

2020 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

Trustees

Dr Thomas Fink (Managing Director)
 Sir Roy Anderson, FRS
 Sir John Beddington, FRS
 Dame Shirley Porter (resigned 18 Jan 2020)
 Martin Reeves
 Sir Peter Williams, FRS (resigned 22 Oct 2020)

Trustees' report and unaudited financial statements

for the year ended 31 December 2020

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1 Trustees' annual report

This report is for the year ending 31 December 2020.

1.1 Objective and activities

Objective

The Institute's objective is to advance research for the public benefit by maintaining an independent research institute for physics, mathematics and the theoretical sciences, where scientists can devote themselves full-time to research.

Activities

The London Institute makes discoveries in physics, mathematics and the theoretical sciences on topics that are foundational, important or of broad interest. We document our discoveries in papers that are clearly expressed and beautifully presented, and publish them in preeminent journals, so that other scientists and businesses can build on and apply their insights. In addition, we describe the Institute and its discoveries on our website, and promote them in the press and digital media. To fund our work, we attract grants and investment from agencies, foundations, firms and donors, and maintain our unrestricted funds so we can improve and expand. We talent-spot and recruit world-class researchers, coders, writers, designers and fundraisers and help them surpass their perceived limits.

1.2 Structure and governance

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 and determination to advance the objectives and activities of the Institute. They need not have a background in science.

The Trustees meet 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 guidance issued by the Charity Commission on public benefit in deciding what activities the Institute carries out.

1.3 Achievements and performance

Research

The main activities of the London Institute are to do research and publish and disseminate it. In 2020 our research ranged from neural networks to phase transitions to graph theory to cell programming. We published our research in journals including *Physical Review Letters*, *Proceedings of the National Academy of Sciences* and the *Journal of Physics*.

The Institute has improved the way it measures the quality and amount of its research. It now uses the source normalized impact per publication, which accounts for differences in citation practices across disciplines. Starting in 2021, we are aiming to double our paper output every two years, over the next several years.

In 2020 the London Institute recruited a new Office Manager and Head of Grants, Victoria Harrison, who also took charge of our move to the Royal Institution, described below. The Institute took stock of its numerous research partners, now shown on its website. It has had joint research grants with over 50 universities and institutes from 17 countries, a testament of a global reach that belies its size.

Move to the Royal Institution

For the last several years, the London Institute has occupied a five-floor townhouse on the Thomas Goode estate in Mayfair. However, since our recognition as an Independent Research Organisation by UKRI, we have been on the lookout for a larger home in central London, which would provide the room to expand.

After an 18-month search, we are delighted to announce that the Royal Institution in Mayfair has invited the London Institute to take up space in its building at 21 Albermarle Street. The Institute will occupy rooms that were once the private apartments of Michael Faraday. The move is set to take place in early 2021.

With 15 Nobel prizes, ten chemical elements and the fundamental principles of electricity to its credit, the Royal Institution is arguably the most prestigious science building in the world. The move will allow us to hire more people and increase the range of our research. The RI's historic public rooms, including the iconic Lecture Theatre, will enable the London Institute to invite a wider audience to its events and talks.

Communication and press

The London Institute is committed to communicating its discoveries and values with clarity and elegance. In addition to our current writer who works on journalism, we have recruited a part-time science writer. Pippa Cole, who has a PhD in cosmology and previously worked for Cambridge University Press, joined the Institute to help describe, in simple language, its papers and projects. She also helps translate our newsworthy discoveries into popular summaries for the press.

In 2020 we made several changes to our website, lims.ac.uk. Our new approach to showcasing papers captures the main idea of each paper with an image and a simple summary. The section called Perspectives is our new collection of essays expressing the Institute's outlook on science policy and how to organise research. We also highlight our global reach with our grants partners page.

The Institute has had increased coverage in the press, with comment pieces in *The Spectator* about the value of curiosity-driven research and in *The Guardian* about the value of theoretical science, and an interview of Sir Roger Penrose in *The Spectator*. Our new collaboration with Bit.Bio was reported in *Forbes* and *The Times*.

Partnership with Bit.Bio

In 2020 the cell-coding company Bit.Bio partnered with the London Institute on a moonshot mission to create every human cell type. It has invested in the Institute to be its theory partner over the next three years.

Bit.Bio, which won Cambridge Startup of the Year, has already had success in producing a few cell types with high consistency. Building on that success, the Institute will create theoretical models of genetic signalling, recursively modular subroutines and efficient experiment design. In supporting Bit.Bio's mission, we will simultaneously push the boundaries of mathematical thought. Understanding the operating system behind cell identity will enable medical researchers to tackle the most pressing diseases, including cancer and dementia.

