Research data: Publish every part of your research

Make the most of your work

David Parsons and Valerie Teng-Broug

April 25, 2018

About the speakers

David Parsons, Publisher *Data in Brief*

David Parsons is the New York City-based Publisher of Data in Brief. He has been working in academic and educational publishing since 2007, covering a variety of topics including physical sciences, life sciences, and medicine. He is currently completing his MS in Data Science from Syracuse University.

Valerie Teng-Broug, Publisher *MethodsX*

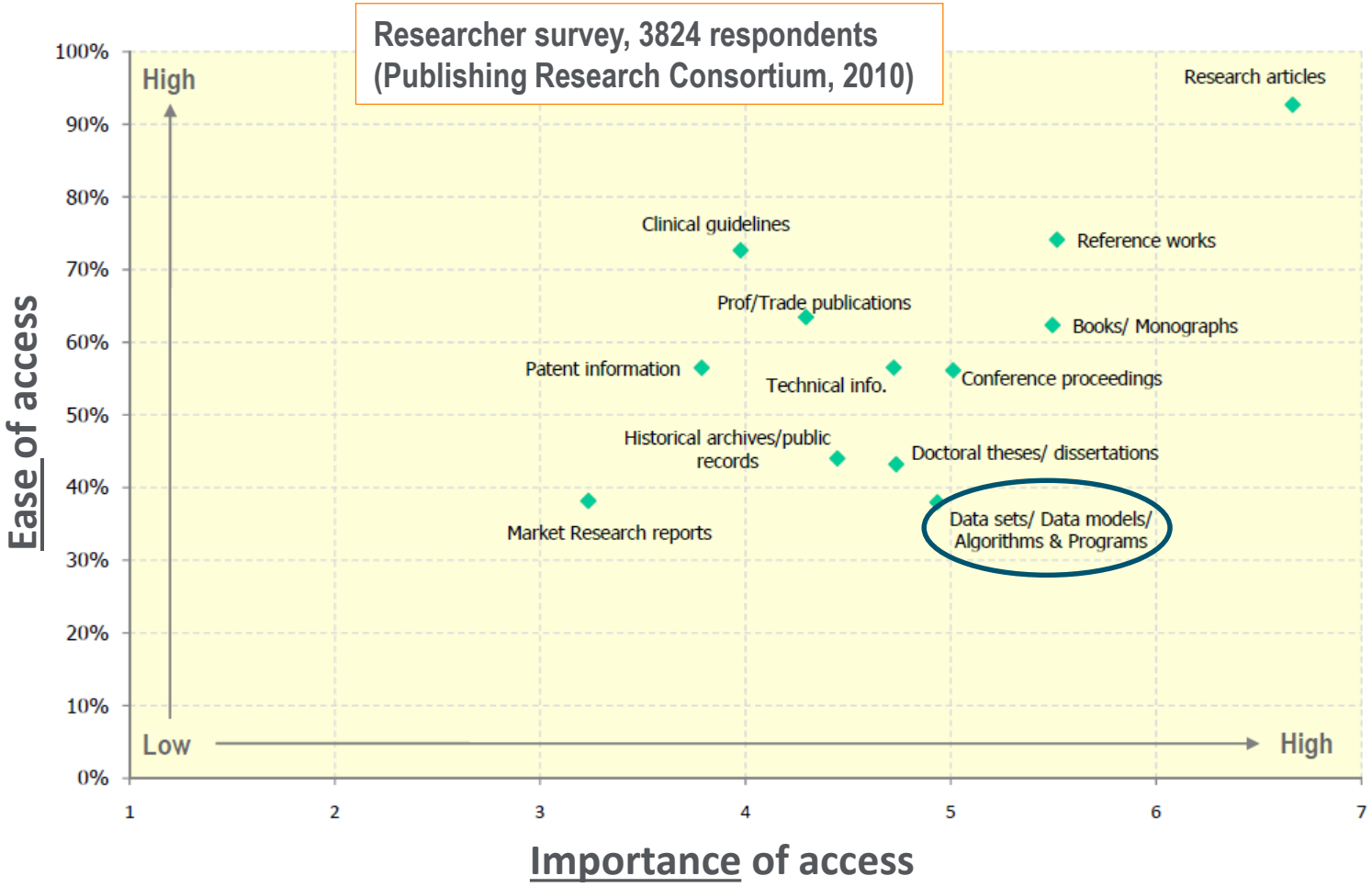
Based in Amsterdam, the Netherlands, Valerie holds a degree in Communications. She has worked at Elsevier since 1995, holding various positions as a Publisher, working on both journals and books series within the fields of Economics, Econometrics, Pure and Applied Mathematics and most recently in Biochemistry and Biophysics.

