BRITISH SOCIETY
FOR THE HISTORY
OF MATHEMATICS

Beyond the Academy. The Practice of Mathematics from the Renaissance to the Nineteenth Century

York, 6–7th April 2017

Venue: Priory Street Centre, York

INTRODUCTION

In the history of mathematics, no less than in the study of history more generally, much attention has traditionally been given to the major figures like Newton, Euler, or Cauchy. However (again, as in history more generally), there is much to be gained from studying the 'minor' figures in the story of the development of mathematics: people whose names are not associated with any groundbreaking discoveries or who have not proved any major theorems, but who nevertheless employed mathematics on a daily basis, and who thus contributed in a broader sense to mathematical progress. This two-day conference is dedicated primarily to the life and works of such 'Mathematical Practitioners'. Who were they? In what milieus did they move? How did they make their living? A secondary, closely related theme is 'mathematics beyond the universities': just as a great deal of attention has been focused on high-profile figures, so too has there been an emphasis in scholarly work on the pursuit of mathematics within major metropolitan or academic centres. The role of women in this story is a particularly important consideration. Our aim with this conference is also to provide a forum for investigating the history of mathematical practice in non-academic or non-urban settings.

Version of Sunday 12th March, 2017

Programme – Day 1

09:00–09:45   Assemble for coffee

09:45–10:00   Welcome (Philip Beeley & Christopher Hollings)

John Bibby (University of York)
York's Mathematical Practitioners and Other Animals, from A to Z

Session chair: Jim Bennett (University of Oxford)

10:00–11:00   Philip Beeley (University of Oxford)
Mathematical Businesses: Seventeenth-Century Practitioners and their Academic Friends

11:00–12:00   Angela Axworthy (Technische Universität Berlin)
Jacques Peletier du Mans's Conception of Practical Geometry in the De usu geometriae *(1572) and* De l'usage de geometrie *(1573)*

12:00–12:30   Stefano Gulizia (Independent Scholar)
Gian Vincenzo Pinelli (1535–1601) and the Rise of the Mathematical Practitioner in the Veneto

12:30–13:30   Lunch

Session chair: Isobel Falconer (University of St Andrews)

13:30–14:30   Daniel Mitchell (Rheinisch-Westfälische Technische Hochschule Aachen)
'The Etherealization of Common Sense'? Late Nineteenth Century British Mathematics of Measurement and the Development of a Quantity Calculus

14:30–15:30   Michael Friedman (Humboldt-Universität zu Berlin)
A 'Minor' Mathematics: Paper Folding and Geometry in Britain and India

15:30–16:00   Tea

16:00–16:30   Vincent Schott (University of St Andrews)
The Mathematics of James Dodson behind the Founding of the Equitable Society

16:30–17:30   Mark McCartney (University of Ulster)
Teaching Mathematics in Early Nineteenth Century Belfast: James Thomson and the Belfast Academical Institution

17:30–19:00   Scientific walk organised by York Science Trails Group

Session chair: PHILIP BEELEY (University of Oxford)

09:00–09:30   CHRISTOPHER HOLLINGS (University of Oxford)
Mathematics at the Philosophical and Literary Societies

09:30–10:30   SLOAN EVANS DESPEAUX (Western Carolina University, USA)
Mathematical Men in Humble Life: Philomaths from the North of England as Active Contributors and Editors of 'Questions for Answer' Journals

10:30–11:00   Coffee

11:00–12:00   JIM BENNETT (University of Oxford)
'Mecanicall practises drawne from the Artes Mathematick': Mathematical Repute and the Navigator John Davis

12:00–13:00   PAUL HUGHES (Independent Scholar)
The Navigation of Greenvill Collins (1643–1694)

13:00–14:00   Lunch

Session chair: CHRISTOPHER HOLLINGS (University of Oxford)

14:00–15:00   BORIS JARDINE (University of Cambridge)
It's only a paper rule? William Oughtred, Elias Allen, and the Invention of the Slide Rule

15:00–16:00   LEO ROGERS (Independent Scholar)
English Mathematical Practitioners and the Development of the Art of Gunnery in the Seventeenth Century

16:00–16:30   Tea

16:30–17:30   YELDA NASIFOGLU (University of Oxford)
Practical Mathematics as Analogy

ABSTRACTS

ANGELA AXWORTHY (Technische Universität Berlin)

Jacques Peletier du Mans's Conception of Practical Geometry in the De usu geometriae *(1572) and* De l'usage de geometrie

This paper aims to examine the *De usu geometriae* of Jacques Peletier du Mans, sixteenth-century French mathematician, poet and physician (Le Mans, 1517 – Paris, 1582). This treatise, which was printed in 1572 and published again in French in 1573 under the title *De l'usage de geometrie*, is divided into definitions and problems and aims to present propositions of a practical nature, which range from Euclidean problems to propositions on measuring instruments. Considering, on one hand, the introductory epistles, and, on the other hand, the structure and content of the treatise, our goal is to identify the intention of the work, in particular the type of knowledge it delivers and the type of audience it seeks to reach, as well as the conceptions Peletier then presents regarding the nature of practical geometry and its relation to theoretical geometry.

