

# 2022 Accounts

## London Institute for Mathematical Sciences



Registered company no. 06814771  
 Registered charity no. 1139814  
 Other names London Institute; LIMS  
 Registered address 21 Albemarle Street, London, W1S 4BS  
 Solicitors Eversheds, 1 Wood St, London EC2V 7WS  
 Independent examiners TC Group, The Courtyard, Shoreham  
 Road, Upper Beeding, Steyning, West  
 Sussex, BN44 3TN

A charitable company limited by guarantee  
[www.lims.ac.uk](http://www.lims.ac.uk)

*Trustees*  
 Dr Thomas Fink (Managing Director)  
 Sir Roy Anderson, FRS  
 Sir John Beddington, FRS  
 Mr Martin Reeves

## Trustees' report and unaudited financial statements

for the year ended 31 December 2022

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# Trustees' Annual Report

## Summary of 2022

2022 was a transformative year. At the start of the Ukrainian war, we moved fast to create our Arnold and Landau Fellowships for scientists from Russia, Ukraine and Belarus. With ten positions, each for three years, it is the largest programme of its kind. By the end of the year, we had recruited five Fellows.

To make room for our new arrivals, we nearly doubled our space in the Royal Institution. We are using one of our large new rooms as a seminar room, which significantly increases our convening power.

Scientific discovery is our main focus, and this year saw breakthroughs in areas ranging from quantum field theory to AI-assisted mathematics. To better benchmark our research progress, we started weighing our papers by the fraction of authors who work at the Institute. We also published articles in the press celebrating the value of theoretical science and announcing our new Fellowships.

We ran events on topics ranging from AI-assisted discovery to the mathematics of cell programming. Our commitment to our website paid off when it was named one of the top five science websites at the 2022 Webby Awards.

## Structure of the London Institute

The London Institute advances research for the public benefit by maintaining an independent research institute for theoretical physics and mathematics. It gives scientists the freedom and support to dedicate themselves to research full-time. There are no teaching or administrative duties.

The Institute's activities are outlined in the following six pages. Each page describes the activities associated with one of the following six themes: research, people, funding, communication, space and events.

The Institute is a charitable company limited by guarantee and is governed by its Articles of Association. The Trustees of the charity are the Directors and Members of the company. Trustees are elected by ordinary resolution on the basis of their capability to advance the activities of the Institute.

The Trustees meet in person every quarter, and individual Trustees meet with the Managing Director more regularly. Day-to-day decision-making is delegated to the Managing Director. The Trustees are aware of the Charity Commission's guidance on public benefit in deciding what activities the Institute carries out.

## Financial review

At the end of 2022 the Institute had total reserves of £150,841 compared to £182,199 in 2021. It had a surplus of restricted funds of £89,043, compared to £2,000 in 2021.

Our reserves policy is to maintain reserves of at least 20% of the charity's annual expenditure. At the end of 2022, we held free reserves of £61,798, compared to £180,199 in 2021.

We received a substantial grant during 2022 which was mostly deferred to 2023. The unrestricted element to this grant was greater than £400,000 which covers well in excess of 20% of the charity's annual expenditure.

Historically, our main risk has been a shortage of unrestricted funds. This was because most grant-giving agencies offer impracticable indirect costs rates, knowing that universities can make up the shortfall through the Research Excellence Framework and student fees.

Over the last few years, however, we have significantly reduced this risk. First, we have had more corporate-sponsored research funding, from bit.bio and the BCG Henderson Institute.

Second, we have started to attract major philanthropy. In our 2021 annual report, we anticipated adding philanthropy to our funding repertoire. Sure enough, in 2022 we raised over £3m to support our Arnold and Landau Fellowships, and we received our first gifts for our endowment for junior fellows.

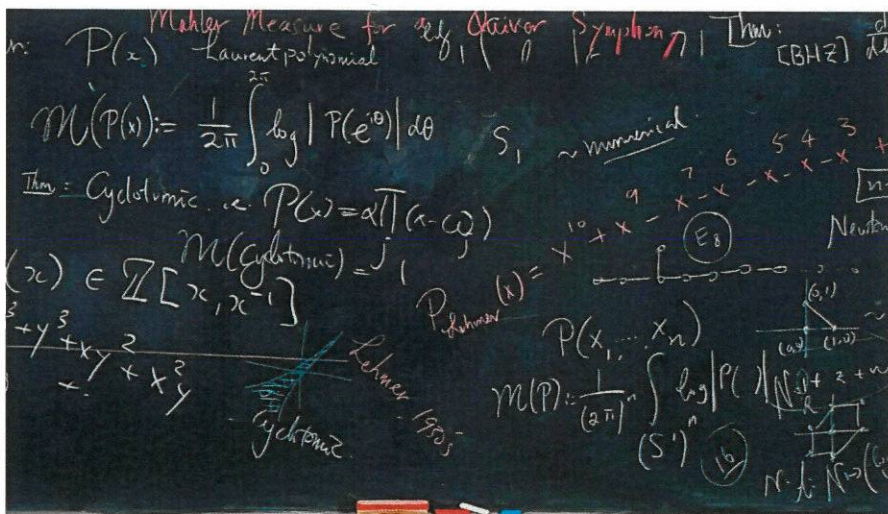
## Declaration

In compiling this annual report, the trustees confirm they have had regard to the Charity Commission's guidance on public benefit and that this report complies with the Charity Commission's Statement of Recommended Practice. The trustees declare that they have approved this report.

Signed on behalf of the trustees by



Dr Thomas Fink  
Director and Trustee  
11 May 2023



Mahler measure from number theory is used for the first time in physics, yielding "Mahler flow" which extrapolates different phases in QFT.

