



# ALLmetrics. Not Altmetrics.

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Director Analytic Product Sales Europe

The 9<sup>th</sup> Munin Conference in Tromsø, November 27<sup>th</sup> 2014

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# History



- **2012**
  - Founded Plum Analytics – Andrea Michalek/Mike Buschman
  - University of Pittsburgh – first customer
- **2013**
  - Launch of PlumX
  - Customers include universities, corporations, publishers
- **2014**
  - EBSCO acquired Plum in January
  - Customers now include funders
  - Poised for growth as altmetrics come of age

# Current state of Scholarly Measure

## Elastic ice shells of synchronous moons: Implications for cracks on Europa and non-synchronous rotation of Titan

Peter M. Goldreich<sup>a,b</sup>, Jonathan L. Mitchell<sup>a,b</sup>

### Abstract

A number of synchronous moons are thought to harbor water oceans beneath their outer ice shells. A subsurface ocean frictionally decouples the shell from the interior. This has led to proposals that a weak tidal or atmospheric torque might cause the shell to rotate differentially with respect to the synchronously rotating interior. Applications along these lines have been made to Europa and Titan. However, the shell is coupled to the ocean by an elastic torque. As a result of centrifugal and tidal forces, the ocean would assume an ellipsoidal shape with its long axis aligned toward the parent planet. Any displacement of the shell away from its equilibrium position would induce strains thereby increasing its elastic energy and giving rise to an elastic restoring torque. In the investigation reported on here, the elastic torque is compared with the tidal torque acting on Europa and the atmospheric torque acting on Titan.

### References

Anderson, J. D., Schubert, G., Jacobson, R. A., Lau, E. L., Moore, W. B., Sjogren, W. L., Sep. 1998. Europa's Differentiated Internal Structure: Inferences from Four Galileo Encounters. *J. Geophys. Res.* 103, 2081-2093

Greenberg, R., Hoppa, G., Helfenstein, P., McEwen, A., Pappalardo, R., Tufts, R., Ockert-Bell, M., Sullivan, R., Greeley, R., Belton, M. J. S., Denk, T., Clark, B. E., Burns, J., Veverka, J., Jan. 1998. Evidence for non-synchronous rotation of Europa. *Nature* 391, 368.

Ghatak, A., Mahadevan, L., Nov. 2003. Crack stress: The Cycloidal Wake of a Cylinder Tearing through a Thin Sheet. *Physical Review Letters* 91 (21), 215507.

Greeley, R., Sullivan, R., Coon, M. D., Geissler, P. E., Tufts, B. R., Head, J. W., Pappalardo, R. T., Moore, J. M., Sep. 1998. Terrestrial Sea Ice Morphology: Constraints on Europa. *Icarus* 140, 207-269.

Greenberg, R., Hoppa, G. V., Tufts, B. R., Geissler, P., Riley, J., Kadel, S., Oct. 1999. Chaos on Europa. *Icarus* 141, 263-286.

Greenberg, R., Weidenschilling, S. J., May 1984. How fast do Galilean satellites spin? *Icarus* 25, 187-195.

## Europa's Differentiated Internal Structure: Inferences from Four Galileo Encounters

J. D. Anderson, G. Schubert, R. A. Jacobson, E. L. Lau, W. B. Moore, W. L. Sjogren

Galileo's observations of Europa's surface, particularly the large impact craters, have provided a unique opportunity to study the internal structure of this moon. The distribution of craters is consistent with a differentiated internal structure, with a rigid outer shell and a hotter, more plastic interior. This structure is consistent with the idea of a subsurface ocean, which would decouple the shell from the interior and allow it to rotate differentially. The results of this study are consistent with the idea of a subsurface ocean, and provide a new perspective on the internal structure of Europa.

