

The STP - A Physical Scientist's Journey

Haroon Chughtai

Trainee Clinical Scientist (Informatics)



Developing people
for health and
healthcare

www.hee.nhs.uk

My Journey

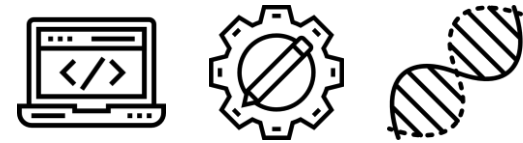
2010 -
2012

A - Levels: Maths, Biology, Physics, Chemistry
Eltham College, London



2012 -
2016

MEng Biomedical Engineering
Imperial College London
Department of Bioengineering



2016 -
Now

NHS Scientist Training Programme -
Clinical Bioinformatics - Physical Science
UCLH NHS Foundation Trust, London
Medical Physics and Biomedical Engineering



Physical Science Themes

Physical Sciences

- Reconstructive Science
- Clinical Pharmaceutical Science

Clinical Engineering

- Rehabilitation engineering
- Medical device risk management and governance
- Clinical measurement and development

Medical Physics

- Imaging (*ionising radiation*)
- Imaging (*non-ionising radiation*)
- Radiation safety physics
- Radiotherapy physics

Clinical Bioinformatics

- Clinical Bioinformatics (*Genomics*)
- ***Clinical Bioinformatics (Physical Sciences)***
- ***Clinical Bioinformatics (Health Informatics)***

A Bit About My Specialism

Clinical Bioinformatics (Physical Sciences)

Furthering knowledge and improving the **healthcare service** by designing **hardware, software, and algorithms** that process **clinical, biomedical and business data**



