

Analysing Next-Gen data within a Core Facility

Simon Andrews

- 30 Research Groups
- 400 Researchers
- 2 Illumina GA2Xs
- 5 Bioinformaticians

Possible uses...

ChIP-Seq

SNP Detection

ChIA-Pet

MeDIP-Seq

Bisulphite-Seq

4C

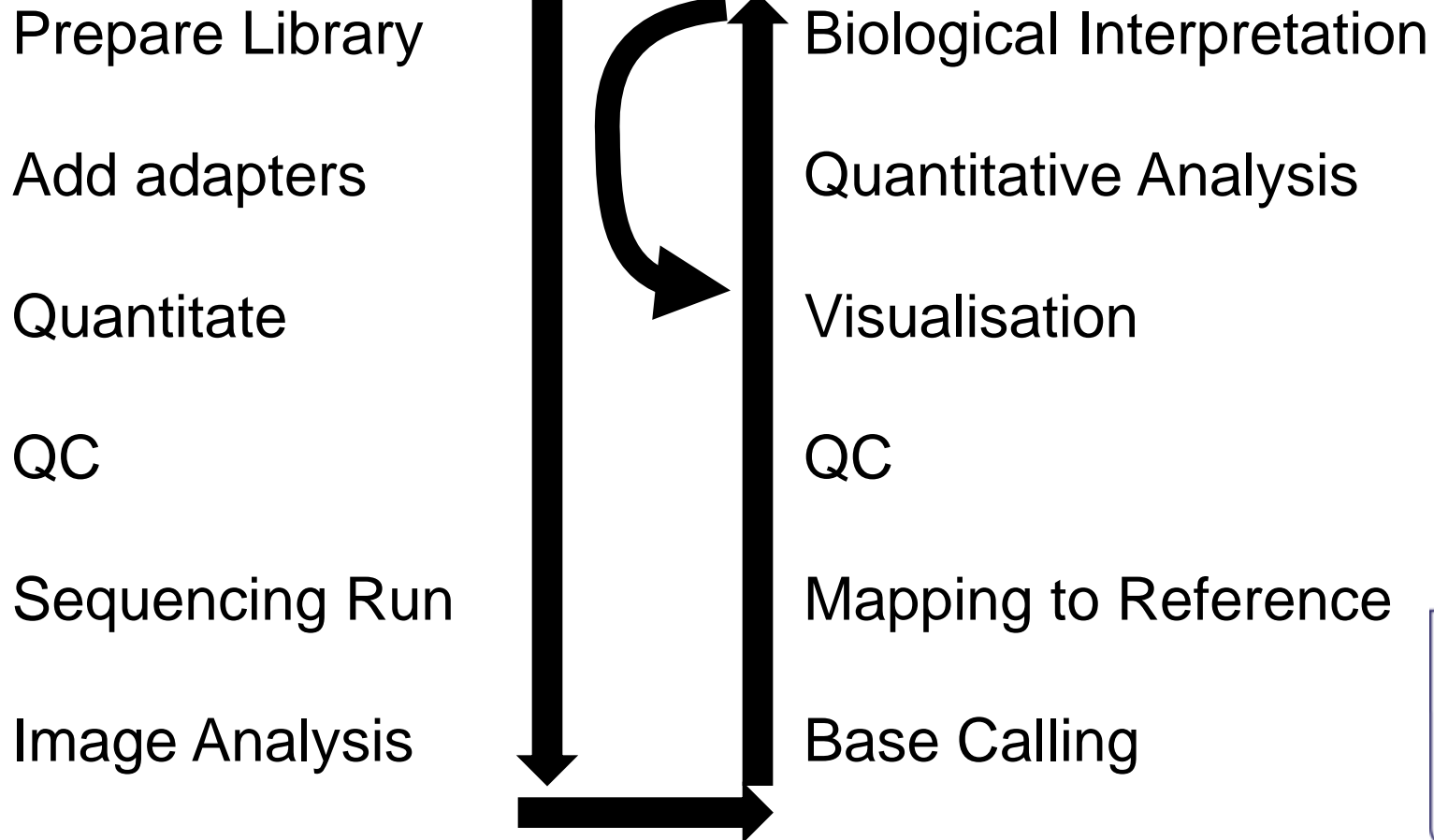
mRNA Tag Seq

3C

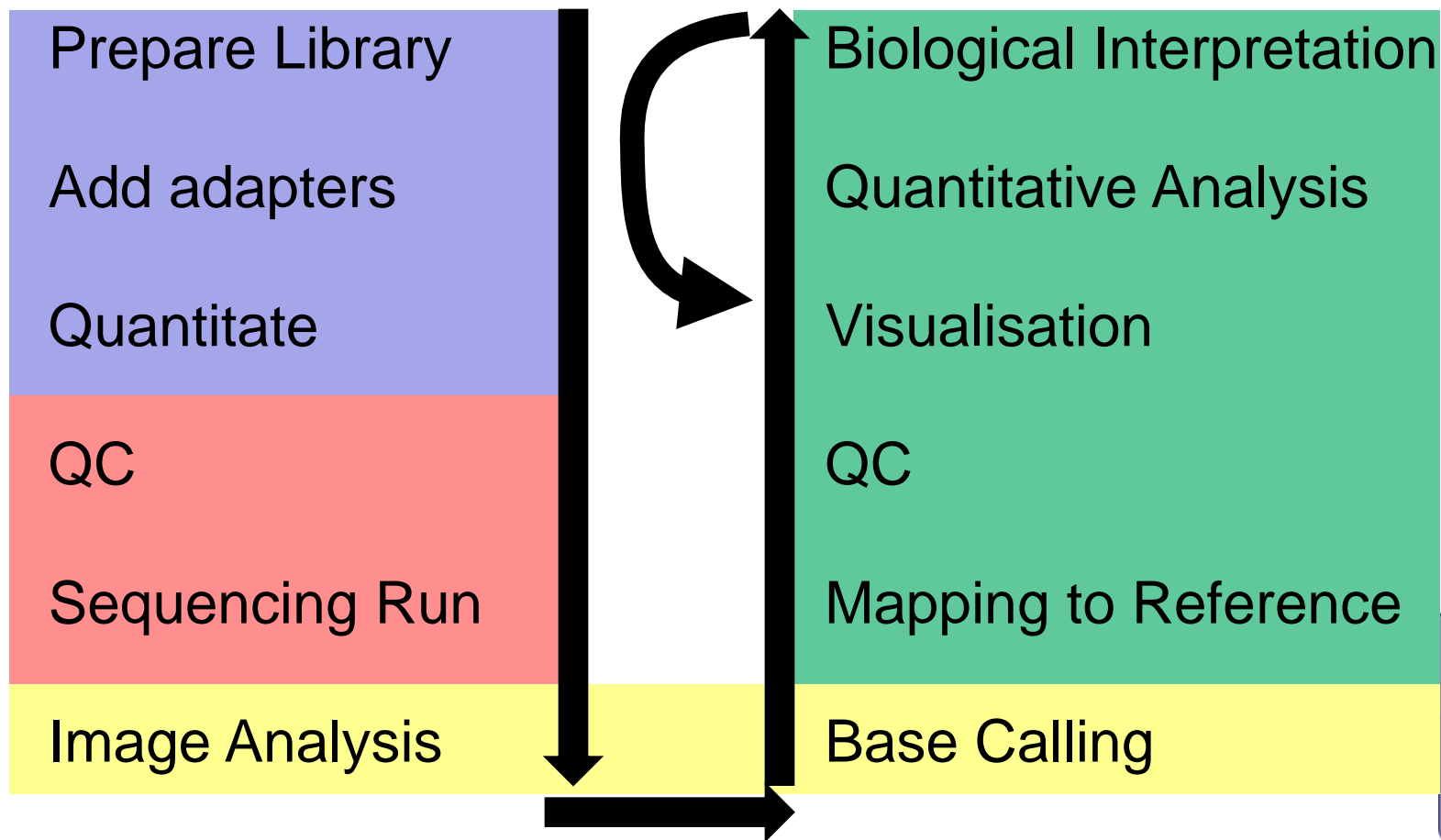
Nuclear RNA-Seq

