Executive summary

The Centre for Personalised Medicine (CPM) is a partnership between the Wellcome Centre for Human Genetics (WCHG) and St Anne’s College at the University of Oxford. It was formed in 2013 as a communication and engagement vehicle for students, academics, clinicians and the public to explore the benefits and challenges of personalised medicine. The Centre runs engagement events throughout the academic year, from small college-based lectures and seminars to conference series and public lectures.

Personalised medicine is a cutting edge field that encompasses all aspects of healthcare, from health promotion, risk stratification and screening through to clinical diagnosis, prognosis and treatment. The term typically refers to the application of new technologies to tailor healthcare at the individual level. Other terms, such as genomic medicine, individualised medicine or precision medicine, are also used to refer to similar or identical concepts. Moreover, the integration of personalised medicine into current practice carries significant clinical, ethical, legal, economic and societal challenges.

This report outlines and reviews the activities of the CPM in Year Five and considers the strategic direction of the Centre as it looks ahead.
Events overview

Since its inception in October 2013, the CPM has hosted events on a wide range of personalised medicine–related topics:

2018

June Talk by Professor Joseph Sung on GI cancer
June Resource allocation conference with Ethox and HERC
May Pint of Science: Stopping the spread of disease
May Discussion evening for St Anne’s students
May Panel discussion of theatre collaboration as part of the Settlers exhibition
April Information day on rare disease genomics
April Theatre collaboration preview
March Strawberry DNA extraction activity for children
February Subject Family Evening on Artificial Intelligence
January Radley School Science Festival
January Stanley Ho Foundation medical symposium, Macau
January CUHK seminar, Hong Kong
November Padova meets Oxford outreach event, University of Padua
October Adult Education Talk on PM
October Green Templeton Talk on PM at a Future of the NHS meeting
October Prostate cancer support group lecture
October New St Anne’s Library building formal opening and CPM showcase
October St Anne’s student introduction
September Evening lecture at the King’s Fund on the future of PM for cancer
September Lecture by Professor Dennis Lo on prenatal diagnosis
September Strawberry DNA event for Grenfell children
September PM in Practice Seminar Series 3: IBD

2017

July UNIQ Programme for Year 12 students
June Intellectual property, ethics and the market in the era of personalised medicine
May Pint of Science Oxford
March Lecture to Oxford Brookes University MSc Genomic Medicine students
March Q&A session with Cancer Research UK
March Genomics talk to school children
March Personalised medicine in practice seminar 2: Reproductive health
February Student debate on medical data sharing
February Iris festival of ancient and modern science
January Subject family evening on the immune system

2016

November Personalised medicine in practice seminar series 1: Cancer
November Big data research: Governance, security and ethics with Big Data Institute
November 3rd CPM annual public lecture with Dr David Altshuler
October Freshers’ event for St Anne’s students
September Career workshop with WTCHG on science communication
September Personalised medicine: The promise, the hype and the pitfalls conference with Healthcare Values Partnership
July UNIQ Programme for Year 12 students
July CUHK public lecture with Professor Dennis Lo and Dr Francis Szele, Hong Kong
June Big data, ethics and the market conference & workshop
March Subject family evening on implementing personalised medicine in the NHS
January Student workshop exploring ethical issues in personalised medicine
2015

**November** Historical perspectives on the genomic revolution in medicine lecture

**November** Medicine for the 21st century student symposium

**April** Personalized Medicine World Conference with PMWC

**April** 2nd CPM annual public lecture with Anne Wojcicki

**April** Integrating genetics into clinical practice GP education seminar

**March** 2015 Personalised medicine and resource allocation conference

2014

**October** 10 years on: Oxford and Chinese University of Hong Kong global collaboration seminar

**October** Personalised medicine: from science to clinical decisions, Hong Kong

**October** Ethical and public health implications of personalised medicine, Hong Kong

**June** Cheltenham Science Festival panel debate

**March** Inaugural CPM annual public lecture with Patrick Vallance

**March** Seminar with Professor Dennis Lo

**January** CPM launch event at WTCHG

2013

**November** CPM launch event at St Anne’s College

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**Key to demographic groups:**

- Clinicians and academics
- Students
- Schoolchildren
- Patient groups and the public
Year Five summary of activities 2017 -18

Key to demographic groups:
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Personalised medicine in practice seminar series 3: Inflammatory bowel disease ● ● September 2017
Professor Simon Leedham joined a distinguished panel of speakers in a two-day exploration of Personalised care in IBD: The interface between science and practice as part of the prestigious annual Oxford Masterclass Series, bringing together clinicians and academics from around the UK and abroad.

