Peer Review Workshop

Supporting the next generation of researchers

The University of Hong Kong
May 14, 2019

- WHAT IS PUBLONS?
- RELATIONSHIP WITH CLARIVATE ANALYTICS
- MISSION AND GOALS

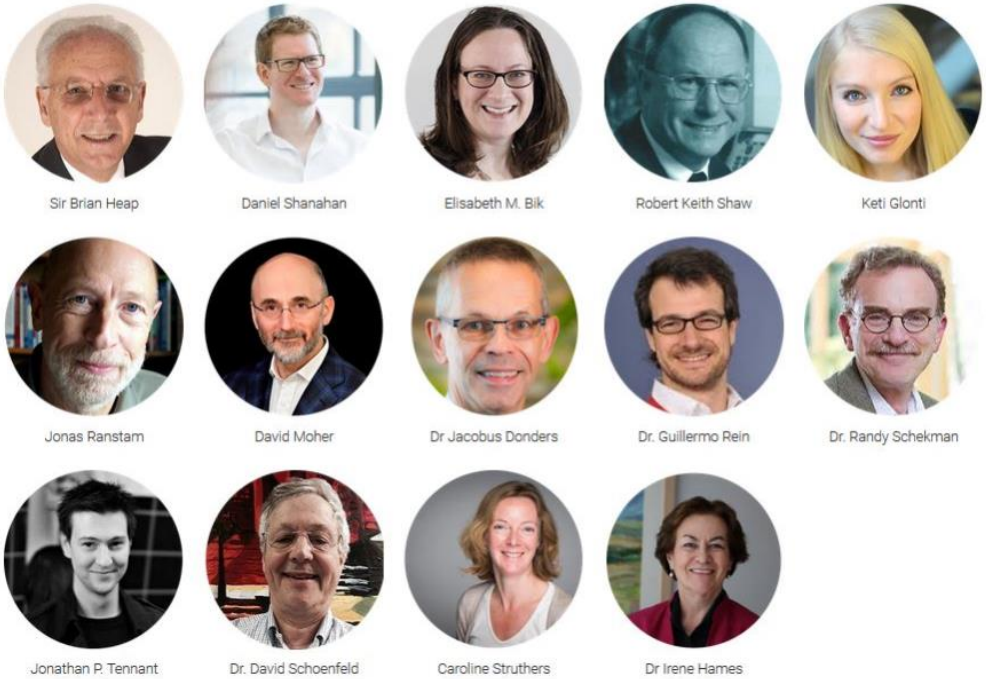
Workshop outline

1.	Introducing Publons Academy	14:30 - 14:40
2.	Peer Review & publishing	14:40 - 15:00
3.	Providing feedback	15:00 - 15:15
4.	Peer review ethics	15:15 - 15:25
	Break	*15:25 - 15:35*
5.	Structuring reviews	15:35 - 16:00
6.	Summary	16:00 - 16:05
7.	Peer review exercise	16:05 - 16:20
8.	Questions	16:20 - 16:30

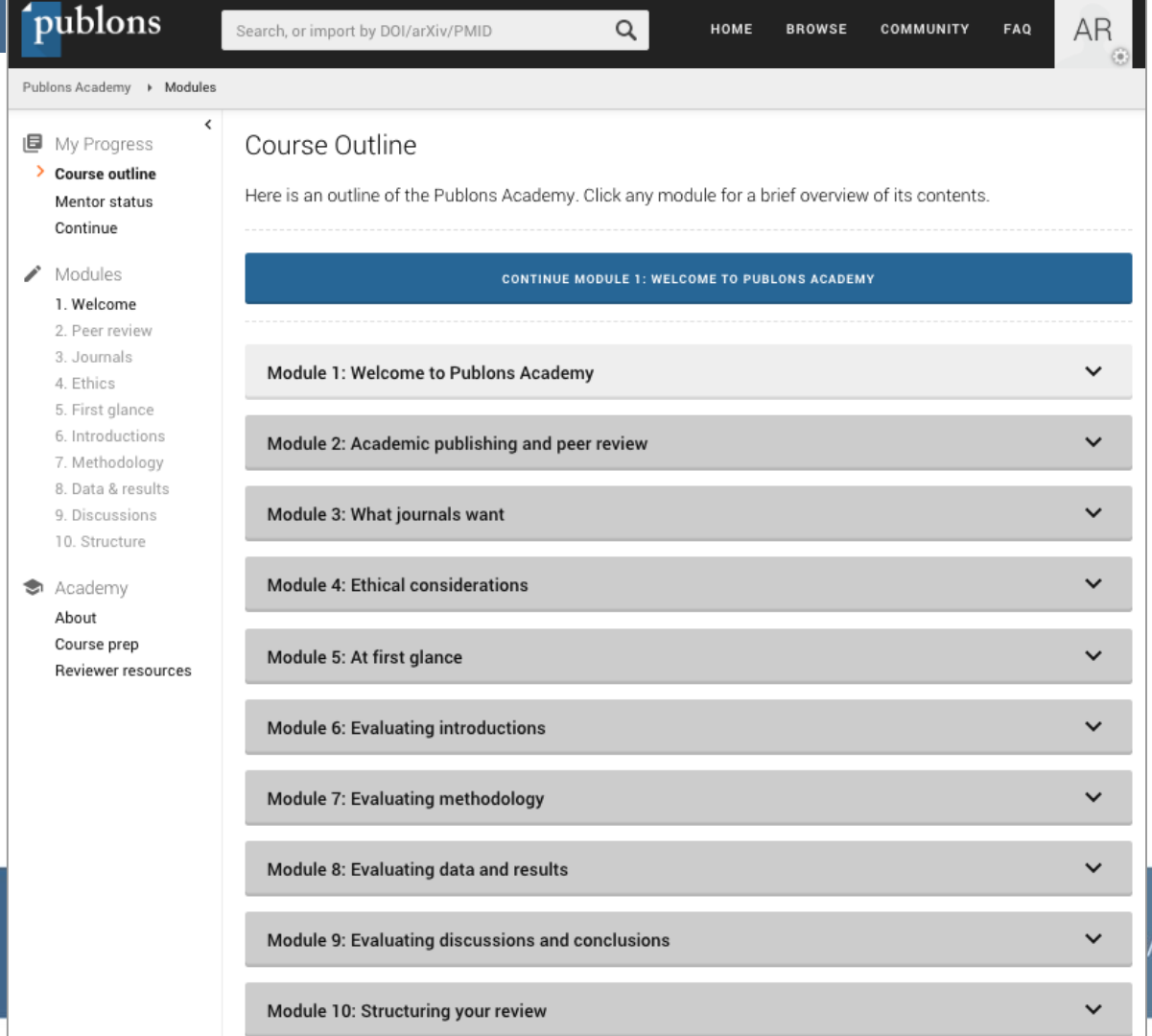
1 - Introducing Publons Academy

Designed together with world renowned experts

including:



- Introductory module
- Modules to cover core reviewing skills
- Modules to cover industry knowledge
- Practical experience activities


publons
Search, or import by DOI/arXiv/PMID
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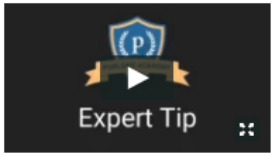
COMMUNITY
FAQ
AR
Publons Academy
Modules
My Progress
Course outline
Mentor status
Continue
Modules
1. Welcome
2. Peer review
3. Journals
4. Ethics
5. First glance
6. Introductions
7. Methodology
8. Data & results
9. Discussions
10. Structure
Academy
About
Course prep
Reviewer resources
Course Outline
Here is an outline of the Publons Academy. Click any module for a brief overview of its contents.
CONTINUE MODULE 1: WELCOME TO PUBLONS ACADEMY
Module 1: Welcome to Publons Academy
Module 2: Academic publishing and peer review
Module 3: What journals want
Module 4: Ethical considerations
Module 5: At first glance
Module 6: Evaluating introductions
Module 7: Evaluating methodology
Module 8: Evaluating data and results
Module 9: Evaluating discussions and conclusions
Module 10: Structuring your review

Module 3: What journals want

Learn about peer review from a journal editor's point of view



Resources:

Slides
Video transcript

Exercise

Answer the multiple choice questions below related to what journals look for in reviewers.

Before accepting a review invitation, you should:

- ◯ Check that you don't have any conflicts of interest
- ◯ Suggest replacement reviewers
- ◯ Proof-read your review
- ◯ Refer to the journal's guidelines and reviewer form

After accepting a review invitation, you should:

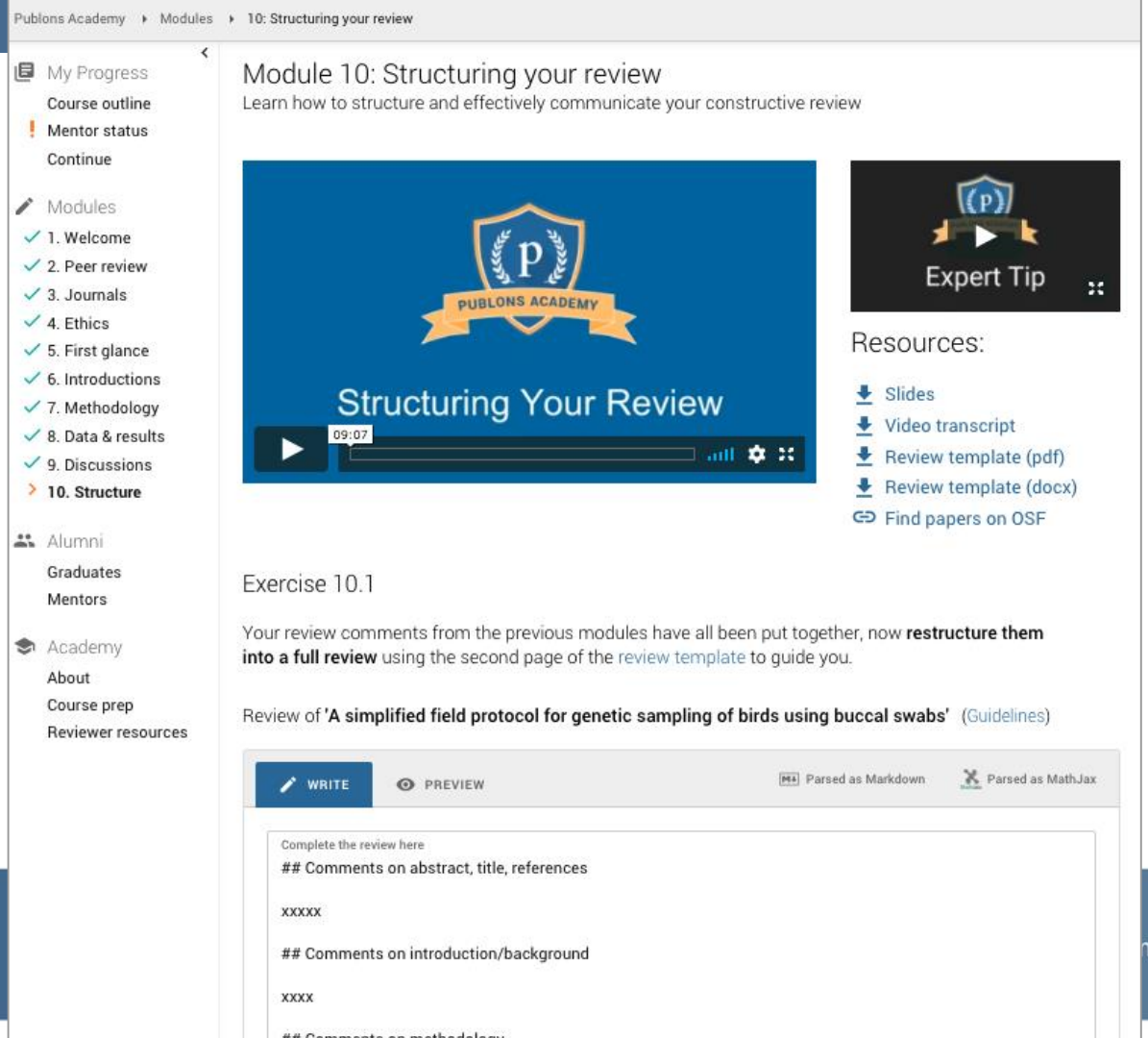
- ◯ Check that you don't have any conflicts of interest
- ◯ Suggest replacement reviewers
- ◯ Proof-read your review
- ◯ Refer to the journal's guidelines and reviewer form

If declining a review invitation, you should:

- ◯ Check that you don't have any conflicts of interest
- ◯ Suggest replacement reviewers
- ◯ Proof-read your review
- ◯ Refer to the journal's guidelines and reviewer form

Just before submitting your review, you should:

- ◯ Check that you don't have any conflicts of interest
- ◯ Suggest replacement reviewers
- ◯ Proof-read your review
- ◯ Refer to the journal's guidelines and reviewer form


Publons Academy ▸ Modules ▸ 10: Structuring your review
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Modules
1. Welcome
2. Peer review
3. Journals
4. Ethics
5. First glance
6. Introductions
7. Methodology
8. Data & results
9. Discussions
10. Structure
Alumni
Graduates
Mentors
Academy
About
Course prep
Reviewer resources
Module 10: Structuring your review
Learn how to structure and effectively communicate your constructive review
PUBLONS ACADEMY
Structuring Your Review
09:07
Expert Tip
Resources:
Slides
Video transcript
Review template (pdf)
Review template (docx)
Find papers on OSF
Exercise 10.1
Your review comments from the previous modules have all been put together, now restructure them into a full review using the second page of the review template to guide you.
Review of 'A simplified field protocol for genetic sampling of birds using buccal swabs' (Guidelines)
WRITE
PREVIEW
Parsed as Markdown
Parsed as MathJax
Complete the review here
Comments on abstract, title, references
xxxxx
Comments on introduction/background
xxxx

10: Structuring your review

Exercise 10.2

Choose a second published paper from your field of research to review using everything you've learned so far (including the feedback from your mentor).