mRNA-Seq

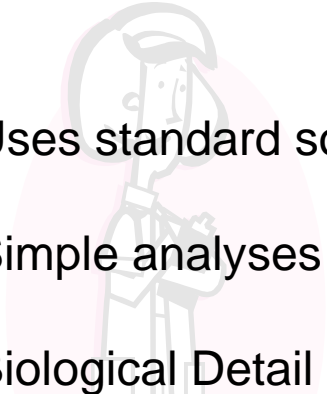
Next Gen Workflow



Next Gen Workflow

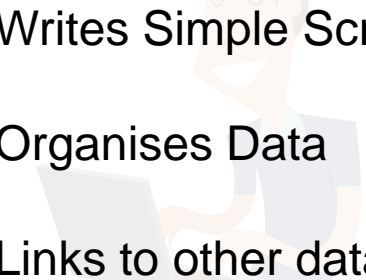


Division of Labour



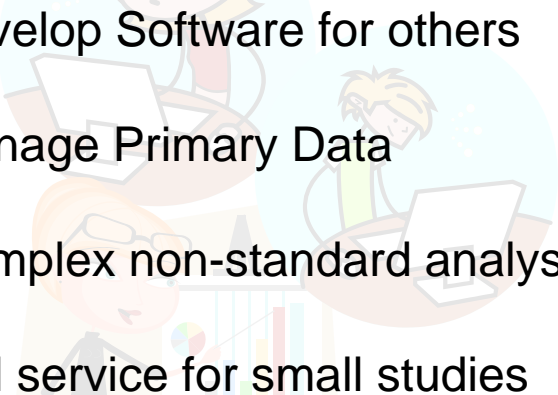
Uses standard software
Simple analyses
Biological Detail

+



Writes Simple Scripts
Organises Data
Links to other data

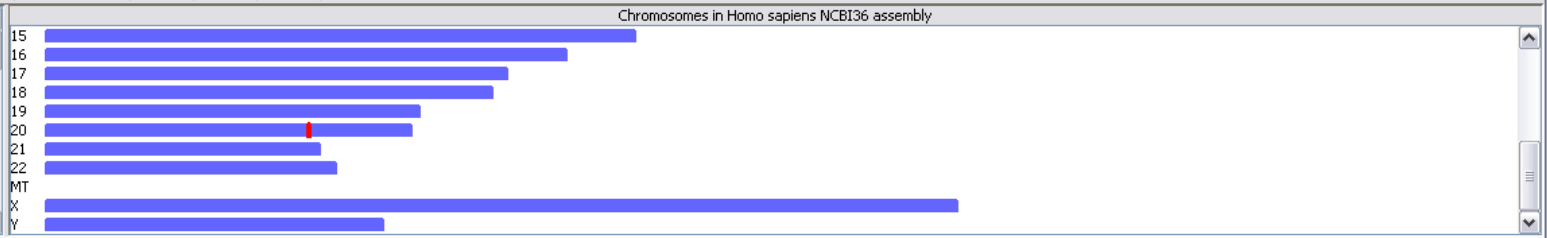
