

MSc in Transfusion and Transplantation Sciences

School of Cellular & Molecular Medicine

Prof Marion Scott, Teaching Board Member



- 1 year full-time specialised MSc, or 2-3 year part-time
- The full-time programme comprises 8 taught units that run from September- March and a research project that begins in May and runs until August.
- The part-time programme comprises 4 x 2-week blocks in year one, leading to a Post-Graduate Certificate: 4 x 2-week blocks in year 2 leading to a Post-Graduate Diploma. Students normally complete their research project in their home laboratory, either during year 2 or during a third year. This completes the full M.Sc.

- Accredited by the Institute of Biomedical Science
- Uniquely, based at a one of the largest transfusion centres in the world, enabling visits to the manufacturing, testing, stem cell and tissue typing sections
- Has modern lecture rooms and laboratories
- High contact hours with teaching each day and includes practical classes
- Has a large array of UK specialist lecturers from within the University, NHS Blood and Transplant and NHS hospitals
- Students can carry out their MSc projects with NHSBT research staff within the transfusion centre, or at their home lab
- Attracts students from many countries with about 50% overseas students and includes new graduates, those working in blood centres and in blood transfusion/haematology in hospitals or training to lecture in transfusion
- Has a large skills component such as writing in different formats, conference and publication skills and assignments with specific study aims

Taught units cover the following

- Transfusion and Transplantation Science:
- Pathology of Transfusion and Transplantation Science:
- Provision of Blood, Cells, Tissues and Organs
- Clinical Transfusion and Transplantation
- Transfusion and Transplantation in Practice (2 units)
- Research Methods and Biostatistics Design (2 units)

Assessments are designed to teach skills such as comprehension, scientific writing in different formats, conference skills and to further knowledge in subject areas not covered in the lectures.

Transfusion and Transplantation Science

- Basics of haemopoiesis
- Blood group molecular genetics
- Platelet structure and function
- Haemostasis
- HLA genes and proteins

Pathology of Transfusion and Transplantation Science

- Sickle cell and haemophilia
- Immunology
- Red cell and platelet antibodies in the adult and fetus

Provision of Blood, Cells, Tissues and Organs

- Where and how do we get our blood?
- How and why do we test it?
- What components can we make and store?
- Product development and improving component safety

Clinical Transfusion and Transplantation

- Organ transplantation
- Engineered tissues
- Stem cell transplants
- Clinical blood transfusion
- Lab investigations
- Management of complications

Transfusion and Transplantation in Practice

- Practical classes
- Different types of technology used in labs

Research Methods and Biostatistics

- Experimental design
- Basic, intermediate and advanced statistics
- Interpretation of published data
- Data analysis
- Preparing a grant application
- Research governance and ethics

Lectures in Tissue and Cell Therapies:

- Tissue Banking and Organ Preservation
 - Stem cell registries and donor selection/care
 - HSC donation, processing and storage
 - Cord Blood Banking
 - Stem cell assays
 - Clonogenic assays
 - Microbiology testing of cells, tissues and organs
 - Tissue Engineering
 - Stem cell transplantation
 - Graft versus host disease
 - Complications and outcomes
 - CD34 purification
 - Ethics
-

Entry requirements:

- This course targets high-quality graduates in medicine, or biomedical science/clinical laboratory science or related subjects such as biochemistry and microbiology.
- 2i degree normally required
- Lower second-class honours or non-degree qualifications may be considered if proof of relevant laboratory experience and other academic achievement is provided.

