

CITIZEN SCIENCE

SDG

CONFERENCE

14.–15.10.2020

Knowledge for Change: A decade
of Citizen Science (2020–2030)
in support of the Sustainable
Development Goals

Using Analytics for Community Monitoring and Support in Online Citizen Science Projects

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wissenschaft im dialog



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CS Track – Project Goals

- Broadening our **knowledge about citizen science** and its impact on a large and diverse set of citizen science activities.
- Identifying and disseminating **good practices**.
- Formulating **knowledge-based policy recommendations**.
- **Maximizing the potential benefit** on individual citizens, organizations, and society at large.



What we look at in this context

- Citizen Science Online Communities
 - knowledge production
 - research
 - learning
 - interactions
 - with professional scientists
 - with other participants
 - data quality

[Aristeidou, M., Scanlon, E., & Sharples, M. \(2017\)](#)

[Ponciano, L., & Brasileiro, F. \(2015\)](#)

[Lukyanenko, R., Parsons, J. and Wiersma, Y.F. \(2016\)](#)

[Trouille, L.; Lintott, C.J., Fortson, L.F. \(2019\)](#)

[Aristeidou, M. and Herodotou, C. \(2020\)](#)

[Masters et al. \(2016\)](#)

[Ponti, M., Hillman, T., Kullenberg, C., & Kasperowski, D. \(2018\)](#)

[Crall et al. \(2017\)](#)

[Crowston, K., Mitchell, E., & Østerlund, C. \(2019\).](#)

[Rohden, F., Kullenberg, C., Hagen, N. and Kasperowski, D., 2019.](#)

[Curtis, V. \(2015\)](#)

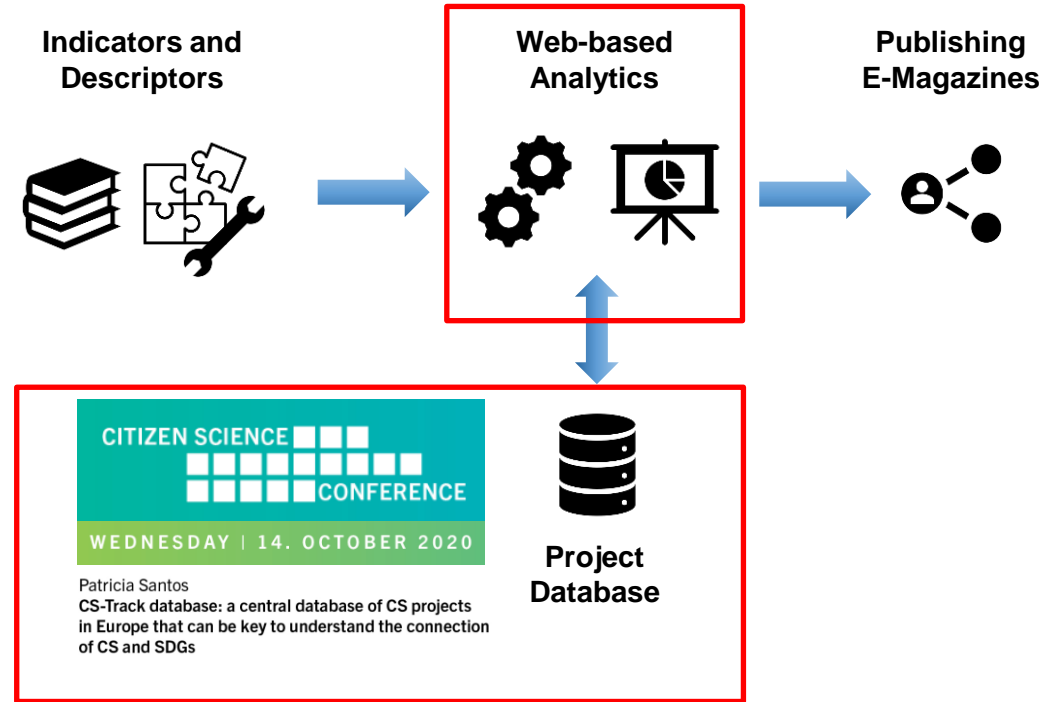
[Jennett, C; Kloetzer, L; Gold, M; Cox, AL; \(2013\)](#)

[Jackson et al. \(2019\)](#)

Monitoring of CS Activities / Analytics in CS Track

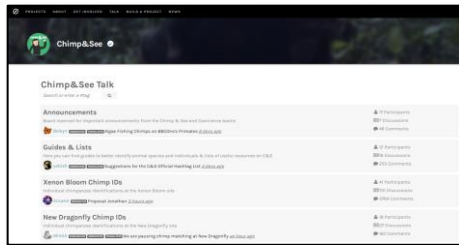
CS Track approach: monitoring and observation of CS projects and activities

- Definition of project **descriptors and indicators** for CS projects (e.g. output, participation, outreach to public media).
- Using **web-based analytics** for monitoring and observation of CS projects and activities.
- Storage of information from descriptors and results of analytics in a **central database** (cf. talk by Patricia Santos yesterday).
- Publishing results in an **e-magazine**.



