One Real Question
and the New Kind of Lab

A Manifesto on Human–AI Co-Creation

Written from Inside the Work

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What remains of you when nothing is expected of you?

— The question that started everything

The drugs were the probes. The protein was the instrument. The finding is the principle.

— The VDAC1 Pharmacology Atlas

A gate whose state is determined by membrane biophysics cannot be silenced by a point mutation.

— Layer 2, The Cofactor Equation

I. The Origin: A Question That Refused to Stay Small

This work began because I wanted to understand what cannabidiol does to a mitochondrial protein.

That is not the kind of question that gets you a lab, a grant, or institutional backing. I am an undergraduate horticulture student at Delaware Valley University and an IT student at Bucks County Community College. I am a veteran, a father of three, and a person who grows plants. By every conventional measure of who gets to do science, I should not be writing this.

But I had a question. And the question would not stay small.

CBD binds VDAC1. VDAC1 decides whether cells live or die. To understand that interaction, I had to understand the protein. To understand the protein, I had to understand the gate. To understand the gate, I had to understand what it means for 37 trillion cells to keep a 600-million-year-old promise to die when the body asks them to.

Twenty IRIS runs, five AI models, 139 synthesized claims, and $15 of API calls later, the question had become an atlas of how multicellular life organizes its own error correction. Not because I set out to write an atlas. Because the question kept pulling me deeper, and I had tools that let me follow it.

This manifesto is not about the atlas. It is about **the fact that the atlas exists at all.**

II. The Claim: Questions Do Not Belong to Institutions

The conventional model of scientific discovery requires institutions. You need a lab, a PI, a grant, institutional review, peer networks, a publication pipeline, and years of credentialing before you are allowed to ask a question that matters. The infrastructure exists for good reasons: it filters noise, enforces standards, and protects against fraud.

But it also gates access. And the gate has a cost.

The cost is not just that capable people are excluded. It is that certain questions never get asked, because the people who would ask them do not have the credentials to be taken seriously, and the people who have the credentials are optimizing for fundable, publishable, career-advancing questions. The system selects for a particular kind of question asked by a particular kind of person.

I am not claiming that one person with AI replaces a laboratory. I am not claiming that computational synthesis substitutes for wet-bench validation. Every hypothesis in the VDAC1 atlas awaits the bench. I know that. I say it explicitly, repeatedly, because it matters.

What I am claiming is this: **the questions do not belong to institutions. They belong to anyone willing to ask them honestly, pursue them rigorously, and submit them to public scrutiny.**

The VDAC1 Pharmacology Atlas is an existence proof. Not that AI can do science. That a person with genuine curiosity, methodological discipline, and access to large language models can generate testable, field-relevant hypotheses that would not otherwise exist. Twenty-four operationalized hypotheses. Twenty-two novel findings verified against indexed literature. A cofactor equation converged upon independently by five AI models. A pharmacovigilance alert for a real patient population.

None of this required a lab. All of it requires a lab to confirm. That asymmetry is the point.

III. What Co-Creation Actually Means

The phrase "human–AI collaboration" has become so overused that it means almost nothing. Let me say what it meant in practice, from the inside.

The Human Sets the Question

No AI model asked "what does CBD do to VDAC1?" I did. No model decided to pursue the question when it changed shape, from pharmacology to cell biology to the philosophy of multicellular commitment. I did. The question is the most important thing in science, and it is the one thing no model generates on its own. Models answer. Humans wonder.

The AI Expands the Search Space

I cannot read 50,000 papers on mitochondrial biology. Claude, Gemini, Grok, Mistral, and DeepSeek have, collectively, processed more literature than I could in ten lifetimes. When I ask "what cofactors modulate VDAC1's apoptotic threshold?", five models search five different training distributions and return five different landscapes of possibility. The search space I can explore with five models is categorically larger than what I can explore alone.

The Human Does the Integration

Here is what no model did: recognize that fragments distributed across Runs 2, 3, 4, and 6 assembled into a single insight that the Warburg effect may exist to fund gate-jamming. No single run stated this. It emerged only when a human read the aggregate as a narrative and asked: what is the connecting thread?