Further information

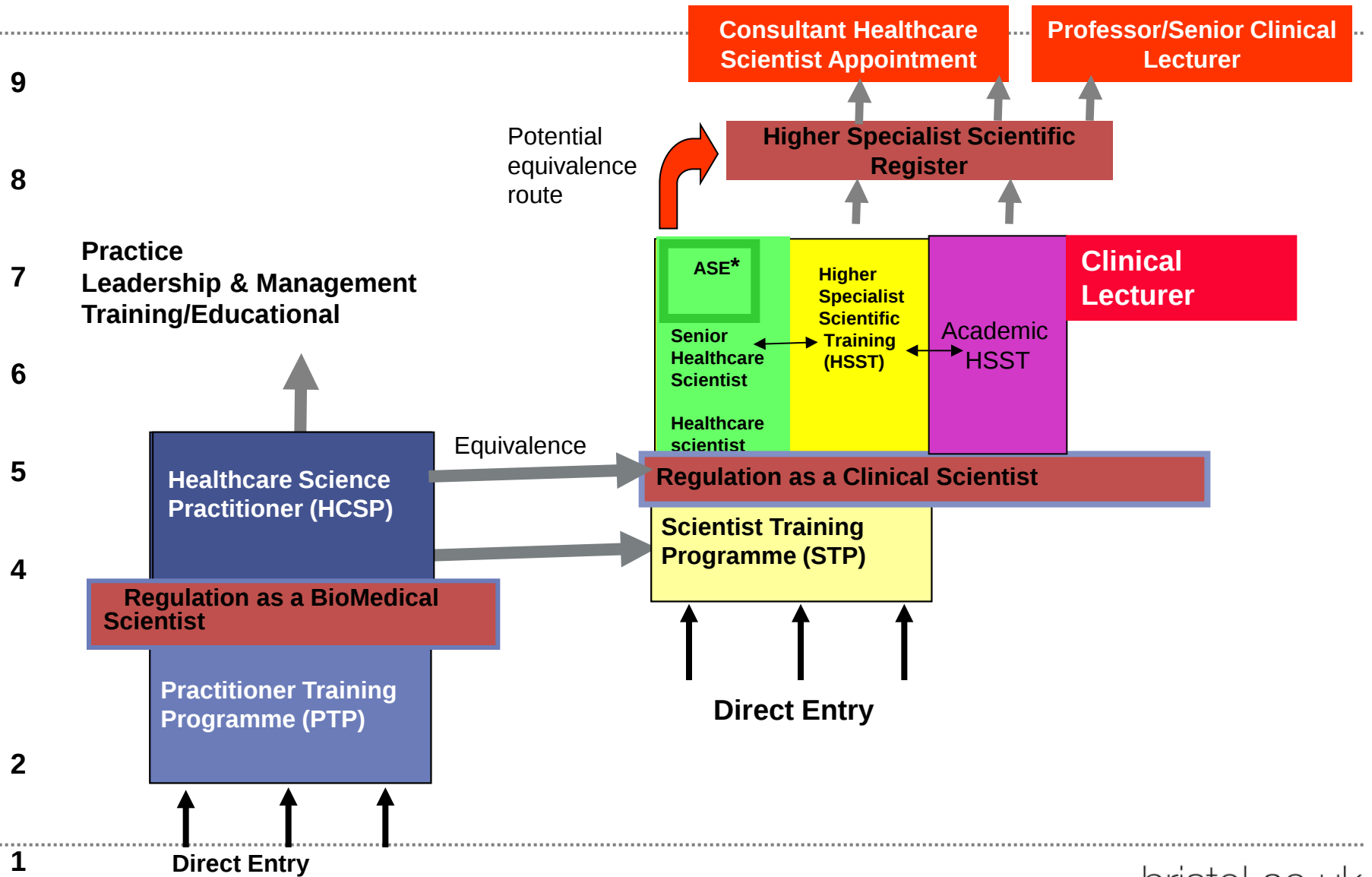


- Lectures are from 9:45 to approximately 16:00 during teaching weeks with around 10 hours of teaching each week
- Students should expect to work office hours for their 12 week project
- All students have a personal tutor
- There is good family accommodation in near the NHSBT centre in north Bristol
- Come and meet the authors of transfusion text books such as “Blood Groups”, meet the staff of the International Blood Group Reference Laboratory or study with lecturers from the team that made the first bioengineered trachea!
- Apply online at
<http://www.bristol.ac.uk/prospectus/postgraduate/2014/apply.html>

Routes To Clinical Scientist Registration in Blood Transfusion

- 1. Academy of Healthcare Science (AHCS)** Certificate of attainment on completion of an approved STP course – suitable for new entrants. Broad training over 3 years including a broad M.Sc and workplace training.
- 2. AHCS Certificate of Equivalence** – for existing staff to prove that they have skills and knowledge equivalent to those who have completed an STP course
- 3. Association of Clinical Scientists (ACS)** Certificate of attainment via route 2 – for existing staff with 6 years relevant experience, three of which must have been in a supervised Clinical Scientist role.

For existing staff the Bristol M.Sc. provides a proven route for Clinical Scientist registration in Haematology/Blood Transfusion by routes 2 and 3 above



AHCS Equivalence - Clinical Scientist

- **Important for existing staff – this is how to join the new pathway without having to start again!**
- **AHCS - No formal requirement for length of experience, but needs to demonstrate equivalence to STP outcomes – min 3 years including an M.Sc. or equivalent**
- **AHCS Professional Groups have agreed that practical rotations in other depts will not be required to prove equivalence to those who have come through STP.**
- **Access to ASE/HSST for Senior BMS staff:**
- **Need to become Clinical Scientists**
 - **M.Sc. + lab and clinical experience**
 - **IBMS Higher and Advanced Specialist Diplomas**

HSST / FRCPath

- **Currently the only RCPPath exam route is Haematology, with blood transfusion as a small part. There are no taught courses for scientists. An HSST curriculum has been developed, but it is still based on haematology**
- **Developing Blood Transfusion as an option, which could be aligned with Haematology or H&I. Joint working group at RCPPath between Transfusion and H&I**
- **Routes for Stem Cells and Tissue Banking are being developed – within Transfusion**
- **Dialogue with RCPPath and AoMRC to ensure suitable routes for all to Consultant status – modalities are under discussion**

- **Fuller general discussion on Clinical Scientist Registration and Training on Friday 9:00 – 10:30. Queens Suite 2.**