Bit.Bio's investment has enabled the Institute to recruit more scientists and expand its range of research. Approaches that we are applying to cell reprogramming include the nonequilibrium dynamics of quasispecies, the composition of logic functions, graph theory approaches to group testing and controllability on bipartite networks.

Director of Development

The Institute does not have an endowment and has been reliant on research grants as its main source of income. For small organisations like the London Institute, this funding model is risky, since it relies on securing an uninterrupted flow of grants. Without the benefit of the law of large numbers, such an approach tends to be volatile.

To attract philanthropic support, the Trustees agreed to the recruitment of a Director of Development. This dovetails well with our move to the Royal Institution. The RI's scientific heritage and magnificent public rooms will help us attract a wider pool of supporters and communicate to larger audiences.

Our focus on philanthropy, led by an inaugural Director of Development, will help us bolster the Institute's sustainability by reducing income volatility and by bringing in funds that are not restricted to a single research project. Sarah Myers-Cornaby was selected for the role at the end of 2020, and will join us at the start of 2021.

1.4 Financial Review

Financial position

In 2020 the Institute had a surplus of restricted funds totaling £122,110, compared to £20,267 in 2019. At the end of 2020 there were total funds of £343,071, compared to £231,754 in 2019.

Reserves

The Trustees' reserves policy is to maintain reserves in unrestricted funds of at least 20% of the charity's annual expenditure. At the end of 2020 the Institute held reserves of £220,961, meeting the policy.

Risk

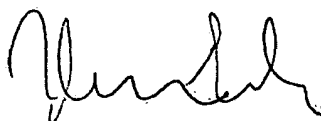
To date, the Institute has relied on research grants as its main source of income, mainly from government agencies but recently from corporate sponsors too. Because the Institute is small and tends to have just several large grants, its income has been volatile. To help secure other types of income and reduce volatility, the Trustees agreed to recruit a Director of Development, described above. We anticipate that this will bring in alternative sources of funding in 2021.

The Covid pandemic impaired some of the Institute's activities during 2020, such as international travel to collaborators and conferences. Crucially, it restricted its ability to apply for new research grants. On the other hand, the Institute is deeply aware of the collaborative nature of research, particularly in the field of theory, where new ideas are fragile. By working with its solicitors Evesheds, the Institute was able to continue operating. This led to several unexpected opportunities, including our partnership with Bit.Bio and the recruitment of several scientists and key members of staff, which have been crucial to our growth in 2020.

1.5 Declaration

The Trustees declare that they have approved the above report.

Signed on behalf of the trustees by



Dr Thomas Fink
Director and Trustee

28 May 2021

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 2020.

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 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 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 28 June 2021

3 Statement of financial activities

<i>Income</i>	<i>Unrestricted 2020 (£)</i>	<i>Restricted 2020 (£)</i>	<i>Total 2020 (£)</i>	<i>Total 2019 (£)</i>
Donations & legacies (see N.4)	3,383	509,067	512,450	80,015
Other trading activity (see N.4)	22,116	0	22,116	51,164
	25,499	509,067	534,566	131,179

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)	16,025	407,224	423,249	332,177
	16,025	407,224	423,249	332,177

Net income/(expenditure) (see N.6)	9,474	101,843	111,317	(200,998)
Transfers between funds (see N.11)	0	0	0	0
<i>Net movements in funds</i>	<i>9,474</i>	<i>101,843</i>	<i>111,317</i>	<i>(200,998)</i>

Reconciliation of funds

Total funds at 1 Jan 2020	211,487	20,267	231,754	432,752
Total funds at 31 Dec 2020	220,961	122,110	343,071	231,754

4 Balance sheet

<i>Fixed assets</i>	<i>2020 (£)</i>	<i>2019 (£)</i>
Tangible assets (see N.7)	2,820	2,168
Investment in subsidiary (see N.8)	100	100
	2,920	2,268

Current assets

Debtors (see N.9)	1,355,480	1,322,230
Cash at bank	121,234	521
	1,476,714	1,322,751

Current liability

Amount falling due within one year (see N.10)	(1,136,563)	(1,093,265)
Net current assets/(liabilities)	340,152	229,486

Net assets

343,071	231,754
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Charity funds

Restricted (see N.11)	122,110	20,267
Unrestricted (see N.11)	220,961	211,487
	343,071	231,754

The financial statements have been prepared in accordance with the provisions applicable to small companies within Part 15 of the Companies Act 2006. The company is entitled to exemption from audit under S477 of the Companies Act 2016. These 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

28 May 2021

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 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 Institute is exempt from preparing group accounts in accordance with s402 of the Companies Act 2006 and the Charities SORP (FRS 102).