Crater	Lat	Lon	Age	Area
Europa A	10°N	10°E	1000	1000
Europa B	20°N	20°E	2000	2000
Europa C	30°N	30°E	3000	3000
Europa D	40°N	40°E	4000	4000
Europa E	50°N	50°E	5000	5000
Europa F	60°N	60°E	6000	6000
Europa G	70°N	70°E	7000	7000
Europa H	80°N	80°E	8000	8000
Europa I	90°N	90°E	9000	9000

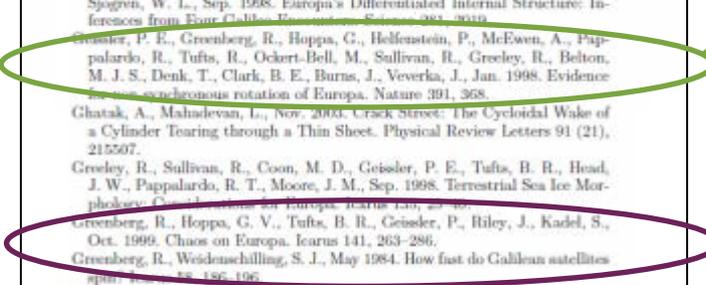
## Terrestrial Sea Ice Morphology: Considerations for Europa

Paul H. Geissler and Robert T. Pappalardo  
Department of Geological Sciences, Brown University, Box 1846, Providence, Rhode Island 02912

and  
Jonathan M. Moore  
Department of Geological Sciences, Brown University, Box 1846, Providence, Rhode Island 02912

Galileo's observations of Europa's surface, particularly the large impact craters, have provided a unique opportunity to study the internal structure of this moon. The distribution of craters is consistent with a differentiated internal structure, with a rigid outer shell and a hotter, more plastic interior. This structure is consistent with the idea of a subsurface ocean, which would decouple the shell from the interior and allow it to rotate differentially. The results of this study are consistent with the idea of a subsurface ocean, and provide a new perspective on the internal structure of Europa.

1. INTRODUCTION  
Most of the outer Galilean satellites are composed of silicate rock and other materials, including various minerals. Many of these satellites show evidence for being liquid during their initial history, and this is supported by various pieces of evidence. Europa's surface is particularly smooth, and this is consistent with the idea of a subsurface ocean, which would decouple the shell from the interior and allow it to rotate differentially. The results of this study are consistent with the idea of a subsurface ocean, and provide a new perspective on the internal structure of Europa.



# Citation Metrics are lagging indicators

- Scopus = 2
- Web of Science = 0
- Google Scholar = 8
- PubMed = 1



Photo credit: A. Wayne Vogl and Nicholas D. Pyenson / Smithsonian Institution.

## Discovery of a sensory organ that coordinates lunge feeding in rorqual whales.

**Author(s):** Nicholas D. Pyenson, Jeremy A. Goldbogen, A. Wayne Vogl, Gabor Szathmary, Richard L. Drake, Robert E. Shadwick

-  Mendeley - Readers: 46
-  Mendeley - Groups: 1
-  Scopus - Cited by: 2
-  PubMed - References: 1
-  Facebook - Comments: 18
-  Facebook - Likes: 39



