# Make an Impact!

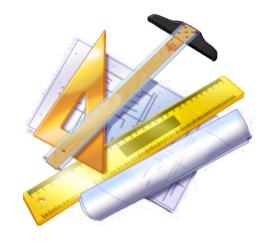
# Assessing scholarly research and output while connecting to your faculty

Anne Rauh and Linda Galloway
Syracuse University Library

# How do we measure scholarly research and output?



- Publications
- Quality
  - Citations
- Funding
  - Research funds
- Technology transfer
  - Patents, start-ups, etc.



# Why do we offer this service?

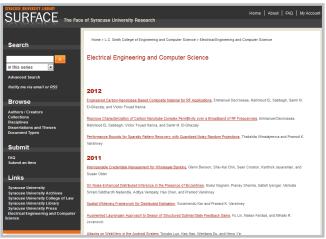
- Build relationships with faculty
- Learn about faculty research interests
- Assist in evaluation of departments, programs, and faculty
- Accreditation efforts
- Marketing for academic programs

# **Examples of Connections**









# What do you want to assess?

- Institutions
- Departments
- Centers or Groups
- Individuals

# What type of data do you need?

- Qualitative
- Quantitative
  - Publications
  - Citations to pubs
  - Publication influence
  - "Other"
    - Social media buzz

Our focus will be on individual, quantitative data.

### What tools will we discuss?

- Scopus
- Web of Science
- Google Scholar
- Journal Citation Reports & Journal Analyzer
- altmetrics









## **Conventional Tools**

## Consider Before Beginning:

- Cost of subscription databases
- Ease of use
- Time frames
  - Citations to past year's work (2011),
  - Citations to author's work in past 5 years (07-11)
  - Citations to author's work in past 10 years (02-11)
- Skewed towards STM fields
- Don't compare across databases!



# Scopus or Web of Science?

#### Scopus

SciVerse Scopus is the world's largest abstract and citation database of peer-reviewed literature.

- Contains 46 million records, 70% with abstracts
- Nearly **19,500** titles from 5,000 publishers worldwide
- Includes over 4.6 million conference papers
- Provides 100% Medline coverage

#### **Subscription includes:**

- 23 million records with references back to 1996 (of which 78% include references).
- 21 million records pre-1996 which go back as far as 1823.

#### **Web of Science**

Web of Science consists of nine databases containing information gathered from thousands of scholarly journals, books, book series, reports, conferences, and more.

- It fully covers over **12,000** major journals.
- Create a visual representation of citation relationships with Citation Mapping
- Capture citation activity and trends graphically with Citation Report
- Use the Analyze Tool to identify trends and patterns

#### Our subscription:

- Science Citation Index Expanded (1899present)
- Social Sciences Citation Index (1898present)
- Arts & Humanities Citation Index (1975present)

# Citation Metrics for Individual Faculty Members

Assess scholarly impact by looking at:

- Works published
- Citations to works published
- Publication influence (Journal Citation Reports)

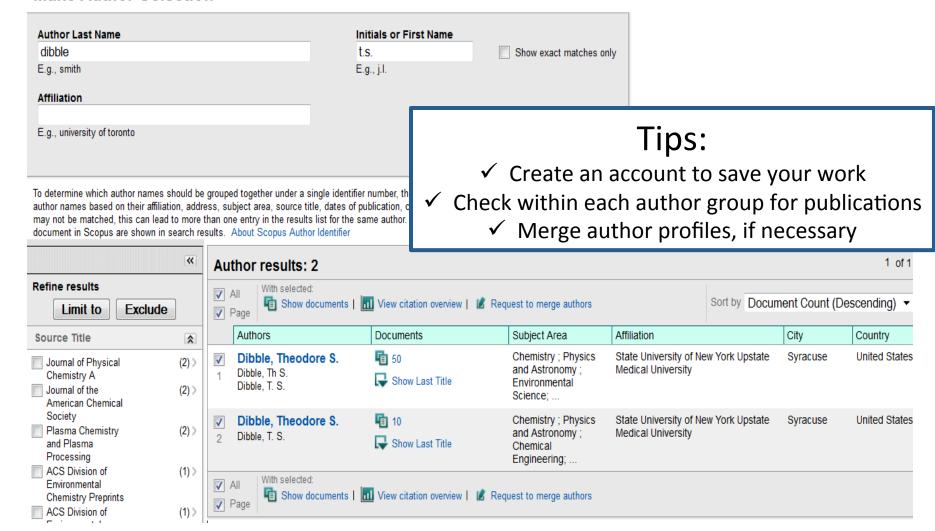


Susan Parks

Assistant Professor of Biology, Syracuse University Bioacoustics Verified email at syr.edu Homepage