Sharing Patient Data
Securely & Safely



Clinical Decision
Support



Medical Image
Analysis

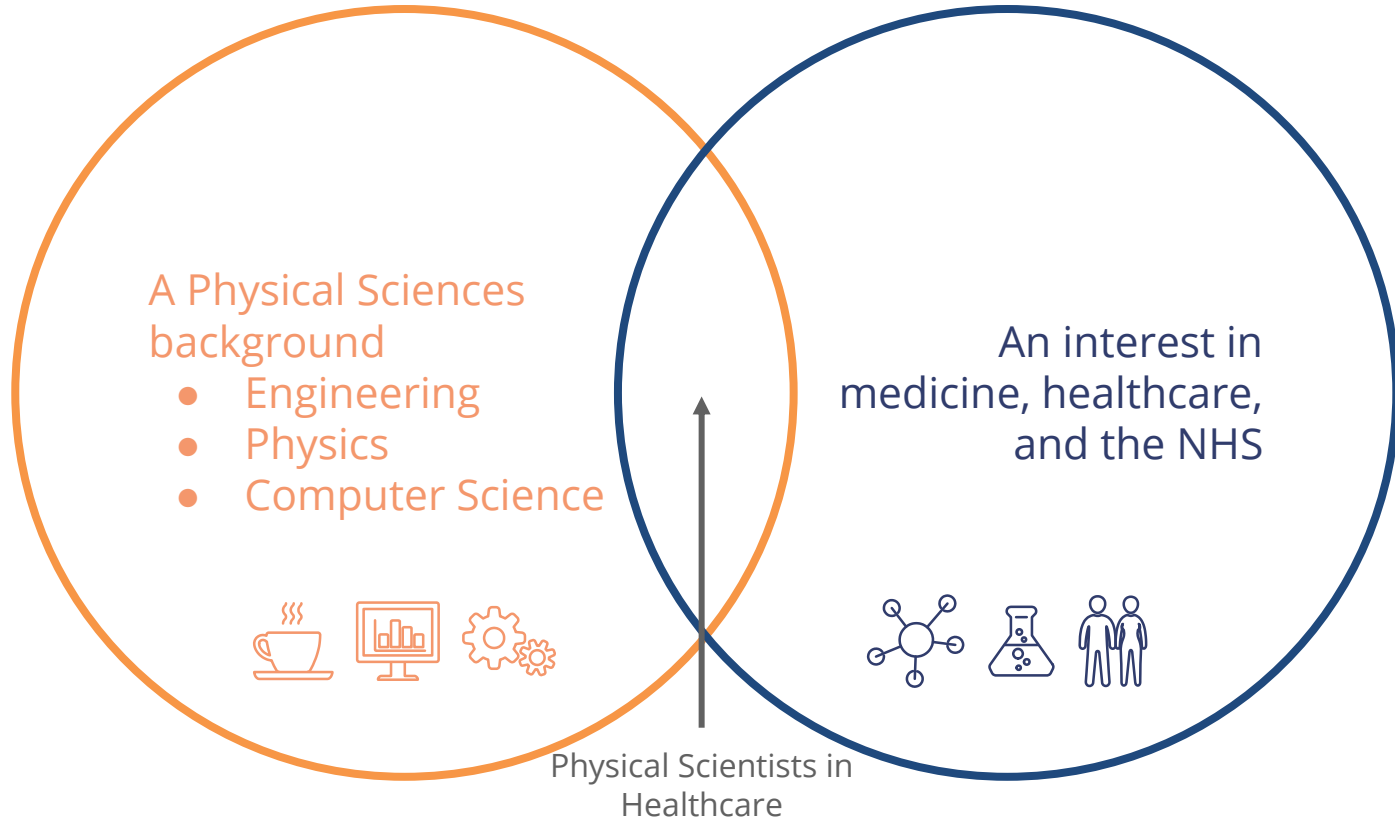


Health Systems
Infrastructure



Population & Public
Health Informatics

Physical Sciences Graduate Profile



Why Choose the STP?

Balance of study, training, work, and research

- Learning is split across academic study and practical application.
- Opportunities to develop as a scientist or engineer, as well as to contribute to research and NHS innovation.
- Fulfills many of the requirements for chartership



For the Patient and the NHS

- Work is done in the hospital environment, and impact on the service can be felt
- Research project can also inform policy

A Strong Scientific Base

- Builds on graduates' core skills in the physical sciences
- Applies existing knowledge to a new domain

The STP - A Life Scientist's Journey

Ashley Pritchard

Trainee Clinical Scientist (Bioinformatics / Genomics)



Developing people
for health and
healthcare

www.hee.nhs.uk

My Journey

2009 -
2013

BSC: *Cell Biology with Industrial Placement Year*
Durham University

2013 -
2014

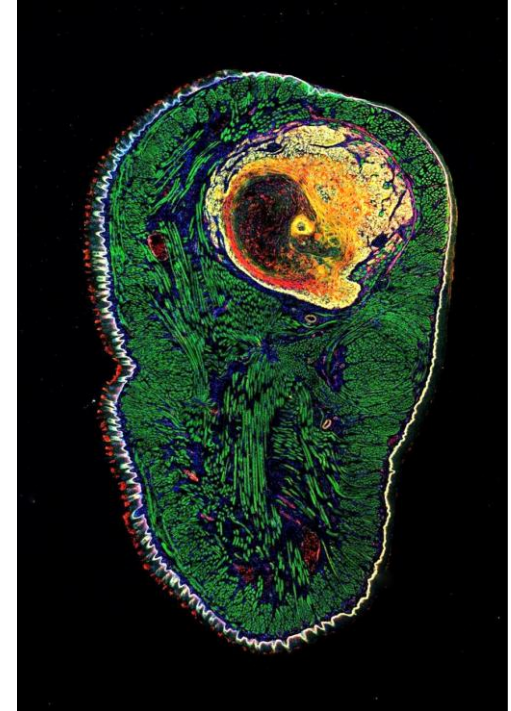
MRes: *Biomedical and Translational Science*
King's College London

2014 -
2017

PhD: *Cancer Research*
King's College London

2017 -
Now

**NHS Scientist Training Programme - Clinical
Bioinformatics (Genomics)**
OUH NHS Foundation Trust, Oxford



Life Science Themes

Life Sciences

Infection Sciences

- Microbiology

Blood Sciences

- Biochemistry
- Haematology and Transfusion
- Immunology
- Histocompatibility and immunogenetics

