

Presented by 1907 Foundation

ATALA

The future of research grants.



HYPOTHETICAL EXPERIMENT

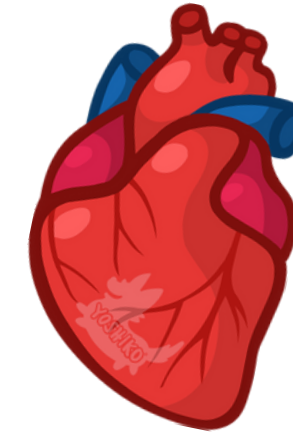
BEGIN WITH A THOUGHT EXPERIMENT



HYPOTHETICAL EXPERIMENT



HYPOTHESIS:
CHEESE IS GOOD FOR YOUR HEART



METHOD:

- STUDY THE BLOOD PRESSURE AND HEART RATE OF MICE
- LOW BLOOD PRESSURE + LOW RESTING HEART RATE = GOOD
- 30 DAYS WITHOUT CHEESE IN DIET
- 30 DAYS WITH CHEESE IN DIET

HYPOTHETICAL EXPERIMENT

SAMPLE: THREE MICE



PINKY

35

FEMALE

JUMPS ROPE EVERY MORNING



STINKY

75

MALE

DOESN'T WORK OUT



RINKY

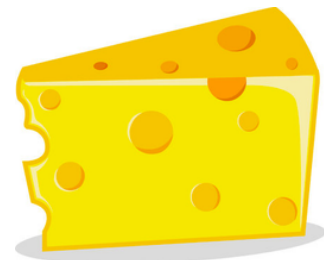
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MALE

EATS COOKIES FROM SECRET STASH
IN THE MIDDLE OF THE NIGHT

HYPOTHETICAL EXPERIMENT

SUPPLIES



EQUIPMENT



CHEESE STORED IN THE FRIDGE = GREAT!
INSIDE OF THE FRIDGE IS COVERED IN SALMONELLA = YUCK!

HYPOTHETICAL EXPERIMENT

QUESTION:

WOULD YOU FUND THIS EXPERIMENT?



HYPOTHETICAL EXPERIMENT

ANSWER:

NO, OBVIOUSLY.

HYPOTHETICAL EXPERIMENT



ISSUES:

- SMALL SAMPLE DOESN'T REPRESENT POPULATION
- SAMPLE SELECTION DOES NOT CONTROL VARIABLES WHICH AFFECT THE OUTCOME
- CONTAMINATION OF EQUIPMENT POTENTIALLY SKEWS OUTCOME