Add in the details of your chosen paper, then **write a full review** using the review template to guide you. You will not be able to submit this review before your first review has been approved by your mentor.

Import article details by entering:

Article DOI, PubMed ID, or arXiv | or | Article title

Review of **'(Please add publication details above)'** (Guidelines)

WRITE | PREVIEW

Complete the review here

doi: 10.1136/bmj.g7094

Module 10: Structuring your review

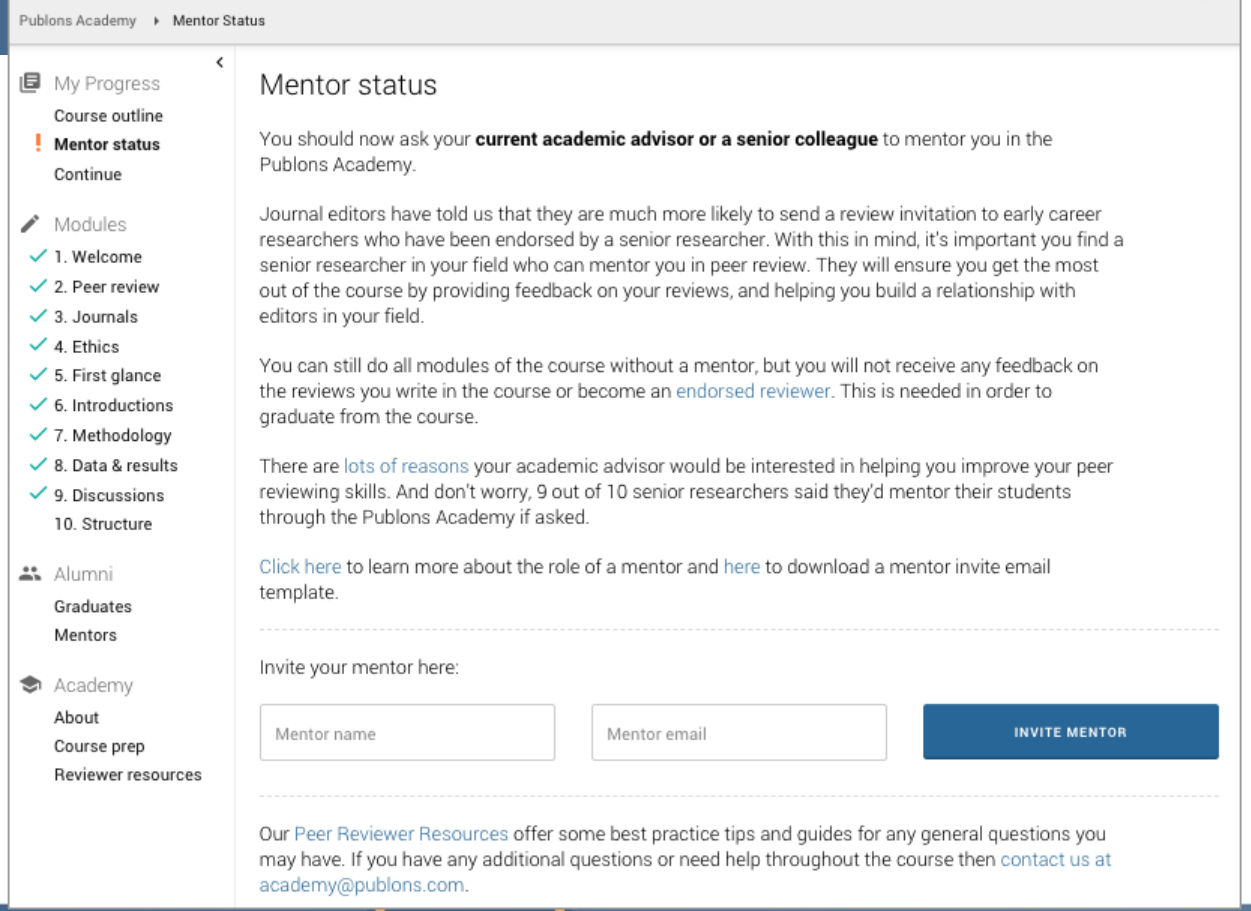
Learn how to structure and effectively communicate your constructive review

Resources:

- Slides
- Video transcript
- Review template (pdf)
- Review template (docx)
- Find papers on OSF

PUBLONS ACADEMY

Powering Peer Review


Publons Academy
Mentor Status
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Modules
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Alumni
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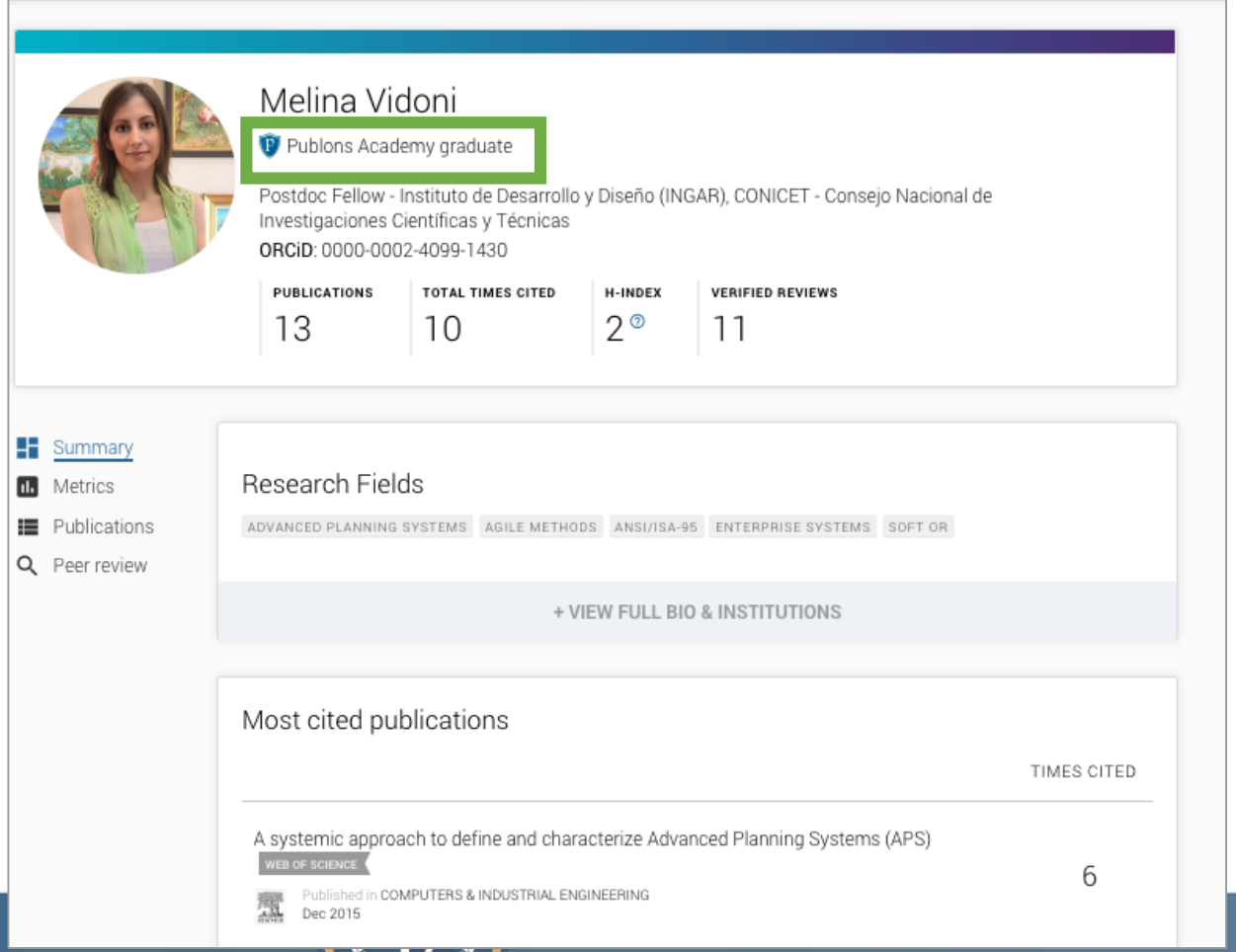
Mentor status
You should now ask your current academic advisor or a senior colleague to mentor you in the Publons Academy.
Journal editors have told us that they are much more likely to send a review invitation to early career researchers who have been endorsed by a senior researcher. With this in mind, it's important you find a senior researcher in your field who can mentor you in peer review. They will ensure you get the most out of the course by providing feedback on your reviews, and helping you build a relationship with editors in your field.
You can still do all modules of the course without a mentor, but you will not receive any feedback on the reviews you write in the course or become an endorsed reviewer. This is needed in order to graduate from the course.
There are lots of reasons your academic advisor would be interested in helping you improve your peer reviewing skills. And don't worry, 9 out of 10 senior researchers said they'd mentor their students through the Publons Academy if asked.
Click here to learn more about the role of a mentor and here to download a mentor invite email template.
Invite your mentor here:
Mentor name
Mentor email
INVITE MENTOR
Our Peer Reviewer Resources offer some best practice tips and guides for any general questions you may have. If you have any additional questions or need help throughout the course then contact us at academy@publons.com.


Melina Vidoni
Publons Academy graduate
Postdoc Fellow - Instituto de Desarrollo y Diseño (INGAR), CONICET - Consejo Nacional de Investigaciones Científicas y Técnicas
ORCiD: 0000-0002-4099-1430
PUBLICATIONS
13
TOTAL TIMES CITED
10
H-INDEX
2
VERIFIED REVIEWS
11
Summary
Metrics
Publications
Peer review
Research Fields
ADVANCED PLANNING SYSTEMS
AGILE METHODS
ANSI/ISA-95
ENTERPRISE SYSTEMS
SOFT OR
+ VIEW FULL BIO & INSTITUTIONS
Most cited publications
TIMES CITED
A systemic approach to define and characterize Advanced Planning Systems (APS)
WEB OF SCIENCE
Published in COMPUTERS & INDUSTRIAL ENGINEERING
Dec 2015
6

PUBLONS ACADEMY

Graduates of the the Publons Academy Practical Peer Review course have been endorsed by a qualified mentor after completing peer review course work corresponding to 10-15 hours.

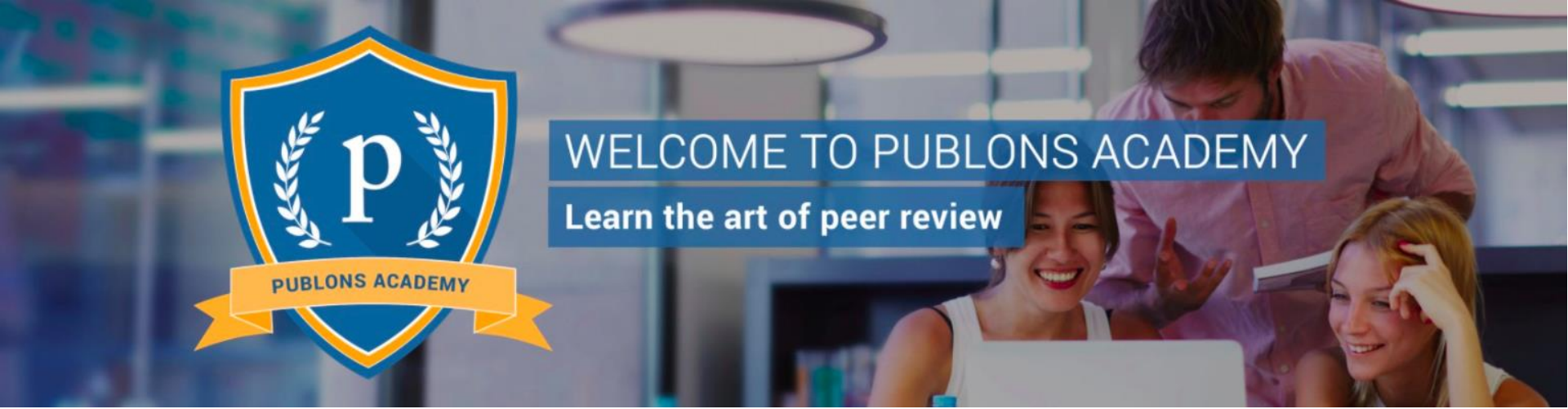
CERTIFIED PUBLONS ACADEMY PEER REVIEWER

Publons, in accordance with the recommendation of the Managing Director, hereby recognize

Peer Reviewer

As having completed the Publons Academy Practical Peer Review course to a satisfactory level.

