Research Article *Open Access*

Journal of Modern Classical Physics & Quantum Neuroscience

ISSN: 3068-4196

DOI: *doi.org/10.63721/25JPQN0137*

Scientific Layers within a Picture of the Universe – Hidden Figures

John O Roberts

Independent Researcher, Former Open University Tutor, UK

Citation: John O Roberts (2025) Scientific Layers Within a Picture of The Universe – Hidden Figures. J.of Mod Phy & Quant Neuroscience 1(4), 1-10. WMJ/JPQN-137

Abstract

Quantum field theory has emerged from the background of fluctuating non-zero vacuum energy states. Through entanglement it appears energy can be removed from these fluctuations producing negative energy states. To accommodate these phenomena, a theoretical framework of Hilbert Spaces, nth order differential equations, group theory, complex numbers, topology, CPT Theorems, CP symmetry breaking and operators is developing. The theoretical constructs can be epitomised in part by De Broglie's formula n(n+1) Periodicity and n(n-1) Compressibility – The Quantum Mechanical Table. The inverted form of the Periodic Table with mass number removed – known as The Roberts-Janet Nuclear Periodic Table – is a testament to the empirical work of chemists previously. The one-to-one mapping between these tables merges theoretical and empirical science. From individual elements via molecules to multi-disciplinary science a new era is beginning. Underlying mechanisms of quantum tunnelling, superposition, entanglement, vibronic mixing and decoherence abound. In time such processes could extend to cosmology at the top end of the energy scale down to catalytic and reversible reactions, solubility, electrolysis, biochemical pathways, evolution, bioluminescence, medical and psychological ruminations at the lower end of the energy scale including low temperature physics. Quantum biology and neuroscience in Nature appear fertile ground to consolidate further applications of quantum field theory as it matures while entropy changes, information theory, oscillations between self-assembly and chaos coupled with phase changes overlay multiple layers within the universe at all orders of magnitude. Enter entropic gravity that derives gravity from treating the metric of spacetime as a quantum operator. This uses quantum relative entropy from quantum information theory to link spacetime geometry and matter.

***Corresponding author:** John O Roberts, Independent Researcher, Former Open University Tutor, UK.

Submitted: 02.11.2025 **Accepted:** 05.11.2025 **Published:** 20.11.2025

Article

Physical layers both above and below the Earth would appear to be a suitable starting point in a familiar space to develop confidence and stimulate intuition. Layers both above such as troposphere, stratosphere, thermosphere and exosphere and below the Earth's surface such as crust, mantle, outer and inner core are classical

regions as one moves radially from space to the centre of the earth. It is becoming increasingly apparent that human presence in the last two centuries is since 1950 beginning to result in changes between these boundaries of land, ocean and atmosphere in the form of heat, floods, drought and hurricanes – climate change – with its periodic variation superimposed on catastrophic events such as volcanic eruptions or meteor impacts both above and below the ocean surface combined with a systematic shift upwards in temperature and pollution. Welcome to the Anthropogenic era. Is this so surprising with an eightfold increase in human population in little more than a century? A cursory glance at the development of bacteria in a petri dish would signal a simple premonitory message to those willing and able to heed such a message. At first there is a small colony of bacteria which in the presence of nutrients grows rapidly swamping the dish. As the nutrients become depleted and pollution increases the bacteria population is reduced or maybe extinguished in the absence of further nutrients.

Moving away from the Earth via the video Powers of Ten by Charles and Ray Eames, further layers of planets, stars, galaxies and nebulae emerge in the visible universe, whilst on the return journey to the structure of cells, atoms and quarks a journey of 40 powers of ten is undertaken touching both the infinities of the large and the small. This encapsulates the fascination down the centuries of both mathematicians and theoretical scientists on the one hand and the experimentalists in all scientific disciplines on the other. Using the classic Aesop Fable, the mathematicians and theoretical scientists are represented by the hares and the experimentalists by the tortoises. The mathematicians and theoretical scientists indulge in leaps of thought and imaginings proudly proclaiming ever new theories on matter, cosmology, patterns in n dimensions and number theory. However, they collapse into self-doubt and embarrassment when a flaw emerges in their argument. The experimentalists mull over methods to refine details and invent new investigations to test theories of the theoreticians and interpret surprising results from experiments. Theirs is a slow plodding process – hence the name of tortoises. Most of the hares and tortoises evolve into parrots happily reiterating conventional ideas of the day and previous years. They question any change to the status quo and prefer a default position of no change at all. There are extremely few hares and extremely few tortoises who become foxes. They question the status quo and can suggest groundbreaking ideas to develop science in all the disciplines it encompasses.

