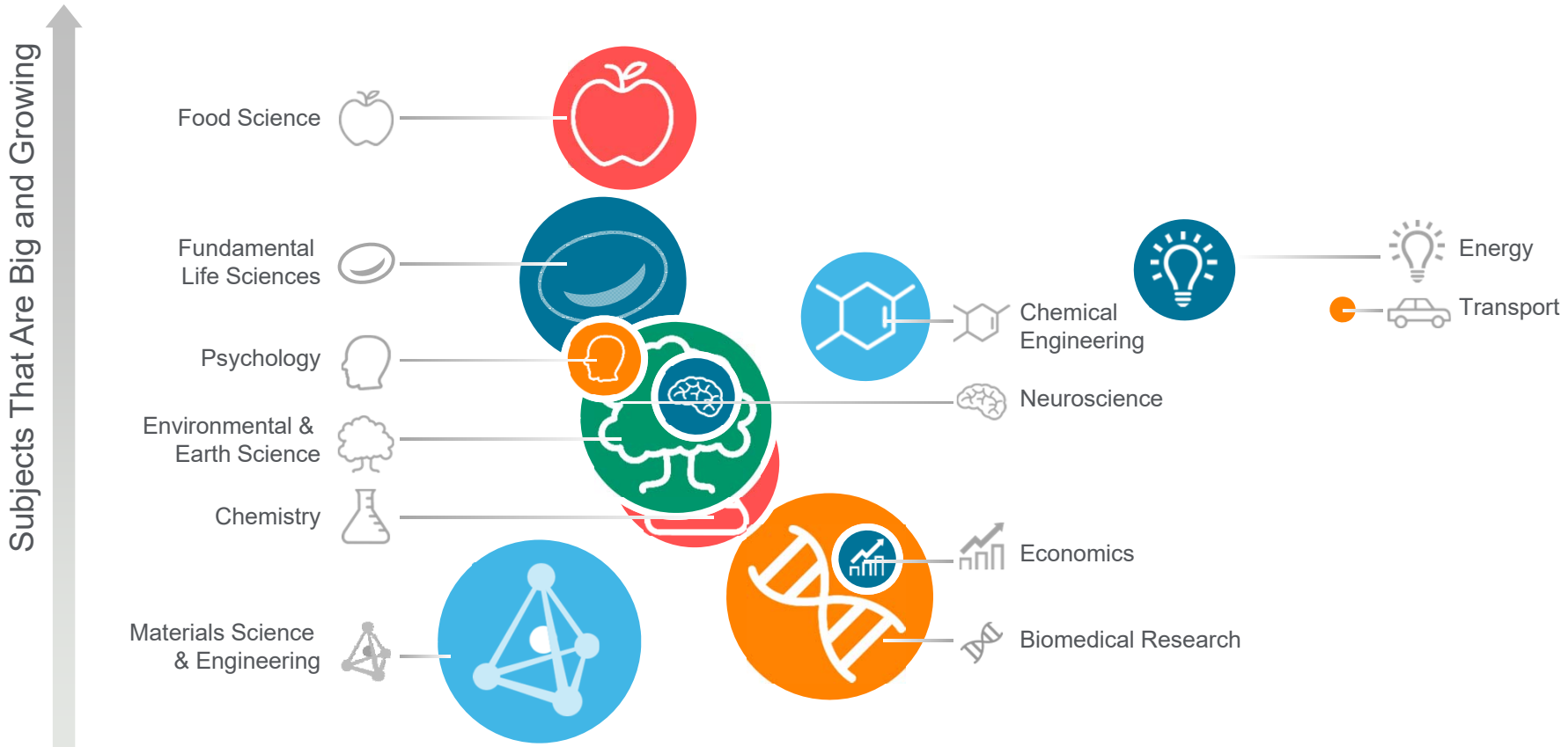
water
pollutant
wastewater
Soils
Pollution
metal
concentration (composition)
model
plant
soil
Removal
Wastewater treatment
data
effluent
time

A A A relevance of keyphrase | declining growing (2011–2015)

Supporting the Research Through Content

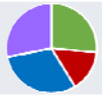
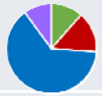


Deep Vertical Strategy focusing on the largest fastest growing research areas where Elsevier is strongest



Results as of 2016. Normalized against average.

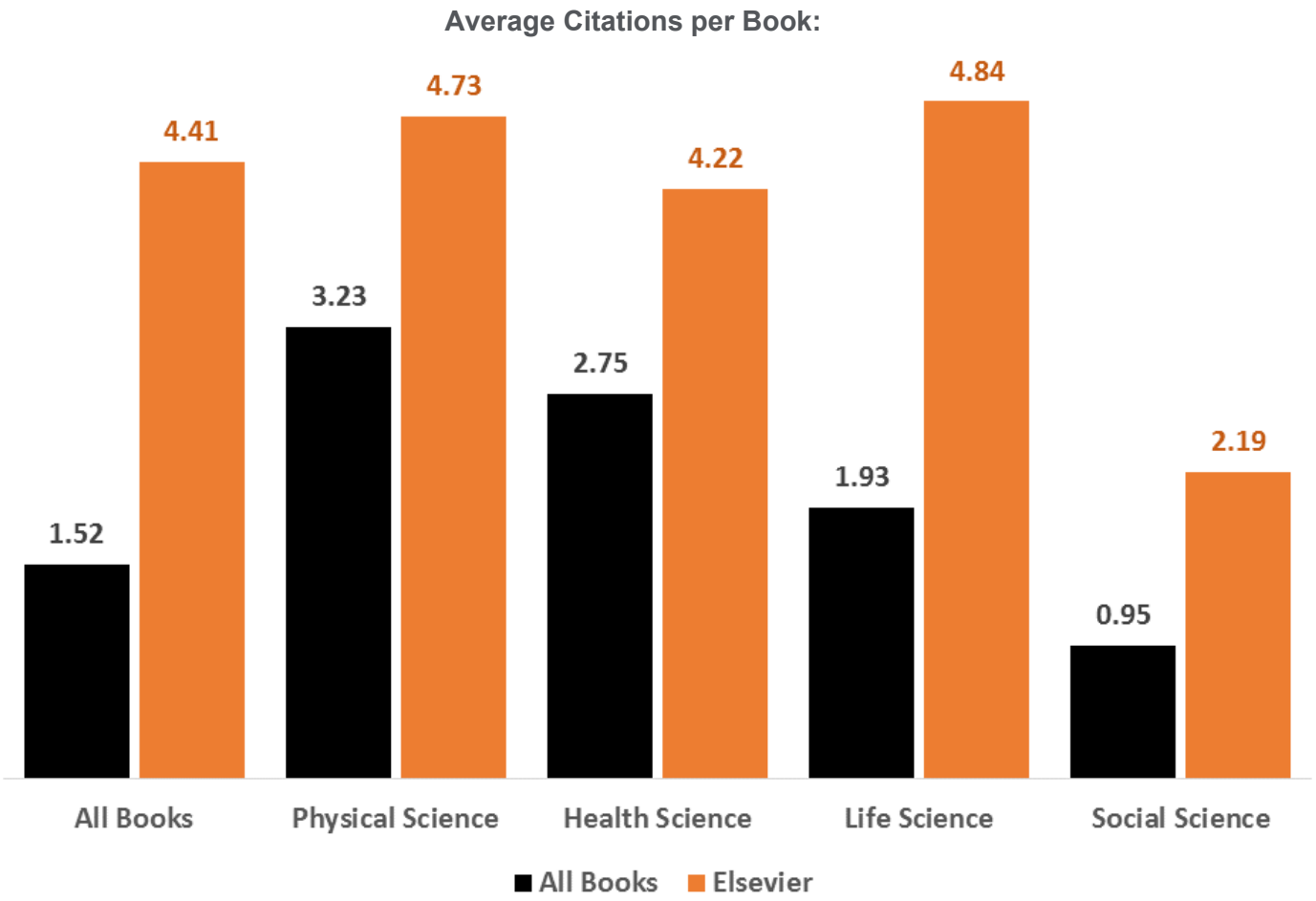
Elsevier‘s books in Scopus consistently receive more citation on average than the market as a whole

Publisher	Book Count	Book Share	Citation Count	Average Citations per Book	Relative Impact	Top citation count of highest cited book	% Top 1% Cited Books	% Books Uncited	Scopus Subject Health Life Physical Social
Total	**12,410**	**100%**	**18,917**	**1.52**	**1.00**	**152**	**100%**	**71.4%**	
Competitor A	**2,956**	**23.8%**	3,119	1.06	0.69	74	14.0%	75.4%	
Competitor B	1,752	14.1%	**4,446**	2.54	1.66	76	**28.7%**	62.3%	
Competitor C	1,283	10.3%	588	0.46	0.30	19	0.0%	80.7%	
Competitor D	714	5.8%	2,964	4.15	2.72	100	15.4%	**32.5%**	
Competitor E	705	5.7%	880	1.25	0.82	**152**	4.4%	79.9%	
Elsevier	693	5.6%	3,055	**4.41**	**2.89**	147	20.6%	40.8%	

*Comparison of books published in 2014 that are indexed in Scopus

Elsevier's books in Scopus consistently receive more citations on average than the market as a whole

