

Clinical Bioinformatics STP

MAHSE Open Day 2015

Dr Angela Davies

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Clinical Bioinformatician Role

- Genomics specialism
 - Responsible for analysing and interpreting genetic data and advising scientists and clinicians to best inform patient care.
 - Involved in building the necessary IT infrastructure including appropriate servers, databases and pipelines to analyse the data.
 - Leadership role in establishing best-practice for data analysis and interpretation, data storage and governance within their laboratory.
 - Interact with multidisciplinary teams including clinical scientists, clinical geneticists, other specialty clinicians and genetic counsellors, and advise colleagues with respect to interpretation of genetic data that will inform patient care.

Health Informatician

- You will advise other healthcare professionals, and lead and develop strategies in the following areas:
 - Data – collection, quality, representation
 - Governance – Security, patient confidentiality
 - Systems design and development, and technologies
 - Data analysis, interpretation and reporting
- Work as a multi-disciplinary team
- Strong communication skills to influence decision-making to ultimately improve the delivery of healthcare.

Programme Structure

MSc Clinical Science (Clinical Bioinformatics)

MSc Clinical Sciences (Clinical Bioinformatics)			
	Year 1	Year 2	Year 3
	Introduction to Healthcare Science, Professional Practice and Clinical Leadership [20]	Research Methods [10]	
	Clinical Bioinformatics: underpinning knowledge for rotational work based training [40]		
		Genomics	
		Programming [10]	Next Generation Sequencing [10]
		Advanced Clinical Bioinformatics [10]	Information Technology for Advanced Bioinformatics Applications [10]
		Research Project in Clinical Bioinformatics [30]	Whole Systems Molecular Medicine [10]
			Research Project in Clinical Bioinformatics [30]
		Clinical & Scientific Computing	
		Clinical & Scientific Computing for the Physical Sciences 1 [20]	Clinical & Scientific Computing for the Physical Sciences 2 [30]
		Research Project in Clinical Bioinformatics [30]	Research Project in Clinical Bioinformatics [30]
		Health Informatics Science	
		Policy, Strategy and Operational Management [10]	Systems Development and Design [10]
		Co-Production of Health [10]	Information Knowledge Management [20]
		Research Project in Clinical Bioinformatics [30]	Research Project in Clinical Bioinformatics [30]
Credits			
Generic	20	10	0
Division/Theme	40	0	0
Specialism		50	60
Total	60	60	60

Route Map: MSc Clinical Science (Clinical Bioinformatics)

MSc trainees begin by following the generic curriculum, which spans all divisions (blue), together with some theme-specific modules (yellow). In Year 2 of the MSc, trainees specialise (orange) in genomics

Programme members

University of Manchester

- **Andy Brass** – *Programme Co-Director of Clinical Bioinformatics*
- **Ang Davies** – *Programme Co-Director of Clinical Bioinformatics*
- **Andrew Devereau** – *Clinical Lead of Clinical Bioinformatics*
- **Georgina Moulton** – *Pathway Lead Health Informatics*
- **Manoj Mistry & Dawn Coope** – *Lay representatives*
- **Simon Boardman, Kirsty McCaffrey and Stuart Cannon** – *Student representatives*

University of Liverpool

- **Helen Boston** – *Pathway Lead Medical Physics*
- **Azzam Taktak**
- **Tony Fisher**

Administrators

- **Victor Badilas** – *Clinical Bioinformatics*
- **Sarah Williams & Louisa-Jane Smith** - *MAHSE*