# Cited Reference Search in Scopus

#### Make Author Selection



Authors: Dibble, Theodore S.; Dibble, Theodore S. Export | Export | Overview options Hide □ Self citations of selected authors Self citations of all authors Exclude from citation overview: Date range Sort documents to 2012 Year descending 2007 Update overview h index = 12 □ Citations Author h index 60 Cited Documents | Save list 2007 2008 2010 2011 2012 2009 Subtotal <2007 >2012 Total View h-Graph X Delete Total 399 38 34 49 63 19 241 0 640 38 Of the 40 documents consid 2011 Impact of tunneling on hydrogen-... for the h index. 12 have bee 2 3 3 1 cited at least 12 times. 2011 Effects of olefin group and its ... 3 Note: The h index considers 2011 Understanding OH yields in elect... Scopus documents publishe 0 0 after 1995. About h-Graph 2010 Potential energy profiles for th... 1 2010 Atmospheric chemistry of isoprop... 1 1 2009 Characterization of a low temper... 0 0 2009 Towards a consistent chemical ki... 2 2 1 2009 Observation and quantification o... 4 6 6 2009 Optical diagnostics of a low pow... 3 5 5

2

2

2009 A study of OH radicals in an atm...

10

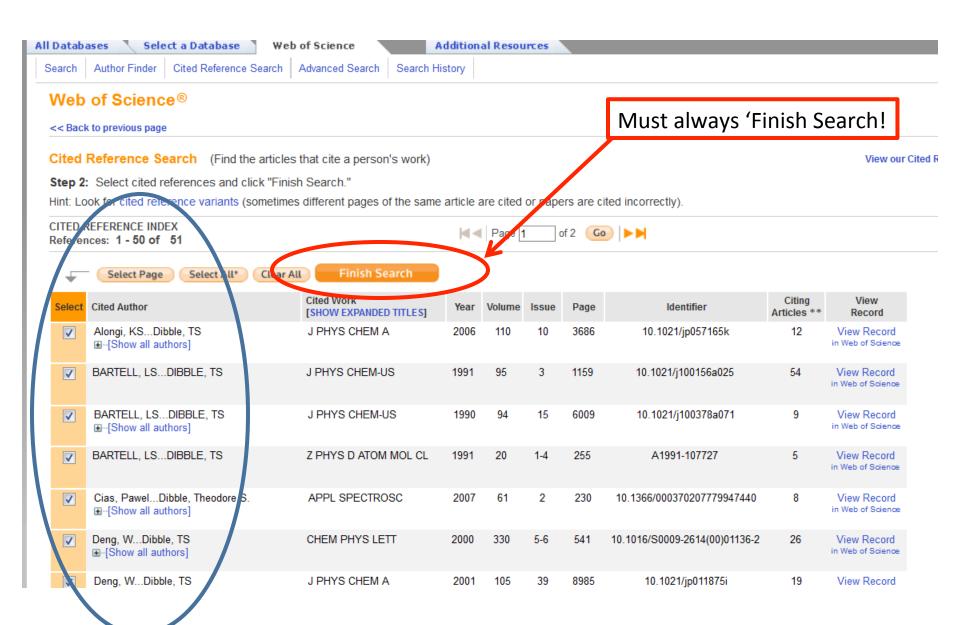
# Cited Reference Search in Web of Science