JOHN BIBBY (University of York)

York's Mathematical Practitioners and Other Animals, from A to Z

In the context of a welcome to York, this talk will describe some recent work on the city's Mathematical and scientific Practitioners — from Alcuin to zoological specimens.

PHILIP BEELEY (University of Oxford)

Mathematical Businesses: Seventeenth-Century Practitioners and their Academic Friends

The growth of the mathematical sciences following the Restoration witnessed the emergence of a number of close relationships between practitioners and members of the new professional class of mathematicians teaching in the universities. The most prominent examples are provided by figures such as Michael Dary, Thomas Strode, and John Collins on the one side and Isaac Barrow, James Gregory, and John Wallis on the other side. What were the expectations driving these relationships and what impact, if any, did they have on the contemporary development of mathematics in England and Scotland? The talk will seek to give some preliminary answers.

JIM BENNETT (University of Oxford)

'Mecanicall practises drawne from the Artes Mathematick': Mathematical Repute and the Navigator John Davis

The Elizabethan seaman John Davis had a substantial reputation in his time, not only for his achievements at sea but as 'a man very well grounded in the principles of the Arte of Navigation'. Although his standing rested on his record as a pilot, his seamanship was understood to rely on skills that were not simply an accumulation of practical experience. He, in turn, felt able to

publish attributions of mathematical reputation. He is one of the earliest in E. G. R. Taylor's list of 'mathematical practitioners' who seems unequivocally to deserve that slippery and very accommodating description, and his mathematical practice — far 'beyond the academy' in more senses than one — therefore deserves a closer examination in the context of this meeting.

Sloan Evans Despeaux (Western Carolina University, USA)

Mathematical Men in Humble Life: Philomaths from the North of England as Active Contributors and Editors of 'Questions for Answer' Journals

Working-class men from the North of England began to form societies for their avocational, mathematical interests by the second decade of the eighteenth century. Some of these men pursued mathematics under detrimental economic conditions: for example, one philomath, John Butterworth, received assistance from the Manchester 'Society for the Relief and Encouragement of Scientific Men in Humble Life'. For these men, well outside of the university sphere, Latin mathematical texts were useless. While some English textbooks on algebra and geometry helped fill the void for instructional material, it was mathematical journals that most helped inform and motivate these philomaths. In turn, these men contributed to the persistence and wide-ranging popularity of the 'questions and answers' genre in British journals for over 150 years.

Michael Friedman (Humboldt-Universität zu Berlin)

A 'Minor' Mathematics: Paper Folding and Geometry in Britain and India

In 1893 the Indian mathematician Tandalam Sundara Row has published his book *Geometrical Exercises in Paper Folding* in Madras. The book was recommended in 1895 by Felix Klein, which in turn led to the discovery of the Italian mathematician Margherita P. Beloch, that one can — with paper folding! — solve equations of degree 3 and 4. Klein is obviously considered one of the famous mathematicians during the 19th century, and Beloch's discoveries were indeed groundbreaking (though ignored for several decades), but the question remains — how did the practice of paper folding come to be considered as a mathematical one in India?

The answer to this question is to be found in the United Kingdom. In my paper, I claim that Row was influenced from two practices, both exported from the UK to the Indian colony: the Fröbelian paper folding and the methodologies of Olaus Henrici (1840–1918) for teaching mathematics. While the occupations of Fröbel in British kindergartens were at that time hardly considered as mathematical (opposed to Fröbel's explicit intent), when transferred to India they began being conceptualized as such. In addition, Henrici, who advocated the use and production of physical mathematical models and rejected the learning by heart of Euclid, used folding as a legitimate operation to teach geometry. But also in this case, while being partially rejected in the UK, Henrici's ideas were more accepted in India. Although these two mathematical practices were developed separately in the UK, interwoven together only in India, they did share a common trait: both were 'minor', in the sense that they were not accepted as a legitimate practice to be applied in the academic world of pure mathematics. I therefore intend to examine these two 'minor' practices, coming together in India and culminating in Row's book.

