

"A must-read. The word 'essential' is often over-used, but in this case it suits perfectly."—Deborah Blum, Pulitzer prize-winning journalist



T H E   E S S E N T I A L   G U I D E

edited by

CHRISTIE WILCOX  
BETHANY BROOKSHIRE  
JASON G. GOLDMAN

# Science Blogging

# **Science Blogging: The Essential Guide**

Edited by

**CHRISTIE WILCOX**

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# Contents

## *Preface*

- 1. To Blog or Not to Blog**  
Christie Wilcox, *Science Sushi*, *Discover Magazine*
- 2. From Page to Pixel: A Personal History of Science Blogging**  
Carl Zimmer, *The Loom*, *National Geographic*
- 3. How to Set Up a Science Blog**  
Khalil A. Cassimally, *The Conversation*
- 4. Using Science Art and Imagery in a Blog**  
Glendon Mellow, *Symbiartic*, *Scientific American*
- 5. Building an Audience for Your Blog**  
Ed Yong, *Not Exactly Rocket Science*, *National Geographic*
- 6. Ethical Considerations for Science Bloggers**  
Janet D. Stemwedel, *Adventures in Ethics and Science*
- 7. The Deal with Networks**  
Danielle N. Lee, *The Urban Scientist*, *Scientific American*
- 8. Indie Blogging: On Being a “Ronin”**  
Zen Faulkes, University of Texas-Pan American
- 9. Getting Interactive**  
Rose Eveleth, *Science Studio*
- 10. Brevity Is the Soul of Microblogging**  
Joe Hanson, *It’s Okay to Be Smart*, PBS Digital Studios
- 11. Science and the Art of Personal Storytelling**  
Ben Lillie, *The Story Collider*
- 12. Using Social Media to Diversify Science**  
Alberto I. Roca, *Minority Postdoc.org*
- 13. I’m Not Going to Tell You How to Be a Woman Science Blogger**  
Kate Clancy, *Context and Variation*
- 14. Blogging as an Early Career Journalist**  
Colin Schultz, *Hakai Magazine*
- 15. Institutional Blogging**

Karl Bates, Duke University

16. **Blogging as a Resource for Science Education**  
Marie-Claire Shanahan, *Science for the People*
  17. **Communicating Science as a Graduate Student**  
Jason G. Goldman, Freelance Science Writer
  18. **Blogging on the Tenure Track**  
Greg Gbur, *Skulls in the Stars*
  19. **Metrics: Measuring the Success of Your Blog**  
Matt Shipman, *Communication Breakdown*, SciLogs
  20. **Toot Your Own Horn: Self-Promotion in Social Media**  
Liz Neeley, *The Story Collider*
  21. **Blogging at Scientific Conferences**  
Travis Saunders and Peter Janiszewski, *Obesity Panacea*, *PLOS Blogs*
  22. **Tackling the Hard Sciences**  
Rhett Allain, *Dot Physics*, *Wired*
  23. **Blogging about Controversial Topics**  
Emily Willingham, *The Evidence-Based Parent*
  24. **Persuading the Unpersuadable: Deniers, Cynics, and Trolls**  
Melanie Tannenbaum, *PsySociety*, *Scientific American*
  25. **Who's Paying? Science Blogging and Money**  
Bethany Brookshire, *Scicurious*, *Science News*
  26. **From Science Blog to Book**  
Brian Switek, *Laelaps*, *National Geographic*
- Afterword**  
Paige Jarreau, *From the Lab Bench*, SciLogs

*Acknowledgments*

*Index*

## Preface

Why are you here?

We don't mean that in the existential sense. But what are you doing, right now, with this book in your hands? (Or more likely with this book displayed on some electronic device?) What is it that you want to know about science blogging?

