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**6 January 2012 02:02**

Hi Helen,

I wanted to run a slightly offbeat idea past you. I've been toying with the idea of writing a piece about a chain of scientists, each of whom inspired/mentored the other. It would be like a string of profiles (or possibly even more than one piece) that would explore the idea of science as a legacy endeavour, where skills, attitudes and directions are handed down from one generation to the next, evolving and/or staying the same as they go.

So, as an example, the US cell biologist Joseph Gall, now 83, was credited for encouraging a lot of female scientists at a time when no one else would. One of his mentees was Elizabeth Blackburn, who discovered the structure of telomeres. One of Blackburns' own students was Carol Greider, who co-discovered the structure of telomerase (the two shared the 2009 Nobel for Medicine). One of Greider's postdocs - Maria Blasco - is now a big name in the telomere world, looking at links between telomeres and cancer.

These aren't necessarily the right scientists (although the presence of 2 Nobel laureates helps), but they illustrate the type of chains I mean. While the topic has obviously been covered before, to my knowledge, no one's done a theme or structure quite like this.

Any thoughts?

E

**6 January 2012 11:50**

HI Ed – I like this a lot and it’s something we have toyed with here for some time without finding the right legacy. I call it the Scientific Dynasty and I’ve tried to sell it to a couple of writers before! The one I started with I think was Paul Nurse and S pombe, because (yes?) his lab more or less established the pombe field and they all trace back to one lab. But I don’t want to do Nurse.

I’ve thought of doing it in two ways: one is finding a true familial dynasty, like the Kennedys of science. The other is more what you are saying – the dynasty that traces from one PhD student to their students and so on. I don’t think you would need to do separate profiles, you could probably weave it together into a story. But it would really depend who you find, and that they story is

If you can find a really good dynasty, and why they are unusual and important to science and why we should focus on it, then I would be game.

I’m going to send you a couple of useful links when I dig them out now

h

**9 January 2012 16:17**

Hi Helen,

Okay, here's a fleshed-out "telomere dynasty" pitch. Let me know what you think about it. I think it's a pretty strong case. For what it's worth, the main potential pitfall I see is that it may be expensive/impractical to actually meet all the players involved, so some of this might have to be done over the phone. And of course, it depends on the willingness of all the branches of the tree to be interviewed on the more personal nature of their science.

Anyhoo, let me know what you make of the idea.

Cheers,

Ed

Science isn’t done by individuals – it’s done by a vast array of dynasties. Young scientists learn their craft from senior ones, who in turn had their own mentors, who in turn had their own mentors. These family trees are rarely discussed, but they are a fundamental part of the way science works. I want to focus on a particular one - the telomere dynasty – to explore how scientific skills, attitudes and directions are handed down from one generation to the next,

The dynasty begins with US cell biologist Joseph Gall, now 83 and a Lasker medal winner. Gall was credited for encouraging female scientists at a time when no one else would, created the group that would later be known as “Gall’s gals”. One of Gall’s mentees was Elizabeth Blackburn, who worked as a postdoc in his lab. Together, they discovered the structure of telomeres in 1978. Blackburn herself mentored Carol Greider, who joined her lab as a PhD student. Within less than a year, they had discovered the structure of telomerase, the protein that regulates the growth of telomeres. The two shared the Nobel Prize in Medicine for their discovery in 2009. Greider has since mentored several scientists who work on telomeres. They include Maria Blasco, now a big name in the telomere world herself, who appeared in headlines recently because of her involvement in Life Length, a company that aims to tell people their “biological age” by measuring their telomeres.

That’s the main trunk of the tree. There are many other branches. Gall, Blackburn and Greider all have other lab alumni who are still working on telomeres. That makes this area relatively unique. Telomere biology really began with Gall and Blackburn so we can document the history of an entire field from the start. Also, the field’s founders are still working and alive, which always helps when scheduling interviews.

The area clearly involves significant science - after all, two members have won Nobel prizes. The topic continues to provoke interest and debate, given that telomeres have strong connections to ageing and cancer. There’s an interesting gender angle, in that Gall’s open attitude to supporting female scientists is still being felt (the telomere field has an unusual proportion of high-flying women working in it). The field is full of rich details – the first big finding stemmed from a chance meeting between Blackburn and Szostak at a Gordon Conference, and Greider's first big finding came on Christmas Day. And there’s the possibility of conflict within the dynasty. Blasco and Blackburn are both involved in companies that provide personalised telomere testing (Life Length and Telome Health, respectively), but Greider is more sceptical, and has said that it is premature to offer such tests to the public.