STEFANO GULIZIA (Independent Scholar)

Gian Vincenzo Pinelli (1535–1601) and the Rise of the Mathematical Practitioner in the Veneto

The reading circle of the Paduan virtuoso and bibliophile Gian Vincenzo Pinelli offers an ideal opportunity to locate mathematics within the culture of Counter-Reformation Italy. Whereas other Venetian intellectual circles, like the Morosini group, left scant archival traces, Pinelli's exceptional talent as a collector allows us to trace the dissemination of *adversaria* and debunk the myth of a patrician disinterest for the history of science; moreover, his library, now housed at the Ambrosiana in Milan, displays news about intersecting mathematical networks that have rarely been mined other than for protocols of storing and abridgement. On the other hand, my aim is not to use Pinelli's archive as a privileged viewpoint from which to study late Renaissance elite culture, but to document through his interests the rise and genealogy of the technical expert as distinct from a courtier.

Within this framework, this paper first examines what distinguishes mathematics from a homogeneous reservoir of knowledge, and assesses the new role attributed to paper technology and scrapbooking in such disciplinary separation. It then looks at a neglected list of mathematical instruments (in MS S 94 sup.) owned by Giuseppe Moleto (1531–1588), who nominated Pinelli executor of a will. It concludes with a reappraisal of the major role played in Pinelli's entourage by the diplomat and jack-of-all-trades Filippo Pigafetta (1533–1604), who was also the author of newsletters bought by subscription and later advised the Medici on how to display instruments and prints as vehicles of mathematical wonder.

CHRISTOPHER HOLLINGS (University of Oxford)

Mathematics at the Philosophical and Literary Societies

The founders of the Philosophical and Literary Societies that emerged across Britain in the late-eighteenth and early-nineteenth centuries typically professed an interest in all strands of knowledge, including mathematics. In practice, however, the lecture programme of a typical Society rarely featured topics that might permit any mathematical content — although there are notable exceptions: the Manchester Literary and Philosophical Society, for instance. In this short talk, I will examine the handling of mathematics by a number of such Societies, and compare this with the central position occupied by mathematics at meetings of the British Association for the Advancement of Science.

PAUL HUGHES (Independent Scholar)

The Navigation of Greenvill Collins (1643–1694)

Greenvill Collins impressed Charles II with his journal keeping, then worked directly for the three kings from 1681 through to death. 'Great Britain's Coasting Pilot' is the result of his seven-year coastal survey. He was a typical mathematical practicioner of his age. Three early large-scale Indian Ocean plane port charts influenced him: of Toliary, Bandar Abbas and the Strait of Hormuz. The first two are based on a sixteen point windrose framework, the third of

a square grid. He adapted elements of both types into his charts. Their magnetic variation is dated, preceding Henry Gellibrand's public announcement of secular change by five years. He triangulated a shoal off the Norfolk coast, then left a rare note of a noon latitude calculation and instrument comparison. The orthodox view of the windrose frame's origin is that it comes from bisection. His charts are very large with a rectangular emphasis at the expense of the oblique. Elements suggest he calculated his grids. For a number of weeks he carried aboard the mathematican John Caswell, who had published the usefulness of the 'position by horizontal angles' to surveying. This allowed Collins to measure distance over water.

BORIS JARDINE (University of Cambridge)

It's only a paper rule? William Oughtred, Elias Allen, and the Invention of the Slide Rule

On August 20th, 1638, William Oughtred wrote to the instrument-maker Elias Allen with instructions for making 'two rulers for calculation'. This was an unusual compound instrument, which had first been published in a 1633 pamphlet. It could be used in a variety of configurations, one of which was a novel use of two logarithmic scales: the slide rule. So when Allen responded with an example of the 'two rulers' he was in fact making the first example of an instrument that would remain in use for more than three hundred years.

The recent discovery of a paper print of this 'first slide rule' provides an occasion to reflect on the nature of invention and instrument making seventeenth-century England. Oughtred was a serial priority-disputant, Allen his regular colleague in the invention of new instruments. Yet the circumstances of the 'two rulers' and its manufacture do not follow the usual pattern.

This paper is in two parts. First I ask what was at stake for Oughtred and Allen in the invention of new instruments; the answer adds to our understanding of the relationship between scholars and artisans in the period. Then I turn to the collectors of mathematical papers, exploring the difficult question of how and why the paper slide rule survived at all.

