

CRediT: Discussing Next Steps

Cory Craig, University of California at Davis Mohammad Hosseini, Dublin City University Alison O'Connell, Collaborative Knowledge Foundation 10/10/18 Slide 2

Cory Craig

Workshop Outline

- Introductions
- Overview of CRediT
- Adoption, Implementation, Value Alison O'Connell
- Ethical Issues
 Mohammad Hosseini
- Breakout Sessions:

Ethics; Tweaking CRediT Roles; Barriers to Implementation; Accessibility & Visual Display; Combining Efforts; Others?

- Breakout sessions report back
- What's Next
- Open Google Folder: https://tinyurl.com/ForceCredit
 (materials for workshop participants; also avail. in print)





Overview of CRediT:

authorship in academia & why we need contributor statements

Cory Craig Physical Sciences & Engineering Library University of California, Davis, USA cjcraig@ucdavis.edu Comments: @cttcraig

Growing consensus:

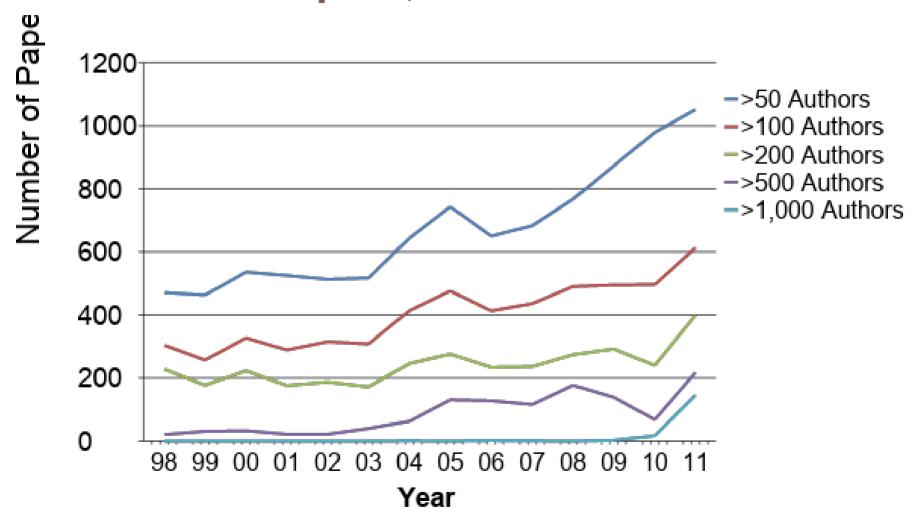
- Author contributions to published research should be
 - transparent
 - accurate
 - evident to readers
 - machine-readable

How did we get here & how do we achieve this?

Authorship

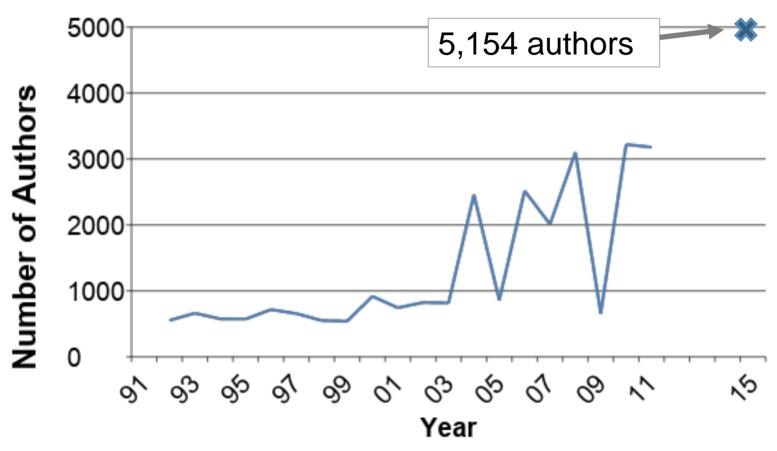
- Central to academic scholarship & reward
- Credit & accountability
- Increasing numbers of authors on scientific papers
 - Ease of collaboration
 - Funding availability for large projects
 - Team Science

Multiauthor Papers, 1998-2011



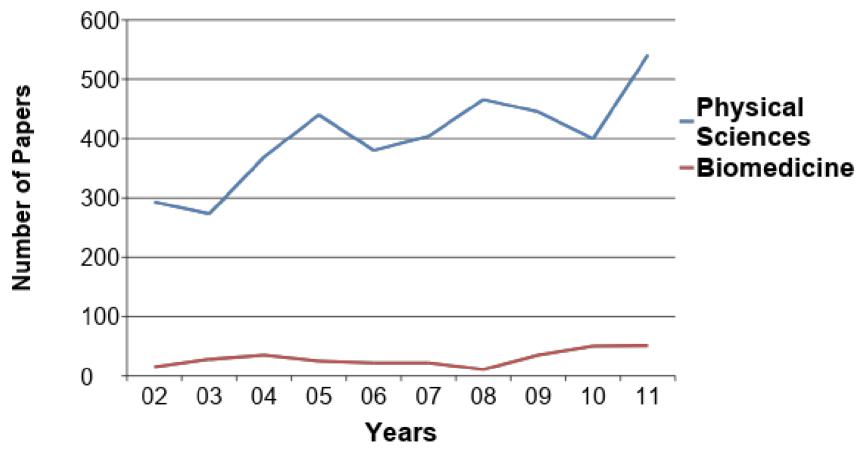
Source: King, C. July 2012. ScienceWatch Newsletter, Thomson Reuters (now Clarivate Analytics). Used with permission.

