

# Physics Partners

Annual Report 2023/2024



## CONTENTS

Page 1	Foreword 2023/2024 at a glance
Page 2	Our reach
Page 3	Evaluating our impact Planet Possibility programme
Page 4-5	Highlights from the year
Page 6	Governance and staffing
Page 7	Accounts
Page 8	Strategy
Page 9	Our supporters and partners

## FOREWORD:

I am delighted to write the foreword for this year's Physics Partners annual report. As someone passionate about science education, I deeply admire the work of Physics Partners in addressing the UK's shortage of skilled physics teachers.

In a world increasingly shaped by science and technology, physics plays a critical role in unlocking opportunities and solving urgent challenges like climate change. Yet, we face a shortage of qualified physics teachers and technicians, which threatens both education quality and the UK's scientific progress.



Physics Partners is tackling this issue head-on, delivering over 3,200 hours of physics support in the past year—a 40% increase—through initiatives such as Girls in STEM Week, an exciting competition, and teacher-focused Festivals of Physics. Their commitment to inclusivity, particularly encouraging young women to explore physics, is truly inspiring.

I am proud to support this remarkable charity and look forward to seeing its continued success in nurturing the next generation of physicists.

**Dame Dr Maggie Aderin-Pocock MBE**

*Space Scientist and Science Communicator*

## 2023/2024 AT A GLANCE

3,000 training  
hours delivered

120,000  
pupils aged  
11-18 impacted

470 schools  
supported

98% of  
participants rated  
our training as  
good or excellent

96 state schools  
entered our first  
competition

10 Teaching  
GCSE Physics  
video tutorials  
added to the  
website

## OUR REACH

Physics Partners continued to expand its reach and impact in 2023-24, particularly with the establishment of three new hubs in Birmingham, funded by The Ironmongers Foundation. These hubs have engaged over 50 teachers from 30 schools across the city. The hubs provide subject knowledge and pedagogical skills, ensuring teachers can inspire and engage students more effectively. We connect teachers with local industries and academia to bridge the gap between theoretical knowledge and real-world applications.

Beyond teacher support, the Birmingham Physics Programme is committed to providing direct opportunities for students. A successful Study Day was held for 180 sixth-form students, and a Girls in STEM event is planned for the next academic year to further inspire students to pursue careers in Science, Technology, Engineering, and Mathematics (STEM).

The Birmingham programme is a blueprint for other regions. By fostering collaboration between schools, businesses, universities, and students, we are creating a sustainable framework for improving physics education across the UK.

In addition, Physics Partners also expanded its work with Multi-Academy Trusts (MATs) across the UK, including STAR Academies, Leigh MAT, and Future Academies. By engaging with MATs, we are reaching a larger network of schools, ensuring that more teachers have access to high-quality physics training, which ultimately benefits thousands of students.

Face-to-face training is an important way to provide hands-on practical support, something often avoided by less confident teachers. However, we recognise the importance of online delivery in reaching areas without local in-person support. Our online series of workshops, part of the Planet Possibility Programme, has extended our reach, providing accessible, flexible training for teachers in remote or under-served regions.

Offering a combination of in-person and online programmes ensures that Physics Partners can support a wide range of teachers, including trainees, driving improvements in physics education across the UK.



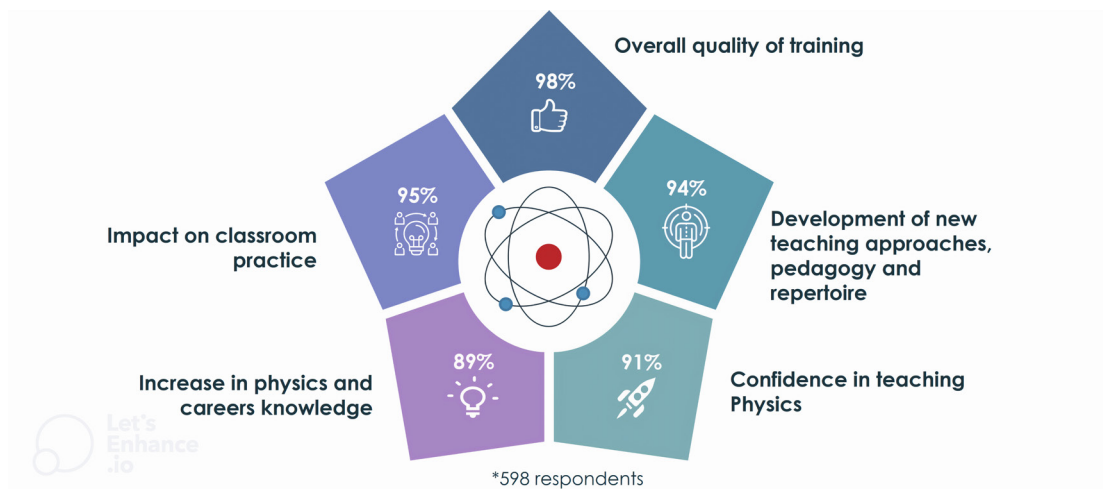
Red markers indicate schools supported in 2023-24

