THE GUY FOUNDATION

Quarterly Review

June 2026

Welcome to the 16th edition of the Quarterly Review, a digest of The Guy Foundation and quantum biology news.

Contents

Proceedings of the 2026 Spring Series

We are delighted that the written **Proceedings of The Guy Foundation 2026 Spring Series on Magnetic Fields and Biology** are now available on our **website**.

The lecture series, which ran from 11 March – 20 May, explored the emerging field of magnetobiology and its implications for life, health, and medicine. The programme examined how weak – nano to microtesla – magnetic fields, once thought to be biologically insignificant, can influence living systems through quantum mechanisms such as the radical pair mechanism, with potential effects on oxidative stress, circadian rhythms, and cellular signalling.

2026 Spring Series on Magnetic Fields and Biology speakers
Top L-R: Professor Jonathan Woodward, Dr Brian Ross, Dr Margit Egg, Professor Martyn A Sharpe
Bottom L-R: Professor Wendy Beane, Professor Massimo Maffei, Professor Alistair Nunn

Spanning theory, experiment, and application, the series highlighted growing evidence that magnetic fields can modulate biological processes relevant to health and disease, alongside their potential use in diagnostics and therapy.

Findings across animal, plant, and prokaryotic systems point to a broad biological sensitivity to magnetic cues, including roles in regeneration, growth, and adaptive responses. Overall, the series underscored a shift toward recognising magnetic fields as a subtle but potentially fundamental component of the biological environment, opening new directions for research and future medical innovation.

The series ended with a stimulating roundtable discussion that concluded that growing evidence from magnetobiology suggests life may be finely tuned to Earth's geomagnetic environment, with implications for mitochondrial function, redox balance, ageing, health, and our broader understanding of bioenergetics and biology itself.

The Proceedings and videos of the series talks are available on our **website** and **YouTube channel**.

2026 Autumn Series Announcement

We are delighted to announce that The Guy Foundation's 2026 Autumn Series will be on '**Bioenergetics, Health and the Quantum Environment**'.

The programme will bring together researchers working across quantum biology, mitochondrial science, neuroscience and medicine to explore how bioenergetics shape human health, from the molecular to the systemic scale.

Running fortnightly from 23 September to 2 December 2026, the series will examine how mitochondrial function links microscopic quantum and biochemical processes to macroscopic outcomes such as inflammation, cognition, disease, and ageing.

The mitochondrion: an organelle at the heart of bioenergetics

The programme opens with a session exploring the origins of mitochondria, featuring Professor Nick Lane. Subsequent sessions will focus on the electron transport chain, mitochondria and health,

and brain energetics, with presentations from leading figures such as Professor Doug Wallace, Professor Wayne Frasch, Dr Lance Becker, Professor Nirosha Murugan, and The Guy Foundation's Professor Alistair Nunn.

The series concludes with a roundtable discussion drawing together the implications of the programme for health, disease, and future medical research. Across all six sessions, the aim is to encourage dialogue between disciplines and to develop a more integrated understanding of how the energetic foundations of life connect environment, physiology, and disease.

We will share the recordings of the talks on our website and YouTube channel. Attendance is by registration. If you aren't already registered but would like to join us at the live sessions, please **contact us**.

Inaugural Quantum Biology Forum

The inaugural **Quantum Biology Forum**, held in Silver Spring, Maryland and hosted by Northwell Health with support from United Therapeutics, was a significant milestone for the rapidly growing field of quantum biology, with many describing the meeting as one of the clearest signs yet that the discipline is moving toward broader scientific and medical impact.

L-R: Forum organiser Lance Becker (Northwell Health) with The Guy Foundation team: Alistair Nunn, Geoffrey Guy and Rhys Mould

The Forum brought together researchers, clinicians, innovators, investors, and funders working at the intersection of quantum science and biology, fostering an environment where foundational physics, mitochondrial medicine, photobiomodulation, bioelectricity, and emerging clinical applications could all be discussed side by side. The breadth of topics was remarkable, ranging from spin chemistry and mitochondrial energetics, to bioelectrical medicine, computational biology, and quantum-informed approaches to health and disease. The talks are available to watch through the **Northwell Health YouTube channel**.

Geoffrey Guy, Alistair Nunn, and Rhys Mould who each presented at the event, felt that the conference reflected a field that is reaching a new stage of maturity and momentum.

Geoffrey Guy commented:

“ There is a growing sense within the community that quantum biology may be approaching a breakout moment into the scientific mainstream, driven by increasing interdisciplinary collaboration, improved infrastructure, and growing institutional support. ”

Geoffrey Guy gives his presentation ‘Quantum Biology: A 30,000-ft Overview’

Congratulations to Rhys Mould, who was awarded a poster prize. Rhys commented:

“ The Quantum Biology Forum was a unique experience, in that I saw that the interest in quantum biology is growing beyond the confines of academia. It was an opportunity to share not just results and science, but where we thought that science might lead us and how we can, as a community, better facilitate this. I think everyone in attendance left with a refreshing sense of optimism about the future of quantum biology. I was also fortunate to be awarded a prize for ‘Recognition of outstanding abstract and distinguished

contribution to the inaugural Quantum Biology Forum', a huge honour for me and a reflection of the work that The Guy Foundation supports. ”

Congratulations to all the prize-winners

Alistair Nunn and Lynn Harrison

The Foundation team also enjoyed meeting many of our scientific faculty colleagues such as Forum delegate Professor Lynn Harrison, LSU Health Shreveport. We enjoyed regular meetings with Lynn during her secondment to the NASA Biological and Physical Sciences Division, and it was a joy meeting in-person rather than on Zoom!