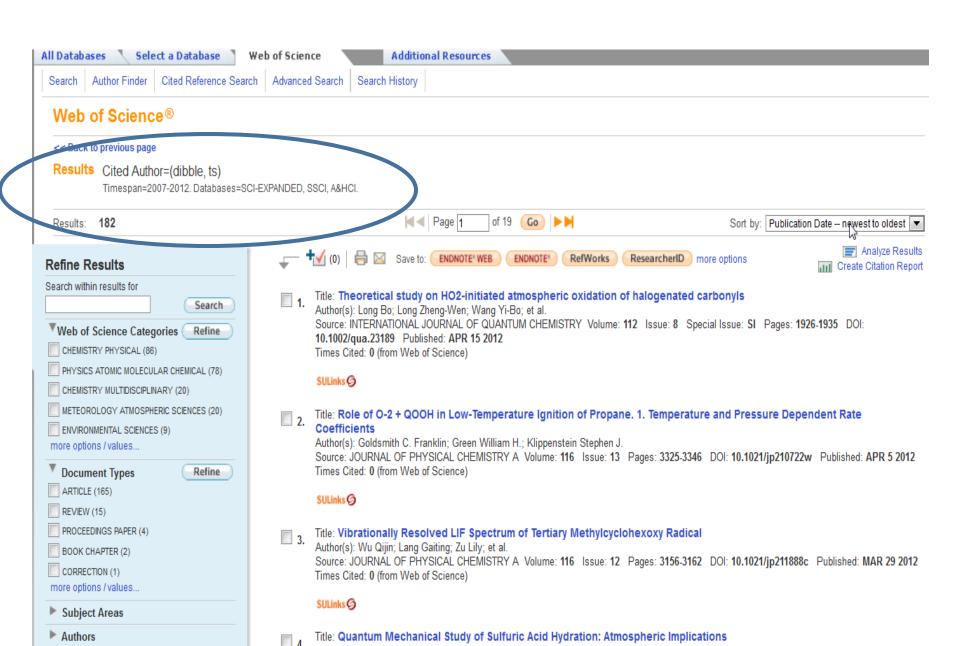
All Databa	ases Sele	ect a Database	Web of Scie	nce	Additio	onal Resources	
Search	Author Finder	Cited Reference Se	arch Advance	ed Search	Search History		
Web	of Science	e <sup>®</sup>					
Cited	Reference Se	earch (Find the	articles that cit	e a persor	n's work)		
Step 1:	: Enter informa	ation about the cited	work. Fields a	re combi	ned with the Boo	lean AND operator.	
* Note: I	Entering the title	e, volume, issue, or	page in combi			Tips:	
		O'Brian C* OR OBri	an C*		✓ Crea	ate an account to save your work	
	Example:	J Comp* Appl* Math	* (journal abbr	✓	Í If you h	have a very prolific author, ask her to	
	Example:	1943 or 1943-1945			5.5	sist with article identification	
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		All Years	(upd	ated 2012-	05-25)		
	•	From 2007 💌	to 2012 🔻 (d	efault is all	years)	₩.	
	<b>⊡</b> Cit	ation Databases				hệ .	
	J	Science Citation In	dov Evpandad (	SCLEVDAN	IDED) 1899 proce	ont .	