Genomic Science

- Genomics
- Genomic Counselling

Cellular Sciences

- Histopathology
- Cytopathology
- Reproductive Science

Clinical Bioinformatics

- ***Clinical Bioinformatics (Genomics)***
- Clinical Bioinformatics (*Physical Sciences*)
- Clinical Bioinformatics (*Health Informatics*)

A Bit About My Specialism

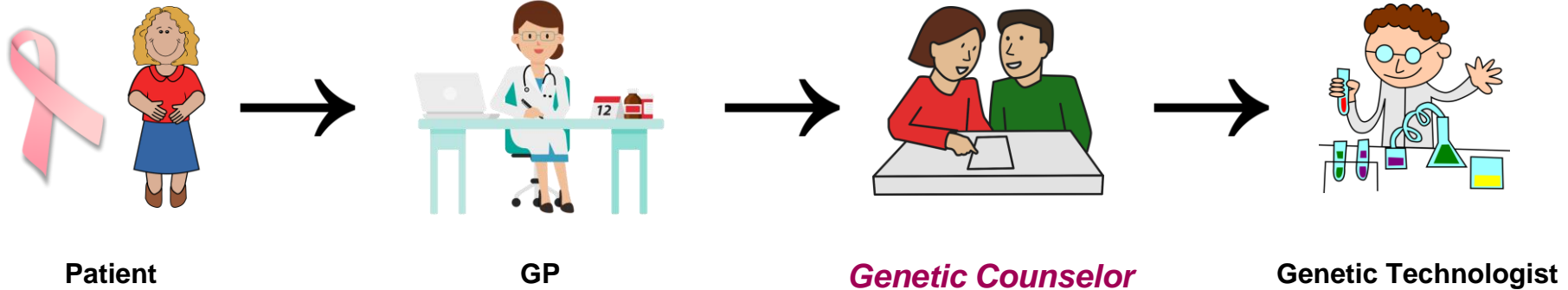
Clinical Bioinformatics (Genomics)

Connecting *computing*, *biology* and *medicine*

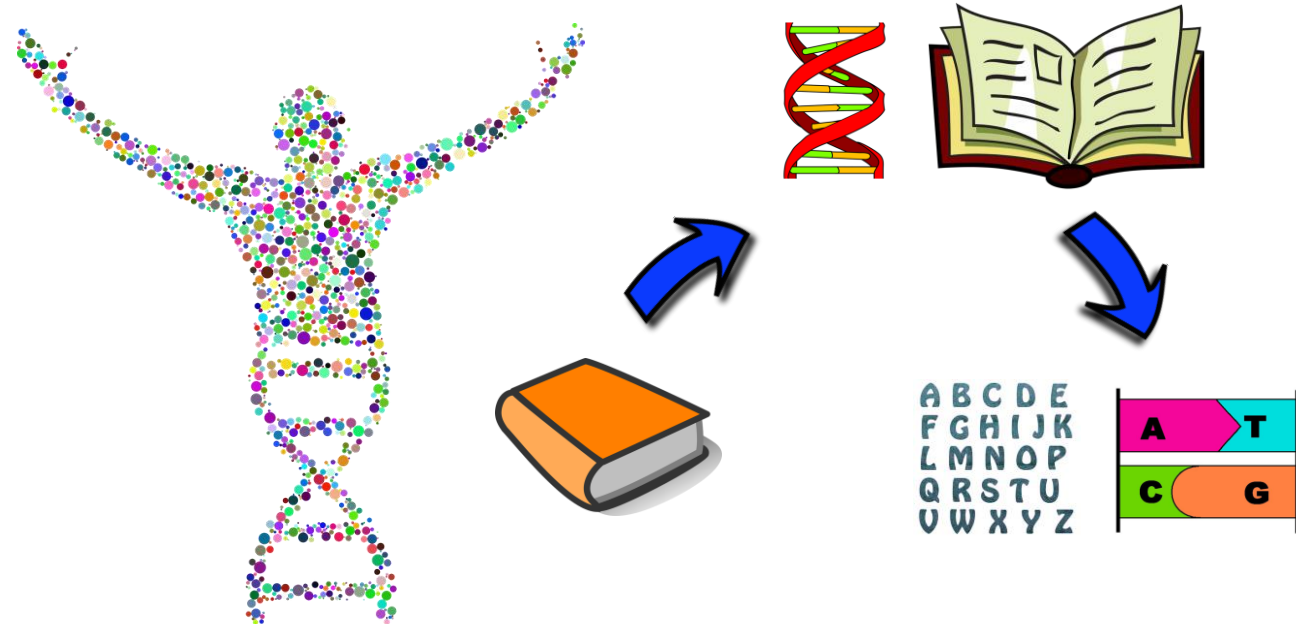
Applying *programming* and *data analysis* skills to problems in
genetics

