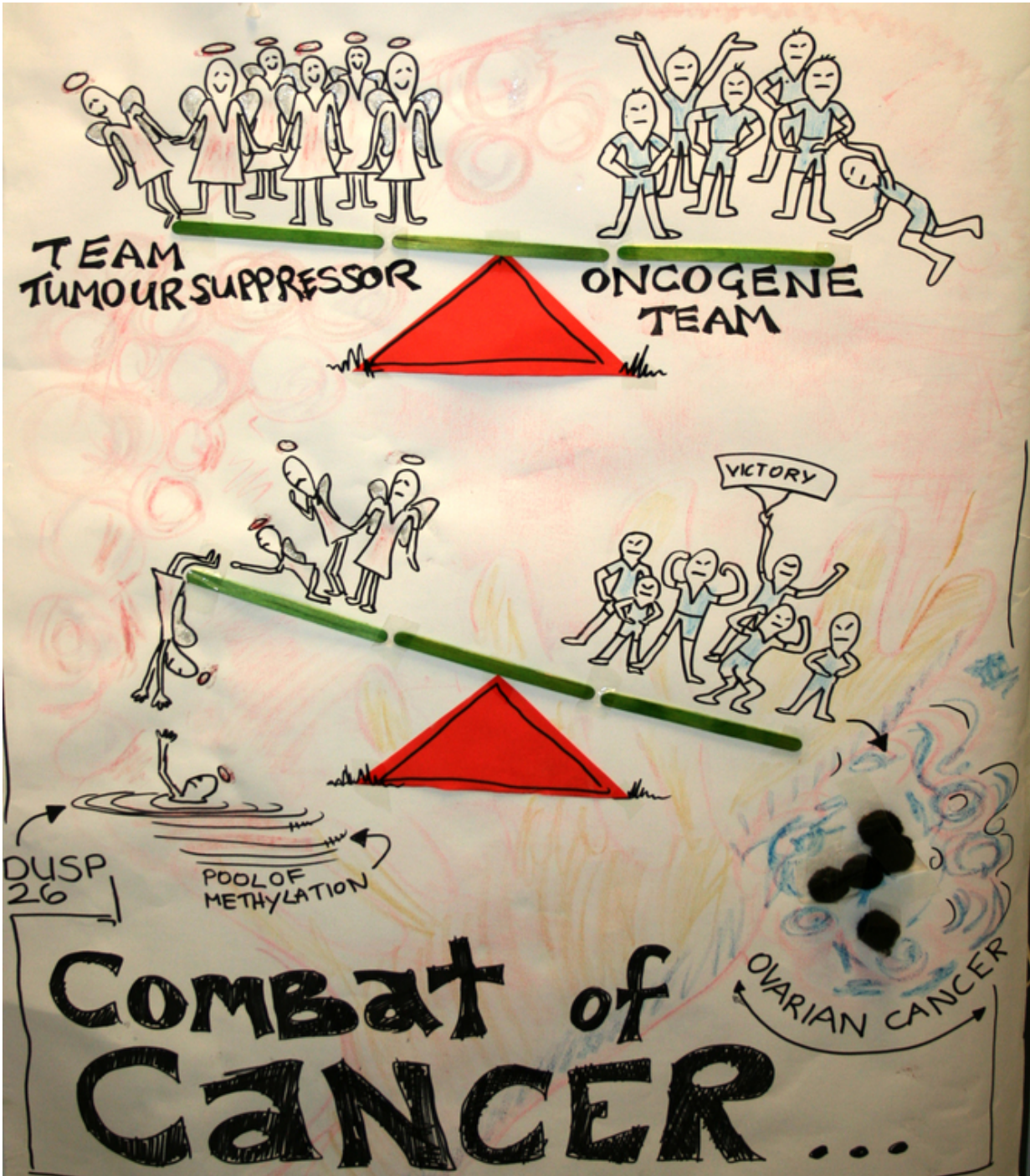


# Talking serious science using scissors and glue

February 25 2016, by Kate Patterson

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Hand-drawn poster showing the relationship between tumour suppressor and oncogenes in cancer. Credit: Kate Patterson. Author provided

A student once told me that she would prefer to learn from pages of writing rather than from a single, concise image. When she told me, I think I may have actually frowned and I definitely paused, just long enough to feel slightly uncomfortable and to see that she was not just being reactionary; frustrated at the challenging task we had set.