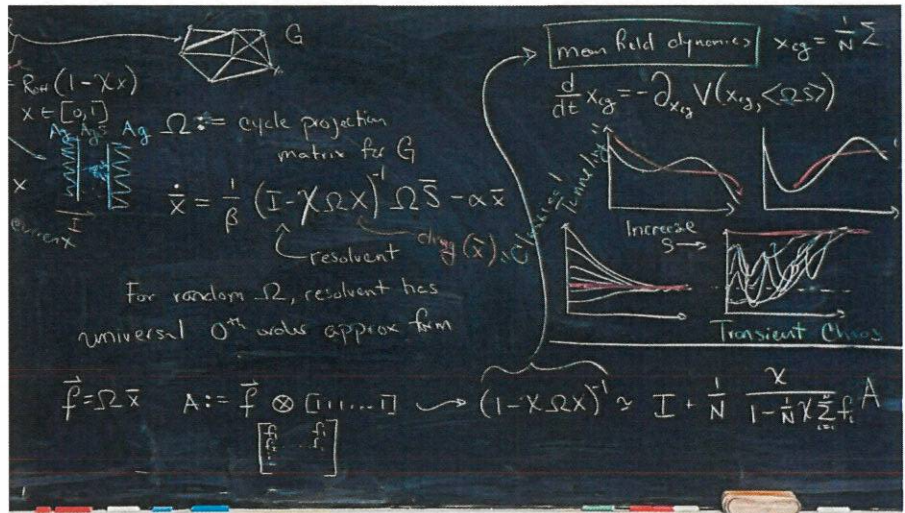
# Research

We continuously track the quality of the papers we publish, and have set ourselves a target of doubling our research output every two years.

Our research spans four main themes: mathematics that unifies; the elegant universe; life, learning and emergence; and the theory of human enterprise. In 2022, most of our research was on the second and third themes. The topics of our publications range from advances in quantum field theory, to alternative forms of computing, to machine learning in geometry. In 2023, we will add pure mathematics to the list: of our five Arnold and Landau Fellows recruited so far, three are mathematicians.

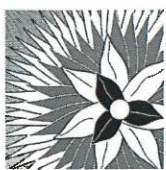
To better benchmark our research, in 2022 we started weighing our published papers by the fraction of authors that work at the Institute. This ensures that the number of organisations that lay claim to a paper adds up to one. Ultimately, this will allow us fairly to compare our research performance with that of other places.

Our goal for the foreseeable future is to double our research output every two years. Our unit of measure is the author and source normalised impact per publication, or ASNIP. In 2022, our target was 20 ASNIP points. In 2023, it will be 28. One ASNIP point is the equivalent of 4 typical papers.



Circuits of memristors, resistors with memory, can exhibit instabilities which allow classical tunnelling through potential energy barriers.

## Selected papers



*Journal of the American Mathematical Society*

### Bounding Zaremba's conjecture

Using methods related to the Bourgain–Gamburd machine refines the previous bound on Zaremba's conjecture in the theory of continued fractions.



*Communications in Mathematical Physics*

### Mahler measure for quivers

Mahler measure from number theory is used for the first time in physics, yielding "Mahler flow" which extrapolates different phases in QFT.



*Physics Letters B*

### Machine learning Hilbert series

Neural networks find efficient ways to compute the Hilbert series, an important counting function in algebraic geometry and gauge theory.



*Physical Review E*

### Optimal electronic reservoirs

Balancing memory from linear components with nonlinearities from memristors optimises the computational capacity of electronic reservoirs.



*Journal of High Energy Physics*

### Gauge theory and integrability

The algebra of a toric quiver gauge theory recovers the Bethe ansatz, revealing the relation between gauge theories and integrable systems.



*Physical Review D*

### Calabi-Yau anomalies

Unsupervised machine-learning of the Hodge numbers of Calabi-Yau hypersurfaces detects new patterns with an unexpected linear dependence.



# People

We filled five of our ten Arnold and Landau Fellowships and recruited two key members of staff: an office coordinator and a science writer.

Our recruitment drive in 2022 was centred on our 10 Arnold and Landau Fellowships. Filling ten research posts in a year is a major undertaking, especially for a small organisation. But through word of mouth and our significant press coverage, by year's end we had 90 applications. We did a first-stage interview with 20 of these, and then met the most promising in person, which often involved travelling to a mutually accessible country. By the end of 2022, we had made five appointments, and two new Fellows had arrived.

Outside of research, we filled two strategic roles. The first was an office coordinator and assistant to the director. We welcomed Alana Ker Mercer in September 2022. As well as orchestrating the activities of our scientists and staff, she also liaises with the Royal Institution, with whom we continue to work more closely.

The second post we filled was a full-time science writer with a mathematical background. In December 2022 we welcomed Dr Madeleine Hall, who has a PhD in mathematics. Her work complements the writing and journalism done by our part-time science writer, Thomas Hodgkinson.



The London Institute hosts a day symposium on using AI to speed up mathematical discovery, followed by a panel discussion, drinks and dinner.

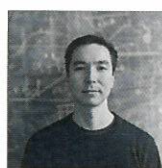
## People



ARNOLD FELLOW

**Ilya Shkredov**

Prof. Shkredov is an Arnold Fellow at LIMS and a member of the Russian Academy of Sciences. He works on number theory and combinatorics.



LANDAU RESEARCH FELLOW

**Alexander Ochirov**

Dr Ochirov is a Landau Research Fellow at LIMS, having previously worked in Oxford and Zurich. His research is on quantum field theory.