Maximum number of authors on a single paper, by year, 1992-2011, 2015



Source 1992-2011 data: King, C. July 2012. ScienceWatch Newsletter, Thomson Reuters (now Clarivate Analytics). Used with permission.

Physical Sciences & Biomedicine Papers: >100 authors, 2002-2011



Source: King, C. July 2012. ScienceWatch Newsletter, Thomson Reuters (now Clarivate Analytics). Used with permission.

Authorship: definitions

- No universal criteria exist for conferring authorship
 - Examined authorship definitions for: American Chemical Society (ACS);
 International Committee of Medical Journal Editors (ICMJE); Council of Science Editors (CSE), American Physical Society (APS)
 - Significant/substantial contributions to the work (ALL)
 - Recognize & be accountable for the work;
 - Obtain consent of all co-authors (to be authors & accountable)
- But: roles and types of contributions are not defined.

Authorship: order

Order of Authors:

- Practices vary between and within disciplines
- Thought to indicate something about who did what on the paper
- Readers implicitly allocate authorship credit without defined standards

Collaboration in Science

- Allows important contributions;
- Current system does not encourage or reward

Authorship model → Contributorship model

- Assumptions about credit are no longer needed
- Problem becomes: development and implementation of a contributorship model everyone(?) agrees on

Publishers & Contributor Statements:

- Authorship Policies: many journals have (62.5%)
- Authorship Contributions Policy: only 5.3% require authors to describe contributions (same study)
- Where contribution statements used great variation:
 - predefined list of roles
 - free-text statements from authors
 - information collected but not published

CRediT Contributor Roles:

CRediT Contributor Roles			
Conceptualization Data Curation			
Methodology	Writing – Original Draft Preparation		
Software Writing – Review & Editing			
Validation Visualization			
Formal Analysis	Supervision		
Investigation	Project Administration		
Resources	Funding Acquisition		

- 14 roles & definitions: https://casrai.org/credit/
- Developed working with researchers & editors
- Not intended to define authorship
- Goal capture work that produce scholarly publications

CRediT: Recommendations for applying

- List All Contributions: whether from those formally listed as authors or individuals named in acknowledgements;
- Multiple Roles Possible: individual contributors can be assigned multiple roles, and a given role can be assigned to multiple contributors;
- **Degree of Contribution Optional:** the degree of contribution can optionally be specified as 'lead', 'equal', or 'supporting';
- Shared Responsibility: corresponding authors assume responsibility for assigning roles, all contributors review and confirm assigned roles;
- Make CRediT Machine Readable: CRediT tagged contributions should be coded in JATS XML

Related Efforts: OpenVIVO

- OpenVIVO
 - free, open-hosted semantic web platform
 - shares open data about scholarship
 - anyone can create a profile
- semantic triple to record all information
 - (a set of three entities and a description of the relationships between them)
- classes, data & object properties from ontologies
- Contribution Role Ontology: provides 60 contribution roles

OpenVIVO: Contribution Role Ontology

Please indicate the contribution that	you made to this work	
Hide roles		
Author		
Writing Original Draft	☐ Figure Development	
Editing and Proofreading	☐ Translator	
Background and Literature Search		
Conceptualization		
Preservation		
Archivist	Digital Preservation	□ Conservator
Data		
Data Curation	Data Analysis	Data Integration
☐ Metadata Application	 Statistical Data Analysis 	Data Quality Assurance
Data Entry	Data Collection	Data Modeling
Data Visualization	Data Aggregation	Data Standards Developer
☐ Funding Acquisition		
Study Investigation		
Methodology		
☐ Technique Development	☐ Guideline Development	Study Design
Protocol Creation	Standard Operating Procedure Developme	
Project Management		
☐ Team Management		
Regulatory Administration		
Policy Development		
Communication		
☐ Marketing	☐ Graphic Design	Documentation
Networking Facilitation	Website Development	

Key Differences

	CRediT	OpenVIVO
Number of contributor roles	14	60
Assigning contribution data	collected for all authors in article submission process	each author identifies their contributions in their individual profile
Where data reside	article XML metadata (recommended, but not implemented by many publishers)	OpenVIVO platform (open and machine readable)

Summary

Existing authorship conventions

- don't capture all roles that create scholarly publications
- not kept pace with the capabilities of web publishing

CRediT:

standardized method of including contribution data

What does implementation look like? What are the next issues to resolve?