Online science communication has come a long way from the early days of LiveJournal and Usenet. Bloggers are no longer sending messages in bottles with only blogrolls and hyperlinks to keep us connected, each of us in our own little far-flung corner of the Internet. Platforms such as Twitter and Facebook may not feel all that new, but they're revolutionary tools that have allowed us not just to interact with each other but also to reach wider and more diverse audiences. Many of us are now clustered together in official networks, under the umbrella of large, mainstream magazines or newspapers. Some independent blogs have grown into high-traffic sites, destinations unto themselves. Science bloggers are no longer limited to blog posts but are also writing books, recording podcasts, and uploading videos to YouTube. For many, science communication is a viable career.

When the three of us started blogging, the crowd was smaller. There were fewer science blogs, which meant it was easier to distinguish ourselves from other bloggers. It was easy to find our voices and to make ourselves heard. It was a time when someone sufficiently motivated could read just about every new blog post written about science each day.

That is no longer the reality. Today breaking in to online science communication can seem almost impossible. It can seem like there are dozens of new science blogs—not to mention YouTube channels and podcasts—popping up each day. But the Internet is still very much a frontier for science communicators. It's the Wild West. Each time the scene threatens to become too settled, someone or something new arrives, keeping us all on our toes. The struggle was once to become heard at all; now the struggle is to remain relevant.

Maybe you're reading this book because you wish to be that someone new. To disrupt the status quo. Or perhaps you're here to get new ideas. Maybe you're here to get your blog to the next level, to transition from blogging as a hobby to blogging as a career. Or maybe you're here to figure out just where your voice fits in the online world.

No matter your goals, this book is here to help. We've brought twenty-seven of the most successful, insightful online science communicators together to share with you what their years of experience have taught them. All of their expertise is as current as we could make it; as of this writing all of the online references you'll see are up-to-date and available.

But you don't need to read this book cover to cover to learn what you need to know.

Depending on your goals, there are different chapters, different paths through this book that will help you on your way. Here are just a few ideas.

## Science Blogging 101

Maybe you are getting started as a blogger and need ideas about how to proceed. In that case, you might start with [Chapter 3](#), to learn the basics of setting up a science blog from Khalil A. Cassimally. Make sure you use and display images and artwork responsibly by checking out [Chapter 4](#) by science artist Glendon Mellow. Then you might check out [Chapters 7 and 8](#) by Danielle N. Lee and Zen Faulkes. They present two different views on science blogging, one from within an official blog network, and one at a personal, independent site.

As you get in gear, check out [Chapter 1](#) by Christie Wilcox to remain mindful of why you're blogging and what you want to achieve. And don't forget that, though it is still young, science blogging has a rich history. See Carl Zimmer's history of our online community in [Chapter 2](#).

Once you have your blog up and running, it's time to think about how you might best communicate your science to the wider world. It doesn't all have to be long essays. Joe Hanson discusses how to be effective by being brief, in [Chapter 10](#). And in [Chapter 22](#), Rhett Allain covers some of the specific challenges that might arise when tackling the hard sciences.

## Telling Your Own Story

No one starting as a science communicator wants to get lost in the crowd. We all have different stories to tell, different angles we can use to communicate. But sometimes it can be difficult to find your own unique voice.

Your approach to science blogging might be influenced by your life experiences. In [Chapter 11](#), Ben Lillie talks about using your personal experience to drive your works. Many bloggers are also heavily influenced by their identity. Alberto Roca offers thoughts on blogging as a minority-group member in [Chapter 12](#), while Kate Clancy offers advice to other female bloggers in [Chapter 13](#).

Many people come to science blogging through their careers. Colin Schultz writes about the benefits of blogging as an early career journalist in [Chapter 14](#), while Marie-Claire Shanahan covers blogging as an educator in [Chapter 16](#). Karl M. Bates considers blogging from inside the ivory tower as a public information officer in [Chapter 15](#). For researchers who are blogging as a form of scientific outreach, Jason G. Goldman covers blogging as a graduate student in [Chapter 17](#), while Greg Gbur takes it to the tenure track in [Chapter 18](#).