## Researchers have Moved Online

ONLINE IN

# 60 SECONDS



Data

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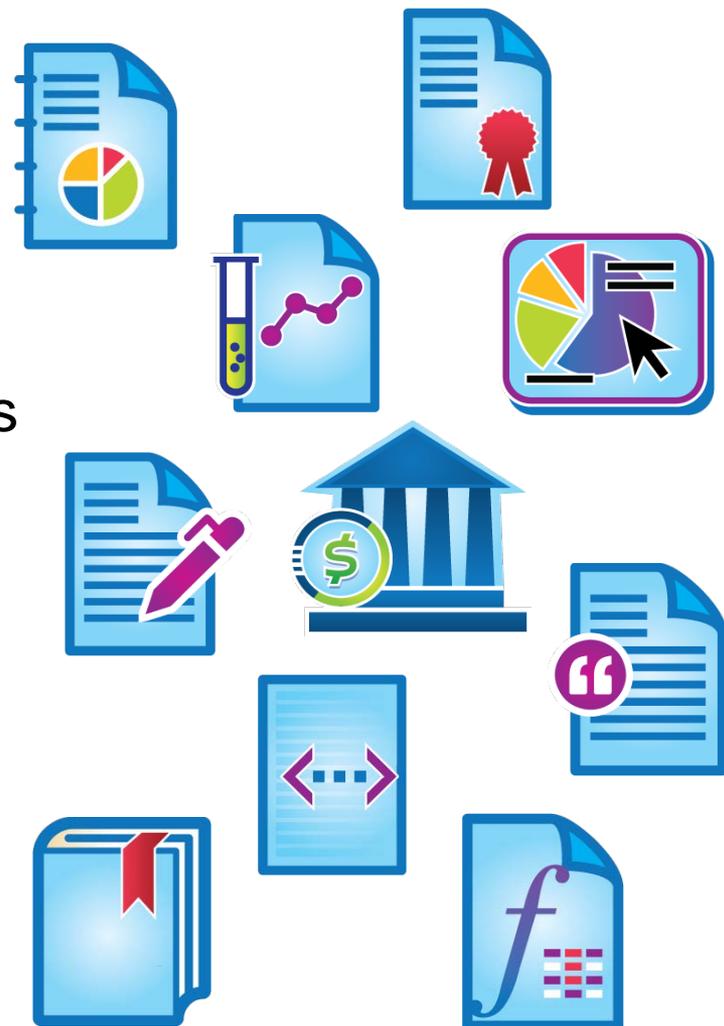
# Scholarly Data Exhaust



“Same” Article, Different Places

# Beyond the Journal Article

- Articles
- Blog posts
- Book chapters
- Books
- Cases
- Clinical Trials
- Conference Papers
- Data Sets
- Figures
- Grants
- Interviews
- Letters
- Media
- Patents
- Posters
- Presentations
- Reports
- Source Code
- Theses / Dissertations
- Videos
- Web Pages



# Sources of Data Exhaust

(Sample sources)

 Amazon

 Bit.ly

 CrossRef

 Delicious

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 dSpace

 EBSCO

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 figshare

 Github

 Goodreads

 Google+

 Medwave

 Mendeley

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 PubMed Central

 Reddit

 Research  
Blogging

 Scopus

 SlideShare

 SourceForge

 Stack Overflow

 Twitter

 USPTO

 Vimeo

 Wikipedia

 Worldcat

 YouTube

# PLUMx Metrics Categories



## USAGE

(clicks, downloads, views,  
library holdings, video plays)



## CAPTURES

(bookmarks, code forks, favorites,  
readers, watchers)



## MENTIONS

(blog posts, comments, reviews,  
Wikipedia links)



## SOCIAL MEDIA

(+1s, likes, shares, tweets)



## CITATIONS

(PubMed Central, Scopus,  
patents)

# PLUM<sup>x</sup> - Samples

# PLUMX Metrics Dashboards

PlumX / Pitt Groups ▾

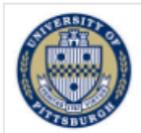


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## University of Pittsburgh

The University of Pittsburgh's PlumX dashboard displays the research impact of researchers from a cross-section of departments throughout the university. Any contribution to the D-Scholarship Institutional Repository is available in PlumX. These contributions enable the per-institute and per-department views. Additionally metrics about the impact of articles in library published journals are

also available.

### Artifact Summary

31617



Government

11962



Article

6215



Thesis

3557



Papers

3439



Paper



### Researchers:



Show All

### Narrow by:

- Digital Collections
- Journals
- Schools and Programs
- Subjects
- University Centers, Institutes, and Research Centers

Show All

All (61920)

Government Document (31617)

Article (11962)

Thesis / Dissertation (6215)

Conference Paper (3557)

Paper (3439)

PrePrint (2311)

Export Data

Other (941)

Book (600)

Book Chapter (555)

Report (345)

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Audio (7)

Case (5)

Syllabus (5)

Code (3)

Interview (3)

Poster (3)

Figure (1)

Data (1)

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Filter...

