



Open Research Publishing: enabling more holistic reporting and evaluation of research

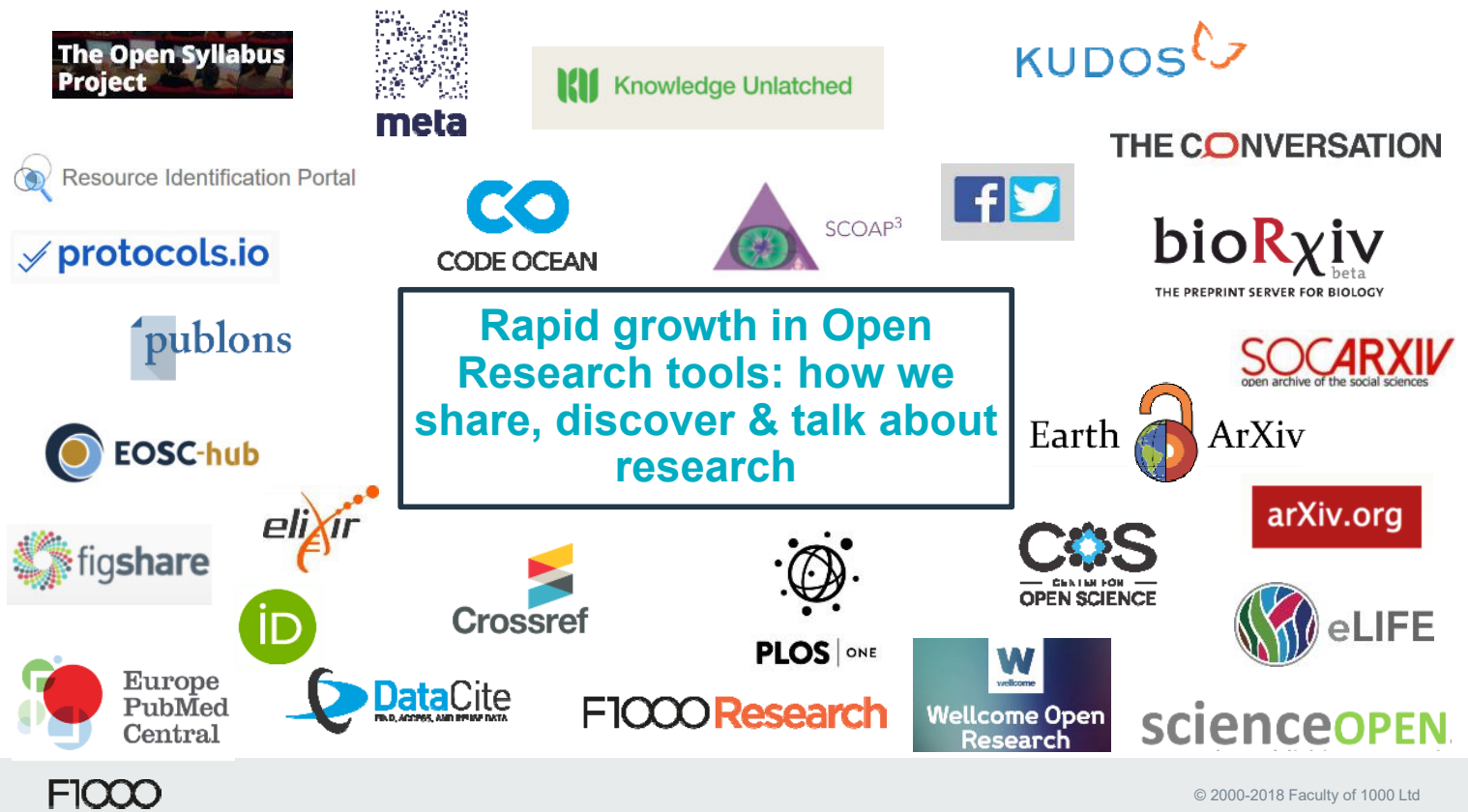
Rebecca Lawrence, PhD
Managing Director, F1000 Group
rebecca.lawrence@f1000.com

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Challenges with existing publishing system

- Much research is not accessible – behind paywalls
- Long delays in sharing new findings
- Biases and conflicts in anonymous editorial decisions
- Lack of data supporting the findings → hard to verify & reuse
- Much good research never published → skews our understanding
- Significant research waste