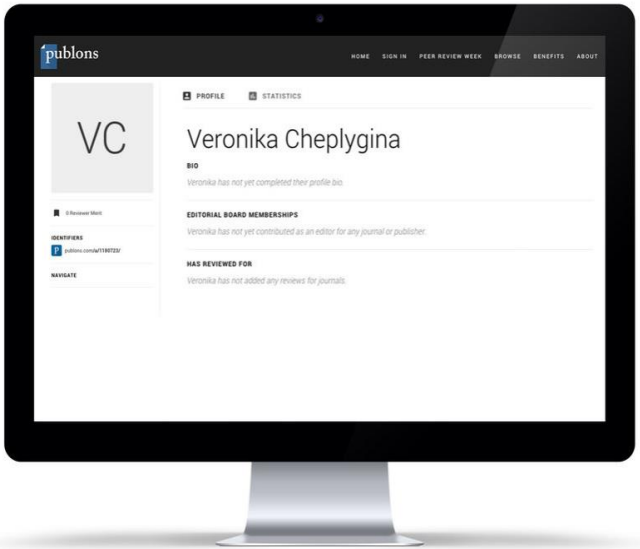
Dr. A.R.H. Preston, Managing Director, publons.com

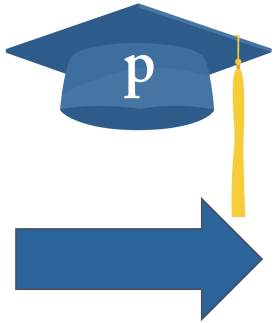


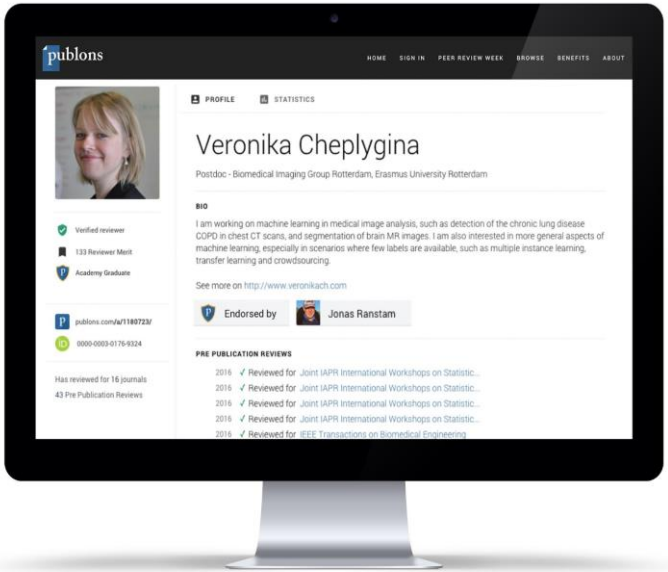
Academy graduates will:

- Understand how the peer review process works
- Have reviewed 2 papers in their area of expertise
- Be endorsed by their supervisor/mentor
- Connect with editors at relevant journals

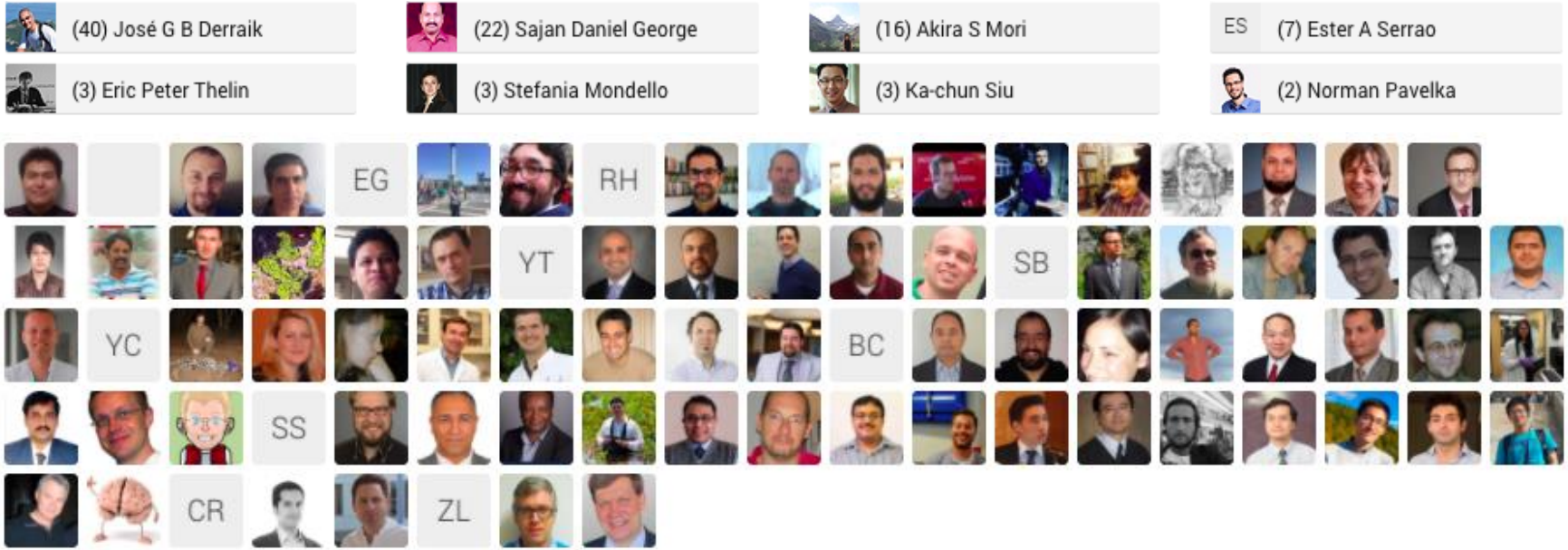
Build your profile as an expert reviewer



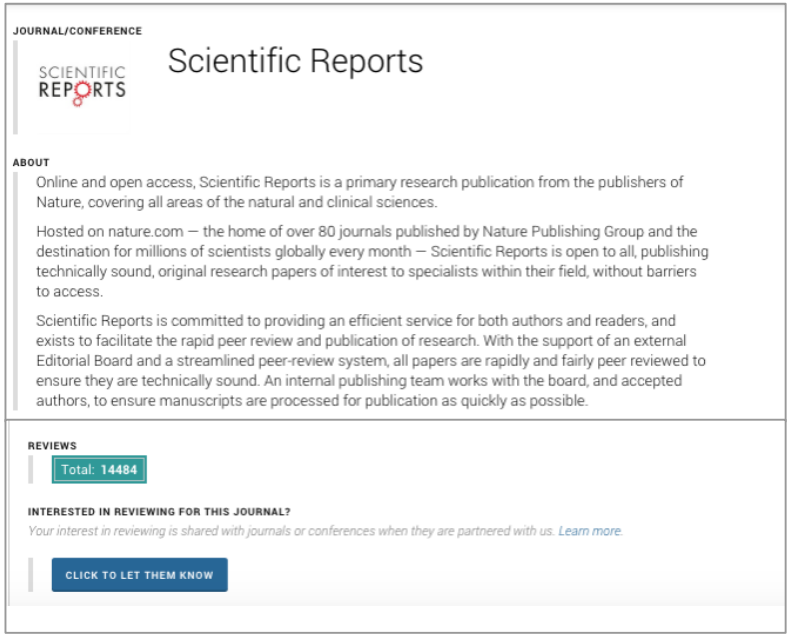


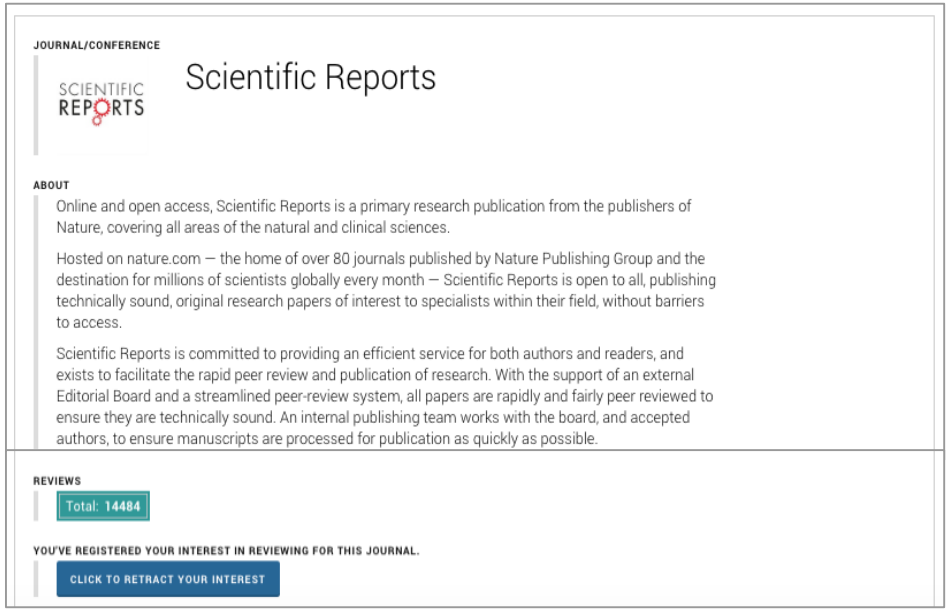


Get in front of top editors on Publons



Express interest to review for your favourite journals

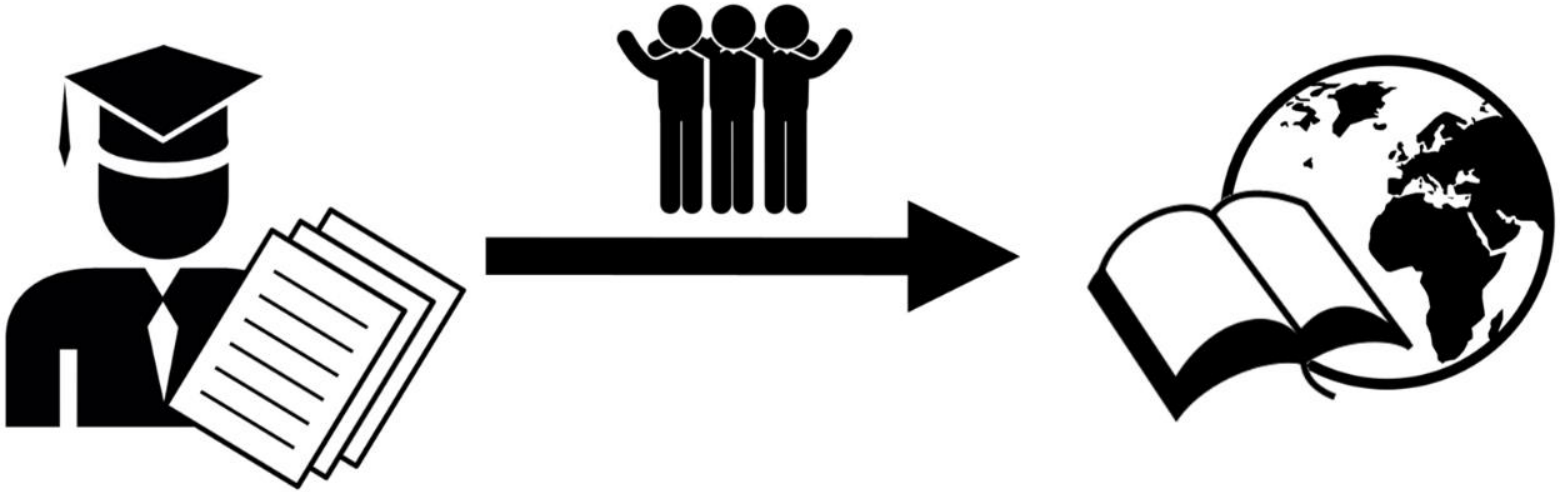




Section 1 summary

- Introduced the Academy advisors
- Overview of Academy modules and exercises
- Explained how to involve a mentor
- What happens post-graduation
- How to express interest to review for journals on Publons

