WRITING WORKSHOP

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The most important rule:

- Know who your audience is.
- For poster abstracts, your audience was supposed to be intelligent layperson. You all know someone like that.
- Always keep that audience in mind as you write.
- What will they need to know to understand your point?
- Don’t introduce unnecessary information.
- Don’t introduce unnecessary jargon.
- (Some level of jargon is usually desirable and necessary in a scientific paper.)
How much detail?

• Look at Whitney’s abstract (p 28).
• How much of the background info on methane in the first paragraph does the reader need?
• That is, what could we cut without having the reader lose the point?
Methane is the second most important greenhouse gas emitted by human activity, contributing approximately one fifth of the total warming caused by humans. Methane levels have increased by 260% since the beginning of industrialization. Recent trends in atmospheric methane have been puzzling, however—stabilizing from 1999 to 2006, and then increasing again in the past decade. Scientists cannot explain these trends, largely because they do not understand which of many potential natural and human-caused sources of methane are responsible.
Tell me a story!

- Stories have a beginning, a middle and an end.
- Beginning: Someone faces a problem.
- Middle: They strive to solve the problem.
- End: They succeed or fail.
- Even a scientific paper or abstract can tell a story like this!
Story

• Look at Jeff’s abstract (p 56)
• What’s the story here?
• These two instruments don’t agree. We need to find out why.
Sequencing of information

• What does a reader need to know first?
• Look at Jeff’s abstract again

• 1) Why we want to measure water vapour
• 2) Several instruments available to do the job
• 3) They don’t agree with one another
• 4) How we can address the discrepancy
• Look at Sarah’s abstract (p 47)

• 1) Why we need to understand how young sea ice affects climate
• 2) What we need to measure (radiation flux from ice surface; clouds)
• 3) How we can measure it (frozen-in icebreaker)
• 4) What we found
Layering complex ideas

• Imagine you’re building a path of stepping stones across a river. You want each step to be easy for the person making the crossing. No big leaps!
Remember Chris’s talk on measuring snow depth?

• We could just stick a ruler in the snow, but snow depth varies.
• So we could walk a transect instead—but transect might not be representative.
• We could put out a bunch of snow gauges, but they have problems too.
• Simple satellite microwave measurements give poor predictive power on their own.
• Therefore add more correction techniques.
Linking ideas

• You want to pull readers along from one sentence to the next without abrupt leaps of thought.
• One good way to do that is to begin your sentence with something familiar, and introduce new concepts toward the end of the sentence.
• Trace elements such as iron, zinc, copper and lead play a critical role in the oceans because they act as nutrients and toxins to marine organisms. Trace elements and their isotopes can also be used as tracers to understand ocean processes such as the carbon cycle, anthropogenic contaminant transport and ocean circulation.

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Strategies for writing more clearly

• Write the same way you talk!

• “Measuring the atmosphere with a satellite is complicated. You need to always check whether what you measure is correct. One way to do it is to compare it with measurements taken from the ground, like those collected by the researchers at the Arctic station. These types of comparisons are what my work is about.”
Nominalizations

- Turning verbs, adverbs, adjectives into nouns
- “Zombie nouns”--suck the life out of verbs, adjectives
• The proliferation of nominalizations in a discursive formation may be an indication of a tendency toward pomposity and abstraction.

• Writers who overload their sentences with nominalizations tend to sound pompous and abstract. (Helen Sword, nytimes.com)
• The consumption of fish, often rich in essential nutrients, promotes health in humans.

• Fish are an important part of a healthy diet because they are often rich in essential nutrients.
• While the advance in computational power and the ongoing developments in hydrological modelling have increased the significance of hydrologic simulations, the issue of adequately addressing the associated uncertainty remains challenging.

• As computing power increases and hydrological modelling improves, hydrologists’ simulations have become more precise. However, they still struggle to address the uncertainties in their models.
Flabby subjects and verbs

• Sentences are more interesting and easier to read if they have subjects that are real people or things, and verbs that are real actions.

• Accurate information on the processes affecting ozone concentrations is essential to understand the changes the global climate is facing today.

• We need to accurately measure the processes affecting ozone concentrations in order to understand the changes the global climate is facing today.
Better

- The pristine polar atmosphere is fragile and pollution can easily unbalance the global climate.

- The Norwegian Young Sea Ice experiment took place on a Norwegian ice breaker frozen into newly formed sea ice in the Arctic Ocean. The ship and surrounding camp flowed with the ice from January to June 2015 while taking atmospheric measurements over the young sea ice.
“Cantilevered” sentences

• The nutrient:Hg ratios and OptQuest model approaches that were utilized to determine the optimal food choices that achieve nutritional sufficiency without exceeding the Hg TRV yielded different answers.

• The two methods did not agree on how much fish consumers can eat without risk to health.
Diagnosing problem sentences

- Underline the subject of the sentence.
- Is it a real person or thing? If not, it might be a zombie.
- Is the subject more than 4 or 5 words long? If so, you might have a problem.
- Circle the main verb of the sentence.
- Is it a real action? If not, you might be missing a chance to add a little zing.
Putting it all together

• Look at Keyvan’s abstract, p 49
• Look at Erik’s abstract, p 46