

# Toward Healthier Science and Health News Feeds

To address the challenge of improving the quality of health and science information that appears in news feeds, the NewsQ Initiative, which seeks to elevate news quality when algorithms rank and recommend news, convened a panel of journalists and media scholars to bring a critical eye to the current ways platform news products are serving science and health news. The aim was to identify specific areas where ranking and recommendation can be improved, and to articulate recommendations for both platforms and publishers.

Chief among our recommendations is a call for increased human curation of content in the feeds by health and science journalists who have the necessary expertise to select the highest quality content and also to filter out misleading content that is still getting past current algorithmic filters. We also suggest a reframing of the categories used in the feeds, further investigation into the creation of allow and disallow lists of outlets, and some easy wins like downranking or eliminating content such as celebrity news from the science and health feeds.

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## NewsQ Panel on Science and Health Journalism (NQPSHJ)

### Description:

The focus of the NewsQ Science and Health review panel was, broadly, to examine and address science and health news and journalism that algorithmic platform news products rank and recommend in their feeds. Focusing on stories from the United States, the central question the group explored was: What health and science coverage should appear in the health and science sections of news feeds, and which sources should get priority? Journalists in the Science and Health inaugural panel brought combined decades of experience writing health and science journalism for newspapers, magazines, digital outlets, wire services, and other publications. Our panelists included:

### Stakeholder(s):

#### Caroline Chen :

Caroline Chen is an investigative reporter covering health care for ProPublica, and adjunct professor at Columbia University's Graduate School of Journalism.

#### Jennifer Kahn :

Jennifer Kahn is a contributing writer for the New York Times Magazine, and has been a regular feature writer for The New Yorker, National Geographic, and Wired, among others. Since 2009, she has taught in the Magazine Program at the UC Berkeley Graduate School of Journalism, and was a visiting Ferris Professor of Journalism at Princeton in 2015.

#### Katherina Thomas :

Katherina Thomas is a health and medical journalist with more than seven years of experience covering epidemics and infectious diseases (Ebola, cholera, MDR-TB, Lassa fever). She worked on the frontlines of epidemics of Ebola and COVID-19, both directly with patients and communities, and as a writer. Her journalism has been published in The Guardian, Reuters, The New York Times, The New Yorker, The Independent, Harvard Global Health Magazine, STAT News, and many other publications.

#### Randi Hutter Epstein :

Randi Hutter Epstein is a medical writer, and serves at Yale University as a Writer in Residence at the medical school and lecturer in the English Department. She is also an adjunct professor at Columbia University Graduate School of Journalism. She has worked as a freelance medical writer for more than 30 years; her writing has appeared in national publications including the New York Times, the Washington Post, and Psychology Today. She is the author of *Get Me Out: A History of Childbirth from the Garden of Eden to the Sperm Bank* (Norton: 2010), *Aroused: The History of Hormones and How They Control Just About Everything* (Norton: 2018) and is working on her third book, also for Norton, about the science of stress.

#### Rick Weiss :

Rick Weiss is the director of SciLine, a philanthropically funded free service that connects journalists to scientists and provides

research-validated information for news stories. He has more than three decades of experience in journalism and media affairs, including 15 years as a science reporter at the Washington Post and eight years of strategic communications and science policy work in the White House and at the DoD's Defense Advanced Research Projects Agency.

#### Wudan Yan :

Wudan Yan is an independent journalist in Seattle writing about science and society. Her work has appeared in the New York Times, the New Yorker, The California Sunday Magazine, Harper's, MIT Technology Review, and others. She is a multiple grantee of the Pulitzer Center on Crisis Reporting award, and a recipient of funding from UC Berkeley's School of Journalism, Society of Environmental Journalists, and the Institute of Journalism and Natural Resources.

#### Yemile Bucay :

In addition to support from a NewsQ facilitator, Yemile Bucay, the panel also included a representative from Facebook to help provide technical feedback on news product questions.