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, certainty 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 financial statements were prepared on the basis that the Institute is a going concern. In early 2020 the Institute received one new research contract and two new grants, worth a total of £1.8 million over three years. One-half of this is designated for unrestricted funds. These are from the Medical Research Council, Cancer Research UK and the cell coding company Bit.Bio Ltd. All three projects start on 1 April 2020. The Institute has a surplus on unrestricted funds of £220,961 (2019: £211,487). The Trustees believe that this and future income from the Institute's new Independent Research Organization status will allow it to continue its activities.

N.4 Income

<i>Income from donations</i>	<i>Unrestricted 2020 (£)</i>	<i>Restricted 2020 (£)</i>	<i>Total 2020 (£)</i>	<i>Total 2019 (£)</i>
Donations	0	0	0	3,500
Grant and corporate	3,383	509,067	512,450	76,515
	3,383	509,067	512,450	80,015
<i>Income from other trading activities</i>				
Fee income	15,500	0	15,500	32,000
Office and room rental	6,619	0	6,619	10,103
Lecture fee income	0	0	0	9,061
	22,116	0	22,116	51,164

N.5 Expenditure

	Staff costs (£)	Depreciation (£)	Other costs (£)	Total 2020 (£)	Total 2019 (£)
Research activity costs (detailed below)	284,631	0	15,733	300,364	146,545
Support costs (detailed below)	14,396	2,575	105,914	122,885	185,632
	299,027	2,575	121,647	423,249	332,177

Research activity costs	2020 (£)	2019 (£)	Support costs	2020 (£)	2019 (£)
Postdocs	57,579	40,000	Administration wages and salaries	12,917	52,467
Fellows	114,850	0	Depreciation	2,575	2,634
Developers	89,000	90,000	Rent	30,000	30,000
Consulting	13,000	0	Bookkeeping fees	9,651	13,075
Travel	1,168	1,716	Sundry expenses	1,276	7,188
Employers national insurance	22,270	11,583	Bank charges and interest	704	2,545
Employers pension	932	1,555	National insurance	1,479	6,255
IT software and consumables	1,322	703	Independent Examiner's fee	3,600	3,600
Books and sundry	243	988	Utilities	2,901	4,276
	300,364	146,545	Repairs and renewals	1,449	3,005
			Cleaning	2,780	2,865
Governance costs			Legal fees	5,522	0
Independent Examiner's fees	3,600	3,600	Rates	(1,367)	3,809
Legal fees	5,522	0	Insurance	1,143	1,215
	9,122	3,600	Telephone and internet	4,901	2,193
			Printing, stationery and postage	1,068	506
Staff costs			Advertising and publication fees	31,138	0
Wages and salaries	274,345	142,467	Recruitment fees	17,700	0
Social security costs	23,750	16,502	Pension costs	0	969
Pension costs	932	969	Subscriptions	(6,362)	1,255
	299,027	159,938	Website development	0	1,351
			(Profit)/loss on disp. fixed assets	0	(716)
			Public relations		53,011
			Foreign exchange loss/(gain)	(190)	(5,871)
				122,885	185,632

One employee received a salary fee in excess of £60,000. Senior management was paid £72,571 (2019: £Nil). The Institute's Articles allows Trustees to be paid for services to the company, and Trustees were paid £Nil and no expenses were reimbursed (2019: £Nil). The independent examiner was paid £3,600 (2019: £3,600) for examining and £Nil (2019: £Nil) for other services. The average monthly number of employees during the year was 5 research staff (2019: 3) and 1 administrative staff (2019: 1).

N.6 Net income & expenditure

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

	2020 (£)	2019 (£)
Depreciation of tangible fixed assets	2,575	2,634
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 2020	189,537	47,749	3,547	240,833
Additions	0	0	3,227	3,227
Disposals	0	0	0	0
At 31 Dec 2020	189,537	47,749	6,774	244,060

Depreciation

As at 1 Jan 2020	188,967	46,151	3,547	238,665
Charge for the year	570	929	1,076	2,575
On disposals	0	0	0	0
At 31 Dec 2020	189,537	47,080	4,623	241,240

Net book value

At 31 Dec 2020	0	669	2,151	2,820
At 31 Dec 2019	570	1,598	0	2,168

N.8 Investments

Investment	2020 (£)	2019 (£)
In 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 35a South St, London, W1K 2XF), 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 2020 showed a total surplus in reserves and share capital of £4,311 (2019: deficit of £1,951).