Analytics

Year	Title	Type	All				
			Captures	Citations	Social Media	Mentions	Usage
2015	Biochemical Kinds	PrePrint			1		62
2015	How do Somatic Markers Feature in Decision Making?	PrePrint			1		86
2015	The North China Nanolithic	Book Chapter					
2014	A new large-bodied oviraptorosaurian theropod dinosaur from the latest Cretaceous of western North America.	Article	10	4	1275	223	44401
2014	Scholarly Communication and Publishing Lunch and Learn Talk #8: Using Bibliometric (Publication and Citation) Indicators to Demonstrate Impact	Conference Paper			6		307
2014	Sex determination: why so many ways of doing it?	Article	65	3	121	2	16512
2014	CD4CD8α lymphocytes, a novel human regulatory T cell subset induced by colonic bacteria and deficient in patients with inflammatory bowel disease.	Article	29	2	35	5	8988
2014	Exact hybrid particle/population simulation of rule-based models of biochemical systems.	Article	17	3	7		3041
2014	Fluphenazine reduces proteotoxicity in C. elegans and mammalian models of alpha-1-antitrypsin deficiency.	Article	2	5	9	5	1273
2014	Genome-wide diet-gene interaction analyses for risk of colorectal cancer.	Article	21		226	56	10385
2014	Mycobacteriophages: windows into tuberculosis.	Article	13	3	77	10	5512
2014	Aflatoxin regulations and global pistachio trade: insights from social network analysis.	Article	2	1	14	5	1226
2014	Burden of total and cause-specific mortality related to tobacco smoking among adults aged ≥ 45 years in Asia: a pooled analysis of 21 cohorts.	Article	8	6	61		7030
2014	Ciliopathy is differentially distributed in the brain of a Bardet-Biedl syndrome mouse model.	Article	2	4	5		1251
2014	Combining experimental evolution with next-generation sequencing: a powerful tool to study adaptation from standing genetic variation.	Article	2	1	25	3	57
2014	Exploring the conformational transitions of biomolecular systems using a simple two-state anisotropic network model.	Article	1			3	3756
2014	Gene-wide analysis detects two new susceptibility genes for Alzheimer's disease.	Article	17	2	12		2506
2014	HIV infection and sexual risk among men who have sex with men and women (MSMW): a systematic review and meta-analysis.	Article	6	2	15		2980
2014	Lack of detectable HIV-1 molecular evolution during suppressive antiretroviral therapy.	Article	14	4	14	2	3154
2014	Rising tides or rising stars?: Dynamics of shared attention on Twitter during media events.	Article	19		115	1	5845
2014	The Personalized Advantage Index: translating research on prediction into individualized treatment recommendations. A demonstration.	Article	14	3	59	13	1872
2014	Correction: Mechanisms of CFTR Functional Variants That Impair Regulated Bicarbonate Secretion in Pancreatic Islets	Article	3	1	17		5961

**Assess and Compare Impact**

# Artifact / Article Level Metrics



Dispensing processes impact apparent biological activity as determined by computational and statistical analyses.

## Usage

PubMedCentral - HTML Views: 84  
 PubMedCentral - PDF Views: 30  
 PLoS - HTML Views: [8346](#)  
 PLoS - PDF Views: [1121](#)  
 EBSCO - PDF Views: 9  
 EBSCO - Abstract Views: 34

## Captures

Mendeley - Readers: [36](#)

## Mentions

Facebook - Comments: 11

## Social Media

Twitter - [www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov): 3  
 Twitter - [dx.plos.org](http://dx.plos.org): 31  
 Twitter - [www.plosone.org](http://www.plosone.org): 29  
 Google+ - +1s: 2  
 Facebook - Shares: 13  
 Facebook - Likes: 20

## Citations

Scopus - Cited by: 5  
 CrossRef - Cited by: 5

# Visualizing Impact: Widgets

## Plum Print



### metrics by PlumX

#### Usage

Clicks: 26

#### Captures

Readers: 47

#### Mentions

Comments: 2

#### Social Media

Shares: 5

Tweets: 25

Likes: 12

#### Citations

Scopus: 12

PubMed: 4

[see details](#)

## Group Widget

PLUMX

### University of Pittsburgh

The University of Pittsburgh's PlumX dashboard displays the research impact of researchers from a cross-section of departments throughout the university. Any contribution to the D-Scholarship Institutional Repository is available in PlumX. These contributions enable the per-institute and per-department views. Additionally metrics about the impact of articles in library published journals are also available.

