

A complex network graph visualization with numerous nodes and edges, rendered in shades of blue and grey, positioned in the upper left corner of the slide.

Peer Community In...

Denis Bourguet

Benoit Facon

Thomas Guillemaud

**A free recommendation process of unpublished
scientific papers based on peer reviews**



Context 1: Scientific Publication

- **What is the value of publishing scientific articles?**

- Makes science public
- Ensures the quality of science
- Defines anteriority of results
- Makes articles searchable/findable

- **Inefficient system**

- Submissions/rejections in cascade
- 6 months to 1 year



- **Vicious system**

- Every accepted article contributes to the publishers' turnover
 - Researchers are evaluated on their ability to publish
- = Conjunction of interest between researchers and publishers

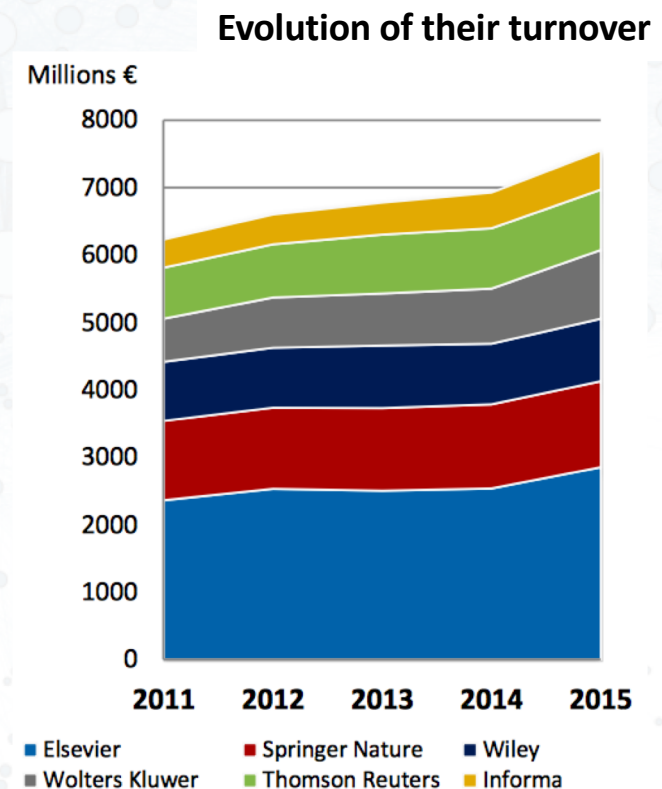
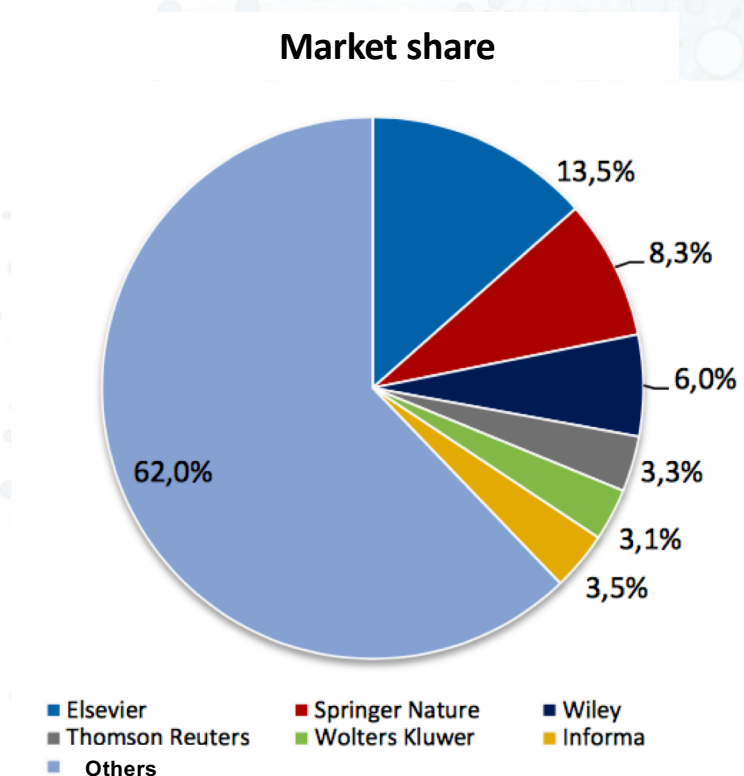
→ snowball effect



