

EcolMetabOrigin

THE ENERGETICS AND HABITAT OF METABOLIC ORIGIN

Projektleitung HHU



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What is your project about and what are the research goals?

This is my [third Advanced Grant](#), my sincere thanks to the ERC. The project aims to narrow the gaps between geochemical reactions at hydrogen producing hydrothermal vents and the biochemical reactions at the core of carbon and energy metabolism in anaerobes that harness energy from the reduction of CO₂ with H₂. At the heart of the proposal is an old idea, widely accepted among microbiologists, that relicts of the chemical reactions that gave rise to life 4 billion years ago are preserved in the physiology of some groups of modern cells (*n.b.* some groups of organisms, not all of them). This idea will be probed using metabolic networks, using inorganic catalysts as substitutes for enzymes in biochemical reactions, and using comparative genomics.

How did the project idea come about?

The project idea stems from [my previous research](#) and from my continued curiosity about the nature of life's first steps from spontaneous chemical reactions to free living cells. There is considerable risk in this project, but if we are successful we might gain some insights into the ecology of earth's first life.

Why did you decide to apply for an ERC and why at this time in your career?

Why ERC? That's easy. It's the same amount of work as applying for any other grant, but there is more freedom involved if the application is successful and the amount of funding involved allows one to formulate research goals that go well beyond the standard one-student-three-year grant. Why now? I am age 60+, so waiting is not an option. But for younger colleagues who are thinking about going for an ERC grant, the same is true: Don't wait, do it now!

What advice do you have for researchers interested in ERC research funding?

A lot, actually. I had success with three ERC Advanced Grants and three of my students/postdocs obtained ERC Starting Grants. If you have some great ideas, put them down on paper and turn them into research. The same questions always come up.

Don't have the big ideas yet? Start anyway, waiting will not help. If you start to write, knowing that you will have substantial resources if successful, the ideas will start to emerge. If they don't, work with the ideas you have, like everybody else does.

Read the instructions. Start early on your proposal text, one year in advance, let it mature, let it evolve, get help [from admin](#), make it the most exciting science you can write.

Your c.v. is not good enough? Well, that is not for you to decide, is it? The ERC funds research proposals, not career achievement. It is a research proposal, not a prize.

You don't yet have the big Nature, Science or Cell paper yet? Fortunately, the ERC does not delegate the responsibility of making decisions about research funding to the editors of Nature, Science or Cell. On average, 95% of your panel members were recently rejected at those journals and are not happy about it. Think about that, and focus on your science.

Fear of rejection? Oh, come on. You are a scientist, we get rejected for a living. Get used to the idea of rejection. The sooner you do, the more freely you will be able to write about what you want to discover (with substantial resources if successful).

Don't hold back with your ideas. Give it all you have. Put your best ideas out there. Don't save them! What would you be saving them for? A more important proposal? If you hold back, but a competitor puts it all out there on the table, they will look

like the one with the ideas. Am I right?

If the grant is not successful at the ERC (90% are not funded) and if the science is good, then there are always opportunities to use your proposal text at other agencies. It's like a paper: If your great new paper is rejected at journal X because editor Y did not read the title, you do not throw it away, you send it somewhere else. Same with grants. At the ERC you get feedback from six to eight scientists (not from one editor).

Remember two important things: First, you might be much better than you think. It could be that your science is held in much higher regard than you ever could imagine (it has happened to me three times). Second, you have no idea at all what the panel is looking at in terms of competition. Write your grant, submit it, then forget it, and go back to work.

Laufzeit	Fördersumme HHU	Fördersumme gesamt	Förderprogramm
1. November 2021 bis 31. Oktober 2026	EUR 2.490.000	EUR 2.490.000	Excellent Science - European Research Council - Advanced Grant (ERC-AdG)