Social Sciences Citation Index (SSCI) --1898-present

Arts & Humanities Citation Index (A&HCI) --1975-present

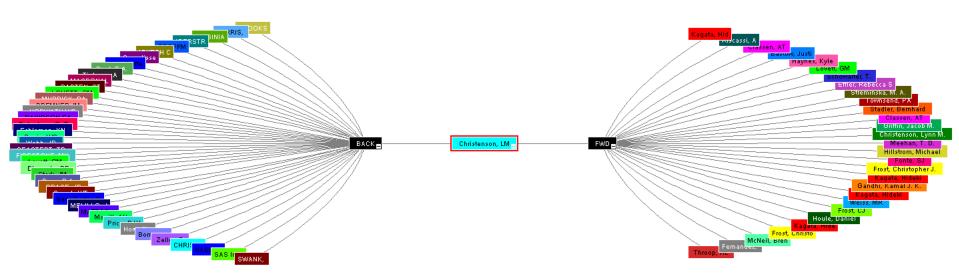
**★** Adjust your results settings





## Citation Mapping in Web of Science

Visually Demonstrate Author/Article Influence



Source:Web of Knowledge<sup>TM</sup>, www.thomsonscientific.com

₩ KE	Record details for the nodes are displayed below (double-click a node to snow its details). Link a checkbox below to locate that node above.									
	Primary Author	Journal Name	Article Title	The fate of nitrogen in gypsy moth frass deposited to an oak forest floor						
<b>V</b>	⇒ Christenson, LM	2002-OECOLOGIA	The fate of nitrogen in gypsy	_	Number / Title	WOS:000175936300015 / The fate of nitrogen in gypsy moth frass deposited to an oak				
	⇒ BREMNER JM		(article title not available)	-1		forest floor				
		ISOTOPES SOIL OR			Journal Title	OECOLOGIA				
		1975-SCIENCE	(article title not available)		Publication Year	2002				
	⇒ Bormann, F. H.	1979-Pattern and process in a forested	(article title not available)		Author	Christenson L, Lovett G, Mitchell M, et al				
		ecosvstem			Source Abbreviation	OFCOLOGIA .				

## Google Scholar Citations



#### Tips:

- ✓ Public profiles are available in Google
- ✓ Can search for an author from within your own profile page







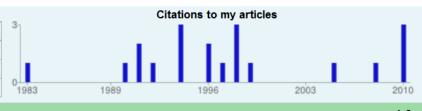
Change photo

Linda M. Galloway Edit
Associate Librarian at Syracuse University Edit
Instruction - Assessment - Information Literacy Edit
Verified email at syr.edu Edit

My profile is public Edit Link Homepage Edit

Citation indices					
	Since 2007				
Citations	20	4			
h-index	2	1			
i10-index	1	0			

Solect: All None Actions





Follow new articles Follow new citations	



Co-authors

# Cited Reference Search in Google Scholar Citations

- Author needs to set up their profile (using their Google account); Google Scholar will harvest related data.
- Authors can add articles, groups of articles, edit entries, etc.
- Profiles are <u>private</u> unless author elects to make public
- Quality control: "To be eligible for inclusion in Google Scholar search results, your profile needs to be public and needs to have a verified email address at your university"



#### Theodore S. Dibble

Professor of Chemistry, SUNY-Environmental Science and Forestry Atmospheric Chemistry - Combustion - Physical Chemistry Verified email at esf.edu Homepage

	Citation indices				Citations to my articles							
		All	Since 2007	67								
Cit	ations	727	255				1.11					
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	Title / Autl	nor					Cit	ted by	Year			
	Electron diffraction studies of the kinetics of phase changes in molecular clusters: freezing of carbon tetrachloride in supersonic flow LS Bartell, TS Dibble The Journal of Physical Chemistry 95 (3), 1159-1167											
	Isomerization of OH-isoprene adducts and hydroxyalkoxy isoprene radicals  TS Dibble The Journal of Physical Chemistry A 106 (28), 6643-6650											
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		. 3. So	olid-state pha ride		of phase chang in selenium hexa		,	32	1992			

## Comparison

	Times cited	H-Index
Scopus	241	12
Web of Science	182	16
Google Scholar	255	9

**Times cited** = number of documents published from 2007-2012 that have cited this author's work

**H index** = Number of author's articles that have been cited at least this many times (during time span indicated)

Searches performed 30 May 2012

### Journal Assessment

Where to publish??

Metrics can help identify the most influential (i.e. most cited) journals in a field. This does not mean each <u>article</u> has the same influence...

- Journal Citation Reports (Thomson-Reuters)
- Journal Analyzer (Scopus)

## Journal Citation Reports - WoS

Journal Citation Reports®



			ISSN			JCR [	Eigenfactor <sup>TM</sup> Metrics i)				
Mark	Rank	Abbreviated Journal Title (linked to journal information)		Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	Articles	Cited Half-life	Eigenfactor <sup>TM</sup> Score	Article Influence <sup>TM</sup> Score
	1	PLOS BIOL	1544-9173	18454	12.472	14.376	2.706	214	4.1	0.15993	8.211
	2	BIOL REV	1464-7931	5098	6.574	10.894	1.581	43	>10.0	0.01225	4.448
	3	FASEB J	0892-6638	38538	6.515	7.201	1.195	462	7.1	0.10353	2.521
	4	PHILOS T R SOC B	0962-8436	21141	6.053	6.977	3.019	317	7.3	0.06850	3.081
	5	Q REV BIOL	0033-5770	3117	5.818	6.400	0.857	14	>10.0	0.00339	3.495
	6	CHRONOBIOL INT	0742-0528	3009	5.576	3.937	0.276	116	4.8	0.00567	0.661
	7	BIOSCIENCE	0006-3568	9884	5.510	6.335	0.848	66	9.5	0.01837	2.580
	8	BMC BIOL	1741-7007	1709	5.203	5.479	1.500	96	3.0	0.01235	2.459
	9	P ROY SOC B-BIOL SCI	0962-8452	31791	5.064	5.443	1.100	452	7.8	0.09051	2.297
	10	PHYS LIFE REV	1571-0645	442	4.875	5.552	8.000	12	3.2	0.00235	2.085
	11	BIOESSAYS	0265-9247	8862	4.479	5.016	1.198	106	7.2	0.02876	2.203

