



Wiki your way into materials history

At the recent Materials Research Society Meeting in San Francisco, I stepped into a symposium outside of my scientific comfort zone and the speaker used an abbreviation that I was not familiar with. I looked around and people didn't seem confused and the speaker never defined, either verbally or on his slide, what he was talking about. Not wanting to wait around for an answer, I pulled out my smartphone and searched the term. Seconds later, I was on the appropriate Wikipedia page with a full definition, mechanism of action, and common scientific uses. Instead of spending the rest of the talk puzzled or confused, I was able to follow along for the entirety and appreciate the magnitude of the work presented.

Where would we be in materials science without Wikipedia? Not as far along as we are now. New ideas, especially in materials research, are born from having a broad knowledge base and connecting different fields and experiments across borders of physics, chemistry, engineering, and biology. But as a chemist myself, I cannot simply pick up physics literature and “figure it out.” Nor do I likely have the correct physics textbook on my shelf. But, with Wikipedia, knowledge and advances in interdisciplinary materials research science can proceed rapidly and smoothly.

So, we are all set, right? We have this wonderful resource that is full of information, is updated frequently, and can set us

on the right path for great science. The general public may view Wikipedia as an encyclopedia, an unbiased source, but the truth is that it is representative of the people who write and edit it. While estimates vary, those people are between 86% and 92% male. Additionally, pages are only created and kept from deletion by the individualized acts of individuals, so something we consider important, such as the Materials Research Society or the *Journal of Materials Research*, might not even have its own page.

There have been plenty of articles discussing how distribution of information and knowledge is made more difficult by not having representative Wikipedia editors. Classic examples are having shorter or nonexistent articles on stereotypically female topics, while video games, for example, have incredibly lengthy and in-depth articles. Also thoroughly discussed has been to study why there is this gender gap. Males, for example, might feel more likely to be experts enough to edit. They might have more free time or enjoy spending time at their computer more.

But, whatever the reasons, a clear observation is that everyone in the materials community needs to contribute to materials-related topics in Wikipedia for its success in materials science to continue and improve. We need more materials scientists to edit their topics of expertise as well as pages on the key figures in their field. We need more women, absolutely, but we will all benefit

from the most detailed, up-to-date descriptions we can possibly have from all scientists. In my opinion, instead of focusing on the cause of the current predicament, we should be focusing on how to use this tremendous resource for our largest benefit.

When I first read about the gender discrepancy in Wikipedia content and authorship in early 2011, the first time it was widely publicized in the likes of the *New York Times*,* I decided to do something about it. I am very social and I love to have fun with the collaborative aspects of science. If I'm going to spend my free time at a computer editing, I want to spend it surrounded by great friends and delicious snacks. So, I invited five of my chemistry friends to my house and after dinner, everyone whipped out their laptops and power cords, and we had our first "WikiWomen" night.

Everyone started either creating a new page or editing and updating an existing page from their expertise—their personal research. We passed the time effortlessly, talking non-stop about problems with our experiments and jokes about labwork, and generally reassuring each other about graduate school life. Working collaboratively, soon we were passing around each other's pages to edit for content, clarity, grammar, and adding links and

* N. Cohen, *The New York Times* (January 30, 2011); http://www.nytimes.com/2011/01/31/business/media/31link.html?_r=0

references. Working for about two hours, the team felt a real sense of accomplishment with the pages we were able to edit. We created a page for materials researcher Peidong Yang, and over time, added pages for Michelle Chang and Ken Raymond.

In addition to being much more fun than working alone, this is a very successful model because Wikipedia determines how important a page or edits are by how popular a page is. If these pages were simply modified by us at home by ourselves and edits were not confirmed, they would likely be proposed for deletion. Especially in the more obscure areas of science, it is important that edits are confirmed by other editors to remain on the page.

This started a monthly event where five to ten of us would get together to edit Wikipedia pages. The Wikipedia parties are easy to plan—we generally have them on Sunday nights, which worked best for all of us. Rotating at different people's homes, the host either made a dinner or provided takeout. Having a meal first allows everyone to catch up and new people to chat and feel comfortable with everyone else.

While so many other things in life can fall into the category of being able to benefit without directly contributing yourself, Wikipedia is not one of them. With so many interdisciplinary fields, we all rely on this resource and rely on each other for current, accurate, and unbiased information. So, whether you recently published novel nanoparticles for an application, furthered physical data for an existing material, or read a biography of a materials scientist, I urge you to spend a couple minutes to create a user name and edit or create your first Wikipedia page! Host a Wiki-party, or figure out your own personal forte for getting your expertise out there.

Piper Klemm