While many fine blogs exist to explain concepts and cover research papers, not all of them need to conform to this standard. Scientist Travis Saunders and science writer Peter Janiszewski describe how they use their blog to cover scientific conferences in [Chapter 21](#).

## I Have a Blog. Now What?

If you're already an experienced denizen of the online world, this book still has plenty to offer. Maybe you've been a small fish in the big science pond too long, unsure about how to find readers. Ed Yong offers insights on how to find your audience in [Chapter 5](#). Many science bloggers are held back by their discomfort with self-promotion, but Liz Neeley will show you, in [Chapter 20](#), that you have nothing to fear. Some bloggers may want to try moving beyond using words alone. To use interactive tools so that your readers will become participants rather than passive viewers, check out what Rose Eveleth suggests in [Chapter 9](#).

Many science bloggers and communicators may think they are reaching the audience they want, but aren't really sure how to look at their metrics. How do they know if anyone is really listening? Matt Shipman offers important insights on metrics in [Chapter 19](#).

Writing on the Internet can be daunting. In [Chapter 23](#), Emily Willingham covers how, and why, we might choose to write about controversial topics, and Melanie Tannenbaum gives some tips for countering trolls in [Chapter 24](#). In [Chapter 6](#), Janet D. Stemwedel shows how carefully we must consider ethical issues as we share information on the Internet.

Many blogs are written simply for the love of science and science communication. But career science communicators also need to pay the bills. Bethany Brookshire discusses getting paid for blogging in [Chapter 25](#). And in the final chapter, [Chapter 26](#), Brian Switek explains how your blog can serve as a sort of "writing laboratory" to help you develop ideas for the ultimate in long-form writing, a book.

By bringing together some of the most experienced voices from around the science blogosphere, we hope this book will have something to teach everyone. Whether you're just getting started, have some blog posts under your belt, or are looking for fresh inspiration, you are not alone. The science communication community may seem overwhelming, but it's friendly. Dive in and show us what you can do. Seriously. Tweet us and show us your stuff. And use our hashtag, #SciBlogGuide, and find us online at <http://www.theopennotebook.com/science-blogging-guide>.

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*Jason G. Goldman (@jgold85), Los Angeles*  
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## Science Blogging

# 1

## To Blog or Not to Blog

CHRISTIE WILCOX

*What does a budding scientist, science communicator, or science writer have to gain from writing about science on the Internet? What are the benefits of getting started in social media? Popular blogger Christie Wilcox of Discover Magazine Blogs takes you through the many reasons why you, yes you, should start communicating about science on the Internet.*

You picked up this book, so you must be at least a little curious about starting a science blog. Or maybe you already have one but could use a little validation. You want to know *why* you should write a science blog. After all, aren't there a million blogs out there?<sup>1</sup> Isn't the Internet bursting at the seams already? Why should you, a busy academic/scientist/journalist/writer/public information officer/insert-your-title-here take the time to write online (especially if it's unpaid at first)? Why should you bother with this often-maligned medium, when there are journal articles or features to be written? Really—why should you, of all people in the world, be blogging?

While I can share my personal experiences and give you a hundred reasons to blog, ultimately they boil down to two philosophical principles: altruism and narcissism. If you ultimately decide to blog, it will be either for yourself, for the good of others, or a bit of both.

### **Make the World Better for Science: The Altruistic View**

If you like to think of yourself as a giving person, then blogging is definitely right up your alley. What better way to share your passion and love of science with the rest of the world? And the truth is, the rest of the world needs it.

Now, more than ever, science is fundamentally intertwined with national and international political issues. Our climate is changing. Animals and plants are going extinct at an alarming rate. Life-saving technologies like vaccines are denigrated and misrepresented. Every day technologies advance in ways that are rarely explained well to the rest of society. To make informed decisions on a wide range of political issues, the people of the world need to understand the science behind the most hotly debated topics. But to do that, they need interpreters who speak the lingo, who can take jargon-filled research and put it into terms that anyone can understand.