Hands-on science activity for children ● September 2017
The CPM ran a workshop helping school children from disadvantaged backgrounds to extract the DNA from strawberries, as part of a St Anne's College outreach event.

Centre for Personalised Medicine Annual Lecture ● ● September 2017
Professor Dennis Lo, Director of the Li Ka Shing Institute of Health Sciences at the Chinese University of Hong Kong, gave the CPM Annual Lecture entitled Pushing forward the limit of plasma DNA-based molecular diagnostics, on his pioneering work in non-invasive prenatal diagnosis, to a packed audience at the Wellcome Centre for Human Genetics.

The future of personalised medicine for cancer ● September 2017
Professor Simon Leedham lectured on personalised cancer treatment at an evening event run for the Guild of Health Writers at the King’s Fund in London. Other talks at the event explored the 100,000 Genomes Project, immunology in personalised cancer treatment, and the presentation of a case study from the South Manchester NHS Trust.

Freshers’ event ● October 2017
Professor Cecilia Lindgren explained the scope and purpose of the CPM to an audience of new Medicine undergraduates, graduate entry Medicine students, Biochemistry and Biomedical Science students as well as STA Medical Sciences Masters and DPhil graduates. This brief introduction gave all St Anne’s students a direct subject link to personalised medicine and an awareness of the CPM and its activities and benefits.

New St Anne’s Library building formal opening ● ● ● October 2017
The formal opening of the Tim Gardam Building at St Anne’s College, the top floor of which houses the CPM’s St Anne’s office, provided an opportunity to showcase the CPM’s work to the College community and to a wider invited Oxford audience through a display, discussion and a presentation on personalised medicine given by Professor Simon Leedham.

Prostate Cancer Support Group ● October 2017
Professor Simon Leedham and Dr Shazia Irshad discussed advances in personalised treatment at a prostate cancer support group meeting. Patients actively engaged with the researchers at this informal evening meeting, asking plenty of questions and expressing hope for the future of therapy in this common condition.
This was a well-attended seminar organised by the medical student society of Green Templeton College exploring the future of the UK National Health Service. Professor Simon Leedham discussed the opportunities, challenges and implications of implementing personalised medicine in the NHS and this stimulated interesting and lively debate on the place of this technology in a resource-limited NHS.

Padova meets Oxford series ● ● November 2017
Several representatives from the CPM participated in a multidisciplinary meeting between the Universities of Oxford and Padova (Padua), Italy. The CPM represented the Medical Sciences Division and Professor Simon Leedham and Drs David Church and Chiara Bardella contributed to an interesting seminar on Personalised Cancer Medicine. This was very well received and a joint Oxford CPM / Padova summer school event is being planned for June 2019.

Personalized Medicine Today ● ● January 2018
Professors Peter Donnelly, Simon Travis and Simon Leedham from the CPM participated in the seminar Personalized medicine today: From west to east, from genetics to therapy, which was held at the Prince of Wales Hospital, Chinese University of Hong Kong. They presented papers alongside distinguished academics from CUHK.

Stanley Ho Foundation medical symposium ● ● January 2018
Professors Peter Donnelly, Simon Travis and Simon Leedham presented their research on inflammatory bowel diseases, personalised treatment of cancer and the genetics of personalised medicine to local clinicians and academics at the annual Stanley Ho Medical Development Foundation meeting Personalized Medicine: A focus on diseases in Macau.

Radley School STEMfest ● January 2018
Professor Simon Leedham delivered the keynote speech at an Oxfordshire school’s Science, Technology, Engineering and Mathematics Festival (STEMfest), explaining basic concepts of personalised medicine to secondary school-aged children from across Oxfordshire.

Subject Family Evening: Artificial Intelligence ● ● February 2018
The CPM hosted one of St Anne’s Subject Family Evenings on the topic of Artificial Intelligence, with Professor Jens Rittscher exploring biomedical imaging and Professor David Clifton the potential applications for AI in healthcare, including in the developing world.

Hands-on science activity ● May 2018
The CPM took a hands-on activity, extracting DNA from strawberries, to a local primary school – messy, fun and informative!

Undiagnosed genetic conditions ● April 2018
The Centre collaborated with Syndromes Without a Name (SWAN UK) and the Oxford Genomics Centre to bring together parents and carers of children with rare genetic conditions to discuss current research and initiatives such as the 100,000 Genomes Project, and for mutual support.
Theatre preview and panel discussion on a theatrical collaboration • • • • April and May 2018
These events formed part of the Settlers exhibition at the Museum of Natural History in Oxford. The CPM and Wellcome Centre for Human Genetics are working with a local theatre company, Reading Between the Lines, to explore the impact of genomics research on the lives of ordinary people.