Adoption & implementation of the CRediT taxonomy



Alison McGonagle-O'Connell Collaborative Knowledge Foundation





About me (declarations)

- Coko, Editoria Community Manager (2018 present)
- Aries Systems, Marketing Manager (2014 2018)
- First joined CRediT Program Committee (2015 present)
- ISMTE, Board of Directors (2018 present)
- CSE, Marketing Committee (2015 present)
- Peer Review Week (2015 present)
- Elected Library Trustee, So. Hampton, NH (2016 present)
- Industry background: commercial publishers & SaaS



What I am going to talk about

- 1. Adoption & implementation
- 2. First insights into its value!





Term	Definition
Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.
Methodology	Development or design of methodology; creation of models.
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.
Validation	Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.
Formal Analysis	Application of statistical, mathematical, computational, or other formal techniques to analyse or synthesize study data.
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.
Writing – Original Draft	Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).
Writing – Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.
Project Administration	Management and coordination responsibility for the research activity planning and execution.
Funding Acquisition	Acquisition of the financial support for the project leading to this publication.





CRediT

CRediT is high-level taxonomy, including 14 roles, that can be used to represent the roles typically played by contributors to scientific scholarly output. The roles describe each contributor's specific contribution to the scholarly output.

Background

CRediT grew from a practical realization that bibliographic conventions for describing and listing authors on scholarly outputs are increasingly outdated and fail to represent the range of contributions that researchers make to published output.

Furthermore, there is growing interest among researchers, funding agencies, academic institutions, editors, and publishers in increasing both the transparency and accessibility of research contributions.

https://casrai.org/credit/

CRediT implemented across increasing number of outlets

Publishers

American Association of Petroleum Geologists

BMJ Open Science

British Psychological Society

Cell Press

Dartmouth Journal Services

De Gruyter Open

Duke University Press

eLife

Elsevier

Evidence Based Communications

F1000 Research

Geological Society of London

Health & Medical Publishing Group

International Centre of Insect Physiology and Ecology

The Journal of Bone & Joint Surgery

KAMJE Press

Lippincott Williams & Wilkins

MA Healthcare

MIT Press

Oman Medical Specialty Board

Oxford University Press

Public Library of Science (Plos)

SAE International

SLACK Incorporated

Springer

Springer Publishing Company

Wiley VCH

Integrators

Allen Press/ Peer Track Aries Systems/ Editorial Manager Coko Foundation/ xPub River Valley/ ReView

Publishing Outlets

Gates Open Research HRB Open Research Wellcome Open Research





CRediT taxonomy at PLOS

- Implementation June 2016 requirement
- Author interface:
 - Replacement of 5-term contributions list
 - Each author must have at least one contribution
 - Assigned by corresponding author
 - For PLOS Medicine: mapping to ICMJE criteria
- Human- and machine-readable:
 - JATS draft

 https://casrai.org/credit/
 Source: Veronique Kiermer, PLOS 2018





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RESEARCH ARTICLE

More than 75 percent decline over 27 years in total flying insect biomass in protected areas

Published: October 18, 2017 • https://doi.org/10.1371/journal.pone.0185809



Article	Authors	Metrics	Comments	Related Content
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Discussion

Supporting information

Acknowledgments

Abstract

Global declines in insects have sparked wide interest among scientists, politicians, and the general public. Loss of insect diversity and abundance is expected to provoke cascading effects on food webs and to jeopardize ecosystem services. Our understanding of the extent and underlying causes of this decline is based on the abundance of single species or taxonomic groups only, rather than changes in insect biomass which is more relevant for ecological functioning. Here, we used a standardized protocol to measure total insect biomass using Malaise traps, deployed over 27 years in 63 nature protection areas in Germany (96 unique

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More than 75 percent decline over 27 years in total flying insect biomass in protected areas

Caspar A. Hallmann . Martin Sorg, Eelke Jongejans, Henk Siepel, Nick Hofland, Heinz Schwan, Werner Stenmans, Andreas Müller, Hubert Sumser, Thomas Hörren, Dave Goulson, Hans de Kroon

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Roles: Conceptualization, Formal analysis, Investigation, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing

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Supporting information

Acknowledgments

References

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Published: October 18, 2017 • https://doi.org/10.1371/journal.pone.0

Authors

Roles: Formal analysis, Resources, Software, Validation

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Abstract

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Published: October 18, 2017 • https://doi.org/10.1371/journal.pone.0185809

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About the Authors

Caspar A. Hallmann

Roles: Conceptualization, Formal analysis, Investigation, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing

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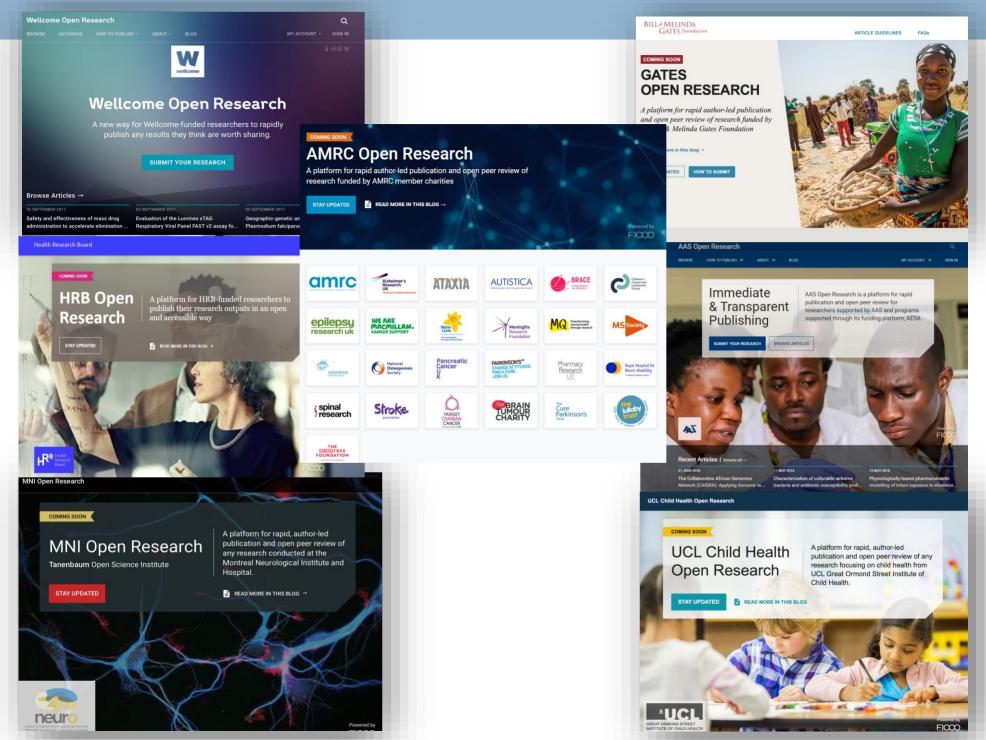




CRediT taxonomy at F1000

- Implementation across all F1000 Open Research Platforms since 2017
- Author interface:
 - Within submission process
 - Each author must have at least one contribution
 - Assigned by corresponding author
- Human- and machine-readable:
 - JATS draft





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RESEARCH ARTICLE

The age of heterozygous *telomerase* mutant parents influences the adult phenotype of their offspring irrespective of genotype in zebrafish [version 2; referees: 2 approved]

Catherine M. Scahill¹, Zsofia Digby^{1,2}, Ian M. Sealy¹, Richard J. White 1, Neha Wali¹, John E. Collins¹, Derek L. Stemple¹, Elisabeth M. Busch-Nentwich 1, 3

Author details

- Wellcome Trust Sanger Institute, Wellcome Genome Campus, Hinxton, UK
- ² Department of Veterinary Medicine, University of Cambridge, Cambridge, UK
- ³ Department of Medicine, University of Cambridge, Cambridge, UK

Catherine M. Scahill

Roles: Conceptualization, Investigation, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing

Zsofia Digby

Roles: Investigation, Visualization

Ian M. Sealy

Roles: Data Curation, Formal Analysis, Visualization

Richard J. White

Roles: Data Curation, Formal Analysis, Visualization

Neha Wali

Roles: Investigation

John F. Collins

Roles: Conceptualization

Derek L. Stemple

Roles: Funding Acquisition, Resources

Elisabeth M. Busch-Nentwich

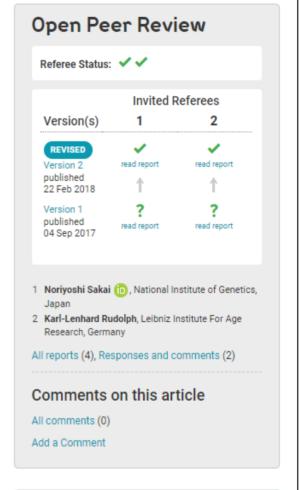
Roles: Conceptualization, Funding Acquisition, Resources, Supervision, Writing – Original Draft Preparation, Writing –