Context 2

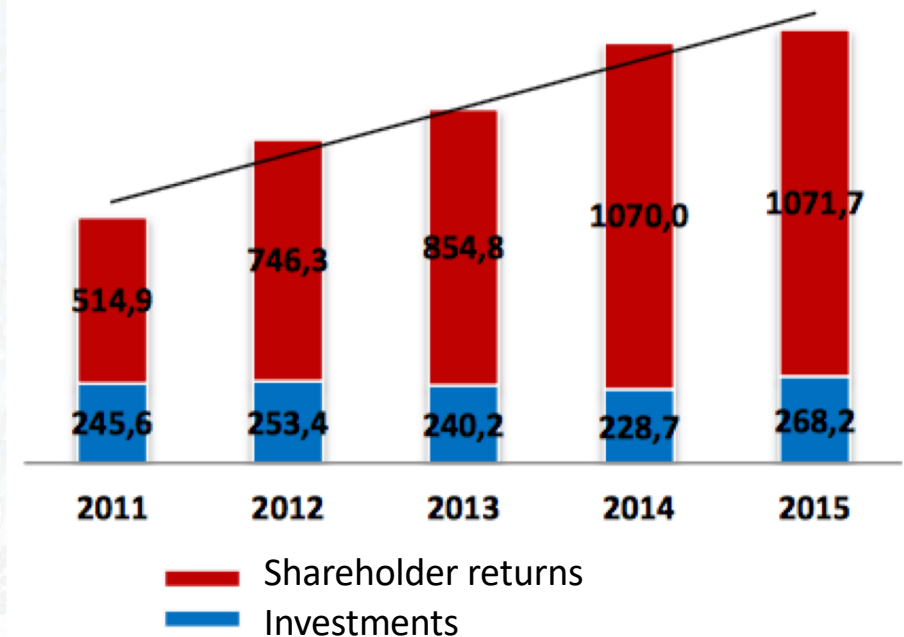
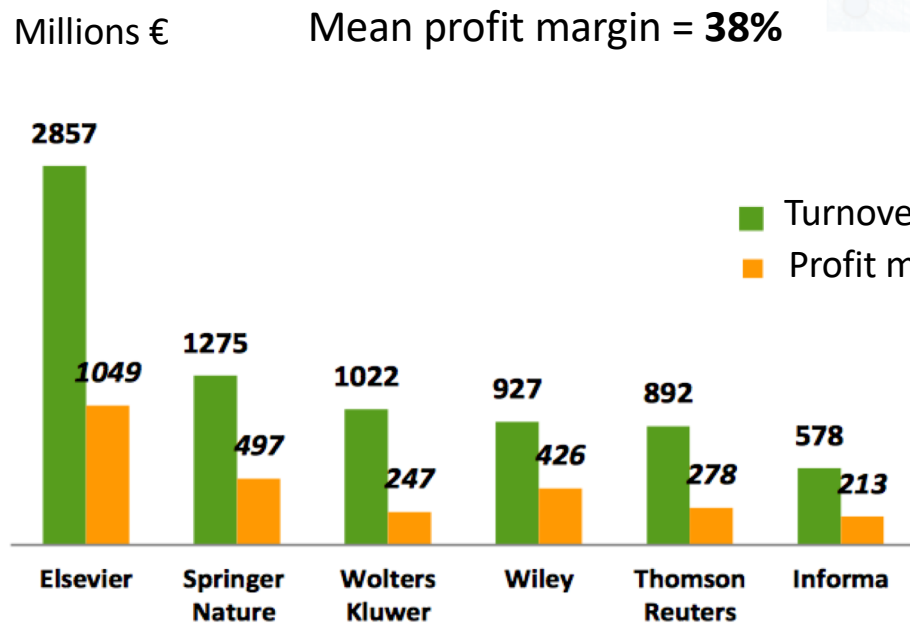
Expensive system hold by 6 big publishers

