How to get bioinformatics help via the Sheffield Bioinformatics Core

Workshops and Training

Analytical support

Pre-grant award

Manuscript trajectory

Bioinformatics Infrastructure and software

http://sbc.shef.ac.uk

Sheffield Bioinformatics Core

https://sbc.shef.ac.uk

Head – Dr. Mark Dunning
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Scientist – Dr. Emily Chambers
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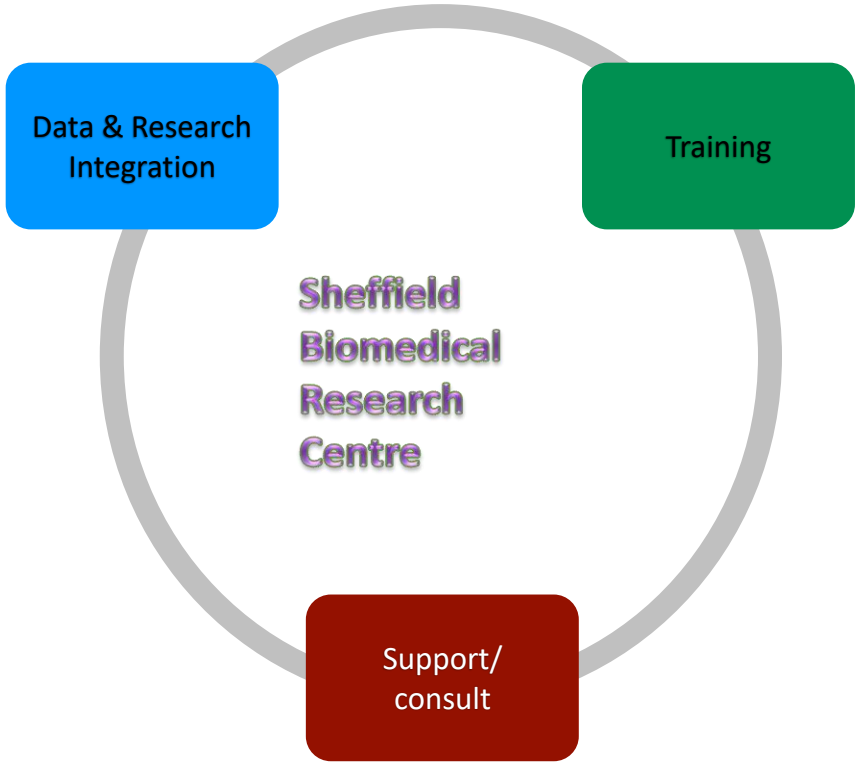
Scientist – Dr. Matthew Parker (starting May 2018)
matthew.parker@sheffield.ac.uk

