

# Eric Pesanelli: Utilizing Tools and Resources to Ensure Image Integrity in Scholarly Publishing

**Anna Jester**

Graphic arts cover an ever-expanding range of options, and those who major in it in college might expect their job titles to be graphic designer or perhaps professor of graphic design. The field plays an intriguing role in scholarly publishing, and ideally the results display information effectively and meaningfully to readers. As Publisher, Art at the American Physiological Society (APS), Eric Pesanelli is responsible for the production and quality control of all artwork published in APS journals, from developing policy and procedures for journal artwork production to supervising art department staff and independent contract artists and managing the process for addressing image integrity.

*Science Editor's* Anna Jester recently spoke with Eric about how he came to his position at APS and how he approaches his role in ensuring image quality and integrity.



**Science Editor:** Please tell us about your job and whether your position historically existed at your organization.

**Eric Pesanelli:** I am not the first to be in this position, and titles evolve over time, but I am the first person with this job title at my organization who has had to address image integrity as a major component of the department's responsibilities. Previously, as the Editorial Art Manager for APS, I was managing production art editing for all the APS journals. Neither myself nor my staff have any scientific training beyond a few college level courses—we are all graphic arts majors. We do understand how images and graphics are created and published and began seeing and questioning irregularities in how figures were being created. We decided to go to the then Director of Publications, Margaret Reich, and then Executive Director of APS, Dr. Martin Frank, and inform them of the issues we were finding. This was around that time articles were being published about figure manipulation, as well other ethical issues in scientific publishing. APS decided

to hold an internal Ethics Summit in late 2008. All the Editors-in-chief, Publication Committee members, and Publications staff came together to discuss all aspects of ethics in APS publications. As a result of the summit, the proactive review of all accepted figures for potential image manipulation was instituted and became a key function of the art department. It remains job one. In early 2009, APS also created an Ethics Manager position, to be held by someone with a PhD in physiology to provide in-house expertise. The art department and editorial staff could now bounce things off the Ethics Manager and get immediate feedback. Prior to having an Ethics Manager, there was more corresponding between the Director of Publications, the journal editors, etc., so this streamlined the process.

**SE:** What do you like best about your job?

**Pesanelli:** I like the problem solving aspect of it. That is certainly what has kept the job interesting all these years. Digital image quality was always the first problem we were looking to solve. Having an in-house team of Production Art Editors allows for a great deal of collaboration with authors and among ourselves. Even though we are not physically in the office anymore, we still collaborate via Zoom and chat

Anna Jester (<https://orcid.org/0000-0002-8543-0311>), Vice President of Sales & Marketing, eJournalPress.

<https://doi.org/10.36591/SE-D-4601-07>

## CONTINUED

programs. There is a level of satisfaction that comes from working with an author and helping them create the best possible images for their publication. Receiving appreciation in return from authors is a nice payoff for all the work that it takes. When image integrity became part of our workflow it added a whole level of detective work to what we were already doing with images.

I also enjoy being part of the Council of Science Editors (CSE) Publication Ethics pre-conference course that has been offered for the last several years. Showing fellow publishers what I do and how I do it has been very rewarding. Being able to provide insight to those who are considering adding the figure review process to their workflow is satisfying. Looking at the audience and knowing people are interested and paying attention, and hearing their thanks, has been a rewarding aspect of my career.

**SE:** Thank you very much for not only speaking as part of those course faculties, but for sharing beneficial knowledge with others. What are the most challenging aspects of your job?

**Pesanelli:** One of the main challenges is technology constantly evolving. We use much of the same software that authors have available to them. Applications like Photoshop are constantly improving and adding features that make image alteration easier and better. A good portion of figure manipulation does not include an intent to deceive. Without that intent, a lot of image manipulation is easy to identify. Sometimes authors take the tools available in software programs too far, and since tools just keep getting better, it makes identifying problems more difficult. Now we have AI [artificial intelligence] that can create text and images, and I find that worrisome.