MARK MCCARTNEY (University of Ulster)

Teaching Mathematics in Early Nineteenth Century Belfast: James Thomson and the Belfast Academical Institution

At the beginning of the nineteenth century, Belfast was a town which was growing rapidly, both in size and in importance within Ireland. Part of this rapid growth saw the opening of the Belfast Academical Institution in 1814. It aimed to be both a school and a college combined, with the college part enabling men from Ulster to be educated at home rather than having to, as was typical, travel to Scotland.

The school's first mathematics master, and college's first mathematics professor, was one James Thomson (1786–1849), a bright and ambitious farmer's son from Ballynahinch, some 20km south of Belfast. During his career in Belfast Thomson wrote a number of textbooks, on arithmetic, geography, trigonometry and calculus. These allow us to trace what he taught to school boys in the town to prepare them for a working live in a busy port, and to examine the more advanced mathematics which he taught in the college (for which at least one set of examinations exists).

Archive material from the school also grants an insight into the practicalities of teaching during the period.

DANIEL MITCHELL (Rheinisch-Westfälische Technische Hochschule Aachen)

'The Etherealization of Common Sense'? Late Nineteenth Century British Mathematics of Measurement and the Development of a Quantity Calculus

The late-nineteenth century gradually witnessed a liberalisation of the kinds of mathematical object and forms of mathematical reasoning permissible in physical argumentation. The early development of a quantity calculus demonstrates the slow and difficult spread of the new 'syntactic' mode of mathematical intelligibility, developed by elite mathematicians from the 1830s onwards, into elementary mathematical pedagogy, experimental physics, and fields of physical practice like telegraphic engineering. A watershed event in this process was a clash between J. D. Everett and James Thomson, prompted inadvertently by Richard Wormell, over the meaning and algebraic manipulation of dimensional formulae invented by James Clerk Maxwell. Buoyed by dramatic changes to science education in Britain during the 1870s, and the rising economic importance of electrical science and technology during the 1880s, this clash precipitated the development of rival 'Maxwellian' and 'Thomsonian' traditions of interpreting and applying 'dimensional' equations. What at first looks like a dispute over a seemingly esoteric mathematical tool for the practical business of unit conversion turns out to concern Everett's application of symbolical algebra to the representation and manipulation of measurements of physical quantities. This move prompted a vigorous reaction among Thomsonian defenders of an orthodox 'mathematical realism' and their sympathisers, who, for ideological, epistemological, semantic, and pedagogical reasons, insisted upon retaining physical correlates for mathematical entities and operations. Their resolute stance reveals a deep gulf in terms of conceptions of mathematical intelligibility between elite mathematicians and mathematical practitioners in Victorian Britain.

YELDA NASIFOGLU (University of Oxford)

Practical Mathematics as Analogy

In Observation VII of his celebrated book *Micrographia*, Robert Hooke attempted to explicate the phenomenon of the so-called Rupert's glass drops. Known in Europe since the 1650s and thought to have been brought to England by Prince Rupert as a gift to Charles II, these tadpole-shaped pieces were formed by dripping molten glass into cold water. In contrast to the incredibly strong globular end that could withstand strikes from a hammer, the breaking of the thin tail caused the whole thing to explode into dust. Based on his numerous experiments, Hooke gave an explanation — a 'conjecture' as he put it — of the phenomenon: the "Fabrick of the drop ... [was] analogus to that of an Arch". Indeed the illustration Hooke provided is not too dissimilar to the fan vaulting over the staircase to the Great Hall built a decade and a half before Hooke arrived at Christ Church, Oxford. Hooke was fond of analogies; looking for Euclid under his microscope, he thought the "Earth it self may be an Analogie call'd a Physical Point". In his 'General Scheme, or Idea of the present state of Natural Philosophy', written soon after *Micrographia* and presumably before his appointment as a Surveyor to the City of London, Hooke proposed that the intellect

act as a "skilful Architect" judiciously collecting the materials needed to realise his design, laying them in a convenient order.

During the early modern period, practical mathematics was central to the development of experimental philosophy, providing it with the necessary instruments and systems of mensuration. This paper examines how, in Hooke's case, it also provided the architectural and mathematical metaphors (Vitruvian analogia and ratio) needed to fill in certain ontological and epistemological gaps in natural philosophy.

