

THE GUY FOUNDATION

# NEWSLETTER

### March 2023

Welcome to the 3rd edition of The Guy Foundation Newsletter. We hope you enjoy reading it. Please do get in touch with any suggestions for future editions.

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#### **SPACE HEALTH RESEARCH – CALL TO ACTION**

On 1 February we held a special symposium, Advancing Terrestrial Health: Lessons from Space. The Foundation has long had an interest in how lessons from aerospace medicine might be applied to health on Earth and indeed to humans as a potentially multi-planetary species. The symposium was structured around the more general concept of non-chemical interactions in biological systems: the role that electric, magnetic and gravitational fields play, with excellent talks from Alistair Nunn, Afshin Beheshti, Michal Cifra, Mike Levin, Betony Adams, Steve Thorne and Wendy Beane. To view the talks visit our **website** or **YouTube channel**.



The topic elicited a lively and illuminating discussion. Of the various points discussed, perhaps the most conclusive was that while we have seen tremendous progress with spacecraft engineering in the last seventy years, this has not been replicated in associated biological research and our understanding of the consequences of space travel for human health remains limited.

The symposium participants agreed a great deal more research needs to be done with respect to how space travel and habitation might influence health, from a short-term perspective right through to space habitation, with the million-dollar question: do we know if we can successfully reproduce in space? We have published the **Proceedings** and invite you to send us your suggestions for research in this area. We are putting together a small working group to review these suggestions and formulate recommendations. Please send your submissions to Nina Copping **n.copping@theguyfoundation.org**.

#### **2023 SPRING SERIES – PRESENTING OUR RESEARCH STUDIES**

It is hard to believe that the 2023 Spring Series is the 7<sup>th</sup> iteration of the Foundation's biannual online lecture series. Alongside these online lectures, since the Foundation was set up five years ago, we have been curating and supporting a programme of research into aspects of quantum biology and bioenergetics. These two strands have come together in the 2023 Spring Series, where each of our collaborating research teams are presenting their work. Topics range from the interaction of light with living systems, to how molecular physiology scales



Opening session speaker Rhys Mould (right) with Ifigeneia Kalampouka (left) in The Guy Foundation Quantum Bioenergetics Laboratory at University of Westminster

to anatomical form. Each team's research works together towards a multi-scale understanding of biology that moves past the purely chemical to include the physics that underlies life. The series began on 1 March with a presentation by University of Westminster's Rhys Mould, who discussed the experimental verification of non-chemical communication in biological systems, with particular attention paid to mitochondria. The work is generating several papers and Rhys will be presenting at the GRC on Quantum Biology at the end of March. One of the aims of The Guy Foundation is to generate rigorous experimental evidence to help advance the field of quantum biology and it is wonderful to see this objective in motion. The Spring Series programme can be downloaded from The Guy Foundation website or viewed on **page 18** of the newsletter. The lectures are recorded and uploaded to the Foundation's **website** and **YouTube channel** (subscribers to the channel can request notifications when new talks are added).

### The Guy Foundation 2023 Spring Series

#### Speakers:

Dr Rhys Mould, Professor Stanley Botchway, Dr Alasdair Mackenzie, Dr Philip Kurian, Professor Michael Levin and Professor Wayne Frasch

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

The aim of our research programme has been to undertake experiments in some key areas, build a bridge between life scientists and physicists and to assist in the development of quantum biology and bioenergetics as a field. The work of the Foundation has been entirely funded to date by the support of Geoffrey and Kate Guy and we thank them for their remarkable contribution. While we are reflecting on our initial sets of results we are not awarding funding to new teams at present. We believe one of the signs of success that the value of QB research is becoming better recognised will be when more research is funded, by more funders, and as such we are absolutely delighted that Philip Kurian has recently been successful in attracting a large grant from the Alfred P. Sloan Foundation.

