Dear Academic Editor Hussein Suleman,

We would like to thank you and the referees for the comments and suggestions on the paper "BraX-Ray: An X-Ray of the Brazilian Computer Science Graduate Programs", by L. A. Digiampietri, J. P. Mena-Chalco, P. O. S. Vaz de Melo, A. P. R. Malheiro, D. N. O. Meira, L. F. Franco, and L. B. Oliveira (PONE-D-13-35818).

The suggestions were extremely helpful and we have incorporated them all in the revised manuscript. In the following, we list in red the changes we have made in response to each of the referees' comments.

Kind regards,

L. A. Digiampietri, PhD

Journal requirements

In addition to the reviewer's comments, please could you also address the following Journal Requirements when submitting your revised manuscript:

1. Thank you for stating the following in the Financial Disclosure section: "This work was partially supported by FAPESP, project 2009/10413-5 (www.fapesp.br/); CNPq, fellowship 304937/2010-0 (http://www.cnpq.br/) and Elabora Consultoria (www.elaboraconsultoria.com.br). The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript."
We note that you received funding from a commercial source Elabora Consultoria.
Please respond in the cover letter to declare this commercial funder, along with any other relevant declarations relating to employment, consultancy, patents, products in development or marketed products etc) and if true, you should also confirm that this does not alter your adherence to all the PLOS ONE policies on sharing data and materials, as detailed online in our guide for authors http://www.PLOSone.org/static/editorial.action#competing by including the following statement: "This does not alter our adherence to all the PLOS ONE policies on sharing data and materials." Please note that we cannot proceed with consideration of your article until this information has been declared. We can make any changes on your behalf.
[Journal Requirement] We have included the statement: "This does not alter our adherence to all the PLOS ONE policies on sharing data and materials."

Please be assured that it is the standard PLOS ONE policy to ask authors to declare any potential competing interests, for the purposes of transparency. This declaration does not affect the review process. PLOS defines a competing interest as anything that interferes with, or could reasonably be perceived as interfering with, the full and objective presentation, peer review, editorial decision making, or publication of research or non-research articles submitted to one of the journals. Competing interests can be financial or non-financial, professional, or personal. Competing interests can arise in relationship to an organization or another person. Please follow this link to our website for more details on competing interests: http://www.PLOSone.org/static/editorial.action#competing

Reviewers' comments:
Reviewer's Responses to Questions
Comments to the Author

1. Is the manuscript technically sound, and do the data support the conclusions?
The manuscript must describe a technically sound piece of scientific research with data that supports the conclusions. Experiments must have been conducted rigorously, with appropriate controls, replication, and sample sizes. The conclusions must be drawn appropriately based on the data presented.
Reviewer #1: Partly
Reviewer #2: Yes

Please explain (optional).
Reviewer #1: The methods and analysis seem correct although clarifications are needed in several points of the manuscript.
[Referee 1, point 1] The manuscript has been properly improved following the reviewer's suggestions. As we shall see later on in this response letter, we have included clarifications throughout the manuscript.
Reviewer #2: Yes. The authors gathered data from the most reliable sources for Brazilian graduate programs - CAPES and the Lattes Platform.

2. Has the statistical analysis been performed appropriately and rigorously?
Reviewer #1: Yes
Reviewer #2: Yes

Please explain (optional).
Reviewer #1: (No Response)
Reviewer #2: Yes. The authors were careful in selecting and comparing data; different criteria were used.

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3. Does the manuscript adhere to standards in this field for data availability?
Authors must follow field-specific standards for data deposition in publicly available resources and should include accession numbers in the manuscript when relevant. The manuscript should explain what steps have been taken to make data available, particularly in cases where the data cannot be publicly deposited.
Reviewer #1: Yes
Reviewer #2: Yes

Please explain (optional).
Reviewer #1: (No Response)
Reviewer #2: (No Response)

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4. Is the manuscript presented in an intelligible fashion and written in standard English?
PLOS ONE does not copyedit accepted manuscripts, so the language in submitted articles must be clear, correct, and unambiguous. Any typographical or grammatical errors should be corrected at revision, so please note any specific errors below.
Reviewer #1: Yes
Reviewer #2: Yes

Please explain (optional).
Reviewer #1: The article is very well written and the graphics are very elucidating.
Reviewer #2: Yes, it is. I suggest a thorough review of the writing though.
[Referee 2, point 1] Writing has been reviewed and improved.

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5. Additional Comments to the Author (optional)
Please offer any additional comments here, including concerns about [dual publication](#) or [research or publication ethics](#).