HYPOTHETICAL EXPERIMENT

**IF WE WOULDN'T FUND THIS SCIENCE,
THEN WHY WOULD WE FUND SCIENCE THIS WAY?**

MATH

$$\text{MU} = \text{E}(X) = \text{MX} + \text{B} + \text{ERROR}$$

$$N = 3$$

PROBLEMS

$$N = \# \text{ OF MICE} = 3$$

$$\text{ERROR} = \text{BIAS} = \text{SALMONELLA} = \text{HIGH}$$

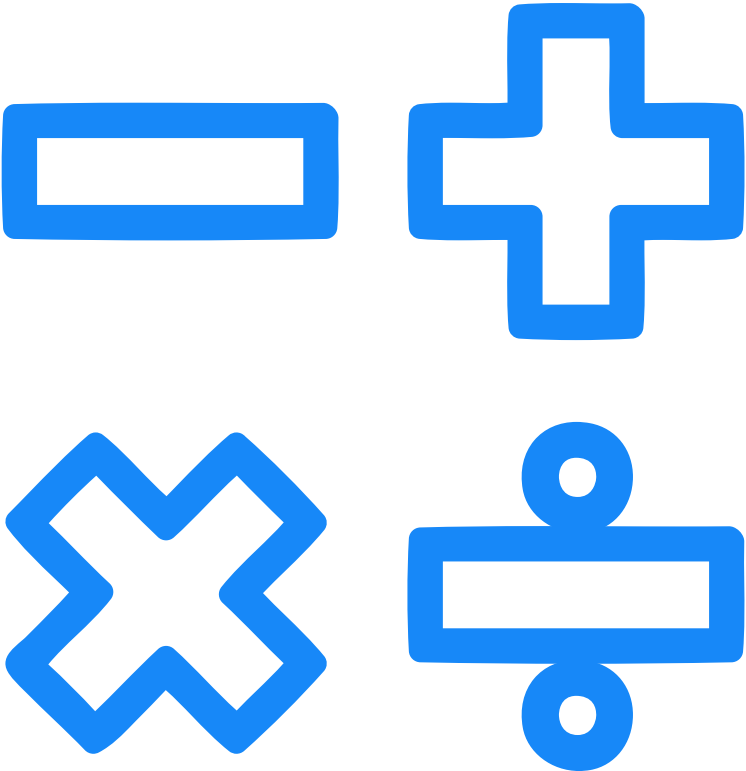
OPTIMIZE

HIGHER N

LOWER ERROR

TAKEAWAY

**THIS ISN'T CONTROVERSIAL.
IT'S MATH.**



TAKEAWAY

SCIENCE IS NOT BEING FUNDED SCIENTIFICALLY

**Fund the best
science.**

**Understand
causes.**

**Find
cures.**



1907 FOUNDATION



HELLO, I'M ADAM

- CO-FOUNDER AND CHAIR OF 1907 FOUNDATION
- BACKGROUND IN FINANCE
- MEDIUM SMART, KNOW A MEDIUM AMOUNT ABOUT STATISTICS
- STARTED FOUNDATION TO FUND MEDICAL RESEARCH FOR MENTAL HEALTH

1907 FOUNDATION



MENTAL HEALTH

INVISIBLE DIFFERENCE WHICH UNITES US ALL
VISIBLE DIFFERENCES ONLY A SMALL PART OF IT

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1907 TRAILBLAZER AWARD

- CAUSES & CURES
- EMERGING SCIENTISTS = INNOVATIVE
- REVIEW THE NOVEL IDEA AND EXECUTION PLAN, NOT SCIENTIST
- INFORM DECISIONS BY BLINDED STATISTICS AND DEBATE



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CONSTRAINT: TIME IS LIMITED

- REVIEWER SAMPLE IS LIMITED
- TIME PER REVIEW IS LIMITED
- TIME FOR DEBATE IS LIMITED
- TIME FOR QUALITY DECISION-MAKING IS LIMITED



