

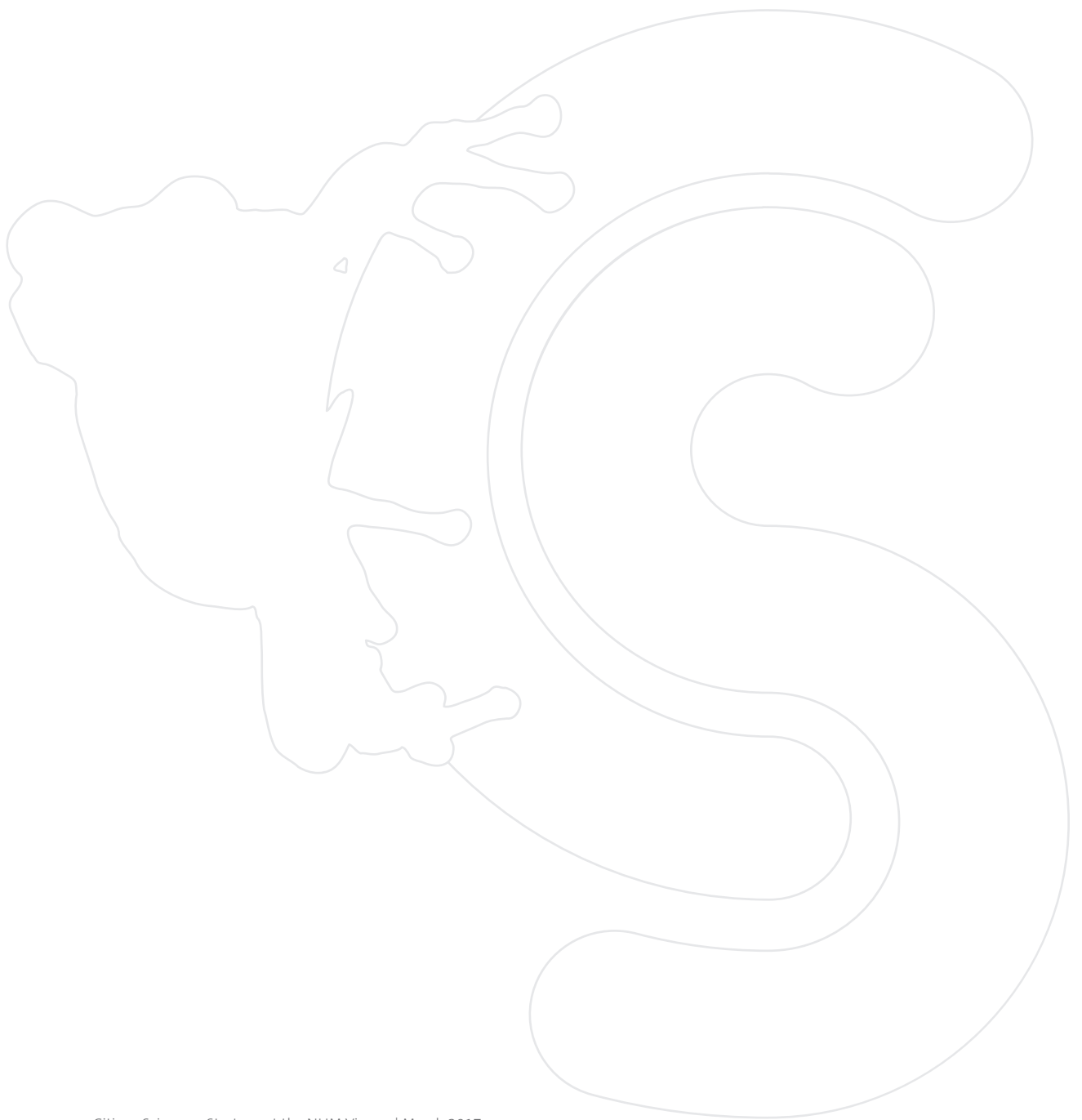
natural history
museum vienna



CITIZEN SCIENCE

Strategy at the NHM Vienna

March 2017



1. Foreword

Citizens have been involved in science since the 18th century. The NHM Vienna in particular has been one of the leading institutions in Austria when it comes to members of the public contributing to research and collecting.

“Citizen Science” is currently a hot topic in European research and funding. Fueled by the recent digital revolution, it aims to bring science and society closer together. “Citizen Science”, which is embedded in the fields of “Responsible Research & Innovation” as well as “Digital Science”, aims to contribute to an open, collaborative, global, creative, and accessible way of doing science. The innovative potential of this scientific approach lies first and foremost in combining local, practical knowledge (“know how”) held within a society with the systemic knowledge (“know why”) of professional scientists and researchers (Science and Society in Dialogue: “Responsible Science”, Federal Ministry of Science, Research, and Economy, 2016).