- Big 6 publishers publish 54% of the scientific publications
- Paying readers (subscription) → Paying authors (APC), (France 120 M€/year)
- Fees are increasing (> +22% between 2004 and 2007)



Context 3

Non-standard profit margins



Researchers do almost everything: write, evaluate, edit, proofread, format
→ **idea of re-appropriating the publication system**

Context 4

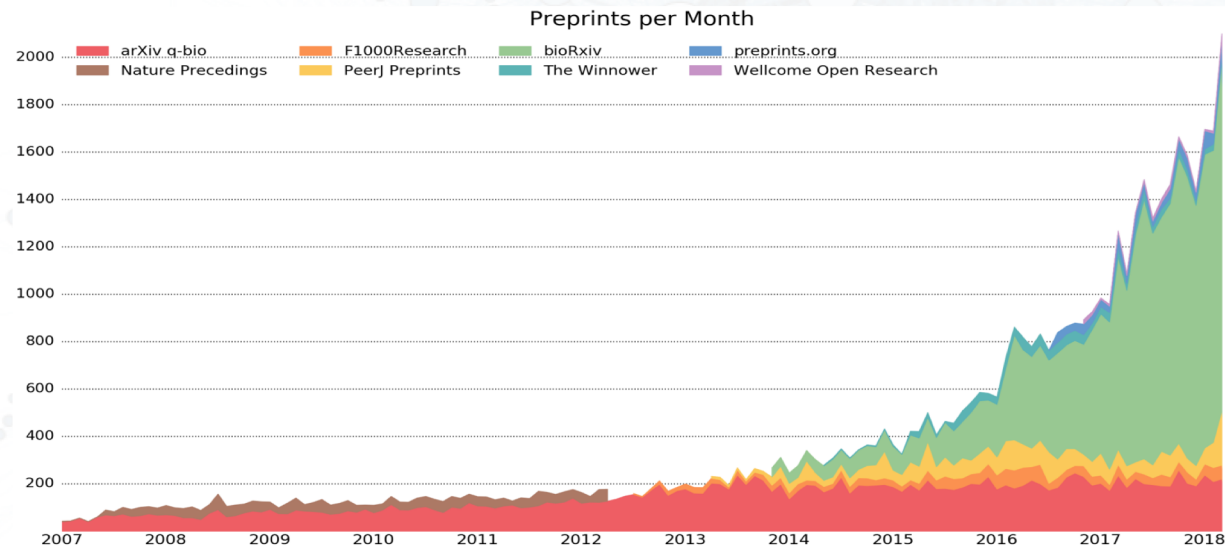
- **Scientific publishing on the internet**

- Very low publishing costs (arXiv: 800 000 \$ / yr / 120 000 art / yr ~ 7 \$ / art)
- Free tools available (eg OJS)

- **A huge rise of preprints deposit**

in biology on open archives (mostly bioRxiv in a similar way than arXiv)

- Makes science available immediately
- Comments on social networks



- bioRxiv is growing fast. Nearly 3 times more preprints were posted 2017 than in 2016. There are now 23,000 papers on bioRxiv from more than 103,000 authors worldwide, with 1,400 new submissions each month.

Context 5

- **Preprints are good...**

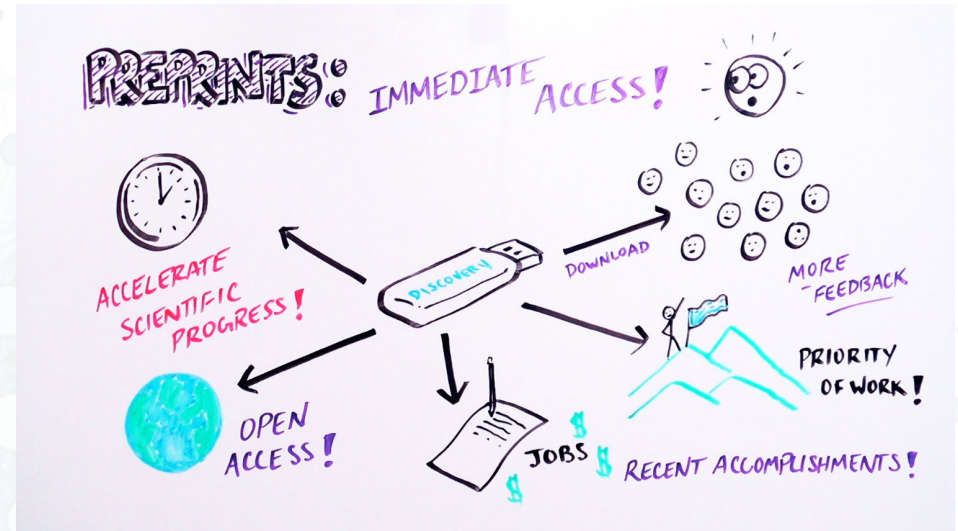
- Free for authors and readers
- Available immediately
- Proof of anteriority
- Searchable/Findable