SCIENCE WRITER

**Madeleine Hall**

Dr Hall is a science writer at LIMS, where she writes for the press and our website. Her background is in mathematical biology research.



OFFICE COORDINATOR

**Alana Ker Mercer**

Miss Ker Mercer is the coordinator and assistant to the Director, with experience in English literature and history of art.



SUMMER UNDERGRADUATE RESEARCH FELLOW

**Tim Zhang**

Tim Zhang was a summer undergraduate research fellow at LIMS. He worked on implementing models of gene regulatory networks.

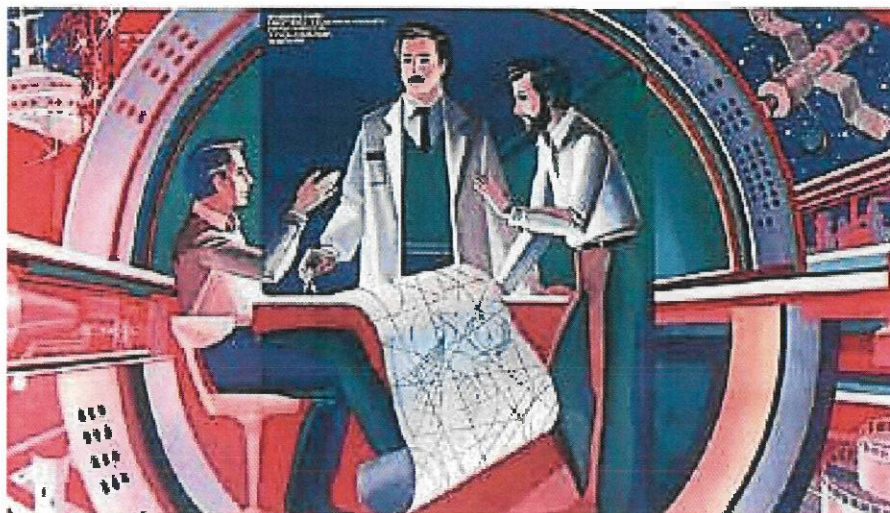
## Funding

Thanks to the generosity of our donors, we created ten three-year Fellowships for outstanding theorists affected by the war in Ukraine.

Within two and a half months of the start of the war in Ukraine, we established ten three-year Fellowships for leading theoretical physicists and mathematicians from Russia, Ukraine and Belarus. Led by our Director of Development, we raised over £3m from anonymous donors. As well as a chance to help scientists affected by the conflict, the programme is a once-in-a-generation opportunity to recruit brilliant theorists.

Our five Arnold Fellowships are named after the Ukrainian-born mathematician Vladimir Arnold. Our five Landau Fellowships are named after Lev Landau, the Nobel prize-winning Russian physicist. By the end of the year, we had received 90 applications and appointed five Fellows.

Meanwhile, with King's College London we won a Research Project Grant from the Leverhulme Trust for work on cosmology. We received the first donations to our Tombrello Junior Fellows endowment, which we are raising with Caltech's help. The BCG Henderson Institute gave us a one-year grant for research on AI-assisted discovery, and our funding from the Cambridge cell programming company bit.bio continued into its third year.



Our Arnold and Landau Fellowships continue a tradition of contact and collaboration between British and Russian scientists.

### Arnold Fellowships

Anonymous donors made a transformative contribution to establish five three-year fellowships for theoretical physicists and mathematicians from Russia, Ukraine and Belarus. These fellowships are named after the Ukrainian-born mathematician Vladimir Arnold. We are grateful for the opportunity to recruit world-class talent from these countries, which have an exceptional record of discovery in the mathematical sciences.

### Leverhulme Trust

The London Institute won a Research Project Grant from the Leverhulme Trust to do research on machine learning applied to string cosmology. The grant, which is joint with King's College London, is for two years and will support a postdoc at the Institute, among other things. The Leverhulme Trust is a UK-based organisation that funds grants for original and significant research across all academic disciplines.

### Landau Fellowships

Following the establishment of the Arnold Fellowships, we have raised matched funding from anonymous donors to establish the Landau Fellowships. Named after the Nobel laureate Lev Landau, these fellowships are for five outstanding theoretical physicists and mathematicians from Russia to work at the London Institute. Thank you to our donors, whose generous support will shape the future of research at our Institute.

### bit.bio

Bit.bio's investment in the London Institute has continued for a third year, supporting multiple posts. Over the coming year, we will investigate the mathematics of experimental design, AI-assisted discovery of reprogramming sets, and simple models of cell programming that are exactly solvable. Bit.bio is a synthetic biology company that reprograms human cells for use in research, drug discovery and cell therapy.

### BCG Henderson

The BCG Henderson Institute invested in research on AI-assisted mathematical discovery. As well as supporting two of our researchers, the funding went towards a conference that brought together researchers from academia and industry. The BCG Henderson Institute is the think tank of Boston Consulting Group, applying insights from academic disciplines to the strategic challenges facing business, government and society.



