



THE GUY FOUNDATION

NEWSLETTER

December 2022

Welcome



It is hard to believe that it has been five years since The Guy Foundation was founded, and more than three years since the first colloquium on quantum biology and bioenergetics, which was held in person here in the UK in October 2019. Since then, the

biannual Spring and Autumn Series of lectures have gone from strength to strength. While initially a response to necessities imposed by the pandemic, the online nature of the meetings has forged a diverse and international faculty, which has led to a number of new ideas and collaborations. Two aims of The Guy Foundation are the fostering of research ideas and networks and the dissemination of information about quantum biology. It has been very satisfying to see the various ways in which these aims are taking shape, either through online lectures, journal publications or the development of our website. The Guy Foundation is also very pleased to see the first fruit of its own funded quantum biology research and our research teams are looking forward to sharing their first sets of findings with you in the 2023 Spring Series. The spring will also see the inaugural Gordon Research Conference on quantum biology, another key milestone for the field and one which we are proud to have supported this year.

The field of quantum biology is making good progress and I sense we are on the cusp of a seed change. Your energy, enthusiasm and expertise are greatly helping the momentum to grow, thank you. On behalf of all the Foundation team, we wish you a happy and peaceful holiday season and we look forward to seeing you in the new year.

Professor Geoffrey Guy,
Founder and Chairman, The Guy Foundation

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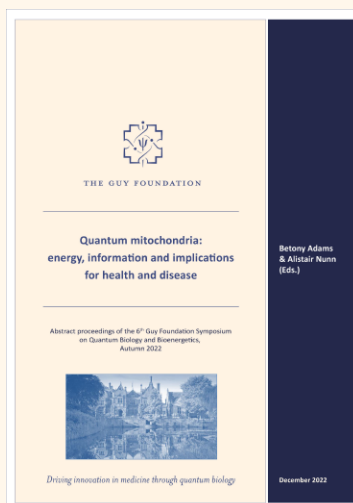
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2022 AUTUMN SERIES – REFLECTIONS AND PROCEEDINGS

The Guy Foundation has long been interested in the role that mitochondria play in biological systems. To this end the 2022 Autumn Series looked at how mitochondria respond to different conditions, how they have optimised their function with respect to Earth's specific magnetic and gravitational field and what implications this might have for health and disease. Topics ranged from chronic disease to space exploration, with a final discussion led by mitochondrial expert Professor Doug Wallace, who commented that:

“ Bioenergetics, rather than anatomy, may be central to understanding physiology, which demands a shift towards the consideration that mitochondrial dysfunction could be the underlying cause of all common diseases. ”

Professor Wallace concluded that organisations such as The Guy Foundation were welcome as a forum for “discussion of ideas that currently fall outside of the paradigm of Western medicine”.



The Proceedings have now been written up, with a summary of the roundtable discussion, and are available to read on The Guy Foundation website [here](#). Don't forget that recordings of all the lectures from this series are also available on our website [here](#).

ONLINE SYMPOSIUM – ADVANCING TERRESTRIAL HEALTH

The Foundation has long believed that aerospace medicine may accelerate our understanding of electromagnetic effects in biology and how these might be able to improve our ability to practise medicine. Indeed the Autumn Series concluded with a thought-provoking presentation by Dr Afshin Beheshti, KBR at NASA Ames Research Center, who discussed the implications that space exploration has for human health. Dr Beheshti outlined the wealth of data that attests to the effects of conditions such as microgravity on mitochondrial function.

The Foundation is organising a symposium that addresses how advances in space exploration might also advance medicine on Earth. The focus of this symposium will be on how living organisms have evolved in the specific physical environment of the Earth – its electric, magnetic and gravitational fields – and how changes to this environment will influence biological systems.

ADVANCING TERRESTRIAL HEALTH: LESSONS FROM SPACE **Wednesday 1 February 2023 15:00hrs – 19:00hrs UK-time on Zoom**

Speakers: Professor Alistair Nunn, Dr Afshin Beheshti, Dr Michal Cifra, Professor Michael Levin, Betony Adams, Professor Wendy Beane, Steve Thorne and Dr Aenor Sawyer

The full programme is available on our website:
www.theguyfoundation.org/our-conferences-and-meetings/

Feel free to promote the symposium to your networks. Anyone not already registered with us is asked to contact Nina Copping, Programme Director by email to register for this event:
n.copping@theguyfoundation.org

ANNOUNCING THE 2023 SPRING SERIES

Since its establishment in 2018 The Guy Foundation has curated and supported a programme of research in quantum biology and bioenergetics. We are very pleased that in the 2023 Spring Series each of the research teams will present results from their studies. These results include highly technical quantum instrumentation, designed by Professor Stanley Botchway and Dr Alasdair Mackenzie to investigate biophoton emissions and entanglement in biological systems. Professor Jimmy Bell and Dr Rhys Mould will present evidence of non-chemical cellular communication while Dr Philip Kurian will talk about progress made in both modelling and identifying collective phenomena such as superradiance in microtubules. Progress has also been made in understanding how molecular physiology scales to anatomical form, the results of which will be presented by Professor Michael Levin and Professor Wayne Frasch.