What is Research Data?

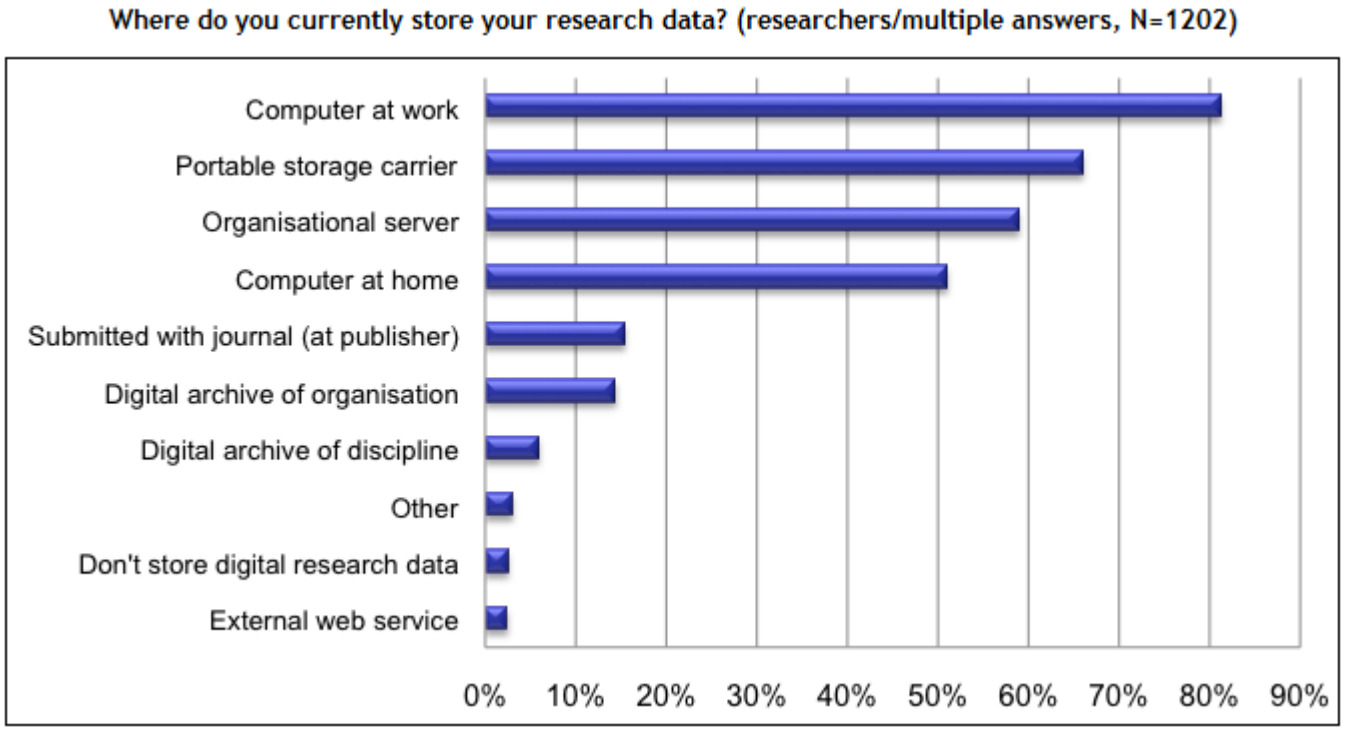
"The precise notion of what constitutes research data will differ from field to field but broadly speaking it refers to the result of observations or experimentations that validate research findings and which are not already published as part of a journal article. Research data can include but are not limited to: raw data, processed data, software, algorithms, protocols, methods, materials."