2 - Peer Review & Publishing



What peer review does for research

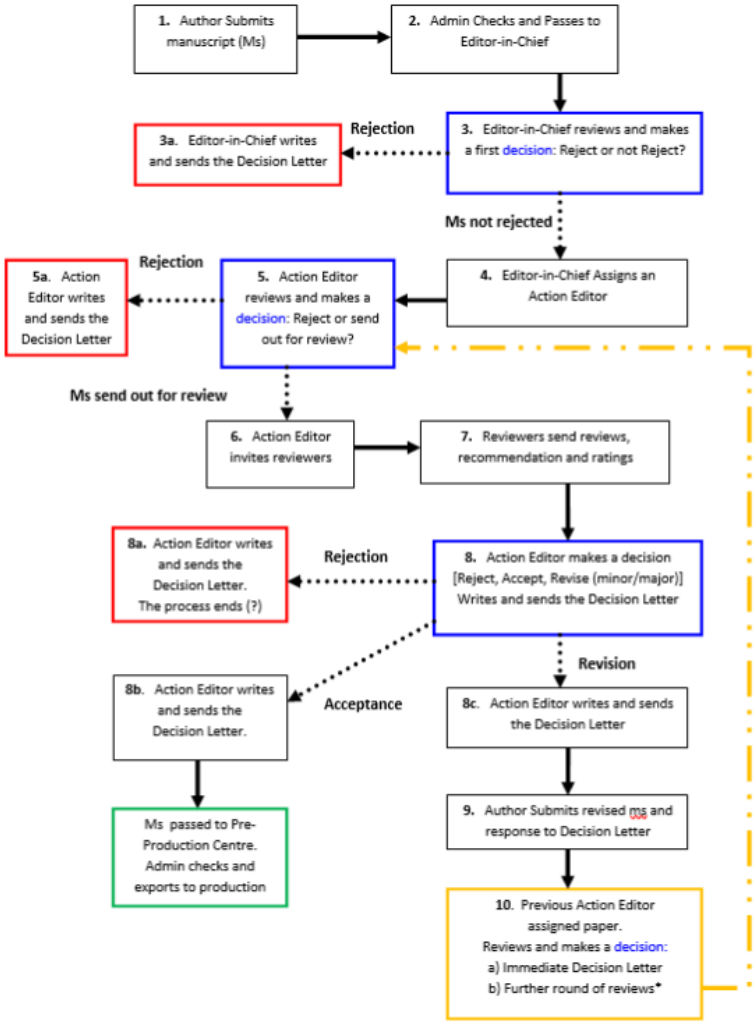
- Quality control
- Logic of questions posed
- Methodological flaws and unsound procedures
- Appropriate statistical analysis
- Fine tune writing

What peer review does for you

- Develops your critical thinking skills
- Improves your writing
- Develops professional relationships
- Increases your reputation
- Advances your career

What the academic community is doing

- Developing a new era of review
- Standards, competencies and guidelines
- Structured training


1. Author Submits manuscript (Ms)
2. Admin Checks and Passes to Editor-in-Chief
3. Editor-in-Chief reviews and makes a first decision: Reject or not Reject?
Rejection
3a. Editor-in-Chief writes and sends the Decision Letter
Ms not rejected
4. Editor-in-Chief Assigns an Action Editor
5. Action Editor reviews and makes a decision: Reject or send out for review?
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Ms send out for review
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7. Reviewers send reviews, recommendation and ratings
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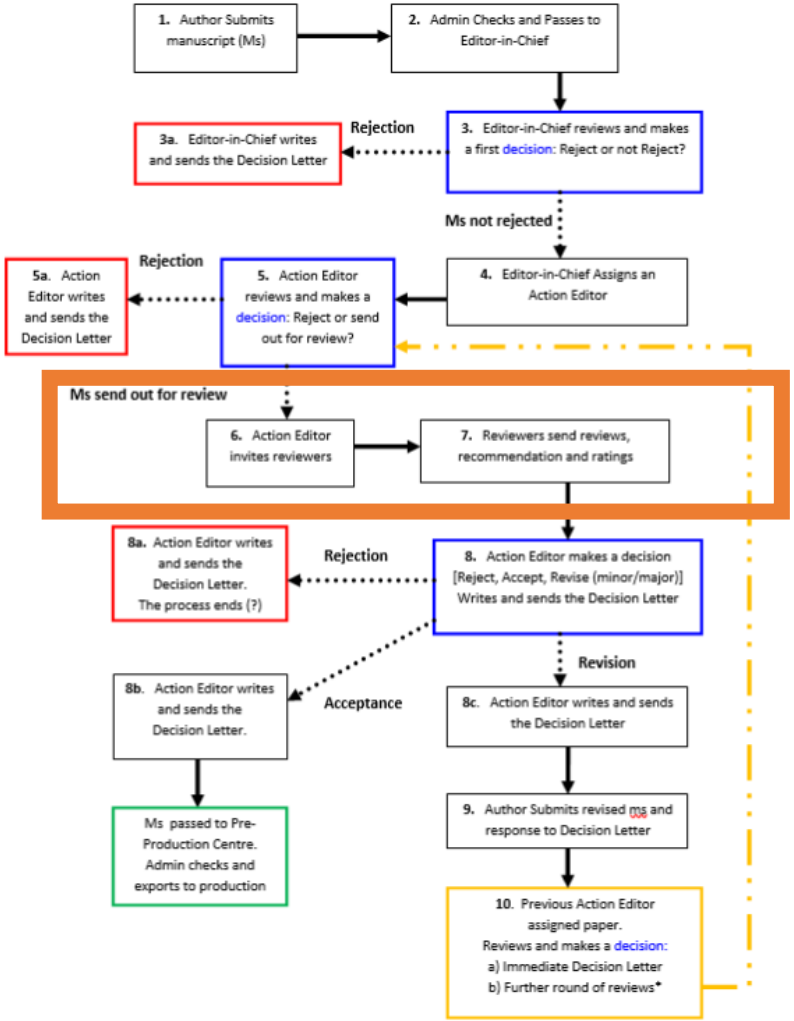
Rejection
8a. Action Editor writes and sends the Decision Letter. The process ends (?)
Revision
8c. Action Editor writes and sends the Decision Letter
Acceptance
8b. Action Editor writes and sends the Decision Letter.
9. Author Submits revised ms and response to Decision Letter
Ms passed to Pre-Production Centre. Admin checks and exports to production
10. Previous Action Editor assigned paper. Reviews and makes a decision: a) Immediate Decision Letter b) Further round of reviews*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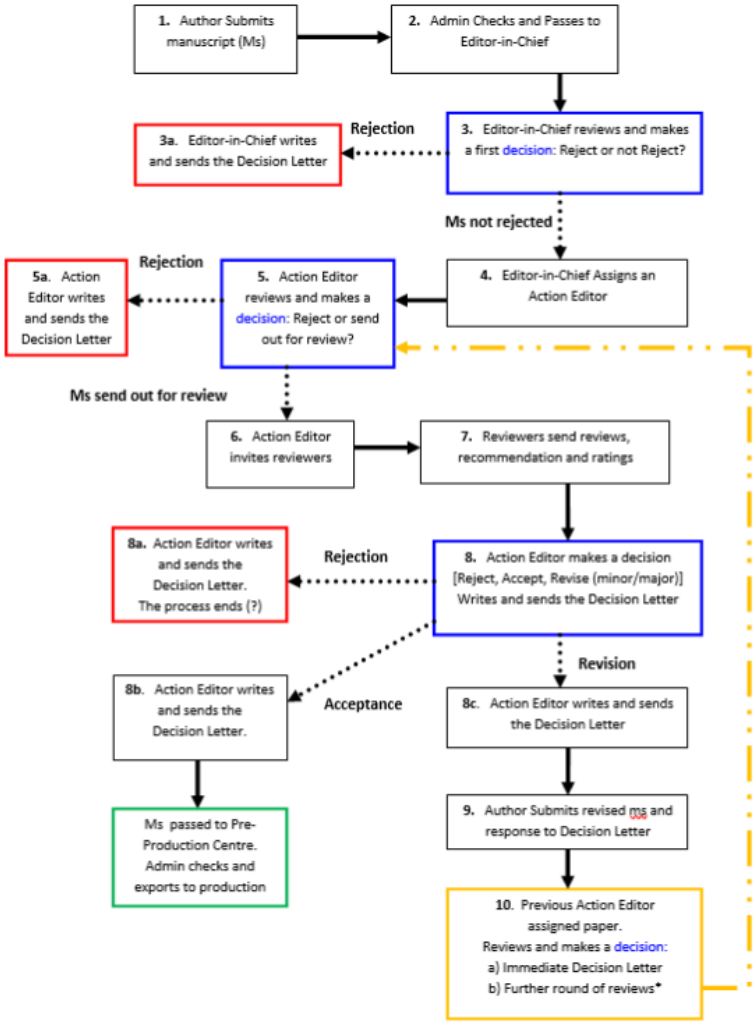
Types of peer review

- Single Blind
- Double Blind
- Open-*Attributed*
- Open-*Public*
- Post-Publication
- Transferable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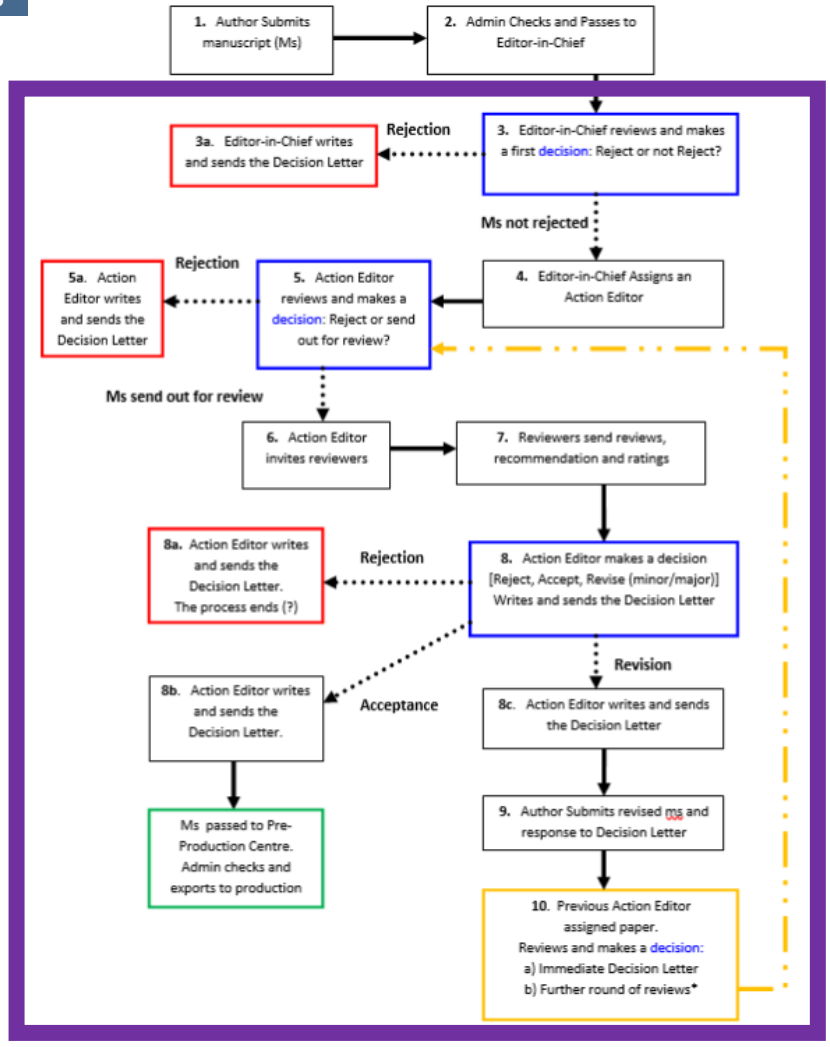
b) Further round of reviews*

Ms passed to Pre-Production Centre. Admin checks and exports to production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Publications

HIDE FILTERS | CLEAR ALL

Title

Research field: Environmental Science

DOI

Journal

Displayed pre-pub reviews

Displayed post-pub reviews

Has followers

120 results

DATE	TITLE	JOURNAL	CITATIONS	SCORE	ALTMETRIC
Jan 2018	Azithromycin sorption and biodegradation in a simulated California r...	Chemosphere	-	8	1
2018	Physiological modes of action across species and toxicants: the key...	Environmental Science: Process...	-	9	7
Jan 2018	Enantio-selective molecular dynamics of (±)- o,p -DDT uptake and de...	Environmental Research	-	7.3	1
Jan 2018	Complex migration of antibiotic resistance in natural aquatic enviro...	Environmental Pollution	-	7.5	1
Dec 2017	Sample treatment for the determination of emerging organic conta...	Trends in Analytical Chemistry	-	9	1
Nov 2017	Lending an Eye to a Beleaguered Guardian of the Environment	Environmental Science & Techno...	-	9.5	14
Nov 2017	Stressor Exposures Determine Risk: So, Why Do Fellow Scientists C...	Environmental Science & Techno...	-	9.5	14
Nov 2017	Enantiomer-specific measurements of current-use pesticides in aqu...	Environmental Toxicology and C...	-	7.1	1
Nov 2017	Responses of reef building corals to microplastic exposure	Environmental Pollution	-	8	1
Nov 2017	Enantiomeric profiling of a chemically diverse mixture of chiral phar...	Environmental Pollution	2	8.5	1
Nov 2017	Effects of polystyrene microplastics on early stages of two marine i...	Environmental Pollution	-	7.5	1

Merit: 5

DETAILS

COMMENT

ENDORSE

Basic reporting

OK, however the lack of positive result led the authors for fishing to possible association, not so strongly supported by hypothesis. The main important critic relates to the Discussion that would need to be improved in clarity with a summary of results followed by an interpretation of results supported by literature data.