Thank you to all those who supported the 2026 Forum. The organisers were delighted with the response and, following strong support from attendees, discussions are already underway for planning the next meeting.

Report on Light and Health

After the success of the 2025 Autumn Series on Light and the establishment of a Working Group, we are in the process of preparing a report on the implications of the modern built environment, our changing light environment, and health. We are engaging with architects, scientists and industry innovators interested in biologically informed lighting environments. In one such conversation with Foster + Partners, it emerged that Head of Studio Professor Stefan Behling had explored this very theme decades ago in his book '**Solar Power: The Evolution of Sustainable Architecture**'. See the **Book Reviews** section for more details.

Excitingly, there is a sense that the science of light and health is becoming less of a fringe topic and increasingly part of mainstream biomedical discussion. A recent *Nature* feature, **The surprising science behind red-light therapy – and how it really works**, reflects this shift and highlights the rapidly expanding interest in how red and near-infrared light interact with cellular metabolism and mitochondrial function. To read more about this article see our **Journal Club** section.

Also as part of the Foundation's light and health initiative, the charity has supported **research** at University College London (UCL), led by PhD student Khorshid Meihami. The study is investigating whether 850 nm near-infrared light can improve metabolism, vision, mood, and sleep in individuals working in windowless office environments, with implications for healthier workplaces and future space habitats. The data analysis is in progress and we look forward to sharing the results when they are available.

UCL Study on windowless office environments - experimental setup. The study investigates the physiological impacts of near-infrared (NIR) light 850 nm on health metrics such as vision and glucose metabolism. While the room is illuminated solely by standard LED lighting lacking NIR wavelengths, the specialised desk lamp (pictured) supplements the environment with invisible 850nm light to evaluate its health benefits.

As well as the growth in research efforts, the number of companies focusing on this area also grows from week to week, with a large range of products becoming commercially available. Sarah Doheny, a researcher with the company Neuronic has drafted a white paper titled ‘Red & Near-Infrared Light as an Environmental Determinant of Cellular and Systemic Health’ which is available to view on **Zenodo**. Sarah would be pleased to receive feedback from the scientific community.

Space Health Programme Update

Research at **The Guy Foundation Quantum Biology and Bioenergetics Lab** continues apace. Rhys Mould and Sanika Ghayal presented some of their new results as part of the Spring Series – you can watch their talks on our YouTube channel **here** and **here**. Using mu-metal chambers that shield static magnetic fields, their preliminary findings suggest that hypomagnetic exposure can alter immune cell function and stress responses, change cartilage cell morphology, and affect muscle cell proliferation and mitochondrial metabolism. With papers currently in preparation, the emerging results further reinforce the Foundation's concerns regarding hypomagnetic fields in space and that the relevant sectors should be alerted to the biological consequences of altered magnetic environments.

We are pleased to report that the Foundation has launched the **prospectus** for the International Space Health Research Collaboration (ISHRC) – a global, independent not-for-profit initiative designed to bring together leading scientists, agencies, industry partners, and policymakers. The collaboration aims to coordinate research, develop policy and advocacy initiatives, and help to establish future health standards for human spaceflight. With renewed public excitement surrounding space exploration – particularly following the successful Artemis mission – questions about the long-term biological effects of space environments are becoming increasingly urgent. For those interested in joining as a funding partners, a copy of the prospectus is **available**.

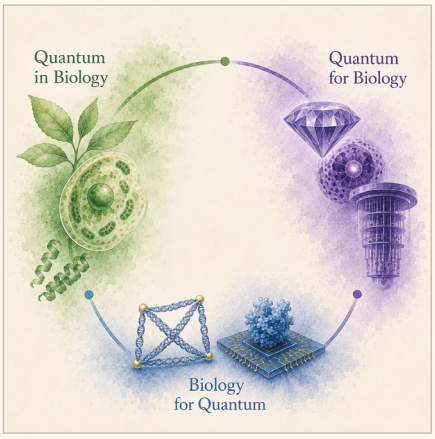
George Freeman FRSA with Lord (Paul) Drayson, his predecessor Minister of State for Science and Space

The ISHRC is led by George Freeman FRSA and Geoffrey Guy who, along with Alistair Nunn and Rhys Mould, attended the Foundation for Science and Technology UK Space Policy event at the Royal Society in April. The event brought together leaders from science, policy, industry, and academia to discuss the future of the UK space sector and the strategic importance of space research and innovation. George Freeman was one of four former Space Ministers engaged in discussions on the evolution, challenges, and opportunities in global space policy.

UK Space Policy event at the Royal Society, London

We are currently inviting funding partners to participate in the collaboration. If you or your organisation are interested in supporting the initiative, please contact Nina Copping at **n.copping@theguyfoundation.org**.

New Discussion Paper



The Guy Foundation's science communications advisor, Betony Adams, was pleased to contribute to a new paper posted recently on the physics arXiv: **Quantum in Biology, Quantum for Biology, and Biology for Quantum: Mapping the Evidence and the Road Ahead**. Led by Lea Gassab, Provost Postdoctoral Scholar in Travis Craddock's Quantum Neurobiology Lab, the paper provides a timely and highly practical synthesis of the different ways in which quantum science and biology intersect.