Total Elsevier 2014 Book Count in Scopus: 693

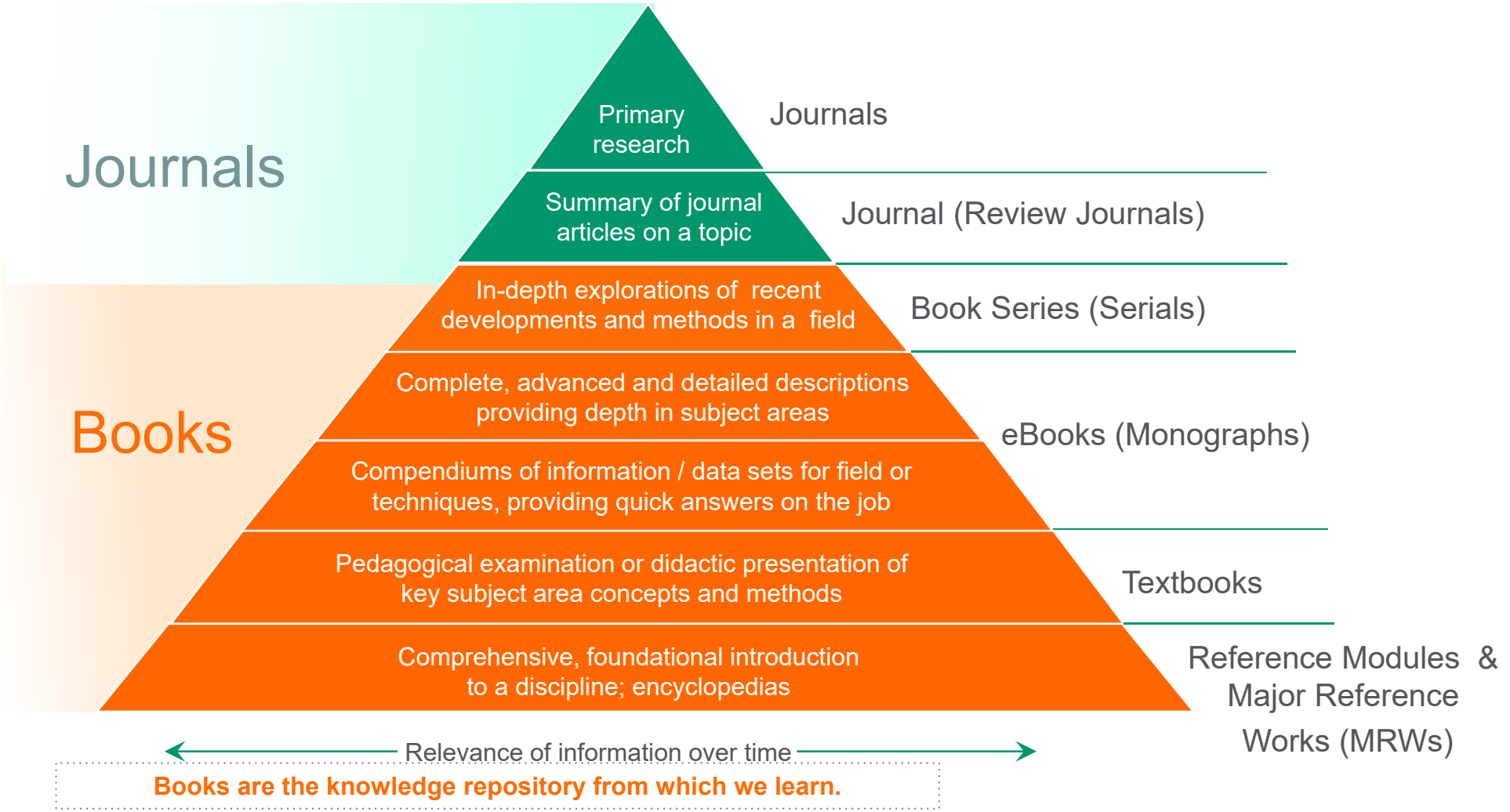


Note: Books counted in multiple subject areas when classified as such

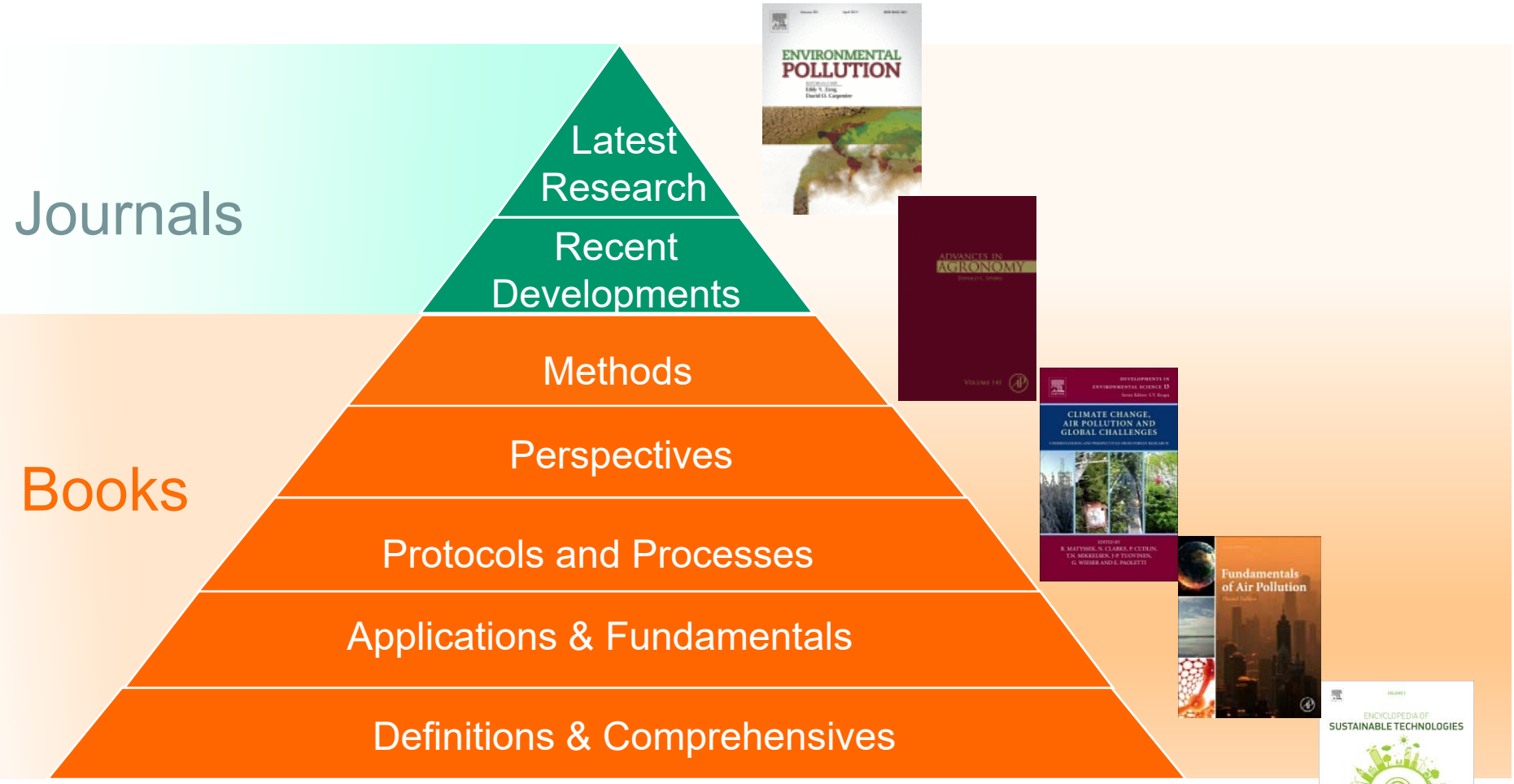
Elsevier's citation impact is strongest in several subjects compared to other publishers

Subject	Publisher	Book Share	Citations per Book	Relative Impact
Chemical Engineering	All Books	98 Books	5.97	
	Publisher A	40.8%	5.25	0.88
	Elsevier	35.7%	9.37	1.57
	Publisher B	6.1%	4.50	0.75
	Publisher C	5.1%	1.20	0.20
Chemistry	All Books	249 Books	4.35	
	Publisher A	38.2%	6.97	1.60
	Publisher C	19.7%	0.67	0.15
	Elsevier	12.9%	9.38	2.16
	Publisher B	12.0%	2.10	0.48
Computer Science	All Books	418 Books	3.40	
	Publisher B	28.0%	4.94	1.45
	Publisher D	20.6%	2.60	0.76
	Publisher A	15.3%	3.53	1.04
	Elsevier	13.9%	5.19	1.53
Earth and Planetary Sciences	All Books	189 Books	3.93	
	Publisher B	21.7%	2.98	0.76
	Publisher D	20.6%	5.28	1.34
	Publisher A	13.8%	4.54	1.15
	Elsevier	12.2%	5.96	1.52
Medical Research	All Books	1300 Books	1.97	
	Publisher B	39.7%	2.39	1.21
	Publisher C	16.0%	0.54	0.28
	Elsevier	11.0%	4.34	2.20
	Publisher A	5.7%	2.19	1.11
	Publisher F	3.9%	0.88	0.45
	Publisher D	3.4%	1.09	0.55
	Publisher G	2.9%	1.24	0.63

Researchers need different content types for different steps in their workflow

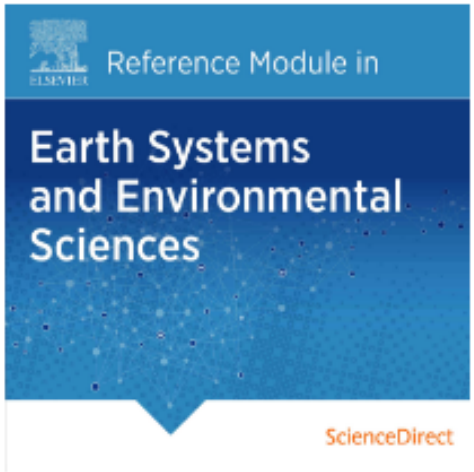


Elsevier book and journal content is complimentary to help researchers solve their problems more efficiently



Books are the knowledge repository from which we learn.