Elsevier Policy: www.elsevier.com/about/our-business/policies/research-data

Perceived Importance versus Ease of Access



Data storage is very fragmented



Researcher survey, 1202 respondents (PARSE.insight 2010)

Why share data?

- Reproducibility – credibility in the research arena is of the utmost importance. Ensure that your research is reproducible by your peers to underline your credibility
- Transparency – by disclosing your data to your peers, they will be able to reproduce your findings easily
- Credit – you spent the time creating the data, receive the credit you deserve
- Mandates – funding bodies, institutes are increasingly requesting or mandating the disclosure of data

How researchers can share data

Your research data files

and/or

Data Repository

√ **Citable, accessible and discoverable**

√ Directly during submission in *Mendeley Data* or indirectly to other supported repositories

Data Article

√ **Peer-reviewed and open access**

√ Co-submit for publication in dedicated open access journals *Data in Brief, MethodsX, SoftwareX or HardwareX* with your Elsevier journal article submission, or submit directly

Can't share?

Data Statement

√ Indicate why data is not available to access or appropriate to post.

√ **Comply** with Funding Body and/or Journal requirements

Your research data with your article on ScienceDirect

and

and

Cite

Cite your dataset in your manuscript to **get credit.**

Link

Bidirectional links between repositories and the online article and, when applicable, your data article to make data **accessible**

Visualize

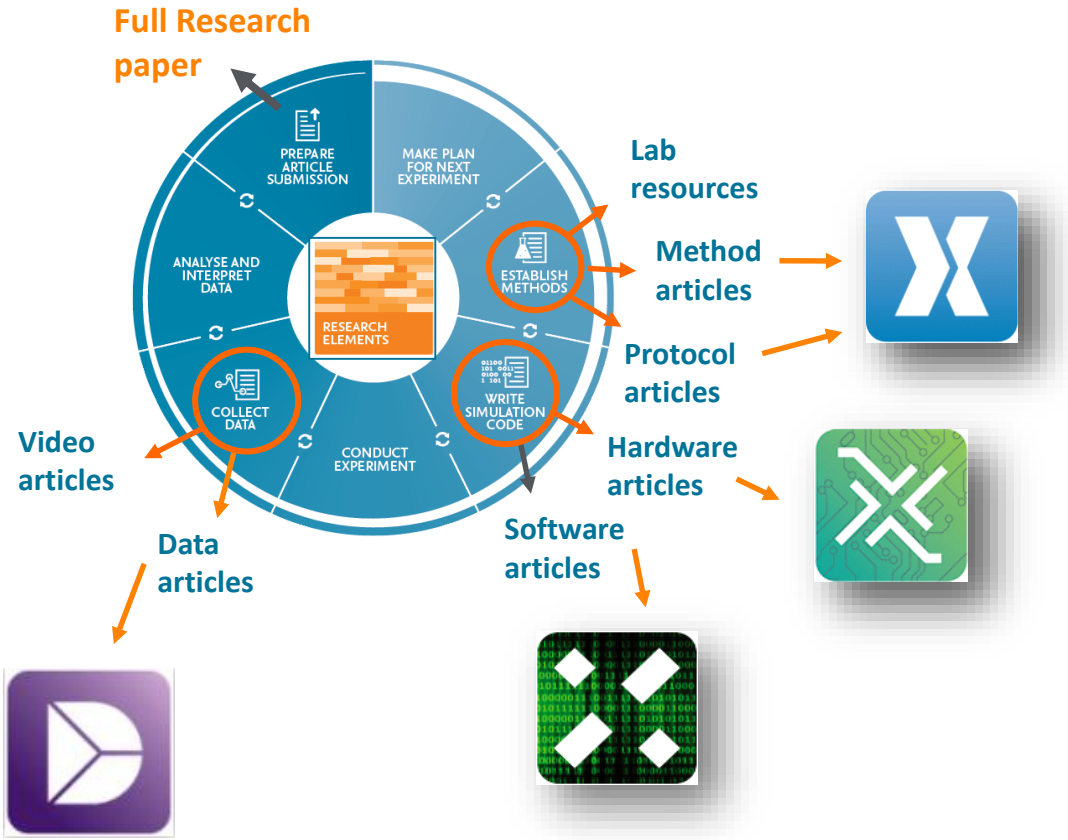
Selected data formats can be visualized next to the article to make it **comprehensible**