Nowhere is this more true than in the United States, where former Senate majority leader Trent Lott can call his four years of science and math in high school “a waste of

my time and a waste of my teachers' time" and receive roaring applause.<sup>2</sup> The only way to change the negative attitude toward science is to show people why they should care. To do that, we have to show people how incredible, important, and intriguing science really is.

But you already know that. You've already had moments where your passion just bubbled out of you uncontrollably, and you saw the spark in someone's eyes when you told them something really, *really* cool. Maybe you explained how the Higgs Boson particle works or got into a conversation about the ballistic penises of male ducks. Somehow you found yourself in that place of authority where you were sharing with others something new and fascinating, and you changed how they think about the world—just for a moment, or perhaps forever. You inspired them. You want to do it again. And you can use a science blog to do it.

There's a reason that major grant agencies like the National Science Foundation require outreach and communication from the scientists they fund. Reaching out and sharing science is a moral responsibility for those who "get it." As the American Psychological Association's David Ballard says, "We have an obligation to be out there in public because there is nobody better informed or more expert."<sup>3</sup>

So why not attend more conferences or go talk to students in their classrooms instead? Because we live in a digital age where ten-year-olds carry smart phones and information is never more than a Google search away. More than half of Americans say they "talk" to people online more than they do in real life.<sup>4</sup> As social media platforms continue to grow exponentially, people are turning more and more to online avenues for connection and communication. If we want to be involved in the conversations about science, we have to be online as well. We need to be found in search results, and get real, accurate science into online conversations.

Most importantly, online avenues target the everyday adult. While we can improve education in public school and try to fight the battle in the next generation, we have to go beyond to really shift our culture. Anyone born before 1980 (and some born after) didn't learn about stem cells in high school. They aren't going to be taking a traditional class to better understand climate change or the causes of autism. They will learn about and understand these issues better only if they have access to content that explains them clearly.

Blogs reach out far beyond even the most gregarious person. I've had blog posts translated into Chinese, Romanian, and French. Commenters come from around the world to weigh in on the science I discuss on my blog. And because it's the Internet, what is written on a blog doesn't just stay on that blog; a wide variety of media outlets and other major traffic sources link to it as well. "Just simply by having a blog," says Travis Saunders of *Obesity Panacea* (<http://blogs.plos.org/obesitypanacea>), "we've been able then to go and get our message out to literally hundreds of thousands or even millions of people through these other much, much larger engines."<sup>5</sup>

I've seen firsthand the immense reach of blogs. When I wrote about DNA fingerprinting to explain how Osama bin Laden's body was identified, more than eighty thousand people read the post on my blog over the next couple days, and it was linked by PBS *NOVA*, NPR, *Nature*, *Discovery*, and a suite of mainstream news organizations, not to mention other blogs. It took only thirty minutes for me to explain

the science behind something I do every day, yet millions of people learned about genetic fingerprinting and were able to explain to their networks how we knew bin Laden was dead.

That's the point, isn't it? To get people talking about science, thinking about science, *caring* about science. To help people find science in the everyday.

Science blogging is truly a noble pursuit because it seeks to inform and excite others. It's all about injecting your personality, your passions, and your reasons for loving science into online content that educates and inspires. The ultimate aim is to change the world—a lofty goal with all the feel-good, heartwarming hope you could ever want in an activity.

## **It Really Is All about Me: The Narcissistic View**

The simple truth is that no matter how much good we want to do for the world, we are all limited. We are, as they say, only human. We have jobs that need to be done, money that needs to be made, and personal lives to attend to. So why should you make time in your busy schedule for blogging? Because ultimately, you're the one who reaps the most rewards from it.