Open Research aims to: *increase research quality, boost collaboration, speed up the research process, make the assessment of research more transparent, and promote public access to scientific results*



Main barriers to uptake of Open Research

- Currently researchers *typically judged by Impact Factor/journal* brand of research articles
- Impact Factors/brands ingrained* in the assessment and evaluation system
- Impact Factors/brands very simple/easy* to use – any replacement will naturally be more complex so no incentive to shift without being pushed

BUT, now moved on from print, no need for journals:

- readers don't need them to find articles – search PubMed, Google Scholar, Scopus etc
- only authors need them for the reflected benefit they provide via their brand

Desirable features of a communication system

Key is to separate publication from evaluation

- Research **be openly accessible**; text and data mineable
- Researchers be able to **share all research findings** – whether groundbreaking, confirmatory, null/negative, incremental etc
- Research community be able to access & view new discoveries **without delay**
- Data underpinning findings be FAIR to **support verification and reuse**
- Peer reviewers receive due credit** for their contribution to scholarly discourse
- New discoveries **judged according to its intrinsic value** and NOT by the proxy of where it is published

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F1000Research: Preprints + Journal-like model

Submission and preprint-like stage
Open Access

Formal *invited* peer review
Indexing in bibliographic databases






Broad range of article types:

Research Articles
Data Notes
Software Tools
Methods Articles
Systematic Reviews etc

Data accessible

Attention & usage
metrics available

Review status:

Approved 
Approved with reservations 
Not approved 

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Transparent peer review and discussion

Gates Open Research [SUBMIT YOUR RESEARCH](#)

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RESEARCH ARTICLE

REVISED Developing new health technologies for neglected diseases: a pipeline portfolio review and cost model [version 2; referees: 3 approved]

Ruth Young¹, Tewodros Bekele¹, Alexander Gunn¹, Nick Chapman², Vipul Chowdhary², Kelsey Corrigan³, Lindsay Dahora^{1,4,5}, Sebastián Martínez², Sallie Permar^{4,7}, Johan Persson⁸, Bill Rodriguez², Marco Schäferhoff⁹, Kevin Schulman¹⁰, Tulika Singh¹⁰, Robert S. Tom¹¹, Gavin Yamey¹¹

Check for updates

METRICS

4392 VIEWS

580 DOWNLOADS

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Open Peer Review

Referee Status: ✓✓✓

Version(s)	1	2	3
REVISED	✓	✓	✓
Version 2 published 22 Aug 2018	read report	read report	read report
Version 1 published 26 Apr 2018	?	✓	?
	read report	read report	read report

1 Lloyd Czaplewski, Chemical Biology Ventures Ltd, UK
 2 Kevin Outterson¹⁰, Boston University, USA; Boston University, USA
 3 Mikel Berdud, Office of Health Economics, UK
 Jorge Mestre-Ferrandiz, Independent Consultant, UK

Gates Open Research

18.5 Days to 1st referee report (median)

34 Days to 2nd referee report (median)

53 Days to indexed (median)

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Transparent peer review and discussion

Version 1

Referee Report 10 Jul 2018

Mikel Berdud, Office of Health Economics, London, UK
 Jorge Mestre-Ferrandiz, Independent Consultant, London, UK

Approved with Reservations

The research article by Young and colleagues, entitled *Developing new health technologies for neglected diseases: a pipeline portfolio review and cost model*, is a research estimating: (i) the funding requirements to move products – currently at development stages – for Neglected Tropical Diseases (NTDs) through the pipeline until market launch, and (ii) the funding required to increase the R&D effort in order to ensure at least one launch for each of 18 missing priority products ranges for NTDs of greatest need. Resulting from adding up these two estimates, authors present a headline figure of \$4.5B-\$5.8B/year of funding requirement over the next 5 years, which is around \$1.5B-\$2.8B per year (more than the actual funding of \$3.0B/year).

Author Response 22 Aug 2018

Gavin Yamey

Many thanks indeed to Mikel Berdud and Jorge Mestre-Ferrandiz for this very helpful review. In the revised version of our study (version 2), we have addressed all three reviewer reports.