Experimental design

OK, however Line 66: The number of dogs used in Part B (n = 30) is in contradiction with the number mentioned in the abstract (n = 15) for the same part.

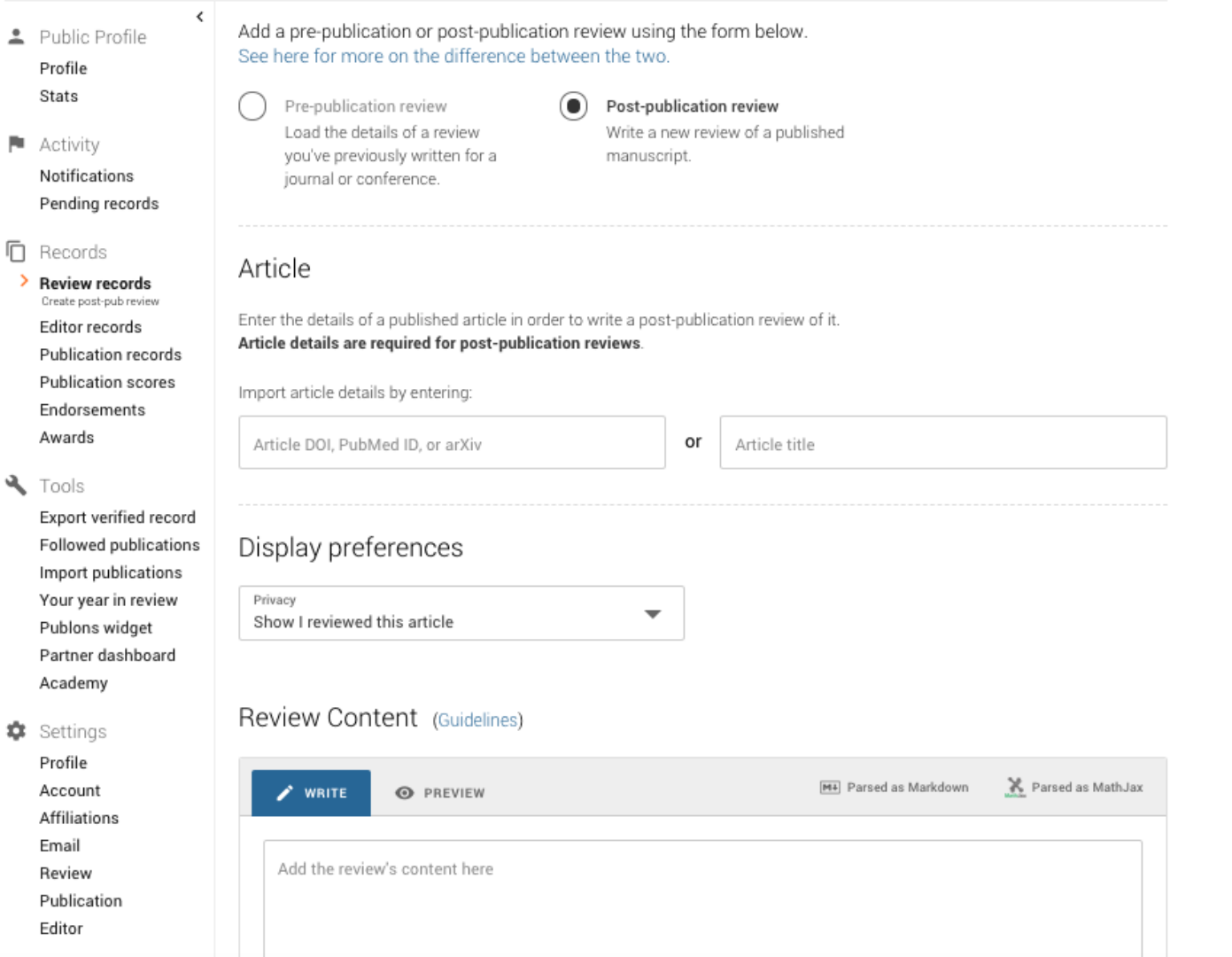
Validity of the findings

Introduction Line 38: The abbreviation NSAID has not been defined earlier in the introduction.

Line 41-42: This statement is not supported by previous studies so it lacks credibility.

General question for the introduction: Why did you decide to choose NSAID such as meloxicam and why not another class of analgesic such as an opioid or another type of pain reliever other than the study you cited (Wernham et al., 2011)? I suppose it to be related to the retrospective nature of Part A, and its support by a Pharmaceutical Industry, but this would need to be explained, as the choice of NSAID is not without potential deleterious effect on sleep quality.

Material and methods Line 123: This is a major bias of not having selected the same time periods for accelerometer evaluation during the night. It would have been more careful to discard in part A the same hour than in part B. Moreover, based in our large experience with accelerometry, we have largely described that a group effect in accelerometry would require a large sample size, with regards to the individual variability. What is more sensitive as outcome is the individual change in accelerometry related to the treatment each dog will receive (either placebo or meloxicam). This would largely simplify the statistical analysis and in consequence the clarity of the paper. Moreover, the count intensity is not always the best choice of outcome in accelerometry as we have reported in previous publication the association between accelerometry and CSOM (Rialland P et al.

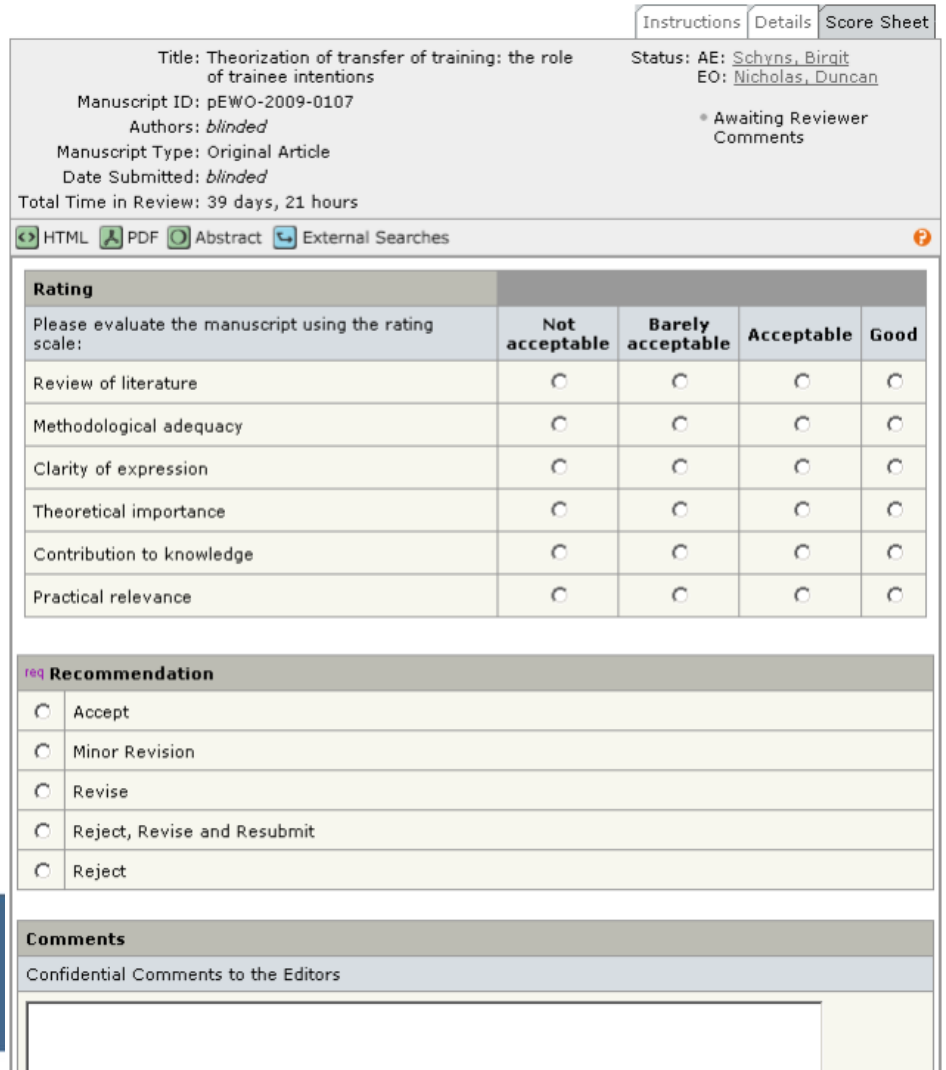

Public Profile
Profile
Stats
Activity
Notifications
Pending records
Records
Review records
Create post-pub review
Editor records
Publication records
Publication scores
Endorsements
Awards
Tools
Export verified record
Followed publications
Import publications
Your year in review
Publons widget
Partner dashboard
Academy
Settings
Profile
Account
Affiliations
Email
Review
Publication
Editor
Add a pre-publication or post-publication review using the form below.
See here for more on the difference between the two.
Pre-publication review
Load the details of a review you've previously written for a journal or conference.
Post-publication review
Write a new review of a published manuscript.
Article
Enter the details of a published article in order to write a post-publication review of it.
Article details are required for post-publication reviews.
Import article details by entering:
Article DOI, PubMed ID, or arXiv
or
Article title
Display preferences
Privacy
Show I reviewed this article
Review Content (Guidelines)
WRITE
PREVIEW
Parsed as Markdown
Parsed as MathJax
Add the review's content here

Section 2 summary

- What peer review does for science, what it can do for your career
- How the scientific community is tackling issues in peer review
- How Publons is helping
- Peer review process and models of peer review

3 - Providing Feedback

- For the Editor to make a decision
- For the Author to improve their work
- Check for journal guidelines
- Check review website



Instructions | Details | Score Sheet

Title: Theorization of transfer of training: the role of trainee intentions
Manuscript ID: pEWO-2009-0107
Authors: *blinded*
Manuscript Type: Original Article
Date Submitted: *blinded*
Total Time in Review: 39 days, 21 hours

Status: AE: Schyns, Birgit
EO: Nicholas, Duncan
• Awaiting Reviewer Comments

HTML | PDF | Abstract | External Searches

Rating				
Please evaluate the manuscript using the rating scale:	Not acceptable	Barely acceptable	Acceptable	Good
Review of literature	○	○	○	○
Methodological adequacy	○	○	○	○
Clarity of expression	○	○	○	○
Theoretical importance	○	○	○	○
Contribution to knowledge	○	○	○	○
Practical relevance	○	○	○	○

req **Recommendation**

- ○ Accept
- ○ Minor Revision
- ○ Revise
- ○ Reject, Revise and Resubmit
- ○ Reject

Comments

Confidential Comments to the Editors

What editors want from reviewers

- Courteous
- Civil
- Constructive
- Stick to timelines
- Declare any conflicts of interest

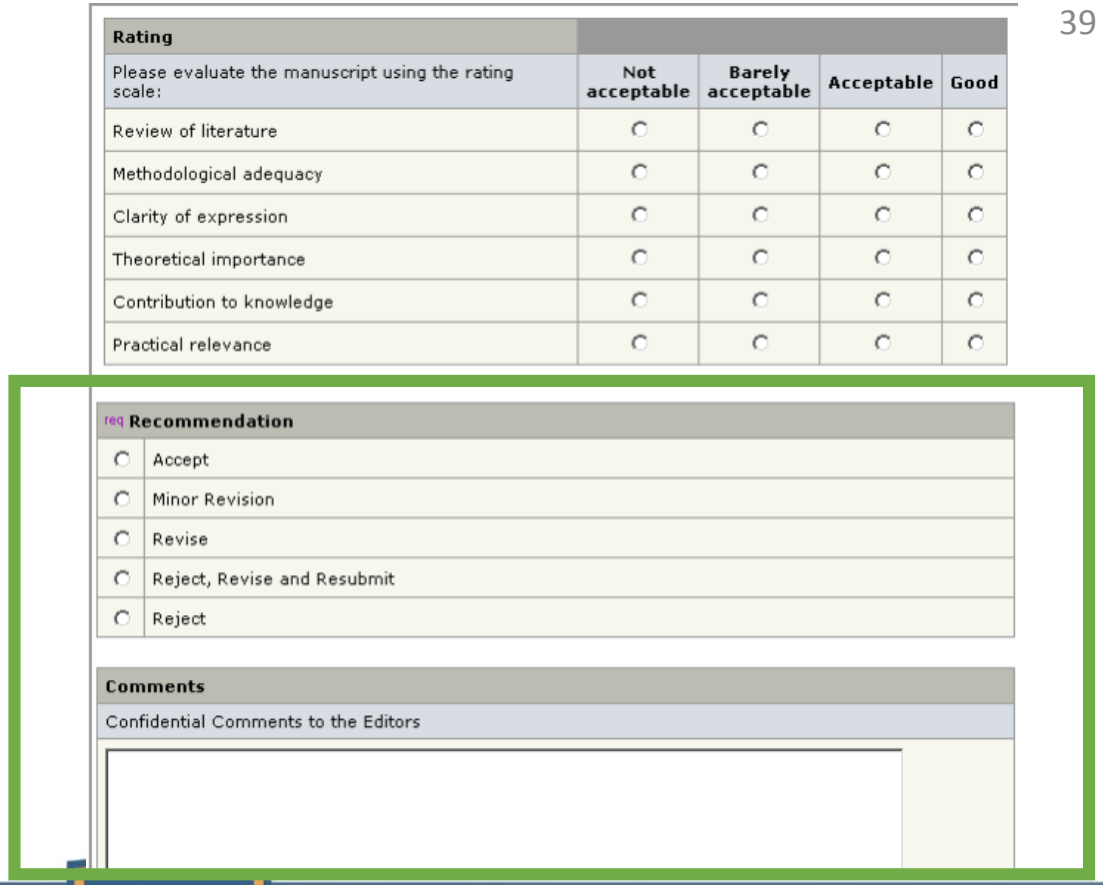
Structuring your review

- Number comments
- Page, paragraph and line references
- Quote text
- Suggest revisions
- Include positive comments