Let's start with the most immediate benefit: exposure, or as marketing professionals refer to it, "personal branding." A long time ago, when you applied for a job or met a new person, they only had one thing to judge you by: what you told them. Now, in less than a minute, a potential employer or colleague can learn a lot about you. If you had Googled my name before 2006, for example, the top result would have been a quote my eighth-grade self gave to my middle school newsletter.<sup>6</sup> The Internet never forgets, and you can either lament that fact or do something about it. Blogging is content over which you have 100 percent control. That means when someone searches your name and finds your blog, they are seeing what you want them to see—your words, your thoughts, evidence of your skills and expertise.

Nowadays, it's more likely that a lack of web presence will damage you as you apply to new jobs. Just ask danah boyd, an assistant professor in media, culture, and communications at New York University and a visiting researcher at Harvard Law School. "There is no doubt that all faculty searches include a Google search," writes boyd.<sup>7</sup> "One of the things I hear most frequently about a new hire is how disturbing it is that he doesn't have a web presence. Something must be wrong, right?"

The best part of having your own blog is that these potential employers, colleagues, or whomever will get to see the *best* you. Instead of being a name and a résumé, you'll be a person—and you've already begun charming them, even if they haven't met you face to face. In that way, blogging provides another benefit: it's like regular networking, but without the pesky limitations of location and timing. Blogs are inherently interactive platforms. With comment threads and the ability to link around the world, they're all about conversations. Instead of rubbing elbows with a handful of people at a small, in-person function, you're chatting with thousands of people from all walks of life, any of whom might become an important contact later on. I know firsthand that this can occur: I first met one of my collaborators on my dissertation thanks to blogging.

Others have similar stories. Bertalan Mesko of [sciencereoll.com](http://sciencereoll.com) feels that “blogging and Twitter don’t just help me in my research but totally changed the way I interact with other researchers and collaborators.” Similarly, John Fossella (who blogs at [genes2brains-2mind2me.com](http://genes2brains-2mind2me.com)) has found that blogging has expanded his scientific network. “Instead of getting feedback from the same handful of folks I regularly see in the lab, I’m getting comments and new ideas from folks who I used to work with 5, 10 and even 20 years ago, not to mention new folks who I’ve struck up online interactions with.”<sup>8</sup>

“Science blogging literally changed my life,” explains Australian science writer Bec Crew, who didn’t know how to get started when she graduated with degrees in arts and media. Initially, she started blogging to satisfy her need to write while working an office job to cover the bills. As she gained attention for her posts, opportunities opened up, and Crew credits blogging with launching her career. “I was completely unqualified for the position I applied for at one of Australia’s few science magazines, *COSMOS*,” she explains, “but there was no questioning my enthusiasm for science communication, which helped me get the job.” She was even approached to write her first book, *Zombie Tits, Astronaut Fish, and Other Weird Animals* (which came out in October 2012), through her blog. When it comes to blogging, Crew says the time put in is 100 percent worth it. “It’s proof of your commitment to the industry, which is especially handy if you haven’t had the opportunity to work in it professionally yet.” More importantly, while it’s easy to say you’re a good writer, hardworking, or committed, showing it is much harder to do—and so means a great deal more. Blog posts can serve as writing samples to show editors, and because they’re online, an interested editor will have an immediate, easy way to contact you. As Crew writes, “What will set you apart is the fact that you’ve been writing about science in your own time, and training yourself to be better at it; because you love it and you think it’s important.”<sup>9</sup>

This is especially true for the scientist blogger. Science is a labor of love. You do what you do because you think it matters, and you publish your research because you think it’s worth talking about. What better way to make sure your research is talked about than to start the conversation yourself? Multiple studies have shown that media attention can positively influence paper citations.<sup>10</sup> This is especially true because, as U.K.-based geneticist Daniel MacArthur has noted, “a fairly hefty proportion of the readership of most science blogs consists of other scientists, so having your work disseminated in these forums . . . increases your profile within the scientific community, promotes thoughtful discussion of your work and can lead to opportunities for collaboration.”<sup>11</sup> And if your research is already being talked about widely, you *definitely* want to be blogging. As GrrlScientist explains in a post about scientists blogging, “A blog can be used to rapidly correct errors in mainstream media reporting, and to highlight the value of one’s findings while doing so. But perhaps most important, a blog provides scientists with a public platform where they can defend their research from misuse or misrepresentation by politicians and corporations that seek to abuse scientific data to bolster their agendas.”<sup>12</sup> As the #arseniclife scandal made blatantly clear, your research is fair game for other science bloggers. When NASA-funded scientists published the shocking finding that some bacteria can replace