Mikel Berdud and Jorge Mestre-Ferrandiz's peer review report lists 11 substantive comments, and our amendments are summarized below:

- Missing literature on assumptions:** the referees kindly gave us additional examples of studies that can inform estimates of cost, attrition rate, and cycle time per phase for product development. We now cite and briefly discuss these additional papers in the Discussion section, specifically the papers by Schuhmacher *et al.* and Hay *et al.*
- The costs that are missing in our estimate:** the referees argue, and we agree, that we should be more explicit in noting which costs are missing (i.e. basic research, drug discovery, and the costs of regulatory review and marketing submission). We have now expanded our discussion of these missing costs, in the section with the sub-heading "Limitations of the P21 modelling tool." We would also refer readers to the companion paper (reference 12 in our paper) and the original 2016 TDR report (reference 11 in our paper) for further information on the model's development.
- Opportunity costs:** as recommended by the referees, we now mention opportunity costs, again in the 4th paragraph under the sub-heading "Limitations of the P21 modelling tool."
- The source of the data for the assumptions in Table 2:** The referees note that P21v2 uses a range of data sources as shown in Table 2 and suggest that we give more explanation of how the different sources affected the assumptions, specifically for unprecedented vaccines. We now give more explanation in the revised paper. We now also discuss—under the Limitations section of the Discussion—the limitations of our approach to modifying P21 v.1 to create P21 v.2.

In the revised Discussion, we state:

"A fifth limitation relates to the modifications that we made to the P21 v.1 tool to create P21 v.2. As described in the

Reviewers:

- get credit for contributing to discussion
- focus on helping authors improve their work
- good training for ECRs

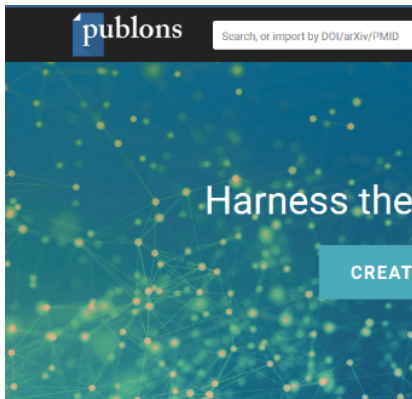
21. Schwarzkopf S: Referee report for: Brain-to-brain (mind-to-mind) interaction at distance: a confirmatory study [v2; ref status: approved 1, not approved 1, <http://f1000r.es/4em>]. *F1000Res.* 2014; 3: 182. [Publisher Full Text](#)

Coreferees (%)

Year	Coreferees (%)
2013	4.2
2014	5.8
2015	7.2
2016	9.8
2017	11.8

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Recognising Peer Review



ORCID Connecting Research and Researchers

3,978,320 ORCID IDs and counting. See more...

Mitchell Bekritsky

ORCID ID
orcid.org/0000-0003-1420-1172

Print view

Country
United Kingdom

- Education (2)
- Employment (1)
- Works (3)
- Peer review (1)

review activity for F1000Research(1)
Journal, F1000Research

Review date	Type	Role	Actions
2017-10	review	reviewer	hide details view

Review identifier(s): DOI: 10.5256/f1000research.13552.r26608
 Convening organization: F1000Research(London, United Kingdom)
 Review subject: Tools for annotation and comparison of structural variation [version 1; referees: 1 approved, 1 approved with reservations] Journal-article F1000Research.
 DOI: 10.12688/f1000research.12516.1
 Source: F1000
 Created: 2017-10-16

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Funder-/institution-controlled platforms

Wellcome Open Research
A new way for Wellcome-funded researchers to rapidly publish any results they think are worth sharing.

GATES OPEN RESEARCH
A platform for rapid author-led publication and open peer review of research funded by the Bill & Melinda Gates Foundation.

HRB Open Research
A platform for HRB-funded researchers to publish their research outputs in an open and accessible way.

AMRC Open Research
A platform for rapid author-led publication and open peer review of research funded by AMRC member charities.

MNI Open Research
A platform for rapid, author-led publication and open peer review of research conducted at the Montreal Neurological Institute.

AAS Open Research
Immediate & Transparent Publishing. AAS Open Research is a platform for rapid publication and open peer review for researchers supported by AAS and programs supported through its funding platform, AESA.

Member Charities: amrc, Ataxia, Autistica, BRACE, Epilepsy Research UK, We Are Mucopolysaccharidosis, Neurology Research Foundation, MQ, MS Society, National Osteoporosis Society, Pancreatic Cancer UK, BURNINGS® Support (UK), Pharmacists for Parkinson's, Stroke, The Brain Tumour Charity, The Cure Parkinson's Trust, The Lady's Trust, The British Heart Foundation.

Mr. Bill · Gates, led the world by literature publication
Who is the thesis?