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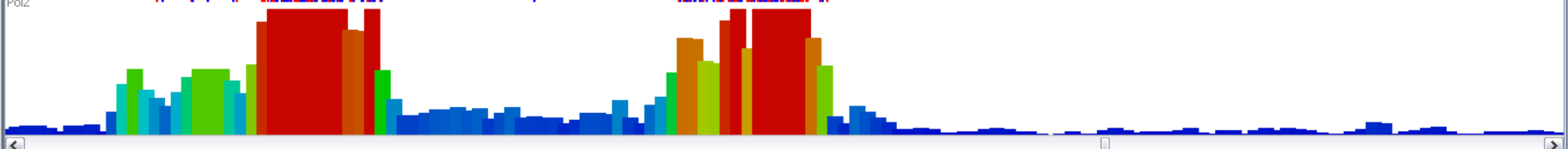
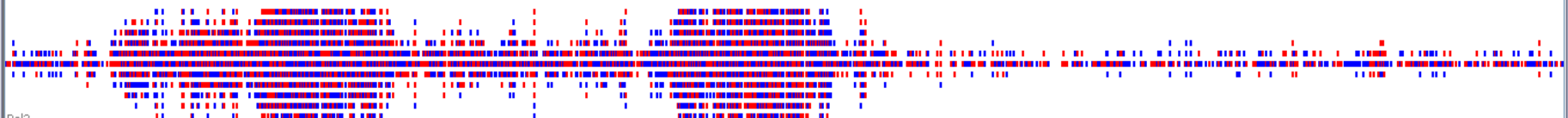
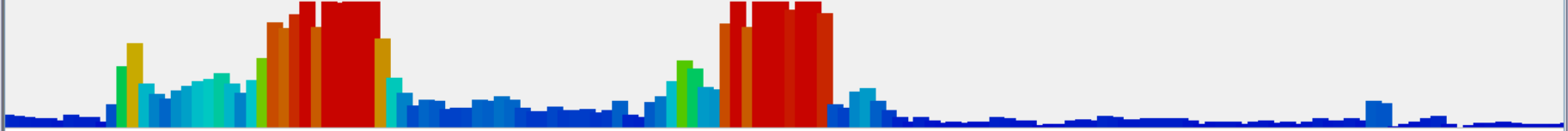
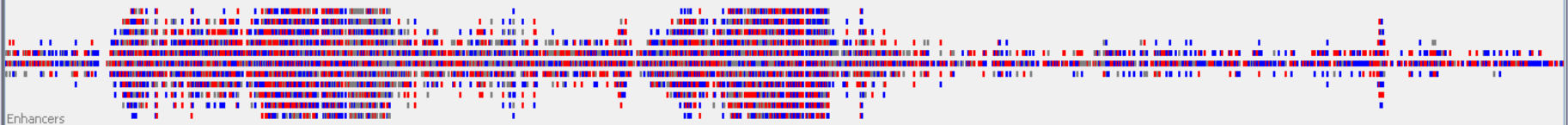
Develop Software for others
Manage Primary Data
Complex non-standard analysis
Full service for small studies



