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# Community-as-a-Service: Data Validation in Citizen Science

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# Citizen science

– Research involves non-specialists



<http://www.openscientist.org/p/citizen-science-for-your-phone.html>

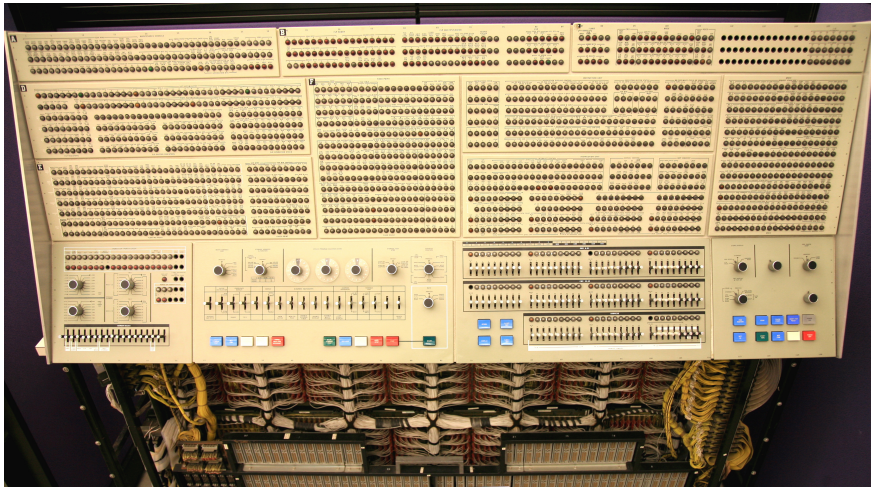


Mount Rainier National Park, CC-BY-2.0, NPS photo by Yonit Yogev



Mount Rainier National Park, CC-BY-2. NPS photo by Kevin Bacher

# Are citizen science data trustful and reliable?



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**Machine**



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**Human**

<b>Crowd</b>	<b>Community</b>
<ul style="list-style-type: none"><li>- Members are independent from each other</li></ul>	<ul style="list-style-type: none"><li>- Members are more interdependent</li><li>- Higher level of commitment, stronger ties</li></ul>
<ul style="list-style-type: none"><li>- Highly simplified, repetitive, and straightforward tasks</li></ul>	<ul style="list-style-type: none"><li>- More difficult and complex tasks</li></ul>

# Observation task

- **When**
- **Where**
- **What**



# “community as a service”

naturalist.org

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## Welcome!

to **iNaturalist.org**, where you can **record** what you see in nature, **meet** other nature lovers, and **learn** about the natural world.

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### Recent additions



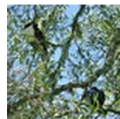
**New Zealand Pigeon**

Observer: jacqui-nz

Date: September 24, 2015

Date added: September 24, 2015

[Needs ID](#) [View »](#)



**Butterflies and Moths**

Observer: david\_chan

Date: June 20, 2015

Date added: September 24, 2015

[Needs ID](#) [View »](#)



# We are interested in exploring...

- What are the *community data validation interactions* on a citizen science project?
- Whether the data quality is improved?

# Method

- The **Biocubes** project
- 39 observation on January 24<sup>th</sup>, 2015
- Public-facing data pages on iNaturalist



*Teen Environmental Education Mentorship students participate in a Biocube project in Sausalito, Calif. Photo by Anand Varma © David Liittschwager 2013.*

# Findings

Major community data validation interactions:

- Agreeing with the organism IDs
- Suggesting a new organism ID
- Leaving comments

The community of naturalists helped validate more than **50%** data!

# Conclusion

- The iNaturalist community members collaboratively validated and improved the citizen science data in the Biocube project.
- Next steps: in-depth analysis
  - Community social structure and other data validation interactions
  - Increasing data points
  - Case-based comparisons

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# Thank you!

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