Working as part of a *multidisciplinary team* -
Clinical Geneticists, *Genomic Counsellors*, IT Teams, *Clinical
Scientists (Genomics)*

Where do Genomic Bioinformaticians fit into the patient pathway?



Where do Genomic Bioinformaticians fit into the patient pathway?

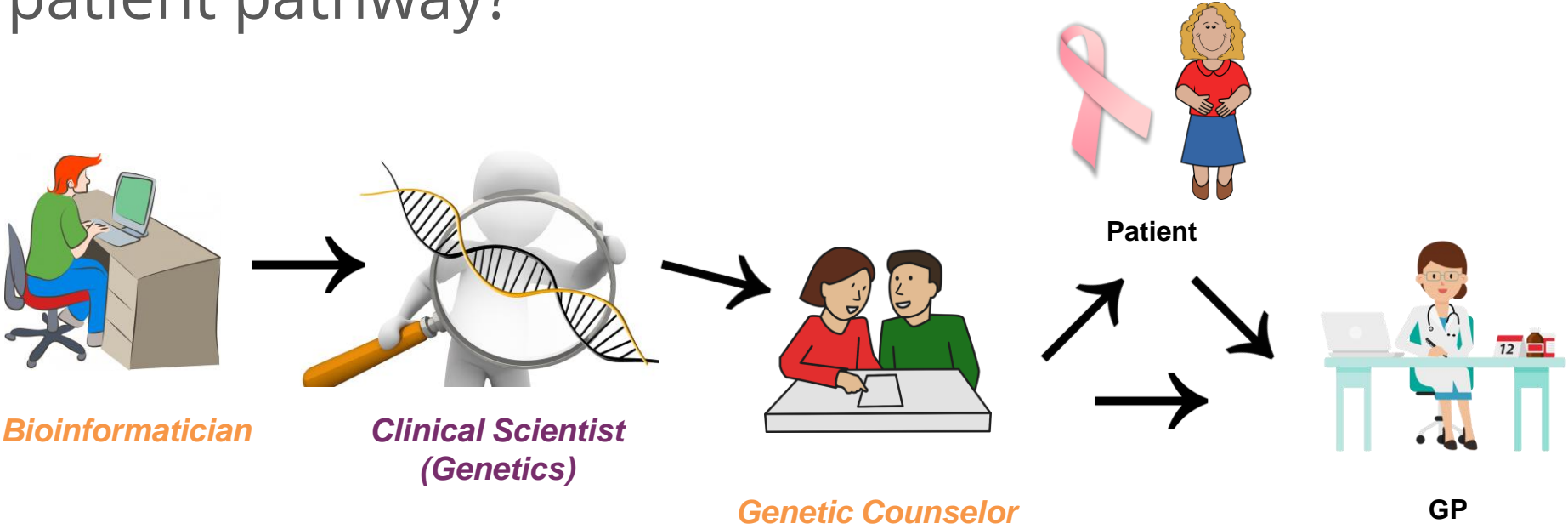


An average **book** has ~
500,000 letters

A **human** is made up
of ~ **3 billion base
pairs**

We need to find a
single spelling mistake
in 6000 books

Where do Genomic Bioinformaticians fit into the patient pathway?



Summary: A Healthcare Science Career

The **STP** provides a wide array of **specialist training** required to work in a senior **healthcare science** role

Trainees come from a variety of **backgrounds**

Ultimately, scientists work as part of **multidisciplinary teams** and are involved in **80%** of all **clinical decisions** made within the NHS