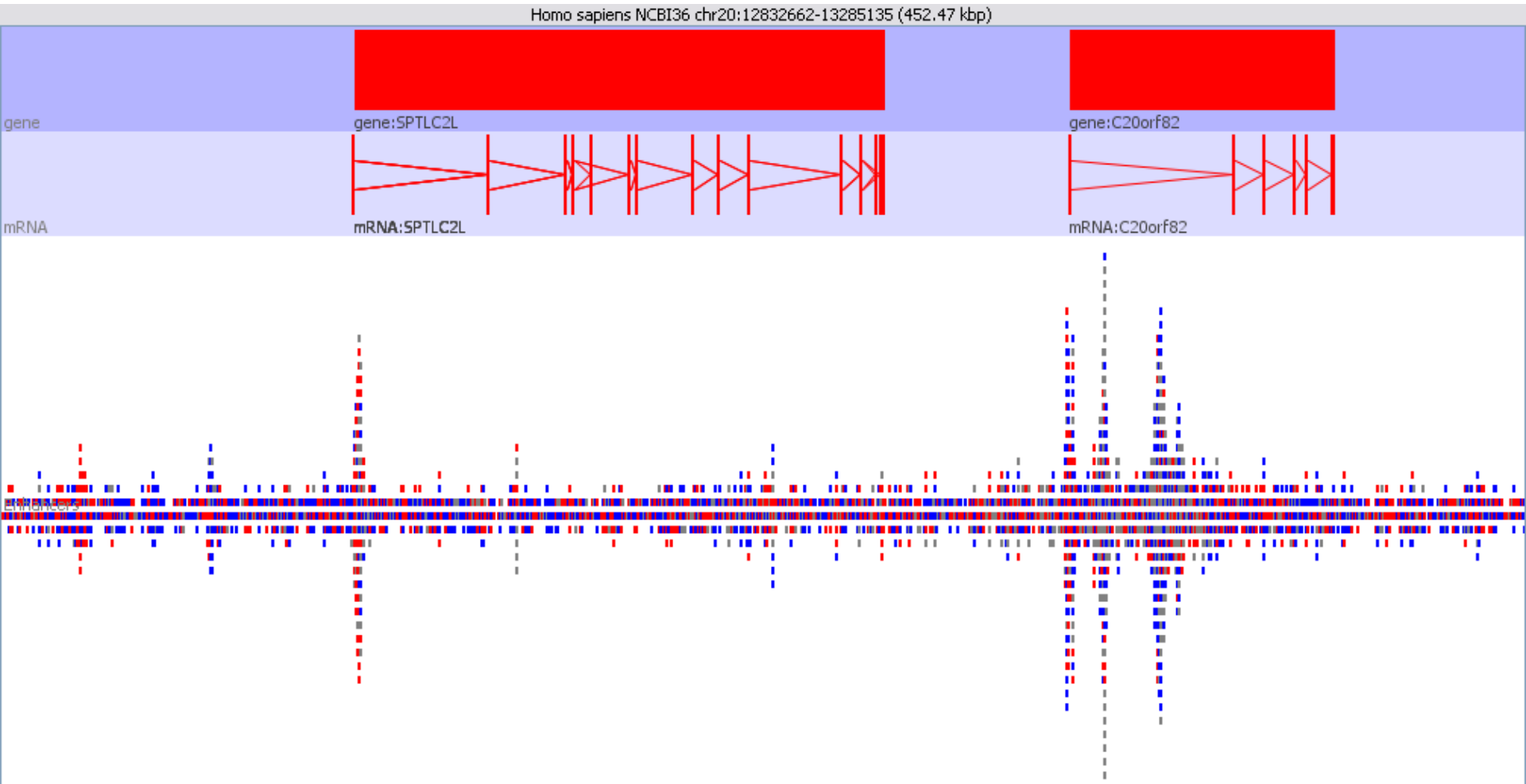
- Data
- Data Sets
 - CD4-H2AK5ac.bed
 - CD4-H2AK9ac.bed
 - CD4-H2BK120ac.bed
 - CD4-H2BK12ac.bed
 - CD4-H2BK20ac.bed
 - CD4-H2BK5ac.bed
 - CD4-H3K14ac.bed
 - CD4-H3K18ac.bed
 - CD4-H3K27ac.bed