Rather than attempting an exhaustive catalogue of quantum biology research, the review organises the field into three complementary directions: 'quantum in biology' (such as tunnelling in enzymes and radical-pair spin chemistry), 'quantum for biology' (quantum-enabled sensing, imaging, and inference tools), and 'biology for quantum' (using biomolecular principles to improve quantum technologies and devices).

This structured perspective strongly resonates with the approach taken at QuEBS 2026 this June, where the programme was organised around these same three directions of interaction between biology and quantum science. (For a report on QuEBS see our **Conferences & Meetings** section.)

The paper takes a balanced and evidence-focused approach. For each topic it asks what the actual mechanistic or technological claim is, which quantum resource is involved, what the strongest experiments currently demonstrate, which classical explanations

remain competitive, and what future benchmark experiments would most clearly strengthen confidence in the field.

For anyone working at – or simply curious about – the interface between quantum physics, biology, medicine, and technology, the paper offers an accessible and valuable overview of where the field currently stands and where it may be heading next. The authors are also actively **welcoming feedback** ahead of formal publication.

UK-NL Workshop on Photonics in Healthcare

Geoffrey Guy, Jimmy Bell, and Rhys Mould attended the UK–NL Workshop on Photonics in Healthcare, held at the Embassy of the Kingdom of the Netherlands to the UK on 26 May. Geoffrey chaired the workshop, which brought together researchers, clinicians, translational institutes, and innovation leaders from the United Kingdom and the Netherlands. Organised by the Netherlands Innovation Network UK, the meeting explored the growing role of photonics technologies in healthcare, including applications in diagnostics, sensing, imaging, surgical guidance, monitoring, and therapeutic interventions. Discussions focused not only on technological advances, but also on the important challenges of translation, validation, and clinical adoption. The workshop also highlighted opportunities for closer UK–NL collaboration and knowledge exchange in advancing photonics-based healthcare technologies.

Welcome to New Laboratory Team Member

We are pleased to share that Matthew Tang has joined **The Guy Foundation Quantum Biology and Bioenergetics Lab**, working with Stan Botchway and Alix Bailie at the Central Laser Facility, STFC Harwell.

Matthew joins the group following his PhD studies at University of Oxford. His background in bioimaging is a valuable addition to the Foundation's goal of understanding how quantum-level processes influence biological systems, and we are excited to see his work develop.

Welcome Matthew!

In other changes, we've been sad to say farewell to two of our research colleagues – Alasdair Mackenzie and Grace Pennelli.

Dr Alasdair Mackenzie joined the Foundation's Laboratory at the Central Laser Facility in 2019 as a postdoctoral researcher, spearheading the charity's research at Harwell with Professor Stan Botchway. Alasdair made an excellent contribution to the programme and he is sorely missed.

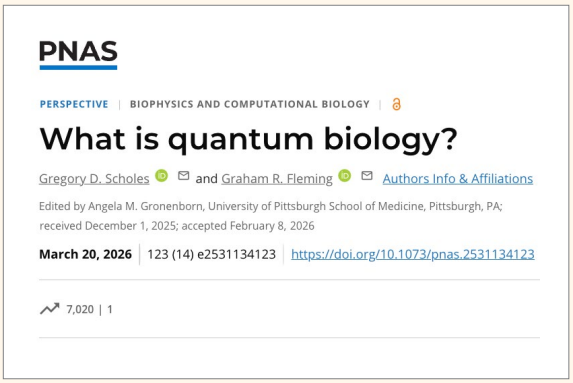
We are also greatly missing Grace Pennelli, who has worked with the team as Research Associate, undertaking valuable work on our two-year Fluorescent Light Energy (FLE) Study which is drawing to a close.

We wish Alasdair and Grace every success in their future endeavours.

Books & Papers

Journal club

For this issue's journal club, Alistair Nunn and Betony Adams have picked a selection of recent, thought-provoking papers.


PNAS

PERSPECTIVE | BIOPHYSICS AND COMPUTATIONAL BIOLOGY

What is quantum biology?

Gregory D. Scholes and Graham R. Fleming Authors Info & Affiliations

Edited by Angela M. Gronenborn, University of Pittsburgh School of Medicine, Pittsburgh, PA; received December 1, 2025; accepted February 8, 2026

March 20, 2026 | 123 (14) e2531134123 | https://doi.org/10.1073/pnas.2531134123

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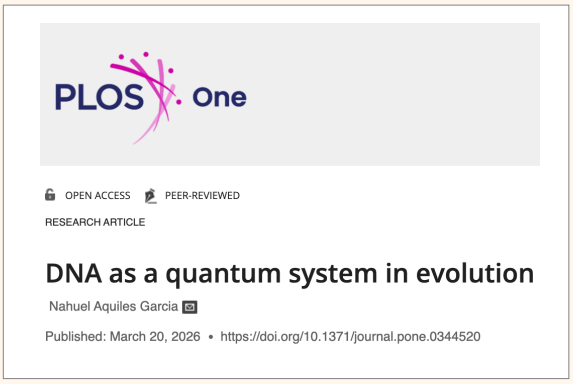

PLOS One

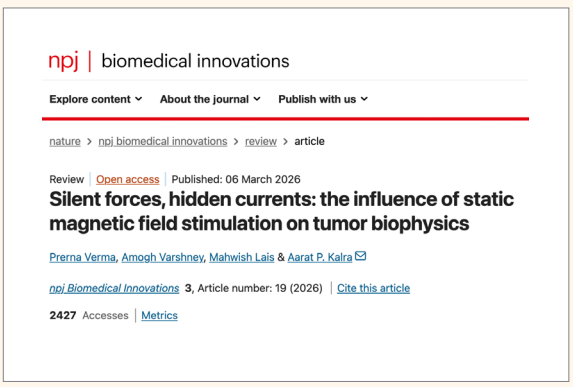
OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