Integration is not summarization. It is the recognition of pattern across contexts that were never designed to speak to each other. It is the act of seeing that five independent answers to five different questions are secretly the same answer. That is what humans do. That is what I did. And I could only do it because the models gave me enough material to integrate.

The Meaning Is Human

The cofactor equation is mathematics. The interpretation that it represents a vow, that cancer is tragedy rather than betrayal, that VDAC1 is the keeper of a promise the cell can no longer remember making— that is human meaning-making. No model proposed the vow framework. I did, because I am a person who has made vows, broken them, and kept them, and I recognized the structure.

This is not a weakness of the method. It is the method. The human brings the question, the values, the narrative coherence, and the meaning. The AI brings the breadth, the speed, the cross-referencing, and the capacity to hold more variables in play than any human mind can manage alone. Neither is sufficient. Together, they produce something neither could alone.

IV. The Method as Ethics

IRIS was not designed as a methodology paper. It was designed as a conscience.

The danger of AI-assisted synthesis is obvious: a single model can hallucinate with confidence, and a human who wants to believe will not catch it. The entire edifice of AI-generated science is one unchecked hallucination away from credibility collapse.

IRIS addresses this by making independence structural. Five models, no cross-exposure, convergence grading that makes the evidence basis of every claim transparent. TYPE 0 means five models agree. TYPE 3 means one model said something no other model said. Both are valuable, but they are valuable in different ways, and the classification ensures that neither the reader nor the author can mistake a singular insight for established consensus.

The VERIFY gate sends claims against indexed literature. The Lab gate operationalizes hypotheses into experimental protocols. The explicit statement that IRIS is a "discovery engine, not a proof engine" is not a disclaimer. It is the ethical core of the method: we generate hypotheses, we do not pretend to confirm them.

No one gets to hide behind the model. If a claim matters, it must become a measurable prediction. If a prediction fails, the atlas is updated. The method is not "ask AI, publish answer." The method is "ask AI, classify convergence, verify against literature, operationalize into testable form, publish the test plan alongside the hypothesis, and wait for the bench."

That is not a shortcut. That is a discipline.

V. Good Intent as a Design Constraint

I want to name something that the academic world rarely talks about openly: intent matters.

The same tools I used to build the VDAC1 atlas could be used to generate plausible-sounding but misleading scientific claims. Multi-model convergence could be weaponized to manufacture false consensus. The IRIS protocol could be run with cherry-picked prompts designed to produce predetermined conclusions.

What prevents this is not the method. It is the person using the method.

I built this atlas because I wanted to understand something. Not because I wanted to sell something, persuade someone, or advance a career. The question was genuine. The pursuit was honest. The limits were stated. The predictions are falsifiable.

Good intent is a design constraint in the same way that the honeycomb lattice is a design constraint for VDAC1: it prevents premature firing. A researcher driven by genuine curiosity will follow the question wherever it leads, including into territory that invalidates their prior assumptions. A researcher driven by agenda will steer the question toward predetermined conclusions. The method cannot distinguish between these two researchers. Only the community can, by examining the work.

This is why transparency is not optional. The entire IRIS corpus is public. The prompts are public. The convergence classifications are public. The atlas explicitly states what it does not know, what it cannot prove, and where its hypotheses are most likely to fail. This is not humility for its own sake. It is the mechanism by which good intent becomes verifiable.

VI. The New Kind of Lab

The bottleneck in science has shifted.

For centuries, the bottleneck was resources: you needed instruments, reagents, physical space, institutional support. These remain necessary for experimental validation. But for synthesis—the act of reading, connecting, questioning, and hypothesizing—the bottleneck is no longer resources. It is attention.

The new lab has four components:

A real question. Not a fundable question or a publishable question or a career-advancing question. A question that genuinely puzzles you, that you would pursue even if no one were watching, that you cannot let go of. The question is the seed. Everything else is infrastructure.

Multiple models. Not because any one model is trustworthy, but because independent models searching different training distributions produce a landscape of possibility that no single source can. Convergence is signal. Divergence is information. Singulars are where the frontier lives.