Discussion evening • May 2018
Junior Research Fellow Dr Jason Torres met with St Anne’s students for a discussion evening on personalised medicine in practice and forthcoming CPM events.

Pint of Science • • May 2018
The Centre was again involved in a Pint of Science evening at a local pub, providing speakers on the subject Stopping the spread of disease. This initiative attracts mainly young people, including students from local universities.

Resource allocation in personalised medicine • • June 2018
The CPM collaborated with Ethox and HERC from the University of Oxford to hold a one-day, international conference Resource allocation in personalised medicine: Evaluation, translation and ethics. This was the third and final conference in the series Personalised Medicine, ethics and the market.
**Microbes and GI cancers: Implications in management**  
*June 2018*

Professor Joseph Sung of the Chinese University of Hong Kong delivered a high profile guest lecture on his research to a mainly clinical audience at the John Radcliffe Hospital, Oxford.

**Website and social media**

The web sub-group, comprising Professor Cecilia Lindgren and the CPM administration team Catherine Lidbetter and Thea Perry, has been working closely with web development company Olamalu to create a modern and fresh looking new website. Its launch is planned for October 2018 or sooner.

**YouTube:** 2,858 video views in the year 1 July 2017 to 30 June 2018. Mike Standing's talk from PMWC UK 2015, 'Real world evidence in healthcare: Transforming patient care' was the most watched with 260 views. Videos were either sourced directly from the CPM YouTube channel or via the website:

http://www.well.ox.ac.uk/cpm/video-library

**Website:** There were 1,821 views of the videos embedded in the CPM website in the year ending 5 July 2017. The most popular video was Sally John's lecture The application of human genetics to drug discovery, with 757 views. www.well.ox.ac.uk/cpm/video-library.

**Twitter:** Twitter has again been an invaluable tool this year, both in the promotion of the CPM's events and in social networking with interested individuals and groups. It has helped strengthen the Centre's visibility in Oxford, nationally and internationally. @CPMOxford has 378 Followers and had tweeted 629 times by 2 July 2018.

**Education**

The CPM serves as a resource within St Anne's College to enhance the education of undergraduate students studying medicine and biochemistry. In addition to Subject Family Evening seminars organised for the broader College community, the CPM works closely with senior tutors and students at the college to host special events for students that complement their curricula. Examples of these events range from seminars on biomarkers for liver disease to student debates on genetic privacy and data sharing. The CPM has recently recruited a student representative who will be instrumental in organising student events in the forthcoming academic year.

The CPM also provides feedback for students interested in pursuing extended studies focused on topics related to personalised medicine. For example, CPM Junior Research Fellow Dr Jason Torres served as a mentor for a visiting biochemistry student on a literature review project concerning the genetics of complex disease. CPM members have met with individual students interested in discussing various aspects of personalised medicine.

The Centre continues to collaborate with Professor Anna Schuh and Professor Sarah Wordsworth from the University of Oxford on preparing a distance learning MSc course on personalised medicine for professional and post-graduate students.
Year 5 Impact Statement 2018

5 public lectures

With generous support from:

Dr Stanley Ho Medical Development Foundation and The Wellcome Trust

Social Media

- Web presence: >23,935 website visits
- >4300 website video views
- >5000 YouTube views

Event Attendees

Event Number

Year 1 | Year 2 | Year 3 | Year 4 | Year 5
---|---|---|---|---
4 | 8 | 10 | 16 | 22

Collaborations

www.well.ox.ac.uk/cpm/home | cpm@well.ox.ac.uk | @CPMOxford | www.facebook.com/cpmoxford
Strategic Plan 2018-19

The CPM will continue to provide a wide range of events and functions, focusing on multidisciplinary perspectives and on collaborative working. In the year ahead it will focus on building on its presence within the University of Oxford, with all of the benefits that brings. The Centre will continue to foster and develop its national and international collaborations, including the many local networks developed in its first five years of operation, national partnerships with organisations such as Cancer Research UK, and international outreach with institutions such as the University of Padua. Building on its previous work with the Chinese University of Hong Kong and interactions in Macau, the CPM will continue to develop these with bilateral seminars Dr Stanley Ho Medical Development Foundation fellowships and scholarships. Finally, the CPM will focus on its use of social media and its website presence.
Year 6 Summary of planned activities

Key to demographic groups:
● Clinicians and academics
● Students
● Schoolchildren
● Patient groups and the public

Personalised neuroscience: From molecules to medicine ● ● September 2018
The final seminar in the series Personalised medicine in practice, this event has been coordinated by Professor Francis Szele of the CPM’s Steering Group. It will bring together leading experts in neuroscience from Oxford, the University of Cambridge and Harvard Medical School.