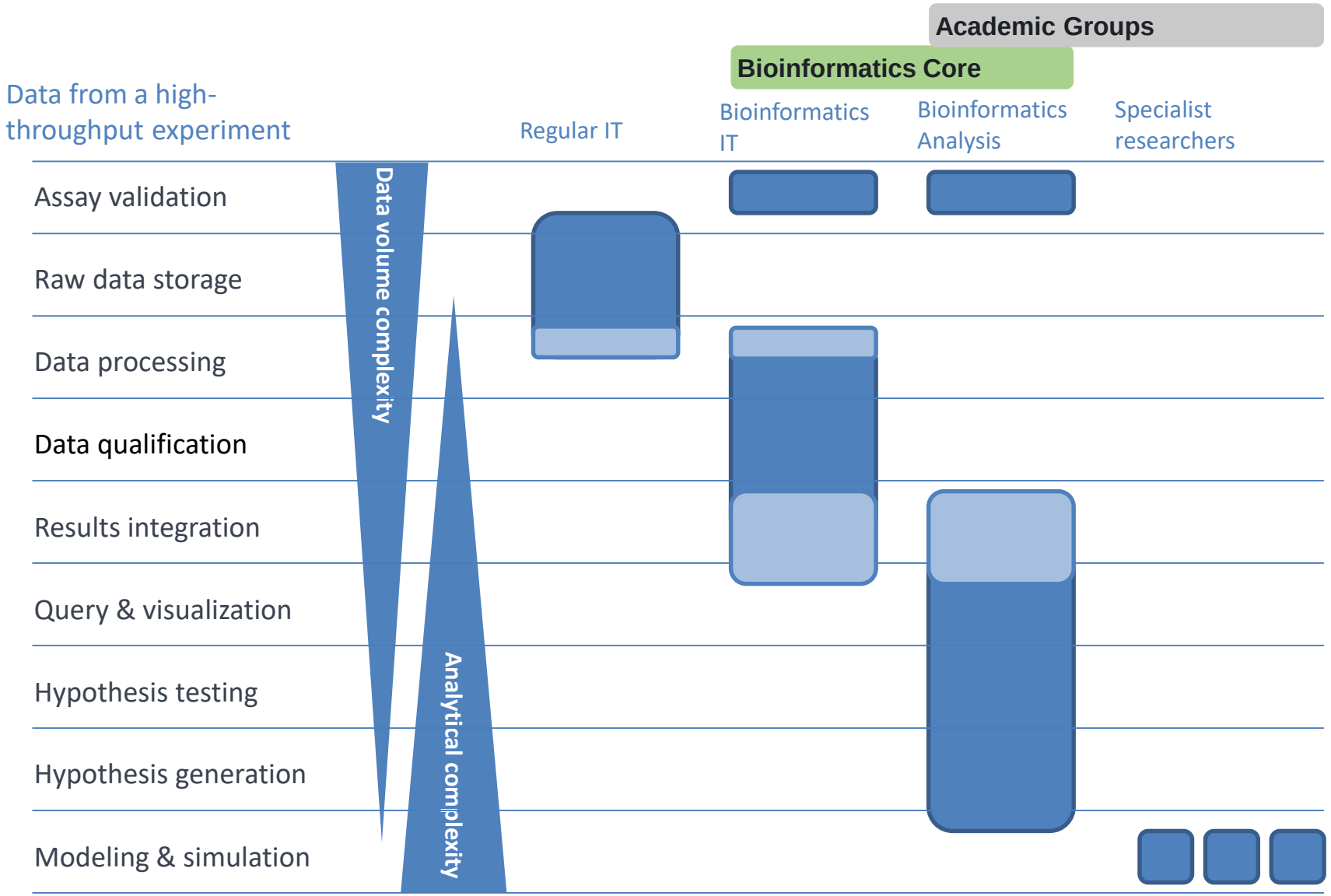
Scientific Directors - Winston Hide and Dennis Wang

Supporting the BRC and Neuroscience research

Core

Core




Academic Groups
Bioinformatics Core
Data from a high-throughput experiment
Regular IT
Bioinformatics IT
Bioinformatics Analysis
Specialist researchers
Assay validation
Raw data storage
Data processing
Data qualification
Results integration
Query & visualization
Hypothesis testing
Hypothesis generation
Modeling & simulation
Data volume complexity
Analytical complexity

Services

Research

- One-one consults
- Design experiments
- Develop grant applications
- Mine public data repositories
- Analyse –omic data (eg. genome, RNAseq)
- Identify relevant pathways
- Build NGS infrastructure
- Centralise computing and data management

Education

- Run training workshops
- Bioinformatics curriculum development
- Online tools and services training