Example 1: Analysis of the *Chimp & See Talk Pages*

- Analysis of the a *Zooniverse discussion forum* (Chimp & See „talk pages“)
- ***Distribution of roles*** within the forum and the communication structures
- Prescribed roles: ***Moderator, Scientist, Volunteer***

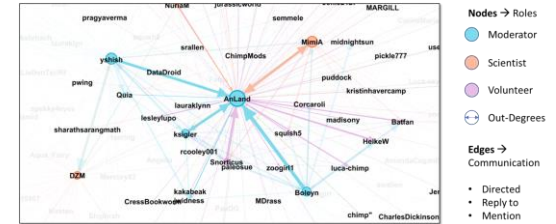


Talk Pages



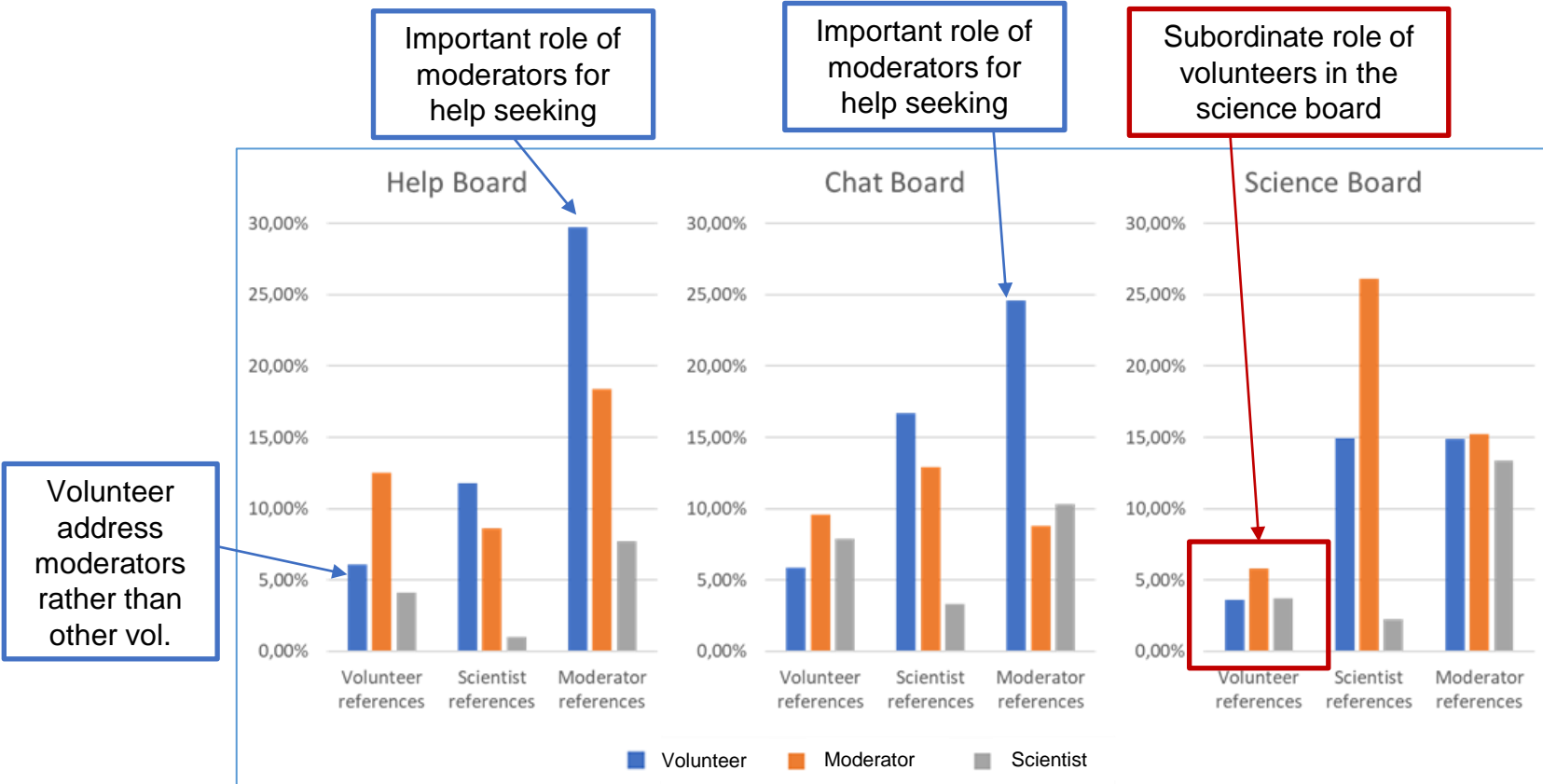
Data	Description
Board Category	Sub-Forum
Post Number	Sequential post id
Time stamp	Date of the post
Title	Title of the post
User Type/Role	Moderator Scientist Volunteer
Username	Username
Response To	Direct response
References to Users	Mentioning (@)
References to Objects/Tags	Hashtag / Object references
Post Content	Textual representation of the post
URL	URL of the thread
Raw HTML	Raw HTML