Reference Module in Earth Systems and Environmental Sciences



- **4,786** – Total articles in Reference Module as of March 2017
- **4,950** – Total currency reviews since publication
- **317** – Total updated articles since publication
- **1,109** – Total new articles since publication (includes the new reference works added)

CSIC
Spanish Council of Research

USC Universidade de Santiago de Compostela

UIB Universitat de les Illes Balears

Universidad Politécnica de Madrid

Universidad Zaragoza 1542

ugr Universidad de Granada

Universitat de Girona

Universidade de Vigo

Universidad de Córdoba

Reference Module in Earth Systems and Environmental Sciences

Earth Systems and Environmental Sciences

Spain

528 reference articles found for "Spain".

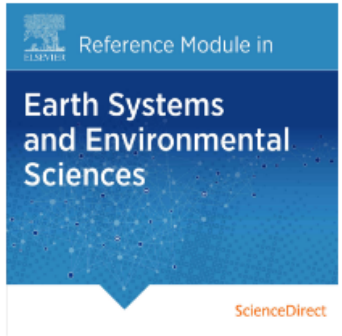
Download PDFs | Export | Sort by: Relevance | Date | View: All | Introductory | Advanced

Spain: Natural Hazards in the Country☆ Introductory Article
Reference Module in Earth Systems and Environmental Sciences, 2013
M.-A. Torres-Vera
Abstract | PDF (3377 K)

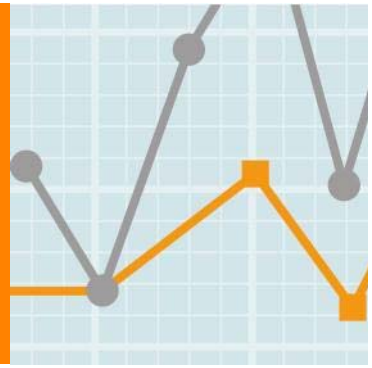
Evolution of Hydropower in Spain Advanced Article
Reference Module in Earth Systems and Environmental Sciences, from Comprehensive Renewable Energy, Volume 6, 2012, Pages 309-341
A. Gil, F. Bueno
Abstract | PDF (13466 K)

Feed-in Tariffs and Other Support Mechanisms for Solar PV Promotion☆ Advanced Article
Reference Module in Earth Systems and Environmental Sciences, 2013, Current as of 9 July 2015
B.K. Sovacool, A. Gilbert
Abstract | PDF (4595 K)

Mediterranean Mariculture
Reference Module in Earth Systems and Environmental Sciences, 2015
G. Barnabé, G. Dewavrin
Abstract | PDF (4088 K)

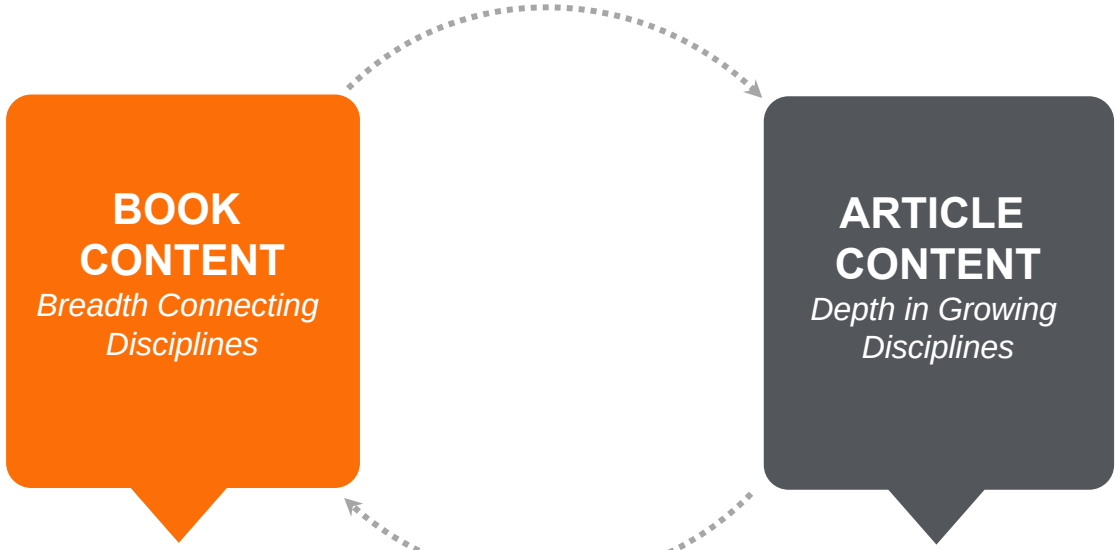


Supporting Research Through Technology



eBook content is a critical complement to journal content

Books and journal articles provide different types of content, but for this reason they are fundamentally interlinked: researchers/students need both to build their knowledge around a topic.



- Facilitating new paths for investigation
- Comprehensive
- Learning tool
- Wide angle
- New topic or recapping old areas

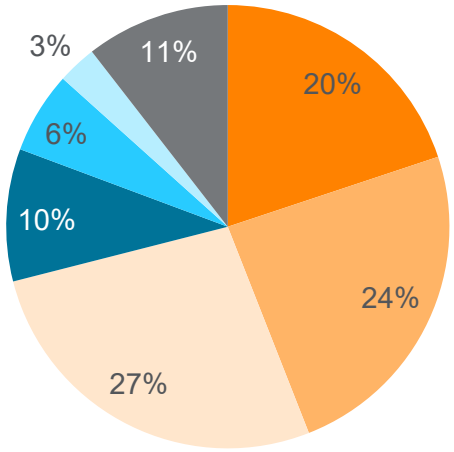
- Specialised knowledge
- Narrow focus
- Extreme depth
- Latest research / new results
- Applying techniques

Source: Communispace survey of 150 users (students to senior researchers) conducted for S&T Books in October 2014

Book content solves problems that journal content does not address

44% look for articles outside their immediate field at least weekly.

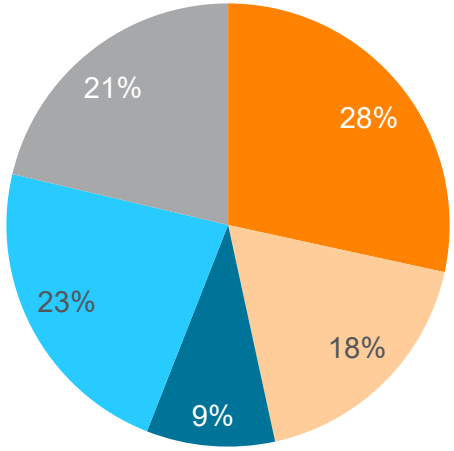
How often do you search for articles outside your immediate field of study? N=352



- Several times a week
- Around once a week
- Around once or twice a month
- Once every 2-3 months
- Once every 6 months
- Less often/never
- It depends on what I'm working on at the time

47% look for collaborators outside their immediate field at least once a year.

Approximately, how often do you look for collaborators from outside your immediate field of study? N=352



- At least once every 6 months
- Once a year
- Once every 2-3 years
- Less often/never
- It varies

Elsevier Researcher panel, March 2015

User Behavior: eBook content is a critical complement to journal content, providing unique benefits to drive research and education forward