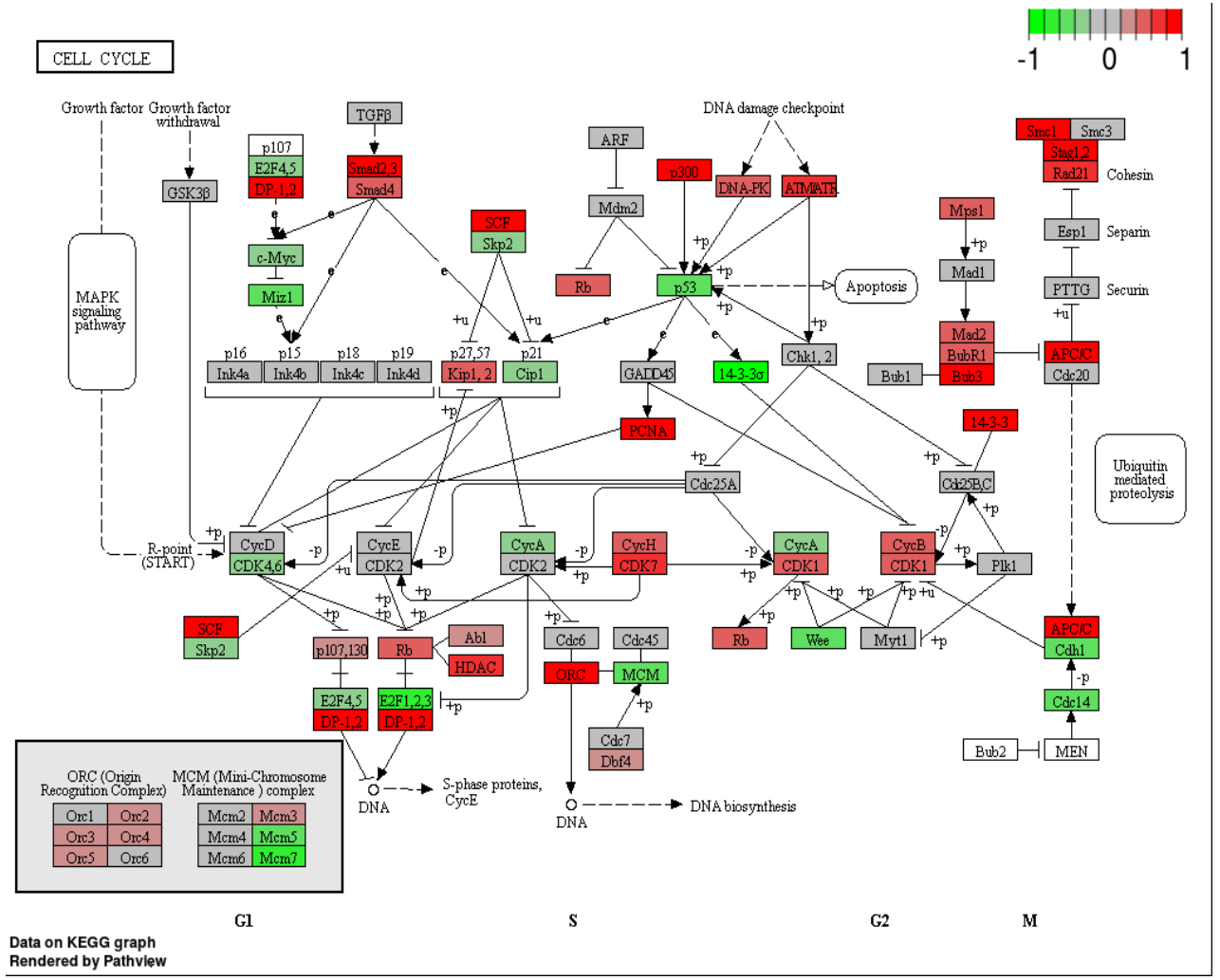
https://tinyurl.com/bioinformatics-training-needs

Experimental Design Consultation

”To consult the statistician after an experiment is finished is often merely to ask him to conduct a post mortem examination. He can perhaps say what the experiment died of.” - R.A. Fisher

Example problem – functional gene enrichment

- Problem: **Are functional genes or genes of a particular biotype enriched in a test vs control experiment?**
- RNA-seq experiment
- Use standardised bioinformatic pipelines to:
  - Check the raw read data for quality
  - Calculate expression counts
  - Get appropriate gene annotation
  - Differential gene expression analysis
- Further downsteam analysis:
  - Perform gene set enrichment analysis
  - Pathway analysis



Short Workshops

1-2 day long workshops in specialised areas

- Introduction to R — 1 day
- Intro to Stats — 1 day
- Intro to RNA-seq — 1/2 day
- RNA-seq analysis — 2 day
- Intro to Command-line — 1 day
- Data management — 1/2 day
- Variant characterisation — 2 day