The series will take place on selected Wednesdays from 1st March to the 24th May. **For more details see the programme overleaf.** Presentations will be recorded and uploaded to The Guy Foundation YouTube channel, please [subscribe here](#) to be alerted when new talks are added.

Proceedings and recordings of our lecture series are available on our website: www.theguyfoundation.org

Talks are also available on our YouTube channel:
youtube.com/@theguyfoundation

If you are interested in attending the live meetings, please register your interest by contacting Nina Copping:
n.copping@theguyfoundation.org



THE GUY FOUNDATION

2023 SPRING SERIES PROGRAMME

Session 1: Wednesday 1 March

The role of biophotonics and electromagnetic fields in cellular communications and bioenergetics

Speakers: **Professor Jimmy Bell** and **Dr Rhys Mould**, Research Centre for Optimal Health, University of Westminster, UK

Session 2: Wednesday 15 March

Development, visualisation & modulation of bio-photons in living systems

Speakers: **Professor Stanley Botchway** and **Dr Alasdair Mackenzie**, Central Laser Facility (Octopus Group), UK Research & Innovation / Science and Technology Facilities Council, Harwell campus, Oxfordshire, UK

Session 3: Wednesday 26 April

Cooperative and coherent quantum phenomena in the life sciences

Speaker: **Dr Philip Kurian**, Quantum Biology Laboratory, Howard University, USA

Session 4: Wednesday 10 May

From molecular physiology to anatomical form

Speakers: **Professor Michael Levin** and **Professor Wayne Frasch**, Allen Discovery Centre at Tufts University, USA and Arizona State University, USA

Session 5: Wednesday 24 May

Roundtable meeting

Short talks to recap the series and roundtable discussion

ALL SESSIONS 15:00HRS – 17:00HRS UK-TIME ON ZOOM

LAUNCH OF THE ONION PRIZE TO CELEBRATE GURWITSCH CENTENARY



In 1923 the scientist Alexander Gurwitsch performed an experiment in which he investigated how non-chemical emissions might stimulate mitotic processes in onion roots. Due to the ultraweak nature of these emissions, which later came to be referred to as biophotons, Gurwitsch's results proved hard to replicate. Recently, renewed

interest in the functional role that light may play in biological systems, along with improved detection technology, has led to an increased focus on biophotons.

To celebrate the centenary of Gurwitsch's original experiment, The Guy Foundation is sponsoring a competition to reward the best, or most novel, replication or reinterpretation of this experiment.

The competition is open to researchers around the world, with particular emphasis on early career researchers. The winner will be awarded the Guy Foundation Onion Prize, which includes a cash prize of US\$5,000.



The closing date for entries is Gurwitsch's birthday, 26th September, 2023.

Please see our website for more information and how to enter. We encourage you to let your colleagues and students know about this fun opportunity!

DONATION TO THE GUY FOUNDATION



The Foundation was delighted to receive a very generous donation of £500,000 from Professor Geoffrey and Kate Guy in October.

To date, The Guy Foundation has funded research projects totalling £1.8 million and operated our scientific programme of lectures and outreach, exclusively with Geoffrey and Kate's financial support.

We thank Geoffrey and Kate for their continuing remarkable contribution to the field of quantum biology and bioenergetics.

We are planning to start looking for additional avenues of financial support for our programmes over the course of the coming year – do let us know if you have any useful contacts or would like to be involved.

To read in more detail about the Foundation, the 2022 report and accounts are now [available on our website](#).

BOOKS & PAPERS

RECENT PUBLICATION ON CELL-CELL DEATH COMMUNICATION



The Guy Foundation is pleased to announce a new publication from one of its research grants. The paper, entitled ‘Cell-cell death communication by signals passing through non-aqueous environments: A reply’ was published in the journal *Results in Chemistry*. The research, which was carried out at the University of Westminster, addresses a prior conclusion that non-chemical death signals can induce cell death in neighbouring, chemically isolated cells. First author, Dr Rhys Mould, commented: “Our results confirmed cell death in neighbouring cells relative to distant control cells. However, this result was contingent on the choice of solvent, suggesting it may be due to volatile solvent-based transmission as opposed to light-based non-chemical signalling.”