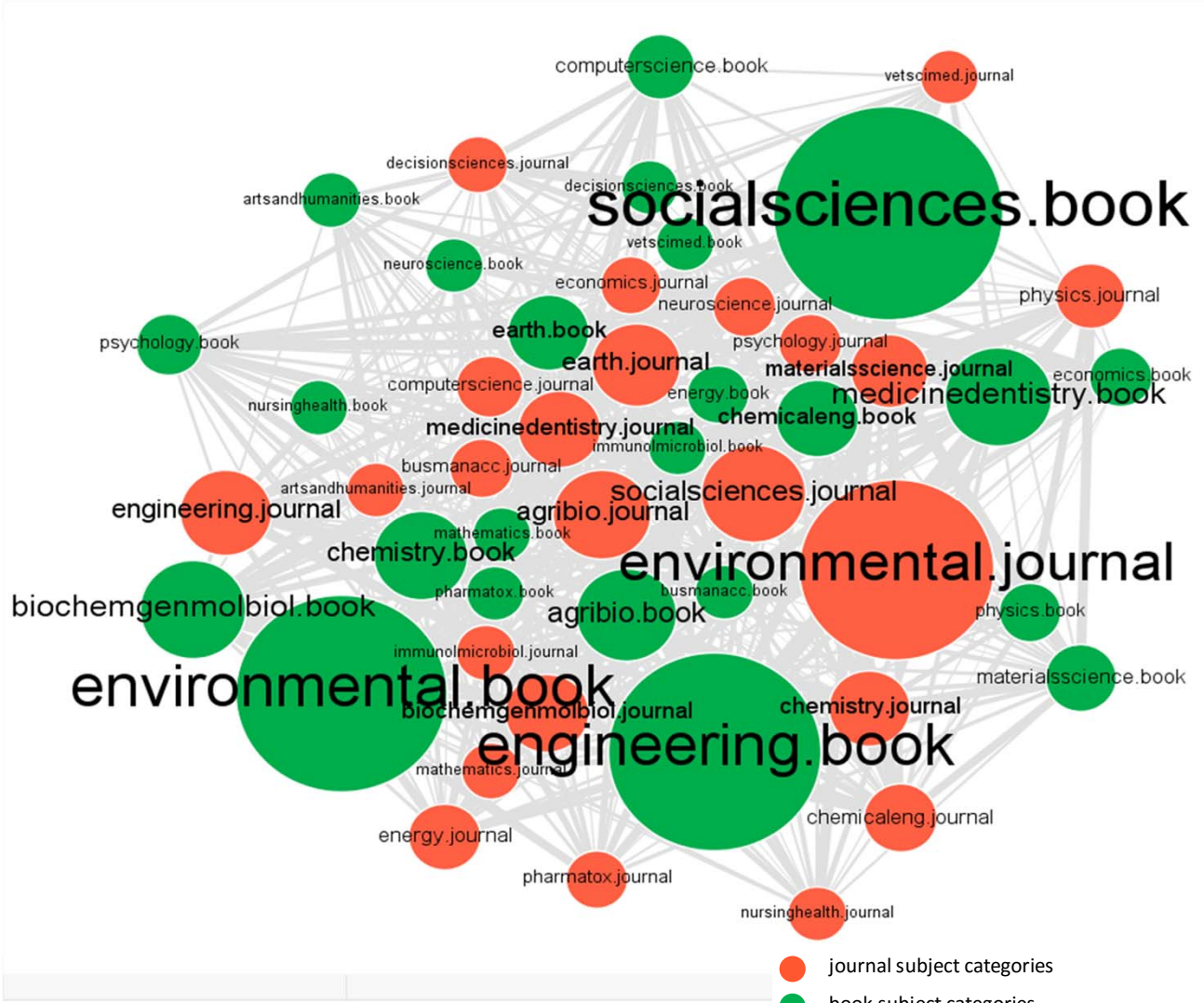
eBook and journal content are used interchangeably in interdisciplinary research – typical use cases

"I want to understand the article" – providing a researcher the foundational content required to understand the terms in a journal article

"It is a challenge to quickly get a foundation of relevant, authoritative, knowledge on subjects that are new to me"

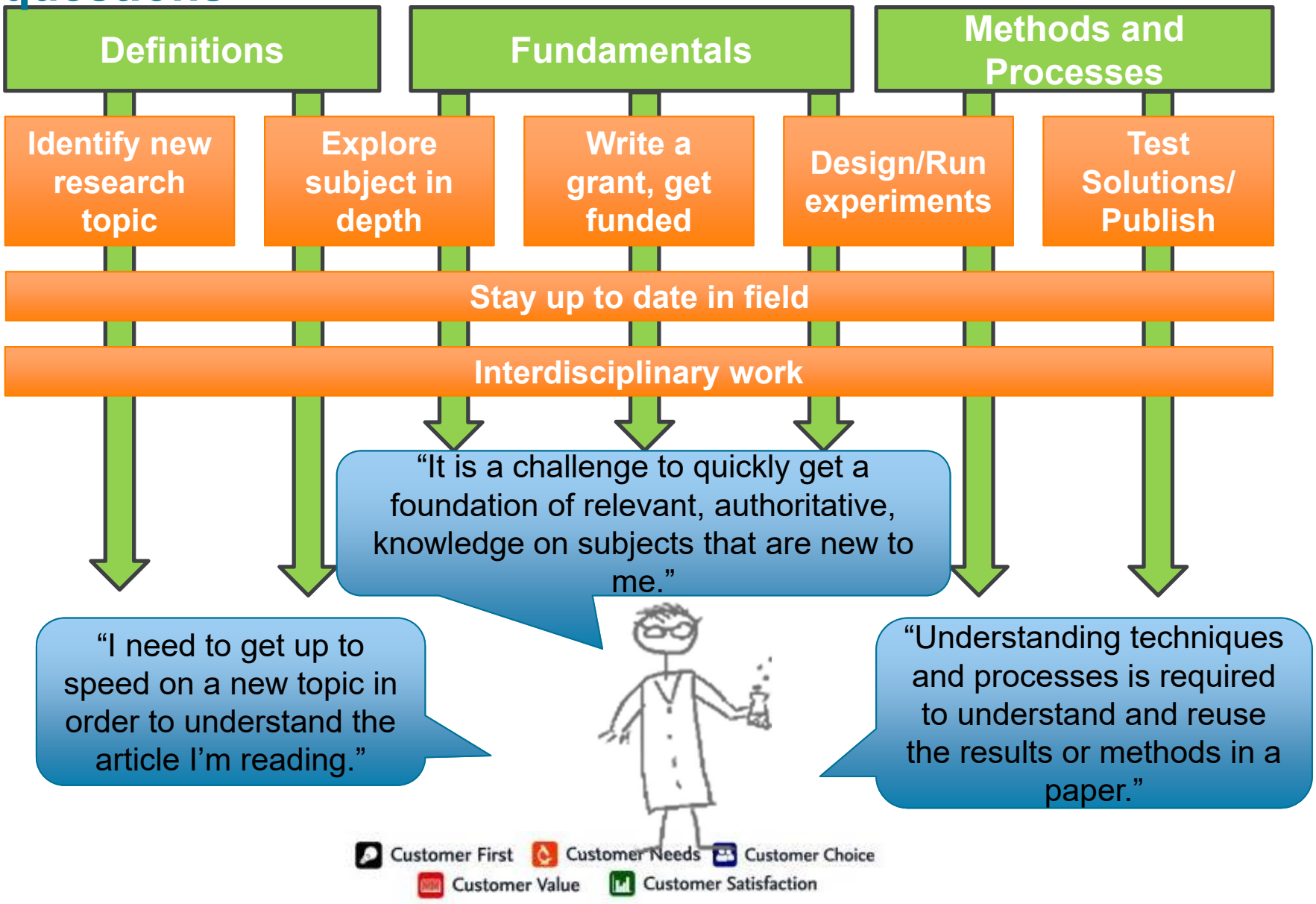
"I need to find related foundational information to support interdisciplinary research"

User Behaviour: Data shows that users use books and journals together and move between disciplines



Data source: ScienceDirect usage data in 2015

To make their work flow researchers need answers to questions



Case Study: Dr. Kyuson Yun

A Cancer Researcher with PhD in Biology from the California Institute of Technology.

She straddles the fields of cancer biology and developmental biology, studying stem cells, neurodegenerative and neuromuscular diseases, developmental disorders, and cancer genetics and genomics.

Her current project is to understand mechanisms that regulate stem cell self-renewal and transformation in brain tumors. Her ultimate goal is to discover new therapies that eradicate brain cancer stem cells (CSCs).

She wants to publish her research in high impact journals to raise her academic profile and that of her institution, and to help patients with brain tumors.

Dr. Yun's Research Challenge

"I need an authoritative, complete review of cancer stem cells, by authors I can trust, as well as organ-specific identifications and their characteristic mechanisms."

"There is too much literature to cover! We have a weekly 'journal club' discussion in which lab members report on recent scientific papers on cancer stem cells and other relevant fields. This helps me stay up-to-date, but what I really need are overview sources, distillations and summaries that will save us time."

"I need to understand the links between cancer stem cell biology, brain biology, and drug design to effectively design a new therapy."

"I need to be aware of the existing FDA-approved anti-angiogenesis agents in enough detail to consider improvements and alternates, and ultimately publish results of my own experiments."

Dr. Yun's Workflow

Dr. Yun's Workflow

Research

- The fundamentals of cancer stem cell biology
- Organ specific understanding of cancer (brain)
- Accepted therapeutic approaches
- Full knowledge of the latest research

Design Experiment

Methods / Laboratory Techniques
Accepted Protocols & FDA Guidelines
Reference Data

Analyze Results

- Determine success of therapeutic drug
- Interpret and organize data

Test Solution

- Test her Results,
- Determine if her experimental drug is ready for Clinical Trials
- Improve Drug Efficacy
- Improve Drug Safety

Dr. Yun's Workflow – she's using books AND journals at each stage

Workflow stage

Explore subject in depth	Design experiments	Analyze results	Create & test solution	Publish Results

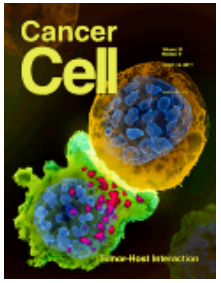
Content use cases

Foundational Advcd Reviews Latest Research Applications Case Studies	Methods Protocols Procedures Reference Data	Foundational Advcd Latest Research Methods Applications	Methods Protocols Procedures Reference Data	Future Implications

Build knowledge, track related areas, and stay up to date in field

Interdisciplinary work: straddles cancer biology, developmental biology, and stem cell biology

Problem Statements



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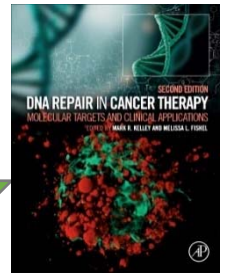
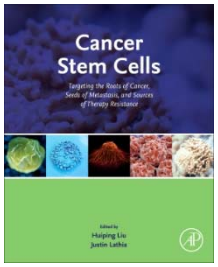




"I need an authoritative, complete review of cancer stem cells, but people I can trust, including organ-specific identifications and their characteristic mechanisms."

