



IEEE

MADISON SECTION NEWSLETTER

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MARCH 2007

Tour the University of Wisconsin Nuclear Reactor

Date/Time: Monday, March 19, 2007, 1:00 - 2:00 PM (NOTE: this is the third MONDAY of the month, not Thursday)

Speaker: Prof. Todd Allen, UW Department of Engineering Physics

Location: Univ of Wisc-Mechanical Engineering Building Room 101

1513 University Ave.

Reactor Supervisor's phone: 608-262-3392

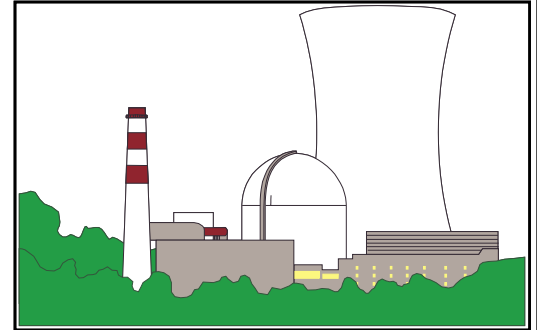
Meet in the lobby of the Mechanical Engineering Building, across from Lot 17

Parking: There is visitor parking available at Lot 17 - \$5.00 for a half day pass.
CAR POOLING IS ENCOURAGED!

Menu: Lunch will not be provided with this tour, but an informal gathering will take place at 11:45 at the Deli in the newly remodeled lobby of Engineering Hall (this is the big building immediately behind the odd-looking fountain). We can walk from Engineering Hall to the Mechanical Engineering building at 12:50.

RSVP: by March 1st to Les Schroeder via e-mail (l.schroeder@ieee.org) or call 608.224.0664

NOTE: this tour is limited to 30 persons and you must provide your name and organization for a security check when RSVPing!



Non-member guests are always welcome!

Note: Attendees will need to provide Government Identification (Wisconsin driver's license or passport) in order to tour the Reactor. The UW will do an advance check on all individuals attending, thus an early RSVP is required. These verifications are required and no last minute additions will be possible.

A renaissance in nuclear energy appears to be taking hold - over 30 new reactors are currently being considered for license applications and construction in the next 10-15 years. If completed, this would represent a 30% increase in the number of reactors and closer to 40% increase in installed capacity. The University of Wisconsin, Department of Engineering Physics, will host a tour of their reactor for the IEEE.

Newsletter Now Email Only

We're now sending out the IEEE Madison Section Newsletter as an email only mailing, except for those members that either do not have an email address registered with the IEEE or who do not wish to receive emails from the IEEE for any reason. We are using a service called "E-Notice" that is provided by the IEEE. The national headquarters maintains a database of member information including email addresses. We simply send them a PDF newsletter and they mail it out to all Madison Section members. The success of this system depends on the national database containing the correct email address for the Madison Section members.

We recommend that all Madison Section members update their member profile, specifically your email address, on the IEEE website so that we can send this newsletter out via email to as many of you as possible. Madison Section Chair Mitch Bradt has written up a comprehensive document to assist members in changing their IEEE profile. This document is in PDF format and can be found on the home page of the IEEE Madison Section website at <http://www.bugsoft.com/ieee/>. The title of the document is "How to Get IEEE Email Notices."

Currently our mailing schedule is as follows:

3 weeks before monthly meeting - PDF newsletter posted to Madison Section website at <http://www.bugsoft.com/ieee/news.html>

2 weeks before monthly meeting - postal newsletter goes to post office for bulk mailing to non-email members

2 weeks before monthly meeting - PDF newsletter emailed to all email members

1 week before monthly meeting - HTML format meeting notice emailed to all email members

As always, if you have any comments or suggestions on the newsletter or website, please contact me at cheilman@ieee.org.



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Web: epd.engr.wisc.edu or E-mail: danbeck@engr.wisc.edu
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Writing Not Badly

by Donald Christiansen

Engineers don't write well, we are told. O.K., so maybe the first step is not writing badly. Writing well may follow.

How can we tell when we are writing badly? First, it might be useful to scan the winners of the Bad Writing Awards. This annual contest seeks to locate "the ugliest, most stylistically awful passage found in a [recently published] scholarly book or article." (It was conceived by Denis Dutton, a teacher of philosophy and the editor of *Philosophy and Literature*.) Contest entries cannot be parodies of bad writing, warn its administrators, as "deliberate parody cannot be allowed in a field where unintended self-parody is so widespread."

The sentence that captured the contest's first prize back in 1998 was this one, from Prof. Judith Butler's article "Further Reflections on the Conversations of Our Time" in the scholarly journal *Diacritics*. "The move from a structuralist account in which capital is understood to structure social relations in relatively homologous ways to a view of hegemony in which power relations are subject to repetition, convergence, and rearticulation brought the question of temporality into the thinking of structure, and marked a shift from a form of Althusserian theory that takes structural totalities as theoretical objects to one in which the insights into the contingent possibility of structure inaugurate a renewed conception of hegemony as bound up with the contingent sites and strategies of the rearticulation of power."

Not surprisingly, the winners of the Bad Writing Contest are not pleased, and do not add these honors to their curriculum vitae. Fifteen academics (one of whom won a first prize in the contest) came together in "Just Being Difficult?" (published by Stanford University Press, 2003) to analyze and largely defend the writing styles of themselves and their colleagues. I did not read the entire book, but jotted down some phrases that might make the uninitiated, and maybe even the initiated, nod off. Here are a few: latent rhetorical proficiencies, corpus-based studies, text-based contexts, construal of the situation, lexico-grammatical elements, ideational macrofunctions. These are particularly lethargy-inducing when strung together in a long sentence.