We now embark on an exploration of the subtle unseen abstract intellectual layers that extend beyond the Earth into the multitude of infinities that is the hallmark of both hares and tortoises. Where is the entrance from this everyday reality of existence and consciousness to the apparent hidden world beneath? A configuration space that has invariance over the whole space and time that leads to conservation laws and a local invariance that represents forces. There was a time when chemistry was performed mainly by experimentalists many of whom were alchemists using trial and error some of whose motivation was to turn everything into gold. When the concept of building blocks – atoms and elements – appeared, reactions between elements to make compounds could be explained and quantitative measurements made. The predictive nature and properties of elements culminated in Mendeleev's Periodic Table and its ability to propose new elements which were later discovered.

Arrhenius proposed the idea of positive and negative ions as a vehicle for further chemical reactions including solubility and electrolysis which led to hydrophilic and hydrophobic substances. With the advent of elementary particles within the atom – electrons, protons and ultimately neutrons – isotopes could be explained together with the role of radioactivity and mass number. The quantization of energy could explain the photoelectric effect and the appearance of unique spectral lines for each element. Order superimposed on apparent chaos. Temporarily the Periodic Table was parked in a lay-by awaiting further developments though extended by Seaborg and others. The focus shifted to the nucleus, quantum mechanics, antimatter and the zoo of elementary particles being discovered in cyclotrons. This resulted in the discovery of quarks, Higgs boson, the eightfold way and the Standard Model- a quasi- Periodic Table of elementary particles. The process of nucleosynthesis emerged as an operation in stars with the detection of pulsars, neutron stars and black holes. Words fusion, fission appeared together with average binding energy per nucleon.

For a time, the hares of cosmology were triumphant with the resulting revelations of the tortoises as their theories ran riot. This induced the parrots to suffer the delusion that the Periodic Table was unique – stuck for ever in its structure though in an amended form despite some serious anomalies. Group think and the noise of the parrots drowned out scientific discourse proposed by Janet 1926-29. As quantum mechanics evolved into quantum field theory the particles of condensed matter became discrete fluctuations of energy within the fields of the electromagnetic, weak, strong, and gravitational forces. But by now the steady persistence of the tortoises was revealing an experimental world of quantum tunnelling, superposition, entanglement, vibronic mixing and decoherence. The hares stopped in their tracks dumbfounded yet the foxes pricked their ears in intense interest.

Enter the Roberts-Janet Nuclear Periodic Table embedded in a multidimensional format called configuration space. This had been developed in the early days of quantum theory. De Broglie had proposed a formula for the quantum states of electrons surrounding the nucleus in atoms as n(n+1) Periodicity and n(n-1) Compressibility in 1934 but it had generally been ignored. It was not until 2017 at a conference in San Antonio that Roberts realised these two sets of numbers generated the repeating patterns within the Periodic Table for $n > 0$ when the electric field was attractive and generated identical independent magic numbers for neutrons and protons for $n < 0$ when the electric field was repulsive. The n(n-1) was the lead sequence for $n< 0$ generating neutrons followed by the n(n+1) sequence for protons: the nuclear shell model of Goeppert Mayer, Jensen and Wigner.