"I need to be aware of the existing FDA-approved anti-angiogenesis agents in enough detail to consider improvements and alternates, and ultimately publish results of my own experiments."

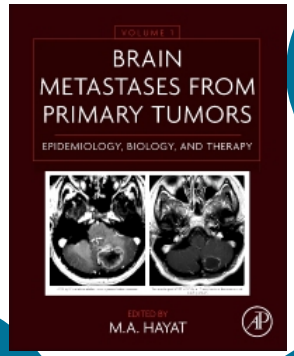
Dr. Yun's Workflow – she's using books AND journals at each stage

Alternative View – User Centric – a continuum of content

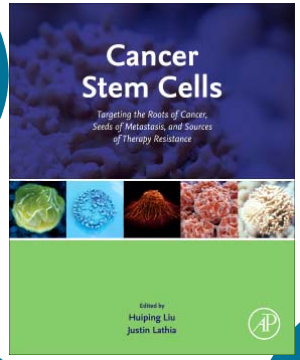
Dr. Yun's Interdisciplinary Journey

"I need to understand the links between cancer stem cell biology, brain biology, and drug design."

Cancer Journals



Cancer Biology



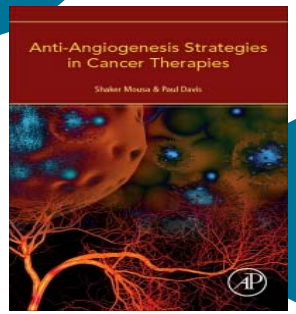
Neuro Journals

Brain Biology

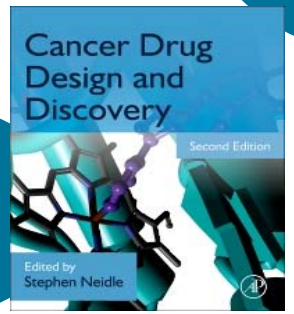
Dr. Yun's Research

Stem Cell Biology

Stem Cell Journals

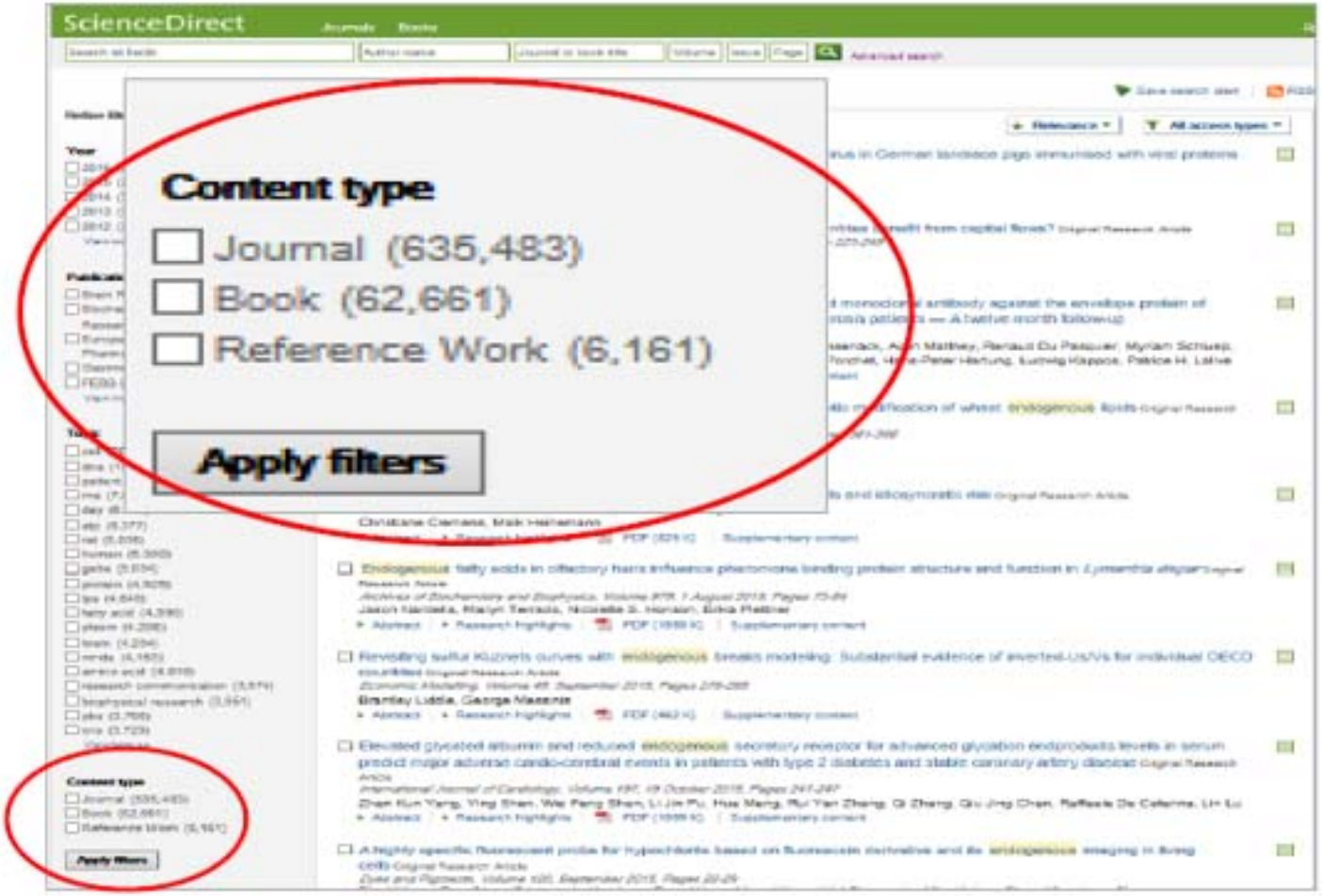


Pharmacology



Drug Design/Clinical Trial Journals

Current content platforms do not easily support co usage, putting the burden on the researcher to hunt around for solutions



Topic Page Solution

Clinical Neurology and Neurosurgery

Volume 109, Issue 2, February 2007, Pages 206–209

Case report

Recurrent limbic and extralimbic encephalitis associated with thymoma

Kenji Okita[a], Noriyuki Matsukawa[a], Manabu Hattori[a], Kentaro Yamada[a], Koji Takada[a], Takemori Yamawaki[a], Mari Yoshida[b], Yoshio Hashizume[b], Kosei Ojika[a]

Show more

http://dx.doi.org/10.1016/j.clineuro.2006.09.007 Get rights and content

Abstract

A 33-year-old woman, with a 7-year clinical history of invasive thymoma treated at ages 26 and 30 years by thymectomy and radiation, presented with a generalized convulsion and loss of consciousness. Following the seizure there was no neurological deficit and normal tendon reflexes. Magnetic resonance imaging (MRI) of the brain without gadolinium enhancement revealed multiple small lesions of high signal intensity on T2 and diffusion weighted images located in the cortical area beyond the temporal lobes. Brain biopsy demonstrated encephalitis with activated microglias and activated T-cell infiltration. Within 4 months of treatment with nothing other than anticonvulsant therapy,

ScienceDirect Journals Books

Back to article > Encephalitis

Encephalitis

Encephalitis is an acute inflammation of the brain, commonly caused by a viral infection.

From Encyclopedia of Neuroscience, 2009

1

Related terms

Enterovirus, HSV, Herpes simplex virus type 1, Viral e..., Bulbar polio, Epide... VZV, Aseptic meningitis, Fla...virus, Herpes simplex virus 1

2

Learn more about Encephalitis

Encephalitis

Karen L. Roos, in *Handbook of Clinical Neurology*, 2014.

Introduction

Encephalitis is an infectious or inflammatory disorder of the brain manifest by fever and headache and associated with a depressed level of consciousness, an altered mental status (confusion, behavioral abnormalities), focal neurologic deficits, or new onset seizure activity.

This chapter will address the viral etiologies of encephalitis. Other chapters in this volume address the bacterial, fungal, spirochetal, and parasitic etiologies of encephalitis. The California Encephalitis Project was initiated in 1998 to improve the

3

Viral Infections

Karen L. Roos, in *Textbook of Clinical Neurology (Third Edition)*, 2007.