Elsevier journals have different guidelines when it comes to research data, either encouraging or requiring you take certain actions. These guidelines concern research data that often underlies, but exists outside of research articles. Check the *Guide for Authors > Research Data* for more info

The Research Elements program: ways to share your data

Research Data Articles:

- Are complementary to original research (articles)
- Are templated and therefore easy to prepare and submit
- Are peer-reviewed and indexed
- Enable other researchers to discover your work
- Enable use and reproducibility of data
- Enable other researchers to cite your work



More info: http://www.elsevier.com/books-and-journals/research-elements

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Data in Brief

Data articles focus on research data collected throughout the research cycle. They enable researchers to easily share a brief, thorough description of their data, helping others discover and reuse the data and reproduce results. For a number of journals, researchers can co-submit their data article to *Data in Brief* together with the original research article.

MethodsX

Materials and methods articles provide details of the methods and protocols developed and materials used during a research cycle. They recognize the time researchers spend customizing methods and creating original laboratory resources. For a number of journals, researchers can co-submit their method article to *MethodsX* together with the original research article.

HardwareX

Hardware articles provide scientists with a place to receive academic credit for the hard work involved in the development of high-quality scientific instruments. HardwareX provides a repository of proven designs of validated tools with all the design files (e.g. bill of materials (BOM), instructions, firmware, CAD, and software) to build, operate and maintain them effectively.

SoftwareX

Software articles describe significant software and/or code in full, including relevant post publication version updates. Software articles capture all metadata needed to help others apply the software in their own research and published online.

Journal features overview

- Place to describe datasets in any scientific discipline.
- Data articles are purely descriptive and do not provide functional data nor interpretation.
- Data articles are intended to facilitate data reuse and reproducibility
- All data described must be made publicly available, either with the article or in a public repository
- All authors fill in a standard data article template available at: https://www.elsevier.com/dib-template and https://www.elsevier.com/MethodsX-template
- Specifications table with direct link to data
  - Value of the Data
  - Materials and Methods
- All articles receive the CC-BY license
- Open access fee: $500 for DIB, $520 for MEX

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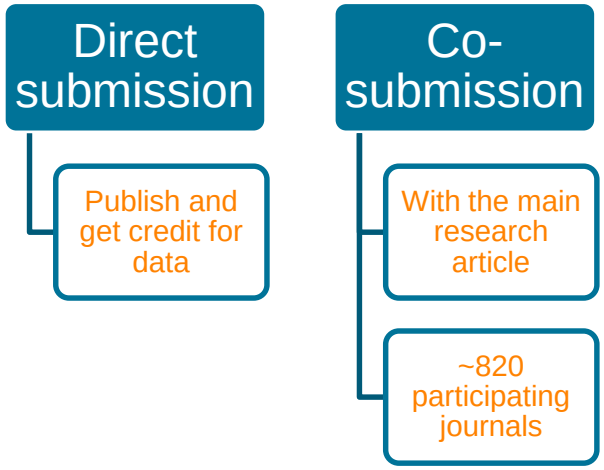
Currently recruiting enthusiastic researchers to join DIB's board!