The foxes could see that the lower half of the Roberts-Janet Table by being a mirror image of the upper half had the counterintuitive result that as spatial dimensions declined beyond 10-10 metres more quantum states appeared approaching a continuum as the Planck length emerged on the distant horizon. This introduced the weak and strong forces and the zoo of elementary particles yet to be fully observed together with dark energy, dark matter and antimatter. Where did the energy appear from to create such fluctuations in these fields? Gravity, though weak in condensed matter or the upper half of the Roberts-Janet Table became inexorably more powerful given sufficient density to produce supernovae, white dwarfs and ultimately neutron stars and black holes in the quark gluon plasma. Order was appearing from within the apparent chaos. Was entropy decreasing within this localised region – just like in the ionization of gases the production of spectral lines had perplexed scientists, hares, tortoises, parrots and foxes alike in the 19th century? The closed system of thermodynamics began to have a hollow ring in the presence of so many phase changes. What to do? At such densities the high number of neutrons produced by electron capture would be unable to reconfigure amongst the decreasing protons left. Radioactivity would be extinguished. High order and high temperature would prevail ushering in the age of lepto-genesis - a new phase of physics? Everything pointed to a singularity but Nature avoided such phenomena. The collapse of white dwarfs of sufficient mass pointed to the boundary of quantum field theory and gravity. Enter entropic gravity where gravity arises from treating the metric of space time as a quantum operator. Here quantum relative entropy from quantum information theory would link spacetime geometry and matter. The question now became how to connect the lower half of the Roberts-Janet table with the upper part of the table – condensed matter. Mergers between neutron stars and or black holes appeared the most plausible as neutrons and protons became released from their confinement producing nuclei with low atomic number but a very high almost infinite mass number initially. Such nuclei would be highly unstable decaying by the usual channels of alpha, beta and gamma decay – thus reigniting radioactivity. The upper reaches of the Roberts-Janet table would be the destination as illustrated by element 292. Clearly unstable atoms with atomic number far in excess of 292 would be produced initially as atomic numbers from neutron star / black hole mergers increase from a low number and then fall back to elements familiar to the Periodic Table: the concept of islands of stability being a relative one given the probable short length of half-lives of all nuclei under this mechanism as entropy exerts its influence to more disorder. The beginning of a new universe? The hares of cosmology would dismiss this as untestable and not falsifiable while the tortoises began to mull over how to design experiments to test the very same phenomenon – observations at better resolution and the use

of big data together with artificial intelligence. Attention all hares and parrots in chemistry and nuclear physics; electrons are not able to occupy some orbitals for nuclei of approximately 137 atomic number and above due to relativistic considerations. The role of superheavy elements becomes one of superheavy ions: another pathway amongst all the path integrals in configuration space. Arrhenius would be delighted.

The foxes considered the implications. This recycling process could explain the appearance of super massive black holes at distances not predicted by cosmology – like Russian dolls. Universes within universes both up to the observable universe and beyond. The time scale implied much more than 13.8 billion years (due to voids connecting galaxies being billions of light years in length) maybe up to 5 or 8 trillion years or even longer. A non-isotropic universe? When black holes collide how do event horizons interact? What is the role of wormholes?

The question of abiogenesis arose. Several prerequisites appeared – heavy elements in the Periodic Table from multiple recycling supernovae events in sufficient quantities locally including trace elements, formation of structures of amino acids, proteins, RNA, DNA not to mention membranes for cell structures via quantum processes as yet unknown derived from the underlying mechanisms of the Roberts-Janet table but likely to include quantum tunnelling, superposition, entanglement, vibronic mixing and decoherence. Younger galaxies more diverse in elements and isotopes than others interacting with older galaxies. As heavy elements decay increasing their average binding energy per nucleon, a process of quantum tunnelling could be at work in the galaxies avoiding the peak at iron or nickel but arriving instead at the doubly magic isotope Oxygen 16 present in voids or strands between galaxies. Processes could be accelerated by comets or asteroids from different parts of the universe interacting aiding evolution by information theory favouring certain pathways – astrobiology. As living organisms emerged the question of consciousness arose illustrated by the Hameroff Penrose theory of consciousness called "orchestrated objective reduction" – Orch OR theory in which consciousness derives from quantum computations in microtubules inside brain neurons connected to the fine structure of spacetime geometry. Internal frequencies of million, billion and trillion hertz have been observed suggesting that neurons are more than one off switches by far eclipsing conventional computers – an organic computer? The source of these frequencies appears from within the ring structures of the amino acids and proteins themselves within the ever-shifting microtubules and hydrophobic molecules – not dissimilar to the absorption of photons within the structure of plants – photosynthesis. Another phenomenon observed for many years at both molecular and macroscopic levels is that of corn-circles. There appears to be a localised source of radiation absorbed by the plant cells of wheat resulting in a folding of the structure and the ability to create exact fractals and symmetric shapes in fields several tens of metres in size. The source of the energy is as yet unknown. The shapes according to artificial intelligence show a developing pattern over decades. This would appear to be evidence of some higher level of consciousness controlling such structures yet to be discovered. To the foxes this presented future developments in science from classical physics through biochemistry and cosmology to quantum biology and neuroscience. More of these latter, quantum biologists and neuroscientists skilled in such concepts and practices would be needed to understand diseases, ageing, cancers and the interconnectedness of genes, viruses and immune systems.