# MAJOR GRANT AWARDED TO THE QUANTUM BIOLOGY LAB AT HOWARD UNIVERSITY

What does it mean to have agency or purpose? And what does this mean in the context of living systems at varying levels of complexity? In the Spring of 2021, The Guy Foundation held an online lecture series which focused on how microscopic events result in macroscopic outcomes. Among the speakers were Philip Kurian, Founding Director of the Quantum Biology Laboratory at Howard University, and Masashi Aono, from Amoeba Energy and Keio University. Philip Kurian, a Guy Foundation Scientific Advisor, had recommended Dr Aono as a speaker, after being introduced to his research in a discussion with Wayne Frasch. Masashi Aono gave a fascinating presentation on how the syncytial slime mold – *Physarum polycephalum* – dynamically balances photosensitive behaviours and chemoattraction to food, and how this dynamic oscillatory response can be leveraged to achieve high-quality solutions to computationally expensive optimisation problems. He also touched on how this functional ability is related to the morphology of microtubule and other cytoskeletal networks (the video recording of the talk is available on our website here.

Since 2020 Philip Kurian and the Quantum Biology Laboratory have been working with The Guy Foundation on a **project** to investigate how light interacts with living systems, specifically with respect to



superradiance in microtubule architectures. Given his interest in the quantum optical properties of cytoskeletal networks, and the mounting evidence that these networks in *Physarum* are implicated in agential decision-making, he was intrigued to see whether this photosensitive behaviour might be effectively modelled, predicted, and tracked in a sufficiently simple organism that exhibits the robust ability to sense its environment and even reintegrate after being sheared into fragments. The ultimate questions to be addressed – How do living systems arise from nonliving matter? How does life organize from biomolecular building blocks? What is the role that light plays in our definitions of life itself? – will guide the development of multiscale models of *Physarum*'s problem-solving behaviour.



Image from the Alfred P. Sloan Foundation Matter-to-Life programme.

We are delighted that Dr Kurian has been successful in securing a grant award of US\$1M from the Alfred P. Sloan Foundation Matter-to-Life programme for this new project, which will be undertaken in collaboration with Professor Mike Levin, Distinguished Professor

of Biology, Director of the Tufts Center for Regenerative and Developmental Biology and himself a Guy Foundation research collaborator.

Dr Kurian remarked:

66 The QBL is very grateful to The Guy Foundation for their substantial investment in our lab over the last few years, as well as for the novel discussions they initiate through their online seminars, which have helped us to form strong research connections and think in broad-minded,

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innovative ways. With the QBL approaching the end of its Guy Foundation project, we were able to build on the conversations and contacts we have made through the Foundation, with the body of work we have generated, to form a strong case for support – resulting in the Sloan grant – which will take us some way towards achieving our long-term vision. As Schrödinger, Aristotle, and many others in and outside the West have asked, What is Life? Exploring such old questions from novel vantage points is enhanced by the Foundation's growing network of scientists, who are generating knowledge at the intersections of biology, chemistry, and physics. We greatly enjoy being part of this dynamic group and look forward to seeing deepened collaborations emerge over time. <sup>99</sup>

The Foundation's Founder and Chairman, Professor Geoffrey Guy, commented:

One of the aims of The Guy Foundation is to foster collaboration among scientists who have common interests but who may not otherwise have met. It is particularly pleasing to have played a key role in facilitating the conversation between this renowned physicist and biologist, and providing the ecosystem of collaborators with adjacent expertise for this exciting new project and partnership. It reinvigorates our Foundation's vision of the polymaths of old. It is wonderful to see these objectives realised with Dr Kurian's fascinating work, and we congratulate him on leveraging such a substantial grant. <sup>99</sup>

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#### **THE GUY FOUNDATION ONION PRIZE 2023**

Die Natur des spezifischen Erregers der Zellteilung Von Alexador Garwitsch, Proteur zu der Uetrestitt Statospei (Sym).

[er Mitwickung der Herren Stad, nat. S. Grähje und S. Sali Nit 11 Textabbildungen und 5 Tabellen. (Eingegengen am 20. März 1973.)

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This year marks the centenary of the scientist Alexander Gurwitsch's seminal experiment to demonstrate the presence of non-chemical communication in onion roots. Subsequently hypothesised to be electromagnetic radiation, this came to be known as biophotons. Gurwitsch's original results proved difficult to recreate until the invention of more sensitive photon detectors. To celebrate this centenary, The Guy Foundation is sponsoring a competition to reward the best, or most novel or imaginative, replication / reinterpretation of Gurwitsch's original experiment. The

winner will be awarded The Guy Foundation Onion Prize (US\$5,000). The deadline for entries is **Tuesday 26 September 2023**. For more details please visit the News page on our **website**. Please help us to spread the word by circulating details of the competition to your contacts and networks. We are particularly encouraging entries from early career researchers, who might benefit from both the prize and publicity.