Net · IT IoT Science & New technology
2018/10/6 6:30 | Nihon Keizai Shinbun electronic version

Save share Other

"It is a publication with quickness and transparency." When opening an English website "Gates Open Research" to publish academic papers, such a sort of phrase can be seen.

It is the "Bill & Melinda Gates Foundation" by Mr. Bill Gates of Microsoft founder, USA. In 2017 when the site was established, it helped hundreds of researchers and published the paper on the site.

I can not just put a paper on it. Evaluation function of the paper which should have been "monopoly patent" of publisher issuing academic journal ...

ビル・ゲイツ氏、論文公開で世界主導

論文は誰のものか

ネット・IT IoT 科学&新技術

2018/10/6 6:30 | 日本経済新聞 電子版

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「迅速性、透明性のある出版物です」。学術論文を公開する英文サイト「ゲイツオープンリサーチ」を開くと、こんなうたい文句が目に入る。

運営するのは米マイクロソフト創業者のビル・ゲイツ夫妻による「ビル&メリンダ・ゲイツ財団」。サイトを開設した2017年に数百人の研究者を助成し、その論文をサイトで公開している。

論文をただ載せるのではない。学術誌を発行する出版社の「専売特許」だったはずの論文の評価機能も...

Breadth of topics

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RESEARCH ARTICLE EDIT VERSION Check for updates METRICS

Modelling credit and savings behaviour of chit fund participants [version 1; referees: 1 approved, 1 approved with reservations]

809 VIEWS 52 DOWNLOADS

Preethi Rao, Sharon Buteau

Gates Open Research SUBMIT YOUR RESEARCH

BROWSE GATEWAYS HOW TO PUBLISH ABOUT

RESEARCH ARTICLE EDIT VERSION Check for updates METRICS

Developing new health technologies for neglected diseases: a pipeline portfolio review and cost model [version 2; referees: 3 approved]

4423 VIEWS

Ruth Young, Tewodros Vipul Chowdhary, Kelsey Sallie Permar, Tulika Singh, Robert F.

Gates Open Research SUBMIT YOUR RESEARCH

BROWSE GATEWAYS HOW TO PUBLISH ABOUT

RESEARCH NOTE EDIT VERSION Check for updates METRICS

Improving energy efficiency of electrochemical blackwater disinfection through sequential reduction of suspended solids and chemical oxygen demand [version 2; referees: 2 approved]

403 VIEWS 48 DOWNLOADS

Brian T. Hawkins, Tate W. Rogers, Christopher J. Davey, Mikayla H.

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BROWSE GATEWAYS HOW TO PUBLISH ABOUT

RESEARCH ARTICLE EDIT VERSION Check for updates METRICS

Optimization of nutrient media for sweetpotato (*Ipomoea batatas* L.) vine multiplication in sandponics: Unlocking the adoption and utilization of improved varieties [version 1; referees: 1 approved]

75 VIEWS 14 DOWNLOADS

Phabian Makokha, Lexa G. Matasyoh, Reuben T. Ssali, Oliver K. Kiplagat, Bramwel W. Wanjala, Jan Low

Gates Open Research SUBMIT YOUR RESEARCH

BROWSE GATEWAYS HOW TO PUBLISH ABOUT

RESEARCH ARTICLE EDIT VERSION Check for updates METRICS

Heterogeneous exposure and hotspots for malaria vectors at three study sites in Uganda [version 2; referees: 2 approved]

301 VIEWS 42 DOWNLOADS

Su Yun Kang, Katherine E. Battle, Harry S. Gibson, Laura V. Cooper, Kilama Maxwell, Moses Kanya, Steven W. Lindsay, Grant Dorsey, Bryan Greenhouse, Isabel Rodriguez-Barraquer, Robert C. Jr. Reiner, David L. Smith, Donal Bisanzio

Central repository

Open Research Central (ORC) :



- Open source repository
- For all research outputs published according to set of principles for open research
- Directed by ORC Board comprising research funders and stakeholders
- Not-for-profit organisation



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Range of outputs and associated metrics

Data availability

All data are available from the Mouse ENCODE consortium; see [Table S1](#) for specific source URLs and accession numbers.

Software availability

We provide supplementary files of the python codes used to process and prepare the data for analysis with R, and the data files for the python codes. We also provide the R codes we used to perform the different analyses as supplementary files, as well as the input for the R codes.