#### Researchers



#### Recent Artifacts

-  Prostaglandin E2 (PGE2) exerts biphasic effects on human tendon stem cells.
-  The Library as Publisher
-  A social scientific framework for social systems in online video games: Building a better looking for raid loot system in World of Warcraft
-  Fiction Criticizing Reality: Abbas Kiarostami and the Cracked Windshield of Cinema
-  Borderlands and Border-Crossers: Migrants and Boundaries in the Greater Caribbean, 1840-1940

[see details](#)

## Author Widget

PLUMX

### Michael Pinsky

Professor of Critical Care Medicine, Bioengineering, Anesthesiology, Cardiovascular Diseases, and Clinical & Translational Sciences



#### Artifact Summary

- |   |  |
|---|--|
|  Article: 341        |  Letter: 5                |
|  Chapter: 82         |  Case: 5                  |
|  Book: 58            |  Report: 2                |
|  Other: 14           |  Thesis / Dissertation: 1 |
|  Conference Paper: 7 |  |

#### Recent Artifacts

-  Robust model-based quantification of global ventricular torsion from spatially sparse three-dimensional time series data by orthogonal distance regression: evaluation in a canine animal model under different pacing regimes.
-  Addressing education debt: student and teacher perceptions of successful teaching of low-income African American students
-  Clinical use of respiratory changes in arterial pulse pressure to monitor the hemodynamic effects of PEEP.
-  Effects of norepinephrine on the renal vasculature in normal and endotoxemic dogs.
-  Informal caregiver burden among survivors of prolonged mechanical ventilation.

[see details](#)

# PLUMX Metrics Dashboards

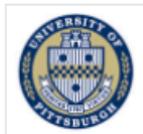
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## University of Pittsburgh

The University of Pittsburgh's PlumX dashboard provides a cross-section of departments through the Institutional Repository is available in Faculty department views. Additionally metrics

also available.

### Researchers:



### Select Metrics

Select Metrics | Select Artifact Type | Restrict Year

Select all / Clear all

- Captures
  - Bookmarks
  - Groups
  - Readers
  - Favorites
- Citations
  - Cited by
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  - +1s
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  - Shares
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  - Tweets
- Mentions
- Usage

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### Summary

11962



Article

6215



Thesis

9557



Papers

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## Artifacts by Publication Year - University of Pittsburgh

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Artifacts by Publication Year

[Researchers Overview](#)

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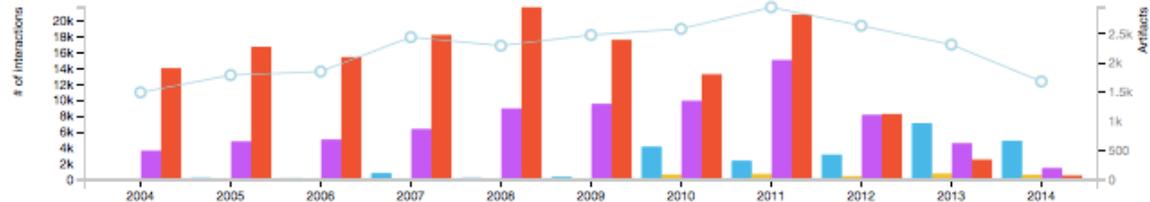
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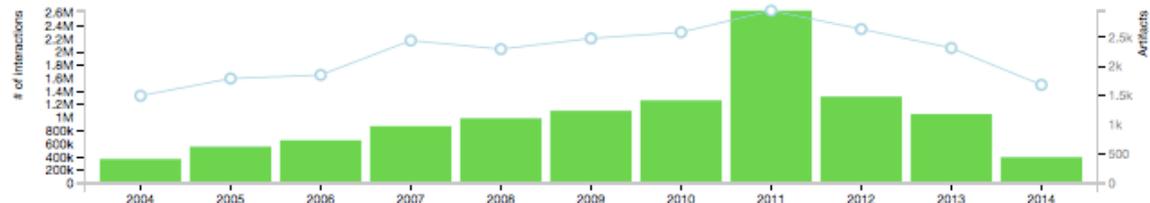
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### Metrics by publication year