#### **QB** RESOURCES – YOUR IDEAS

We are keen to provide useful resources for those interested in quantum biology research and as part of this we have developed a list of **quantum biology centres** with a link to their websites, as well as whether they offer PhD programmes or host online scientific seminars. If you would like your centre to be added please let us know. We have also developed a **glossary**, please let us know of any terms it would be useful for us to add, or indeed any other resources that you would find helpful in your work.

### OUR LOGO - DID YOU KNOW?

We were recently asked about the origin of our logo and we thought you might be interested to hear more about it. As many of you will know the serpent-entwined staff is commonly associated with medical practise. Among other things, the serpent represents the dual role of the physician: mediator of



life and death, dispenser of the carefully calibrated poison that acts as a medicine.

In The Guy Foundation logo this duality is reimagined in the context of quantum mechanics, a theory that itself reimagined the physical world as fundamentally dual, behaving sometimes as a wave and sometimes as a particle. The role that quantum physics may play in advancing medicine is the central tenet of

The Guy Foundation. The rod takes on the form of psi ( $\psi$ ), made famous by Schrodinger's equation, which describes the behaviour of a quantum mechanical system. When viewed as a static image, both the particles (represented by dots) and waves (represented by the rod - psi,) are showing together in the logo, but when viewing the animated version (such as on the 'Our work' page of our **website**, as the cursor passes over it, the logo collapses variously from wave to particle, from particle to wave.



# BOOKS & PAPERS

#### **JOURNAL CLUB**

For this issue's journal club, Alistair Nunn and Betony Adams have picked four thought-provoking papers that have been published since the start of this year.

Cryptochrome is an important protein in the context of quantum biology, being the proposed site of magneto-sensitive radical pair reactions. The exact form of these cryptochrome based reactions is still a topic of strong debate. A recent **paper**, published in *Nature*, adds some interesting insights to this debate. The paper 'Essential elements of radical pair magnetosensitivity in *Drosophila*' reached the surprising conclusion that amino acid residues of cryptochromes in *Drosophila melanogaster* can still facilitate magnetoreception, despite lacking the FAD-binding domain and tryptophan chain, which are often seen as canonical to the radical pair compass. Indeed, increasing intracellular FAD alone is enough to potentiate both blue-light-induced and magnetic-field-dependent effects.

On the topic of magnetic fields, 'spin' is a property that defines how particles behave in a magnetic field. Definitions of quantum spin often emphasise the fact that this does not mean rotation or spin in the classical sense. We thought the 'Researcher posits that electrons do spin, thanks to their fields' piece by Whitney Clavin on Chip Sebens's work offers an interesting new angle on this old debate, found on Phys.org **here**. The Guy Foundation's recent space symposium raised a number of questions about the implications of extra-terrestrial travel for human health. It seems the fundamental change in environment that this travel entails can have significant effects on the body. A new **paper** by Steven Jillings et al suggests, however, that the human brain is also sensitive to changes such as microgravity conditions, reflected by changes to the connectivity of certain parts of the brain. The implication is a profound one. A better understanding of how new environments influence physiology and neurology will be integral to the health and cognition of those astronauts exploring these new worlds.

And finally, on a lighter note, we enjoyed the recent flurry of emails in the Big Quantum group around the issue of asking 'stupid' questions. To add to this discussion – with thanks to Marco Saachi at University of Surrey @drmarcosacchi for Tweeting it – this **essay** in the *Journal of Cell Science* elaborates on the importance of stupidity in scientific research. The trick, perhaps, is to be productively stupid. To chip away – even in the face of failure – at the vast and wonderful edifice of the unknown.

#### **SPECIAL ISSUE REMINDER**

A reminder that the "Molecular Logics in Human Neuroscience" Special Issue of The International Journal of Molecular



*Sciences*, guest edited by Dr Kevin Clark, is inviting submissions involving classical, quantum, and hybrid classical-quantum biomolecular logics. Visit the special issue **website** for further details. The deadline is **31 May 2023**.