- **But putative quality problem...**

- No formal evaluation – no peer-review
- Everything can be found in open archives including preprints of very bad quality

- **We therefore need preprints evaluation**

- Evaluation could be disconnected from publication (open archives)
- Evaluation could be disconnected from the market
- Evaluation could be organized by the scientists themselves



The *Peer Community in* (PCI) project


- **Our goal**

Create several communities of researchers evaluating (through peer review) and recommending (highlighting) articles in their scientific field, e.g. *PCI Ecology*, *PCI Evolutionary Biology*, *PCI Paleontology*, etc..

- **Recommended articles**

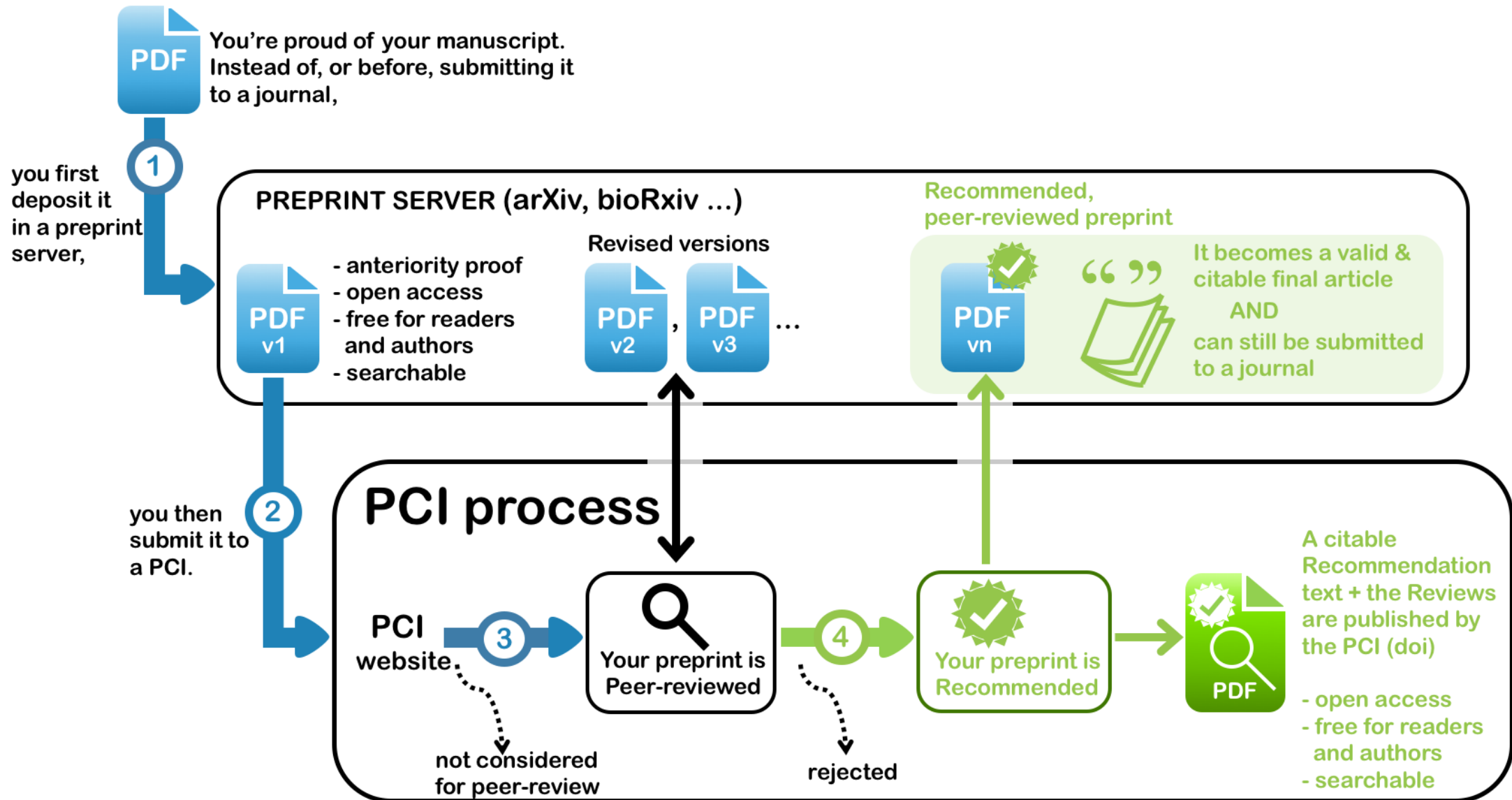
Mostly preprints (not published in journals) but occasionally postprints (articles already published in scientific journals)

