The Gibb Maitland Medal is awarded by the Geological Society of Australia – Western Australia Division for substantial contributions to Western Australian geology, in particular for contributions in the field of mineral resources exploration.

The 2012 winner of the Gibb Maitland Medal was Scott Halley. Following is the text of his acceptance speech, delivered at the 59th Annual Dinner of GSA–WA, held at 150 East Riverside Bar Restaurant on Friday 20 April 2012.

The Gibb Maitland Medal is awarded in honour of Andrew Gibb Maitland, who was the founder of the Geological Survey of Western Australia, and field mapper extraordinaire. The medal is awarded for ‘Substantial contributions to geoscience in Western Australia, with particular consideration given to contributions that relate to the occurrence or discovery of mineral resources.’

There is a list of very distinguished past recipients, so I am very surprised but very honoured to be selected by my peers for this award.

I don’t consider that I have done anything particularly special. I have just incrementally added to the vast amount of knowledge, understanding and data that has been accumulated by countless numbers of geologists before me. It works like this: as young geologists, we meet particular people along the way who for one reason or another decide to help us out and pass on some of their knowledge. At some stage we get to a point where we are able to incrementally add to that pool of data and knowledge. Eventually we get to a stage where we become the crusty old grey-haired geologists, and now it is our obligation to mentor the next generation of geoscientists. That is the way that each and every society builds its skill base.

There are three of my mentors who I am going to single out. The first is John Walshe. John was my PhD supervisor, and we have remained as collaborators in one way or another ever since. The first thing that John taught me was how to construct phase diagrams for magnesium fluoro-silicate minerals in tin skarn systems. This is an essential skill every field geologist needs to have in his tool bag!

The second was Simon Gatehouse. Simon was the geochemist at RGC when I started there in 1989. That was about the time that NAA (neutron activation analysis) became commercially available. Simon needed a way to extract the information that was hidden within tables of multi-element geochemical data, so he wrote his own software to do that. He called it the Geochemical Analysis System, or GAS for short. Through a series of mergers, takeovers, sales etc., the concepts within his program finally morphed into ioGAS. Simon showed me how to characterize rock types, quantify alteration signatures and recognize zonation patterns in multielement data, and to this day, that is the part of my work that I find most interesting.

The third was Greg Hall. For me, Greg turned Kalgoorlie and Laverton, and then the rest of the Placer world, into a geochemists’ playground. I can never recall a time when he did not support an idea that I thought was worth testing. He always found a way to squeeze some money from someone else’s budget to fund my geochemistry experiments. This was either a display of enormous faith in me, or an act of foolishness. Nevertheless, thanks Greg!

Learnings:

1. It is really difficult to find new orebodies, but it is easy to find the alteration systems that surround them. So, look for the alteration cell first, and then work inside that space. Analogy: we are going to play football, and we want to kick a goal. You have a better chance of kicking a goal if you find a footy oval before you kick the ball!

2. Every decade there is a step change in the quality of geochemistry that you can get from the local assay laboratory: better accuracy, precision, bigger suite of elements, lower unit costs, and especially better detection limits. The mining business has made very very poor use of the improvements in assay technology!
3. We have spent a lot of time and money thinking about PREDICTION in mineral exploration. However, 99% of new discoveries still come about as a result of some direct DETECTION process. The corollary is that we are not nearly as clever as we would like to think we are!

4. It is much easier to make a breakthrough in science than it is to change the way an organization behaves.

5. Thirty years ago, every exploration company did regional reconnaissance geochemistry surveys, but the assay methods available at the time were not really adequate for what they were trying to do. Now that we have fantastic commercial geochemistry available to us, nobody does regional-scale geochemistry surveys anymore. Why?

6. We all have our own pet theories about how particular mineral deposits were formed. When someone else comes along with a different theory, our behaviour is to get defensive. Rather than objectively considering the evidence they put forward, we blindly reject their proposal. This kind of behaviour has really slowed down our rate of scientific progress.

7. It turns out that none of us is very good at logging core, and we are hopeless at logging drill chips. When your project gets to a drill-out phase, get hold of an infrared spectrometer and use it as a systematic logging tool. It takes away the subjectivity from the logging; everybody gets the same answer. You’re nuts if you don’t do it!

8. The deep regolith profile in Western Australia is NOT an impediment to exploration. It is actually a great help. We have just gone about it the wrong way! Ray Smith and Charles Butt gave us the clues 20 years ago, but we just didn’t recognize it at the time.

9. The complexities of mineral systems are quite overwhelming, and the exploration community is actually a relatively small group of people. To improve our ability to explore and discover new orebodies, we need to collaborate as much as possible. Some companies believe they have an intellectual competitive advantage and they construct a cone of silence to protect their advantage. This stops ideas getting out, but it also stops ideas getting in. Those companies are rapidly overtaken and left behind by their competitors.

10. Lastly and most importantly; you know that you’re in trouble when you start to believe your own bullshit!