1907 FOUNDATION



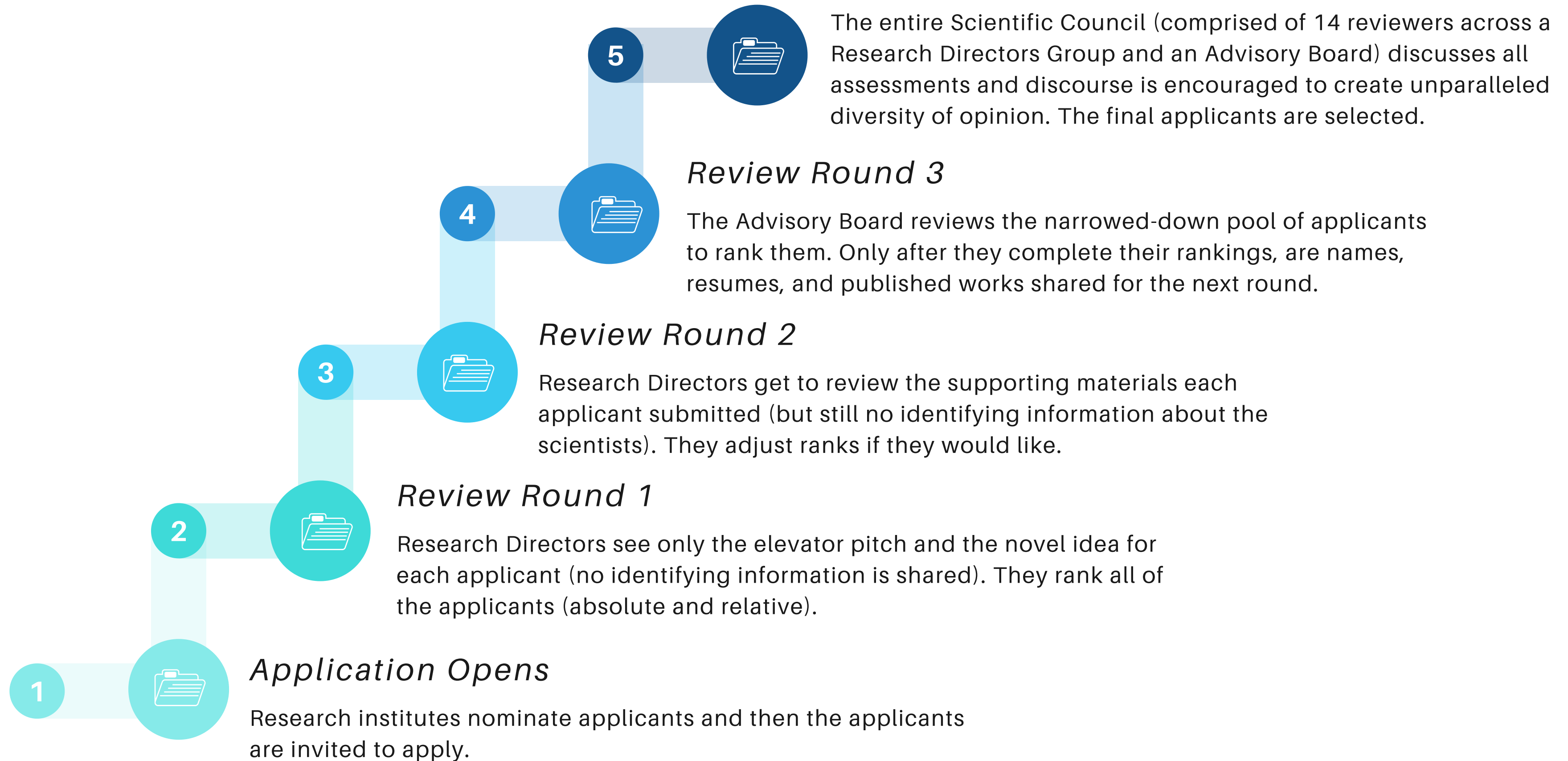
APPROACH

- BLIND VIA SOFTWARE (NO NEED FOR REDACTION)
- INCREASE N VIA REVIEW ROUNDS
- INCREASE N VIA LAYERS OF REVIEWERS
- ACCOUNT FOR REVIEWER DIFFERENCES

...THE REVIEWERS ARE THE EXPERIMENT



THE SCIENTIFIC VETTING PROCESS



RESULT

Each of these fellows was selected using Atala and the process outlined in this packet. Each of the fellows is considered an emerging (i.e young) scientist with disruptive ideas and novel approaches. Their research is too critical to allow their time to be wasted on grant applications instead of their work. It is too critical to water it down or wait until they have the right points on their resume.

METABOLIC APPROACHES TO MENTAL HEALTH



WOMEN'S HEALTH



DEPRESSION + SLEEP



NEURODEGENERATIVE DISEASES



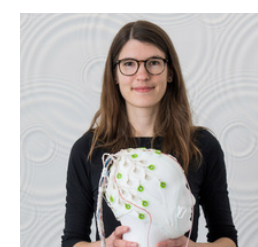
DR. HOY SHEN

Dr. Shen seeks to map enzymes related to psychiatric disorders with presently unknown functions to try to uncover a metabolic approach to the diagnosis and treatment of psychiatric disorders.