QUANTUM TUNNELLING IN SARS-CoV-2 VIRUS

The Guy Foundation team member and University of KwaZulu-Natal PhD student, Betony Adams, recently published a paper in the journal *Scientific Reports*. The aim of the paper was to investigate the role that quantum tunnelling might play in SARS-CoV-2 host cell invasion using a quantum master equation approach. The results demonstrated a biologically relevant parameter regime where the vibrational spectrum of the SARS-CoV-2 spike protein might enhance electron transfer in a putative ACE-2 receptor. Building on work done in the context of vibration assisted tunnelling models of olfaction, the authors hope to widen the conversation around the possibility of charge transfer in receptor activation mechanisms.



Special issues - calls for submissions

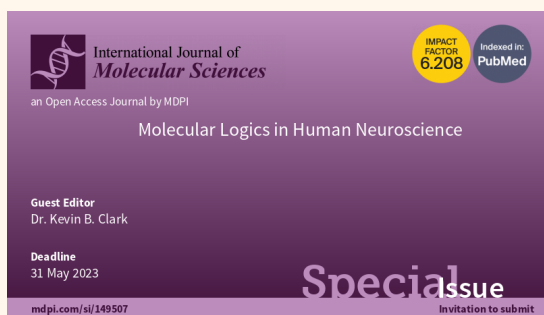
IEEE TRANSACTIONS ON MOLECULAR, BIOLOGICAL, AND MULTI-SCALE COMMUNICATIONS

The journal IEEE Transactions on Molecular, Biological, and Multi-Scale Communications has called for submissions to a special issue of quantum biology, which will look more closely at how quantum biology might play a role in communication processes, information transfer/processing, or networks in biology.

Deadline: 1 May 2023

[Visit website for submissions](#)

THE INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES



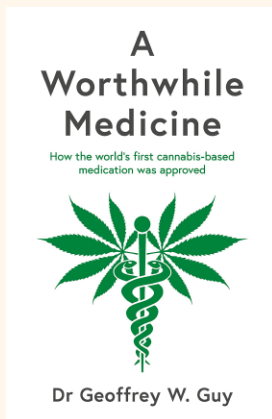
The Editors of The International Journal of Molecular Sciences have announced a Special Issue, to be guest edited by Dr Kevin Clark, which is inviting submissions involving classical, quantum, and hybrid

classical-quantum biomolecular logics. The Special Issue “Molecular Logics in Human Neuroscience” focuses on trends in natural and artificial or man-made biomolecular logics systems and their role in the development, operation, disease and injury, and diagnosis and treatment of the human central and peripheral nervous systems. Submissions involving original basic, translational, and clinical science on molecular logics or critical reviews on historical, contemporary, and future innovations on the topic are particularly welcome, as are manuscripts that may relate the study, advancement, and use of molecular logics in computational models valid for human neuroscience understanding and application on or off Earth.”

Deadline: 31 May 2023

[Visit the special issue website](#)

Book corner



For this issue's book corner, Dr Nathan Babcock, postdoctoral researcher, Quantum Biology Lab at Howard University, sent us the following review of *A Worthwhile Medicine*, a book by Geoffrey Guy which was published in 2021.

A WORTHWHILE MEDICINE IS MORE THAN A WORTHWHILE READ

Geoffrey W. Guy's account of the creation of the world's first licensed cannabis-based medicine is compelling and engrossing: Combining personal memoir with professional commentary and socioeconomic saga, the story weaves diverse elements into a cohesive narrative that offers the reader a unique chance to watch history unfold. Yet this epic speaks for itself. Rather than promoting the book with glowing reviews designed to entice the buyer, the dust cover's inside jacket grabs the reader's attention with real news headlines that chronicle GW Pharmaceuticals' precipitous rise to the top.

Beginning with the chapter *Listening to Patients*, the book's main theme is the critical importance of listening to clients and shareholders in earnest and with compassion, revealing insight into Prof. Guy's success as a doctor, an entrepreneur, and a storyteller. In classic style, the prose is littered with adages and witticisms to boost the acumen of both business leaders and philosophers alike, laying out the course of one doctor's life starting with hospital practice before leaping to industry and pharmaceutical research

specifically, until one twist of fate led him to a half-day event at the Royal Pharmaceutical Society about the medical use of cannabis. The rest, they say, was history.