### Facebook

#### Science & Health Journalists :

*Identifying Core Terms, and the Purpose of Science and Health Journalism* — Although exploring the ranking of science and health articles together might make sense for general readers, this framing can obscure some distinctions. Science and Health are in fact distinct desks at many news outlets and, perhaps correspondingly, are different feeds on ranking and recommendation algorithms. Nevertheless, approaching the topics together allowed us to tease out where the line might be between the two. While there are many ways to define science and health news, we generally understood the following difference:

#### Science Journalists :

*Science journalism* — Science journalism makes mention of scientific methodology and explains the methods through which evidence was derived.

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Stakeholders (continued)

### Health Journalists :

*Health journalism — Health journalism has at least some science backing it up even when it is not about medicine. The definitions presented here were not intended to be conclusive, but rather a starting point to ensure clarity when using certain terms. Then, in order to identify what specific aspects of algorithmic ranking and recommendation systems need to change to improve the quality of the news they surface, the panel articulated a vision of what science and health journalism ought to aspire to. The panel agreed that science and health journalism should serve at least one of several often — though not always — interrelated missions. Informing the public about the most important, high-quality health and science stories, whether focused on one study or a trend, is the ultimate aim. The primary audience of the missions, however, are the science and health journalists and editors who create the content that the news platform products feed on. We also see the news products as an essential audience of this paper, which we hope can inform decisions about ranking and recommending science and health stories in platform feeds. Implicit in our task is the notion that algorithmic news products should highly rank and recommend stories that manifest these missions. And that, in so doing, news consumers will benefit.*

### Information Providers :

*Informational — Science and health journalism should inform readers of breaking news and discoveries and put them in the relevant social, economic, cultural, and political context(s). Ultimately, this should help people make more evidence-based decisions in their lives.*

### Explainers :

*Explanatory — Science and health journalism should explain how we know something about the natural world, so it should include some discussion of scientific methodology. Addressing the question of how scientists or medical experts know something is an essential component of this journalism. It must explain how a piece of information came about, to help differentiate between “evidence” and “belief” or “received wisdom.” In this vein, in the course of communicating about a scientific advance, science and health stories should be clear about how much we do know and how much we don’t know about the finding or natural phenomenon. Such stories should help people learn to think in more evidentiary ways and ask themselves how they know what they know and whether their first impressions of things are accurate. As a corollary of this, the best of these explanatory stories will clearly communicate uncertainty, and make clear, implicitly or explicitly, that scientific research is by its nature an iterative process with a major goal of trying to disprove things it previously found to likely be true. In this way, good explanatory reporting should help science and health news consumers change their minds and understanding of things as science evolves, and not make the mistake of mistrusting science just because its findings change over time.*

### Decision-Making Supporters :

*Service-oriented — Science and health journalism should help people make decisions whether personal (e.g., health decisions) or larger scale (policies to support, people to vote for), by helping them understand and navigate complexities around health, science, or technology. Always, but especially in moments like the COVID-19 pandemic, science and health journalism should give people real utility to assess risks, appreciate*

*uncertainties, and feel less fear and more empowerment. To that end, science and health journalism should be written in a manner that avoids over-simplification, but that also speaks directly to audiences at an accessible level of difficulty and in a manner that is relevant to their lives. In this regard, both in science and health journalism, whatever journalists are trying to convey should connect directly to readers/viewers/listeners’ lives, or to how it impacts societal decisions or aspects of the social contract at large. For example, during an infectious disease outbreak or epidemic, access to quality health journalism can result in better health outcomes. Conversely, information that is unclear, insensitive to uncertainty, and insufficiently acknowledging that science is a process, can encourage misguided behavioral decisions and poor health outcomes.*

### Accountability Journalists :

*Accountability journalism — Science and health journalism can also serve as accountability journalism by exposing abuses of power, holding decision makers accountable for their actions, and providing an evidentiary basis for, say, assessing health policy-related decisions that can lay the groundwork for accountability down the line. Additionally, the panel found the following two missions to be of particular relevance specifically to science journalism that may or may not apply to health news:*