	Social Media	Mentions	Captures	Citations	Artifacts
2014	4936	669	1480	556	1686
2013	7152	810	4603	2558	2316
2012	3181	487	8170	8295	2640
2011	2426	759	5050	20785	2955
2010	4181	696	9928	13273	2586
2009	390	118	9544	17598	2481
2008	276	222	8977	1695	2298
2007	859	180	6383	18212	2444
2006	251	117	5068	15437	1855
2005	281	64	4828	16742	1794
2004	178	89	3670	14042	1499

### Usage by publication year



	Usage	Artifacts
2014	397919	1686
2013	55285	2316
2012	321966	2640
2011	2634125	2955
2010	266123	2586
2009	1107186	2481
2008	991315	2298
2007	872618	2444
2006	656813	1855
2005	558097	1794
2004	370459	1499

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## Researchers Overview - University of Pittsburgh

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Artifacts by Publication Year

**Researchers Overview**

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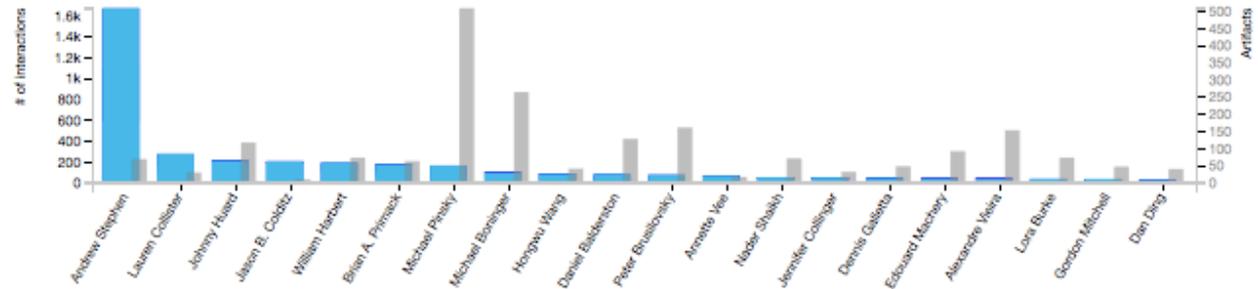
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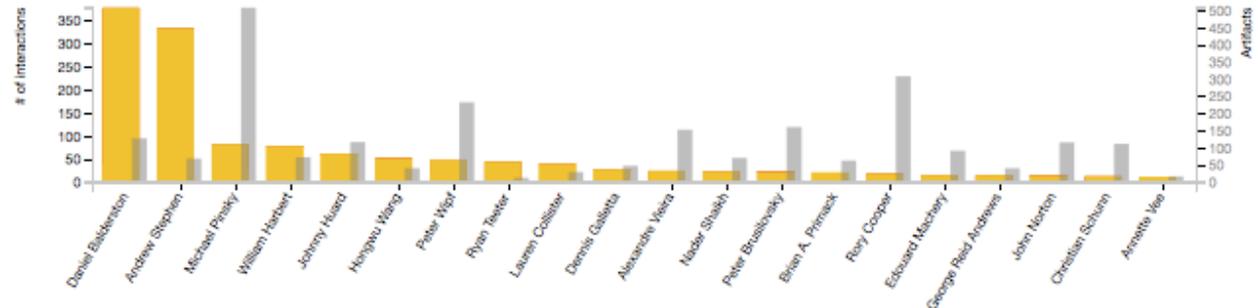
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### Social Media