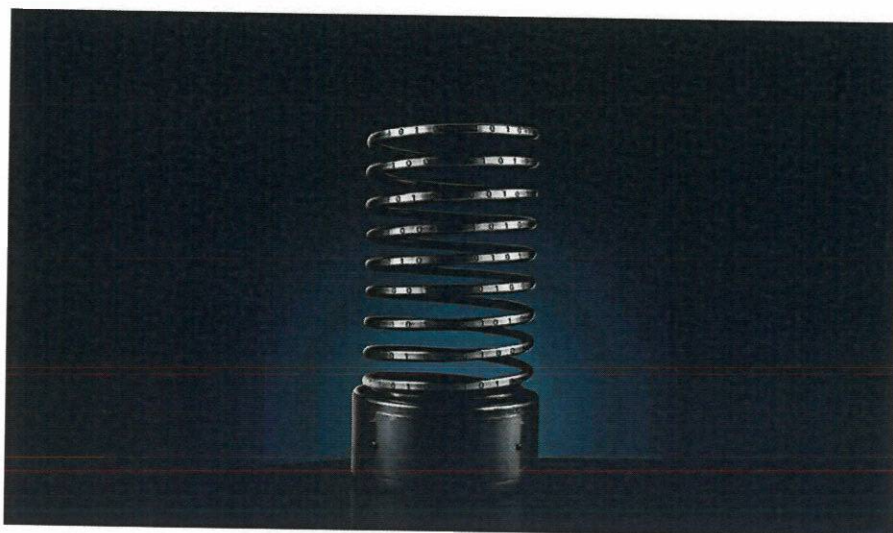
## Communication

We published essays on our new Fellowships and the value of theory, and we were named one of the top five science websites at the Webby Awards.

More than most research organisations, we invest in our website to ensure it is clear, compelling and up-to-date. In 2022, for example, we updated our site's underlying grid to enhance its modular design, and we built our collection of blackboards on our landing page. We added a new section to showcase our rooms in the Royal Institution, and another to describe our Arnold and Landau posts. We also improved our interface with social media.

Our dedication to our site was rewarded when we were named at the 2022 Webby Awards as one of the five best science websites in the world. This placed us alongside the likes of *Science* magazine and NASA Solar System Exploration. In an essay called "Designing Web Design," we described the five principles guiding our site: simplicity, clarity, continuous evolution, modularity and recursively divisible grids.

The press took great interest in our Fellowships for scientists affected by the war in Ukraine. We had articles about them in *Nature*, *The Times* and *The Daily Telegraph*. Before the Nobel ceremonies, we wrote in *The Times* about the value of theoretical research.



Our website has been nominated for the best science website in the Webby Awards—hailed the “internet’s highest honor” by *The New York Times*.

### Selected articles



8 DEC 2022

#### The beautiful game

The beautiful game of mathematics, accelerating discovery by seeing patterns among the patterns, deserves a Nobel prize all of its own.



4 OCT 2022

#### Boost for British science

In *Nature*, the London Institute argues that its five new Research Fellowships for Russian theorists will be a boost for British science.



1 JUL 2022

#### History repeats itself

The Royal Institution supported scientists fleeing 1930s authoritarianism. Now, thanks to our Arnold Fellowships, history repeats itself.



10 OCT 2022

#### Landau lives on

Creating Fellowships for scientists affected by the war in Ukraine will not only help them, it will also be a major boost for British science.



12 OCT 2022

#### Russians welcome

In a letter in *The Times*, our Director Thomas Fink echoes Einstein's support for liberty as a precondition of original thought.



13 MAY 2022

#### From Russia with math

History suggests our new posts for physicists and mathematicians from Russia, Ukraine and Belarus will have an enduring impact on UK science.

# Space

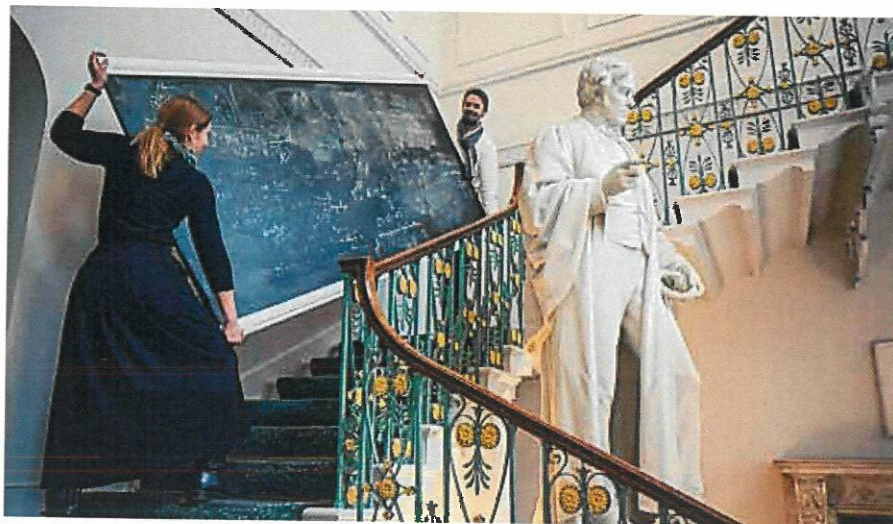
To accommodate our growing team of scientists and staff, we doubled our space in the Royal Institution, making us their anchor tenant.

We believe in the power of presence, and all of our scientists and staff work in the building five days a week. To make space for our growing team, in 2022 we rented three new rooms in the Royal Institution. This has nearly doubled our space, making us the Royal Institution's anchor tenant.

Two of our new rooms are large rooms on the second floor, adjoining our original offices. These formed part of the private apartments of past Royal Institution directors. We call them Bragg's Dining Room and Tyndall's Parlour. On the third floor we took a room that once served as a guest room for visiting lecturers, which we call Davy's Attic.

We are using the biggest of our new rooms as a seminar room and to host meetings of young researchers from the surrounding universities. It can accommodate 50 people.

To make the interior of all of our rooms reflect the magnificence of the discoveries made within them, we are developing plans to refurbish them with the architects Donald Insall. Their expertise in Grade I listed buildings will ensure that we update our space in a way that respects its historical significance.