# Book corner



For this issue's book corner, Professor Alistair Nunn, The Guy Foundation's Director of Science, has written a review of *We are Electric* by Sally Adee, published in February 2023.

# WE ARE ELECTRIC BY SALLY ADEE

Sally Adee's interest in the world of biological electricity began when she experienced a transcranial direct current stimulation (tDCS) technique aimed at enhancing people's ability to become sharp shooters. While immersed in a virtual reality set up, her ability dramatically improved. The experience spurred her to investigate the world of bioelectricity. The result is this book, which delves into the deep history and speculates on the eventual future of bioelectricity and suggests that understanding the "electrome" could play a pivotal role in the evolution of medicine.

Overall, this is a very well written book, with an easy style that should enable any reader to engage in the subject and learn something. It is not a deep scientific treatise on the subject, but it is referenced, and cites many of the main sources of literature. It is also clear that the author has taken the time to talk to some of the leading scientists in the area, such as Mike Levin.

What this book does very well is to discuss the main protagonists in history and explain how the concepts fell in an out of favour. For instance, the battle between Volta and Luigi Galvani in the 18th Century, and whether the newly discovered electricity should be viewed from the point of view of physics or biology – it all shows how good ideas can sometimes backfire when pushed too hard, risking the subject becoming viewed as quackery. Alas, this is something that is still very much evident today, resulting in some fields taking many years to come back "in vogue". Indeed, this particular battle between physicists and biologists about the role of electricity in biology was repeated both in the 19th and 20th Centuries and was made worse by discoveries in genetics and pharmacology, which tended to draw the focus away from bioelectricity. But in the 21st Century, as the author suggests, the importance of bioelectricity is being revisited with new vigour.

The book skips over the work of some key players such as Alexander Gurwitsch, who introduced the concept of the morphogenetic field in the 1920s, and Robert Becker – who pioneered research into regeneration and electricity in the middle part of the 20th Century. Important contributions to the understanding of bio-electromagnetism have also been made by scientists such as Herbert Fröhlich and Jiři Porkorný and others, such as Nick Lane, have discussed why we are electric beings in the first place and how this may have arisen. Although it could be argued the contributions of these pioneers may have been at a deeper level than the target audience of the book, one wonders if a mention would have been helpful in pointing the reader towards the world of quantum biology.

The final chapter is perhaps the most thought provoking, as it may well encourage the reader to view things differently – and this

would apply both to the lay and the professional scientific reader. As Mike Levin says, we need to stop thinking about genetics as determining body shape, but instead think about the morphogenetic field and the bioelectric code it may contain. The key here is that there is now a lot of evidence to suggest that it is ion channels, and gap junctions, that are playing a central role in generating these morphogenetic fields. Taking this a step further, it therefore suggests that any drug that modulates these channels is thus altering the morphogenetic field, to either harmful or helpful effect. It is also interesting that many anaesthetics alter ion channel function, which might tell us something about the nature of consciousness.

In summary, this is a book that is definitely worth reading, for both the lay person and the more focussed researcher in search of a better understanding of the history of this field. From the scientific perspective, it reinforces the simple fact that life is all about the dissipation of energy and that structure emerges from the movement of fundamental particles, such as electrons and protons, which of course means fields must be involved. From a personal perspective, this book highlights a gap in our knowledge, and perhaps a way of thinking and a scientific approach, as it has not addressed the relationship between role of electricity in life and how it is powered. We evolved from prokaryotes, who in turn, evolved from abiotic conditions on the early earth: understanding this could well help explain the origins of bioelectricity itself.

#### **Alistair Nunn**

# Conferences & Meetings

#### **GORDON RESEARCH CONFERENCE ON QUANTUM BIOLOGY**



The inaugural GRC on Quantum Biology is just around the corner. The conference, which takes place in Galveston, Texas, from 19 – 24 March, will focus on emerging methodologies for investigating quantum effects in biology. A number of Guy Foundation researchers will be

taking part in various capacities, from chairing sessions to oral and poster presentations. The speaker programme is now available **here** and looks full of interesting presentations from both established and emerging researchers. The meeting will no doubt play host to many more informal discussions too and we look forward to seeing many of you there.