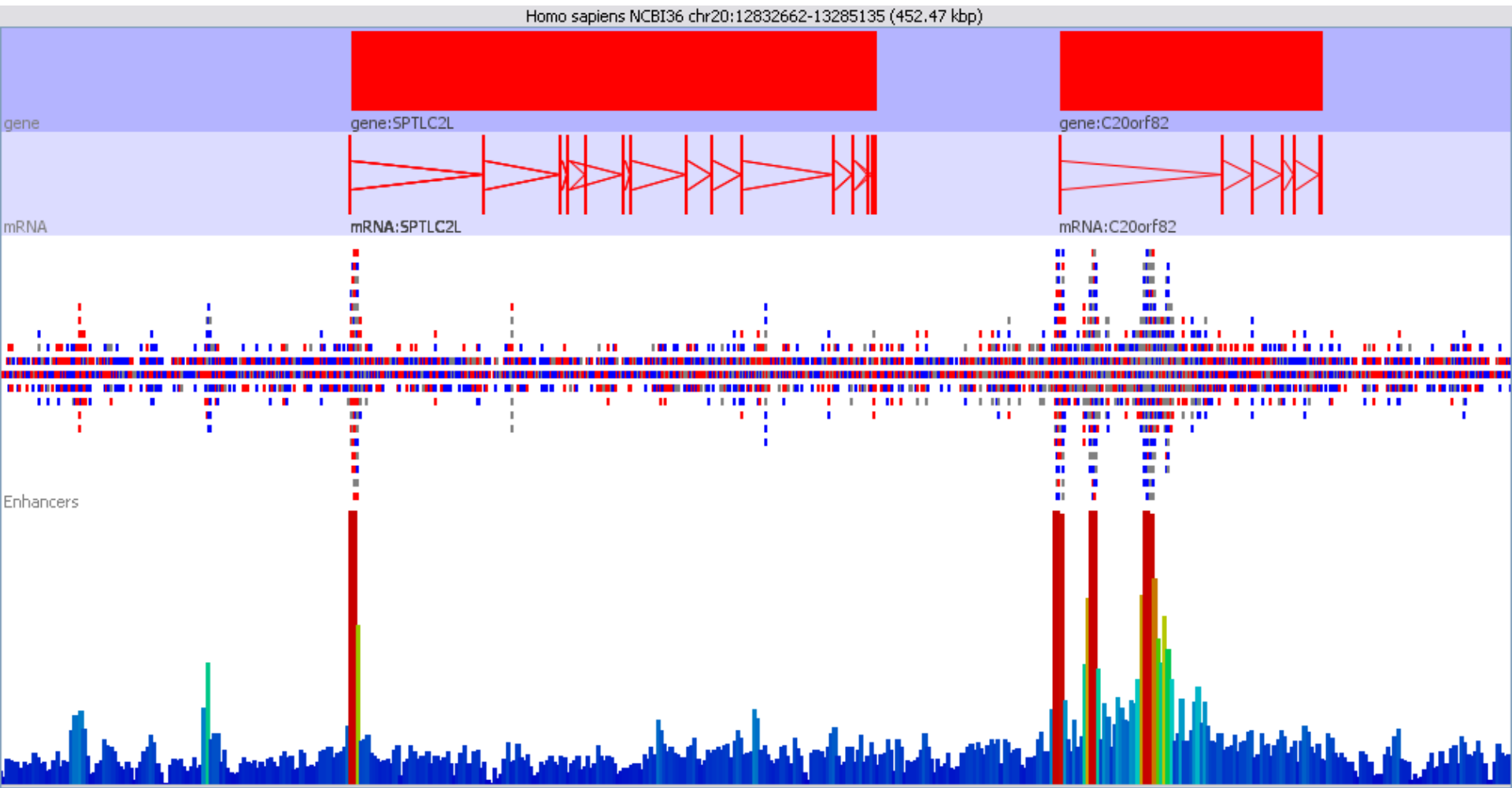
Homo sapiens NCBI36 chr20:44393570-44538282 (144.71 kbp)