- **Characteristics**

- Deposit of « preprints » in open repository **bioRxiv** 
- Completely free (for authors as well as for readers)
- PCI publishes the recommendation texts (equivalent to N&V) and the reviews of the preprints. The preprint is not published (the recommended version remains in open archives).

=> different from traditional journals

How does it work ?



Peer Community in ...

- **A preprint recommended by a PCI** is a valid and citable article.
Noel et al. (2018). Sexual selection and inbreeding: two efficient ways to limit the accumulation of deleterious mutations. bioRxiv 273367, ver. 3 peer-reviewed by PCI Evol Biol DOI: 10.1101/273367
- **'Recommenders'/Editors**
 - Are equivalent to associate editors in traditional journals
 - Large number
- **Referees**
≥ 2 who can be chosen within or outside the PCI
- **What does PCI publish?**
PCI only publishes reviews and recommendation of preprint **if recommended**
- **PCI ...**
= electronic journal of reviews and recommendation texts

Sexual selection and inbreeding: two efficient ways to limit the accumulation of deleterious mutations

Elsa Noël, Elise Fruite, Denyss Lelaurn, Nicolas Bonel, Adeline Segard, Violette Sarda, Philippe Jarne, Patrice David

Cite as:
Noël E, Fruite E, Lelaurn D, Bonel N, Segard A, Sarda V, Jarne P, and David P. (2018). Sexual selection and inbreeding: two efficient ways to limit the accumulation of deleterious mutations. *bioRxiv* 273367. doi: 10.1101/273367

Peer-reviewed and recommended by Peer Community in Evolutionary Biology

Recommendation DOI: 10.24072/pci.evolbiol.100055
Recommender: Charles F Baer

Based on reviews by: anonymous and anonymous

Inbreeding compensates for reduced sexual selection in purging deleterious mutations

Charles F Baer¹

¹ Department of Biology, University of Florida – Gainesville, USA

Cite as: Baer CF. Inbreeding compensates for reduced sexual selection in purging deleterious mutations. *Peer Community in Evolutionary Biology*. 100055 (2018). doi: 10.24072/pci.evolbiol.100055

Published: 08 August 2018

Based on reviews by:
anonymous
anonymous

Correspondence:
cfaer@ufl.edu

 CC BY-NC 4.0
This work is licensed under the
Creative Commons
Attribution-NonCommercial 4.0
International License.

A recommendation of
Noël E, Fruite E, Lelaurn D, Bonel N, Segard A, Sarda V, Jarne P, and David P. Sexual selection and inbreeding: two efficient ways to limit the accumulation of deleterious mutations. *bioRxiv* 273367, ver. 3 peer-reviewed by PCI Evol Biol (2018). doi: 10.1101/273367

Two evolutionary processes have been shown in theory to enhance the effects of natural selection in purging deleterious mutations from a population (here "natural" selection is defined as "selection other than sexual selection"). First, inbreeding, especially self-fertilization, facilitates the removal of deleterious recessive alleles, the effects of which are largely hidden from selection in heterozygotes when mating is random. Second, sexual selection can facilitate the removal of deleterious alleles of arbitrary dominance, with little or no demographic cost, provided that deleterious effects are greater in males than in females ("genetic capture"). Inbreeding (especially selfing) and sexual selection are often negatively correlated in nature. Empirical tests of the role of sexual selection in purging deleterious mutations have been inconsistent, potentially due to the positive relationship between sexual selection and intersexual genetic conflict.