Leo Rogers (Independent Scholar)

English Mathematical Practitioners and the Development of the Art of Gunnery in the Seventeenth Century

Tartaglia's *Nova Scientia* of 1537 heralded a new approach to the problems of military technology, and after some practical enquiry his final edition of 1558 offered the idea that nature could be explained by the application of Platonic philosophy to physical phenomena.

Attempting to break the Aristotelian paradigm, Tartaglia accepted that the flight of the missile, hitherto thought to comprise distinct violent and natural phases, had to be of a mixed nature. While the application of mathematics in a mechanical paradigm might offer some validity, the Gunner's problem was finding a reliable way of aiming and firing his shot with reasonable accuracy, while on the other hand, neo-platonist philosophers needed convincing with a formal solution to this problem. In his *Stratioticos* (1579) Thomas Digges' chapter on gunnery proposed an extensive list of parameters for investigation, and John Dee had espoused the virtues of scientific method and vernacular language later forcefully expressed in Francis Bacon's *Novum Organum* (1620), where the intellect could pass beyond the ancient arts and produce a radical revision of methods of gaining knowledge.

In this paper I trace the development of the 'Art of Gunnery' in the 17th century through the practical vicissitudes of the English Civil War, the parallel development of technology, and the new epistemology brought about through the Gunners' own practice.

Vincent Schott (University of St Andrews)

The Mathematics of James Dodson behind the Founding of the Equitable Society

Amongst actuaries he is frequently referred to as the 'father of life insurance', yet the mathematics of James Dodson, FRS (c. 1705–1757) has seldom been discussed in mathematical literature. After being turned down for old age by the 'Amicable Society', the very first life office, the mathematics teacher and former student of de Moivre set out to devise a scientific insurance scheme that would accept the likes of his age group. Dodson's pioneering work to calculate age-based premiums based on mortality rate laid the mathematical groundwork for the founding of the Equitable Society and life insurance as we know it.

After a brief introduction to Halley's and de Moivre's prior contributions to the 'valuation of lives' this talk will focus on Dodson's life, and his work as transcribed in his 'Lectures' from 1756/1757. Specifically, Dodson's calculation of premiums, his proposed insurance schemes, critique of the Amicable Society as well as his thoughts on profit distribution will be discussed and an account of the Equitable Society's early years will be presented.

Angela Axworthy (Technische Universität Berlin)

Angela Axworthy has a PhD in Philosophy (2011) from the Centre d'Études Supérieures de la Renaissance (Université François-Rabelais, Tours). She is currently a postdoctoral researcher at the Technische Universität in the framework of the Berlin Center for the History of Knowledge. She was previously a postdoctoral fellow of the Max Planck Institute for the History of Science, Berlin (2012–2016). Her research focuses on Renaissance epistemology of mathematics. She has worked on projects dealing with the ontology and epistemology of Renaissance commentators of Euclid, late Medieval cosmology and sixteenth-century practical geometry. She has recently published a book based on her PhD thesis entitled *Le Mathématicien renaissant et son savoir. Le statut des mathématiques selon Oronce Fine* (Paris, Classiques Garnier, 2016).

John Bibby (University of York)

John Bibby is a statistician/economist who lives in York. Recently he has got involved in historical issues, especially those relating to local York history, the Middle East, and the family history of Karl Pearson. He has recently established the York Science Trails Group.

Philip Beeley (University of Oxford)

Philip Beeleys research and publications are focused on the history of science and epistolarly cultures in early modern Europe. He is especially interested in the role played by correspondence networks in the emergence of modern scientific thought and in the ways in which mathematical ideas were disseminated and discussed both in scholarly communities and across different social milieus. A further area of his research is on early modern cryptography and its importance in shaping political and military events in late seventeenth-century Europe. He is currently President of the British Society for the History of Mathematics.

Jim Bennett (University of Oxford)

Jim Bennett has retired from being Director of the Museum of the History of Science, Oxford. He then worked for a time at the Science Museum, and has retired again. He has recently published a 'Very Short Introduction' to Navigation, in the OUP series. He is currently President of the Hakluyt Society.

