

# iNSci: a news platform that connects scientists with the general public



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## Abstract

In the digital age, when the flood of information makes it more and more difficult to distinguish the truth from a fake, it is important - as never before - to guide society towards reliable sources of information and justified decisions. This challenge is highlighted in the Lindau Guidelines as Goal 9 “Communicate to Society”, which calls for scientists to take responsibility for communicating their research. Herein, we propose a digital interface that will allow the general public to navigate through a continuous flow of science news articles by interacting with the scientific community. Our platform - **iNSci** - provides easy access to free science news articles, raises public awareness of actual research behind the news, and has an ultimate goal to boost public trust in science.

## Introduction

We have gone through immense scientific progress in the last few decades and have gradually entered the new digital era. This digital life has ushered in numerous internet outlets that continuously feed us enormous amounts of information. News based on scientific discoveries is no exception. As a result, we are now at the crossroads of scientific discovery and rumors, which are presented to the public by numerous web portals at a similar rate. In addition, the rise of social media and the obsession to share any piece of news do not serve to advance the scientific cause. All these lead to the unprecedented spread of fake news together with the decline of public trust in science [1,2]. Thus, it is time that the science community rethinks its strategies to reach out to the public, educates the society through open communication, and helps to distinguish myths from actual scientific discoveries.

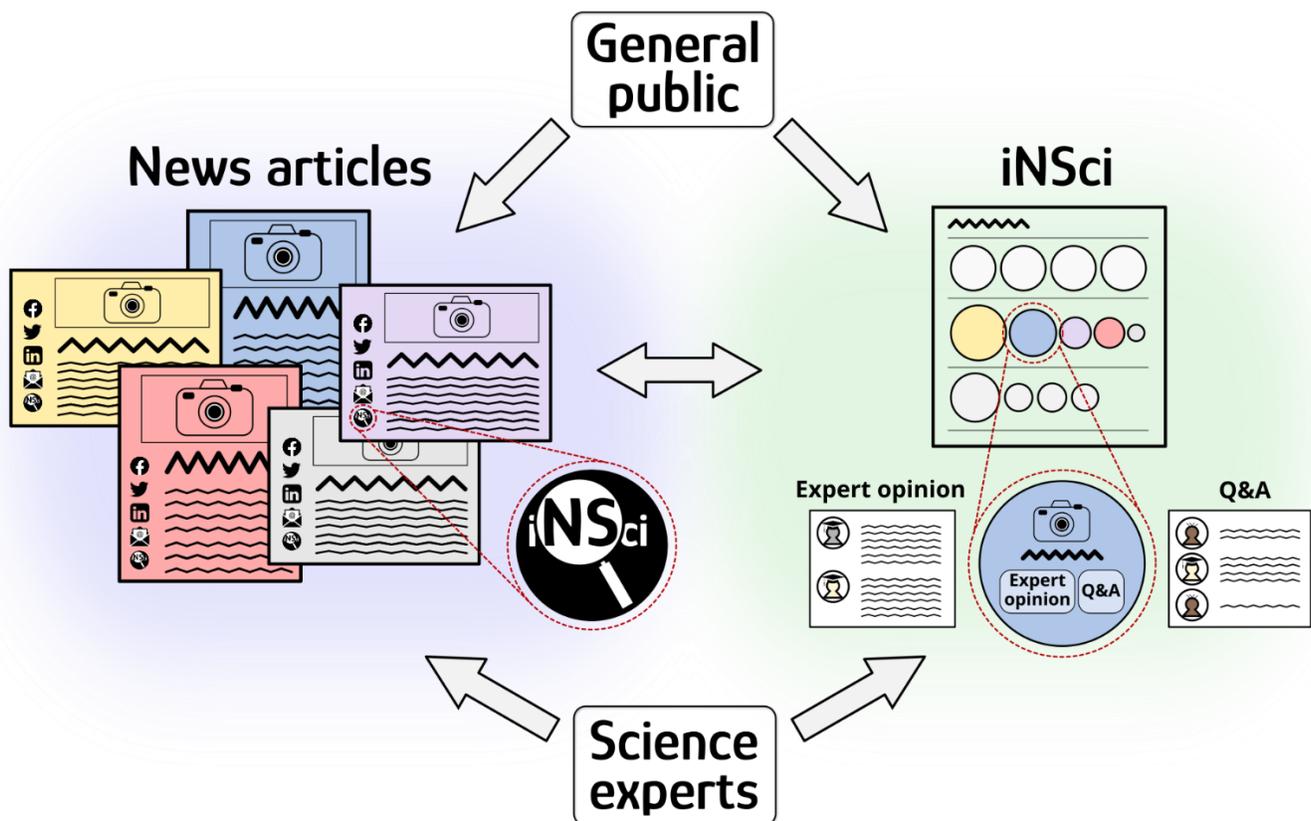
We believe that one way to address the challenges of responsible science communication and to increase public trust in science is to *create a direct link between scientists and the general public*, so as to raise public awareness of scientific approaches and help people of non-scientific backgrounds to pursue logical and data-driven decisions.