DNA as a quantum system in evolution

Nahuel Aquiles Garcia

Published: March 20, 2026 • https://doi.org/10.1371/journal.pone.0344520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Review | Open access | Published: 06 March 2026

Silent forces, hidden currents: the influence of static magnetic field stimulation on tumor biophysics

Prerna Verma, Amogh Varshney, Mahwish Lais & Aarat P. Kalra

npj Biomedical Innovations 3, Article number: 19 (2026) | Cite this article

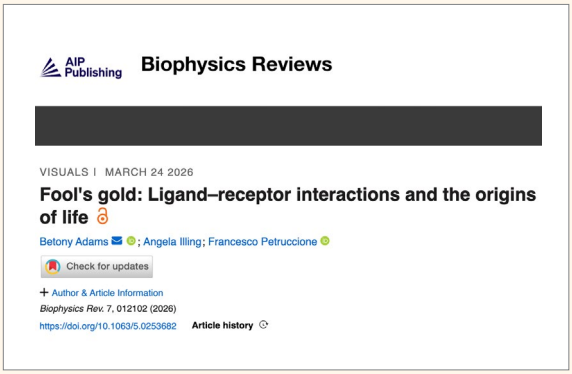
2427 Accesses | Metrics

New quantum biology papers came thick and fast this Spring! For those of you who missed our March LinkedIn post highlighting some of the fascinating new research, we have started this edition's Journal Club with a brief summary. Greg Scholes's new paper, **'What is quantum biology?'**, was published in the journal *PNAS* in March. The paper reviews the current state of the field and outlines its possible future direction. We were also delighted to see that Nahuel Garcia has published his paper, **'DNA as a quantum system in evolution'** in the journal *PLOS One*. On a more practical level, the new review article from Aarat Kalra's research group, **'Silent forces, hidden currents: the**

influence of static magnetic field stimulation on tumor biophysics', published in *npj Biomedical Innovations*, examines static magnetic field (SMF) stimulation as a potential electroceutical approach to cancer treatment.

We are delighted to highlight two new papers by Foundation faculty. Ifigeneia Kalampouka's recent paper **'Light talks: The role of biophoton in cellular communication'**, published in the *International Review of Neurobiology*, revisits the subject of biophotons from the neural perspective. Biophoton research has advanced significantly since Alexander Gurwitsch made his first observations. It is now established that these emissions arise from processes involving reactive oxygen species and excited molecules during cellular respiration. In the brain, their emission levels appear to track neural activity, metabolic changes, and oxidative stress, with potential uses in monitoring neurological health and cognitive function. With the advancement of biophoton detection technologies, there is growing interest in how these emissions might be used as indicators and modulators of cellular health.

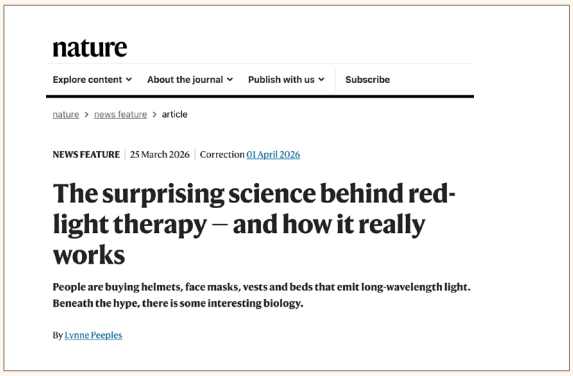
Betony Adams recently had a paper published in the journal *Biophysics Reviews*. The paper, **'Fool's gold: Ligand-receptor interactions and the origins of life'**, explores the origins of life through the lens of ligand-receptor interactions, arguing



that early prebiotic chemistry likely relied on metal-catalysed redox reactions – particularly involving iron-sulphur minerals – before enzymes existed. It proposes that binding affinity between simple molecules acted as a primitive form of natural selection, driving the formation of increasingly complex, autocatalytic systems.

Building on this, the authors connect early chemistry to modern biology by suggesting that ligand-receptor interactions may involve electron transfer processes, potentially via quantum mechanisms such as electron tunnelling, with structural features like disulphide bonds playing key redox roles. Although still speculative, the new paper argues that the electronic properties of biomolecules – especially conductivity modulated by binding – could provide new insights into receptor function, drug efficacy, and viral infection, concluding that ligand-receptor interactions are fundamentally linked to both the origins of life and contemporary biological processes.

After the success of the Autumn Series on Light we were excited to see both Glen Jeffrey and Bob Fosbury quoted in a recent news feature in *Nature*: **'The surprising science behind red-light therapy – and how it really works'**. Photobiomodulation has occupied a mostly fringe position in established scientific dialogue and is it very encouraging to see it


nature

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nature > news feature > article

NEWS FEATURE | 25 March 2026 | Correction 01 April 2026

The surprising science behind red-light therapy — and how it really works

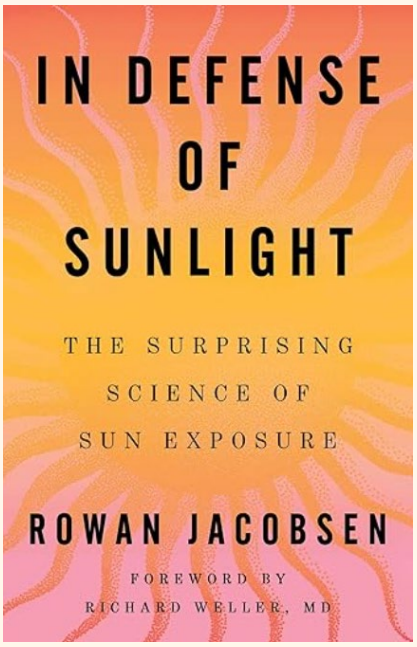
People are buying helmets, face masks, vests and beds that emit long-wavelength light. Beneath the hype, there is some interesting biology.