Two ways to publish

For authors who have stand-alone data

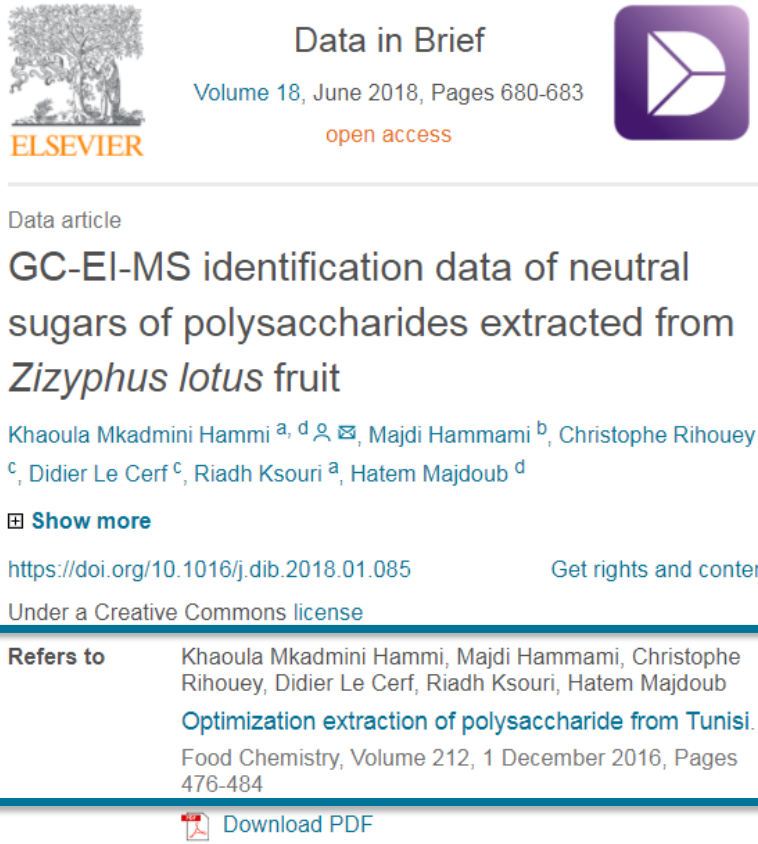
- Authors fill in the template and either directly supply data files with the article, or link to the files in a public repository
- The data article is sent for external peer review:
  - Compliance to the template
  - Is the data adequate? Does it make sense? Why is it useful?
  - Is the protocol for generating data adequate?
  - Data format (is it standard for the field? potentially re-usable?)
  - Are sufficient captions/labels provided? Is the data well documented?
- Additional checks (prior to peer review)
  - Data and text duplication
  - Completeness of metadata
  - File format consistency



For Participating journals at Elsevier:

- During the submission process, the author has the opportunity to co-submit a data article for *Data in Brief* or *MethodsX*. Information is available in the Guide for Authors.
- Interested authors complete the template and submit it directly with their manuscript (so it is available for peer review as support to the manuscript)
- For those that have not, in the manuscript revision letter, Authors are invited to convert their supplementary material into a data article for *Data in Brief* or *MethodsX*.
- If the manuscript is accepted, their data article is sent directly to the journal for peer review; any necessary revisions are requested of the authors

Co-submission linking



Data in Brief

Volume 18, June 2018, Pages 680-683

open access

Data article

GC-EI-MS identification data of neutral sugars of polysaccharides extracted from *Zizyphus lotus* fruit

Khaoula Mkadmini Hammi [a, d], Majdi Hammami [b], Christophe Rihouey [c], Didier Le Cerf [c], Riadh Ksouri [a], Hatem Majdoub [d]

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Food Chemistry, Volume 212, 1 December 2016, Pages 476-484