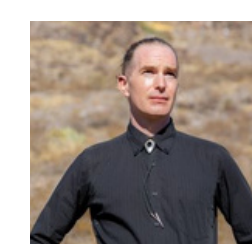
DR. JONATHAN POWER

Dr. Power's study is the FIRST of its kind to study how women's brains change over pregnancy and the implications for peripartum and postpartum mental illness.



DR. LAURA LEWIS

Dr. Lewis is examining links between sleep, cerebrospinal fluid flow, and inflammation in Depression to better understand how sleep and sleep interruptions impact mood and our emotions.



DR. BEN BARTELLE

Dr. Bartelle will attempt to address the root biological causes of neurodegenerative diseases with an innovative approach that uses naturally occurring neuroimmunity of a domesticated Virus.

COLLABORATION

HOW WE CAN HELP YOU

- FULLY BLINDED WITHOUT NEED FOR REDACTIONS
- STATISTICAL DASHBOARDS
- "PHONE A FRIEND" REVIEWER INVITATIONS
- AUTOMATIONS

A TOOLKIT TO FUND SCIENCE, SCIENTIFICALLY.



FUNDER LENS: TIME INEFFICIENCY AND LACK OF TOOLS

In addition to the application mess for scientists, the review process itself is packed with redundancies, bias, and poor methods of assessment.

THE QUANTITY

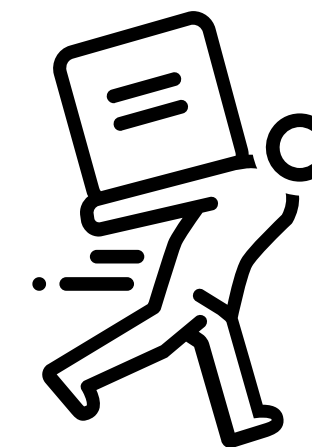


THE FORM

NAME
SCHOOL
DISCIPLINE
GENDER
RACE
PUBLISHED
COLLABORATORS
AWARDS



THE SCIENCE



TIME

20+ page applications with multiple questions, no word count limit, and typically in PDF format.

BIAS

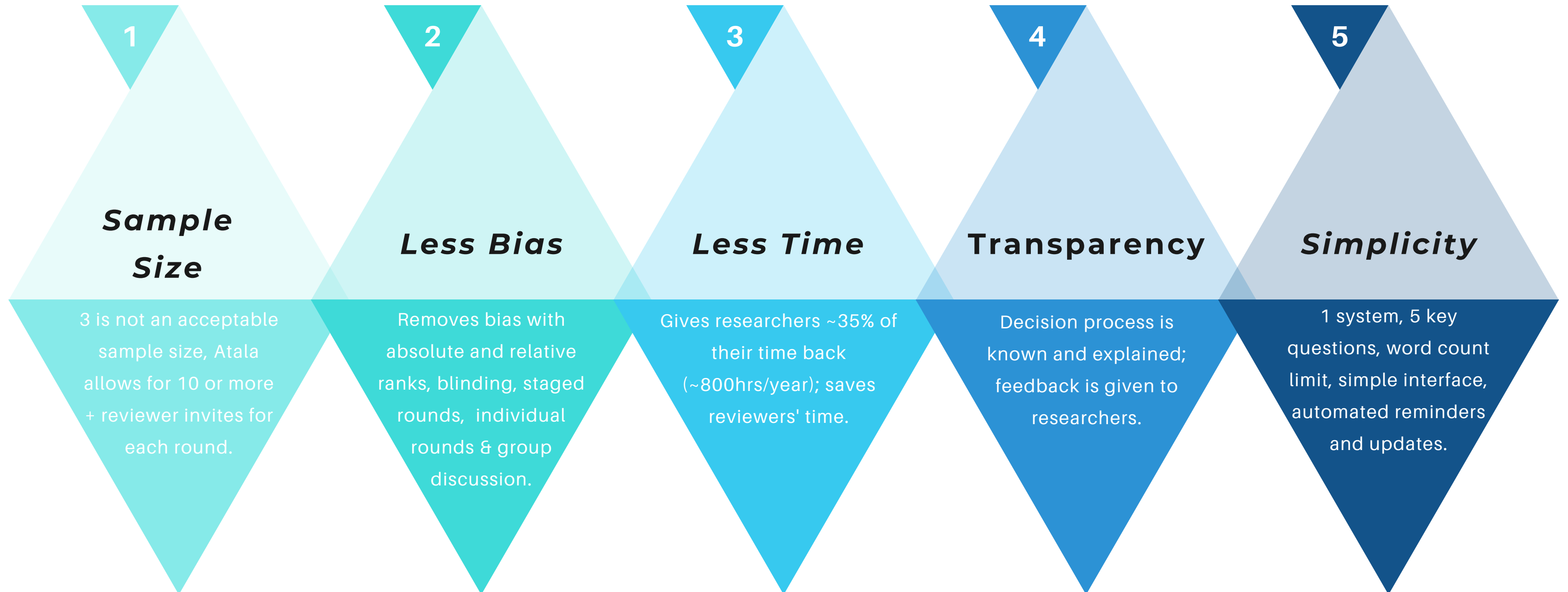
- Reviewers have access to full resumes and removing bias is attempted using **mandates**, rather than science and diversity of opinion.
- More time spent assessing the scientist than the science.