### Educators :

*Educational — Science journalism should help people understand the value of science and foster an appreciation for science as an epistemological method — while not crossing a line and morphing into advocacy journalism or becoming indiscriminate “boosters” for science or science funding.*

### Entertainers :

*Entertaining — Science journalism can generate interest in the larger concept of science by recounting surprising (or “cool”) phenomena. Science and its results can be enjoyed as an art to be appreciated just for what it is. Many people may claim they don’t “need” science, which may be true. But, like music or theater, science inspires and enriches our lives, fostering a community connected by a common understanding of the nature of the world. The educational mission as defined here of inculcating in people how a process works and inciting curiosity was not considered to be of primary relevance to health news. The explanatory and informational missions of guiding readers about their health choices covered that. The value of entertainment was not considered to be particularly pertinent to health coverage because we think that the focus of health coverage should be to provide utility to readers in being overall informed on issues affecting their health.*

### Data Providers :

*Data for Panel Analysis — To test existing news products’ success in fulfilling the missions of science and health journalism, the panels looked at specific results from a small set of news feeds. NewsQ project staff captured this data across certain dates that spanned a four-month period from February to July 2020. In particular, they captured screenshots of news feeds from major platforms. They also avoided personalized settings or preferences as much as possible, to enable a review of generic recommendation and ranking logic. The NewsQ team anonymized for example the searches as much as possible with regards to tracking the computer, browser, and location. The*

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*Stakeholders (continued)*

*Science and Health panel analyzed results from news feeds classified as “Health” and “Science” from Google News, Facebook News Tab, Apple News, and Yahoo News. When possible, results were captured with both desktop and mobile user experiences in mind. The goal for the panel was an initial qualitative evaluation, which is why the provided dataset was illustrative rather than systematically sampled. Results were compiled and translated into a spreadsheet format so that panelists could discover contextual information about each story ...*

**Google News****Facebook News****Apple News****Yahoo News****Science & Health News Products :**

*... science and health news products need to be guided by the missions of science and health journalism ... We hope that by articulating these missions, identifying some of the problems currently present in the platform feeds, and providing some initial recommendations for improvements, we have contributed towards a healthier news ecosystem and more useful ranking and recommendation platforms.*

**Vision**

A healthier news ecosystem

**Mission**

To improve the quality of health and science information that appears in news feeds

**Values****Heath****Science****Information**

**Quality:** Of the problems that our panel identified, we felt that the most pressing fell in the areas of oversight, editorial judgment, transparency, and prioritization.

**Oversight:** Perhaps most important, given the ongoing weaknesses in today’s algorithmic systems, there is a clear insufficiency of human oversight to maintain a basic threshold of quality.

**Judgment:** More specifically, there is a notable lack of editorial judgment in elevating stories that serve the missions of science and health journalism;

**Transparency:** a lack of transparency from the news products in explaining to audiences in an accessible way how the content they are served is surfaced and ranked; and

**Prioritization:** a failure to prioritize stories that serve the most important needs of audiences.

## 1. Curation

### *Improve curation*

Our top recommendations propose a path to remedying those concerns that fall in the area of better curation.

#### 1.1. Goodness

##### *Boost good journalism*

“Boosting the good” — First and foremost, we agreed that there could be a better “boosting of good” journalism, and that this would require human curation. We think that every platform should use humans with a health and science reporting background to curate some of the top stories in the health and science feeds. One way to do this might be to have three or five stories be stable across users. Cognizant that instant dynamic curation is not possible, such top stories could remain in place for a given period of time such as a day. While a couple of news products (Apple News and Facebook News Tab) currently deploy some element of human curation in the “Top Stories” sections of their products, they have stated that they do not so in the “Health” or “Science” feeds. Given the degree of nuance and subject-matter expertise required to assess the most exemplary science and health coverage, we think that all audiences would benefit from having experts select the top stories. We did not find the coverage of breaking news to be of utmost importance in health and science news as the best of this journalism takes time to develop, so having a stable set of top stories for a set time period could still serve to keep audiences meaningfully informed. The best method to implement this level of curation may vary with each product and will likely require further inquiry. What we want to stress, however, is this: every platform news product needs to employ experts in health and sciences to curate some element of those feeds. In addition to recommending that all news products hire human editor-curators with science and health expertise to select and rank these stories, we recommend that each news product develop a series of questions for curators to use as a roadmap to determine top stories. These questions should be shared with the public on the platform product.