**Sessions have been held for teacher trainees at the following universities:**

**University of Bedford  
University of Derby  
University of Nottingham  
University of Portsmouth  
University of Southampton  
University of Sussex**

## EVALUATING OUR IMPACT

98% of attendees reported high satisfaction with the overall quality of our training, while 95% note that it would have a positive impact on their classroom practice. These immediate outcomes underscore the effectiveness of our training and its ability to enhance subject knowledge and confidence in the subject.



To deepen our understanding of the long-term impact of our work, we are currently collaborating with ImpactEd, a specialist organisation focused on evaluating educational activities. Together, we have created a revised Impact Evaluation Framework to better capture long-term outcomes. This evaluation will provide a richer, evidence-based understanding of our programmes' lasting effects on both teachers and students, ensuring we continuously improve and expand our impact.

## PLANET POSSIBILITY PROGRAMME

Physics Partners is proud to have been a contributor to the Planet Possibility programme, an initiative funded by the Institute of Physics (IOP) and delivered in collaboration with Future First. This programme has inspired and supported young people, especially those from under-represented backgrounds, to engage with physics and explore the vast opportunities within STEM fields.

Over the past two academic years, we delivered an online programme for physics teachers, focused on enhancing subject knowledge and increasing their knowledge of physics careers. We ran 150 online workshops, with more than 900 participants from 270 schools. Additionally, we developed a series of Teaching GCSE Physics videos and bite-sized career resources, further strengthening our collection of on-demand resources.

As the Planet Possibility Programme comes to a close, its impact will endure through the new partnerships formed within the consortium and the valuable resources created.

"Awesome session, well resourced and with excellent links to further reading and resources."

- Attendee on 'Gender representation and unconscious bias in physics'

"Really good ideas for demos and simulations. I feel more confident in explaining mechanical waves."

- Non-specialist attendee on 'Teaching Waves'

"Really useful session delivered by a very knowledgeable and approachable tutor. Lots of tips for supporting teaching and demonstrations"

- Non-specialist attendee on 'Teaching Electromagnetism'

## 'WHAT LIGHTS UP YOUR LOVE OF PHYSICS?' COMPETITION

**“The students were buzzing with excitement throughout the trip to CERN! I'm truly indebted to Physics Partners.”**

*Ross Robinson, Head of Science, Bishop Luffa School*

We were delighted to have been asked by Oxford University's Department of Physics to create an exciting new competition entitled 'What Lights Up Your Love of Physics?', generously supported by The John Templeton Foundation. The competition sparked plenty of enthusiasm among year 12 students, with nearly 100 schools entering. The top 10 teams were invited for a one-night residential at Merton College, filled with engaging discussions, impressive presentations, and valuable career insights. It was a wonderful couple of days, and the teachers and students were very grateful for the experience.



Charlotte, pictured with her lego clock mechanism, was the overall winner. Her prize was a fascinating trip to CERN, along with some of her classmates from Bishop Luffa School, Chichester (see front page image).

The 10 runner-up schools each received £1,000 towards physics equipment, which made a real difference to their teaching.

**“We are absolutely thrilled to have been able to purchase top-of-the-range equipment. Thank you!”**

*Fiona Watson, non-specialist physics teacher, South Essex College*

## GIRLS IN STEM EVENT

With support from the Ogden Trust, we held a week-long Girls in STEM event in Brighton and Hove at the start of the year. This was a huge success with 12 schools and over 350 students participating in inspiring careers and educational workshops. The highlight of the week was a talk and Q&A with eminent space scientist Dame Maggie Aderin-Pocock MBE.