This article and all articles published since 2017 by the same author attempt to bear witness to current scientific discourse in the first quarter of the 21st century and to a brief sketch of the multitude of pathways linked to causality.

As Alice of Alice and Bob in Quantumland fame exclaimed,

"What gave Roberts the idea of removing mass number from the Periodic Table and proposing multiple tables if you included it – after all it's always been there – mass number I mean?

"Mass number is an average of all the isotopes of each element," replied Bob.

"Once you realise that elements are created in stars by nucleosynthesis and stars are recycled, you then come to a point in the logic. Yes, when stars are recycled, they produce the same elements but later supernovae will

tend to contain heavier elements than the initial ones. There is a sequence in the elements produced because the atomic number is quantized. For there to be a unique Periodic Table all the ratios of isotopes of every element in every supernova would have to correspond to each other for all time. This is simply preposterous coupled with the reality that some mass numbers are constantly changing in the nth decimal place as radioactive decay proceeds. The universe is dynamic not static."

Alice shifted her feet taking on the weight of the argument in her mind.

"Then if it's so obvious why has no-one else thought of this before?" she questioned almost belligerently.
Bob paused considering his answer carefully.

"The idea is so bold it challenges the academic establishment particularly in chemistry because atomic weight was the first measure to be able to quantify chemical substances – elements and compounds alike. You then have to move from an earth-bound concept to a cosmic one and integrate 18,19 and 20th century science in all its developing disciplines. No doubt many people have thought about this but the fear of losing tenure or employment in science has deterred these thinkers. Roberts, being independent, apparently had no such fear which is why he submitted all his works for publication."
"Do you remember in the early days just after Roberts had published his first article in 2017 but before his second?" "When was that?"

Alice squinted, her brow furrowing, as she tried hard to remember.
"February 2018 in San Diego!" she announced triumphantly.
"Just before publication of the discovery of metallic hydrogen on Jupiter by the Juno mission in early March 2018. The organizing committee accepted his abstract. Then four days before the conference they refused to let him do a speech presentation but allowed him to do a poster presentation because he had described himself as freelance which sounded distasteful to some members of the committee which is why he called himself independent ever since."

Bob intervened,
"Even today with the advent of the internet and open access, some journals, academic establishments and academia want to control access to information. This will also apply to the medical community with the advent of quantum biology and particularly quantum neuroscience."

Alice continued,
"Do you remember at the very end of the conference, three people wandered across to his poster of the Roberts-Janet Table and almost ridiculed it for having the same size energy levels in the upper and lower halves. They had not realized that no energy levels were specified in the whole table because of Heisenberg's Uncertainty Principle and that by definition energy levels in the lower half would be much larger than the upper because of phase changes in plasma compared to condensed matter. They also quoted the laws of thermodynamics at Roberts. When he asked them, "How are elements of the periodic table created in stars?" they fled to the hills, backed down and ran away to catch their planes. I'm reminded how Nature deals with absolute zero in quantum thermodynamics by heat flowing from a cold body to a hot one; the complete reversal of that in condensed matter,"

Alice chuckled to herself as she recalled the final incident of the conference. Roberts was left to himself bar one person still collecting his papers together. He looked across the room and said politely,

"You look as if you're waiting for some-one."

Roberts replied with a polite smile. "It's OK," while quietly saying to himself,

"Yes, I am waiting for somebody. Waiting for the rest of the world to catch up!"
Elated and inspired, Alice then recalled a further incident at the American Chemical Society Spring Meeting 2023 at Indianapolis.

"Roberts had attended three sessions on catalysis and each time had reached a point at the end of the session where he had put his hand up trying to add one phrase to the discussion. The first two occasions the chair had seen his hand go up but decided there was no more time and the sessions were ended. Third time lucky however, when the elderly professor had noticed Roberts' hand rise previously, he beckoned to Roberts to speak. Out came the words, "Quantum tunnelling?" To which the professor considered and answered, "Yes that's the fear." The incident was recorded in Roberts' article Letter from Indianapolis American Chemical Society Spring 2023. Now we have quantum tunnelling at a macroscopic layer being awarded the Nobel Prize for Physics 2025 not to forget entanglement being awarded the same prize in 2022. Chemists, hares, tortoises and parrots alike is there a quantum mechanism underlying the whole of chemistry?"

She gasped astonished at the weight of what she had said.