We've doubled our space at the Royal Institution. Our new rooms include Faraday's drawing room and the guest room for Christmas Lecturers.

## Our rooms



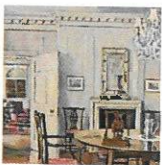
### Old Post Room

Where the mail of the Royal Institution was once sorted, our scientists now meet for a chat, a coffee and demonstrations on the blackboard.



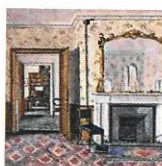
### Faraday's Study

This is the room in which, after a hard day in the laboratory, Michael Faraday would write up neatly the rough notes he had made earlier.



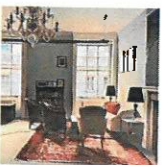
### Bragg's Dining Room

The dining room of the resident professors has played host to distinguished speakers, including Guglielmo Marconi and Lord Rutherford.



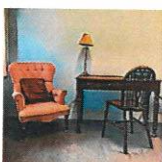
### Tyndall's Parlour

Where John Tyndall relaxed and Michael Faraday read aloud from Shakespeare, we host our weekly meetings with the London Theory Institute.



### Rumford Room

We have named our Director's study the Rumford Room, in honour of the brilliant, mercurial founder of the Royal Institution, Count Rumford.



### Davy's Attic

Rooms on the third floor have served as bedrooms to Sir Humphry Davy, Michael Faraday, and scientists delivering the Christmas Lectures.



### Porter Wing

When the Theatre blew up in 1927, it offered the chance for a rebuild—leading to the creation of these rooms on the building's eastern side.



## Events

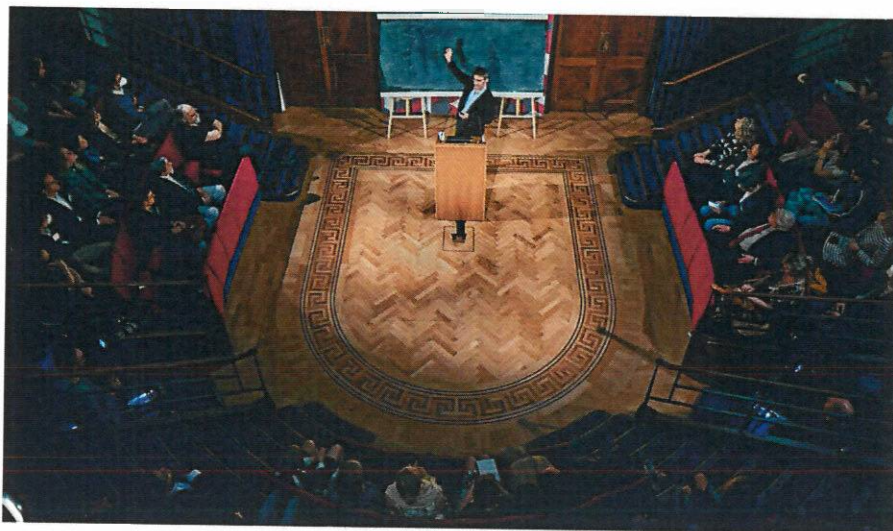
We have contributed to the Royal Institution's programme of events with seminars, public lectures and our largest conferences to date.

The Royal Institution is a world-leader in the live communication of science. In 2022 we contributed to its programme with a programme of our own.

We hosted conferences on AI-assisted mathematical discovery and the mathematics of cell programming. With the addition of a dedicated seminar room to our rooms in the Royal Institution, we were able to host more talks, for larger audiences, on subjects ranging from black holes to turbulence to the structure of innovation.

We started hosting weekly lectures on current topics in theoretical physics for young researchers from the London universities, in partnership with the virtual London Theory Institute. This is an opportunity for PhD students and postdocs from different universities to network on neutral turf. It also offers us, in the absence of students, a chance to scout for emerging talent.

Since interviewing Sir Roger Penrose in the Lecture Theatre at the end of 2021, we have continued to provide content for the Royal Institution's public events. As we grow, we hope to progress from being an occasional contributor to being one of the Royal Institution's mainstays.



Cell biologist and bit.bio founder Mark Kotter explains how breakthroughs in programming cells are kicking off a revolution.

### Selected events



5 DEC 2022

#### Strong turbulence

Over the course of four lectures, Prof. Alexander Migdal presents 35 years of research concerning his new approach to strong turbulence.



7 JUL 2022

#### Accelerating innovation

The London Institute and the Ditchley Foundation host an afternoon discussion and drinks on the science of innovation and how to speed it up.



28 MAR 2022

#### Cell programming maths

The London Institute and bit.bio host a two-day international meeting to unravel the theory of cell programming at the Royal Institution.



28 OCT 2022

#### AI mathematics

The London Institute hosts a day symposium on using AI to speed up mathematical discovery, followed by a panel discussion, drinks and dinner.



10 MAR 2022

#### Uncovering the OS of life

Breakthroughs in cell programming are kicking off a biological analogue of the silicon revolution, allowing us to predictably engineer life.



21 FEB 2022

#### LonTI lecture series

During spring, the London Institute hosts weekly lectures in theoretical physics for young researchers who are interested in new fields.



## 2 Independent examiner's report to the trustees of London Institute for Mathematical Sciences ("the Company")

I report to the charity trustees on my examination of the accounts of the Company for the year ended 31 December 2022.

### *Responsibilities and basis of report*

As the charity's trustees of the Company (and also its directors for the purposes of company law) you are responsible for the preparation of the accounts in accordance with the requirements of the Companies Act 2006 ('the 2006 Act').