### Mentions





***Thank you***



# *Appendix*

# Changing the focus on metrics

COUNTER

how much **your institution** uses the collections

Article-level metrics and PlumX

how much the world uses **your research**

# PLUMX means:

- **Understand and evaluate your output beyond citation metrics.**
- **See who is using your output and obtain immediate feedback.**
- **Providing 4 more categories of metrics than reference databases (WoS, Scopus) and tools/analyses based on citations.**
- **It's important to –**
  - understand what is happening to your output now and in the years before you even see first citations
  - have a more holistic view of your output in the digital environment
- **Support research for areas outside of the STEM disciplines**
  - Humanities and Social Sciences underserved by WoS and Scopus
- **Going beyond articles by supporting a wide array of research output types.**
- **Remaining database and publisher neutral.**
- **See who you're rising stars are now, not in the future, when it may be too late.**

# PLUMX Author Dashboard

PlumX Groups ▾



Author

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## Antony Williams

Connections in Chemistry

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[Microsoft Academic Search](#), [Impact Story](#), [Wikipedia](#), [SlideShare](#), [YouTube](#), [Mendeley](#), [PROskore](#),  
[ResearchGate](#), [amazon.com](#), [Vizify](#), [visualize.me](#), [Pinterest](#), [ORCID](#), [Vimeo](#)

### Researcher from:

[Sample Profiles / Royal Society of Chemistry](#)

My passion is connecting people to chemistry. Over the past decade I held many jobs and responsibilities including the direction of the development of scientific software applications for spectroscopy and general chemistry, directing marketing efforts, sales and business development collaborations for the company. I have almost... [+ More](#)

[All \(502\)](#)
[Presentation \(266\)](#)
[Article \(127\)](#)
[Paper \(38\)](#)
[Video \(28\)](#)
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[Web Page \(1\)](#)
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### Impact by Type: All



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## Artifacts by Publication Year - Antony Williams

Download as...

Artifacts **Publication Year**

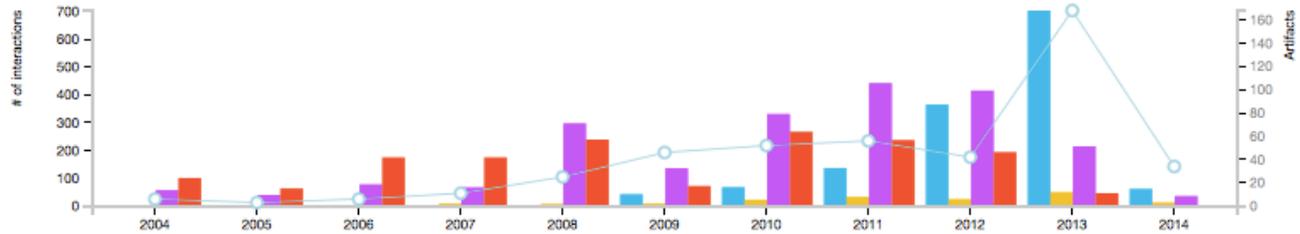
Artifacts Overview

Sunburst

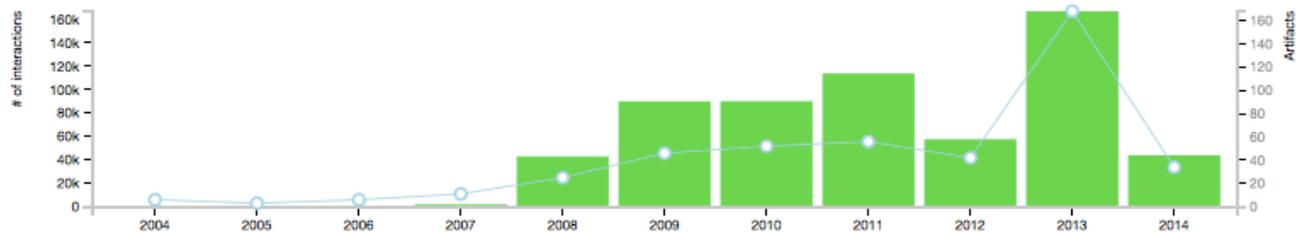
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### Metrics by publication year



### Usage by publication year



# PLUMX

# Next Generation Technology