N.9 Debtors

Debtors	2020 (£)	2019 (£)
Rental deposit	2,500	2,500
Other debtors	6,104	1,053
Owed from group undertakings	1,338,559	1,318,677
Accrued income	8,317	0
	1,355,480	1,322,230

N.10 Creditors

Creditors falling due within the year	2020 (£)	2019 (£)
Bank loans and overdrafts	6,155	6,227
Other loans	396,889	395,365
Trade creditors	63,378	82,079
Social security	115,772	95,006
VAT	231,058	205,197
Other creditors	265,211	284,888
Accruals and deferred income	58,100	24,503
	1,136,563	1,093,265

N.11 Restricted and unrestricted funds

Restricted funds. The way to think about restricted funds is as a bunch of separate pots, each of which starts the year filled to some amount. Relevant income is poured in, and relevant expenditure is poured out, determining the level of the pot at the end of the year.

Unrestricted funds. The way to think about unrestricted funds is as a single pot, which starts the year filled to some amount. Unrestricted income from different sources is poured in and mixed together. From this single pot expenditure is poured out, determining the level of the pot at the end of the year.

The Institute has six types of income which contribute to its restricted and unrestricted funds. The subtotals for these six 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 2020 (£)	Income	Expenditure	Transfers	Carried forward 31 Dec 2020 (£)
Restricted funds						
Grants	Garfield Weston	16,488	0	2,575	0	13,913
	BCG3	0	37,571	37,571	0	0
	BCG	3,779	0	3,779	0	0
	UCL - Reimagine	0	100,096	41,202	0	58,894
	KCL - CRUK	0	18,760	18,760	0	0
	BitBio Ltd	0	352,640	303,337	0	49,303
		20,267	509,067	407,224	0	122,110
Unrestricted funds						
LIMS Ventures	LIMS Ventures		15,500			
Other trading	Room rental	211,487	6,616	16,025	0	220,961
Corporate	Security service		3,383			
		211,487	25,499	16,025	0	220,961
Total funds						
Restricted funds		20,267	509,067	407,224	0	122,110
Unrestricted funds		211,487	25,499	16,025	0	220,961
		231,754	534,566	423,249	0	343,071

Short name	Source	Long name
Reimagine	Medical Research Council	Reimagine
BCG3/BCG	Boston Consulting Group	The statistical physics of recursive innovation
Precision medicine	Cancer Research UK	New quantitative tools for precision medicine
Bit.Bio	Bit.Bio Ltd	The mathematical structure of cell identity and reprogramming

N.12 Analysis of net assets between funds

	<i>Unrestricted</i> <i>2020 (£)</i>	<i>Restricted</i> <i>2020 (£)</i>	<i>Total</i> <i>2020 (£)</i>	<i>Unrestricted</i> <i>2019 (£)</i>	<i>Restricted</i> <i>2019 (£)</i>	<i>Total funds</i> <i>2019 (£)</i>
Fixed assets	344	2,575	2,919	1,598	570	2,168
Net current assets/liabilities	175,967	218,386	394,353	209,889	19,697	229,586
	176,311	220,961	397,272	211,487	20,267	231,754

N.13 Related party transactions

Included within other creditors is a balance of £168,533 (2019: £188,654) due to the Managing Director, which will be drawn down from year to year.

During the year, the Institute invoiced LIMS Ventures Limited (see N.4) £15,500 (2019: £32,000) in respect of rent and professional services. At the year end, LIMS Ventures Limited owed the Institute £1,338,559 (2019: £1,318,677).

During the year, the Institute received funds from Boston Consulting Group totaling £37,571 (2019: £85,575). Martin Reeves is a director of Boston Consulting Group.

N.14 Operating lease commitments

As at 31 Dec 2020, minimum payments to be made in relation to the premises rental lease totalled £131,040 (2019: £22,500).

N.15 Comparative statement of financial activities for the year ended 31 Dec 2019

	<i>Unrestricted</i> <i>2019 (£)</i>	<i>Restricted</i> <i>2019 (£)</i>	<i>Total</i> <i>2019 (£)</i>
<i>Income</i>			
Donations & legacies	1,000	79,015	80,015
Other trading activity	51,164	0	51,164
Other	0	0	0
Total income	52,164	79,015	131,179

<i>Expenditure</i>			
Charitable activities	247,822	84,355	332,177
Total expenditure	247,822	84,355	332,177

Net income/(expenditure)	(195,658)	(5,340)	(200,998)
Transfers between funds	0	0	0
Net movements in funds	(195,658)	(5,340)	(200,998)

<i>Reconciliation of funds</i>			
Total funds at 1 Jan 2019	407,145	25,607	432,752
Total funds at 31 Dec 2019	211,487	20,267	231,754