#### **PHYSICS OF LIFE CONFERENCE**



Following close on the heels of the GRC, the Physics of Life conference is on 27 – 30 March 2023 in Harrogate, UK. While not centred on quantum effects, the conference will feature parallel

presentations on many fascinating subjects at the interface of physics and biology. The deadline for abstract submission has been extended until 20 March 2023 and further details on how to submit can be found **here**.

#### **MITOX CONFERENCE**



Image courtesy of Ezster Dombi

Registration has opened for this year's MitOX conference, the annual meeting for researchers with an interest in mitochondria, organised by Karl Morten and colleagues at the Nuffield Department of Women's & Reproductive Health. The conference is being held on Friday 21 April

as a hybrid event, ie attendance both online and in person at the John Radcliffe Hospital, University of Oxford. The one-day conference will comprise short talks and a face-to-face poster session spanning cancer metabolism, neuroscience, diabetes, mitochondrial disorders and general mitochondrial biology.

To register for an online or in-person place, please visit the conference website **here**. Attending online is free of charge and the in-person registration fee is £35 (£25 students). The deadline for abstract submission is **Monday 20 March**. Registration closes on **1st April**.

#### **SCIENCE OF CONSCIOUSNESS CONFERENCE**

The philosopher David Chalmers is perhaps most famous for first describing what is often referred to as the 'hard problem' of consciousness, a problem that for the most part remains unanswered. The 2023 **Science of Consciousness** conference will feature Chalmers as keynote speaker, along with renowned neuroscientist Christof Koch and Nobel Prize winning physicist Roger Penrose. The conference will take place from 23 – 28 May in Taormina, Sicily.

In its 29th year this meeting focuses on interdisciplinary research – conceptual, empirical, cultural, artistic – that may shed some light

on the question of consciousness. Quantum biology will be well represented, with invited speakers that include Roger Penrose, Stuart Hameroff, Jim Al-Khalili, Johnjoe McFadden, Travis Craddock and Guy Foundation research collaborator Mike Levin. Details of the programme can be found on the conference **website**. The deadline for abstracts and for registration have passed but Betony Adams is attending and looks forward to reporting back in the next issue.

# QUEBS 2023

The annual **Quantum Effects in Biological Systems** (QuEBS) meeting will take place from 26 – 30 June 2023 at the University of Surrey, UK. The programme will comprise a diverse range of talks, including topics on tunnelling in enzymes, exciton and charge transfer dynamics in photosynthetic complexes, and the magnetic sense of animals. Speakers include Clarice Aiello, Judith Klinman, Alexandra Olaya-Castro, Sam Hay, Suzanna Huelga, Kominis Iannis, Nirosha Murugan and Jonathan Woodward.

Keep an eye on the **conference website** as information on abstract submissions and registration will be available soon.

### **BIG QUANTUM MEETINGS**

The Big Quantum meetings, a joint venture between the QuBiT Lab at UCLA and the University of Surrey's Leverhulme Centre, have proven to be a great success. The new programme for these weekly meetings, from March to August 2023, has just been released and is available **here**.

# If you have conferences or meetings for us to include in the newsletter, please let us know.

# DATES FOR YOUR DIARY



THE GUY FOUNDATION

#### **2023 SPRING SERIES PROGRAMME**

Session 1: Wednesday 1 March **The role of biophotonics and electromagnetic fields in cellular communications and bioenergetics** Dr Rhys Mould, Research Centre for Optimal Health, University of

Westminster | Video recording available here

Session 2: Wednesday 15 March

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

Professor Stanley Botchway and Dr Alasdair Mackenzie, Central Laser Facility, UK Research & Innovation / Science and Technology Facilities Council, Harwell

Session 3: Wednesday 26 April

**Cooperative and coherent quantum phenomena in the life sciences** Dr Philip Kurian, Quantum Biology Laboratory, Howard University

Session 4: Wednesday 10 May

From molecular physiology to anatomical form Professor Michael Levin and Professor Wayne Frasch, Allen Discovery Centre at Tufts University and Arizona State University