Western Equine Encephalitis

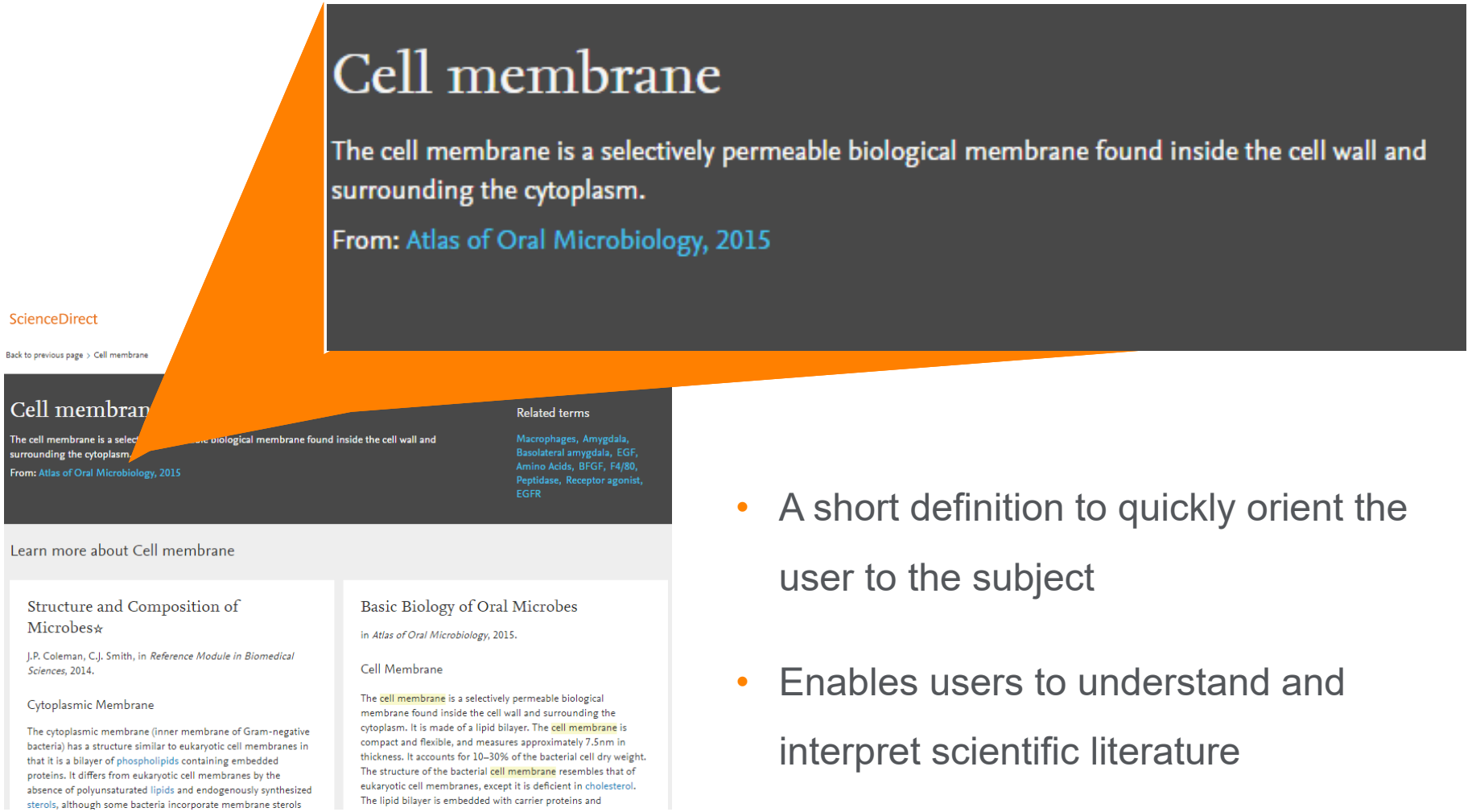
Western equine encephalitis tends to occur in children younger than age 1 year and in adults older than age 50.[54] Inapparent infections with western equine encephalitis virus are more common than symptomatic cases. Like the other arthropod-borne encephalitides, western equine encephalitis begins with an influenza-like syndrome of fever, malaise, myalgias, pharyngitis, and vomiting. As the disease progresses, irritability, convulsions, or coma develops.[49]

Key Features:

1. **Overall clear definition**
2. **Related terms (to topic pages)**
3. **Learn more on topic**
   - 10 longer definitions
   - Related/ relevant reading

Live in Neuroscience, Biomedical Sciences and Life Sciences **late May 2017**

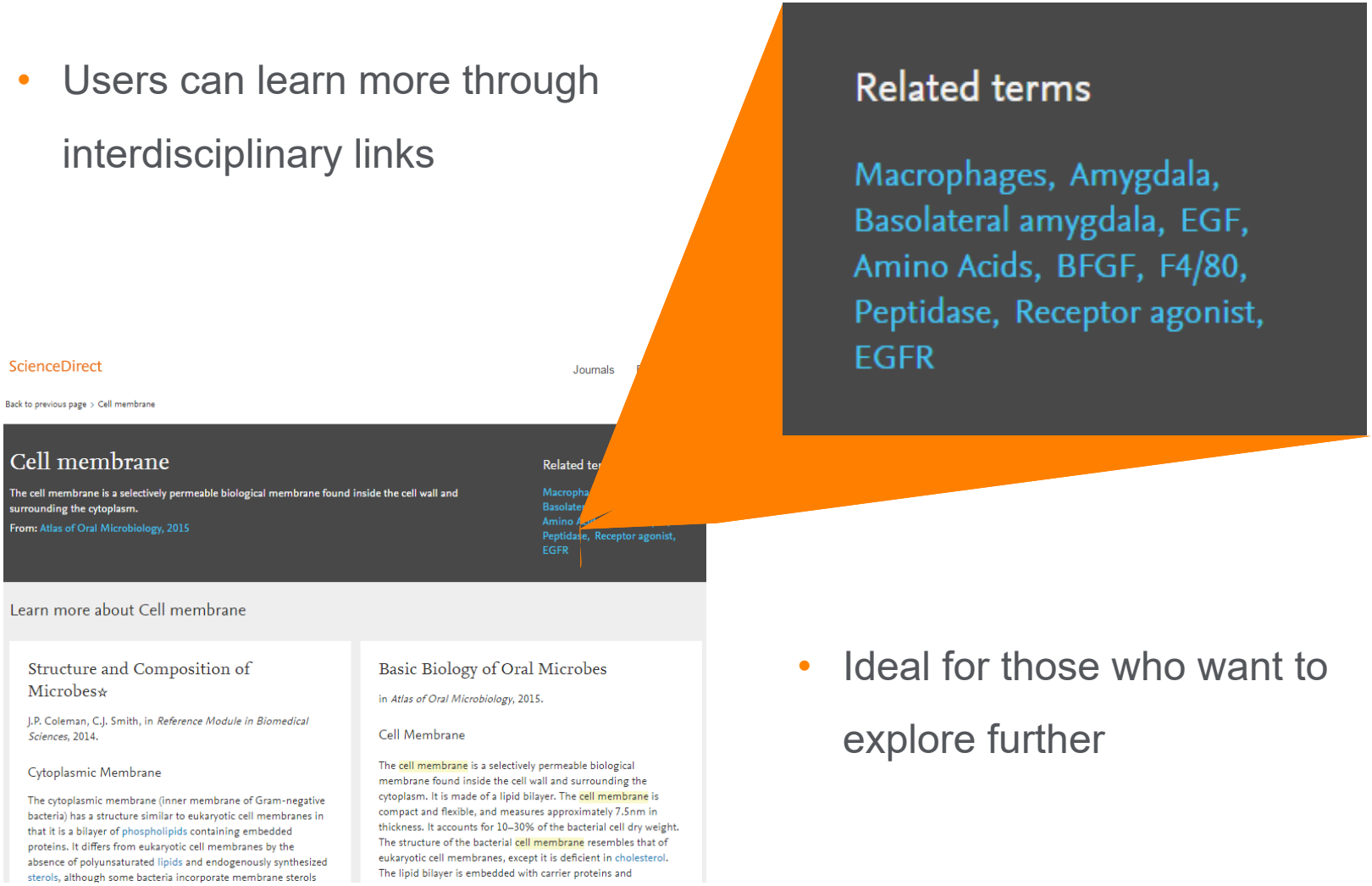
1 Quick Definition



- A short definition to quickly orient the user to the subject
- Enables users to understand and interpret scientific literature

