Today, we’ll talk about science writing for a non-expert audience in general and writing news releases in particular. Increasingly scientists are expected to publicize their discoveries so that the general public can understand and appreciate the importance of scientific research and discovery.

While many of the principles are the same (tailor your message for your audience, use persuasion), writing for the public has particular challenges. We’ll talk about them today.

We’ll also talk about the journalistic writing style, which is quite different from standard scientific or journal-article style, but which is also a useful tool to have in your writing arsenal. In the course of your career, you will need to use this style when interacting with the news media, with the general public, and with funding agencies.
This *Time* cover recounts the so-called “cold fusion” debacle, where electrochemists Stanley Pons and Martin Fleischmann announced at a press conference in March 1989 that they had achieved nuclear fusion in a small, tabletop experiment at room temperature. At the time of their announcement, their results had neither been published in a scientific journal nor even subjected to peer review.

The resulting brouhaha distracted science for years, and Pons and Fleichmann, who were eventually forced out of science, were universally criticized for publicizing their “results” outside the normal process of peer review and journal publication.

At the University of Illinois, we do not write *anything* about a scientific discovery until it has been published in a legitimate peer-reviewed journal.
Write like a journalist

Start with a snappy headline
Follow with a strong “lead”
Use the question words
Who, what, when, where, why, how?
Write very short paragraphs
Provide direct quotations
Use analogies
Explain your terms

Start with a short, snappy headline—one that accurately previews the story but does so in a way that grabs the reader’s attention. Here are some examples of effective science headlines:
“Nano knitting” (about force-controlled lifting of molecular wires)
“Look, Ma, no fields” (about Aharonov–Bohm effect)
“How to Catch a Moonbeam” (entanglement of atomic ensembles by correlated photons)
“The Neuron Whisperers” (creating a neurochip to replicate brain activity)

Start your story with a strong “lead”—an interesting fact or analogy that will make the reader want to learn more. Here are some examples of strong leads:

“Two scientists believe they’ve solved a mystery that’s defied explanation for more than 400 years. The phenomenon known as milky seas, once thought to be folklore, may be real.” ScienceDaily, July 2, 2006; http://www.sciencedaily.com/videos/2006/0707- uncovering_the_mysteries_of_the_seas.htm. (Also has a very cool video...)

Tip: Another place where you’ll use a strong lead is your statement of purpose for graduate school applications.

Use direct quotations. (N.B. Direct quotations are never used in journal articles.)

Explain your terms; use no jargon. If a person you meet at the grocery store doesn’t know what that word means, don’t use it without an explanation. (What is “electroweak symmetry breaking” anyway?)
As in any written work, knowing your audience is essential. Ask yourself:
What will my prospective readers find interesting or engaging?
What do they already know?
What do I need to explain so that they can understand the significance of my story?
What words are they familiar with?
Why should they care?
Stories that interest people (think “sell newspapers”) incorporate one or more of the following elements:

**Impact**—will this discovery affect people’s lives? other work?

**Timeliness**—is the work new?

**Prominence**—does the story involve a well-known person or field?

**Proximity**—will local people care?

**Conflict**—are the results controversial? do they upset previous beliefs?

**Weirdness**—are the results unexpected or strange?

**Currency**—is the report related to some general topic that people are already talking about?
The tone for a news article, like a journal article, should be straightforward and factual. Your treatment must be balanced; readers dislike and distrust hyperbole.

Add credibility to your story by quoting authorities and pointing the reader to other reliable sources of information.
Organize information in an inverted pyramid

Most newsworthy info

Present the most important and interesting information (the “lead”) in the first sentence of the first paragraph.

Add additional details in subsequent (short) paragraphs.

The inverted pyramid style comes from newspaper reporting, where an editor might have to chop off the last paragraphs of a story to get it to fit on the page.

Assume not everyone (anyone?) will read every word, down to the last period. Can the reader get the basics of your story from the first three paragraphs?
Limit text to one “main idea” per paragraph, and make it the first sentence.

Keep paragraphs short (two or three sentences). Restrict to half the word count (or fewer) compared with conventional writing.

Break up the text with content-rich (not cute) subheadings—make it scanable.

Use typeface variations, columns, and short paragraphs to break up text into scanable chunks.

Highlight key words to make them visible (bold, italic), but don’t underline text to highlight it. If your story is going to be used on the Web, readers expect underlined words to be hyperlinks.
“Graphic excellence is that which gives to the viewer the greatest number of ideas in the shortest time with the least ink in the smallest place.” —Edward Tufte

Drawings—details, motions, function, cross or cutaway sections.
Diagrams and schematics—processes, symbolic representations, successive steps in time.
Charts/plots—numerical data, comparisons, trends, relationships among variables.
Photographs—actual views of objects; give sense of realism.

Important to provide a scale for photos and drawings—will your reader know how big something is by looking at it (2 mm or 2 m or 20 m)?

These images all tell the story of the U.S. DOE’s artificial retina project. The image at the top left shows a scientist holding a thin-film artificial retina array; it gives an idea of the scale of the device and reinforces what it is used for by positioning the device in front of the woman’s eye. The image at the top right provides a schematic overview of how the device works. The image at the bottom left shows one of the artificial retina wafer, which holds a dozen thin-film arrays. The image at the bottom right shows the artificial retina implant including the array and its implantable electronics package. “Lab plays key role in Department of Energy’s artificial retina project,” Lawrence Livermore National Laboratory, https://publicaffairs.llnl.gov/news/news_releases/2010/NR-10-02-03.html.
Use this template

FOR IMMEDIATE RELEASE
Contact: Name, email, phone, URL

Your catchy title (in boldface)

Urbana, Ill. – <date> – Start writing your text here. Write short paragraphs.

Leave a blank line between paragraphs.

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Emulate good examples

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