Manchester
Healthcare Science

Programmes

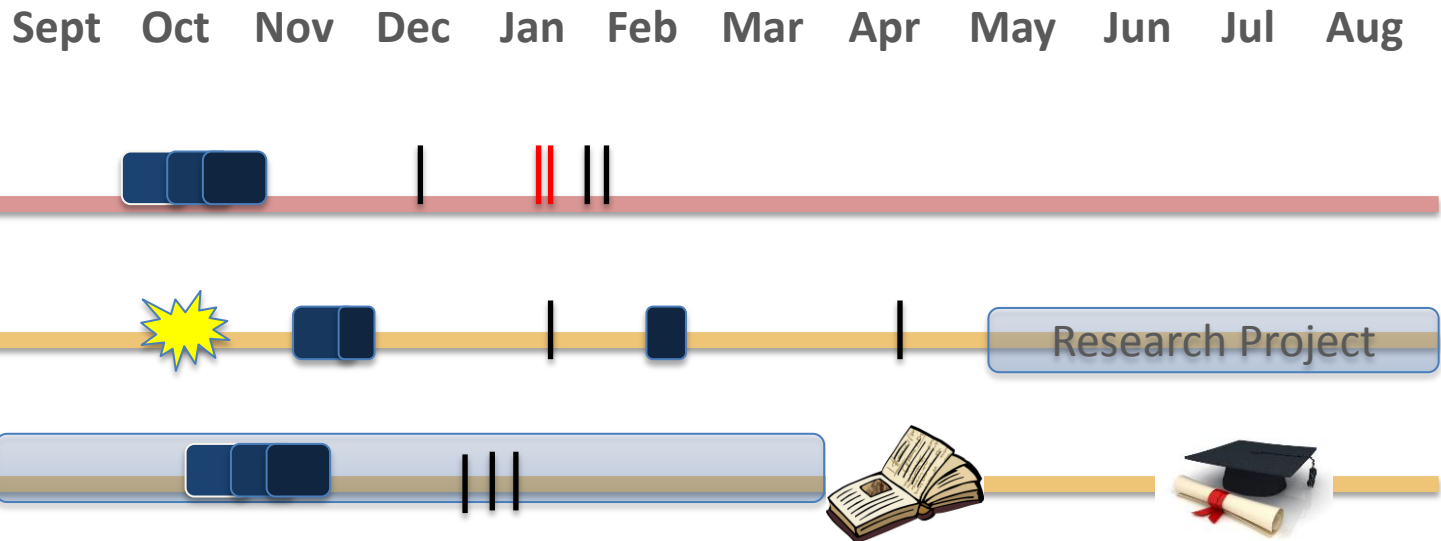


The University of Manchester



Division	Themed Pathway	Specialism	HEI offering specialism
Life Sciences	Blood Sciences	Clinical Biochemistry	Manchester Birmingham
		Haematology & Transfusion (MMU)	
		Clinical Immunology	
		Histocompatibility and Immuno	
	Cellular Sciences	Histopathology	Manchester
Cytopathology			
Reproductive Science			
Genetics		Nottingham	
Infection Sciences	Clinical Microbiology	London & Nottingham	
Physiology Sciences	Cardiovascular, Critical Care, Respiratory and Sleep Sciences	Cardiac Science (MMU)	Manchester and Newcastle
		Vascular Science (UoS)	
		Respiratory & Sleep Science (MMU)	
		Critical Care (UoS)	
	Gastrointestinal Physiology and Urodynamic Science	Gastrointestinal Physiology and Urodynamic Science	Newcastle
		Perfusion	
Neurosensory Sciences	Audiology	Manchester and Aston	
	Neurophysiology (MMU)		
	Ophthalmic & Vision Science		
Physical Sciences and Biomedical Engineering	Medical Physics	Medical Physics – unspecified	Kings College Liverpool and Newcastle
		Radiotherapy Physics	
		Radiation Safety	
		Imaging with Non-Ionising Radiation	
		Imaging with Ionising Radiation	
	Clinical Engineering	Clinical Engineering – unspecified	Kings College
		Rehabilitation Engineering	
		Clinical Measurement & Development	
	Clinical Pharmaceutical Science	Device Risk Management & Governance	Manchester
Reconstructive Science		Manchester	
All	Clinical Bioinformatics		Manchester

Timelines



Teaching block in Manchester

Assignment deadline

Exam in Manchester

Project idea / research proposal submitted

Dissertation deadline

Credit weightings

- **180 credits in total**
 - 120 credits taught
 - 60 credits research project
 - 1 credit = 10 hours study
- **National School stipulates 1 day/week academic work**
 - Does not include OLAT
 - Does not include time in Manchester

Curriculum

ACADEMIC



MODERNISING SCIENTIFIC CAREERS

Scientist Training Programme

MSc in CLINICAL SCIENCE

Curriculum

CLINICAL
BIOINFORMATICS

2014/15

Modernising Scientific Careers



Science in healthcare DRIVING A MODERN NHS

WORKPLACE



MODERNISING SCIENTIFIC CAREERS

Scientist Training Programme
Work Based Training

Learning Guide

CLINICAL
BIOINFORMATICS

2014/15

Science in healthcare DRIVING A MODERN NHS



Taught Units – Year 1

- **Professional Practice & Introduction to healthcare science (*Generic*) (15 credits)**
- **Clinical Bioinformatics 1**
 - Introduction to Bioinformatics and Genetics (10 credits)
 - Introduction to Human Physiology (5 credits)
- **Clinical Bioinformatics 2**
 - Health Informatics (10 credits)
 - Computing for Clinical Scientists(Liverpool) (10 credits)
 - ICT in the Clinical Environment (Liverpool) (10 credits)

Problem-Based Learning

- What is it?
 - It's a way of using case-based scenarios to reinforce content received in traditional lectures
- What are the benefits?
 - To teach students how to work in groups and manage group projects
 - To improve and develop transferable skills of students
 - To develop problem solving skills of students
 - To encourage self-motivation, curiosity and thinking

Further Information

- Contact:
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