The Sciathon 2020 witnessed the development of a browser extension - *authentiSci* - that allowed people from the general public to judge how trustworthy a news article is based on the ratings of researchers with an ORCID identifier [3]. We decided to take one step further and **give the general public an opportunity to have an open dialog with people who are the primary source for any science news - the scientists**. The readers of news articles would have a chance not just to see the articles rated by scientists from any field, but to read actual feedback from the experts in the field related to the news article. In addition to retrieving scientific news articles from existing websites, our platform would help raise public awareness of science through direct interaction with the scientific community. Finally, we offer a simple visualization metric that can help a general user to develop an informed decision about the article in question and easily navigate through related online content.

## Concept overview

Our platform - **iNSci** (interconnected **N**ews and **S**cience) - is an interface between the general public and scientists that uses science news articles as a matter of discussion. An overview of the relationship between **iNSci**, science news providers, scientists, and the general public is shown in [Figure 1](#). The heart of the platform is a *website* (extensible to an app in the future) that collects recent popular science news articles from *reliable* and *free* open sources, providing users with an overview of the news articles from various online sources; all articles that report on the same piece of news are grouped together.

A *unique feature of our platform* is the ability to **provide communication between non-scientists and researchers** who are experts in the area pertaining to the news article. The experts of the field and authors of the original research cited in a news article will be invited to provide feedback on the quality of the article as well as give any additional information that might be of interest to many people. Whenever a news article presented on **iNSci** receives comments from the experts, its graphical representation on the website changes in relative size; in other words, the news articles that receive the most feedback from scientists become more noticeable.



**Figure 1.** Overview of the **iNSci** concept. The general public can interact with scientists by means of our platform. The reason for such communication is the science news articles that might raise multiple questions and debates. Each science news article on the **iNSci** website is represented as a circle and the articles highlighting the same piece of news are grouped in separate rows. On webpages with news articles, the **iNSci** button is present (together with other “share” buttons) and can direct a reader to the **iNSci** website.

Other **key features** of **iNSci** are the following:

- **Easy access** to all important science news with an overview of the coverage of each piece of news in different free online sources.
- The **target audience** of **iNSci** is **the general public**: only news articles that do not contain incomprehensible scientific jargon are picked up by the platform.
- **Highly trustworthy** news platform: only high-quality news articles are selected (using an artificial intelligence-based filtering system) and are further closely inspected by the experts in the field (including the authors of the original research article).

## **iNSci platform: architecture and workflows**

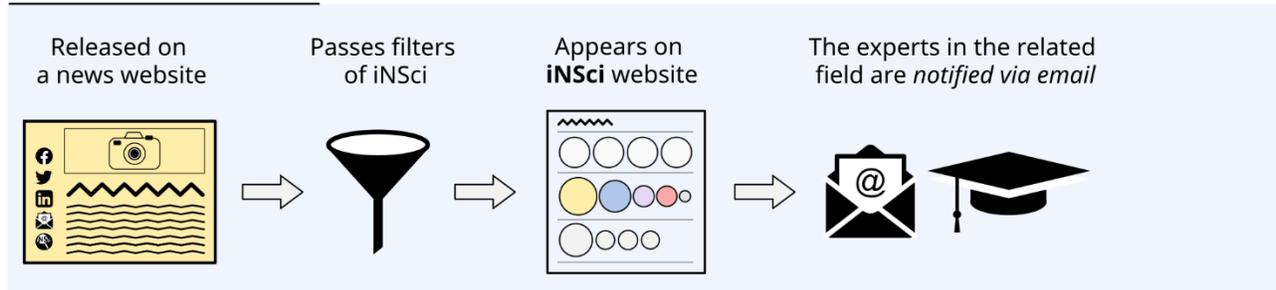
The working procedure of the proposed platform is illustrated in [Figure 2](#) below. Open access and trending news articles that report on the same piece of news are first picked up and passed through the **iNSci** algorithm. The algorithm uses language recognition to select the articles that properly cite the original research works and use careful wording when making any claims. Upon successful processing, these articles are laid out in rows embedded in circles that start off the same size. Subsequently, the circles will vary in size depending on the ratings and comments provided by the authors of the original research publication(s) and expert scientists of the field. A larger circle would imply higher credibility. Once the article is listed on the **iNSci** website, the authors and relevant experts of the field will be automatically notified (by email) and invited to provide ratings and brief comments to the news articles as well as to answer any potential questions posed by the readers.