phosphorus with arsenic, they found out the hard way that in this Internet age, scientists will not just challenge your results academically, they'll also do it online in full view of the public.<sup>13</sup> "Savvy scientists must increasingly engage with blogs and social media," explains Paul Knoepfler, professor of cell biology at the University of California, Davis School of Medicine, in a comment for *Nature*. "Even if you choose not to blog, you can certainly expect your papers and ideas will increasingly be blogged about. So there it is—blog or be blogged."<sup>14</sup>

For all writers of all kinds, from journalists to novelists, there is no better way to get yourself and your work out there than to write more. A blog is a writing laboratory where you can experiment with types of content and see what works best and what doesn't. You can play with images, videos, and all sorts of multimedia. It requires commitment, which means you're putting words to the page, showing potential employers that you have the dedication and ability to produce content. Blogging also keeps you keyed in to the most recent and relevant scientific discourse, and allows you to interact with other writers and the scientists whose work you write about. You'll sit at the same table with some of the most well-respected science communicators out there and gain insight into what they do and how they do it.

Science journalist Carl Zimmer has found that blogging allows him to expand his topic range and elaborate on new ideas. "I blog about things that I find very cool but that I won't be able to turn into an article someone will pay me to write," says Zimmer. "Very often, I will mine these posts for my books, and I sometimes even manage to produce articles on topics I first visited on my blog."<sup>15</sup>

If nothing else, blogging helps develop essential skills. "A wonderful side effect," says Ph.D. student Drew Conway, "is that the overall quality of your work will also increase, as you become a better writer, researcher and conveyer of complex ideas."<sup>16</sup>

*National Geographic* blogger Ed Yong reminds us that for a journalist, blogging is a great form of practice. "When I write for my blog, I do so in exactly the same way as I would for a mainstream organization. I ask whether stories are worth telling. I interview and quote people. I write in plain English. I provide context. I fact-check . . . a lot. I do not use press releases, much less copy them."<sup>17</sup>

By blogging you practice writing, cohesive thinking, effective communication, and web skills like HTML programming, skills you will use no matter what future career you find. "It's really an opportunity to work on your writing and presenting skills," says Saunders. "I found that having an excuse to write every day, trying to distill research down into lay terms . . . gave me a lot more confidence in my writing ability and also my confidence in presenting."<sup>18</sup> As every writer knows, the best way to improve as a writer is to write—and blogging not only nudges writers to write more regularly; it also provides wiggle room to explore different narrative structures and writing styles.

While blogging might seem a selfless act at first, it opens the door to real career-enhancing opportunities, whether that means broadening your professional network, increasing your exposure, or simply making you more marketable through new and enhanced skills. You can even end up making money off of it, though I wouldn't recommend getting into science blogging for the cash. Blog because you like to communicate, and because you have a passion for scientific topics that need someone

like you to convey them. Blog to gain exposure and network, and to expand your career.

## The Win-Win of Science Blogging

Scientist bloggers can gain a wider audience for their research, network with other scientists they might never have otherwise met, and establish their name as experts in their fields. Bloggers who focus on science, whether they're scientists, journalists, writers, or simply enthusiasts, can use their blog for self-promotion, draw in larger audiences, practice important skills, and try out new ideas and media types. Meanwhile all science bloggers benefit from being involved in a conversation and receiving feedback and ideas from a much bigger audience than they would reach with traditional outlets. And they get to do all of this while doing the important work of sharing what they love with the world, shifting negative cultural attitudes toward science, and combating pseudoscience and misinformation.