Reviewer #1:
- Reviewer comment:
The article presents an analysis of the research productivity and collaborative patterns of the main Brazilian Computer Science graduate programs. The most interesting finding is a high correlation between the importance of a program in the collaborative network and the program's research productivity.

My first comment is the fitting of the article to PLOSOne. I personally think that this article would be a better fit for journals like Scientometrics or Informetrics.
[Referee 1, point 2] We agree that the aforementioned journal would fit this paper as well. We have chosen PLOS ONE because the journal covers a wider spectrum of interdisciplinary work.

Second, the interest of the study may be limited as the scope is very narrow: one field (Computer Science) and one country (Brazil). How does this compare with other areas and countries?

[Referee 1, point 3] In fact, we believe the study may be interesting to many fields, as the methodology is field-independent. We have chosen the pair CS-Brazil as a case of study because of our access to their bibliometric data. The assessments of other Brazilian graduate programs, as well as of international graduate programs are part of our future work. There are still few works which present a deep assessment of one specific area or for a whole country. Some of these works are presented in the Related Work Section.

In a positive note, the article is very well written and the graphics are very elucidating.

- Reviewer comment:
That said there are also some technical issues that need to be better clarified in the current version of the manuscript. There are several of steps in the proposed data flow that are prone to imprecisions and errors, such as the data parsing and citation deduplication. It would be important to have an idea of the effectiveness of such steps in terms of accuracy (or a similar metric like Precision/Recall or F1) of the extraction step or of the citation deduplication to understand how much noise (if any) is being introduced in the whole process.

[Referee 1, point 4] A (semi) manually curated dataset was produced to evaluate the parser and the deduplication technique. This dataset contains information about 36 researchers and 620 publications. More than 99% of the fields were correctly parsed and the accuracy of the coauthorship identification hit 99% (with specificity above 99.9%, sensibility above 88% and F1 score about 94%). This information has been added to the manuscript (cf. Analysis Section).

- Reviewer comment:
Moreover, some parameters of the whole methodology such as the Qualis weights and the Levenshtein similarity thresholds seem to be set in a completely adhoc way without any justifications.

[Referee 1, point 5] Levenshtein similarity threshold was used in the deduplication process as presented in the previous answer to the reviewer, which is to say, to achieve an accuracy of at least 99%). As for Qualis weights, in turn, those are defined in the CAPES' Computer Science Report. The manuscript has been updated in order to clarify this point (cf. Data Storage & Enrichment Section).

- Reviewer comment:
In the network formation, it was also not clear how the affiliation of the first author of a paper was determined in the case of the directed graph. What happened if this first author was a student (a very common case in Computer science)? His name would not be in the original list of the professors of the program obtained from the CAPES reports.

[Referee 1, point 6] As for the directed graph, we only consider papers in which first author is a professor affiliated to a Brazilian CS program. We have pointed this out in the manuscript (cf. Network Formation Section).

- Reviewer comment:
Regarding the analysis of the two principal components, I have sincere doubts whether the second principal component has any discriminative power as basically all points are in the narrow range between [-0.2,0.3].

[Referee 1, point 7] We agree the second principal component, which is more related to the clustering coefficient of the programs in the network, has not a significant discriminative power. Yet, we believe it is important as it seems to be able to discriminate programs located in the left far side of the PCA plot and thus indicate that a program should avoid a collaboration strategy that leads to very high or very low values for the clustering coefficient. Besides, we think it plays a role in the methodology, i.e., the discriminative power may be limited for our dataset, but not for other datasets. In the new version of the manuscript, we have made a note to make this clear (cf. Network-based Classification Section).

- Reviewer comment:
Regarding some of the conclusions about edge formations, in the case of "small –> BIG", I think the authors may be neglecting the impact of external governmental incentives for cooperation such as Capes' PROCAD program.
[Referee 1, point 8] We agree funds and governmental incentives play a key role and we thank the reviewer for pointing us that. This was out of the work's scope, though. We have left this as a suggestion of future work in work (cf. Conclusion Section).

- Reviewer comment:
Finally, it is not clear the relationships (similarities and differences) between this work and the work of Figueiredo and Freire [25] who also studied the relationships between collaborative networks and the Capes ranking.
[Referee 1, point 9] We have highlighted the contrast between ours and Figueiredo's and Freire's work (cf. Related Work Section)

Reviewer #2: (No Response)

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6. If you would like your identity to be revealed to the authors, please include your name here (optional).
Your name and review will not be published with the manuscript.
Reviewer #1: (No Response)
Reviewer #2: (No Response)

[NOTE: If reviewer comments were submitted as an attachment file, they will be attached to this email and accessible via the submission site. Please log into your account, locate the manuscript record, and check for the action link "View Attachments". If this link does not appear, there are no attachment files to be viewed.]