By Lynne Peeples

take centre stage in such a well-respected journal. The article outlined how – though caution should be exercised in the face of misplaced hype – clinical studies now support benefits across a range of conditions, from wound healing and neuropathy to retinal and neurological disorders. Scientists are also increasingly focusing on mitochondria as a key mechanism, with specific wavelengths thought to enhance cellular energy production and reduce inflammation.

Many of the themes of the article echoed those raised in the Autumn Series, including the possibility that modern indoor lifestyles deprive humans of beneficial light exposure. Although many questions remain around dosing, mechanisms, and efficacy, the field of photobiomodulation is expanding, prompting new attention to the role of light in human health.

Book corner



For this issue's book corner Alistair Nunn reviews Rowan Jacobsen's latest book ***In Defense of Sunlight: The Surprising Science of Sun Exposure***, published 16 June in the US and 16 July in the UK, by Scribner. Rowan attended the Foundation's 2025 Autumn Series on Light and his book includes a foreword by Richard Weller, whose fascinating Autumn Series talk is available to watch on The Guy Foundation **website** and **YouTube channel**.

In Defense of Sunlight: The Surprising Science of Sun Exposure, by Rowan Jacobsen

“ Very simply, this is a terrific book – well written, well researched, and genuinely thought-provoking. It is a must-read, and it will likely change the way you think about light, health, and wellbeing.

The author begins with a familiar observation: we don't seem to be as happy or as healthy during winter, even when maintaining good diet and exercise habits. He then develops a compelling case that sunlight plays a far more fundamental role in human health than is often recognised.

He situates this within an evolutionary framework, noting that humans evolved under intense equatorial sunlight in Africa and that skin pigmentation adapted as populations migrated, reducing

melanin in lighter-skinned groups to maintain sufficient light exposure at higher latitudes. This biological history underscores the idea that our physiology remains closely tuned to natural light environments.

Jacobsen also engages judiciously with the science. For instance, he acknowledges concerns around ultraviolet exposure and skin cancer, but argues that public discussion has often become imbalanced, with risk overemphasised at the expense of broader context, highlighting evidence that, beyond vitamin D, appropriate sunlight exposure may support immune function, regulate blood pressure, and improve overall wellbeing.

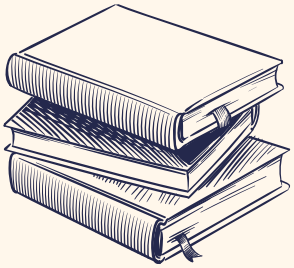
The book brings together research, historical perspective, and expert interviews, alongside the author's own experiments in changing his lifestyle to spend more time outdoors and align more closely with natural light cycles. In contrast to modern indoor environments – often lacking appropriate spectral and temporal light cues – he suggests that disrupted circadian rhythms may play an underappreciated role in declining health.

He finishes by making the point that putting heliotherapy into practice is very simple. We have altered our light environment and only later come to recognise its value as a therapeutic tool – suggesting that if we had preserved our natural exposure to light, we might not now need to reintroduce it as a treatment. Ultimately, Jacobsen makes a strong case that restoring healthy patterns of sunlight exposure is both simple and potentially transformative for health and wellbeing. ”

We thought we would take this opportunity to highlight some other fascinating books – both old and new – on the important role that light plays in biology. Geoffrey and Alistair recently had an interesting meeting with Foster + Partners and discovered that architect Stefan Behling had already been thinking deeply about the biological and architectural importance of sunlight almost 30 years ago. His book, **Solar Power: The Evolution of Sustainable Architecture**, looks at how solar energy and light have shaped architecture across cultures and throughout history. The book now feels remarkably prescient considering growing contemporary interest in biologically informed architecture and healthy lighting environments.

This renewed focus on light is also reflected in more recent popular science writing. In the book **Incandescent: We Need to Talk About Light**, journalist Anna Levin examines how artificial lighting has transformed modern life and what this means for health, ecology, sleep, and well-being.

If any of you have further book recommendations on this topic, we would be glad to hear them. You can contact **Betony Adams**.



