SCIENCE BLOCKCHAIN LAB

Mission
Build a science blockchain commons platform that can propel science forward in the 21st Century. Focusing on the properties of reproducibility of science based on open participation and access that is backed by an immutable ledger, smart contracts, human review and computational consensus.

GOVERNANACE
Find a founding team that leads the setting up of LAB and sets vision for uniting a community and team to built the science blockchain. This team co-ordinates a global collaboration of parties to build and pilot parts of the Science Blockchain.

DATA LIBERATION
In both the commercial and academic worlds the flow and sharing of data is still very limited. The LAB will be at the forefront of liberating data and permissions to those that own it.

WHITE PAPERS
The LAB will prepare and co-author a set of white papers to set out the intellectual underpinning of the Science Blockchain. These will cover the, Science Accounting Ledger(blockchain), A new human peer review system, a computation consensus review system and the currency for the platform.

TEAM

Governance
Sets initial road map until a Decentralized Autonomous Science Organisation sustains the platform and infrastructure.

Delivery of Software
A LAB division charged with aggregating and delivery of the Science Blockchain technologies. Ideally multiple implementation teams e.g. Academic lead and two independent coding languages.

Community
Open Science Meets the Blockchain – Founding Hackathon Location TBD Date August 2016

On the back of the first hackathon establish global network where people can participate and collaborate.

FUNDING
The LAB will be an independent and autonomous entity. All funding sought will be on a grant or donation basis until a ScienceDAO (Decentralized Autonomous Organisation) is designed and built.

Initial funding granted into the LAB from academia, commercial or individuals.

1. Seed round 250k-1m
2. Crowd Fund 1-20+m fully funded LAB via TheScienceDAO

The ScienceDAO
The DOA will be designed by the founding community and audited by an respected independent science body. The DOA will start by running a month long crowd founding sale where anyone can

grant money into the LAB. The Governing Board of the LAB will then use the investment to

A. Fund core development teams
B. Commission teams to run pilot projects
C. Set up other DOA's e.g. liberate data from sensors

The LAB will accept bids from academia, commercial or open science community, individuals to teams to build features for Science Blockchain. The community will be given a voting mechanism via the DOA to prioritise the pilot projects and future DAO fund raising activities.

TIMETABLE

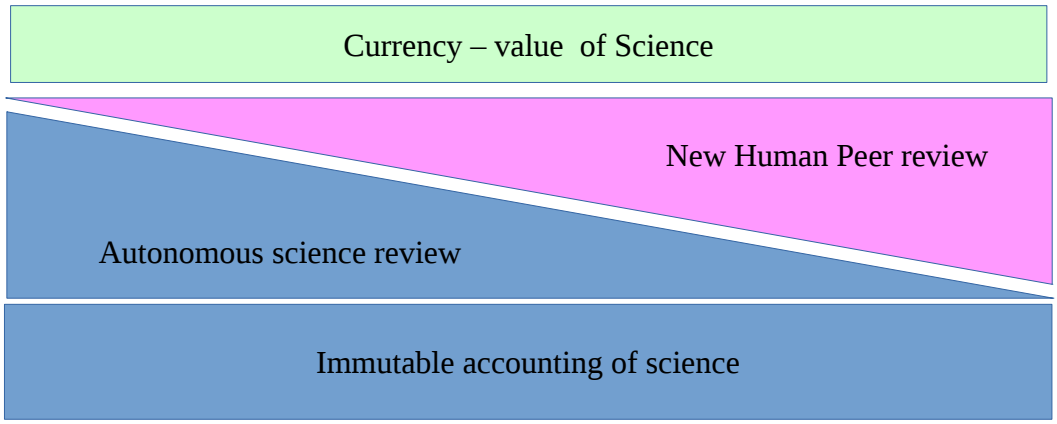
2016 Founding 2016 & Seed funding
2016 August – Open Science Meets the Blockchain / Final Whitepapers
2016/17 Science DAO crowd sale

2017 Delivery of MVP science blockchain Commissioning of pilot projects

2018 Self sustaining Science Blockchain delivered and operational

Science Blockchain Platform

Science has the broadest of reach, from theory to application. Building a Science Blockchain that is useful to such a board array of interests is a challenge. To ensure the Science Blockchain is designed to accommodate this range of uses, the follow pilot projects are being put forth. Each pilot will need its own team to champion, operate, provide the in-depth documentation and deliver software to back to the main Science Blockchain code base.