REVIEWERS AND PROCESS

3 reviewer sample size, absolute rankings, and no system updates or automations.

LESS BIAS = HIGHER QUALITY DATA

Our Atala software ensures that funding decisions are made based on the best science and removes the key pain points in the current grant management process. If this is extended to the entire grant marketplace, imagine the progress we would see in scientific research.

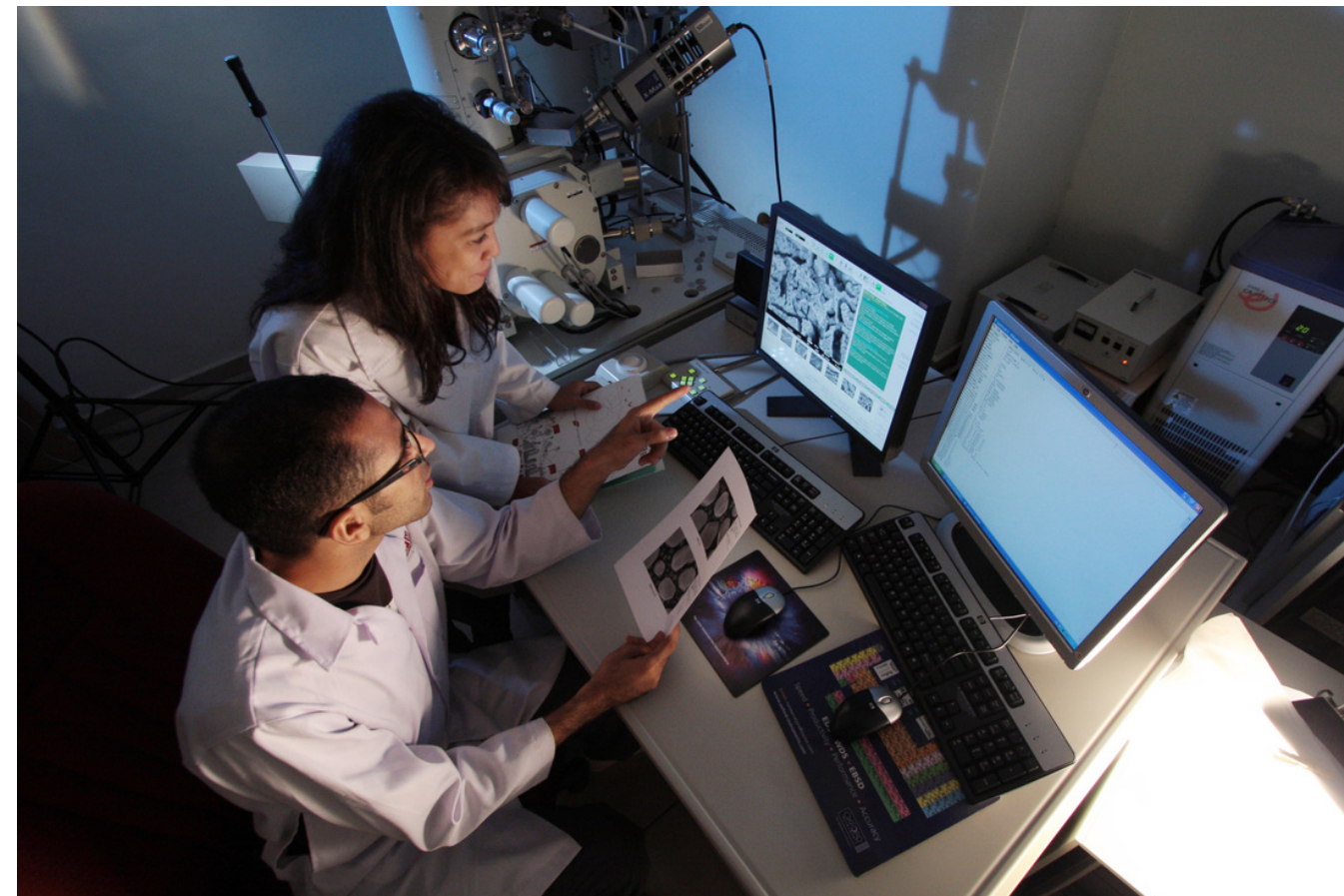


INFRASTRUCTURE

HOW WE CAN HELP SCIENTISTS

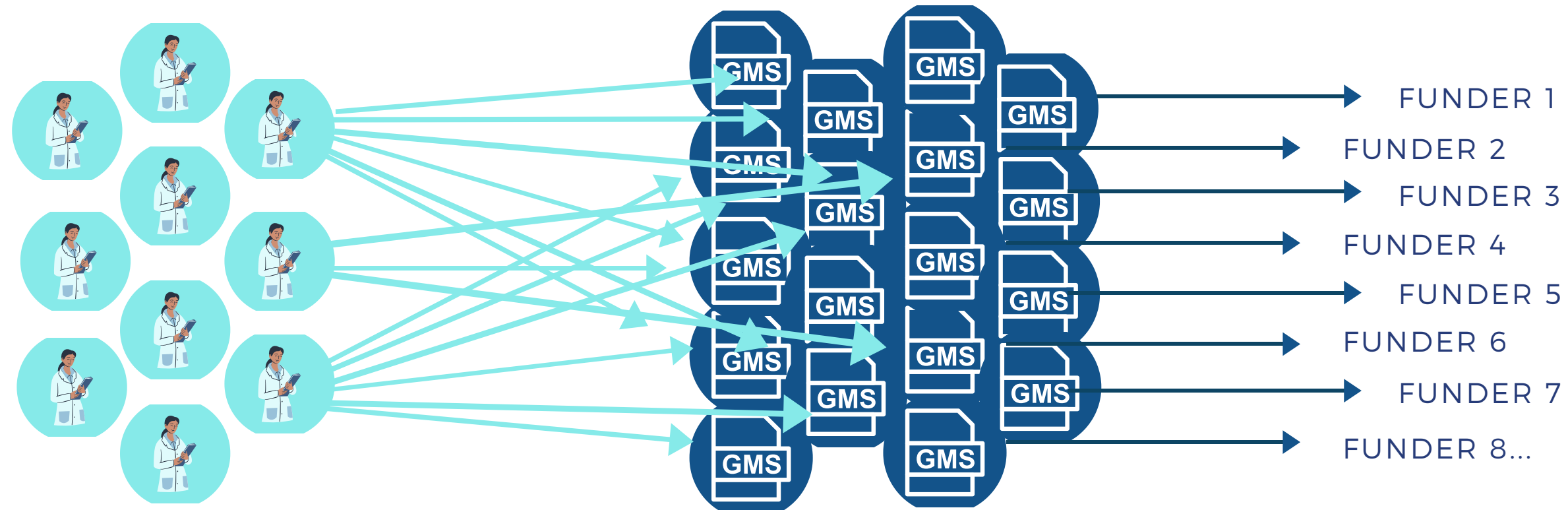
SAVE TIME

GET THE BEST SCIENCE FUNDED=CAUSES & CURES



WHERE WE ARE TODAY = BAD DECISIONS AND TIME WASTE

The traditional grant selection process creates inefficiencies, and conscious and subconscious bias. If the goal is to fund the best science for the best possible outcomes, we are missing the mark.