Regarding the use of the **iNSci** platform, members of the general public have two options. The first option is to go straight to the **iNSci** website and select a news article that appears to be the most trustworthy (judged by the relative size of its graphical representation). Alternatively, members of the public can also be directed to the **iNSci** website through a *button* that we seek to introduce on popular online news platforms. This button will provide the readers with access to other news articles that report the same piece of news and are shown on our platform. They can make a more informed decision of the information featured in the news based on the visualisation metric provided by our platform, comments and ratings from experts in the field, as well as pose questions to the scientists through the platform. Our platform will also be beneficial to news providers that are producing good quality articles as these articles will receive positive affirmation and will hopefully encourage more responsible scientific communication in general.

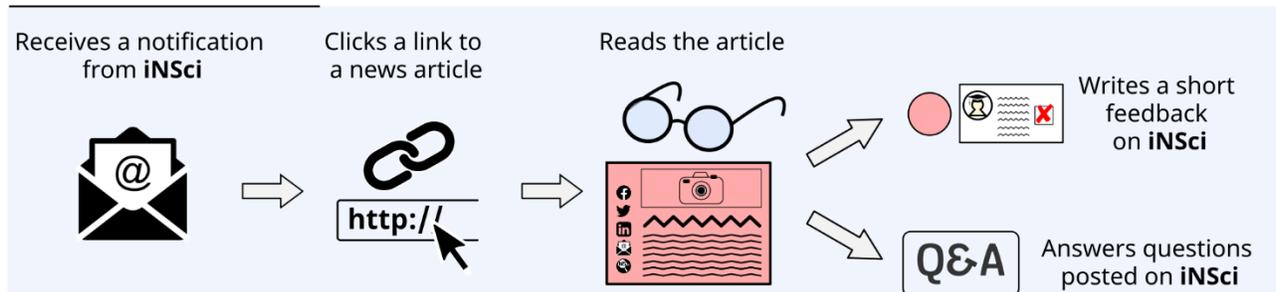
## **Case Study**

In the prototype website, we collated current trending articles based on three different publications [4-6]. An R code was written, in order to perform filtering of articles based on three tiers of keywords. A criterion was then set such that an article will only return if it fulfills 1 of the top-tier keywords or at least 2 of the middle and bottom tier keywords and at least a total of 5 middle and bottom tier keywords. Starting with a collation of 2, 9, and 15 articles for the “black hole”, “talking duck” and “cat” examples, respectively, a total of 1, 3, and 11 articles were returned after passing through the filters. An example of the code ran on the “black hole” example is shown in [Figure 3A](#), with the articles that were retained and removed for all examples listed in [Figure 3B](#). A section of the prototype website containing some of the articles is shown in [Figure 3C](#), with details of the full website to be highlighted in the video.