Having satisfied myself that the accounts of the Company are not required to be audited under Part 16 of the 2006 Act and are eligible for independent examination, I report in respect of my examination of your charity's accounts as carried out under section 145 of the Charities Act 2011 ('the 2011 Act').

Since the company's gross income exceeds £250,000 your examiner must be a member of a body listed in section 145 of the 2011 Act. I can confirm that I am qualified to undertake the examination because I am a member of the Association of Chartered Certified Accountants, which is one of the listed bodies.

In carrying out my examination I have followed the Directions given by the Charity Commission under section 145(5) (b) of the 2011 Act.

### *Independent examiner's statement*

I have completed my examination. I confirm that no matters have come to my attention in connection with the examination giving me cause to believe:

(i) accounting records were not kept in respect of the Company as required by section 386 of the 2006 Act; or

(ii) the accounts do not accord with those records; or

(iii) the accounts do not comply with the accounting requirements of section 396 of the 2006 Act other than any requirement that the accounts give a 'true and fair view which is not a matter considered as part of an independent examination; or

(iv) the accounts have not been prepared in accordance with the methods and principles of the Statement of Recommended Practice for accounting and reporting by charities.

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.

  
Mr Mark Cummins FCCA FCIE

for and on behalf of

TC Group  
The Courtyard, Shoreham Road  
Upper Beeding, Steyning, West Sussex  
BN44 3TN

Date: 27 September 2023

### 3 Statement of financial activities

<i>Income</i>	<i>Unrestricted 2022 (£)</i>	<i>Restricted 2022 (£)</i>	<i>Total 2022 (£)</i>	<i>Total 2021 (£)</i>
Donations & legacies (see N.4)	752,107	117,437	869,544	669,505
Other trading activity (see N.4)	40,000	-	40,000	1,000
	792,107	117,437	909,544	670,505

The statement of financial activities includes all gains and losses recognised in the year. All income and expenditure derive from continuing activities.

#### *Expenditure*

Charitable activities (see N.5)	910,508	30,394	940,902	831,377
	910,508	30,394	940,902	831,377

Net income/(expenditure) (see N.6)	(118,401)	87,043	(31,358)	(160,872)
Transfers between funds (see N.11)	-	-	-	-
<i>Net movements in funds</i>	(118,401)	87,043	(31,358)	(160,872)

#### *Reconciliation of funds*

Total funds at 1 Jan	180,199	2,000	182,199	343,071
Total funds at 31 Dec	61,798	89,043	150,841	182,199

### 4 Balance sheet

<i>Fixed assets</i>	<i>2022 (£)</i>	<i>2021 (£)</i>
Tangible assets (see N.7)	5,225	5,680
Investment in subsidiary (see N.8)	100	100
	5,325	5,780

#### *Current assets*

Debtors (see N.9)	1,519,897	1,485,053
Cash at bank	1,340,524	145,934
	2,860,421	1,630,987

#### *Current liability*

Amount falling due within one year (see N.10)	(2,714,905)	(1,454,568)
<i>Net current assets/(liabilities)</i>	145,515	176,419

#### *Net assets*

	150,841	182,199
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#### *Charity funds*

Restricted (see N.11)	89,043	2,000
Unrestricted (see N.11)	61,798	180,199
	150,841	182,199

For the year ending 31 December 2022 the company was entitled to exemption from audit under section 477 of the Companies Act 2006 relating to small companies. The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006. The directors acknowledge their responsibility for complying with the requirements of the Act with respect to accounting records and for the preparation of accounts.

The accounts have been prepared in accordance with the provisions applicable to companies subject to the small companies regime.

The financial statements were approved by the Trustees on and signed on their behalf, by



Thomas Fink

Company Registration No: 06814771

The notes on the following pages are part of these financial statements.



# Notes to the financial statements

## N.1 Company status

The London Institute is a company limited by guarantee and registered in England and Wales. The members of the company are the Trustees. In the event of the company being wound up, the liability is limited to £5 per member. The Institute meets the definition of a public benefit entity under FRS102. The specific public benefits can be found in the Trustees' Report.

## N.2 Accounting policies

### *Basis of preparation of financial statements*

The financial statements have been prepared in accordance with the Companies Act 2006, the Charities Act 2011 and Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standards (FRS 102, effective Jan 2015). The financial statements have been prepared under the historical cost convention. The London Institute is exempt from preparing group accounts in accordance with s402 of the Companies Act 2006 and the Charities SORP (FRS 102). The functional currency of the charity is British pound sterling. Items in the accounts are rounded to the nearest pound.

### *Fund accounting*

Unrestricted funds are funds with no restrictions and can be used for the general objectives of the company. Restricted funds are funds which have restrictions imposed by donors or which have been raised by the company for particular purposes. The transactions relating to such funds are set against each separate fund and no other. The aim and use of each restricted fund is set out in Note N.11.

### *Expenditure*

Expenditure is accounted for on an accruals basis and has been aggregated into relevant expense categories. Research activity costs are those costs incurred directly in support of the Institute's objects. Support costs are those costs incurred indirectly in support of the Institute's objects. Governance costs are those incurred in connection with administration of the Institute and compliance with constitutional and statutory requirements.

### *Income*

Incoming resources are included when the charity has entitlement to the funds, probability of receipt and the amount can be reliably measured. Other trading income is recognised on an accruals basis, excluding value added tax.

### *Tangible fixed assets and depreciation*

Tangible fixed assets are stated at cost less depreciation. Depreciation is calculated using a 20% straight line for the leasehold property, fixtures and fittings and 33% straight line for the office equipment.

### *Foreign currencies*

Monetary assets and liabilities are translated into sterling using the closing spot rate at the balance sheet date. Transactions in foreign currencies are translated into sterling using the spot rate on the day of the transactions. Exchange gains and losses are shown in N.5.