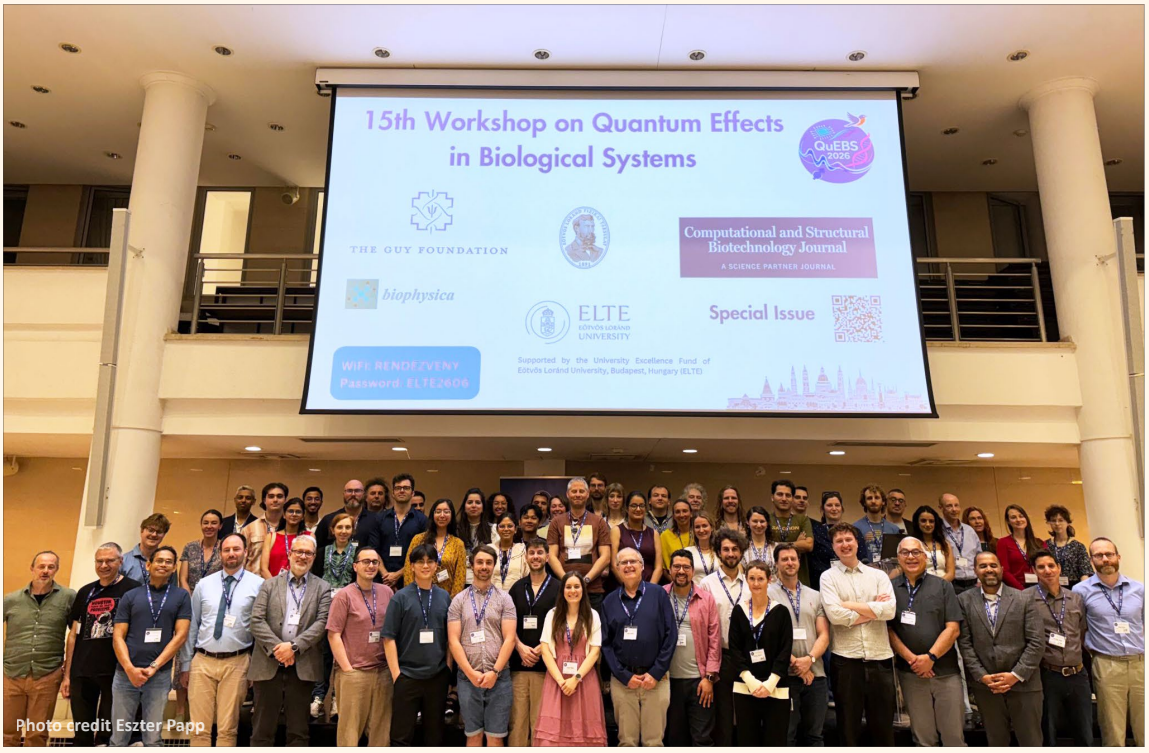
For more book reviews, see the **Useful Resources** section on our website where we have reviews of a number of books that we have enjoyed in recent years.

Conferences & Meetings

The Guy Foundation **website** includes a page dedicated to quantum biology-related conferences and meetings, both online and in person. If you have any to add, please let us know.

QuEBS, June 2026 Report

The 2026 Quantum Effects in Biological Systems (QuEBS) conference was a great success, bringing together researchers from across the globe to explore one of science's most fascinating frontiers. Hosted in the beautiful city of Budapest, the meeting provided an inspiring setting for discussions that ranged from fundamental quantum phenomena in biology to emerging applications in health, sensing, and quantum technologies. You can view videos of the talks on the **QuEBS 2026 YouTube channel**.



Participants at QuEBS 2026 in Budapest, Hungary

A highlight of this year's meeting was The Guy Foundation Keynote Lectures: 'Quantum Effects in Physiology – Life's Responses to Quantum Stimuli'. These lectures showcased the expanding contexts of quantum biology and its increasing relevance to medicine. Travis Craddock, University of Waterloo, Canada, explored how spin-dependent processes may influence biological function beyond the phenomenon of animal magnetoreception, opening new perspectives on the role of quantum effects throughout living systems.

The keynote speakers with the conference organisers and Foundation team member Betony Adams, who also presented her research at the conference. L-R: Eszter Papp, Rhys Mould, Alix Bailie, Betony Adams, Travis Craddock, Philip Kurian and Gabor Vattay

Philip Kurian, from the Quantum Biology Laboratory, Howard University, examined the diverse ways in which biological systems interact with light, highlighting emerging evidence for quantum processes operating in contexts that extend well beyond traditional photosynthetic systems. His previous research on superradiance in microtubules was funded in part by the Foundation as part of their **research programme**.

Philip commented:

> “Having the extra time of the keynote to deep-dive into the work we’ve been doing over the last 10 years was really beneficial.”

Rhys Mould and Alix Bailie – from The Guy Foundation Quantum Biology and Bioenergetics Laboratory at the University of Westminster and Central Laser Facility, Harwell – concluded the keynote series. Rhys outlined his research into ultraweak photon emission as well as the effects of hypomagnetic fields on living organisms, while Alix discussed the photophysics of the important metabolic coenzyme, NADH. Both presentations discussed the application of quantum approaches to health and medicine.

An evening view of the Danube

A rainbow illuminates the beautiful city of Budapest

The conference organisers, particularly Eszter Papp and Gábor Vattay, deserve special thanks for delivering such a well-organised and welcoming event. Their efforts ensured a productive and enjoyable meeting that fostered collaboration across disciplines and continents. We look forward to seeing everyone again at QuEBS 2027, which is proposed to take place in Stellenbosch, South Africa. To read more about the Stellenbosch quantum biology group see our **View from the Lab section**.

ALIFE, August 2026

The ALIFE special session, *Quantum Biology and Artificial Life – New Physical Principles for Living Systems*, will take place from **17 – 21 August 2026** in Waterloo, Canada. For more information visit their **website**.

Quantum Biology: from Molecules to Medicine, July 2026

The Quantum Biology: from Molecules to Medicine course will take place from **31 July – 2 August 2026** at the IIT Delhi, India. For more information visit their **website**.

CIBB, September 2026

The 21st International Conference on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB 2026) will take place from **2 – 4 September 2026** at Sapienza University of Rome, Italy. The conference will host a special session titled *Quantum Artificial Intelligence for Bioinformatics and Biostatistics: Theory, Algorithms, and Applications* focusing on the intersection of quantum computing, AI, and computational biology. For more information visit their **website**.