Decisions

- Reject
- Major Revisions
- Minor Revisions
- Accept

- Reject
- Major Revisions
- Minor Revisions
- Accept



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Contribution to knowledge	○	○	○	○
Practical relevance	○	○	○	○

req Recommendation	
○	Accept
○	Minor Revision
○	Revise
○	Reject, Revise and Resubmit
○	Reject

Comments

Confidential Comments to the Editors

Section 3 summary

- Reviews are for Editors and Authors
- Check journal guides and submission forms before starting
- Structure your review with numbers, quotes, criticism and praise
- Provide a decision recommendation
- Consider your etiquette and stick to the timelines

4 - Peer Review Ethics

Addressing criticisms of peer review

- Ineffective in spotting errors
- Inconsistent in judgement
- Slow and expensive
- Not transparent
- Biased
- Abuse and exploitation / manipulation

Biases in peer review

- Unintentional favouritism or unfair critique due to
  - Gender
  - Geographical location
  - Institution
  - Research method
- Follow the same structured process

Conflicts of Interest

- Avoid reviewing papers of current or recent collaborators, colleagues and friends
  - Decline invitation and declare COI
  - If not recent collaborator/colleague then declare COI and editor will make a decision

- Competing papers
  - Decline as you may not be able to give an unbiased review

Expertise and Confidentiality

- Be honest about your abilities
- Be confident about your knowledge
- Don’t disclose sensitive information
  - Do consult colleagues for specific advice
  - Obtain permission for co-reviews

Research ethics

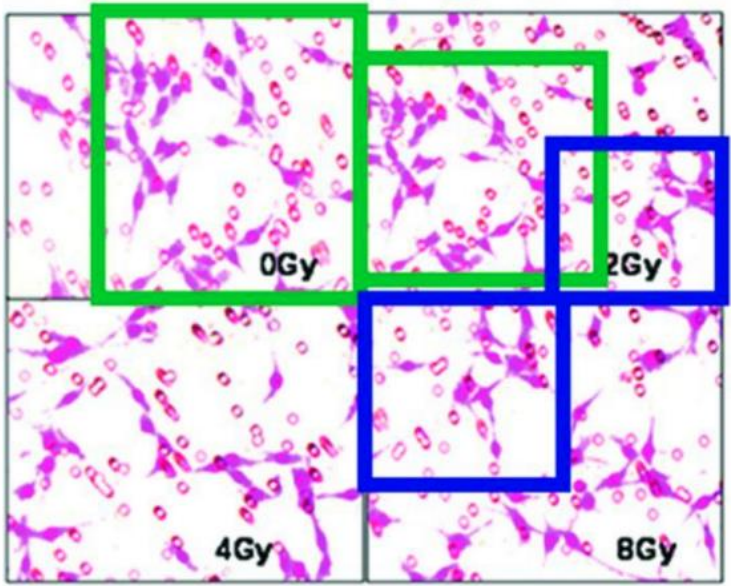
- Data-sharing
  - Does the journal require open data?

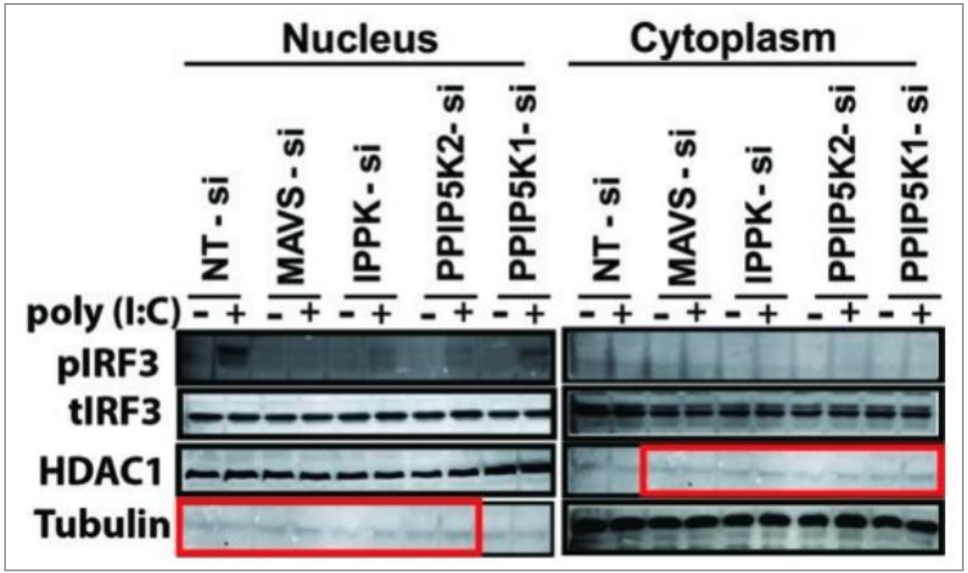
- Funding transparency
  - Is there a funding statement?
  - Is there a conflicts of interest statement?
- Treatment of human and animal subjects
  - Were consents and permits obtained?

Publishing ethics

- Plagiarism
  - Authors cannot copy their own work or that of others
  - Is everything cited and quoted correctly?
- Data and image manipulation
  - *Fabrication* is the *invention* of data
  - *Falsification* is the *alteration* of real data

Examples of image manipulation





What to do if you suspect misconduct

- Detecting misconduct is not solely a reviewers job
  - It's the editors job
  - They have tools to help detect plagiarism and misconduct
- If you suspect misconduct
  - Let editor know confidentially

Basic principles to which peer reviewers should adhere

Peer reviewers should:

- only agree to review manuscripts for which they have the subject expertise required to carry out a proper assessment and which they can assess in a timely manner
- respect the confidentiality of peer review and not reveal any details of a manuscript or its review, during or after the peer-review process, beyond those that are released by the journal
- not use information obtained during the peer-review process for their own or any other person's or organization's advantage, or to disadvantage or discredit others
- declare all potential conflicting interests, seeking advice from the journal if they are unsure whether something constitutes a relevant interest
- not allow their reviews to be influenced by the origins of a manuscript, by the nationality, religious or political beliefs, gender or other characteristics of the authors, or by commercial considerations
- be objective and constructive in their reviews, refraining from being hostile or inflammatory and from making libellous or derogatory personal comments
- acknowledge that peer review is largely a reciprocal endeavour and undertake to carry out their fair share of reviewing and in a timely manner
- provide journals with personal and professional information that is accurate and a true representation of their expertise
- recognize that impersonation of another individual during the review process is considered serious misconduct

Section 4 summary

- How we can play our part in increasing the integrity of peer review
- Biases and conflicts of interest
- Research and publishing ethics
- Example case study of plagiarism
- Introduced you to the COPE guidelines

Short 10 min break

1.	Introducing Publons Academy	14:30 - 14:40
2.	Peer Review & publishing	14:40 - 15:00
3.	Providing feedback	15:00 - 15:15
4.	Peer review ethics	15:15 - 15:25
	Break	*15:25 - 15:35*
5.	Structuring reviews	15:35 - 16:00
6.	Summary	16:00 - 16:05
7.	Peer review exercise	16:05 - 16:20
8.	Questions	16:20 - 16:30

5 – Reviewing a paper

a) Planning a review
b) Abstract
c) Introduction
d) Methods
e) Results: Figures & Tables
f) Discussion

a) Planning a review

- Scan to familiarise yourself with the paper
- 1st – structure, originality, overall quality
- 2nd – main issues and suggestions for revision
- 3rd – concluding statements and overall recommendation

b) Abstract

Variability in plankton elemental requirements can be important for global ocean biogeochemistry but we currently have a limited understanding of how ocean temperature influences the plankton C/N/P ratio.

Multiple studies have put forward a 'translation-compensation' hypothesis to describe the positive relationship between temperature and plankton N/P or C/P as cells should have lower demand for P-rich ribosomes and associated depressed QP when growing at higher temperature.

However, temperature affects many cellular processes beyond translation with unknown outcomes on cellular elemental composition. In addition, the impact of temperature on growth and elemental composition of phytoplankton is likely modulated by the life history and growth rate of the organism.

To test the direct and indirect (via growth rate changes) effect of temperature, we here analyzed the elemental composition and ratios in six strains affiliated with the globally abundant marine Cyanobacteria Prochlorococcus.

We found that temperature had a significant positive effect on the carbon and nitrogen cell quota, whereas no clear trend was observed for the phosphorus cell quota. The effect on N/P and C/P were marginally significantly positive across Prochlorococcus. The elemental composition and ratios of individual strains were also affected but we found complex interactions between the strain identity, temperature, and growth rate in controlling the individual elemental ratios in Prochlorococcus and no common trends emerged.

Thus, the observations presented here does not support the 'translation-compensation' theory and instead suggest unique cellular elemental effects as a result of rising temperature among closely related phytoplankton lineages.

Thus, the biodiversity context should be considered when predicting future elemental ratios and how cycles of carbon, nitrogen, and phosphorus may change in a future ocean.

Interactions between Thermal Acclimation, Growth Rate, and Phylogeny Influence *Prochlorococcus* Elemental Stoichiometry. PLOS ONE 11(12): Martiny AC, Ma L, Mouginot C, Chandler JW, Zinser ER (2016) https://doi.org/10.1371/journal.pone.0168291

b) Abstract

Variability in plankton elemental requirements can be important for global ocean biogeochemistry but we currently have a limited understanding of how ocean temperature influences the plankton C/N/P ratio.

1. General background

Multiple studies have put forward a 'translation-compensation' hypothesis to describe the positive relationship between temperature and plankton N/P or C/P as cells should have lower demand for P-rich ribosomes and associated depressed QP when growing at higher temperature.

2. Specific background

However, temperature affects many cellular processes beyond translation with unknown outcomes on cellular elemental composition. In addition, the impact of temperature on growth and elemental composition of phytoplankton is likely modulated by the life history and growth rate of the organism.

3. Gap in knowledge

To test the direct and indirect (via growth rate changes) effect of temperature, we here analyzed the elemental composition and ratios in six strains affiliated with the globally abundant marine Cyanobacteria Prochlorococcus.

4. Method

We found that temperature had a significant positive effect on the carbon and nitrogen cell quota, whereas no clear trend was observed for the phosphorus cell quota. The effect on N/P and C/P were marginally significantly positive across Prochlorococcus. The elemental composition and ratios of individual strains were also affected but we found complex interactions between the strain identity, temperature, and growth rate in controlling the individual elemental ratios in Prochlorococcus and no common trends emerged.

5. Results

Thus, the observations presented here does not support the 'translation-compensation' theory and instead suggest unique cellular elemental effects as a result of rising temperature among closely related phytoplankton lineages.

6. Conclusions

Thus, the biodiversity context should be considered when predicting future elemental ratios and how cycles of carbon, nitrogen, and phosphorus may change in a future ocean.

7. Relevance and application

Interactions between Thermal Acclimation, Growth Rate, and Phylogeny Influence *Prochlorococcus* Elemental Stoichiometry. PLOS ONE 11(12): Martiny AC, Ma L, Mouginot C, Chandler JW, Zinser ER (2016) https://doi.org/10.1371/journal.pone.0168291

c) Introduction

- Introduce the broader background
- Details directly relate to the research question
- Logical, clear, and easy to follow
- Justify the research and why it is important

c) Introduction

- Is it sound?
- Is there supporting evidence for the question?
- Is it current?
- Is it interesting?
- Could it advance the field?

c) Introduction

Introduction

The cellular contents of carbon (C), nitrogen (N), phosphorus (P), and other elements in marine phytoplankton are emerging as important features of ocean biogeochemistry. For a long time, C/N/P was assumed static at Redfield proportions (106/16/1)[1]. However, variability in plankton elemental requirements can influence nutrient limitation patterns and stress [2,3], nitrogen fixation rates [4,5], the link between nutrient supply and C export [6], and atmospheric CO_2 levels [7]. Recent work has demonstrated extensive differences in the elemental content and ratios of marine communities across regions or seasons [8–12]. However, the exact mechanisms controlling the observed regional differences are still uncertain as key environmental factors strongly co-vary in the ocean.