### *Debtors*

Trade and other debtors are recognised at the settlement amount due. Prepayments are valued at the amount prepaid.

### *Creditors and provisions*

Creditors and provisions are recognised where the Institute has a present obligation resulting from a past event that will likely result in the transfer of funds to a third party and the amount due can be reliably measured.

### *Investments*

Investments in associates and subsidiaries are accounted for on the historic cost basis for the equity held.

### *Cash at bank and in hand*

Cash at bank and in hand includes cash and short term highly liquid investments.

### N.3 Going concern

The Trustees believe current and future expected income will allow the London Institute to continue its activities. Therefore, the financial statements were prepared on the basis that the Institute is a going concern. The Institute has a surplus on unrestricted funds of £61,798 (2021: £180,199).

### N.4 Income

<i>Income from donations</i>	<i>Unrestricted 2022 (£)</i>	<i>Restricted 2022 (£)</i>	<i>Total 2022 (£)</i>	<i>Total 2021 (£)</i>
Donations	8,906	1,573	10,479	2,798
Grant and corporate	743,201	115,864	859,065	666,707
	752,107	117,437	869,544	669,505

#### *Income from other trading activities*

Fee income	40,000	-	40,000	-
Lecture fee income	-	-	-	1,000
	40,000	-	40,000	1,000

### N.5 Expenditure

	<i>Staff costs (£)</i>	<i>Depreciation (£)</i>	<i>Other costs (£)</i>	<i>Total 2022 (£)</i>	<i>Total 2021 (£)</i>
Research activity costs (detailed below)	438,758	-	27,064	465,822	409,084
Support costs (detailed below)	200,921	5,011	269,148	475,080	422,293
	639,679	5,011	296,212	940,902	831,377



## N.5 Expenditure (continued)

<i>Research activity costs</i>	2022 (£)	2021 (£)
Postdocs	2,988	51,933
Fellows	283,601	188,232
Developers	99,208	96,000
Consulting	3,543	8,315
Travel	19,744	8,672
Employers national insurance	50,276	32,396
Employers pension	2,684	20,529
IT software and consumables	3,585	2,311
Books and sundry	193	696
	465,822	409,084

<i>Governance costs</i>	2022 (£)	2021 (£)
Independent Examiner' fees	3,600	3,600
Legal fees	22,375	16,312
	25,975	19,912

<i>Staff costs</i>	2022 (£)	2021 (£)
Wages and salaries	561,727	551,699
Social security costs	72,755	59,100
Pension costs	5,197	24,170
	639,679	634,969

<i>Support costs</i>	2022 (£)	2021 (£)
Administration salaries	175,930	215,534
Depreciation	5,011	3,704
Rent	212,924	137,592
Bookkeeping fees	6,112	8,753
Sundry expenses	(16,212)	(15,690)
Bank charges and interest	17,047	4,650
National insurance	22,479	26,704
Independent examiner's fee	3,600	3,600
Utilities	-	1,751
Repairs and renewals	2,490	14,061
Cleaning	-	493
Legal fees	22,375	16,312
Rates	-	3,406
Insurance	1,760	1,211
Telephone and internet	(316)	754
Printing, stationery and postage	1,306	1,176
Advertising and publication fees	54,610	47,420
Recruitment fees	10,800	33,040
Pension costs	2,513	3,641
Subscriptions	3,032	1,835
(Profit)/loss on disp. fixed assets	-	(1,166)
Foreign exchange loss/(gain)	4,356	-
Research & development tax credit	(96,703)	(86,488)
Event costs	41,528	-
Fines and penalties	438	-
	475,080	422,293

Three employees received total employee benefits in excess of £60,000. Senior management consists of 3 individuals (2021: 1), with staff costs totalling £329,082 (2021: £292,472). The Institute's Articles allows Trustees to be paid for services to the company, and Trustees were paid £Nil and no expenses were reimbursed (2021: £Nil). The average monthly number of employees during the year was 3 research staff (2021: 6) and 4 administrative staff (2021: 3).

The independent examiner was paid £3,600 (2021: £3,600) for examining and £Nil (2021: £Nil) for other services.

## N.6 Net income & expenditure

The net income and expenditure in the statement of financial activities is stated after charging:

	2022 (£)	2021 (£)
Depreciation of tangible fixed assets	5,011	3,704
Independent examiner's fee	3,600	3,600

## N.7 Tangible fixed assets

Cost	Leasehold property (£)	Fixtures & fittings (£)	Office equip. (£)	Total (£)
As at 1 Jan 2022	189,537	47,749	13,338	250,624
Additions	-	-	4,557	4,557
Disposals	(189,537)	-	-	(189,537)
At 31 Dec 2022	-	47,749	17,895	65,644

### Depreciation

As at 1 Jan 2022	189,537	47,520	7,887	244,944
Charge for the year	-	228	4,783	5,011
On disposals	(189,537)	-	-	(189,537)
At 31 Dec 2022	-	47,748	12,670	60,418

### Net book value

At 31 Dec 2022	-	-	5,225	5,225
At 31 Dec 2021	-	229	5,451	5,680

## N.8 Investments

Investment	2022 (£)	2021 (£)
Subsidiary	100	100
	100	100

### Subsidiary LIMS Ventures Ltd

On 2 Nov 2015 the Institute set up its trading subsidiary, LIMS Ventures Limited (registered no. 09851506 and registered office 21 Albemarle Street, London, England, W1S 4BS), and subscribed to 100 ordinary £1 shares. The charity holds 100% of the issued share capital. The company's accounts for the year ended 31 Dec 2022 showed a total deficit in reserves and share capital of £6,111 (2021: £4,311 deficit).

