

BITE Magazine, September 2014



Professor Mike Hubbard,
founder of The D3 Group.

Breaking down barriers

If you really want to make a difference, help people and even try to change the world, then you'll likely have to bend a few rules along the way, as Professor Mike Hubbard, co-founder of The D3 Group, has discovered. By **Chris Sheedy**

A decade ago the idea of 'translational research' was virtually unheard of in science and academia. That is because a translational research (aka 'bench to bedside') network can only be formed when the traditional structure of science and industry, which involves the almost complete separation of the roles of scientists, clinicians, organisations, product developers and educators, is broken down.

In its place, a system is built in which all of these people can work

together and understand each other's specific needs, roles and markets. It is an environment in which people from various professional and educational backgrounds are not required to be in the same place, but can all contribute to the same work and knowledge that leads to a mutually agreed end goal. When it works, it is a supremely powerful system indeed.

Living proof of this is The D3 Group, a network that has as its surprisingly humanitarian mission the 'Better understanding and care of people with developmental dental defects'. In

order to experience the success he has after seven years of developing The D3 Group, co-founder Professor Mike Hubbard has had to bend many rules of traditional science and academia.

For instance, three years ago, when the academic world expected him to publish his breakthrough research findings in the time-honoured, scientific way, he instead set about writing a 100-page educational website that includes a children's storybook.

"When I wrote that website before the academic papers, it was seen in some circles as bordering on career suicide,"



The D3 Group is a great example of a 'bench to bedside' network.

Prof Hubbard says. The Kiwi academic, now living in Australia and working within the University of Melbourne and Royal Children's Hospital, originally completed a Bachelor of Dental Surgery at New Zealand's University of Otago before taking on a PhD in biochemistry and working in postdoctoral positions at the National Cancer Institute in the USA and the University of Dundee in Scotland.

"The children's storybook was an unusual thing to do career-wise in academia," he says. "But we had made an exciting scientific breakthrough—one that might eventually change child health care in some ways, as grandiose as that sounds. Then we realised there were all sorts of educational deficiencies around this topic, meaning not enough people know about the problem in the first place. Our concern was that good science would fall on deaf ears and be lost. So we switched across from research to education."

And that is the benefit of working in a 'translational' environment. Directions and strategies can be changed but the



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knowledge and purpose can be kept within the group. In his current role, Hubbard doesn't refer to himself as an academic or even a manager, but instead as a "conductor". The experts he has surrounded himself with from various industries and professions are his orchestra, and when that orchestra is in tune it can produce music far more powerful than the sum of its parts.

The D3 Group describes itself as "an eclectic bunch of individuals whose lives have been touched by D3s [developmental dental defects] one way or another". Its purpose is to pull together knowledge and expertise to help D3 problems, such as Molar Hypomin, become better recognised, understood and cared for. "Our ultimate goal is to make many of these problems go away through prevention," says their website.

But what does all of this have to do with a children's storybook? In order to implement an education program, The D3 Group could have chosen the traditional method of first helping dental-care providers, then waiting for



Professor Hubbard's approach to D3 issues has been strikingly successful.

them to educate their clients one by one.

"I said, 'Blow that! That is the slow way of doing it,'" Prof Hubbard says. "We found a student who was of like mind and she agreed to take it on as part of her postgraduate research project. So we inverted the educational model and focused on the public. We thought, if you're trying to help people in the street and they are the people who have the problem, then it would be fastest to help

them directly and this would also save the dental practitioners heaps of time."

Since The D3 Group's educational resource was launched a year ago (www.thed3group.org), it has received more than 50,000 unique visits and the children's storybook has been downloaded over 3000 times. The site offers information on D3 issues in formats suitable for kids, families, the community, practitioners and academic researchers.



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Quote

Professor Mike Hubbard, The D3 Group co-founder

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"We ended up putting most of the information in a way that kids and family can understand," Prof Hubbard says. "We only gave dental folk the specialist clinical stuff, not the general basics. We felt, to avoid repetition, they could see the basics through the eyes of a layperson and that has worked out very well. Many dentists have told me they loved reading the kids' version of D3 tooth science."

So the translational nature of The D3 Group has allowed its dental members to spell out a problem that few scientists knew about, do the fundamental research to discover its shape and

scope, invite experts from the broader biomedical research world to be part of the process then educate the public, industry and medical field about the issue. The network is now moving on to partnering with business for promotional and cooperative research purposes, and starting to spread its support base beyond Australia and New Zealand. It's not bad going for a translational initiative started by two scientists 11 years ago. They have also recently launched a small biotech company to develop tools for use in the battle against D3 issues.

"We have walked the path from bench

to bedside and along the way it has sometimes felt as if we have crawled through a military obstacle course. But we're now very close to achieving what we set out to do in terms of establishing a framework for public good," says Prof Hubbard, who is also the research director of the Melbourne Research Unit for Facial Disorders. "The next few years will be about bringing in experts from different areas to scale things up.

"We would love to get the dental and medical professions more broadly involved in what we're doing. It's in their realm now, rather than being arcane science. There will be problems presented to them in ways they can relate to and they will be able to see exactly how the solution will help them in their clinical work.

"We want to partner with as many experts and students as possible to continue to advance our work. There will always be age-old barriers but when you ask what would be the best for global health care, the answer often involves pulling down those barriers and working together." □



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