Molecular Biophysics Workshop, September 2026

The Molecular Biophysics Workshop (MBW26) will take place from **27 September – 1 October 2026** in Matsushima, Japan. We are delighted that Rhys Mould, The Guy Foundation Quantum Biology and Bioenergetics Laboratory, has been invited to present. For more information visit their **website**.

Gordon Research Conference, March 2027

The 2027 Gordon Research Conference (GRC) on Quantum Biology has had a change of venue. It will take place **7 – 12 March 2027**, at the Holiday Inn Oxnard, Ventura, USA, with a registration deadline of **7 February 2027**. Abstract submission is now open. For more details see their **website**.

Dates for your Diary

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2026 Autumn Series Programme

Bioenergetics, Health and the Quantum Environment

The 2026 Autumn Series aims to bridge scales: from quantum and molecular processes within mitochondrial electron transport chains, to whole-organism outcomes such as disease, cognition, and ageing. By exploring how disruptions in bioenergetics give rise to systemic dysfunction, the series links microscopic mechanisms to macroscopic health. We will also explore how changes in the quantum environment – light exposure, lifestyle, technology, the built environment, and even space travel – affect human health by acting on biology at its most fundamental level.

Session 1

Mitochondrial origins

Wednesday 23 September

Professor Nick Lane, UCL

Session 2

The electron transport chain

Wednesday 7 October

Professor Wayne Frasch, Arizona State University

Programme continued on next page

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2026 Autumn Series Programme

Bioenergetics, Health and the Quantum Environment

Session 3

Mitochondria and health

Wednesday 21 October

Professor Doug Wallace, The Children's Hospital of Philadelphia and The University of Pennsylvania

Dr Lance Becker, Northwell Health

Session 4

Mitochondria and brain energetics

Wednesday 4 November

Dr Nirosha Murugan, Wilfrid Laurier University

Session 5

The quantum mitochondrion

Wednesday 18 November

Professor Alistair Nunn, The Guy Foundation and University of Westminster

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Session 6

Implications for health and disease – roundtable session

Wednesday 2 December

Dr Betony Adams, The Guy Foundation and Stellenbosch University

Professor Alistair Nunn, The Guy Foundation and University of Westminster

Followed by roundtable discussion

All sessions 15:00hrs – 17:00hrs UK-time on Zoom

Please contact **n.copping@theguyfoundation.org** to register

Community News

Biophotoniq

We were very pleased to hear about a new initiative from Michal Cifra and colleagues: **Biophotoniq**, an international research network focused on the study of biological chemiluminescence, often referred to as biophotons. Biophoton research investigates the ultra-weak light emissions produced by living systems, a phenomenon that has attracted growing interest across biophysics, quantum biology, redox biology, and biomedical imaging. One of the major goals of the new network is to help bring greater scientific visibility, methodological rigour, and coordination to what remains an interdisciplinary and sometimes fragmented field.

Biophotoniq was officially launched during the Quantum Biology Forum 2026, and a recording of the presentation is available **here**. The initiative aims to provide important community resources while facilitating collaborations, joint grant proposals, translational partnerships, and student exchange opportunities. The network is open to anyone interested in the field, and researchers, students, practitioners, funders, investors, and companies are warmly **invited to join**.

The Biophotoniq initiative also features Dr Ela Svetla, an AI-based science communication chatbot focused on biophotons, redox biology, and related interdisciplinary topics. More information is available **here**.

Ela and the Biophotoniq community are also active online on social media:

- **Biophotoniq LinkedIn**
- **Biophotoniq Bluesky**
- **Biophotoniq Facebook**
- **Dr Ela Svetla on Bluesky**

Community discussion and updates are additionally available on Telegram (links work best directly from cell phone):

- **Community discussion group**
- **Announcement channel**
- **Direct messaging with Dr. Ela Svetla bot**

We'd also like to highlight that Michal has produced a number of **short explanatory videos** on a range of fascinating scientific questions, which he shares on LinkedIn and are well worth a watch.

Dr Michal Cifra

Alive: A Conversation with Nick Lane

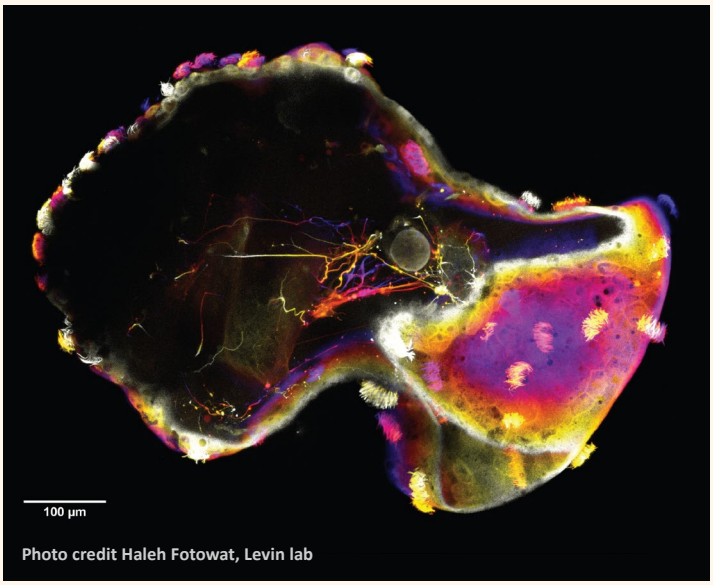
Professor Nick Lane, UCL

Nick Lane – who will be speaking as part of The Guy Foundation 2026 Autumn Series on bioenergetics – is participating in an exciting **public discussion** at the Royal Institution in London and online on 16 July. Nick will join author Melanie Challenger and science writer Philip Ball to discuss some of the deepest questions about the nature of life itself, ranging from the energetic foundations of living organisms to emerging ideas about agency and individuality in biology.