By its nature, any piece on a scientific dynasty would cover work that has already been discussed in features elsewhere, and telomeres are no exception. But the point of the piece is not to just discuss the science (although that will play a role), but to focus on the people behind it and how they influenced, supported and disagreed with one another across ‘generations’.

**20 January 2012 13:01**

Ed – I’m sorry it took me so long to get back to you on this one. I wanted to do a little reading around and talk to the team.

After doing that, I’m afraid that my concern on this is how much more we can say about the telomere story. If you read Blackburn’s and Greider’s Nobel speeches and biographies, a lot of this story is there already. And there’s an entire book ‘Elizabeth Blackburn and the story of telomeres’ and plenty of profiles of her too.

So, while you say: the point of the piece is not to just discuss the science (although that will play a role), but to focus on the people behind it and how they influenced, supported and disagreed with one another across ‘generations’.

I worry that in fact a lot of that nice personal detail about the people involved has already been written, and that we wouldn’t quite find enough here to make it fresh.

What I was thinking of doing is canvassing our manuscript editors for ideas of scientific dynasties, and seeing if that shakes out some good starting points. And perhaps you have more ideas too.

I know it’s a tall story to ask for a scientific dynasty that has not been widely covered, but I think one that has been \*less\* widely covered is going to produce a more unique story, which is what you want if you’re going to sink the effort into this story that it’s going to require.

Anyway, you’re probably having too much fun at science online to worry about this, so we can pick it up again when you’re back

Have a great time.

Best

H

**27 January 2012 20:26**

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Hi Helen,

Okay, here's another suggestion, based on a chat I had at ScienceOnline and a bit of subsequent digging.

**Robert T Paine,** a marine ecologist who, in 1969, coined the concept of the keystone species– the idea that certain species are lynchpins of their particular ecosystems. By removing starfish from the coast of Tatoosh Island, off the coast of Washington, Paine showed that mussel populations bloomed to crowd out other species. This simple concept had a massive effect on conservation efforts over the following decades, by showing people that a single species can have a big ecological impact.

Nancy Baron from COMPASS (an ocean science communications org) suggested Paine to me when I talked to her about the dynasty idea at Scio12. She vouches for him as a great person to interview. “Everyone’s a little terrified of him”. He hasn’t really been covered a lot (I’ve had to dig online to find any biographical info) and Nancy tells me he only recently come out of his ivory tower after many years of being happy not talking to journalists.

Paine has trained over 40 PhD students, who include many of the most influential marine biologists working today. They include: [**Note – some of this is not actually accurate... – Ed, after the fact]**

* Jane Lubchenco (already profiled by Nature). She said in an interview: “Paine created a dream team of grad students in the department.  Smart, inquisitive, fun and creative individuals, they challenged, inspired and supported each other and excelled at producing innovative scientific discoveries.  [It was] catalytic in framing the way I thought and think about problems.”
* Steve Palumbi, who has done a lot of work on the use of genetic techniques in conservation. Among other things, his research led to a sting operation where some Californian restaurants were shut down for selling whale meat.
* Bob Steneck, the so-called “lobster king” and one of the world’s top kelp forest and coral reef scientists
* Jeremy Jackson,a palaeoecologist who reconstructed history of the Panama isthmus
* Julia Parrish, who studies the ecology of seabirds (at Tatoosh, the same island where Paine started *his* work).

There’s a thematic relevance here that I quite like. Paine is, quite literally, *the* keystone scientist.

You could even do a nice interactive map going from the little rock of Tatoosh to all the seas around the world where Paine’s students do their work.

Thoughts?

**2 February 2012 10:54**

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Lots of enthusiasm for this idea in our features meeting yesterday

Am just getting some additional feedback from our ecology manuscript editor who knows about the science.

H

**3 February 2012 09:03**

I think I’m sold by this stage, so let’s talk about logistics and firming this up when you’re back from holiday

h