**“The event showed me that careers in STEM for women were achievable and inspiring!”**

*Year 10 attendee*

## BIRMINGHAM STUDY DAY

In September, King Edward's School generously hosted an engaging series of lectures by professors from Birmingham University. 180 students attended, coming from eleven state schools across Birmingham. Leah-Nani Alconcel discussed her work with the Cassini spacecraft and its exploration of Saturn, Amaury Triaud shared insights from his discovery of over 100 exoplanets and the potential for detecting life beyond our solar system, and Miriam Watson explored the fascinating realm of particle physics, including the subatomic world and the Atlas Project at CERN.

The event was met with an enthusiastic reception, and we are particularly grateful to Associate Professor Dan Cottle for his support with putting together the programme.



## HUB SPOTLIGHT - NORWICH PHYSICS HUB

*We have physics hubs across the country, bringing together local schools and providing regular subject-knowledge sessions to teachers. Here is a report from our Norwich hub:*



“The University of East Anglia's (UEA's) motto, “Do Different,” is embodied in our Norwich Physics Hub. Over the past two years, we've welcomed teachers, and technicians, from diverse educational backgrounds, and fostered strong local partnerships. Each meeting focuses on a specific theme, with teachers sharing their practices, benefiting both experienced and newer educators. And all sessions include cake!

Our collaboration with UEA has also led to practical benefits, such as Year 13 students from hub schools completing their radioactivity Practical Activity Group (PAG) at UEA's engineering department.

This year's sessions have included an exam review, a visit from an inflatable planetarium, and ongoing support for teachers of Physics at all levels. A highlight was a virtual session with Lewis Matheson, from Physics Online, where we explored A-level exam boards and valuable resources.

We continue to work with UEA to enhance resources for aspiring engineers, particularly female students. Moving forward, we plan to offer industrial visits and joint events.’’

**“We create an informal, inclusive space for teachers to connect.”**

**Anne Farthing, Hub Lead for the Norwich Physics Hub**

## GOVERNANCE AND STAFFING

At the start of the academic year, the trustees appointed Sally Smith as Chief Executive, following the retirement of Bryan Berry. Sally, who has been with Physics Partners since September 2021, brings extensive experience in charity operations to the role. Freelance support was utilised as needed, notably from Suzanne Gray, who provided valuable assistance in administration and coordination. The board also welcomed a new trustee, Matt Hateley, who has a strong background in industry and is passionate about promoting STEM careers.



**Matt Hateley, Trustee**

Mechanical Engineer.  
Director at Ofwat, former  
Operations Manager at  
National Grid.



**Sally Smith, CEO**

Charity-sector senior  
manager, formerly at  
Diabetes UK.

Our longer serving trustees are:

**Isabelle Haigh (Chair):** Former Executive at National Grid ESO, Electrical Engineer, Non-executive Director and executive coach.

**Richard Thomas (Deputy Chair):** Mechanical Engineer, Swansea University Council Member, National Museum of Wales Board member and Higher Education consultant.

**Andrew Burton (Company Secretary):** Retired Head of RAF Administration and former Bursar of Sevenoaks School.

**Thomas Cookson:** Founding trustee. Former Head of King Edward VI School, Southampton; Sevenoaks School and Winchester College.

**Arpan Mehta:** Consultant neurologist and researcher at MRC Protein Phosphorylation & Ubiquitylation Unit, Dundee, working on discovering new treatments for motor neuron disease.

**Krysia Sosin:** Deputy Headteacher, Chase Community School, and non-specialist Physics teacher.

**Mary Breen:** Schools Adviser at Farrer & Co. Former Headmistress of St Mary's School, Ascot, and former Head of Physics at Eton College.

**Winston Ginsberg:** MBA Harvard Business School, and former partner and investment committee member at Towerbrook Capital.

**Emma Smart:** Head of Science at Bedford Girls' School and non-specialist Physics teacher.



## ACCOUNTS

In the financial year ending 31st August 2024, Physics Partners reported a total income of £161,761, comprising £119,438 from donations and grants, and £42,323 from income generated through partnerships such as the Planet Possibility programme and the 'What Lights Up Your Love of Physics?' competition. We are pleased to report that our donations remained consistent with the previous year, though £34,840 of this year's donations were restricted funds, designated for training in specific areas (Kent and Birmingham). Our total expenditure for the year was £157,762, reflecting our continued efforts to expand training and support services.

