

**JAMES CLERK MAXWELL FOUNDATION**

**ANNUAL REPORT AND SUMMARY ACCOUNTS**

**Year ended 31 December 2018**

# **JAMES CLERK MAXWELL FOUNDATION**

(Scottish Charity Number SC015003)

## **Trustees' Annual Report and Accounts for the year ended 31 December 2018**

### **HONORARY PATRON**

Professor Peter Higgs CH FRS FRSE

### **TRUSTEES**

Professor David S. Ritchie, MA FRMetS FRSE (Honorary President)

Professor T. Alastair Gillespie, BA PhD HonDSc FRSE (Chairman)

David O. Forfar, MA FFA MMath DipStats FSS FIMA CMath FRSE (Past Chair and visitor coordinator)

Professor Peter M. Grant, OBE PhD Hon Dr h.c. HonDEng HonDEng LFIEEE FREng FRSE (Secretary)

Dr John W. Arthur, BSc PhD FInstP FIET SMIEEE FREng FRSE (Property and Curator)

Professor J. Chris Eilbeck, BA PhD FRSE (Meetings)

Sir Michael Atiyah, OM HonDSc HonFREng HonFMedSci HonFFA PastPresident RS & RSE

Dr Richard C. Dougal, BSc PhD CPhys FInstP

Professor Dugald B. Duncan, BSc PhD FIMA

Dr Isobel Falconer, MA PhD

Dr Iain Lindsay, BSc PhD (From 1 September 2018)

Professor Malcolm S. Longair, CBE BSc MA PhD HonLLD FRS FRSE

Dr A. David Milne, OBE PhD HonDEng HonDSc FIET SMIEEE FREng FRSE

Dr Susie P. Mitchell, BSc PhD

Professor Roland A. Paxton, MBE MSc PhD HonDEng CEng FICE FRSE

Mr David Peacock (To November 2018)

Dr James Rautio, BSEE MS PhD FIEEE

Dr John S. Reid, PhD FInstP CPhys MLitt FRAS FRMetS

Professor John F. Roulston, OBE DEng HonDSc FREng FRSE

Professor Alan C Shotton, BSc ARCS DPhil CPhys FInstP FRSE

Mr Benjamin Thomson, BSc FRSE

Treasurer: Daniel O'Hara

### **Contact address**

James Clerk Maxwell Foundation, 14 India Street, Edinburgh, EH3 6EZ.

### **Recruitment and appointment of Trustees**

Trustees are selected from suitably qualified persons who have an interest in James Clerk Maxwell.

### **Governing document**

Deed of Declaration of Trust (registered 11 February 1977).

### **Charitable purposes**

As set out in Deed of Declaration of Trust, 4th Schedule.

### **Activities and achievements**

See Trustees Report for the year ended 31 December 2018.

### **Reserves**

At 31 December 2018 the Foundation had bank account funds of £65,061 plus investments valued at £47,876 giving a total reserve of £112,947.

## **Trustees' Report for the year ended 31 December 2018**

### **TRUSTEES AND FRIENDS**

The Foundation noted with sadness during 2018 the death, as trustee, of Mr David Peacock who provided us with excellent service over many years as colleague, WWW master and visitor host. Dr Iain Lindsay was upgraded from friend and appointed as a new trustee during the year.

### **CHARITABLE GRANTS AWARDED**

Edinburgh International Science Festival Maxwell lecture by David Flynn of ARM  
Maxwell Prize (awarded jointly with the Mackinnon/Macneill Trust) to an outstanding student in science or engineering from the West of Scotland on their entering university.  
University of Edinburgh PhD studentship support.  
Scottish Mathematics Council.  
Scottish Mathematics Masterclass.  
Dunfries Science Festival.  
Edinburgh Academy Science Prize.

The Trustees noted, with immense pleasure, that David Flynn and David Jagger are to be awarded the 2019 IEEE/RSE James Clerk Maxwell Medal for “their contributions to the development of novel Reduced Instruction Set Computer (RISC) architectures as adopted in 100 billion+ microprocessor cores worldwide.” David Flynn is employed by ARM Cambridge.