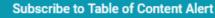
Review & Editing







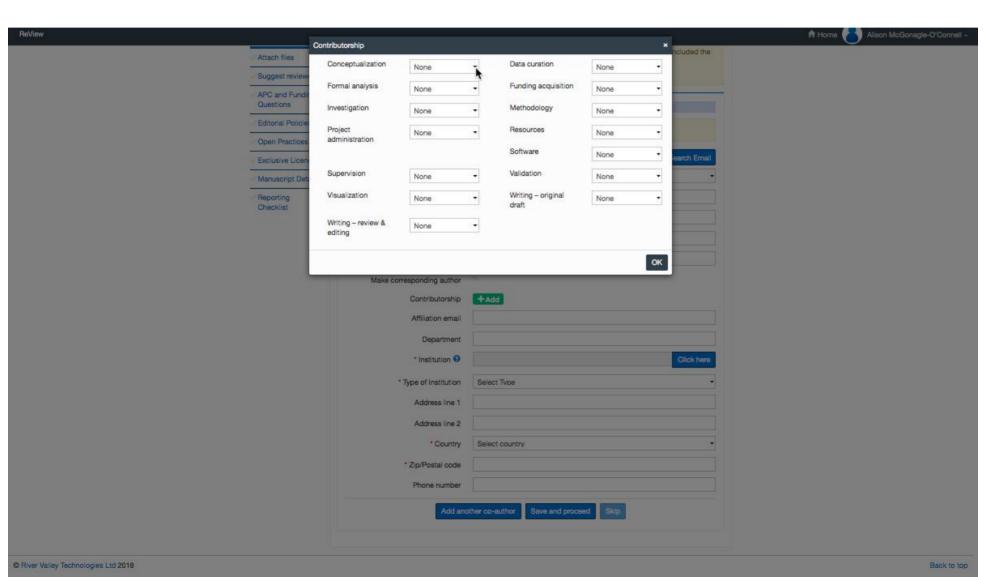




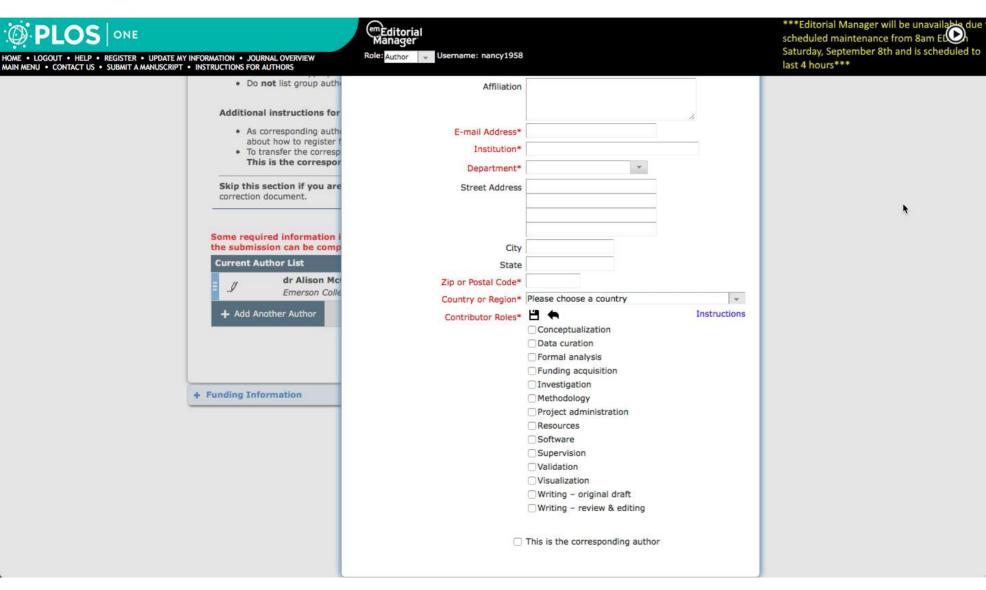
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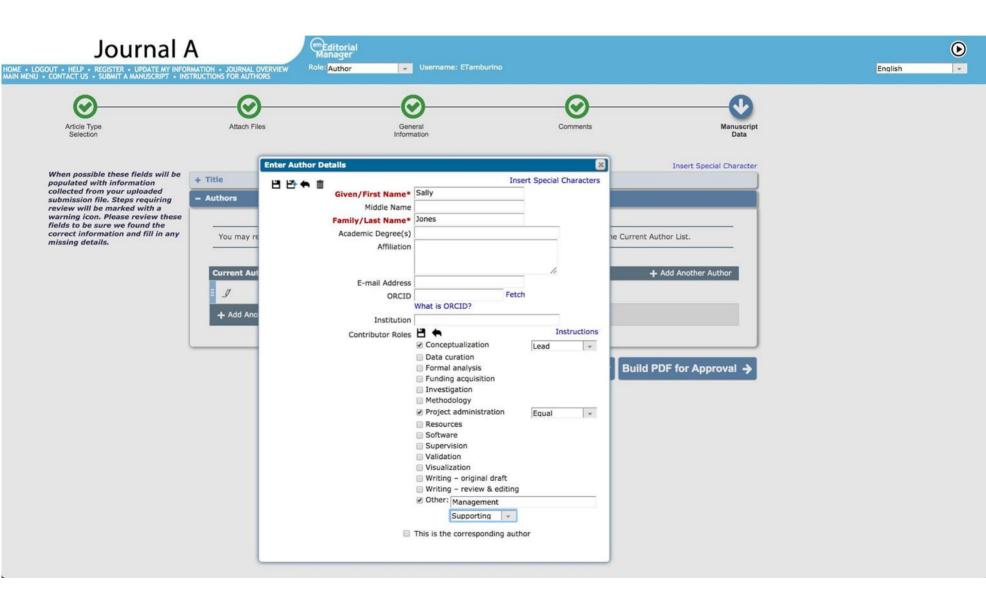
Integration in Manuscript Submission Systems: River Valley's ReView



Integration in Manuscript Submission Systems: Aries Systems' Editorial Manager



Integration in Manuscript Submission Systems: Aries Systems' Editorial Manager





PERSPECTIVE

Transparency in authors' contributions and responsibilities to promote integrity in scientific publication