As a strong visual thinker, learning from well-constructed diagrams is my preference so, to me, the idea that someone would knowingly choose text over a visual option seems utterly preposterous.

I openly acknowledge that my individual thinking and learning style is not the only way one can successfully navigate life, however it could appear to offer a distinct advantage when the task at hand is to generate a diagram that explains the pathogenesis of a specific disease.

## **It is hard to communicate dense information concisely**

The assessment task was at the time a completely novel approach to teaching and learning for these veterinary students. I was brought in as an 'expert' in the field and could see that many struggled to immediately appreciate the benefits of creating visuals.

Most could not fathom how it was even remotely relevant to their future veterinary career(s). Some even made loose claims that it was a form of academic torture. Others sat quietly, soaking up the opportunity to finally exercise their natural visual talents. Secretly, I was jealous. There I was, mentor, teacher, trying to convince this cohort of students of the power and principles of visual communication, using my own work to showcase (in my opinion) examples of both ineffective and effective visuals I have created, yet I felt jealous that I, as a student in that very lecture theatre some ten years prior had not been challenged with the same task.



Picnic posters—poster generating at The Garvan Institute of Medical Research

We are (mostly) well practised in interpreting visuals, but being asked to generate a NEW visual resource for others to interpret does not come so easily. That is because creating effective diagrams that convey dense information concisely, takes a lot of thinking and planning. **It's this thinking and planning that is so valuable (in every career) for effective communication.**

## **Visual language enforces order, relationships and relevance**

I anticipated the groans and comments that came from the shocked students; "but I can't draw" or "this isn't design school" and "how will this help me get a job". I argued that an effective visual that communicates a clear message does not need to be created by an artist. It

is the *process* that is important when creating an image to communicate science. Creating visual representations forces one to filter and transform vast amounts of complex information into a form that can be willingly consumed by the desired audience. It forces one to identify appropriate **order**, **relationships** and **relevance**. This idea also touches on a myth (that I will expand with vigour in a future post) that knowing how to draw or, better, knowing how to use sophisticated graphics software means you automatically will create effective scientific visuals. No.

## **Stripping away fancy fonts enforces deeper thinking**

I am still not sure that I managed to convince every student of the benefit of this inevitable learning experience, but the diagrams they created were outstanding, easily publishable by the most respected peer-reviewed journals and texts. Apparently, through the pain and suffering that the students claimed to have endured, they engaged with their topic so deeply they were able to filter and transform the information obtained from multiple resources into concise visual language.

They elegantly balanced accuracy with simplicity for understanding, and together they developed a collective visual resource that was made available for each other and also for future cohorts to learn from.

For tasks like these, the words design **thinking** and **communication** should be emphasised rather than words like **drawing**, **image** or **diagram**. It's clear that these latter words are intimidating to many people, especially in the context of learning or researching science. These words invite resistance, and I am reminded of another occasion when I was met with similar resistance. On this occasion I 'gifted' a group of medical research PhD students with coloured paper, glue and scissors and asked them to create a research poster.

The usual, predictable groans and scepticism ensued, at least for the first few minutes, but given a time limit and a strong incentive in the form of a monetary prize, they all got cracking. After the first few had presented their poster, the students had overcome the fact they were standing in front of their peers and talking about a poster they had created with paper cut-outs and bubble-writing. They had done some serious thinking about their research questions. They had planned their stories well and thought about how to best show them to their peers with the tools they had been given. By stripping away fancy computer generated graphs and oh-so-neat sans-serif fonts, they were freely talking about their research—talking serious science. And everyone was listening.

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