Archived software files as at the time of publication

Zenodo. Data files and codes used in the reanalysis of the mouse encode comparative gene expression data. DOI: [10.5281/zenodo.17606](https://doi.org/10.5281/zenodo.17606)

License

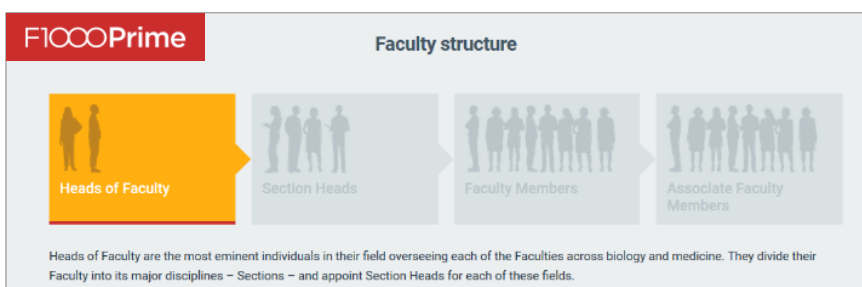
These codes are provided under the MIT license.

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CrediT: from authorship to contributorship

The screenshot shows a research article on the Wellcome Open Research platform. The article title is "The age of heterozygous telomerase mutant parents influences the adult phenotype of their offspring irrespective of genotype in zebrafish [version 2; referees: 2 approved]". The authors listed are Catherine M. Scahill, Zsófia Digby, Ian M. Sealy, Richard J. White, Neha Wali, John E. Collins, Derek L. Stemple, and Elisabeth M. Busch-Nentwich. A red circle highlights the author details section, which lists roles for each author, such as "Conceptualization, Investigation, Visualization, Writing - Original Draft Preparation, Writing - Review & Editing" for Catherine M. Scahill. The article has 338 views and 125 downloads. The peer review status is "2 approved".

F1000Prime – article-based expert assessment



- Over 8000 experts across biology and medicine
- Faculty include 10 Nobel Laureates, 16 Lasker Award winners, >150 NAS members, etc
- >200,000 recommendations, across >4000 journals
- Now adding Physics and other fields

Anesthesiology & Pain Management	Biochemistry	Bioinformatics, Biomedical Informatics & Computational Biology	Biostatistics
Cancer Biology	Cardiovascular Biology	Cardiovascular Disorders	Cell Biology
Chemical Biology	Critical Care & Emergency Medicine	Dermatology	Developmental Biology
Diabetes & Endocrinology	Ecology	Evolutionary Biology	Gastroenterology & Hepatology
Gastrointestinal Biology	Genetics & Genomics	Gerontology	Immunology
Infectious Diseases	Metabolic & Endocrine Science	Microbiology	Molecular Biology
Molecular Medicine	Nephrology	Neurological Disorders	Neuroscience
Obstetrics, Gynecology & Women's Health	Oncology	Ophthalmology	Otolaryngology
Pharmacology & Drug Discovery	Physiology	Plant Biology	Psychiatry
Public Health & Epidemiology	Plant Biology	Research Methodology	Respiratory Biology
Respiratory Disorders	Rheumatology & Clinical Immunology	Structural Biology	Urology

Example F1000 Faculty

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Faculty / Dermatology / Urticaria, Vasculitis & Connective Tissue Disease

Faculty Member since 06 Nov 2017

Manabu Fujimoto
Department of Dermatology, Faculty of Medicine
University of Tsukuba
Tsukuba, Ibaraki
Japan

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RECOMMENDATIONS BIOGRAPHY

ACADEMIC POSITION:
Professor and Chair, Department of Dermatology, Faculty of Medicine, University of Tsukuba

EDUCATION:
MD, University of Tokyo (1992)

RESEARCH INTERESTS:
• Scleroderma
• Dermatomyositis
• Autoimmunity
• B cell biology

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ARTICLE RECOMMENDATIONS F1000 FACULTY BLOG

Faculty / Cell Biology / Membranes & Sorting

Associate Faculty Member since 10 Jul 2014

Norihiko Ohbayashi
Graduate School of Comprehensive Human Sciences
University of Tsukuba
Tsukuba, Ibaraki
Japan

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Faculty Member since 07 Jul 2014

Mitsunori Fukuda
Department of Developmental Biology and Neurosciences
Tohoku University
Sendai, Miyagi
Japan

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Faculty / Neuroscience / Theoretical & Computational Neuroscience

Associate Faculty Member since 22 Mar 2013

Jun Izawa
Faculty of Engineering, Information and Systems
University of Tsukuba
Tsukuba, Ibaraki
Japan

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Faculty Member since 13 Aug 2004

Reza Shadmehr
Department of Biomedical Engineering
Johns Hopkins University
Baltimore, MD
USA

BIOGRAPHY

Jun Izawa is an Associate Faculty Member who works with Reza Shadmehr to evaluate the literature relevant to their research interests.