So you, enthusiastic science-y person, why aren't you blogging already? If you're feeling inspired but still unsure of the next best steps, the rest of this book will help you start with advice and howtos from the best in the business, so you can begin to reap the many rewards. And if you are already blogging, this book has information for you as well: their insider know-how will help you take your blog to the next level, so you can reach whatever goals you have set for your little corner of the Internet.

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## Notes

1. Actually, there are hundreds of millions of blogs—over 70 million on Word-Press alone.
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## 2

# From Page to Pixel

A Personal History of Science Blogging

CARL ZIMMER

*The Internet is relatively young, and science outreach on the Internet is even younger. Carl Zimmer, an award-winning author, journalist, and blogger at National Geographic, discusses the history of the blogosphere, implications for the future, and his own transition from traditional journalism to becoming one of the world's best-known science bloggers.*

Today blogging is one of the standard ways in which we tell the stories about science. This state of affairs is relatively new. For those of us who entered the science-writing world back in the twentieth century—as opposed to the twenty-first—the memories of a life before science blogging are still fairly fresh. Understanding the origins of science blogging can help us do it better now, and to push it into fruitful new experiments.

My own memories of life before science blogging start around 1990, when I got my first job in the journalism business—as an assistant copy editor at *Discover*. At the time, it was one of the biggest of the many magazines focused on science. It had a robust circulation of over a million readers. And it had no connection to the Internet whatsoever.

In that format, science writing had a simple one-way flow from writer to reader. A writer would research a story and write it. An editor would edit it, a fact-checker would make sure it was accurate, a designer would lay it out in an upcoming issue, a printer would produce millions of copies of the magazine, and truck drivers and ship captains would deliver it to the world.

In this one-way arrangement, it was rare for us writers to hear from our readers. Sometimes someone would sit down with pen and paper and write out a letter to the editor. But we had little sense of our audience. We had no way of knowing how many people read a given story, or how many of them talked about it with their friends.

The technology that would turn our journalistic world upside down already existed at the time. Though journalists had little idea that the Internet even existed, scientists had been using it since the 1970s. I stumbled across the Internet in 1994, when I was interviewing a scientist about his work on simulations of black holes. He explained to me that I could see his simulations on my own computer—and he wouldn't have to send me a CD-ROM. I loaded Mosaic software onto my computer, and it carried me, to my astonishment, to the scientist's web page. It was as if I had been hurled from

New York and landed in a chair next to him in his office in Urbana, Illinois, thousands of miles away.

Even as I came to appreciate the web, it would have been hard to imagine then that my own stories would someday jump into the screen, that most people would read my work online rather than in print. The modems were too slow, the computer memories too infantile, the monitors too pixelated.

As a science writer, my own transition to the Internet was motivated by practicality. In 1999, I left *Discover* to become a full-time writer of books and articles. I wanted a place online where I could display my magazine articles in order to persuade editors that I could write for them. I also wanted to post information about books I had written and links to places where people could buy them. I discovered that no one had yet claimed [carlzimmer.com](http://carlzimmer.com) and started to build a website. The site was useful, but it was also a lot of work. The primitive software of the day meant I ran a huge risk each time I wanted to make the slightest change. It was like replacing a jet engine at thirty thousand feet.

I was therefore amazed to discover that a few people had websites that they updated *every day*—and some of them were writing about science. The earliest of those science writers I can recall include Chris Mooney (writing on science and politics), Razib Khan (human genetics), P. Z. Myers (evolution and development), and Derek Lowe (drug development). Their topics and politics varied enormously, but they all shared the same lively, personal style.

The medium they used also gave them a power that print could not offer. As soon as something happened in the news, they could write a piece of commentary and post it within hours—or even minutes. Publishing was as simple as pressing a key. The bloggers, as they called themselves, could incorporate photographs easily into their text. To back up what they said, they could link to original sources. And they offered readers an opportunity to respond, by providing comment threads.