Multiple biological mechanisms controlling the elemental composition of marine phytoplankton have been proposed. The main suggested controls include nutrient availability, growth rate, temperature, and life history. Extensive experimental and model studies have demonstrated a strong effect of nutrient availability, whereby a low supply of nitrogen or phosphorus leads to a low cell quota (Q) of the corresponding element [13–16]. Another important factor is the cellular allocation towards P rich ribosomes at elevated growth rates. Coined the 'Growth Rate Hypothesis' [17], fast growth is hypothesized to result in high Q_P and corresponding low C/P and N/P ratios. However, this growth effect on stoichiometry appears to vary extensively by organism and environmental conditions [16,18,19]. Thus, the genetic and environmental contexts (and possible interactions) for changes in growth rate may be important to consider.

Broad background

- Main subjects
- Current understanding
- Gap in knowledge

Interactions between Thermal Acclimation, Growth Rate, and Phylogeny Influence *Prochlorococcus* Elemental Stoichiometry. PLOS ONE 11(12): Martiny AC, Ma L, Mouginot C, Chandler JW, Zinser ER (2016) https://doi.org/10.1371/journal.pone.0168291

c) Introduction

Here, we investigated the sensitivity of the elemental quotas of *Prochlorococcus* to changes in temperature, with the hypothesis that their N/P and C/P ratios are positively related to temperature. As a possible temperature effect will be modulated by changes in growth rate as well as the life history (i.e., genotype) of the organisms, we quantified the effect of temperature on the growth rate and elemental composition of three strains of the high-temperature-adapted HLII clade and three of the low-temperature-adapted HLI clade. This study contributes fundamental information on how temperature influences the elemental composition of this key, abundant lineage and its contribution to global biogeochemical cycles.

Current research

- Relationships
- Hypotheses
- Measurements
- Contribution to literature

Interactions between Thermal Acclimation, Growth Rate, and Phylogeny Influence *Prochlorococcus* Elemental Stoichiometry. PLOS ONE 11(12): Martiny AC, Ma L, Mouginot C, Chandler JW, Zinser ER (2016) https://doi.org/10.1371/journal.pone.0168291

d) Method

- Consider Validity and Reliability
- Appropriate sampling techniques
- Appropriate control groups
- Appropriate assessment measures
- Are there guidelines?

d) Method

Cell counting

Concentration of *Prochlorococcus* was measured by flow cytometry using a Guava EasyCyte 8HT cytometer (Millipore, Billerica, MA) and growth rates were estimated.

Particulate organic matter

Particulate organic carbon (POC), nitrogen (PON) and phosphorus (POP) samples were each collected in duplicate from each of three biological replicates (6 total) by filtration of 50 ml of culture onto precombusted (5 h, 500°C) GF/F filters (Whatman, Florham Park, New Jersey) and stored at -20°C. To quantify POC and PON, filter samples were thawed and allowed to dry overnight at 65°C. Filters were then packed into a 30 mm tin capsule (CE Elantech, Lakewood, New Jersey) and analyzed for C and N content on a FlashEA 1112 nitrogen and carbon analyzer (Thermo Scientific, Waltham, Massachusetts) [31]. POC and PON concentrations were calibrated using known quantities of atropine and peach leaves in each run. The amount of POP was determined in each sample using a modified ash-hydrolysis method [15,32]. We also analyzed multiple blank controls.

Data analysis

All data was plotted using Matlab. Statistical analyses were done using linear models in R. To account for non-linear effects of T on the elemental content of *Prochlorococcus* strains, T was treated as a factor with four levels.

Phylogenetic analysis

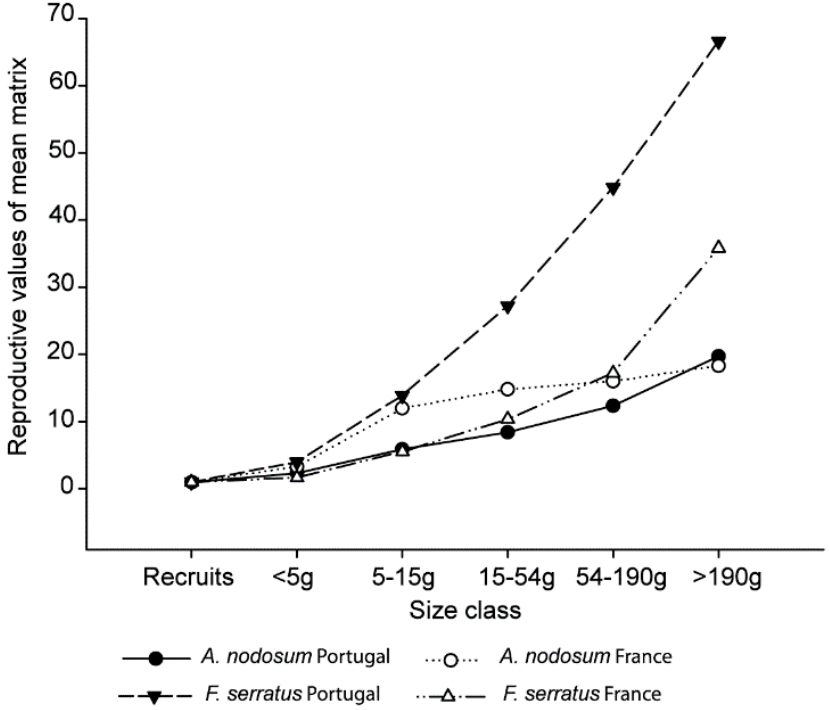
Prochlorococcus ITS nucleotide sequences from each strain were aligned using ClustalW [33]. Pair-wise DNA distance matrix (w. F84 substitution matrix) and neighbor-joining tree were calculated using Phylip v. 3.69 [34] using ITS sequences from *Prochlorococcus* assemblies HNLC1 and HNLC2 as outgroup [35]. Next, we found the linear contribution of temperature, growth rate and strain identity on cell quotas and rates. To evaluate if the strain identity effects were phylogenetically structured, we then compared an Euclidian distance matrix of the strain identity effects to the pair-wise DNA distance matrix using a Mantel test in the R package 'vegan' [36].

Interactions between Thermal Acclimation, Growth Rate, and Phylogeny Influence *Prochlorococcus* Elemental Stoichiometry. PLOS ONE 11(12):
Martiny AC, Ma L, Mouginot C, Chandler JW, Zinser ER (2016)
https://doi.org/10.1371/journal.pone.0168291

e) Results: Figures & Tables

- Units of measurement
- Labelled axes
- Legends
- Captions
- A purpose!

e) Results: Figures & Tables



e) Results: Figures & Tables

- Categories, rows and columns
- Descriptive headings
- Superscript letters or symbols
- Minimal formatting

e) Results: Figures & Tables

Floral trait	Habitat			Nested ANOVA	
	MWR (N = 40)	MLR (N = 42)	SWR (N = 51)	Habitat	Population within habitat
Spur Length	20.49±1.79[a]	20.64±2.31[a]	18.28±1.97[b]	***23.5%	*6.8%
Column Height	2.26±0.71[a]	2.01±0.28[b]	2.03±0.18[b]	**6.9%	***15.3%
Lip Width	6.62±0.57[a]	6.59±0.57[a]	7.26±0.61[b]	***23.2%	**9.8%
Lip Length	21.40±1.62[a]	22.29±2.17[ab]	23.00±2.09[b]	***10.3%	***15.7%
Lateral Petal Width	3.39±0.44[a]	3.13±0.28[b]	3.22±0.29[b]	***10.2%	***42.3%
Lateral Petal Length	20.63±1.67[a]	21.77±2.52[b]	21.66±2.00[ab]	***13.1%	***18.2%
Adaxial Sepal Width	4.42±0.39[a]	4.78±0.40[b]	4.60±0.33[c]	***14.2%	NS 6.5%
Adaxial Sepal Length	19.87±1.70[a]	21.57±2.37[b]	21.80±2.16[b]	***14.6%	***16.4%
Lateral Sepal Width	3.55±0.42[a]	3.70±0.24[b]	3.76±0.28[b]	***8.2%	***36.7%
Lateral Sepal Length	21.01±1.77[a]	22.80±2.41[b]	22.69±2.17[b]	***5.4%	*** 16.3%

MWR, Mountain windward rainforest; MLR, Mountain leeward rainforest; SWR, Submountain windward rainforest. Means followed by the same letter at the same row are not significantly different ($P<0.05$) according to the pairwise t-test with Bonferroni correction, $*P<0.05$, $**P<0.01$, $***P<0.001$.

doi:10.1371/journal.pone.0087469.t005

e) Results: Figures & Tables

We also quantified growth rates of all the isolates to determine how changes in growth rate in conjunction with temperature affected the elemental composition of *Prochlorococcus* (Fig 2). At a light level of 40 μmol quanta m^{-2} s^{-1}, the growth ranged between 0.13 d^{-1} and 0.39 d^{-1}. Temperature affected the growth of HLI and HLII isolates slightly different whereby several HLI isolates sustained growth a lower T whereas HLII isolates were less inhibited at high T. Relating growth rate and elemental quotas and ratios, we detected a negative effect of growth rate on Q_P, whereas the other cell quotas and ratios did not display any linear trends (Fig 1 and Table 2).

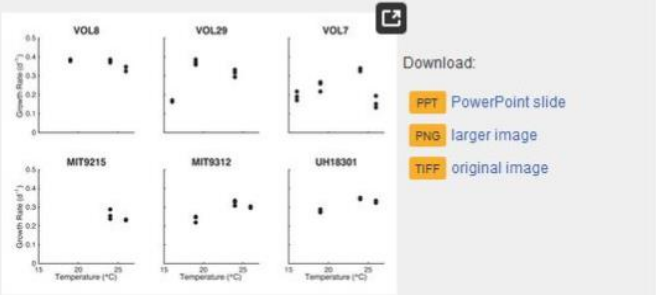


Fig 2. Growth rate of HLI and HLII cultures across a temperature gradient. HLI cultures are VOL8 (MIT9515), VOL29, and VOL7 (MED4) and HLII cultures are MIT9215, MIT9312, and UH18301.
https://doi.org/10.1371/journal.pone.0168291.g002

We next examined the influence of temperature on the cell quotas in the context of each strain as well as indirectly via changes in growth rate (Table 2 and Fig 3). We observed some similarities as well as difference in the response across the six strains. As seen in the aggregated response for all strains, individual strains displayed negative relationships between growth rate and Q_P. In addition, temperature also influenced Q_P on a per strain basis (Fig 3A), but there were no systematic differences between strains nor interactions between factors (Table 2). The HLI strains VOL8 and VOL29 had higher overall Q_N and Q_C and temperature plus growth rate influenced Q_N and Q_C across all strains (Fig 3B and 3C). Thus, there was evidence for direct influences of strain identity, temperature, and growth rate–as well as some interactions–in setting the overall elemental composition (Table 2).

Structured results section

Thematic paragraphs

No interpretation – statements only

f) Discussion

- Answer hypothesis
- Address main findings
- Implications for the field
- Global applications
- Limitations
- Future studies

f) Discussion

Discussion

Multiple studies have put forward a 'translation-compensation' hypothesis for a positive relationship between temperature vs. N/P or C/P. Cells should have lower demand for P-rich ribosomes and associated depressed Q_P when growing at higher temperature [20,22]. A lower Q_P will cause elevated C/P and N/P and such an acclimation mechanism should further explain the high elemental ratios observed in cells growing in the hot, oligotrophic gyres [8,9]. However, we see little support for this hypothesis in *Prochlorococcus*. Instead, the thermal effect leads to increasing Q_N and Q_C, whereas Q_P shows little systematic change. This points towards other physiological acclimation mechanisms as the primary drivers of elemental changes in *Prochlorococcus*. The observed elemental changes are likely associated with a cell size increase as Q_N and Q_C increase in tandem. The underlying mechanism for this increase in Q_N and Q_C in *Prochlorococcus* is not known but the response was opposite to *Scenedesmus* and *Asterionella* [38]. Based on studies in heterotrophic organisms, it is likely associated with an increase in cellular macromolecules and especially protein content [39]. Such a change in cell size means that you cannot simply extrapolate from an increase or a decrease in an individual cell quota (like Q_P) to the stoichiometric ratio. Thus, our study adds to an emerging concept, whereby changes in cell size due to physiological responses to different environmental conditions are important for regulating the elemental composition and ratios in marine Cyanobacteria [16].