In their preprint, Noël et al. [1] report a cleverly designed, and impressively long-term, experimental evolution study designed to tease apart the relative contributions of selfing and sexual selection in purging deleterious mutations, using the self-compatible hermaphroditic snail *Physa acuta*. Hermaphroditism relieves at least some of the potential conflict between males and females because each individual expresses traits of each sex. The authors report a 50-generation (ten years) evolution experiment with four experimental treatments: Control (C), in which snails reproduced by mass mating (allowing sexual selection) and the next generation was sampled randomly from offspring in proportion to maternal family size; Male-selection (M) in which snails reproduced by mass mating but maternal family size was

Where are we?

Peer Community in Evolutionary Biology

(Denis Bourguet, Benoit Facon & Thomas Guillemaud)



Peer Community In Evolutionary Biology

Peer Community in Paleontology

(Jeremy Anquetin & Guillaume Billet)



Peer Community In Paleontology

Free and transparent preprint
peer-review in paleontology

Peer Community in Ecology

(François Massol & Tim Couslon)



Peer Community In Ecology

Free and transparent preprint and postprint
recommendations in ecology

PCI Evolutionary Biology

- Launch of the PCI Evol Biol website in January 2017
~ 2000 unique visitors /month

- # recommenders/editors
 - At launch = 162
 - Currently (July 2018) = 374



- 56 recommendations published (24 postprints, 32 preprints)
- 72 submissions of preprints
 - 32 preprints recommended
 - 19 preprints currently under consideration
 - 21 not considered or rejected
- Mean time between submission and first editorial decision = 49 days

SUBMIT A PREPRINT

RECOMMEND A POSTPRINT

SUBMITTED PREPRINTS REQUIRING A RECOMMENDER

[edit title](#)

[edit text](#)

Latest recommendations



2018-02-28



PREPRINT

Insects and incest: sib-mating tolerance in natural populations of a parasitoid wasp

Marie Collet, Isabelle Amat, Sandrine Sauzet, Alexandra Auguste, Xavier Fauvergue, Laurence Mouton, Emmanuel Desouhant

<https://doi.org/10.1101/169268>

Recommended by [Caroline Nieberding](#) and [Bertanne Visser](#) based on reviews by 2 anonymous reviewers

Incestuous insects in nature despite occasional fitness costs

Inbreeding, or mating between relatives, generally lowers fitness [1]. Mating between genetically similar individuals can result in higher levels of homozygosity and consequently a higher frequency with which recessive disease alleles may be expressed within a population. Reduced fitness as a consequence of inbreeding, or inbreeding depression, can vary between individuals, sexes, populations and species [2], but remains a pervasive challenge for many organisms with small local population sizes,...

MORE

2018-02-19



PREPRINT

Genomic imprinting mediates dosage compensation in a young plant XY system

Aline Muyle, Niklaus Zemp, Cecile Fruchard, Radim Cegan, Jan Vrana, Clothilde Deschamps, Raquel Tavares, Franck Picard, Roman Hobza, Alex Widmer, Gabriel Marais

<https://doi.org/10.1101/179044>

Recommended by [Tatiana Giraud](#) and [Judith Mank](#) based on reviews by 3 anonymous reviewers

Dosage compensation by upregulation of maternal X alleles in both males and females in young plant sex chromosomes

Sex chromosomes evolve as recombination is suppressed between the X and Y chromosomes. The loss of recombination on the sex-limited chromosome (the Y in mammals) leads to degeneration of both gene expression and gene content for many genes [1]. Loss of gene expression or content from the Y chromosome leads to differences in gene dose between males and females for X-linked genes. Because expression levels are often correlated with gene dose [2], these hemizygous genes have a lower expression leve...