**Impact factor:** The journal Impact Factor is the average number of times articles from the journal published in the past two years have been cited in the JCR year.

# Journal Analyzer - Scopus



**SJR:** "SCImago Journal Rank is weighted by the prestige of a journal. Subject field, quality and reputation of the journal have a direct effect on the value of a citation."

## **Author Disambiguation**

- Scopus Scopus Author Identifier (53 author sets for M.J. Mitchell)
- Web of Science Distinct Author
   Identification System (494 author sets for MJ Mitchell)
- Google Scholar Profiles
- Institutional ID



### **ORCID**

- Not for profit
- Create registry of unique identifiers for individual researchers
- Open and transparent linking between ORCID and other ID schemes
- Many vendors, institutions are members



NATURE | NEWS

#### Scientists: your number is up

ORCID scheme will give researchers unique identifiers to improve tracking of publications.

#### Declan Butler

30 May 2012

In 2011, Y. Wang was the world's most prolific author of scientific publications, with 3,926 to their name — a rate of more than 10 per day. Never heard of them? That's because they are a mixture of many different Y. Wangs, each indistinguishable in the scholarly record.

The list of the world's top 100 authors, all of whom show similarly impressive production rates, is a who's who of conflated Zhangs, Lis, Chens, Lees and other Wangs. But this confusing problem could be solved following the launch later this year of the Open Researcher and Contributor ID (ORCID), an identifier system that will distinguish between authors who share the same name.

Just as barcodes at the supermarket allow the till to distinguish a tomato from a turnip, ORCID aims to reliably attribute research outputs to their true author by assigning every scientist on the planet a machine-readable, 16-digit unique digital identifier. If ORCID takes off, it could revolutionize research management, vastly increase the precision and breadth of scientific metrics and help in developing new analyses of, for



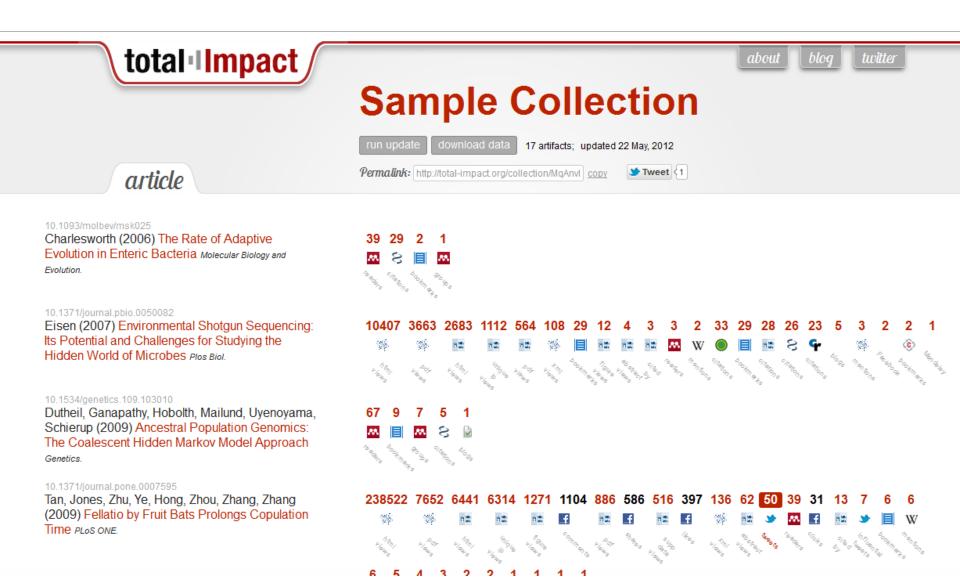
Don't worry, the tattoo is optional FREDRIK SKOLD/GETTY IMAGES