### **UPKEEP OF THE HOUSE**

There was further continuing essential expenditure in 2018 on: the procurement of new library furniture; period coatstands for visitors use in the foyer; as well as sundry property repairs such as replacing our central heating controllers and upgrading the kitchen in our basement flat. We appointed Redpath Bruce Ltd to act as our maintenance factor.

### **FINANCIAL POSITION**

The statement of accounts for the year ended 31 December 2018 shows an overall income of £29,567 (predominately rental) including donations totalling £757. Our total expenditure of £22,160, included charitable donations totaling £6,550, Foundation development and outreach activities (such as house maintenance, updating displays, newsletter production and distribution) of £15,490, giving a slight excess of income over expenditure. The value of our investments at the year end was £47,866. The balance at the banks at 31 December 2018, including our investments, amounted to £112,947.

### **NEWSLETTER**

The Tenth Edition (Spring 2018) included an article by Prof. Martin Hendry, University of Glasgow, on the *Discovery of Gravitational Waves* and an article by Prof. Elisabetta Strickland, University of Rome, on the Scottish scientist *Mary Somerville*. The Eleventh edition (Summer 2018) featured an article by our trustee, Prof. Peter Grant, on *Wireless Advances using Visible Light (LiFi)*.

It is appreciated by the Foundation that the printing of the Newsletters (which are also available on our website) was undertaken, pro bono, by LEONARDO, Crewe Toll Edinburgh (formerly SELEX Galileo).

## **MUSEUM**

We are grateful to the Museum of Communications in Burntisland who have loaned us a coherer to accompany to our spark generator display covering early communications equipment. We added a 3-LED colour display demonstrating the generation of white light, a Crookes' radiometer connected with Maxwell's kinetic theory of gases, and also a refurbished Wimshurst spark generator to demonstrate the practical generation of electromagnetic waves. We had conservation work undertaken on the following items in our display case: an original Maxwell poem; the three copy colour lantern slides; and two original Maxwell letters. These have now been professionally photographed and added to our digital archive. We also made additions to our set of staircase engravings featuring additional prominent scientists. We had been gifted an original GSM signed 2G cellular mobile telephone agreement from 1987.

## **VISIT to INDIA STREET by Dr Jackie Lee**

In Spring 2018, we hosted a further visit from Dr Jackie H-C Lee from California to request assistance from our archive for his development of Virtual Reality material on Faraday and Maxwell.

## **OUTREACH**

Our website: <http://www.clerkmaxwellfoundation.org> has recently been enhanced with a new panoramic virtual tour at <http://www.maxwellhouse.org.uk/> which highlights the main features of our museum.

We secured permission to mount an explanatory plaque on the rear of the George Street statue to James Clerk Maxwell to point visitors to [www.jcmf.org](http://www.jcmf.org) to better highlight Maxwell's technological significance to statue observers.

## **SCHOOL VISITS**

We hosted museum visits from 4 Scottish School pupils (Edinburgh Academy, George Heriot's, Falkirk High and Strathallan), for over 80 pupils which were very well received. We intend to develop these visits further in 2019 and extend this by inviting more local secondary schools to arrange to visit our museum.

## PRESENTATIONS

Presentations on James Clerk Maxwell were made to over 270 visitors who came in various groups to visit the museum. Major hosted group visits were:

23 March	36 students from Thames Valley College
27 March	22 students from College St Michel Fribourg, Switzerland
13 April	24 French School students
23 May	20 individuals from Arizona “Golden Age of Science” alumni association
11 June	70 attendees from “Biomedical Applications of Tomography Conference”
11 July	20 students from Florida, USA
17 August	20 staff from Faraday Grid Company
11 October	12 East Lothian U3A visitors
23 October	set of West Lothian College apprentices
19 November	repeat visit of 40 Physics students from Dundee University

One our Trustees provided an external presentation on James Clerk Maxwell on 12 September to Braids Rotary Club

We hosted, in the Museum meeting room, Mathematics scientific meetings on these dates:

30 August  
11 September  
23 November

## VISITS

The number of individual visitors to the birthplace exceeded 150. The trustees and friends hosted over 65 individually guided visits, for which the visitor profile was: 40% from the UK; 25% from USA; 25% from EU; 5% from Asia; and 5% from the rest of the world. To make better use of the limited Trustee time available to host these visits we changed to opening by appointment, on every Tuesday afternoon, from October 2018.