2 Related Terms

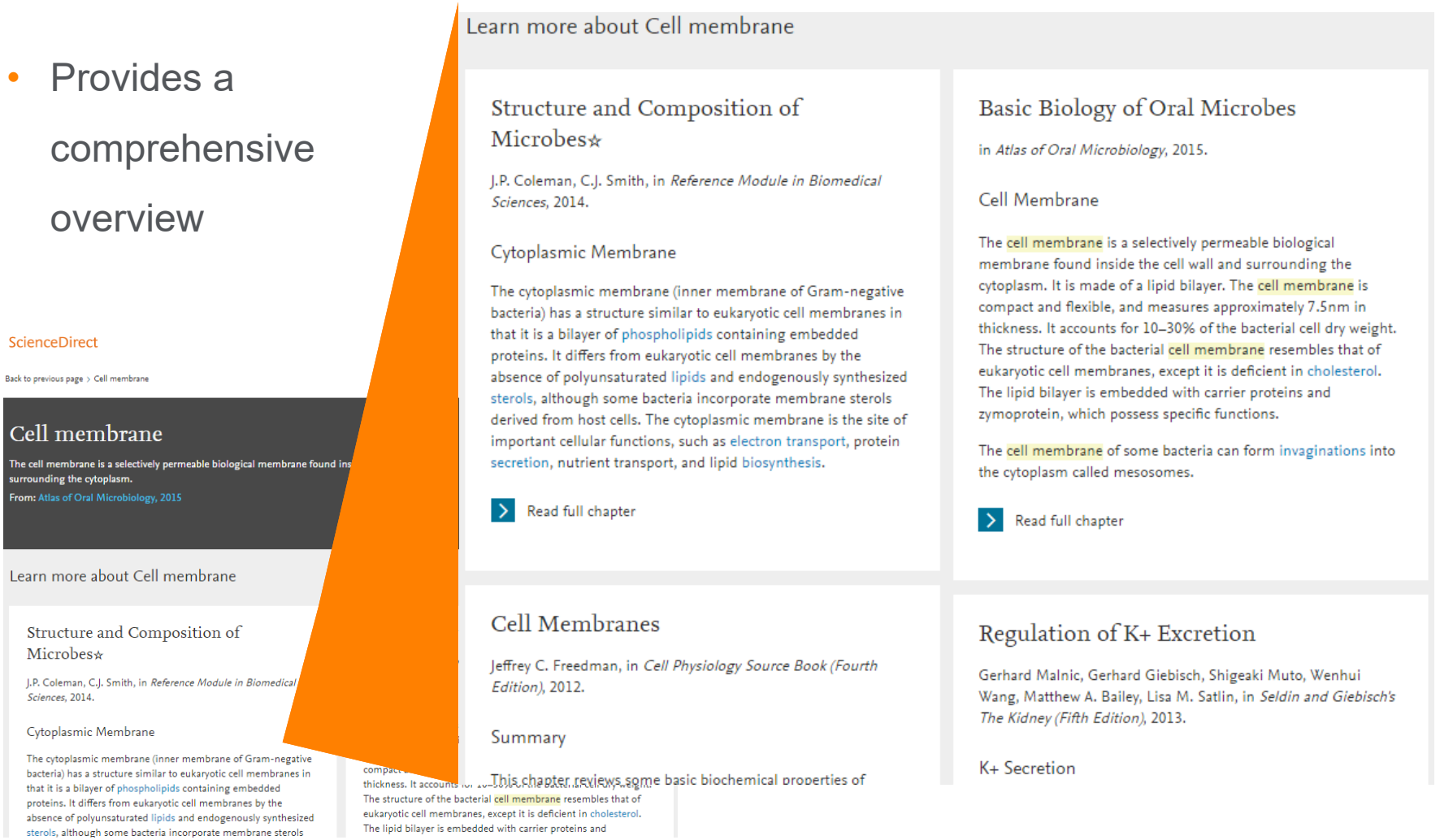
- Users can learn more through interdisciplinary links



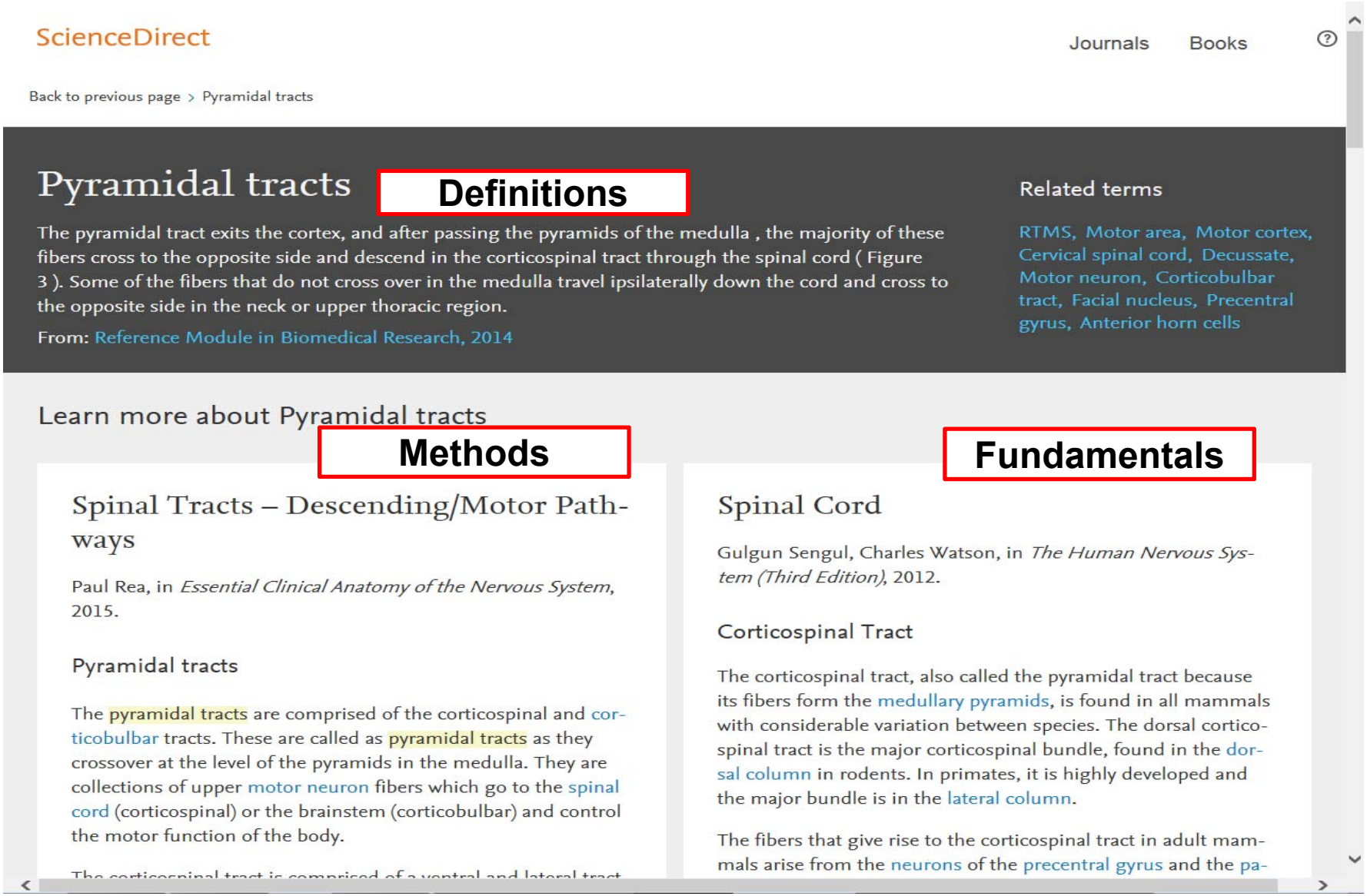
- Ideal for those who want to explore further

3 Relevant Excerpts

- Provides a comprehensive overview



Where next?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Back to previous page > Pyramidal tracts
Pyramidal tracts
Definitions
The pyramidal tract exits the cortex, and after passing the pyramids of the medulla , the majority of these fibers cross to the opposite side and descend in the corticospinal tract through the spinal cord (Figure 3). Some of the fibers that do not cross over in the medulla travel ipsilaterally down the cord and cross to the opposite side in the neck or upper thoracic region.
From: Reference Module in Biomedical Research, 2014
Related terms
RTMS, Motor area, Motor cortex, Cervical spinal cord, Decussate, Motor neuron, Corticobulbar tract, Facial nucleus, Precentral gyrus, Anterior horn cells
Learn more about Pyramidal tracts
Methods
Fundamentals
Spinal Tracts – Descending/Motor Pathways
Paul Rea, in Essential Clinical Anatomy of the Nervous System, 2015.
Pyramidal tracts
The pyramidal tracts are comprised of the corticospinal and corticobulbar tracts. These are called as pyramidal tracts as they crossover at the level of the pyramids in the medulla. They are collections of upper motor neuron fibers which go to the spinal cord (corticospinal) or the brainstem (corticobulbar) and control the motor function of the body.
Spinal Cord
Gulgun Sengul, Charles Watson, in The Human Nervous System (Third Edition), 2012.
Corticospinal Tract
The corticospinal tract, also called the pyramidal tract because its fibers form the medullary pyramids, is found in all mammals with considerable variation between species. The dorsal corticospinal tract is the major corticospinal bundle, found in the dorsal column in rodents. In primates, it is highly developed and the major bundle is in the lateral column.
The fibers that give rise to the corticospinal tract in adult mammals arise from the neurons of the precentral gyrus and the pa-