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

	BIG QUANTUM BIOLOGY MEETINGS
	HOSTED BY UCLA AND UNIVERSITY OF SURREY
March 30	Mitochondria: role in the evolution, physical principles of
	operations, and inspirations for future research
	Lev G. Murokh
April 13	High-resolution mid-infrared molecular spectroscopy for
	precision measurements and tests of fundamental physics
	Benoit Darquie
April 20	Quantum life science: nanoscale quantum biosensors,
	quantum hyperpolarized MRI, and quantum
	biology/biotechnology
	Youshinobou Baba
April 27	Quantum sensors for neurology: non-invasive measurement
	of brain currents and muscle functions
	Thomas Middelmann
May 4	Enhancing macromolecular design approaches with
	quantum computing and quantum chemistry
	Vikram Mulligan
May 11	Quantum diamond NMR at the scale of single cells
	Ron Walsworth
May 18	Schroedinger's bacteria: implications for physics and
	biology
	Vlatko Vedral
May 25	Make MRI accessible to all with an ultrasensitive SQUID
	detection system
	Dimitri Labat
June 1	Investigation of magnetic field-sensitive flavin
	photochemistry with high-sensitivity microspectroscopy
	Lewis Antill
June 8	Interfacing coherent qubits with biological targets
	Peter Maurer
June 15	Magnetic control of emissivity in multichromophoric
	molecular systems
	Seigei Vinogradov

# See the Big Quantum meetings website for the Zoom details

# JOB OPPORTUNITIES

# POSTDOCTORAL POSITION IN QUANTUM PHYSICS AND NETWORK DYNAMICS

The **Quantum Biology Laboratory** at Howard University has advertised a **postdoctoral position** to study how multiscale photoactive processes coordinate structure and dynamics in the agential decision-making behavior of the model organism *Physarum polycephalum*. This full-time annual appointment funded by the **Alfred P. Sloan Foundation Matter-to-Life Program** would be at a salary commensurate with experience, and is potentially renewable for up to three years. The notional start date for this position is in May 2023. A CV, cover letter, and three references (including one from Ph.D. supervisor, one from current immediate supervisor if different, and one from a senior scientific collaborator) should be submitted to **quantumbiolab@howard.edu** by **Friday 28 April**.

### POSTDOCTORAL POSITION IN EXPERIMENTAL BIOPHOTON RESEARCH

The University of Calgary has advertised a new postdoctoral position. The position is for a postdoctoral candidate with a background in biology/neuroscience, to work on experimental research into biophotons. This is a University of Calgary position, but the research will be primarily done at NRC in Ottawa. Further information can be found **here**. The deadline for applications is **31 March**. Candidates should send a cover letter and CV to Prof. Daniel Oblak **doblak@ucalgary.ca**.

#### March 2023

# Community News

#### THE ART OF SCIENCE

The communication of ideas is an integral part of scientific practise. The University of Surrey has announced it will take a creative approach to this communication, with a new fellowship for an artist in residence. The project aims to explore and create a new body of work responding to the theoretical and practical research of



quantumbiology and time reversibility and how it relates to the personal and cultural experiences of time and memory. University of Surrey quantum biology researcher, Youngchan Kim, will work with digital artist Alex May, to widen the context and increase public awareness of this scientific research. Read more about the project **here**.

# **QUANTUM SHORTS**



The **electron double slit experiment** (right image) demonstrated that matter has wave properties, made evident by the interference pattern that slowly emerges.

Quantum Shorts is a competition organised by the Centre for Quantum Technologies (CQT) at the National University of Singapore. The competition alternates biannually between short fiction and short film, with concepts drawn from quantum

mechanics. This year, The Guy Foundation team member and University of KwaZulu-Natal researcher Betony Adams, has been shortlisted for a film based around the electron double slit experiment and its illustration of the wave nature of matter. The film, titled **'The Heart of the Matter'**, was animated by **Angela Illing**, a graphic designer from Durban, South Africa. To watch and vote on the shortlisted films, and find out about future competitions, see details on the **Quantum Shorts website**. 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.



#### The Guy Foundation team

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

> To contact us, or to unsubscribe, please email n.copping@theguyfoundation.org

#### www.theguyfoundation.org



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