Another significant challenge is that image integrity screening takes time and effort. There is not a separate department that looks at images for integrity, so our Production Art Editors are handling this on top of all the other tasks to get images ready for publication. Doing both of those tasks included a learning curve that slowed down production until we were comfortable with the workflow, the tools, and documenting findings.

**SE:** Have you presented training similar to the short courses for your internal staff or as people come on board?

**Pesanelli:** I used much of my content covered in the CSE short course to train an incoming staff member who moved from part-time contractor to full-time figure editing. He previously worked for a large print service provider and had some background knowledge, but not in the tools that we use and the issues we look for.

If you want to start a program training people to detect image manipulation, it is important to stress the need for

problem solving skills, and the ability to see the big picture involving workflows. Much needs to be in place before you even get to the point of reviewing figures. Understanding of the types of images your authors submit and their potential problem areas is crucial. Are there common areas of concern with photographic elements and screen captures in the discipline? You need to decide when you are going to look and who will do the screening. Screeners need a strong knowledge of industry-standard applications, especially Adobe Photoshop. To root out image manipulation, you often need to be able to look beyond the obvious in an image, and tools such as those provided by the Office of Research Integrity are a big help in doing that. Understand that the more you look, the more you will find.

Computers can find what the human eye cannot, and the human eye tends to find what the computers cannot. Seeing patterns may come more naturally to someone with an art background, but that doesn't mean somebody who doesn't have an art background can't be helped immensely by the tools and applications that are out there now for detection of figure manipulation.

**SE:** What has been the biggest surprise to you about your job, organization, or something else related to the industry?

**Pesanelli:** I didn't have "Work from Home Full-Time" on my bingo card. I knew for years that a lot of roles in our publications department could be done from home. Wasn't sure I wanted to, but here I am. I still miss being at the office and being around people, and it is hard to believe it has been nearly 3 years already. We still have a physical office and will have quarterly full staff in-house meetings, but it is very different than in years past when you could poke your head inside someone's office and ask a question or just chat. You can do that virtually, too, but you hear less about their personal lives outside of work. The commute, however, is not something I miss.

**SE:** Do you have any predictions for the future you are willing to share?

**Pesanelli:** Some art department tasks may eventually be automated by AI in the future, but neither humans nor AI can catch everything. Our image review program at APS has also been one of education for staff, our Ed Boards, and our authors. We defined policies and published them in our instructions for authors, but it has been a learning experience for journal staff and our authors. When we started looking, we encountered many cases where we pulled the articles out of production and sent it to the Ethics Manager for resolution. The majority were what we call "presentation errors" and not an attempt to deceive. Still, the time and effort to resolve hundreds of instances the first year of the program had a big

*(Continued on p. 44)*

---

*(Continued from p. 18)*

impact on staff. Since that first year, we have recorded a steady decline in the number of ethics cases involving figures. Watching the numbers go down year after year has been positive and reinforces that the message has gotten out and raised the level of awareness for authors regarding appropriate and inappropriate image manipulations.

**SE:** That is very encouraging to hear for authors, editors, readers, your organization's members, and the entire discipline. It definitely clarifies why we need standards, clear author instructions, and easily accessible policies. Lastly, if you could give one piece of advice to folks interested in working in a similar position in the scholarly publishing industry, what would it be?

**Pesanelli:** Take advantage of information from those who have gone before you. Reach out and ask questions

because the scholarly publishing community is generally very willing to offer guidance. Often, others in this space have had similar experiences or created a path or a framework that you can follow. Use resources such as those provided by CSE—and it is worth being an active member, maybe even an organizational member, to help ensure your staff are up to date. Volunteering is also important. I am not a refined public speaker, but I am glad that I was given the opportunity to participate in the CSE Short Course on Publications Ethics. For someone like me, it can be so much easier to just do something than to try and explain to someone how to do it. It took me out of my comfort zone and forced me to step back from what I was doing and think about it in a way that would have meaning for others. Plus, it introduced me to a great group of people.