## N.9 Debtors

Debtors	2022 (£)	2021 (£)
Rental deposit	73,125	35,260
Other debtors	105,665	109,434
Owed from group undertakings	1,340,359	1,340,359
Trade debtors	748	-
	1,519,897	1,485,053

## N.10 Creditors

Creditors falling due within the year	2022 (£)	2021 (£)
Bank loans and overdrafts	758	6,155
Other loans	372,637	398,237
Trade creditors	8,774	3,186
Social security	303,753	287,289
VAT	227,264	243,865
Other creditors	224,682	282,915
Accruals and deferred income	1,577,037	232,921
	2,714,905	1,454,568



## N.11 Restricted and unrestricted funds

### Restricted funds

Restricted funds are externally restricted in use or purpose.

Restricted funds are accounted for and reported separately.

### Unrestricted funds

Unrestricted funds bear no external restrictions in use or purpose.

Unrestricted funds are pooled and spent in accordance with the charity's objectives, as determined by the trustees.

The Institute has five types of income which contribute to its restricted and unrestricted funds. The subtotals for these five streams help us see which fundraising efforts were effective, and how best to adjust course for the year ahead.

Income type	Income given...	For research	Competitive	Restricted vs unrestricted
Grants	for research after winning a competition	✓	✓	Mix of both
Foundations	not for research after winning a competition		✓	Mix of both
Corporate	for research in the absence of a competition	✓		Typically unrestricted
Donations	not for research in the absence of a competition			Varies
Other trading	for office and room rental and other activity			Unrestricted

		Brought forward 1 Jan 2022 (£)	Income	Expenditure	Transfers	Carried forward 31 Dec 2022 (£)
Restricted funds	Anon C	-	13,641	13,641	-	-
	Anon J	-	16,753	16,753	-	-
	Edward Harvist Trust	2,000	-	-	-	2,000
	Tom Tombrello	-	85,470	-	-	85,470
Donations	Tom Tombrello	-	1,573	-	-	1,573
		2,000	117,437	30,394	-	89,043

### Unrestricted funds

Grants	Anon C	180,199	25,846	910,508	-	61,798
	Anon J		82,180			
Donations	Various		8,906			
Other trading	Boston Consulting Group		90,571			
Corporate	BitBio Ltd		584,604			
		180,199	792,107	910,508	-	61,798

### Total funds

Restricted funds	2,000	117,437	30,394	-	89,043
Unrestricted funds	180,199	792,107	910,508	-	61,798
	182,199	909,544	940,902	-	150,841

Source	Short name	Long name
Anon J	Anon J	Anonymous J
Anon C	Anon C	Anonymous C
Edward Harvist Trust	Edward Harvist Trust	Edward Harvist Trust

## N.12 Analysis of net assets between funds

	<i>Unrestricted 2022 (£)</i>	<i>Restricted 2022 (£)</i>	<i>Total 2022 (£)</i>	<i>Unrestricted 2021 (£)</i>	<i>Restricted 2021 (£)</i>	<i>Total funds 2021 (£)</i>
Fixed assets	5,326	-	5,326	5,780	-	5,780
Net current assets/liabilities	56,472	89,043	145,515	174,419	2,000	176,419
	61,798	89,043	150,841	180,199	2,000	182,199

## N.13 Related party transactions

Included within other creditors is a balance of £91,582 (2021: £165,371) due to Dr. Thomas Fink, Director of the London Institute, which will be drawn down from year to year.

During the year, the London Institute invoiced LIMS Ventures Limited (see N.4) £nil in respect of accountancy services (2021: £1,800). At the year end, LIMS Ventures Limited owed the Institute £1,349,725 (2021: £1,340,359).

Mr. Martin Reeves (trustee) is a director of Boston Consulting Group. During the year, the London Institute received £90,571 (2021: £nil) from Boston Consulting Group.

Included within other debtors is a balance of £104,012 (2021: £116,612) due from Benjamin Lynch, director of LIMS Ventures Limited. Repayments received during the year were £12,600.

## N.14 Operating lease commitments

As at 31 Dec 2022, minimum payments to be made in relation to the premises rental lease totalled £212,924 (2021: £137,592). Total of future minimum lease payments under non-cancellable operating leases are as follows;

<i>Operating leases which expire:</i>	<i>Leasehold property 2022 (£)</i>	<i>Leasehold property 2021 (£)</i>
Within one year	350,999	78,624
Between two and five years	-	-
After five years	-	-
	350,999	78,624



## N.15 Comparative statement of financial activities for the year ended 31 Dec 2021

<i>Income</i>	<i>Unrestricted 2021 (£)</i>	<i>Restricted 2021 (£)</i>	<i>Total 2021 (£)</i>
Donations & legacies	572,037	97,468	669,505
Other trading activity	1,000	-	1,000
<b>Total income</b>	<b>573,037</b>	<b>97,468</b>	<b>670,505</b>

### *Expenditure*

Charitable activities	613,799	217,578	831,377
<b>Total expenditure</b>	<b>613,799</b>	<b>217,578</b>	<b>831,377</b>

Net income/(expenditure)	(40,762)	(120,110)	(160,872)
Transfers between funds	-	-	-
<b>Net movements in funds</b>	<b>(40,762)</b>	<b>(120,110)</b>	<b>(160,872)</b>

### *Reconciliation of funds*

Total funds at 1 Jan 2021	220,961	122,110	343,071
Total funds at 31 Dec 2021	180,199	2,000	182,199

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