



For my article in the Spring/Summer 2015 issue of *Wisconsin People and Ideas* on the human microbiome (adapted from an article I wrote for FASEB's "Breakthroughs in Bioscience" series), I was asked to write a sidebar about my process.

In the last decade, more than 10,000 scientific papers have been published about the human microbiome. Somewhere in those 10,000 papers, I have to find a story.

I start with research. I read scientific articles, interviews, and biographies. I stream videos, podcasts, and webcasts. I talk to experts. I find sources that will help me provide historical or scientific context. I find quotes and anecdotes that will give the reader insights into the lives of scientists. I fill my virtual and real-life desktops with everything I can learn about the subject. Somewhere in those stacks of paper and pixels, there is a story.

A story, whether fiction or nonfiction, is not just a series of events or facts strung together. Each element relates to the others in a cause-and-effect way to pull the reader along. I first find the heart of the story—the truth that needs to be conveyed. I build an outline based on the main points of that truth arranged in a logical order. Each paragraph builds on the information that precedes it, just as each scientific discovery builds on earlier work.

Once I have found the story and outlined the narrative, I fill it in.

Scientific papers have structure: Introduction, Methods, Results, and Discussion. In writing for a general audience, the same elements need to be included, without that strict structure. Each part of the story needs to have a motivation, a brief description of the methods the researchers used and what they found, as well as some idea of what it means and how it fits into the story. If I know of conflicts or obstacles, I add them for a more compelling read. Metaphors and analogies can help with comprehension.

Throughout the piece, I try to emphasize that science is a collaborative process. Headline-grabbing discoveries are made possible by years of basic research. Many scientists contribute their own findings, insights and techniques to the body of work.

I want the article to be engaging rather than exhaustive. I resist the urge to add material that is not related to the main narrative. All that research I do? The vast majority of it does not end up in the finished piece. But that's OK. I like to think of a quote from a letter written to Laura Ingalls Wilder by her daughter, Rose. "Facts are infinite in number. The truth is a meaning underlying them; you tell the truth by *selecting* the facts which illustrate it."