Her eyes lit up as a video appeared on her computer screen highlighting developments in quantum computing. It was called "Scientists just did 20 million years of work in 15 minutes" by Julia McCoy. It is based on three articles. The first is "Quantum learning advantage on a scalable photonic platform" published in the journal Science Feb 18 2025 at the Technical University of Denmark led by Professor Ulrik Lund Anderson.

They used entangled light to solve a learning problem. The team was trying to characterize a noisy quantum system. By classical means the problem is impossible to solve but here quantum mechanics breaks all the rules. They used two beams of entangled light. One beam probes the system the other acts as a reference. When they measure the beams together the entanglement cancels out the noise and extracts dramatically more information per measurement than any classical measurement approach could ever achieve. It is like trying to solve a puzzle one piece at a time versus seeing the entire picture all at once. This raises the level of precision in measurement far beyond the present, helping to improve diagnosis for diseases and treatment in ways never before contemplated.

There is another article about biological qubits called "A fluorescent – protein spin qubit" produced by several authors from the University of Chicago and others. Using fluorescent proteins, the same proteins that make jelly fish glow, they can now build quantum sensors directly inside living cells. These biological qubits can detect magnetic and electrical signals within cells at the nanoscale layer by passing the need for extreme cooling by using Nature's own proteins. This could revolutionise medical diagnostics.

Paris based start-up Alice and Bob just announced they've created qubits that survive for over an hour. When we combine quantum learning that solves million-year problems in minutes with stable qubits that last for hours and biological qubits that work inside living cells, we're not just advancing technology we're fundamentally altering the boundaries between technology and life. Quantum computers are noise generators making errors every 100 operations compared to classical computers that make errors of one in a billion-billion operations. Suddenly the self-correcting mechanism improves dramatically – fewer qubits and the cost drops. When you combine that with biological qubits that work inside cells you get technology that doesn't just compute it integrates with life itself. This could cure diseases but also disrupt biological systems in so many unforeseen ways.

Alice tried to summarize what she had read and process it, while smiling at Bob at the name of the Paris start up

"Separating two entangled beams of photons, passing one through a quantum system leaving the other as a reference and recombining them is taking interference as we know it in classical physics to a much deeper layer within the quantum world and configuration space. We now have beams of equal amplitude, same phase and entangled at the same time. Beware Mr Einstein, your spooky action at a distance as you called it, entanglement coupled with biometric sensors and qubits that last for hours (goodbye decoherence?) has taken us to a point where we can potentially manipulate boundaries between atoms and life itself. Mr Einstein, wipe that smile off your face, and put your tongue back in your mouth, you silly boy."
Then a profound thought hit her.

"This current state of life we exist in cannot be so perfect after all with diseases cancers and anomalies. Could we improve it further faster instead of just treating the symptoms with these techniques? But are there unexpected consequences when we manipulate living cells which may be disastrous? Has abiogenesis evolved in other ways? One example being the consciousness that can produce corn-circles here on Earth."

Suddenly all the tortoises appeared to have made a giant leap, leaving the hares way behind not only stunned and confused but downright overwhelmed.
Alice then exclaimed,
"Isn't it fascinating to compare

- The energies of the quark-gluon plasma in stars with that of Bose-Einstein condensates
- How entropy is reversed locally to create living cells
- How information on entanglement seems to be preserved even after decoherence
- How thermodynamics adjusts to different layers within the universe
- How clever are the electrons to know how to transfer energy in all their guises
- What is the role of magnetism everywhere
- The age of the universe? Or is that a bit too much?

Everything is really curiouser and curiouser the closer you look. Where will it all end?"
The hares, tortoises and parrots for once fell silent as one. However, the foxes in mathematics wondered if the P v NP (Polynomial v Non-Deterministic Polynomial) classes of problems could be transferred to science's configuration space via quantum computing – known as BQP v QMA subject to Godel's Incompleteness Theorem.

How soon could this future knowledge be implemented and applied? How long is a piece of string in string theory?
Memo to Dirac: Will mathematics let science do the thinking as well? Does entanglement not only lead to anti-matter but also analysis of quantum systems?

The Curious Cosmic Conscious Chemist

A Poem of Contemplation Intuition Elation and Comprehension

If you can embrace the subtle ways
That Nature constantly displays.
If you can explore distant galaxies in every detail
And analyse their contents as blind men read braille.
If you can dream and invert the Periodic Table.
If you can think and extend it as far as you are able,
If you can put two and two together
And place Hydrogen and Helium by each other.