CURRENT POSITION:
Vice Department Head, Department of Motor Control and Rehabilitation, ATR Computational Neuroscience Laboratories

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Example recommendations

F1000Prime ARTICLE RECOMMENDATIONS

ARTICLE RECOMMENDATIONS F1000 FACULTY BLOG

1 Recommendations New Finding

Hypoxia fate mapping identifies cycling cardiomyocytes in the adult heart.

Kimura W, Xiao F, Coneseo DC, Muralidhar S, The S, Zhang HM, Abdarrahman Y, Chen R, Garcia JA, Shelton JM, Richardson JA, Ashour AM, Asathumby A, Liang H, Xing D, Lu Z, Zhang CD, ... more Author affiliations

PUBLISHED: 2015 Jul 09 CITE AS: [Nature. 2015 Jul 09; 523\(7556\):556-560. doi:10.1038/nature14288](#)

RECOMMENDATIONS ABSTRACT COMMENTS

Rated ★★ Very Good 23 Oct 2018 EDIT

David Sassoon F1000 Faculty Member
Developmental Biology / Morphogenesis & Cell Biology
University of Pierre and Marie Curie
Paris
France

Mariana Valente F1000 Associate Faculty Member
Developmental Biology / Morphogenesis & Cell Biology
University of Pierre and Marie Curie
Paris
France

Hypoxia fate mapping identifies cycling cardiomyocytes in the adult heart.

Kimura W^{1,2}, Xiao F¹, Coneseo DC¹, Muralidhar S¹, The S¹, Zhang HM¹, Abdarrahman Y¹, Chen R¹, Garcia JA^{1,3}, Shelton JM¹, Richardson JA^{1,4}, Ashour AM¹, Asathumby A¹, Liang H¹, Xing D¹, Lu Z¹, Zhang CD^{1,5}, Sasaki HA^{1,6}

¹ Department of Internal Medicine, Division of Cardiology, The University of Texas Southwestern Medical Center, Dallas, Texas 75390, USA

² Life Science Center, Tsukuba Advanced Research Alliance, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki 305-8577, Japan

³ Departments of Physiology and Developmental Biology, The University of Texas Southwestern Medical Center, Dallas, Texas 75390, USA

⁴ Department of Medicine, VA North Texas Health Care System, 4609 South Lancaster Road, Dallas, Texas 75216, USA

⁵ Department of Molecular Biology, The University of Texas Southwestern Medical Center, Dallas, Texas 75390, USA

⁶ Department of Pathology, The University of Texas Southwestern Medical Center, Dallas, Texas 75390, USA

⁷ Department of Radiation Oncology, The University of Texas Southwestern Medical Center, Dallas, Texas 75390, USA

Studies have provided evidence demonstrating that the formation of new cardiomyocytes comes from pre-existing cardiomyocytes that proliferate in human steady state young heart as well as in pathological conditions (1-5). Similarly, in the mouse, this study by Kimura et al. is one of a number suggesting that new cardiomyocytes are derived from a rare subset of pre-existing cardiomyocytes that are mononucleated, small in size, hypoxic and with lower oxidative DNA damage, and able to re-enter the cell cycle (see also (2, 6-10)).

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F1000Prime ARTICLE RECOMMENDATIONS

ARTICLE RECOMMENDATIONS F1000 FACULTY BLOG

2 Recommendations New Finding

Incidence and outcomes of repositioning surgery to correct misalignment of toric intraocular lenses.