Marcia K. McNutt^{a,1}, Monica Bradford^b, Jeffrey M. Drazen^c, Brooks Hanson^d, Bob Howard^e, Kathleen Hall Jamieson^f, Véronique Kiermer^g, Emilie Marcus^h, Barbara Kline Pope^{i,2}, Randy Schekman^{j,k}, Sowmya Swaminathanⁱ, Peter J. Stang^m, and Inder M. Vermaⁿ

Edited by Karen S. Cook, Stanford University, Stanford, CA, and approved January 18, 2018 (received for review August 30, 2017)

In keeping with the growing movement in scientific publishing toward transparency in data and methods, we propose changes to journal authorship policies and procedures to provide insight into which author is responsible for which contributions, better assurance that the list is complete, and clearly articulated standards to justify earning authorship credit. To accomplish these goals, we recommend that journals adopt common and transparent standards for authorship, outline responsibilities for corresponding authors, adopt the Contributor Roles Taxonomy (CRediT) (docs.casrai.org/CRediT) methodology for attributing contributions, include this information in article metadata, and require authors to use the ORCID persistent digital identifier (https://orcid.org). Additionally, we recommend that universities and research institutions articulate expectations about author roles and responsibilities to provide a point of common understanding for discussion of authorship across research teams. Furthermore, we propose that funding agencies adopt the ORCID identifier and accept the CRediT taxonomy. We encourage scientific societies to further authorship transparency by signing on to these recommendations and promoting them through their meetings and publications programs.

authorship principles | research transparency | scientific integrity

What I am going to talk about

1. Adoption & implementation

2. First insights into its value!





First insights into CRediT value

Vincent Larivière, Université de Montréal

Cassidy R. Sugimoto, Indiana University Bloomington



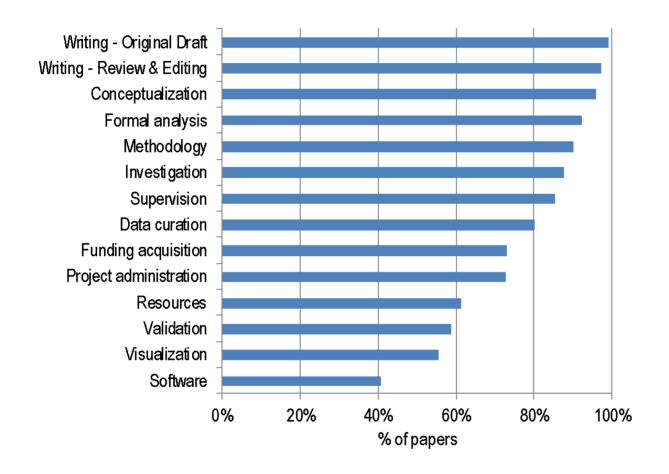




Dataset: PLOS contributions July 2017-June 2018

Journal	N. papers	Mean N. of CRediT Contributions per paper	Mean N. of authors per paper
PLOS Biology	1	14.0	1.0
PLOS Computational Biology	376	11.1	5.2
PLOS Genetics	375	11.2	9.1
PLOS Medicine	129	10.9	15.5
PLOS Neglected Tropical Diseases	607	11.3	10.0
PLOS One	13,667	10.8	7.2
PLOS Pathogens	411	11.2	10.1
All PLOS Journals	15,566	10.9	7.5

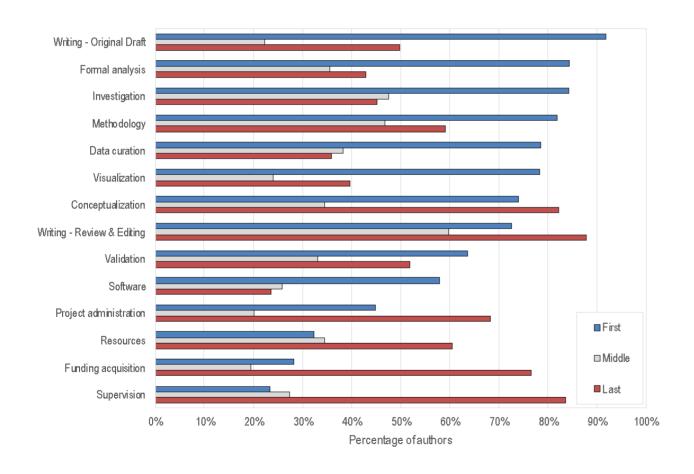
Percentage of papers with specific CRediT role



Each role reported in >50% articles (except software 40%)

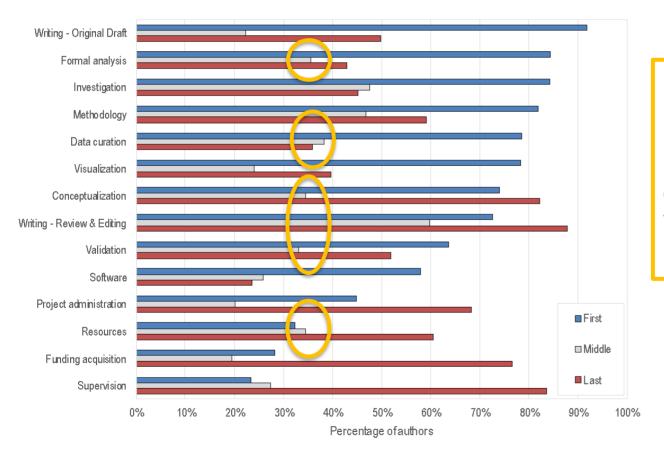
Vincent Larivière, Cassidy Sugimoto, preliminary results