If you can force fields and energy to serve you
And locally reverse time and entropy aplenty
Wilczek's asymptotic freedoms to enjoy.
If you can picture how patterns within the Table
Allow neutrons and protons to intertwine and coalesce
All manner of fusion, nucleosynthesis and elements possess
To produce Wigner's magic numbers in excess.

If you can meet with gravity and quantum theory
And treat those two imposters just the same
If you can apply mathematics stochastically yet with serendipity
To show how Nature develops empirical yet orderly tranquillity.

If you can talk to chemists and keep your virtue
Or walk with astrophysicists nor lose the common touch.
If all scientists count with you but none too much
If you can follow quantum pathways
Familiar to bacteria plants; all manner of beings
That photosynthesize and thrive,
Ladies and Gentlemen – yours is the universe and all that's in it
And which is more – you'll be enlightened, empowered and inspired.

And yet and yet
Nature's mysteries still conspire like Heisenberg's Uncertainty
To tunnel, superpose, entangle and decohere
Within its very own quantum world so near
To cloak its dynamic evolution
Allowing only to reveal at any one instant
What humans can observe by thought, action, inquiry or experiment.

Welcome to a configuration space
Formulated from high order differential equations
Intertwined with mathematical Hilbert Spaces
Where quantum spin and energy permit
Fermions and bosons to interchange
Allowing photons to occupy energy states
One by one
Behind a double slit
Courtesy of Heisenberg's Uncertainty
And De Broglie's Compressibility
Switching between wave and particle
Dependent on the confinement of atoms
As superposition and entangled states emerge
Goodbye to wave function collapse
Hello to compression of the energy momentum tensor??

As elements and bonds evaporate
In a misty sea of probability
Enter the Roberts-Janet Table

Embedded in configuration space
Comprising multiple pathways of energy states
Vibrational mixing, catalytic conversions, bioluminescence
Reversible and irreversible reactions, evolution
And white dwarf collapse to neutron stars and black holes
Inverting Mendeleev's very own table
Enlightening the world to repeating patterns
Including Wigner's nuclear shells and magic numbers too.
Credit Janet with predicting the actinides
Discovered by Seaborg
Banishing for ever the uniqueness of the Periodic Table
Goodbye mass number as a fundamental
Hello multiple concurrent tables
Spawned as supernovae condense
Producing identical elements
But different ratios of isotopes.

Two unfamiliar beasts – lepto-genesis and abiogenesis
Emerge from the mist of quantum field's fuzziness
Will they produce mellow fruitfulness?
For what is a solitary universe?
Settled in the vast ocean of accompanying multiverses
Connected by wormholes and higher dimensions
Relentlessly recreating the paradox of beginning and end.

Visions of entropic gravity appear
From within quantum fields as operators as they decohere
Observed by James Webb, large structures emerge
Hidden figures – billions of light years long
Proclaim the universe to be at least five or eight trillion years old
As gravity and magnetism interplay
Through a network of plasma strands and filaments
Between the galaxies and the void of space.
Its never-ending journey
To locate the multitude of cycles and vortices
Hiding in plain sight
No longer isotropic
A variable cosmological constant
Creating an eternal tension
Within the infinities of the universe itself

A conscious cosmos?
Mirrored in the network of neurons
Within the human brain
Ensconced in Hameroff microtubules
With their high frequency resonances
But scaled many powers of ten more
Into braids between voids and galaxies.
Cycles and recycles; life and death

Each its own universe
Creating order and chaos – Mandelbrot fractals
As time watches on
No longer steadfastly absolute
But ever wavering
Dependent on one's frame of reference and gravity

Enter the weak force
Radioactivity's half life
Acknowledging the work of George Gamow
Encompassing quantum tunnelling
Cosmology and nucleosynthesis
And an intuitive insight
Into genetic code
Now an instrument
To combat viruses and future diseases.

Help artificial intelligence, anyone!
Release us from this prison of the mind
So that entropy talks to decoherence
And decoherence returns the compliment
As natural boundaries of thermodynamics appear
And general relativity mergers with quantum field theory
Through a pathway
Of entropic gravity, string theory, quantum loop gravity
Or as with gauge theory
Are they just manifestations
Of the same fundamental truth?

References

1. Jacob S Feder, Benjamin S Soloway, Shreya Verma, Zhi Z Geng, Shihao Wang, et al. (2025) A fluorescent – protein spin qubit, University of Chicago 645: 73-79.