The following singular nouns also appear frequently in text written by contenders for and defenders of "bad" writing. My gratuitous translations are in parentheses: exegesis (explanation); nonnormativity (not normal); temporality (a transitory state); antinomies (contradictions); obscurantism (making something deliberately obscure). Other favorites of this cohort are hegemony, dialectical, heuristic, didactic, and, of course, cohort.

Some of this academic-speak even creeps into the IEEE Transactions on Professional Communications. As examples, these article titles from recent issues: "Constructive Interaction: An Analysis of Verbal Interaction in a Usability Setting," and "Rhetorical Figures as Headings and Their Effect on Text Processing: The Moderating Role of Information Relevance and Text Length."

On our own

The linguists and critics of language and its teaching seem to exempt engineers and scientists from the barbs they heap upon one another. Perhaps they perceive us as writing only in terms of physical facts and unassailable mathematics, and so excuse us from any tests for clear, lucid writing. Or perhaps our writing is totally incomprehensible to them, so they allow us to go our own way. To my knowledge, no science/engineering writing has yet been nominated for the Bad Writing Contest.

Until the "Bad Science Writing" awards come along, we will have to be our own critics. No less a distinguished engineer than John Pierce, when he became editor of the Proceedings of the Institute of Radio

Engineers (the predecessor of the Proceedings of the IEEE), found that neither he nor any members of his editorial board could understand most of the articles. He needed to enlist the aid of specialist reviewers to improve both technical authenticity and the readability of the journal.

I am constantly on the lookout for good and bad science/engineering writing. I have concluded that, on balance, engineers and scientists do not write as, shall we say, obscurely as the literary philosophers do. Often we do not write well, but often we do not write badly.

Let's take a look. In a recent issue of Science, one of the articles began: "Large-conductance Ca^{2+} and voltage-activated K^{+} channels (BK_{Ca} or $K_{Ca1.1}$) are fundamental modulators of neuronal signaling (1, 2) by contributing to action potential repolarization (3, 4), mediating the fast phase of afterhyperpolarization (3, 5-8), controlling dendritic Ca^{2+} spikes (9), and establishing a feedback loop between membrane potential and cytosolic Ca^{2+} that regulates release of hormones and transmitters (10-13)." [Editor's note: \wedge precedes a superscript; $\}$ denotes a subscript.]

Although imposing at first glance, pockmarked with chemical symbols, and probably amenable to improvement, it is hardly a candidate for the Bad Writing Contest, as it states the subject (channels) of the article, four ways in which they behave, and the outcome. You may have to read further to learn what afterhyperpolarization is and whether the actions stated are serial or simultaneous, but it is not a badly written sentence, and plenty of references are provided throughout.

Of course there are more inviting ways to attract readers to an article, and I found some in the same issue of Science. Here's one: "Based on the growing number of known planetary systems (1) and on the wealth of observations of disks around young stellar objects (2, 3), it is now well established that planets around main-sequence solar-type

stars form in massive, gaseous, and dusty protoplanetary disks that survive for several million years around the nascent stars (4)."

And another: "Over the past 6 years, people have realized that security failure is caused at least as often by bad incentives as by bad design. Systems are particularly prone to failure when the person guarding them is not the person who suffers when they fail."

And one more: "A graduate student was recently heard lamenting, "I feel like my life is passing me by!" as he waited for an atomic force microscope (AFM) image to form line-by-painstaking-line."

An article in Scientific American by Stuart Kauffman, a professor of biocomplexity and informatics, intriguingly began: "When the world changes unpredictably over the course of centuries, no one is shocked: Who blames the Roman centurions for not foreseeing the invention of rocket launchers?"

Finally, in a recent issue of Technology Review, Freeman Dyson, famed for his work on mathematical physics, set the stage for his essay on operational research at the RAF Bomber Command during World War II with these opening remarks: "I began work in the Operational Research Section (ORS) of the British Royal Air Force's Bomber Command on July 25, 1943. I was 19 years old, fresh from an abbreviated two years as a student at the University of Cambridge. The headquarters of Bomber Command was a substantial set of red brick buildings, hidden in the middle of a forest on top of a hill in the English county of Buckinghamshire. . . . The ORS was housed in a collection of trailers at the back. Trees were growing right up to our windows, so we had little daylight even in summer. The Germans must have known where we were, but their planes never came to disturb us." The reader who suspects that Dyson's informal introduction promises an interesting essay, easy to read and devoid of equations, will not be disappointed.

I have deliberately avoided giving examples from our own specific

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explore



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discover



evaluate



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fields of interest. Both good and bad models do exist. Perhaps you'd like to nominate one or more for possible inclusion in a future column. You need not label them "good" or "bad." I think we'll be able to tell the difference.

Resources

For more on bad and some good writing:

- Romano, C., "Was It as Bad for You as It Was for Me?," The Chronicle of Higher Education, Oct. 24, 2003.
- Dutton, D., "Language Crimes," The Wall Street Journal, Feb. 5, 1999.
- Culler, J. and K. Lamb, eds., Just Being Difficult? Academic Writing in the Public Arena, Stanford University Press, 2003.
- Spears, T., "A Contest No One Wants to Win: 'Loopy' Academic Prose Vies for Top Honors," Ottawa Citizen, Feb. 9, 1999.
- Nussbaum, M., "The Professor of Parody," New Republic, Feb. 2, 1999.
- The IEEE Transactions on Professional Communication
- The PCS Newsletter
- Christiansen, D., "Engineers Can't Write? Sez Who!, Today's Engineer Online, February 2003.

Donald Christiansen is the former editor and publisher of IEEE Spectrum and an independent publishing consultant. He can be reached at donchristiansen@ieee.org.



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