

Featured: Tim Eglinton

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PRE-SCRIPT

In the second episode of BIOmarkers, the audio series that archives the oral history of organic geochemistry, we speak with Dr. Tim Eglinton, Professor of Biogeoscience at ETH Zurich and Fellow of the Royal Society well-known for his work on the carbon cycle. In his interview, Tim covers his path into the field, his research, and he speaks about his father, Geoffrey Eglinton.

SCRIPT

Fatima Husain: Welcome to BIOmarkers, an audio series that archives the oral history of organic geochemistry. I'm your host, Fatima Husain, and I'm here today with my series co-creators and fellow organic geochemists Angel Mojarro and Juliana Drozd.

Juliana Drozd: For today's episode, we spoke with Dr. Tim Eglinton, Professor of Biogeoscience at ETH Zurich who pioneered the application of radiocarbon dating to better understand the carbon cycle.

Angel Mojarro: We caught Tim for a short conversation outside the lecture halls at the 2019 International Meeting on Organic Geochemistry in Gothenburg, Sweden.

Fatima Husain: Thanks, Juliana and Angel. We started off with Tim discussing how he got into organic geochemistry in the first place.

Tim: My name is Tim Eglinton and I am a professor of biogeoscience at in the department of Earth Sciences at ETH Zurich in Switzerland.

Tim: My trajectory is a little bit different from many because of having a father who essentially was one of the founders of modern organic geochemistry, and so, in many respects is sort of in the blood. And I was aware of the discipline from very early in, certainly— around about 1969 or so, because of my father's involvement in the Apollo 11 mission and the lunar landing and analysis of organic compounds in lunar soil. So when you have your father on TV, describing such an exciting event, then obviously that is going to register in the brain at some level.

Angel Mojarro: Tim is of course referring to Geoffrey Eglinton.

Tim: My father was a professor in organic geochemistry at the University of Bristol and he was a professor there from 1966 until he retired in 2003. I think it was if I'm right. And then he, of course, remained extremely active after that, before that he was

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a professor at the University of Glasgow. And before that he had had essentially a training in pure organic chemistry. But as is often said, he is one of the those individuals who really started this field of organic geochemistry, looking at the earth, through the lens of molecules. And yes, he developed a very good reputation for that. It was what got NASA interested in him coming to measure lunar samples. But he has had his finger in numerous pies, studying early Earth processes, all the way through to issues of environmental concern. So he was a very (sorry) Yeah, he was a very special individual.

Fatima Husain: Very special indeed, and a huge inspiration to all of us. We're going to hear more stories about Geoff in upcoming episodes, so stay tuned.

Juliana Drozd: But for now, back to Tim. Did he know that he was going to end up in the field?

Tim: I have to say that, for me, I wasn't the most academic child and I think I was fairly rebellious early on, so it wasn't as though I knew right then that I wanted to do organic geochemistry or science in general actually.

Angel Mojarro: Fast forward to when Tim went to college...

Tim: I did a bachelor's degree in environmental science at Plymouth. It was a Polytechnic then in the UK. And that course I thought was fantastic. And it really, at that stage, got me interested in the impact of humans on the environment. And I then learned some of these organic geochemical tools and how this can tell us about natural processes, as well as human impacts. And after a foray into some of the more petroleum aspects, I then went and did research at Woods Hole Oceanographic Institution and there understanding the role of the oceans in the Earth's climate system became very, very apparent. And the more my career has progressed, the more concerned I've become about how our species is impacting the planet. And the more I've tried to configure my own research towards that.

Tim: So at Woods Hole, there was at that stage, just as I arrived, an accelerator mass spectrometer, the first ocean science dedicated AMS, for measuring radiocarbon in ocean samples. And radiocarbon is this fantastic clock on carbon cycle processes, but also a really specific tracer of following carbon around the planet. I quickly decided that this was something I wanted to take advantage of, merge it with organic geochemical skills to understand about carbon cycle processes in the oceans initially, but since then it has expanded to ocean and terrestrial systems as well. So what I do

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now mostly is use radiocarbon as a tool to understand the pace at which carbon is moving around the planet. How we are changing stable carbon reservoirs and putting them into active carbon reservoirs that is affecting our climate system. And trying to put this in a bit of a historical perspective through going back through time to see how the carbon cycle has changed.

Angel Mojarro: Tim's research into the carbon cycle is key to understanding our current climate system, but when we asked what Tim was he most proud of in his career, he didn't mention his research.

Tim: most proud of, probably the students who have come through the lab because some of them have done extremely well. And I don't think it's necessarily because of me, but I like to feel like I have a, I've had a role in, in having them develop their careers, and creating an environment of which they could grow and develop as independent researchers. So that's probably the most—the thing I'm most proud of.

Fatima: Tim also spoke about how he attends conferences, as well as the opportunities within them. He began by discussing IMOG.

Tim: So it's a meeting where you get to hear what the state of the art is within our specific discipline. And I feel like of course, that state of the art is changing all the time. But to come here, every, every other IMOG or something like this is to me, taking into account that there are other meetings to go to. And I think, to me, there's a lot that we can provide to other disciplines by showing up at their conferences and highlighting what organic geochemistry can do. So bearing in mind things like CO₂ footprint I think there's a set number of conferences one should try and participate in. And from that perspective, yeah, coming here is a good way of getting a sort of a dose of what's what's really going on within our field. But then you need to balance that with how to disseminate the information we have in other fields.

Juliana: As the sessions continued at the conference, we ended with an important question: what makes a good organic geochemist?

Tim: I don't think this is a recipe, single recipe. Because so the discipline away, in a way, grew out of the field of organic chemistry. And so for a long time, it was dominated by really spectacular organic chemists discovering this amazing array of molecules that are present in the geosphere, and people like Roger Summons are a very good example of that. But you need the Earth scientists there to provide the right context. They may not have the chemical tools, but using those tools in a vacuum is also not the most logical thing to do either. So I think it really, to me, that's what's exciting about the discipline is it's one in which it really benefits from these various

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perspectives that come in. And that's what I find really fascinating about it. And I think it still has an awful amount to offer. The tools that we develop, I think of extremely portable to many other disciplines, but also the perspectives we have in space and time. And from the global to the molecular. These are all I think really great things that we can offer.

Fatima: Thanks so much for joining us today, and a sincere thank you to Dr. Tim Eglinton for speaking with us and sharing his insights.

Angel: And now for a special announcement:

Roger: Hello, this is Roger Summons. If you are enjoying the BIOmarkers Podcast and would like to stay up to date with all of our upcoming episodes, you can now follow us on Apple Podcasts, Google Podcasts, Spotify, or wherever you listen to your favorite shows.

Fatima: Thanks, Roger. Next time, we'll speak with Sylvie Derenne, who recently was awarded with the 2019 Alfred Treibs Award.. To tune in, go to [summons dot m-i-t dot edu backslash BIOmarkersPodcast](https://summons.mit.edu/backslash/BIOmarkersPodcast). BIOmarkers is produced in the Summons Lab at the Massachusetts Institute of Technology.

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