Oshika T, Inamura M, Inoue Y, Ohashi T, Sugita T, Fujita Y, Miyata K, Nakano S, ... Author affiliations

PUBLISHED: 2017 Aug 18 CITE AS: [Ophthalmology. 2017 Aug 18; 126\(8\):2135. https://doi.org/10.1016/j.ophtha.2017.07.004](#)

RECOMMENDATIONS ABSTRACT COMMENTS

Rated ★★ Good 03 Oct 2017 EDIT

Eric C Amesbury F1000 Faculty Member
Ophthalmology / Lens Disorders
Virginia Commonwealth University
Richmond, VA
USA

Classified as New Finding

The authors present retrospective data from over 6000 eyes with toric intraocular lens (IOL) implantation, of which 42 underwent repositioning surgery for misaligned IOL. They found a correlation between timing of repositioning surgery and long-term outcome as well.

More

Rated ★★ Very Good 05 Mar 2018 EDIT

Daniel Koop F1000 Faculty Member
Ophthalmology / Refractive Errors & Refractive Surgery
Smile Eye Clinic Munich
München-Plughafen
Germany

Classified as New Finding

The authors of this retrospective, multicenter case series present data of a very high

Recommend this article

Recommended Dissent

Oshika T¹, Inamura M², Inoue Y³, Ohashi T⁴, Sugita T⁵, Fujita Y⁶, Miyata K⁷, Nakano S⁸

¹ Department of Ophthalmology, Faculty of Medicine, University of Tsukuba, Ibaraki, Japan, oshika@nige.ac.jp

² Inamura Eye Clinic, Kanagawa, Japan

³ Inoue Eye Clinic, Okayama, Japan

⁴ Ohashi Eye Clinic, Hokkaido, Japan

⁵ Sugita Eye Clinic, Tokyo, Japan

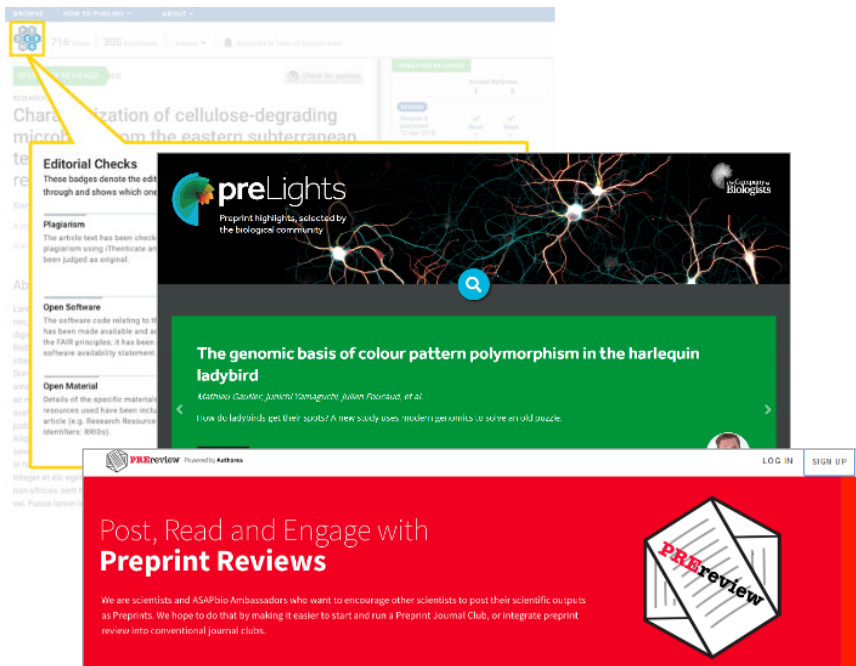
⁶ Fujita Eye Clinic, Tokushima, Japan

⁷ Miyata Eye Hospital, Miyazaki, Japan

⁸ Division of Ophthalmology, Ryugasaki Saiseikai Hospital, Ibaraki, Japan

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Indicators of quality: existing and new



- **Badges to capture level of checks** (e.g. plagiarism, reporting) **and of review** (e.g. expert peer review, community review)
- **Expert recommendations** (e.g. F1000Prime, PreLights, PreReview, Research Highlights)
- **Journals & societies** could move from publishing new findings to providing curation across all published findings (not just what is sent to them)

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Summary



- The **tools and technologies exist** to resolve many issues with the traditional way of communicating new discoveries
- Little will change unless we **tackle the rewards & incentives structure head-on**
- We **no longer need the journal**; researchers should be able to communicate new findings when they are ready
- **New models exist** and have been thoroughly tested to enable a better way of communicating research
- **Publishers should shift from gatekeepers to service providers** to the scientific community
- **Research funders, governments and institutions are crucial** to embracing and enabling researchers to change to such a system

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Questions?

rebecca.lawrence@f1000.com



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