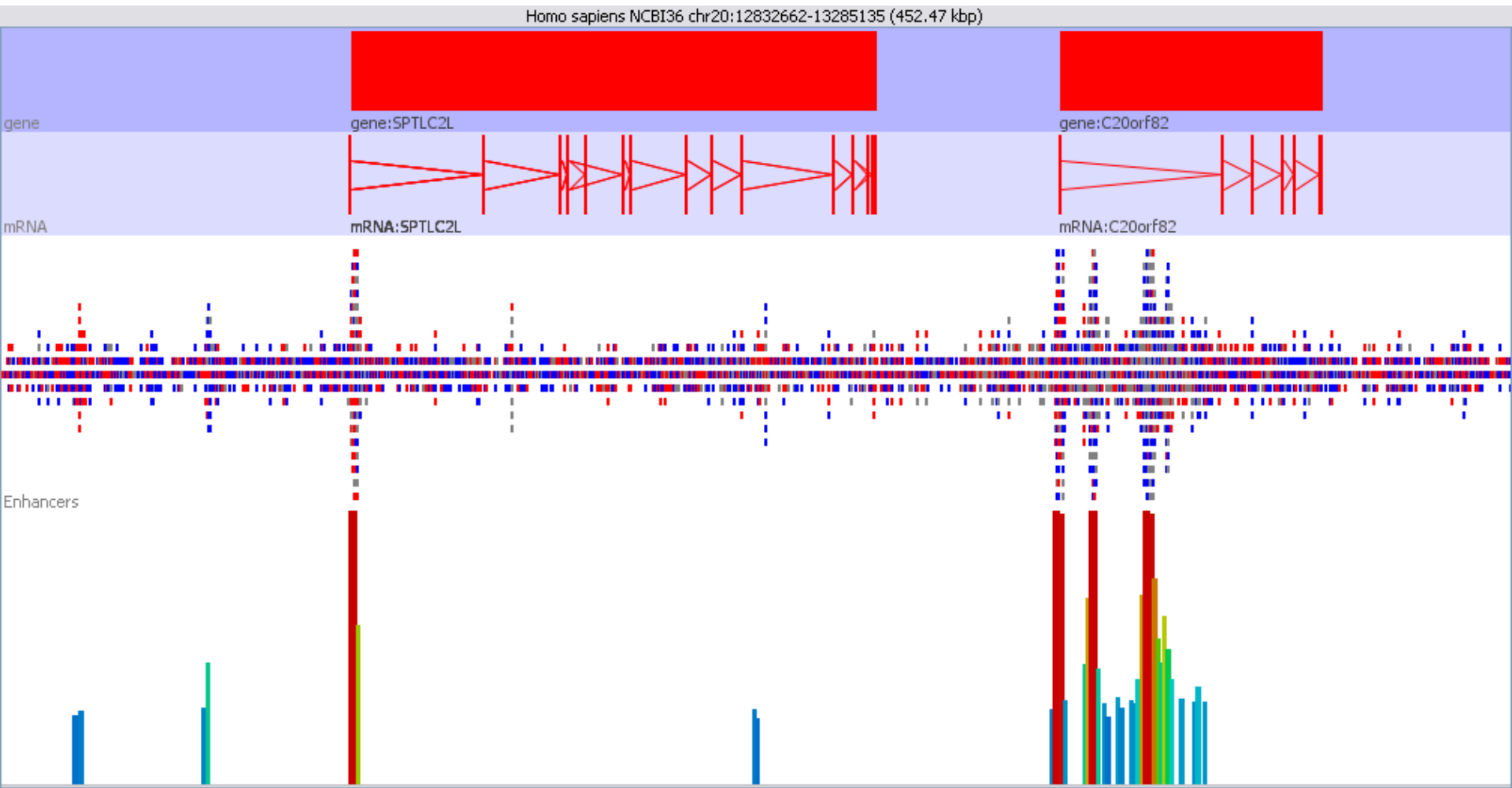
Visualise



Quantitate



Filter



Report

Report for 'Value above 16.0'