These themes resonate strongly with many of the questions currently animating research across bioenergetics and quantum biology, particularly growing interest in how metabolism, energy flow, and environmental interaction shape biological organisation at multiple scales.

The event will take place in the Royal Institution theatre with a simultaneous livestream for online audiences. Further details can be found **here**.

From Xenobots to Neurobots



An example of a neurobot

Regular readers will know that we have previously highlighted the groundbreaking work of Michael Levin, close collaborator of The Guy Foundation, whose research into 'living robots' – such as xenobots and anthrobots – has challenged conventional distinctions between organisms and machines. Levin and colleagues have now taken this work a step further by developing 'neurobots': xenobot-like biological constructs incorporating rudimentary neural tissue. The research explores how the addition of simple nervous-system components changes the behaviour of these self-organising living systems.

Beyond the scientific advance itself, the work raises increasingly important questions for the future. We are witnessing the rapid evolution of artificial intelligence, and debates about what constitutes life and consciousness are becoming central to both science and philosophy. Levin's work continues to push these questions into experimentally testable territory, offering a striking glimpse into how living systems can self-organise in unexpected ways outside conventional evolutionary contexts.

You can read a popular article about the research **here**, or find the academic paper **here**.

Essay Prize

The Foundational Questions Institute and Paradox Science Institute have announced the winners of their 2026 essay competition, 'How Quantum is Life?', awarding $53,000 across 97 global entries. Joint first prize went to Connor Thompson and Samuel Morriss, whose essays explore quantum effects in viruses and human skin, respectively, with implications for evolution and medicine. The judges highlighted how the competition could play a role in advancing quantum biology and fostering new interdisciplinary ideas, by bringing these ideas to a wider audience. You can read the winning essays **here**.

View from the Lab

In what is an increasingly online world, we enjoy taking a peek out of your laboratory windows at the landscapes of our quantum biology community. For this edition we feature the **Quantum@SUN** group at Stellenbosch University in South Africa.

The group, led by Professor Francesco Petruccione – who is also Director of South Africa's **National Institute for Theoretical and Computational Sciences** (NITheCS) – brings together a broad spectrum of research interests, from quantum computing and machine learning to emerging questions in quantum biology. The group has grown into a dynamic, interdisciplinary environment of researchers working at the interface of quantum physics, computation, and life sciences.

Above left: The Stellenbosch quantum biology group
L-R: Tristen Gwynn, Francesco Petruccione, Betony Adams, and Abbas (Omid) Hassasfar

Above right: The Stellenbosch University library on a sunny Autumn day

Photo credit: Betony Adams

Francesco has a long history of interest in quantum biology. In 2014 he organised the 'Future of quantum biology' conference

which resulted in one of the seminal **review papers** of the field. He also hosted – in collaboration with the Foundation – the more recent 'A century of biophotons' conference which took place in Stellenbosch and has also resulted in a paper, currently in preparation.

A view across the main square of the Stellenbosch campus, looking towards the Physics building, where the **Quantum@SUN** group is located

Since his move to Stellenbosch from the University of KwaZulu-Natal in 2022 Francesco has added a small but growing group of quantum biology researchers to the wider **Quantum@SUN** group. Postdoctoral researcher Betony Adams, along with PhD students Abbas (Omid) Hassasfar and Tristen Gwynn, investigate how spin chemistry might underlie phenomena ranging from avian magnetoreception and quantum sensing to neural activity and brain function. They also study quantum models of drug binding and viral

infection, where ideas such as electron tunnelling are being investigated as possible contributors to ligand-receptor binding.

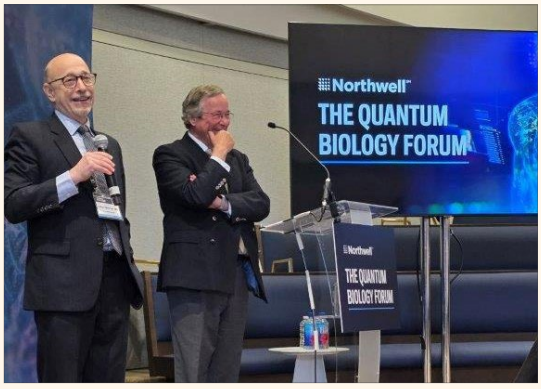
What makes the group distinctive is its integration of quantum biology within a broader quantum technology programme, including quantum machine learning, reflecting a broader shift toward understanding life as a complex information-processing system that may, at its foundations, involve quantum processes.

To read more about the **Quantum@SUN** group see their **website**.

For a directory of **Quantum Biology Centres** across the world visit our website. If you would like to add your centre please contact **Nina Copping**.

We hope you have enjoyed reading the Quarterly Review. Please feel free to get in touch with any suggestions for future editions - **n.copping@theguyfoundation.org**.

The Guy Foundation team



Forum organiser Lance Becker (Northwell Health) introduces Geoffrey Guy before his presentation

Photo credit Rhys Mould

Alistair Nunn, Rhys Mould and Guy Foundation faculty member Nathan Babcock in Washington DC for the Quantum Biology Forum, April 2026

www.theguyfoundation.org