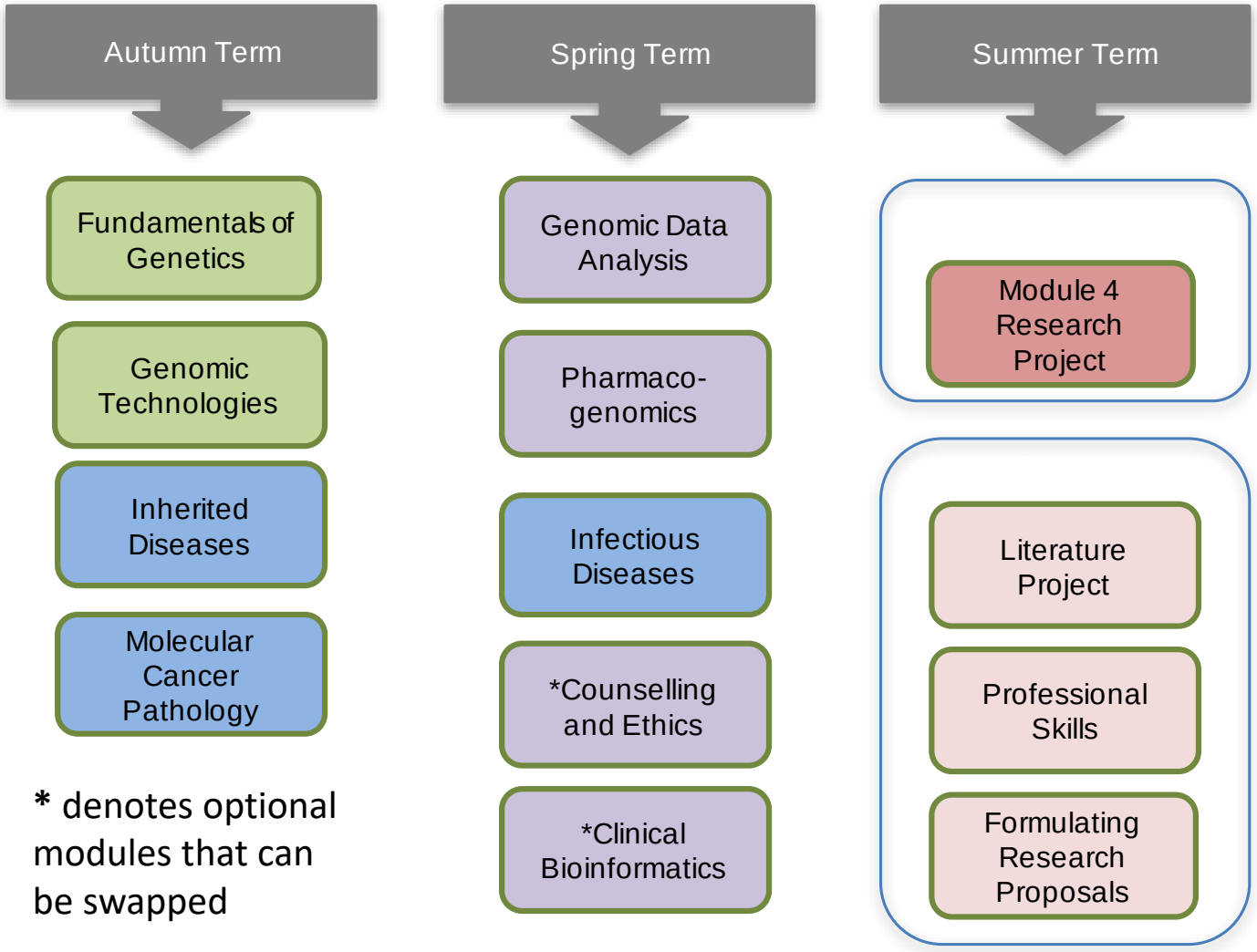
Training Delivery

- Each workshop will comprise a mixture of lectures and practical exercises.
- At least half of the allotted time will be devoted to practical work and lectures will be a maximum of 30 – 45 min
- Around 20 - 30 to encourage an interactive learning environment
- 3 - 4 experienced instructors will be there to help

Schedule: http://sbc.shef.ac.uk/training/
Cost: £60 / day

CPD modules for Genomics

https://www.sheffield.ac.uk/neuroscience/genomicmedicine/



* denotes optional modules that can be swapped