Freshers’ event ● October 2018
Dr Jason Torres, CPM Junior Research Fellow, will explain the scope and purpose of the CPM to an audience of new Medicine undergraduates, graduate entry Medicine students, Biochemistry and Biomedical Science students as well as STA Medical Sciences Masters and DPhil graduates. This brief introduction will give all St Anne’s students a direct subject link to personalised medicine and an awareness of the CPM and its activities and benefits.

Student seminar ● October 2018
This educational event will be aimed at biochemistry students at St Anne's College and other interested students and will focus on innovative scientific approaches for disease biomarkers.

The CPM Annual Lecture ● ● ● November 2018
The annual lecture will be delivered by Professor Charles Swanton, the Royal Society Napier Chair and Personalised Cancer Medicine Chair at University College London. He is a clinician scientist and a world leader in the understanding of genomic diversity within cancers, the molecular mechanisms driving cancer branched evolution and the use of targeted immunotherapy in the treatment of cancer. This important event will also mark the relaunch of the CPM as it begins its next phase of funding.

St Anne’s College Alumni event ● ● January 2019
The College has invited the CPM to participate in an event for former students, to be held at the Old Operating Theatre, London. This is a chance for St Anne’s to showcase the CPM as one of its treasures.

A social contract: Data sharing in healthcare ● ● Winter 2018/19
The first in the new series Personalised medicine in the media, this event is aimed specifically at the General Practitioner community and the public. It will take the format of a deliberative jury with presented arguments for and against data sharing / access in the NHS using genomic medicine data as the test case. The principal aim is to generate a consensus agreement that might inform future policy decision.
Website

The CPM will launch its new website in the autumn.

Education

Involvement with the forthcoming online distance learning MSc in Precision Medicine will continue alongside the busy schedule of educational events. The CPM will continue to lobby for personalised medicine to be included in the medical curricula at the University of Oxford.

Dr Stanley Ho Medical Development Foundation Scholars / Fellows

The CPM will host and support Foundation Students or Fellows, identified by our partners in Hong Kong and Macau and approved by the CPM. They will be placed in a relevant Oxford laboratory for a bespoke research scholarship to allow them to develop new skills and initiate research collaborations. Costs will cover local expenses and bench fees for a defined research project.
People

No sooner had our new Junior Research Fellow (JRF), Dr Sara Pulit, started working with the CPM, than she became the recipient of a prestigious Veni grant, which required her to continue her previous research in Utrecht, the Netherlands. We were sorry to see her leave, but it was pleasing to welcome her replacement, Dr Jason Torres, a postdoctoral research scientist in disease gene regulation at WCHG, in January 2018.

Director of the CPM Professor Simon Leedham continues to work on gastrointestinal stem cell biology and the testing of precision therapeutics in both inflammatory bowel disease and gastrointestinal cancers. He was awarded a national Cancer Research UK Future Leaders prize in 2017 in recognition of his contribution to this field.

Catherine Lidbetter, Programme Coordinator, and Thea Perry, Administrative Officer, have continued their day-to-day management of the Centre, with a nearly 50% increase in the number of events held compared with 2016–17, and a threefold increase on 2014, the CPM’s first full year.
Ongoing funding

The CPM was established and funded for five years with a £450,000 donation from the Dr Stanley Ho Medical Development Foundation. The Wellcome Trust provided an additional grant to cover the salaries of the administrative team, as part of a public engagement funding bid by WCHG.

A Memorandum of Understanding between the CPM and the Dr Stanley Ho Medical Development Foundation was signed in July 2018, committing the Foundation to continued and increased funding of the CPM programme for the next 5 years which will help to deliver additional activities.

Acknowledgements

Patrick Huen, Professor Joseph Sung and the Dr Stanley Ho Medical Development Foundation
Professor Dennis Lo and colleagues at the Chinese University of Hong Kong
Dame Mary Archer, Chair of the External Advisory Board to the CPM
Professor Peter Donnelly, CEO of Genomics plc and Co-Chair of the CPM Steering Group
Wellcome Centre for Human Genetics Business Manager
Helen King, Principal of St Anne's College and Co-Chair of the CPM Steering Group
St. Anne's College Academic, Bursary, Conference and Development Offices