## **Alternative Tools**

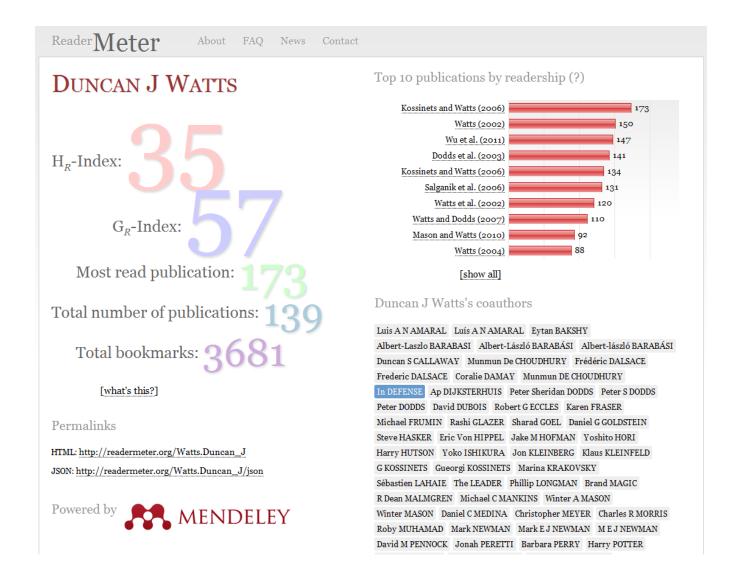
# altmetrics

altmetrics is the creation and study of new metrics based on the Social Web for analyzing, and informing scholarship

# total Impact



### Reader Meter



### ScienceCard

ScienceCard

Works

urnals

Aho

Sign In with Twitter

### Key Issue <br/> <br/> Collective Action for the Open Researcher & Contributor ID (ORCID)

Fenner M, G'omez C, Thorisson G. Serials: The Journal for the Serials Community. 2011:24 (3);277-279.

JSON | XML | BibTeX | RIS | CSV

7 months ago http://dx.doi.org/10.1629/24277 Share on Mendeley - Share on CiteULike

Journal article 8 Shares 1 Citation

★ Martin Fenner liked this

This paper discusses a potential rollout strategy for ORCID. - Martin Fenner

Metrics

**Shares** How often this work has been shared by others





Citations How often this work has been cited by others



### Limitation to altmetrics

- New
- Time frame some new tools cannot search old mentions, tweets, etc.
- Rely on user generate metadata
- Should social media mentions be given the same weight as scholarly article citations?
- Can these tools be easily manipulated to raise significance of an article?

# Scholarly Metrics in Context

### Assessing Output Using these Metrics

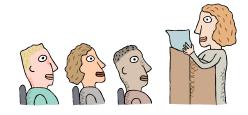
#### **Strengths**

- Quantitative information about output
- When used together, tools give a broad picture of the impact of journal publishing activity
- Widely used within academic departments to inform decisions of promotion and tenure

#### Weaknesses

- Two most popular tools only measure the work that they index
- Traditional tools don't capture grey literature and other informal scholarly communication
- Coverage does not always include lifespan of author's work due to date coverage of tools
- Developed to measure scientific scholarly publishing activity but now being applied to other disciplines where measures may not fit

# Framing Discussions with Faculty



- Tools don't replace disciplinary knowledge
- Faculty need to check their publications and citations (citing errors, incorrect institutional affiliations, etc.)
- These tools can help you own your online presence

# Criticism and Complaints

- Read and understand documentation and metrics provided by databases
- Define scope and limitations of your output before beginning
- Keep track of your methodology and pay attention to time frames
- Defend your work you are the expert!

### More Information

http://researchguides.library.syr.edu/citationmetrics

## Questions?

Anne Rauh <u>aerauh@syr.edu</u>
Linda Galloway <u>galloway@syr.edu</u>