MORE

Tweets by @PCIEvolBiol

 **PeerComInEvoBiol**
@PCIEvolBiol

the [#preprint](#) of Clemente et al. 2017 BioRxiv, 113274, doi.org/10.1101/113274, peer reviewed and recommended by [@PCIEvolBiol](#) ==> Accepted in Behavioral Ecology, "IT CERTAINLY IMPROVED THE MANUSCRIPT, HENCE THE CHANCES OF BEING ACCEPTED", the authors said



Despite reproducti...
This preprint has be...
[biorxiv.org](https://www.biorxiv.org)



Mar 8, 2018

 **PeerComInEvoBiol**
@PCIEvolBiol

Replying to [@PCIEvolBiol](#)

[@GaltierNicolas](#) understood [@PCIEvolBiol](#): « I think the idea is: once you get your PCI reviews+recommendation for free, if you really want to pay \$2000 for being "published" in "famous" journals that do nothing, well, yes you can »



Mar 6, 2018

 PeerComInEvoBiol Retweeted 

 **LBE INRA**
@LBE_INRA

Le LBE est heureux d'accueillir aujourd'hui Thomas Guillemaud et Denis Bourguet fondateurs du projet Peer Community In [@PCIEvolBiol](#)



ROBINSON-RECHAVI Marc

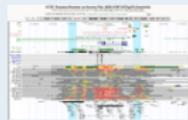


- Department of Ecology and Evolution, University of Lausanne, Lausanne, Switzerland
- Bioinformatics & Computational Biology, Evo-Devo, Genome Evolution, Molecular Evolution, Phylogenetics / Phylogenomics
- **recommender**

Research in my group is mainly focused on linking the evolution of animal development to genome evolution. The group develops databases for evolutionary biology, and studies genome evolution in vertebrates. The group is also involved in targeted projects in functional and evolutionary genomics. <http://bioinfo.unil.ch/>

1 recommendation

2017-10-06



PREPRINT

Evolutionary analysis of candidate non-coding elements regulating neurodevelopmental genes in vertebrates

Francisco J. Novo

[10.1101/150482](https://doi.org/10.1101/150482)

Recommended by [Marc Robinson-Rechavi](#) based on reviews by [Charles Danko](#) and [Marc Robinson-Rechavi](#)

Combining molecular information on chromatin organisation with eQTLs and evolutionary conservation provides strong candidates for the evolution of gene regulation in mammalian brains

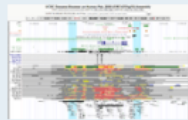
In this manuscript [1], Francisco J. Novo proposes candidate non-coding genomic elements regulating neurodevelopmental genes.

What is very nice about this study is the way in which public molecular data, including physical interaction data, is used to leverage recent advances in our understanding to molecular mechanisms of gene regulation in an evolutionary context. More specifically, evolutionarily conserved non coding sequences are combined with enhancers from the FANTOM5 project, DNase ...

MORE

1 review

2017-10-06



PREPRINT

Evolutionary analysis of candidate non-coding elements regulating neurodevelopmental genes in vertebrates

Francisco J. Novo

[10.1101/150482](https://doi.org/10.1101/150482)

Recommended by [Marc Robinson-Rechavi](#) based on reviews by [Charles Danko](#) and [Marc Robinson-Rechavi](#)

Combining molecular information on chromatin organisation with eQTLs and evolutionary conservation provides strong candidates for the evolution of gene regulation in mammalian brains

In this manuscript [1], Francisco J. Novo proposes candidate non-coding genomic elements regulating neurodevelopmental genes.

What is very nice about this study is the way in which public molecular data, including physical interaction data, is used to leverage recent advances in our understanding to molecular mechanisms of gene regulation in an evolutionary context. More specifically, evolutionarily conserved non coding sequences are combined with enhancers from the FANTOM5 project, DNase ...