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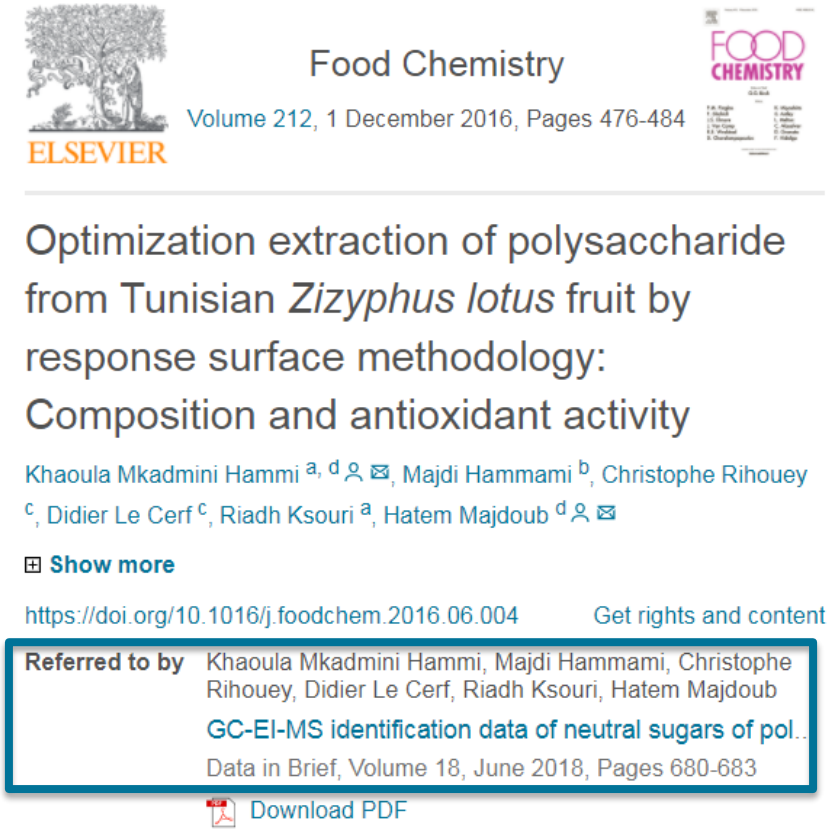

Food Chemistry

Volume 212, 1 December 2016, Pages 476-484

Optimization extraction of polysaccharide from Tunisian *Zizyphus lotus* fruit by response surface methodology: Composition and antioxidant activity

Khaoula Mkadmini Hammi [a, d], Majdi Hammami [b], Christophe Rihouey [c], Didier Le Cerf [c], Riadh Ksouri [a], Hatem Majdoub [d]

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Data in Brief, Volume 18, June 2018, Pages 680-683

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Both articles cite each other in the reference list.

The data article clearly links back to the related research article

Templates

Abstract

[Briefly describe the contents of this Data article (this should not be the same as a research article abstract). Tell the reader the repository name and reference number for the data here. If data is supplied in the article instead of a repository, please explicitly state this. If the data is related to a published research article, please also directly mention the article in the abstract]

Data can be placed within an article OR In a public repository (i.e., Mendeley Data

Specifications Table *[please fill in right-hand column of the table below]*

Subject area	*Physics, Chemistry, Biology, Economics, Psychology*
More specific subject area	*Describe narrower subject area*
Type of data	*Table, image (x-ray, microscopy, etc), text file, graph, figure*
How data was acquired	*Microscope, survey, SEM, NMR, mass spectroscopy, etc. If an instrument was used, please provide the model and make of the instrument*
Data format	*Raw, filtered, analyzed, etc*
Experimental factors	*Brief description of any pretreatment of samples*
Experimental features	*Very brief experimental description*
Data source location	*City, Country and/or Latitude & Longitude (& GPS coordinates) for collected samples, data if applicable*
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Value of the data *[describe in 3-5 bulleted points why this data is of value to the scientific community]*

-

Data, Experimental Design, Materials and Methods

[Thoroughly describe your data here. Provide a description of the Experimental design and methods used to acquire or perform base level analysis of the data presented with this article and where applicable. Include any relevant figures/tables needed to fully understand the data. Please also attach, where applicable, any code files used to provide base-level analysis or filtering of the data.]

References *[please include all references relevant to the data described here; references are not limited]*

Mendeley Data

- Mendeley is a **repository** – anyone can post anything they like
- No peer review, not indexed, not searchable on Scopus/SD
- Soon will be able to upload directly via EES/EVISE with associated research

Data in Brief and MethodsX

- **Peer-reviewed** data with descriptions
- Data can be located within article itself or on ANY open repository
- Currently able to submit direct via EES/EVISE
- It is not competitive with Mendeley Data

Thank you.

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