

The community of the DAO



Decentralized autonomous organizations are growing as alternative research funding models, but are also strong scientific communities. We should get on board.

It's one thing to come up with a great idea for a research project. It's another to figure out how to get that project funded. There are many issues that plague scientific funding today – bias based on gender or affiliation¹, for example. Some proposed solutions to these problems involve making the entire peer review process of grant applications more transparent. Several years ago, there was discussion around making grant allocation a lottery², but this has never come to fruition.

The decentralized science movement hopes to become an alternative funding and knowledge-sharing model for scientists. This movement began to gain traction in 2021 with the emergence of several biotech-focused decentralized autonomous organizations (DAOs) that use blockchain technology to orchestrate and log their activities. They employ tokens for fundraising purposes, amassing a treasury that is directly used for research funding. The tokens also serve as a voting mechanism, allowing community members to determine to which projects the accumulated treasury will be allocated. At the core of this community are research scientists, clinicians, entrepreneurs, patients and members of the public who are interested in advancing a scientific field.

In the past year there have been both a growth of existing DAOs and an emergence of new ones. The flagship VitaDAO (focused on longevity)³ has been followed by groups including ValleyDAO (for synthetic

biology and climate change) and AthenaDAO (for women's health).

Project proposals are sent to the DAO, and each DAO member is able to vote on whether a particular project should be funded. Members have tokens, which can be purchased or earned, and they are able to provide support and feedback to new project proposals. Research results are also provided to the DAO as projects continue, leading to further feedback and engagement. Eventually, the project will (hopefully) end up in an IP-NFT (intellectual property non-fungible token) – something like a patent, which is owned by the DAO and governed by all token holders. This could be commercialized into a product or developed into a startup, generating more revenue that would then be fed back into the DAO for funding of further projects.

This all takes place using blockchain technology, which is significant. Blockchain is open and accessible by everyone, even non-members. Each transaction is recorded and transparent: it is possible to see who is backing a project or providing feedback, and the results are public. This is vital to the ethos of the decentralized science movement: promoting open science as a way to gain trust and eliminate sources of bias.

So far, the DAO model seems to work best with projects that tackle a difficult problem or a traditionally underfunded area of research. Projects involving the use of synthetic biology for climate change applications, for example, are hard to get funded by venture capital because it is looking for scalability or proof-of-concept results that often are not available yet. A community of scientists such as those at ValleyDAO would appreciate these early-stage ideas or difficult projects. Women's health issues are historically underfunded, and AthenaDAO's women-focused community provides a strong source of interest and dedicated funding.

DAOs could also be used to focus on a particular patient group. For example, HairDAO is advancing research and development specifically for hair loss treatments. Members of the DAO have first access to all funded treatments as volunteers, as well as governance rights over all assets. In this way, the patients could own the technology being used to treat them.

Along with the transparency of blockchain, there are other advantages to the DAO system. Having a strong DAO community for decision-making means that everything is more collaborative. Member engagement on a particular project is an inherent, regular quality check on the work itself. Because DAO members are from diverse backgrounds, they bring different views and expertise to address particular issues and, in doing so, engender new ideas. Scientific collaboration has been shown to help science move faster, with direct benefits to the speed of research output.

Right now, DAOs are not self-sustaining. Even those, like VitaDAO, that have successfully funded projects to the IP-NFT stage are working to secure further rounds of funding. DAOs also need to grow their numbers of token members to engage more scientists and members of the general population. Part of this challenge is helping possible members realize that the DAO is not just a funding body, but also a community of people who care strongly about supporting a particular scientific cause, and that it does not require a lot of time and money for participation. More DAOs will likely emerge in the future around particular topics; it will be worth checking them out.

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References

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