SCIENTISTS

- Apply to multiple grants using multiple GMS with different criteria
- Result is at least 40% of researchers' time is spent applying for grants

GRANT MANAGEMENT SOFTWARES (GMS)

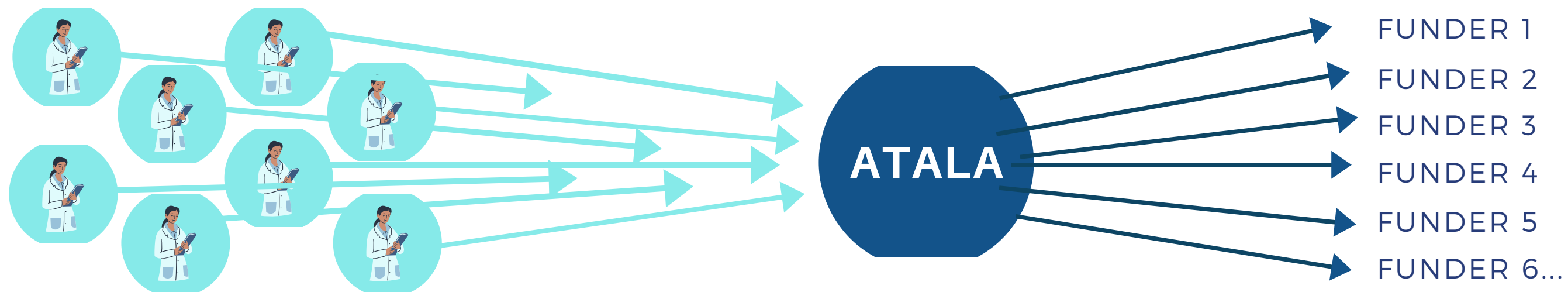
- Each has own extensive list of questions and features identifying information.
- Most require PDF format limiting data analysis and processing capabilities.

FUNDERS & REVIEW PROCESS

- Fragmentation creates complexities for the reviewers (bias, redundancies, difficult to read applications)
- Funder limitations (only access to applicants who found the GMS they use)

WHERE WE'RE GOING = STATISTICALLY DRIVEN DECISIONS AND TIME EFFICIENCY

The system would be able to serve scientists and funders better if there was one grant-making system, where scientists could apply one time and automatically be seen by multiple relevant funders. Funders get to access a database of already completed applications and ideas that they can choose to fund.



TIME

- Researchers should spend time researching.
- Simplify applications to focus on communicating the idea by reducing questions and limiting word count.

BIAS

- Blinding at the core of our process.
- Reviewers access identifying information in the final round when they've already made decisions.
- Reviewers review the science, not the applicant.

SAMPLE SIZE

- 10+ people review each application.
- We are creating an invite to external reviewers to gather more statistics.