The NHM Vienna has reacted to the discovery and promotion of this form of scientific work at the level of national and international funding (e.g., Horizon 2020, European Science Foundation) by coming up with its own Citizen Science Strategy. This cross-cutting approach, including all departments at the museum, aims not only to further strengthen and to professionalize interaction between science and society, but also to make this interaction visible and transparent so that it can be seen, recognized, and supported by the general public, politicians and, ultimately, funding bodies.

2. Definitions and framework conditions

Responsible Research & Innovation

Responsible Science, also known in an EU context as “Responsible Research and Innovation” (RRI), actively incorporates civil society into research and innovation processes in order to handle current challenges more effectively and in line with the values, expectations, and needs of society. This concept is becoming increasingly important for the European Commission when it comes to awarding research funding. Austria has also adopted Responsible Science as an important element in its Action Plan for a Competitive Research Area drawn up by the Federal Ministry of Science, Research, and Economy. One of the steps derived from this action plan was to create an Alliance for Responsible Science, of which the NHM Vienna is a member (www.responsiblescience.at). This Alliance sees Citizen Science as an expression of the capacity for an active dialogue between the scientific community and the general public – a central task of every modern knowledge-based society and, therefore, a subject of great importance to the NHM Vienna.

Open Innovation

According to the Open Innovation Strategy for Austria, incorporating citizens into the scientific process can range from pure data collection to citizen-driven research projects where members of the public develop research projects in cooperation with researchers. These new formats make it possible to access a wide range of knowledge by tapping into new, external sources (Open Innovation Strategy for Austria, Federal Ministry of Science, Research, and Economy, 2016). This opening up of the research process rests on four key pillars, each of which contributes added value to both the scientific community and civil society:

Adaptivity: Reviewing and adapting the research project based on new knowledge and/or the needs of those involved.

Anticipation: Anticipating the needs of society and applying proposed solutions to real-world problems.

Openness: Establishing the best way to open up the scientific process; sharing knowledge with a wide audience.

Inclusion: Interdisciplinary and transdisciplinary approach to research projects; a sufficiently heterogeneous range of external partners considering the research goal.



Citizen Science and Crowd Science in Museums

Citizen Scientists are defined as people active in a scientific field to which they have no professional institutional connection. Citizen Science activities can range from brief periods of data collection to long-term voluntary engagements, in which Citizen Scientists cooperate with professional researchers and/or other volunteers in a specific field. Although many Citizen Scientists have academic training, this is not a pre-requisite in order to be part of a research project. What is important, however, is that Citizen Scientists know about and adhere to scientific standards, in particular transparency when it comes to data-collection methods and public discussion of the results (www.buergerschaffenwissen.de). As museums focus in particular on expanding, documenting, and developing their collections, Citizen Scientists can make a particularly significant contribution to the scientific process.

The continued growth of digitalization also means that Crowd Science – incorporating an unlimited number of Citizen Scientists into research projects via digital media – is becoming increasingly important for museums.

3. Goals

of the Citizen Science Strategy at the NHM Vienna

The NHM Vienna aims to establish itself as an important physical – not just virtual – location for Citizen Science, where national and international representatives of civil society and the scientific community can exchange information and ideas as equals. By establishing the NHM Vienna as a hub for Citizen Science, the museum wishes not only to kick-start the creation of new learning structures but also to highlight the importance of Citizen Science for the research community and society as a whole.

This will be achieved using targeted activities and by working closely together with citizens involved in scientific research. Wherever it is possible and useful, the NHM Vienna will involve Citizen Scientists in research processes and thereby make possible research projects that otherwise would not have been able to be carried out on this specific topic or in this particular way. It is planned that Citizen Science should be applied to all topics and fields of research.

The NHM Vienna is a location which is ideally suited to Citizen Science for the following reasons:

- Long-term commitment to Citizen Science thanks to an established tradition of, and experience with, different types of volunteer research and incorporating citizens into research processes.
- The NHM Vienna's position as an important museum of natural science makes it one of only a few major spaces already shared on a day-to-day basis by researchers and citizens.
- Research and communication are the two core elements of the NHM Vienna. As such, the museum is a place where sharing knowledge with the general public is an ongoing process; an area of learning and education for both schoolchildren and the general public, where lifelong learning is made possible. It is also a transformative place of learning for citizens and scientists.
- In its role as a museum the NHM Vienna forms an important bridge between research institutions, in particular universities, and society as a whole.

In the future the museum plans to place greater emphasis on raising awareness among the general public about the importance of research – especially new forms of participative communication and through a new, open innovation and experiment room ("Deck 50"). This multifunctional communication platform with a wide range of educational activities and teaching methods will form a professional framework for Citizen Science and dialogue, making it an important part of the NHM Vienna.