Chr	Start	End	No. Pr...	Features	Descriptions	Enhancers
20	30406001	30681501	1	248 ASXL1 C20orf112 RP...	"Putative Polycomb group protein ASXL1(Additional sex combs-like p...	54.806
20	61945001	62223501	1	241 TPD52L2 DNAJCS UC...	"Tumor protein D54 (hD54) (Tumor proteinD52-like 2). [Source:Unipr...	56.444
20	46659001	46886501	1	209 RP11-269H4.1	"Phosphatidylinositol3,4,5-trisphosphate-dependent Rac exchanger ...	61.968
20	49422001	49597501	1	173 NFATC2	"Nuclear factor of activated T-cells,cytoplasmic 2 (T-cell transcriptio...	68.676
20	42992001	43161501	1	154 PABPC1L TOMM34 ST...	"Polyadenylate-binding protein 1-like.[Source:Uniprot/SWISSPROT;...	41.353
20	57096001	57272501	1	150 MRPS16P ZNF831	"Uncharacterized protein C20orf174.[Source:Uniprot/SWISSPROT;...	56.965
20	61619001	61770501	1	128 C20orf149 PTK6 SRM...	"UPF0362 protein C20orf149.[Source:Uniprot/SWISSPROT;Acc:Q9H...	62.218
20	36841001	36972501	1	122 PPP1R16B	"Protein phosphatase 1 regulatory inhibitorsubunit 16B (TGF-beta- i...	67.106
20	51103001	51271501	1	121 TSHZ2	"Teashirt homolog 2 (Zinc finger protein 218)(Ovarian cancer-relate...	23.969
20	55358001	55492501	1	120 RAE1 RBM38	"mRNA export factor (mRNA-associated proteinmrnp 41) (Rae1 prot...	62.845
20	32040001	32165501	1	118 RALY EIF2S2	"RNA-binding protein Raly (hnRNP associatedwith lethal yellow homo...	68.915
20	45548001	45680501	1	116 AL353777.18 AL3537...	"Nuclear receptor coactivator 3 (EC 2.3.1.48)(NCoA-3) (Thyroid ho...	35.144
20	60797001	60935501	1	115 NTSR1 C20orf20 OGF...	"Neurotensin receptor type 1 (NT-R-1)(High-affinity levocabastine- i...	45.525
20	4704001	4857501	1	109 RASSF2 SLC23A2	"Ras association domain-containing protein 2.[Source:Uniprot/SWIS...	39.917
20	17496001	17612501	1	105 DSTN RRBP1	"Destrin (Actin-depolymerizing factor) (ADF).[Source:Uniprot/SWISS...	34.974
20	31009001	31129501	1	100 SPAG4L BPIL1 BPIL3 ...	"Sperm-associated antigen 4-like protein(Testis and spermatogenesi...	39.239
20	56229001	56362501	1	100 ANKRD60 AL354776....	"Ankyrin repeat-containing protein C20orf86precursor. [Source:Unip...	38.502
20	39570001	39684501	1	97 CHD6	"Chromodomain-helicase-DNA-binding protein 6(EC 3.6.1.-) (ATP- d...	32.766
20	51875001	52006501	1	95 AC005220.1 BCAS1	"Breast carcinoma-amplified sequence 1 (Novelamplified in breast ca...	42.4
20	48549001	48648501	1	88 PTPN1 hsa-mir-645 C...	"Tyrosine-protein phosphatase non-receptortype 1 (EC 3.1.3.48) (P...	59.646

Close Save

Core Facility Jobs

- Mapping
- QC
- Filtering
- Standard Workflows
- Custom Analysis
- Planning / Design
- Software Development
- Training

Analysing High Throughput Sequencing Data with SeqMonk

Version 0.4

Learning To Program With Perl

*An introduction to the Perl programming language for those who
haven't programmed before*

Version 0.6 (public)

www.bioinformatics.bbsrc.ac.uk

simon.andrews@bbsrc.ac.uk