Readers interested in the intricacies of building a multi-billion dollar business while navigating political pitfalls and regulatory red tape will find this to be a riveting read. Yet what captures the imagination is the synthesis of the author's lifetime of experience with pharmaceuticals into the conviction that present-day pharmaceutical science is inadequate to describe the action of many common drugs. Combining this conviction with the audacity to bet his fortune on the science of the future, Prof. Guy leaves no doubt that his story is still history in the making.

The final chapter on Quantum Biology offers more questions than answers, which The Guy Foundation aims to unveil. Much research on quantum biology has focused on the search for quantum coherence and non-trivial dynamical effects in biological systems. While this focus has great academic merit, The Guy Foundation unabashedly seeks to develop this new science into therapeutic practice. Will it hold the secret to quantum medicine? Prof. Guy surely aims to find out.

Dr Nathan Babcock

CONFERENCES AND MEETINGS

GRC IN QUANTUM BIOLOGY – REGISTRATION IS OPEN



Registration is now open for the inaugural **Gordon Research Conference (GRC) on Quantum Biology** which is taking place from 19 – 24 March 2023, in Galveston, Texas. The Foundation is pleased that a number of affiliated scientists will be taking part in the conference. The Foundation's Scientific Advisors Professor Stan Botchway and Dr Philip Kurian are speaking and leading discussion and PhD students Ifigenia Kalampouka and Betony Adams will be presenting short talks on their research results.



PHYSICS OF LIFE CONFERENCE

Following directly on from the GRC, the **Physics of Life conference** will take place from 27 – 30 March 2023 in Harrogate, UK. Organised jointly by PoLNet3, IOP Biological Physics, the British Biophysical Society, Physics of Living Matter and Physics meets Biology, this in-person meeting aims to address science at the interface between physics and biology. The programme includes sessions dedicated to a number of the topics that intersect with those raised in The Guy Foundations seminars, such as metabolism and energetics, imaging across scales, cancer, disease, aging and more. The deadline for abstract submission is 23rd January 2023.

QUANTUM BIOLOGY SEMINARS

Over the last few months the team has attended a number of interesting quantum biology meetings, including those hosted by the **Quantum Biology Lab** at Howard University, **Big Quantum group** and the **Bioelectrodynamics group** at The Czech Academy of Sciences. If you know of other relevant meetings and seminars, do get in touch.

COMMUNITY NEWS

FULL STEAM AHEAD: THE NEXT QUANTUM GENERATION



Howard University Quantum Biology Lab Founding Director and The Guy Foundation Scientific Advisor, Dr Philip Kurian, gave a 12-minute **TED talk** as part of a TEDx event in Washington, DC, aimed at inspiring excellent thought for all ages, from “K to

Grey.” In his presentation Philip mentioned the Quantum Biology Lab’s collaboration with William Rowen Elementary School in Philadelphia, Pennsylvania, to establish a STEAM (science, technology, engineering, arts and mathematics) lab focused on training the next generation of thinkers and quantum discoverers. For more details on this initiative, please read the Howard Newsroom article [here](#).

NOBEL IN AFRICA



Prof. Francesco Petruccione has followed up his move to Stellenbosch University by co-convening the inaugural Nobel in Africa Symposium Series, with an outreach programme organised by the National Institute of Theoretical and Computational

Sciences (NITheCS). Nobel in Africa is a collaborative initiative between STIAS (Stellenbosch Institute for Advanced Study) and Stellenbosch University under the auspices of the Nobel Foundation and the Royal Swedish Academy of Sciences. STIAS is the first institution outside of Scandinavia to host a Nobel Symposium, with an aim to further research and collaboration, and nurture Africa’s brightest scientific minds in conversation with the international scientific community.

AND FINALLY... IN SEARCH OF NEW PLANARIA

We thought you'd be as interested as we were to hear that in a break from the laboratory, Professor Mike Levin spent two weeks in Greenland, in search of novel species of planaria. While it is unclear how many new head shapes he observed, he did manage to turn light into matter, through a number of fabulous photographs - we hope you enjoy this selection.





Photographs © Mike Levin 2022

We hope you've enjoyed this edition of the newsletter. If you have some news that you'd like to share with us, or comments on the newsletter, please get in touch by emailing Nina n.copping@theguyfoundation.org.

We wish you a happy holiday season.

The Guy Foundation team



From left to right: Nina Copping (Programme Director), Lord Waldegrave (Trustee), Russell Bowyer (Treasurer), Alistair Nunn (Director of Science), Jonathan Laughton (Trustee), Geoffrey Guy (Chairman), Eric Dixon (Trustee), Kate Guy (Trustee), and Richard Brass (Trustee), at the recent Board of Trustees meeting at Chedington Court, Dorset, UK. (Photo by Kim Laughton)

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www.theguyfoundation.org



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