Sloan Evans Despeaux (Western Carolina University, USA)

Sloan Despeaux completed a PhD at the University of Virginia under the supervision of Karen Parshall. Her research is in the history of mathematics, with a particular focus on nineteenth-century mathematics, mathematicians, and scientific journals in Britain. Her most recent publication (with Adrian Rice) is a survey of Augustus De Morgan's anonymous reviews for *The Athenæum.*

Michael Friedman (Humboldt-Universität zu Berlin)

Michael Friedman earned his doctorate in mathematics in Bar-Ilan University, Israel, and his master's degree in philosophy in Tel-Aviv University, concentrating on Lacan and Heidegger. He is now an associate researcher at the Excellence Cluster 'Image, Knowledge, Gestaltung' at Humboldt University Berlin and is currently finishing a monograph on the mathematization of the fold (2017, Birkhäuser). Recent publications include 'On Folding' (2016 transcription, ed. with Wolfgang Schffner), 'Psychoanalysis: Topological Perspectives' (2016 transcription, ed. with Samo Tomsic), and 'Martin Heidegger: die Falte der Sprache' (2017 Turia + Kand, ed. with Angelika Seppi).

Stefano Gulizia (Independent Scholar)

Stefano Gulizia is an independent scholar and intellectual historian (PhD 2009). His publications include articles on sophistic disputation; nautical instruments, printed books, and social experience in the early modern Atlantic world; Francesco Patrizi's methods of argumentation; and Ruscelli's *Book of Secrets.* He is currently working on automata in the early modern Mediterranean as well as Spain, and the print culture of Venice.

Christopher Hollings (University of Oxford)

Christopher Hollings is Departmental Lecturer in Mathematics and its History at the Oxford Mathematical Institute, and a Senior Research Fellow of The Queen's College, Oxford. His research interests lie in the history of mathematics, mainly in Cold War mathematical communication, and in the development of abstract algebra in the nineteenth and twentieth centuries.

Paul Hughes (Independent Scholar)

Captain Paul Hughes PhD is a marine consultant, pilot, aviator, and independent researcher, who has just completed a large study of Hydrographer Greenvill Collins (1643–1694).

Boris Jardine (University of Cambridge)

Boris Jardine's research deals with the history of the instruments and material culture of science. Jardine was previously Curator of History of Science at the Science Museum (London), and Munby Fellow in Bibliography at the Cambridge University Library (2014/15). His current project, 'The Lost Museums of Cambridge Science, 1865–1936', tells the story of the 'New Museums Site' in the centre of Cambridge, focusing on the way in which collections were amassed and then dispersed in the various museums that once occupied the site.

Mark McCartney (University of Ulster)

Mark McCartney is senior lecturer in mathematics at the University of Ulster and is a member of Council of the BSHM. His most recent edited books are *Mathematicians and their gods* (with Snezana Lawrence, OUP, 2015) and *James Clerk Maxwell: Perspectives on his life and work* (with Raymond Flood and Andrew Whitaker, OUP, 2014). Apart from the history of mathematics his other scholarly interests lie in the area of nonlinear systems.

Daniel Mitchell (Rheinisch-Westfälische Technische Hochschule Aachen)

Daniel Jon Mitchell is a *Wissenschaftlicher Mitarbeiter* at RWTH Aachen, Germany, and has worked mainly on the history of physics in nineteenth-century France and Britain. The research in his conference paper was carried out during a Leverhulme Early Career Research Fellowship at the Department of HPS, University of Cambridge, as part of his project on the role of absolute measurement in the rise of the physics discipline in Britain. His current research into the origins of the 'virtual particle' concept belongs to the collaborative project 'The Epistemology of the Large Hadron Collider', which is funded by the Deutsche Forschungsgemeinschaft (DFG).

Yelda Nasifoglu (University of Oxford)

Yelda Nasifoglu studied architecture in New York and architectural history and theory in Montreal before working as an architect for eight years. With a desire to investigate the roots and philosophical underpinnings of mathematical thinking in architecture, she returned to academia, first with an MSc in the history of science at Oxford, and is a PhD candidate in architectural history and theory at McGill University. Currently she is a Researcher with the 'Reading Euclid' project (with Benjamin Wardhaugh and Philip Beeley) based at the History Faculty, Oxford.

Leo Rogers (Independent Scholar)

Leo Rogers is a founder member of the British Society for the History of Mathematics and founder of the International Study Group on the History, Pedagogy and Epistemology of Mathematics (HPM). He has worked with pupils and teachers in a number of European Community university research and school curriculum projects. His principal interests are the Historical, Philosophical and Cultural aspects of Mathematics as they relate to the development of curricula, mathematical pedagogies, and individual learning. When not involved with these interests, he dances the Argentine Tango.

Vincent Schott (University of St Andrews)

Originally from Frankfurt, Germany, Vincent came to study in the UK in 2011. He is currently completing a BSc in Economics & Mathematics at the University of St Andrews before taking on his graduate studies in Financial Economics at the University of Oxford.