REVIEW PROCESS

- Require both absolute and relative ranks to narrow down the applicant pool each round.
- Rounds are reviewed individually to collect unbiased statistics.
- Final round deliberations occur to foster debate by acknowledging differences of opinion. Automations built-in each round.

DATA

- Data collection and analysis can be shared with funders, reviewers, and researchers.
- Provides data on the reviewers.

AN UNWAIVERING COMMITMENT

Atala delivers uncompromising quality in every area critical to the users of grant management softwares.

EFFICIENT

REDUCING APPLICANTS' TIME FROM 40% TO 4% & ALLOWING REVIEWERS TO LOOK AT 1 APP IN 1 PROCESS.

EFFECTIVE

ABSOLUTE + RELATIVE RANK, STAGED ROUNDS, AND STATISTICAL ANALYSIS TO ALLOW THE PURITY OF SCIENCE TO PREVAIL.

ETHICAL

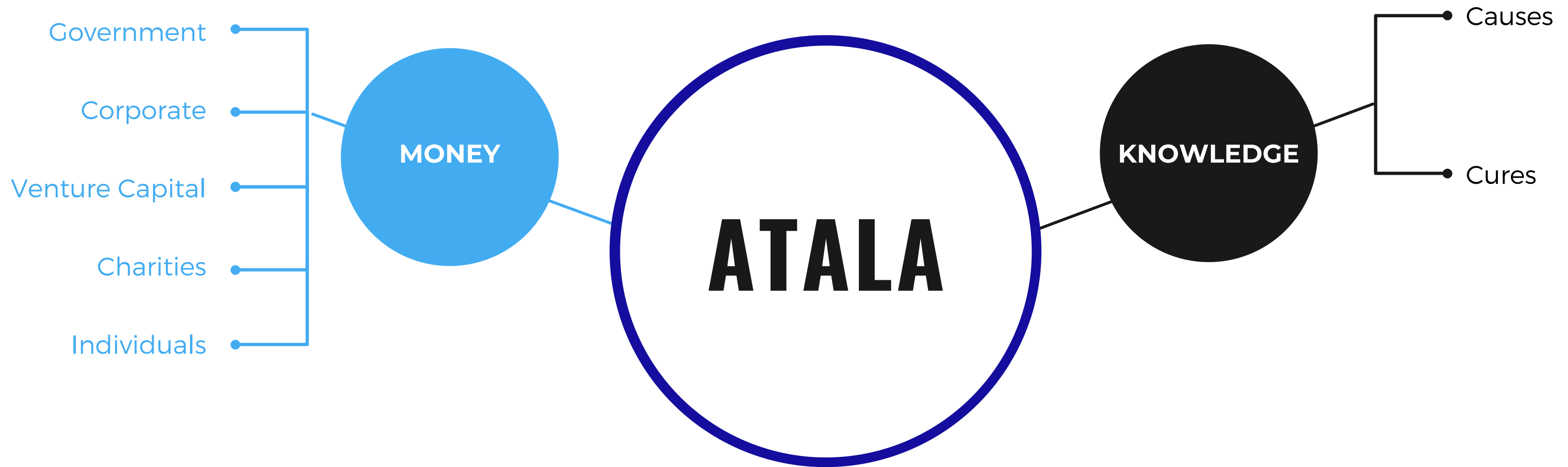
DOUBLE-BLINDED PROCESS TO REMOVE OPPORTUNITIES FOR BIAS AND GROUPTHINK.

EQUITABLE

SCIENCE, LONG-TERM VISION, DIVERSITY OF OPINION, AND IMPACT REIGN SUPREME.

BREAKING IT DOWN

We need to focus on connecting the best sources to attain scientific knowledge with the resources they crave: time and capital. Atala was built to provide that access and serve as the bridge and the check between the supply and demand.



MAY THE BEST SCIENCE WIN