#### 1.2. Filtering

##### *Use humans to weed out the most egregious content that slips through algorithmic filters*

Quality control — In addition to employing human experts to curate the top stories, the news products should consider also using humans to weed out the most egregious content that slips through algorithmic filters. Better quality control measures might also help improve current algorithmic curation of the vast remainder of the feed beyond the top stories. For example, even if algorithms could detect whether someone with an expert title is cited within an article, human screeners are still needed to weed out stories if the person does not have the correct qualifications or expertise. Recognizing that quality control involves a very high volume of content review, one approach could be to create a list of keywords that may correlate to a higher likelihood of the article including misinformation such as “vaccine” that would queue an article for human review. Whatever approach is used, platforms should be transparent not only about the general principles that human curators have been instructed to follow, but also about the definitions of those terms and the metrics in use to assess failure or success (which understandably or at least hopefully will change and improve over time). We have heard platform representatives reference attributes like “quality,” “integrity,” “authoritativeness,” and “transparency” itself, but little specificity was provided regarding how they define those terms in practice.

## 2. Categories

### *Rethink science/health categories*

In general, we think that the ways the platforms group content need to be rethought.

#### 2.1. Population

*Avoid categories that need to be populated when there is no important news*

One consideration is to avoid the problem of having categories that need to be populated continuously, even when there is not important news to recommend.

#### 2.2. Determination

*Communicate how the categories are determined*

How the categories are determined, such as what definitions the news product uses in the classification of its feeds, should be communicated transparently to audiences.

#### 2.3. Health v. Wellness

*Implement a greater divide between science-based health and less rigorous “wellness” content*

On health coverage specifically, news products should implement a greater divide between science-based health and less rigorous “wellness” content on topics like diet and other lifestyle habits. These articles are often unbacked by medical science, which could have deleterious consequences for readers.

#### 2.4. Science & Technology

*Divide science and technology*

On science coverage, a divide between science and technology would be helpful. This way, gadget reviews or articles about the tech industry will not become a dominant feature of a science feed. When presenting news about technology in a science feed, articles should be focused on the science underpinning technological developments.

#### 2.5. Temporary Sections

*Consider temporary standalone sections*

We understand that some articles, including investigative and longform ones, may cross subject matter boundaries and draw from many different areas to present a nuanced story about a scientific phenomenon or health issue. For this reason, we appreciated the temporary standalone sections, for example of COVID-19 or of the wildfires in the West Coast, when a breaking news event required special coverage by many beats.

### 3. Outlets

*Establish an “allow list” of outlets*

Addressing the problem of outlet quality identified earlier, we suggest investigation into the establishment of an “allow list” of quality sources specifically for science and health feeds.

#### 3.1. Elevation

*Ensure algorithmically elevated stories are of the highest quality*

A vetted list could help ensure that the stories that are algorithmically elevated to the top of feeds are of the highest quality in accordance with the missions of health and science journalism explained earlier.

##### 3.1.1. Experts

*Engage independent third-party experts*

Ideally, such a list could be compiled by independent third-party experts including science editors and health editors.

**Stakeholder(s):**

**Science Editors**

**Health Editors**

##### 3.1.2. Diversity

*Engage a broad set of experts*

To mitigate the possibility of excluding high quality sources and to ensure diversity in the outlets represented, it would be important to invite a broad set of experts into this process.

