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### PREP Workshop Report: Expository Writing

Darren B. Glass *Gettysburg College* 

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#### PREP Workshop Report: Expository Writing

#### Abstract

A significant part of the job of a mathematician involves writing - between research papers, expository writing, grant applications, letters of recommendation, and materials for our teaching, I know that I spend much of my days writing something or other. Yet most of us are never really trained to write mathematics, and even in our jobs we rarely find time to talk about the actual writing of the mathematics which has taken place. With this in mind, I chose to attend a PREP workshop held by the Mathematical Association of America at their headquarters in Washington, DC dedicated to the art of mathematical exposition. [*excerpt*]

#### Keywords

Professional Enhancement Programs, Mathematical Association of America, Expository Writing

**Disciplines** Mathematics

#### **PREP Workshop Report**

By Darren Glass

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about the actual writing of the mathematics which has taken place. With this in mind, I chose to attend a PREP workshop held by the Mathematical Association of America at their headquarters in Washington, DC dedicated to the art of mathematical exposition

Twenty-three participants chose to spend three and a half days at the MAA's Carriage House conference center just a couple of blocks from Dupont Circle, and I think we would all say that we learned quite a bit while having a good time. About half of the workshop was dedicated to guest speakers who came in to talk about the process of writing. The names of these speakers will be familiar to many MAA members: Keith Devlin, Underwood Dudley, Dan Kalman, Ivars Peterson, Eve Torrence, and Paul Zorn as they are all quite wellknown as journal editors, journalists, and mathematicians. Their presenta-

## PREEP Professional Enhancement Programs of the MAA

tions gave advice on a variety of topics, ranging from their pet peeve grammatical errors to how to choose a story that will appeal to a wide audience. They also discussed issues about how to pitch stories to the media, resources that are available on the web, and how to break into textbook writing.

The other half of the workshop was spent in small groups critiquing manuscripts. Each group had a leader and six participants who brought in a piece of writing which we would discuss and critique. In our group, there was a wide diversity in these writings, in terms of their content, their target audience, and their stage in the writing process: some people had nearly completed papers that they essentially wanted proofread while other people had barely formed outlines. For each of these papers, the group's goal was to help people flesh out the details or figure out what types of publications they would fit well in.

I know writing groups are common for writers of fiction or poetry, but I had never heard of such a thing for mathematical writing. I found it enormously helpful to hear feedback about the piece I presented to the group, on issues both small, such as punctuation, and large, such as the structure of the article. Our small groups will continue to 'meet' virtually over the next year or so

using email and a wiki that was set up for the workshop, as we all refine our manuscripts and see them through the publication process.

Even as I write these sentences, I think that my writing has improved due to the many tips that I picked up during the PREP workshop, and I highly recommend the experience to anyone who has an interest in writing mathematics that people actually want to read.

The top three tips that I learned from the workshop:

- 1. Editors are good people.
- 2. Know the audience you are writing for.
- 3. Keep straight when to use 'that' and when to use 'which.'

#### Personal Recollections of the PREP Workshop on Expository Writing

By Charles Coppin

My PREP experience was outstanding. Imagine what it would be like to attend a basketball camp, only to find that Michael Jordan was your teacher. Our workshop was similarly blessed and quadruply so. Our teachers were Keith Devlin, Ivars Peterson, Paul Zorn, and Underwood Dudley, all great presenters and great teachers. Each offered a differ-

ent but valuable perspective. The plenary presentations, aptly led by Ivars Peterson, covered every imaginable area of mathematical communication such as grammar, presentations, internet resources, and the ins-and-outs of publishing books and papers. Each presenter led groups of about six participants. Our group, led by Paul Zorn, worked very well together but I expect all groups worked well.

I enjoy writing; however, throughout my career as chair, teacher and researcher, my writing consisted only of reports, class notes, letters, memos and research papers. I am a teacher by nature; appropriately, at this point, in my career, I see expository writing as an extension

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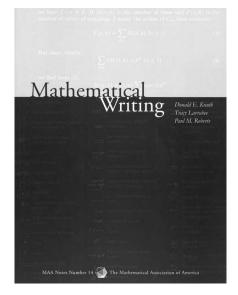
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of teaching. In fact, as we were reminded many times, good writing should find its way into all our writing. As a result, my research papers will improve and, on reflection, my teaching should improve as well as all my communications.

The experience was intensive. My attention span can be very short; I bore easily, especially with daily sessions covering seven hours. I was not bored at all! Ivars Peterson's presentations were focused and pertinent. I had written a rough draft of a paper to bring to the PREP workshop for criticism. I knew my paper had problems; however, my group gave me excellent input, most of which I have incorporated into my revised paper. I believe each of us worked hard to give good input into each other's writing. Amazingly, I seem to remember much of what we were taught. Application is another matter! I know I won't become a great expositor overnight, but I do believe that with hard work, much practice, and input from colleagues, I will improve greatly.

Our group, led by Paul Zorn, will communicate by a Wiki created by the PREP workshop. We will exchange papers and supply edits. This is a yearlong exercise, which I personally appreciate. The follow up will be critical to our success. I really appreciate Paul's laid back attitude; his leadership led to vigorous and useful edits.

I highly recommend this PREP workshop to all who want to learn how to communicate their mathematics to colleagues and the general public. It should be a required experience for all graduate students in mathematics.



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