Science Blockchain

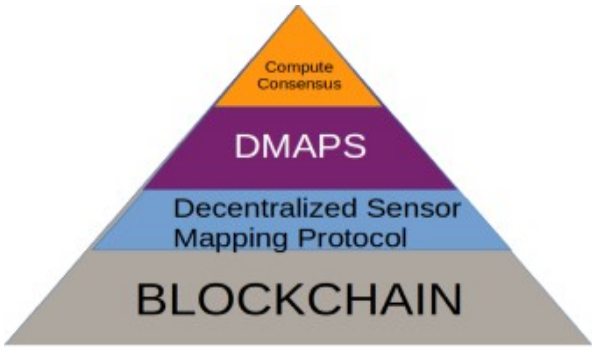
Setup a permissionless blockchain specifically designed to meet the demands of science. This will include the identity, the science itself, publication, review, impact and consensus.

Look inside the layers:

Immutable Accounting of science
The accounting ledger will provide a public audit trail of all science that underpins reproducibility. Look at existing proof of work/stake and alternatives to secure the network.

Review-

Autonomous
The Science Blockchain Platform brings a new consensus mechanism based on computation where data volumes meet minimum levels



Human Peer review
Where data volume or a unique experiment does not allow autonomous review a new human peer review mechanism and incentive system will be applied.

Currency – value of science
Investigate the tokenisation of the value of knowledge in context of reputation, value, monetary and post monetary.

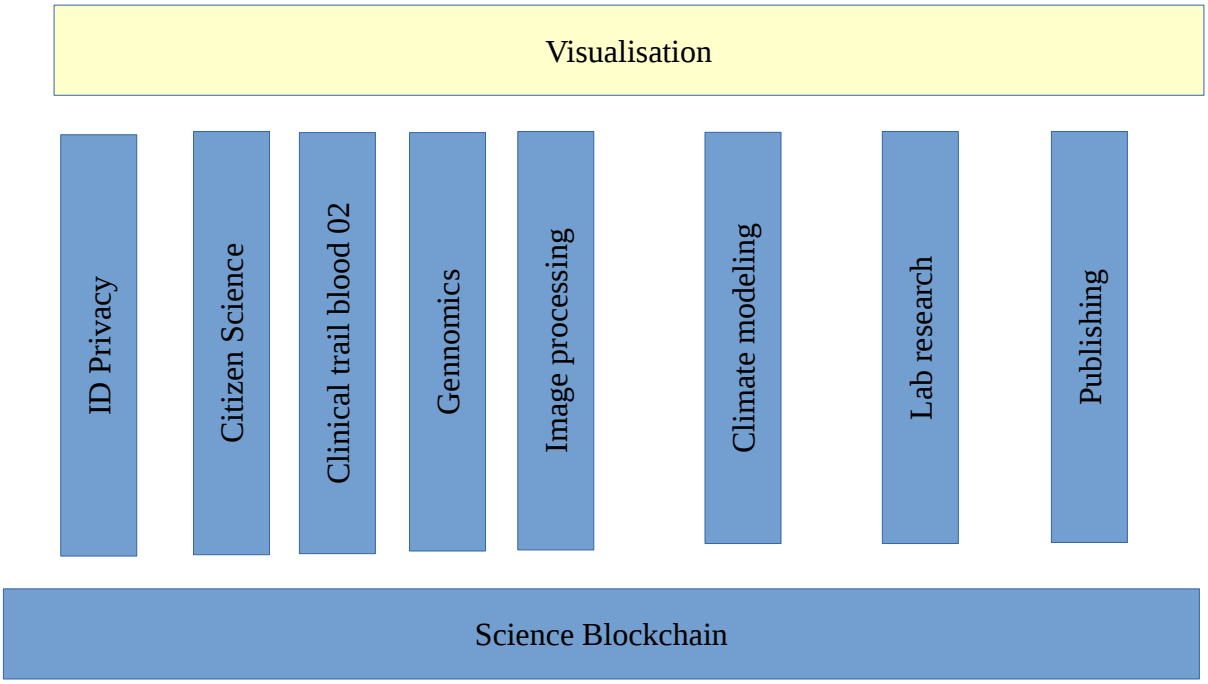
Properties:

- Reproducibility
- Transparency
- Permissionless
- Immutable ledger
- Compute Consensus
- Science made available to all

Benefits of this new Scientific Method

Address application of science in 'messy' environment
Human bias designed out
Dramatic reduction in administration costs of science (cohort trail etc)
Public Accountability
New economy built around
Everyone free to participate

PILOT PROJECTS
The role of the pilot projects is to give range of application of science to ensure a board set of features are discovered and built**.**



Autonomous Trails – Computational Active

Citizen Science
Select a public science experiment and show how any one can participate yet the science can be kept honest over a Peer to Peer network.

Clinical trails
First look at how existing clinical trails can be enhance by applying blockchain. Secondly, use of random sampling and data sampling techniques to double and triple blind test, this being a new concept to be piloted.

Genomics
Examine the computational challenges of performing comparison genomics on a peer to peer network.

Image Analysis
The use of AI deep learning is being spearheaded in the area of pixel analysis. Numerous startups are building such algorithms but have poor methods to test there outcomes. This pilot will demonstrate how networks of data from different hospitals can be used to test and validate predictions made by an AI.

Distributed Modeling

Climate – Flooding weather forecasting seismology
Investigate ways how data collected by the public can improve climate modeling.

Science Accounting

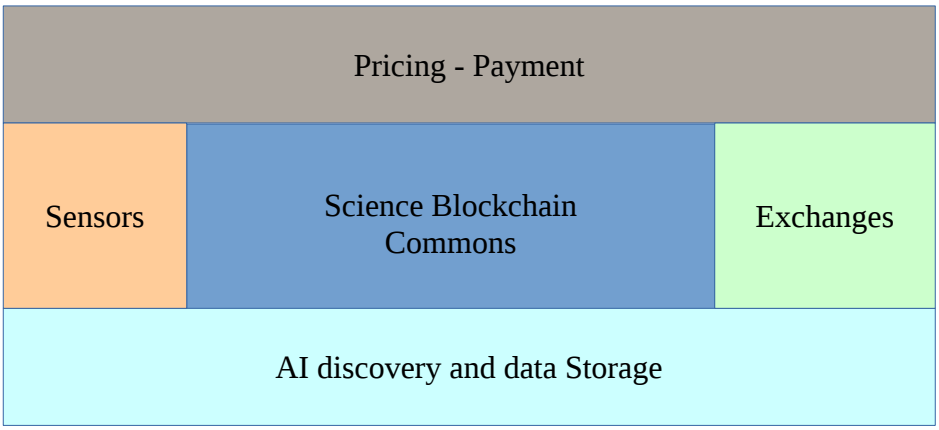
Lab research
Take a new scientific idea and show how its conception is documented, experiments built and result gathered and shared via its publication and use in real world applications.

Dis-intermediating the publishing cycle

Visualisation
Build and originate open source standards for the visualisation of health, climate and habitat information.

WIDER ECOSYSM

With the Science blockchain base in place it is envisioned a wider ecosystem will sustain itself. This will enable commercial activity, flows of data from sensors and the creation of a new industries analyzing the blockchain itself to enable a new era of collaboration.



Pricing – Payment
E-commerce smart contract and payment APIs

Sensors
Libraries of connectivity and data transfer e.g. bluetooth driver for wearables

Exchanges
Use the science blockchain in regulated environments.

AI Discovery and data Storage
A whole new data storage industry will secure data, set access permissions, build data utility libraries e.g. formatting data or cleaning services, ensure availability etc. The use of Science Blockchain will create vast new networks of data patterns for analysis. It is envisioned a whole new industry will be created around this data.

Team

Founding Team

Commons Foundations

Raising of initial funding and setting up of research agenda and managing projects.

Budgets

	Year 1	2	3	5
Income				
Expenses				
Surplus(deficit)				
Cash balance				
Head count				

Grant funding targets