MORE

Institutional Supports

Scientific Societies



Research Institutions

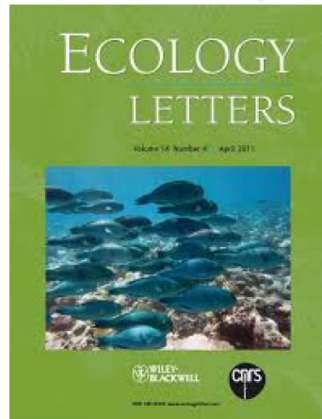


CNU

Conseil National des Universités



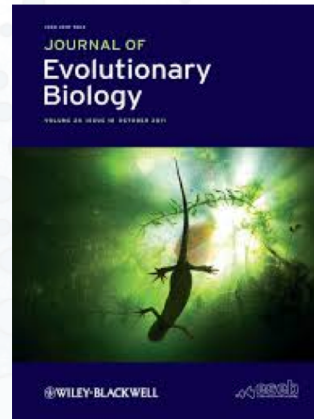
PCI Evol Biol and relations with journals



Tim Coulson



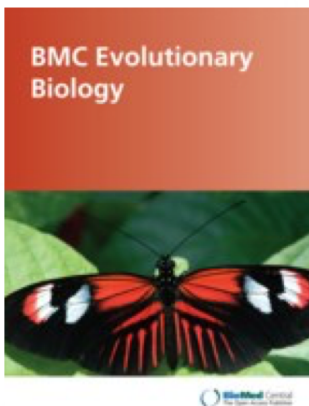
Dries Bonte



Wolf Blanckenhorn



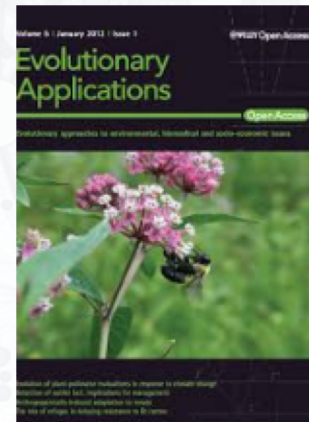
Loren Rieseberg



Christopher Foote



Mohamed Noor



Louis Bernatchez

etc.

We would value the recommendations seriously and may even use them for handling without further peer review (only peer review by handling editors)

PCI Ecology

PCI Paleontology



Peer Community In

Ecology Free and transparent preprint and postprint
recommendations in ecology

- Launch of the website in January 2018
- 284 recommenders/editors
- 24 preprint submissions
- 2 recommendations



Peer Community In

Paleontology Free and transparent preprint
peer-review in paleontology

- Launch of the website in January 2018
- 82 recommenders/editors
- 2 submissions

Advantages of PCI?

For authors

You obtain ≥ 2 reviews of your preprint \rightarrow You improve the quality of your preprint

Notorious journals consider PCI reviews as they stand and/or to speed up their decisions

A text recommending your preprint is signed by the editor and published (like a N&V)

For Editors/recommenders

You choose to pick up or not papers, you edit only interesting papers

You edit few papers each year (maximum = 4)

You sign a news & views like paper that is published (with a DOI, citable)

For reviewers

You can get credit for your reviews : they are published by PCI and deposited in an open archive

Economic model

- **Mostly human time**

- 1/5 full time / each PCI
- Maintenance of the web site + addresses
~ 0.1 full time / all PCI

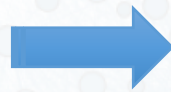


www.shutterstock.com · 685227487

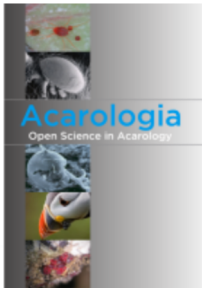
- **Functioning** : about 5 K€/year/each PCI

- Web site hosting and development
- Meeting of the managing board
- Promotion

Creation of new PCIs



Managing board of *Acarologia* thinks about:



PCI Acarologia

PCI Computational biology -

PCI Plant Mol Biol -

PCI Entomology -

PCI Neurobiology -

Others contacts: *PCI Genetics/Genomics, PCI Oceanography, PCI Virology, PCI Computational Biology, PCI Archaeology...*

Call for the creation of new PCIs

- In as many scientific disciplines as possible
 - Chose a topic.
May be highly specialized (eg PCI medical entomology) or very generalist (eg PCI Physics)
 - Set up a managing board
 - Start to bring together a large number of « recommenders »
- Proposals will be evaluated by the PCI organization
- Founders of the new PCI will benefit of:
 - a fully operational website
 - a logistical support from the PCI
- Interested? Need further explanation on how to proceed?
Please contact us at contact@peercommunityin.org