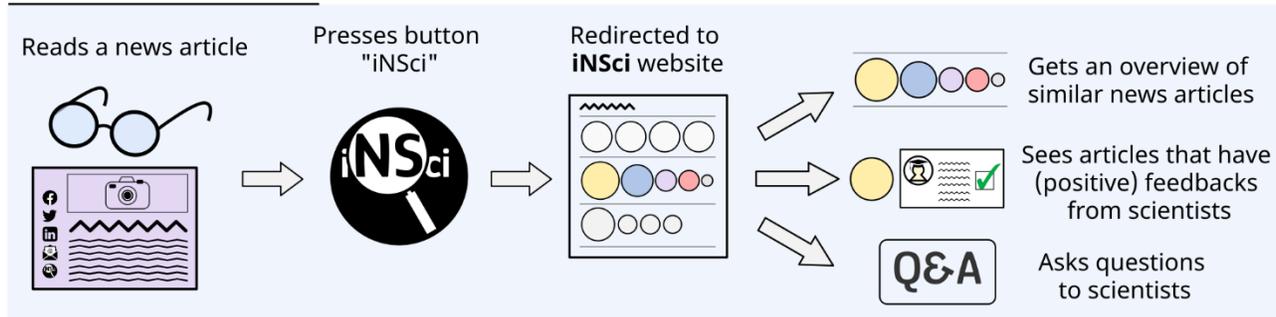
## Science news article



## Scientist



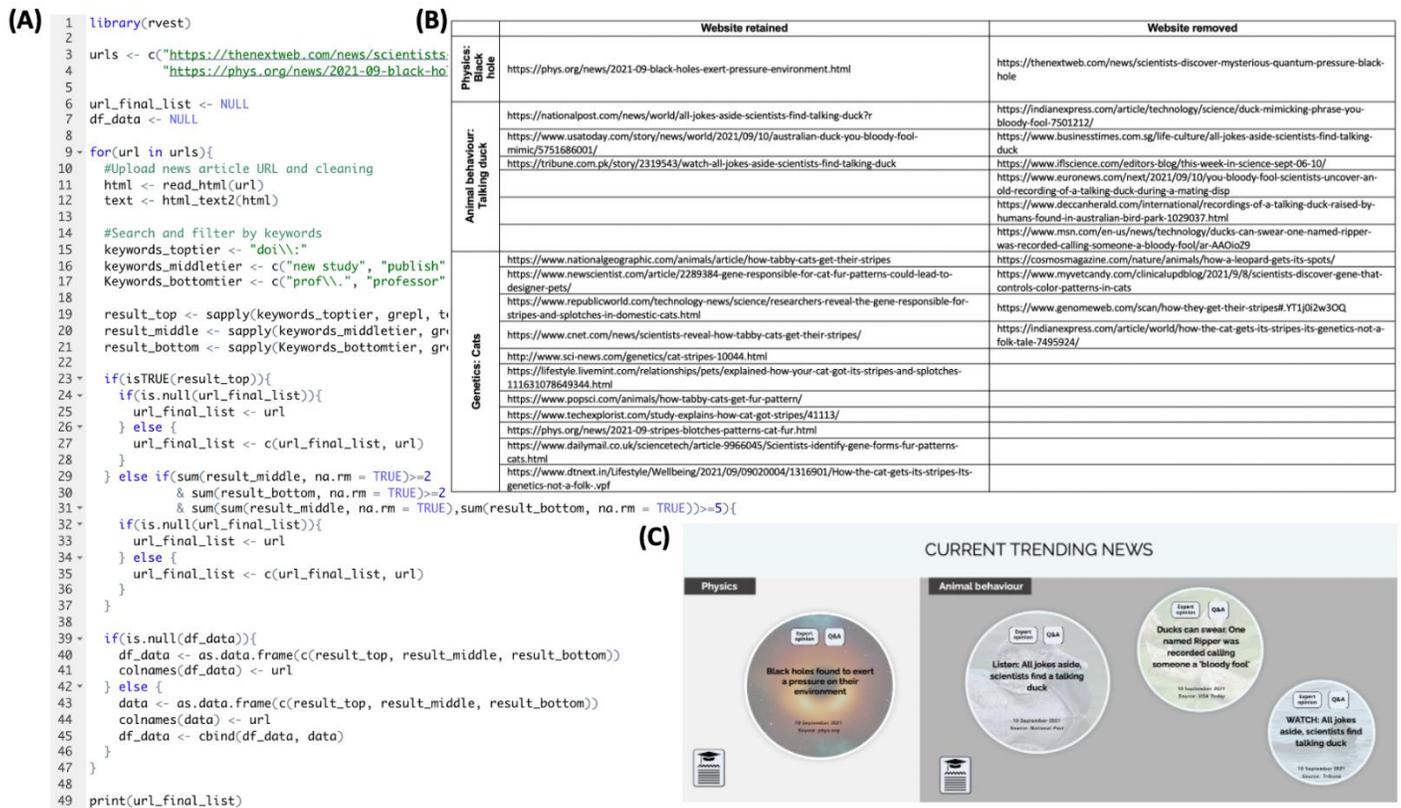
## Reader



**Figure 2.** iNSci in action. The sequence of events viewed from the perspective of a news article, a scientist, or a reader from the general public.

## Summary

Here, we propose and have developed a prototype website that collates current trending news based on scientific research publications, coupled with an interactive interface, so as to connect scientists with members of the general public, especially those who do not possess a scientific background and are interested in obtaining credible science-based news. The key features of the platform include collecting popular news articles that properly cite the original research papers, inviting authors of the original research publication and other scientists who are experts of the field to comment on the news article so that members of the general public can make informed decisions on the credibility of the news article, as well as offering the opportunity for questions to be posed to the scientists. Altogether, through our interactive platform **iNSci**, we hope that the general public's trust towards scientific news will be increased through responsible science communication.



**Figure 3.** A snapshot of the code used to select articles to feature on the website (A), along with a list of websites that are retained or removed after passing through the filter (B) and the article-feature section of the prototype website (C).

## Acknowledgements

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