Intrigued, I started playing around with blog software. I was attracted to blogging because I wanted to write about things that weren't very welcome in print publications, and I wanted to write in ways that didn't fit their style. Because I was my own publisher, I didn't have to ask anyone's permission to write what I wanted. In 2003, I launched my blog, which I dubbed *The Loom* (an obscure reference to a line in chapter 93 of *Moby Dick*). It's been an intimate part of my writing life ever since.

In hindsight, I can see that my experience was just a small part of a turbulent chapter in the history of journalism. Print publishing was beginning to slide. In the 1990s, magazines and newspapers were so lucrative that corporations gobbled them up. Debts soared on the assumption that the good times would never end, and that print would always reign supreme. The *New York Times* spent over a billion dollars buying the *Boston Globe*, reportedly because they had the best color printing presses in the country. Color printing, not the Internet, was the future of journalism.

And then the crash came.

Corporations tried to pay off their debts by squeezing bigger profits out of their publications. When the profits weren't forthcoming, they cut costs by slashing staffs. Special science sections vanished from newspapers; science writers were laid off. Editors became anxious about stories that wouldn't grab as many people as possible.

No essays about altruistic slime molds, please.

That editorial fretting didn't stop newspapers and magazines from losing huge numbers of readers, many of whom shifted to the web. Meanwhile, the advertising that had buoyed magazines and newspapers began to evaporate. Classified ads migrated to Craig's List. Luxury ads also moved online. Sadly, most print publications didn't give serious thought to a better way to cope with the changes in journalism: by investing in good websites. For years, their websites were little more than copy-paste dumping grounds for their print edition.

Like other science writers, I did my best to tread water. I wrote freelance articles for magazines and newspapers, figuring out the sorts of stories that worked for each outlet. When I needed to write for myself, and for like-minded readers, I blogged.

The greatest pleasure I got from blogging was surprise. I would delve into strange corners of biology—a wasp that turns a cockroach into a zombie in which it can lay its eggs, for example. And I could see that people really did like to read about such stuff—and share it with their friends. The analytics for my blog showed me that I had readers from all over the world. I could see how other bloggers linked approvingly to the zombie post. Eventually the wasp ended up as a villain in a video game. A band posted a video on YouTube in which the members sang about the wasp's attack as a metaphor for a romance gone especially bad. I could see the unpredictable ways in which the things I wrote spread through the maze of culture.

Blogging also let me jump right into the biggest science news stories of the day. In 2005, a judge in Pennsylvania was hearing a case brought by parents complaining that creationism—in its latest form, “intelligent design”—was being slipped into their local school. Judge John Jones delivered a devastating rejection of intelligent design and his decision was posted online. I grabbed a copy and read through it, blogging as I read. As I updated my post, readers were having their own discussion in the comment thread, making collective sense of this historic moment.

I sometimes responded to creationists on my own blog. Traditional publications didn't see such responses as part of their mission. I disagreed, and used my blog to explain why creationist claims were wrong. By the time I had finished explaining how scientists know that the world is not just six thousand years old, I had explained geochronology—real science.

For the first few years of my experiments with blogging, some of my more distinguished colleagues in science journalism were baffled that I was “wasting” so much of my professional time. I was frustrated sometimes trying to explain why I enjoyed it so much. I couldn't get them to see the possibilities that blogging—both the software and the cultural practice—opened up for science writing. They joked about how I was going to end up living in the basement of my mother's house, blogging in my pajamas.

There's a hostility laced into such jokes. Many journalists saw themselves as professional gatekeepers, who used careful judgment to decide what kinds of science should become part of the public record, and to decide how their stories should be told. Now anyone could launch a blog and make a mess of things.

Professional journalists didn't just view bloggers as degrading the craft. They also viewed bloggers as an existential threat. By the mid-2000s, traditional science