Fundraising remains critically important for Physics Partners to fulfill its mission, and we are grateful to Andrew Day at Gifted Philanthropy for his pro bono advice. The generosity of charitable foundations and individuals has enabled us to sustain and expand our activities, as demand for our support grows. We will continue to focus on diversifying our funding sources and securing multi-year funding to ensure long-term success.

We extend our heartfelt thanks to everyone who has supported us over the past year, including those listed overleaf.

	Unrestricted funds	Restricted Funds	12 Months ending 31/8/24	12 Months ending 31/8/23
	£	£	£	£
<b>Income</b>				
Donations and grants	84,598	34,840	119,438	122,872
Training income	42,323		42,323	20,787
<b>Total</b>	126,921	34,840	161,761	143,658
<b>Expenditure</b>				
Administration	3,834		3,834	3,869
Business Development & meetings	811		811	1,642
Fundraising	10,697		10,697	9,983
Staff Costs & Expenses	68,579		68,579	62,506
Training & Regional Coordination	59,460	10,201	69,660	51,198
Trustees	649		649	902
Website & IT	4,765		4,765	5,708
<b>Total</b>	148,794	10,201	158,995	135,809
<b>Net income</b>			<b>2,766</b>	<b>7,849</b>

## **STRATEGY**

Physics Partners has a three-year strategy covering the academic years from September 2024 to August 2027. It focuses on expanding our reach, increasing the effectiveness of our programmes, and ensuring sustained impact. We aim to raise £250,000/year to deliver this.

### **1. Expansion and Enhancement of Training Hubs**

**Regional Hubs:** We will continue to focus on enhancing existing physics hubs and developing new hubs in under-represented and disadvantaged areas.

**Hub Growth:** Our goal is to establish nine new hubs over the next three years, offering local, face-to-face training and peer support tailored to regional needs.

**Hub Events:** We will increase half-day and full-day events, like the Festival of Physics, in collaboration with local industry and higher education institutions.

### **2. Programme Development**

**Training Standards:** We will implement a framework across all sessions, ensuring consistency and increasing collaboration through partnerships with other organisations.

**Blended Learning:** We will continue to offer a mix of online and in-person training, allowing greater flexibility and accessibility for teachers across various regions.

### **3. Strengthening Industry Connections**

**Industry Partnerships:** We will enhance the relevance of physics education and expose students to local and national career opportunities, apprenticeships and graduate roles.

**Industry Funding:** To diversify funding, we will engage with Corporate Social Responsibility teams and seek sponsorship for hubs and events.

### **4. Recruitment and Development of Trainers**

**Director of Education:** Our newly appointed part-time Director of Education will drive the growth of scalable, high-quality training programmes.

**Trainer Development:** We will provide ongoing training to our 50 freelance coaches, ensuring they stay updated with the curriculum and can effectively support teachers.

### **5. Enhancing Student Engagement and Diversity**

**Girls in STEM:** We will increase the number of Girls in STEM events, to inspire more female students to consider careers in science, technology, engineering, and maths (STEM).

**Diverse Outreach:** Our programmes will continue to target students from diverse backgrounds, promoting inclusivity and access to physics education.

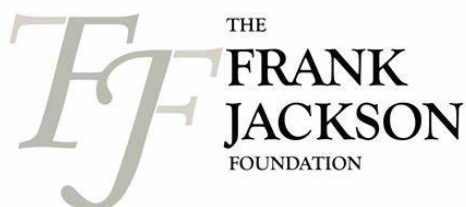
### **6. Evaluating and Reporting Impact**

**Evaluation:** We will maintain robust evaluation processes, tracking teacher satisfaction and student outcomes to assess programme effectiveness.

WITH THANKS TO OUR PARTNERS:



WITH THANKS TO OUR SUPPORTERS:



The Worshipful Company of Pipe Makers and Tobacco Benevolent Fund



THE IRONMONGERS' COMPANY

*John and Diane Kemp-Welch Charitable Trust*



*The Damon de Laszlo Foundation*



THE DRAPERS' COMPANY  
— 1364 —

*Winston Ginsberg*

Physics Partners Ltd is a company limited by guarantee.  
Registered in England No 06292894. Registered Charity No 1125644.  
Registered office: 40 Caversham Road Business Centre, 40 Caversham Road, Reading RG1 7EB

[www.physicspartners.com](http://www.physicspartners.com) @physicspartners