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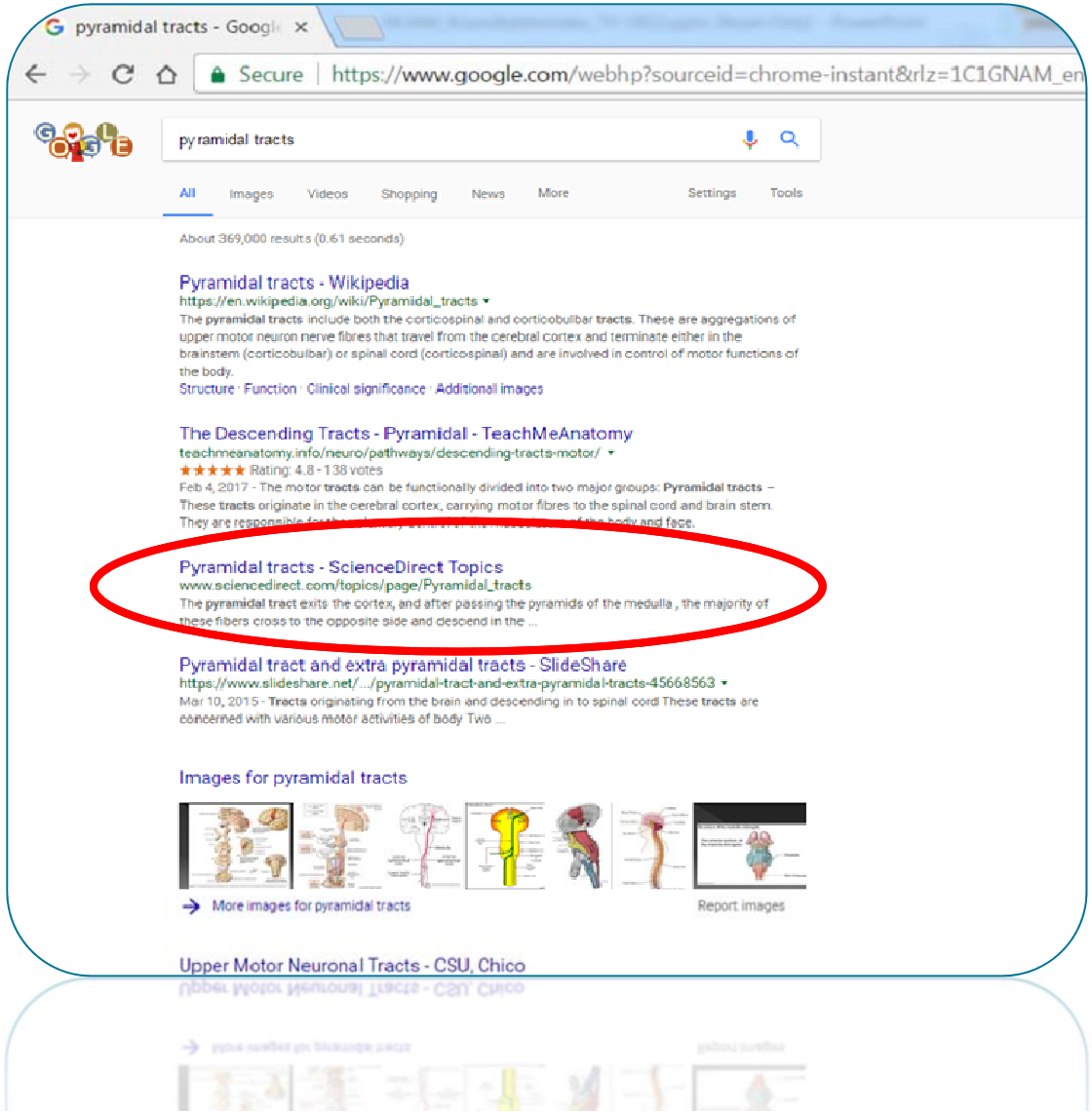

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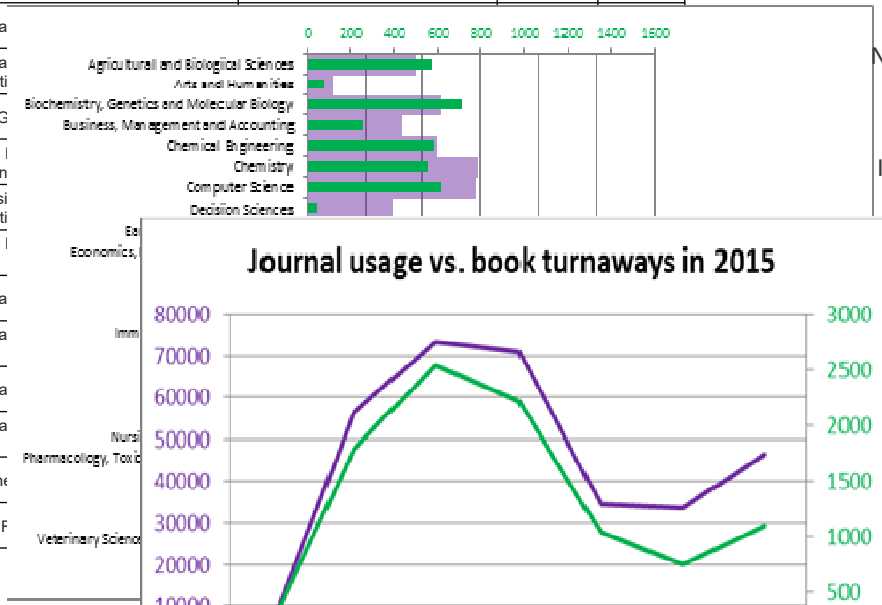

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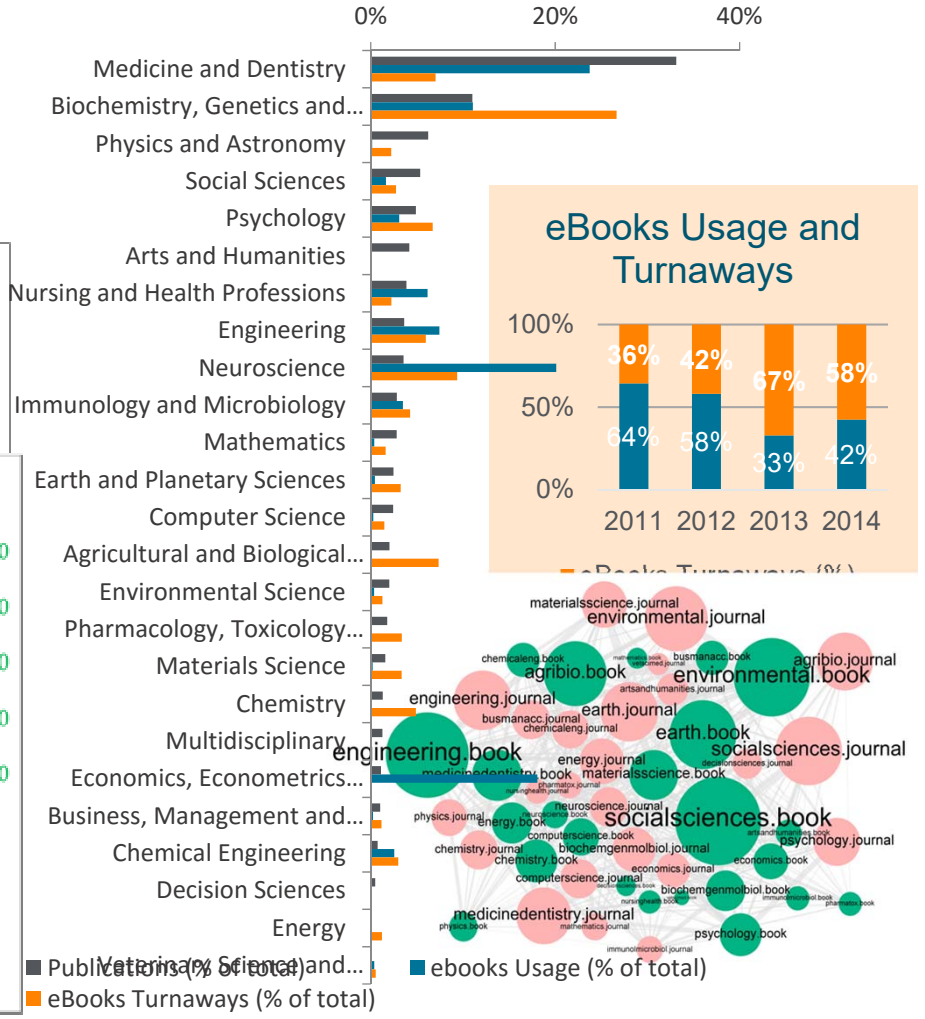
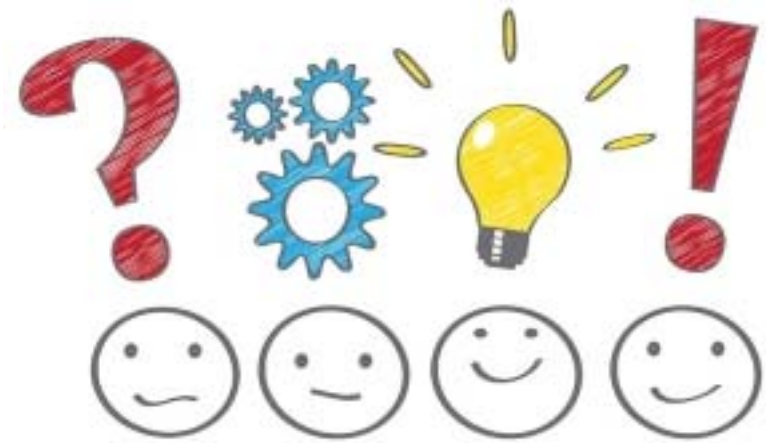


Agenda

- Identifying the Problem
- Supporting Research Through Content
- Supporting Research Through Technology

Questions?



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