Discourse Dataset



Social Networks

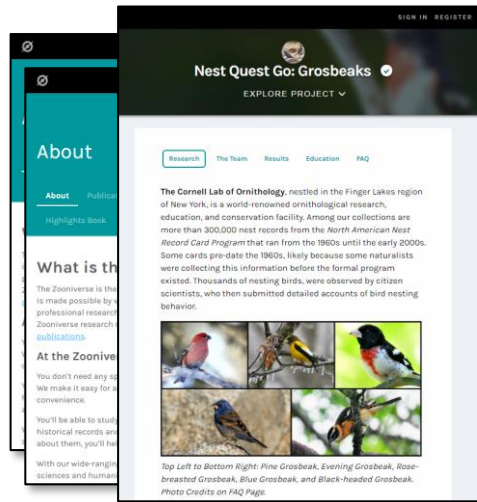
Distribution of Roles and Communication Patterns



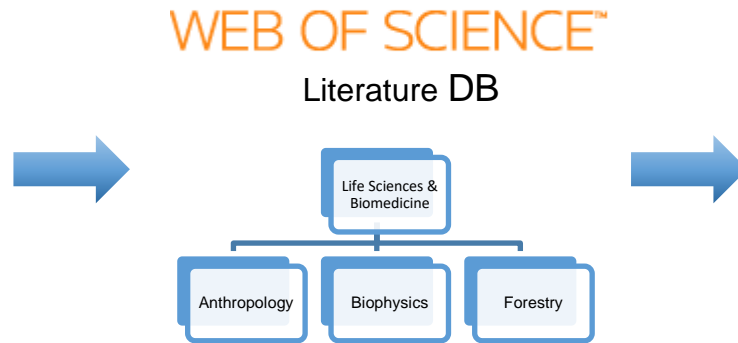
*Numbers are relative to the number of references per board

Example 2: Research Areas on Zooniverse (in progress)

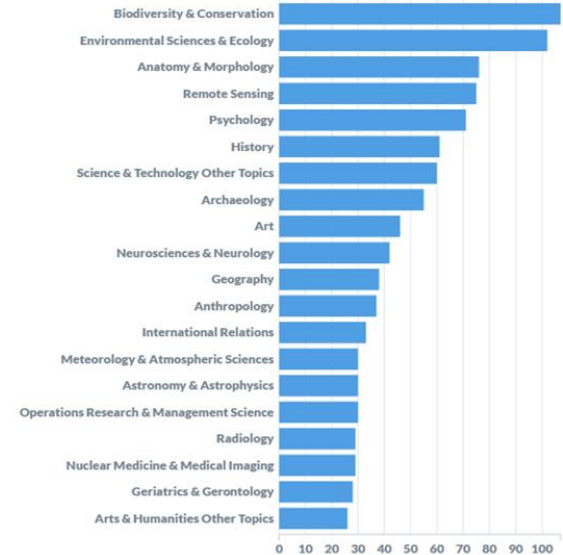
- **Automatic extraction** of research areas from 217 Zooniverse projects
- Exploration of **inter-disciplinarity** of CS activities and projects



Info Pages of 217 Zooniverse Projects



Comparison to the Web of Science Taxonomy using ESA (**Explicit Semantic Analysis**)



Distribution of **Research Areas**

Outlook

Outputs of the project: CS Track methods, analyses and database/community platform

What the citizen science community can gain:

- Deeper understanding
 - community interaction level
 - individual trajectories
- New monitoring techniques (research areas, participation, knowledge production, etc.)

How this can improve Citizen Science experiences:

- Improve design
- Tailor recruitment & facilitation efforts





Contact us @CS Track!



- > **CS Track project:** <https://cstrack.eu/>
[!\[\]\(815df092dd722ee9268ef8e6d0193e3a_img.jpg\) @cstrackproject](#)
- > **Sven Manske @ RIAS Institute:**
[!\[\]\(c72edb9626cad660f3a9f5fb0f22a68c_img.jpg\) sm@rias-institute.eu](mailto:sm@rias-institute.eu) [!\[\]\(0c564128c6342bd2f601e97f4518828a_img.jpg\) @sven_manske](#)
- > **Julia Lorke @ Wissenschaft im Dialog**
[!\[\]\(5cb79a1c9acdf5d94bce345803852578_img.jpg\) julia.lorke@w-i-d.de](mailto:julia.lorke@w-i-d.de) [!\[\]\(cc23775bf31a648cde5902baa397f9aa_img.jpg\) @kleines283](#)
- > *Thank you!*