Compare to previous research

Contrast and make interpretations

Implications of current study

Interactions between Thermal Acclimation, Growth Rate, and Phylogeny Influence *Prochlorococcus* Elemental Stoichiometry. PLOS ONE 11(12): Martiny AC, Ma L, Mouginot C, Chandler JW, Zinser ER (2016) https://doi.org/10.1371/journal.pone.0168291

g) References

- Recent and relevant
- References in text match reference list…
- …and vice versa
- Journal style

Case study 1: Open peer review paper from PeerJ

PeerJ

How to be a great dad: parental care in a flock of greater flamingo (*Phoenicopterus roseus*)

Camillo Sandri[1], Vittoria Vallarin[2], Carolina Sammarini[1], Barbara Regaiolli[3], Alessandra Piccirillo[4] and Caterina Spiezio[3]

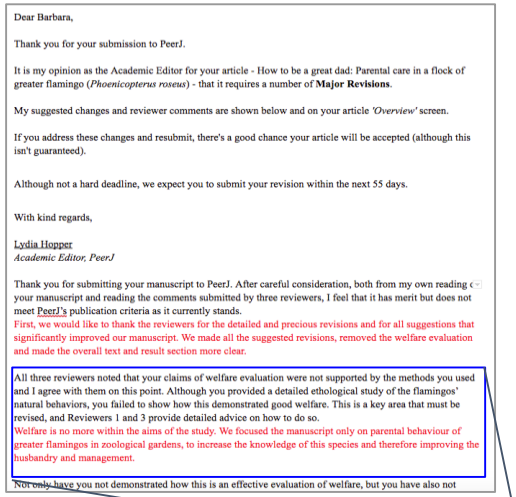
[1] Department of Animal Health Care and Management, Parco Natura Viva - Garda Zoological Park, Verona, Italy

[2] Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, University of Parma, Parma, Italy

[3] Research and Conservation Department, Parco Natura Viva - Garda Zoological Park, Verona, Italy

[4] Department of Comparative Biomedicine and Food Science (BCA), University of Padua, Padua, Italy

Case study 1: Overall aims of the study



Dear Barbara,

Thank you for your submission to PeerJ.

It is my opinion as the Academic Editor for your article - How to be a great dad: Parental care in a flock of greater flamingo (*Phoenicopterus roseus*) - that it requires a number of **Major Revisions**.

My suggested changes and reviewer comments are shown below and on your article *'Overview'* screen.

If you address these changes and resubmit, there's a good chance your article will be accepted (although this isn't guaranteed).

Although not a hard deadline, we expect you to submit your revision within the next 55 days.

With kind regards,

Lydia Hopper
Academic Editor, PeerJ

Thank you for submitting your manuscript to PeerJ. After careful consideration, both from my own reading of your manuscript and reading the comments submitted by three reviewers, I feel that it has merit but does not meet PeerJ's publication criteria as it currently stands.
First, we would like to thank the reviewers for the detailed and precious revisions and for all suggestions that significantly improved our manuscript. We made all the suggested revisions, removed the welfare evaluation and made the overall text and result section more clear.

All three reviewers noted that your claims of welfare evaluation were not supported by the methods you used and I agree with them on this point. Although you provided a detailed ethological study of the flamingos' natural behaviors, you failed to show how this demonstrated good welfare. This is a key area that must be revised, and Reviewers 1 and 3 provide detailed advice on how to do so.
Welfare is no more within the aims of the study. We focused the manuscript only on parental behaviour of greater flamingos in zoological gardens, to increase the knowledge of this species and therefore improving the husbandry and management.

Not only have you not demonstrated how this is an effective evaluation of welfare, but you have also not

Editor's comment based on the reports of 3 reviewers

All three reviewers noted that your claims of welfare evaluation were not supported by the methods you used and I agree with them on this point. Although you provided a detailed ethological study of the flamingos' natural behaviors, you failed to show how this demonstrated good welfare. This is a key area that must be revised, and Reviewers 1 and 3 provide detailed advice on how to do so.

Authors' response

Welfare is no more within the aims of the study. We focused the manuscript only on parental behaviour of greater flamingos in zoological gardens, to increase the knowledge of this species and therefore improving the husbandry and management.

Case study 1: Overall aims of the study

Submitted version of the manuscript that underwent peer review

83 The aims of the present study was to assess the welfare of a captive colony of greater
84 flamingo hosted at Parco Natura Viva, an Italian zoological garden, through ethological
85 parameters and to improve the knowledge on this species in zoological gardens, especially
86 during the breeding season. In particular, the present study investigated and compared the

Published version of the manuscript

The aim of the present study was to investigate the parental behaviour of a captive colony of greater flamingo hosted at Parco Natura Viva, an Italian zoological garden to improve the knowledge on this species in zoos. In particular, the present study investigated

Case study 1: Presentation of the results

Comment from Reviewer with example of what can be done to improve the presentation of the results

Validity of the findings

These comments relate to your results.

PAGE 22 - - Table 1. What data are these? Please give units. It might also be better to provide standard error rather than standard deviation.

- Are you able to provide any graphical information to show the range of times for each bird that performed each behaviour? E.g. box plots that show the range, median, quartiles and outliers of the behaviours measured at an individual flamingo level?

Table 1 in submitted version of the manuscript that underwent peer review

Table 1: behavioural categories performed by flamingos near the nest and on the nest (standing and incubating). The table reports the mean ± SD duration of each behavioural category performed by females (F) and males (M) when they are near the nest, standing on the nest or incubating the egg.

	Near the nest		On the nest (standing)		On the nest (incubating)	
	F	M	F	M	F	M
Agonistic behaviour	82.26 ± 118.99	233.91 ± 222.63	19.91 ± 35.22	14.57 ± 19.02	636.17 ± 378.00	940.57 ± 444.17
Attentive behaviour	-	-	-	-	1577.34 ± 821.43	1949.89 ± 903.34
Comfort behaviour	263.91 ± 271.67	662.40 ± 569.73	83.11 ± 136.36	21.09 ± 42.79	157.46 ± 266.87	191.69 ± 296.26
Egg care	-	-	192.14 ± 187.04	223.89 ± 167.49	-	-
Nest-bulding	-	-	-	-	2306.31 ± 919.58	2766.91 ± 1259.69
Other	384.77 ± 439.51	1232.97 ± 859.03	-	-	-	-
Sleeping	318.91 ± 564.98	959.49 ± 733.02	-	-	387.06 ± 485.95	527.60 ± 669.19

Case study 1: Presentation of the results

Authors' response

The table has been revised and improved. Basing on the reviewers' comments, the table reports medians and interquartile ranges (APA Style). Median durations of time spent in different posture are also reported and removed from the text to avoid redundancy. Moreover, Figure 1 has been replaced with new figures (box plots) providing medians and IQR.

New table in published version of the manuscript

Table 2 **Behavioural categories performed by flamingos near the nest and on the nest (standing and sitting).** The table reports the median (IQR) duration in seconds of each behavioural category performed by females (F) and males (M) when they were near the nest, standing on the nest or sitting on the nest, incubating the egg. The last row reports the median (IQR) duration in seconds of time spent by female and male flamingos in different position.

	Near the nest		On the nest (standing)		On the nest (sitting)	
	F	M	F	M	F	M
Agonistic behaviour	40 (3–105.5)	187 (40–326)	11 (0–21)	8 (0–19)	545 (375–884)	921 (637–1105.5)
Comfort behaviour	231 (27–480)	524 (210–945)	14 (0–71.5)	0 (0–24)	64 (0–165.5)	59 (4–230.5)
Sleeping	55 (0–434)	934 (358–1378)	–	–	67 (0–634)	319 (0–714.5)
Egg care	–	–	148 (72–239.5)	172 (99–320)	–	–
Incubation	–	–	–	–	1,650 (1,081–1,895)	1,995 (1,181–2,578.5)
Nest-building	–	–	–	–	2,336 (1,523–2,956)	2,791 (2,036–3,469)
Other	255 (71–502)	1,093 (432–1,836.5)	–	–	–	–
Position	**763 (287–1,405.5)**	**2,862 (1,654–4,365.5)**	**168 (114–380)**	**228 (99–385)**	**5,464 (4,010–6,067.5)**	**6,000 (5,238–7,248)**

Case study 1: Presentation of the results

Authors' response

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New figures in published version of the manuscript

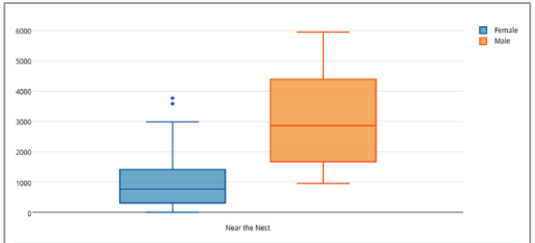

Figure 1 **Box and whisker plot of the time spent (seconds) by flamingo partners near the nest.** The horizontal lines within the box indicate the medians, boundaries of the box indicate the 25th and 75th percentile and the whiskers indicate the minimum and maximum values of the data samples. Outliers are drawn as points.

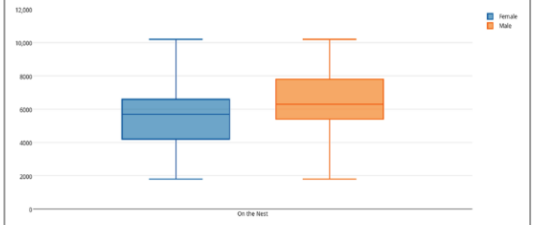

Figure 2 **Box and whisker plot of the time spent (seconds) by flamingo partners on the nest.** The horizontal lines within the box indicate the medians, boundaries of the box indicate the 25th and 75th percentile and the whiskers indicate the minimum and maximum values of the data samples. Outliers are drawn as points.

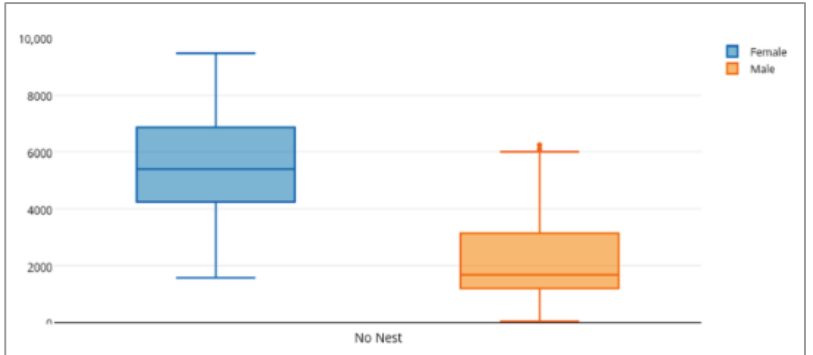

Figure 3 **Box and whisker plot of the time spent (seconds) by flamingo partners away from the nest (No Nest).** The horizontal lines within the box indicate the medians, boundaries of the box indicate the 25th and 75th percentile and the whiskers indicate the minimum and maximum values of the data samples. Outliers are drawn as points.

Section 5 summary

- 4-step approach to writing reviews
- Structure of an abstract
- Key questions to ask of an introduction
- How to determine the integrity of a method
- Presentation of results
- How to evaluate and interpret the discussion section
- What to consider with references

6 - Summary

- Looked behind the scenes of peer review
- Highlighted the value of peer review to your career
- Walked through a review of a paper
- Given best practice advice on structuring reviews
- Introduced peer review ethics
- Shown how Publons Academy can help achieve your goals

7 - Peer Review Exercise

- Working on the questions of the first 4 modules of Publons Academy
  - You have about 15 minutes for the exercise
- In the next two slides we'll provide a template you can use to start making comments and notes after the workshop, and then update those notes into a fully structured review report

Paper title: **Aim(s):**

DOI: **Review due date: / /**

Section	Points to Ponder	Review comments and notes

Abstract, title and references	• Is the aim clear?
	• Is it clear what the study found and how they did it?
	• Is the title informative and relevant?
	• Are the references:
	  ◦ Relevant?
	  ◦ Recent?
	  ◦ Referenced correctly?
	  ◦ Are appropriate key studies included?	

Introduction/ background	• Is it clear what is already known about this topic? • Is the research question clearly outlined? • Is the research question justified given what is already known about the topic?	
Methods	• Is the process of subject selection clear? • Are the variables defined and measured appropriately? • Are the study methods valid and reliable? • Is there enough detail in order to replicate the study?	

Results	• Is the data presented in an appropriate way?
	  ◦ Tables and figures relevant and clearly presented?
	  ◦ Appropriate units, rounding, and number of decimals?
	  ◦ Titles, columns, and rows labelled correctly and clearly?
	  ◦ Categories grouped appropriately?
	• Does the text in the results add to the data or is it repetitive?
	• Are you clear about what is a statistically significant result?
	• Are you clear about what is a practically meaningful result?	

Discussion and Conclusions	• Are the results discussed from multiple angles and placed into context without being overinterpreted? • Do the conclusions answer the aims of the study? • Are the conclusions supported by references or results? • Are the limitations of the study fatal or are they opportunities to inform future research?	
Overall	• Was the study design appropriate to answer the aim? • What did this study add to what was already known on this topic? • What were the major flaws of this article? • Is the article consistent within itself?	

Structure your comments into a full review:

Overall statement or summary of the article and its findings in your own words	
Overall **strengths** of the article and what **impact** it might have in your field	
Specific comments on **weaknesses** of the article and what could be done to improve it	Major points in the article which needs clarification, refinement, reanalysis, rewrites and/or additional information and suggestions for what could be done to improve the article. 1. 2. 3. Minor points like figures/tables not being mentioned in the text, a missing reference, typos, and other inconsistencies. 1. 2. 3.

8 - Questions