##### 3.1.3. Criteria

*Be transparent about inclusion criteria*

If such a list is created internally by a news product, the product should be transparent about inclusion criteria.

##### 3.1.4. Marketing

*Be transparent about any accompanying marketing arrangements*

The news product should also be transparent about any accompanying marketing arrangement that might result in the actuality or appearance of a conflict of interest that news readers should be aware of as they consider what's in their feed and how it is ranked.



## 4. Easy Wins

*Immediately implement remedies to some of the most egregious problems*

### Stakeholder(s)

#### Platform News Products

Some of the above suggestions may take time to implement. Nevertheless, there are still easy steps to take that can improve the relevance of the stories featured to audiences. We propose the following measures for immediate implementation by the platform news products to remedy some of the most egregious problems we have seen, with what we believe will take relatively little effort. Our panel strongly felt that:

#### 4.1. Principles

*Require implementation of journalistic principles*

A product should not call a feed “news” unless key journalistic principles are implemented. These might include, as foundational to a news-labeled product, the prioritization of editorial independence and transparency about sourcing and attribution (as opposed to those principles being on, say, equal footing with other factors such as partner marketing and audience engagement).

#### 4.2. Sources

*Require stories to have more than one source*

Stories that only cite one source should not appear in the feeds. This is because single-source stories do not provide sufficient context to readers. Basing a story upon only one source is not best journalistic practice.

#### 4.3. Celebrity Content

*Refrain from presenting celebrity content in the science or health feeds*

No celebrity content should appear in the science or health feeds. An exception to this rule could be if a story of a celebrity’s illness is merely a leading anecdote as a way of explaining, with journalistic integrity, the science behind something. One possible way to implement this solution might be to add outlets focused solely on covering celebrities like TMZ or People Magazine to current “disallow lists” of featured health and science reporting.

### Stakeholder(s):

**Celebrities**

#### 4.4. Press Releases

*Refrain from presenting press releases in the science or health feeds*

No press releases should appear in the science or health feeds. Instead, only reported stories should appear in science or health feeds.

#### 4.5. Rules

*Establish rules for mass-published wire stories*

For stories that are covered by many outlets or that are written by wires but republished by many outlets, one should elevate either:

- The original story (the one closest to the primary source of information); or,
- The version from the local outlet best regarded by the audience in a given locale to increase the chances of the story being read and being trusted.

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## 5. Additional Questions

### *Resolve additional issues*

Further Questions — Beyond these initial suggestions, there were significant questions unresolved by the panel. We believe them to be worthy of more deliberation.

#### 5.1. Scientific Consensus

*Determine how much certainty about the scientific consensus on a matter is required to justify production of a science article in specific times and circumstances*

State of scientific consensus — Science is a process that builds over time, rather than a static set of facts. If part of the mission of science journalism is to inform the public on how science works, we asked ourselves: how much certainty about the scientific consensus on a matter is required to justify production of a science article? Relatedly, our panel discussed how this requirement might shift in a breaking news context. For example, when the public faces an immediate threat to their health and safety but when scientific understanding is rapidly changing, as with the COVID-19 pandemic, our panel discussed how the need for scientific consensus before reporting on a finding might shift.

#### 5.2. Genres

*Determine how certain genres of journalism do or do not fit within science and health feeds*

While the terms “health” and “science” describe a subject focus, these types of journalism are not restricted to a specific genre. Our panel agreed that science and health journalism extend far beyond breaking news or brief reporting on single studies and that some of the best science and health journalism is often longform. However, there were unresolved questions about certain genres of journalism, and how they fit or don’t fit within science and health feeds. Our panel discussed whether opinion journalism about science and health should ever be present. At minimum, labeling opinion articles appearing in the science and health feeds seemed helpful. The panel discussed a number of other genres throughout the process, including entertainment and press releases. We explored questions such as: What is the nature of the difference between entertaining content that might speak to people’s curiosity about science versus entertainment content like celebrity news? Is there room for both in health and science feeds?

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