What do 'middle authors' do? % authors performing contribution by author's order



Vincent Larivière, Cassidy Sugimoto, preliminary results; subset data: n=11k

What do 'middle authors' do? % authors performing contribution by author's order



1/3 contribute to:

Formal analysis
Data curation
Conceptualization
Validation
Resources

Vincent Larivière, Cassidy Sugimoto, preliminary results; subset data: n=11k

Some ethical issues involved in scientific authorship, and using the CRediT taxonomy.

Mohammad Hosseini

Dublin City University

PhD Candidate

Research Ethics and Research Integrity







Why authorship matters?

An aggregator of interests for different stakeholders:

- Science: Openness an existential element of the conduct of science
- Scientific institutions: Citation stats, funds, ranking systems
- Scientists: Coin of the Realm (Bigioli), Gift economy (Hagstrom), Symbolic capital (Bourdieu), Credibility Cycle (Latour)

Scientists: Plato and the art of Pay

Each professional has two different sets of skills.

- Professional skills unique to their job
- The art of pay





Contribution VS Authorship

The relationship between contribution and Authorship is a contentious issue.

CRediT increases the transparency of collaborations, but does not solve the authorship conundrum. 2 Contributions

Let's be clear

- CRediT is not a checklist for attribution of authorship.
- CRediT is not meant to help addressing authorship order.
- CRediT is not a computational tool, that said its developers have envisaged 'lead', 'equal', or 'supporting' roles for complex projects.

Some ethical issues: Non-academic contributions

CRediT=> All contributions should be listed

- What about the non-academic contributions? The postman, or secretary/admin staff etc.
- What about the contribution of participants in quantitative or qualitative surveys. Especially, in case of the latter, participants make meaningful contributions to the project that is indeed intellectual, irreplaceable and necessary.
- Peer-reviewers or ethics committee comments?

Some ethical issues: Funding acquisition VS provision

Funding Acquisition => Acquisition of the financial support for the project leading to this publication.

- Under the role of funding, a contributor will be listed who facilitated receiving the money but 'where did the money come from?' remains unanswered.
- Isn't that a form of contribution?

Some ethical issues: Justice and Fairness

- Although CRediT provides a more specific understanding of tasks and contributors roles, it leaves questions about the importance of each task in relation to the entire work unanswered.
- For instance, while data visualization might only take about three days, data collection might have taken months. But in the end, they are both being seen as contributors.

Case study-Applying CRediT in practice

Project: Discovery of novel pharmaceuticals from marine and desert microorganisms.

 Involved disciplines and sub-disciplines in the research part (before the pharmacology part):
 Chemistry (natural product chemistry, biochemistry, organic chemistry, analytical chemistry); Earth sciences (Marine sciences and marine biology, desert research); Biology (microbiology, molecular biology)

Case study*

Project Description:

- Microorganisms from extreme environments such as the deep seas, cold seas and hyper arid deserts have been shown to produce a range of complex natural products with high biological activity. In this project you will investigate the chemistry of these compounds and their potential for treating a range of diseases. Via collaborations we obtain desert and marine samples from which you will isolate unique bacterial and fungal strains. Cultivating these under the compounds in a range of biological as different conditions gives rise to varied metabolic profiles. We have new facilities for cultivating bacteria at very high pressures to mimic deep sea environments. You will use a range of chromatographic techniques to isolate the compounds from these cultured microbes. The next step will be to identify their chemical structures using spectroscopic techniques followed by testing says to ascertain their biological activity and potential for use against human diseases.
- As part of this project you will gain skills in microbiology, natural product chemistry and biological
 testing. You will work in a committed group of scientists interested in investigating natural resources
 for their potential to treat disease. The group is located in the Marine Biodiscovery Centre which
 houses state-of-the-art facilities and scientists with skills in microbiology, molecular biology, chemical
 analysis and natural product chemistry.

Knowledge: Organic chemistry, Nuclear magnetic resonance spectroscopy and mass spectrometry

^{*} Special thanks to Stephen Lyons for explaining the tasks and involved steps.