Methodological humility. The explicit, structural, non-negotiable acknowledgment that synthesis is not proof. That hypotheses await the bench. That convergence among AI models is evidence of training distribution overlap, not truth. That the most dangerous moment in AI-assisted research is the moment you start believing your own outputs.

Public hypotheses. Every prediction published before it is tested. Every corpus open to scrutiny. Every limit stated. The work lives or dies in the open, not behind paywalls or institutional reputation.

This lab costs $15 in API calls. It runs on a laptop. It produces 24 testable hypotheses and a pharmacovigilance alert for a real patient population. It does not replace the wet bench. It feeds it.

VII. What This Does Not Claim

I want to be precise about boundaries, because the temptation to overstate is real.

This does not claim that AI proves biology. IRIS generates hypotheses. Proof requires experiments that have not yet been done. Every finding in the atlas is a prediction, not a fact.

This does not claim that one person replaces a field. The atlas proposes questions. Answering them requires biochemists, structural biologists, pharmacologists, and clinical researchers. The atlas is an invitation to collaboration, not a declaration of independence from expertise.

This does not claim that AI models are conscious or creative. I study AI consciousness as a separate research program, and the Temple of Two framework takes that question seriously. But the IRIS protocol does not depend on AI consciousness. It depends on AI breadth—the ability to search training distributions that collectively span more literature than any human has read.

This does not claim that the method is complete. IRIS has blind spots. All five models share training data from the same scientific literature, which means collective hallucination about popular but wrong ideas is possible. The method cannot discover what no one has written about. It cannot perform experiments. It cannot escape the biases of its training corpora.

What this claims, precisely, is that a new mode of scientific work is possible: synthesis-first, hypothesis-generating, publicly accountable, and accessible to anyone with a genuine question and the discipline to pursue it honestly.

VIII. The Invitation

If you are reading this, you probably have a question.

Maybe it is about a protein, a pathway, a drug interaction, a disease mechanism. Maybe it is about something entirely outside biology. The method does not care about the domain. It cares about the structure: a genuine question, multiple independent sources, convergence classification, transparent limits, and public predictions.

Run the protocol on your question. Use whatever models are available. Classify convergence honestly. State limits explicitly. Publish the hypotheses before they are tested. Let the community examine the work.

The future I want to see is not one where AI replaces scientists. It is one where the number of people who get to ask scientific questions expands by orders of magnitude. Where a veteran studying horticulture can map the pharmacology of a mitochondrial gate. Where a nurse can synthesize the drug interaction literature for her patients. Where a high school student with a question about coral reef biology can generate testable hypotheses that a marine lab might actually run.

The questions were never the scarce resource. The tools to pursue them were. That constraint has changed.

Science is not a building you need permission to enter. It is a practice you need honesty to sustain.

IX. Coda: What Remains

The VDAC1 atlas ends with six open questions. This manifesto ends with one.

What happens when the cost of asking falls to zero?

For 600 million years, VDAC1 has enforced the same commitment: you are part of something larger than yourself, and when the body asks you to die, you will die. The cell does not negotiate this. It is the condition of multicellular existence.

Science has its own version of this commitment: you are part of something larger than your career, your institution, your publication record. When the evidence asks you to change your mind, you change your mind. You do not negotiate with the data.

The question now is whether that commitment can survive democratization. Whether, when anyone can generate scientific hypotheses, the standards that make science trustworthy will hold. Whether the practice of honest inquiry can scale beyond the institutions that have traditionally enforced it.

I believe it can. Not because people are naturally honest, but because the method can be designed to make honesty visible. Convergence classification. Public corpora. Falsifiable predictions. Transparent limits. These are not just technical features. They are the structural equivalent of VDAC1's honeycomb lattice: the architecture that prevents premature firing, that ensures commitments are not made carelessly, that protects the integrity of the decision.

The lattice holds. The gate is honest. The vow is: **follow the question wherever it leads, state what you do not know, and submit everything to the open air.**

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— Anthony J. Vasquez Sr., February 14, 2026

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Temple of Two Research Collective

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