4. Status Quo

Facts and Figures

The NHM Vienna is one of the largest non-university research institutions in Austria and an important center of excellence for questions related to human sciences, earth sciences, and life sciences. The NHM Vienna has:

- 60 professional researchers
- about 300 Citizen Scientists
- 30 million individual objects
- 100,000 exhibits displayed in 39 rooms covering 8,460 square meters.

Each year the NHM Vienna has:

- more than 700,000 visitors
- about 7,500 events and activities
- about 120,000 people taking part in these events and activities.

Citizen Science in the History of the NHM Vienna

The original Natural History Collection was established by Emperor Francis I, Duke of Lorraine, who was himself an early Citizen Scientist. Over the years the collection grew as new exhibits were contributed by travelers, hunters, ambassadors, and ordinary citizens with an interest in the natural sciences. In the 19th and 20th centuries, many scientific societies were founded which were – and in some cases still are – based at the NHM Vienna (Anthropological Society in Vienna, Austrian Mineralogical Society, Austrian Society for Herpetology, Vienna Coleopterist Society, BirdLife Austria, etc.). These often served as an interface between members of the public and professional researchers. In many cases expeditions and acquisitions were and still are financed with the help of such associations like the “Friends of the NHM Vienna” founded in 1923. Since the reign of Empress Maria Theresa the NHM Vienna has also been committed to “educating the people”. The early 20th century marked the start of a close cooperation with adult education centers, which continues today. As early as the 1960s the NHM Vienna hosted events – such as the “Floristic Evenings” organized by the Geobotanical-Floristic Working Group – where members of the public could bring their “finds” to the museum for expert analysis, which often resulted in lengthy discussions. Many scientists at the Natural History Court Museum, which would later become the Natural History Museum Vienna, began their careers as unpaid volunteers.

5. Current Significance

of Citizen Science and Crowd Science for the NHM Vienna

There are currently more than 30 activities at the NHM Vienna in which Citizen Scientists, with a wide range of backgrounds and expertise, are involved. This involvement ranges from classic data collection to coming up with ideas for new research projects using crowdsourcing. Cooperation between Citizen Scientists and professional researchers takes place both face-to-face and digitally via online platforms.

When it comes to sharing the NHM Vienna's knowledge with the general public, open and participatory formats are becoming ever more important. A good example is the first Citizen Science Day, which took place in October 2016, and the first open workshop for families ("Maker-space") held as part of the annual Long Night of the Museums in 2016. The NHM Vienna is now well-established as a place where stakeholders from all areas of society get together to talk about science (e.g., "Environment Talks" in 2016, "Public meets Biodivers.city" in 2017).

6. Measures

to strengthen Citizen Science and Crowd Science activities at the NHM Vienna

The NHM Vienna wishes to offer citizens the opportunity to contribute to all aspects of science and research. The fact that it houses ten scientific departments in one institution and under one roof makes interdisciplinary and transdisciplinary research easier. This core competence of the NHM Vienna means that the museum is able to implement the “Response” approach followed in Austrian research policy in order to react to the needs and expectations of civil society (www.responsiblescience.at).

The following measures are planned:

- Strengthening Citizen Science and Crowd Science at the NHM Vienna at strategic level:
 - clear commitment to Citizen Science
 - Citizen Science as part of the museum’s modernization and educational mission
 - new alliances between science and society
 - intensification of internal communication
 - awareness-raising within the museum
 - standardized definitions of key terms
- Making work carried out by Citizen Scientists more visible inside and outside the museum, as well as making projects and opportunities for interaction more visible.
- Integrating Citizen Science and Crowd Science into internal and external communication activities at the NHM Vienna
- Strengthening integration of Citizen Science and Crowd Science into research activities at the NHM Vienna
- Strengthening integration of Citizen Science and Crowd Science into educational events and activities at the NHM Vienna
- Developing an annual catalogue of measures to implement the Citizen Science Strategy and regular evaluations

7. Catalogue of Measures 2017

- Information on how to get involved in Citizen Science activities at the NHM Wien via all communication channels:

- dedicated section on the homepage
- links to national and international Citizen Science platforms
- social media campaign
- press releases on Citizen Science projects
- reports in the Universum magazine and in the museum's annual report

- Creation of a contact point for Citizen Science to provide technical and methodological information and coordinate research:

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Vienna, March 31, 2017

For the NHM Vienna



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The strategy is based on the results of two workshops held for all interested members of staff at the NHM Vienna.

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Support and advice was provided by:

winnovation – Open Innovation Research and Consulting (Dr. Gertraud Leimüller)

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