Step	Tasks involved	Contributor(s) involved	Correlating
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		item in CRediT
Securing money	- Writing a winning proposal	- Supervisor	
Overall supervision	- Managing the process	- Supervisor	
	- Networking	- Other colleagues	
Design the project and its component	- Thinking of different steps and details of the project -	-Supervisor	
	Getting ethical approval if needed		
Following up on every step and making	- Making calls and appointments with people and follow ups	- Student (junior researcher)	
things happen			
Pick a disease	- Picking a relevant but well understood disease.	- Supervisor	
	- Find a pharmaceutical tailored to exploit the weakness for	- In case of collaboration with industry,	
	treatment.	Pharmaceutical company	
How to treat it?	- This will depend on the disease: location of illness, does it	- Supervisor	
- Pill/Injection/Cream	manifest on the skin? Does it effect bones? These will	-Pharmacologist	
•	dictate the treatment.		
Providing pathogen/disease sample	Providing the sample	-Supervisor	
- Company	How to treat it?	- Microbiologist	
- Collaborator			
-Department			
Specifying what microorganisms will be	- Check whether IP is involved	- Supervisor	
used		- Student (junior researcher)	
Getting marine sample	- Collecting samples	- Requisition team (diver, boat)	
3	- Culturing samples	- Microbiologist	
	- Preserving samples		
	- Shipping samples		
Getting desert sample	- Collecting samples	- Requisition team (desert explorer)	
	- Culturing samples	- Microbiologist	
	- Preserving samples	l marcaneragian	
	- Shipping samples		
Deal with bacteria and microorganisms	- Keeping samples sterile to prevent contamination.	- Supervisor	
(micro biology)	and the second s	- Student (junior researcher)	
(e.e z.e.egy)		- Lab owner	
		- Student nr.2	
School in the university that provides	- Material resources	- Manager of the lab	
laboratory resource	Material resources	- Head of school	
Analysing data, statistics	- Computational analysis	- Software specialist	
Data validation	- Running of tests	- Student (junior researcher)	
Data Tandation	- Treating disease with chosen microorganisms	- Student nr.2	
	- Conclude findings	- Ctddork Fill 2	
Writing	- Drafting the paper	- Student (junior researcher)	
· · · · · · · · · · · · · · · · · · ·	Training the paper	- Supervisor	
Writing	- Revising and submitting the paper	- Student (junior researcher)	
l vviidii9	Trovioling and oddinitaling the paper	Supervisor	

Case study-reflections and thoughts

- Do CRediT roles correspond properly to complicated projects?
- Are there any contribution types and/or contributors that are likely to be omitted?
- Can you think of examples from other disciplines?

Online Poll-1

Please go to www.sli.do and enter 8255

Should non-academic participants be included in the list of contributors?

- YES, all contributions must be included.
- YES, but only those who make direct intellectual contribution to the research process.
- NO, contributors must be involved in all stages of the research and make intellectual contributions.

Some ethical issues, Who is an author?

- Authorship is different in each period and discourse (Foucault, 1979).
- Although CRediT is not intended to define what constitutes authorship (Brand et al. 2015), CRediT can be a stepping stone for the evolution of the authorship and author function in academia.

Online Poll-2

Please go to www.sli.do and enter 8255

Once listed as a contributor...

- I expect to be an author as well.
- I will only ask to be an author if I meet journal's authorship criteria.
- Once my contribution is acknowledged, I don't really mind if my name is listed among the authors or not.

Breakout Sessions: Topics

For each topic:

- Relevant materials: https://tinyurl.com/ForceCredit (& in print)
- Each group: identity potential solutions or necessary steps

Topic	Issue Addressed by Breakout Group
Ethics and Tweaking CRediT Roles	How does using CRediT impact the byline? Should the 14 CRediT roles be changed, expanded, extended beyond science?
Barriers to Implementation	Identify barriers and solutions.
Accessibility & Visual Display	How can CRediT roles be prominent & easily electronically accessible? How should contribution info be displayed? Is there a visual solution? Heatmap, grid, other visual solutions?
Combining Efforts	How can CRediT and OpenVIVO work together?
Other ideas?	

Online Poll-3

Please go to www.sli.do and enter 8255

Ideas for the breakout sessions:

- Ethics and Tweaking CRediT Roles
- Barriers to Implementation
- Accessibility & Visual Display
- Combining Efforts
- Other ideas?

BREAKOUT SESSIONS

Breakout Sessions:

Ethics; Tweaking CRediT Roles; Barriers to Implementation; Accessibility & Visual Display; Combining Efforts; Others?

- Focus: Identify problems & solutions
- Breakout sessions report back
- Open Google Folder: https://tinyurl.com/ForceCredit
 (materials for workshop participants; also avail. in print)

Breakout session – Ethical Aspects

A few questions to consider

- Can you think of forms of contribution that are not covered in the current list of tasks?
- What do you think is the best way of using the CRediT taxonomy in parallel with the Byline?
- What is your experiences with authorship and how will using CRediT effect that?
- Should the 14 CRediT roles be changed, expanded, extended beyond science or is it better to have a different taxonomy for non-STEM disciplines?

Online pool-4

Please go to www.menti.com and press: 829623

CRediT word cloud

- Three positive words about CRediT
- Three negative words about CRediT

What's Next?

- What's Next
 - Building awareness of CRediT significant interest
 - Duraspace/CASRAI supporting implementations of CRediT
 - Feedback routes working to future versions/keeping
 CRediT current (while practical)
 - More analysis & usage
 - Links to ORCID & Crossref metadata
 - Discuss! Participate!
- Summary of workshop will be shared with CRediT program committee, then forwarded to session participants