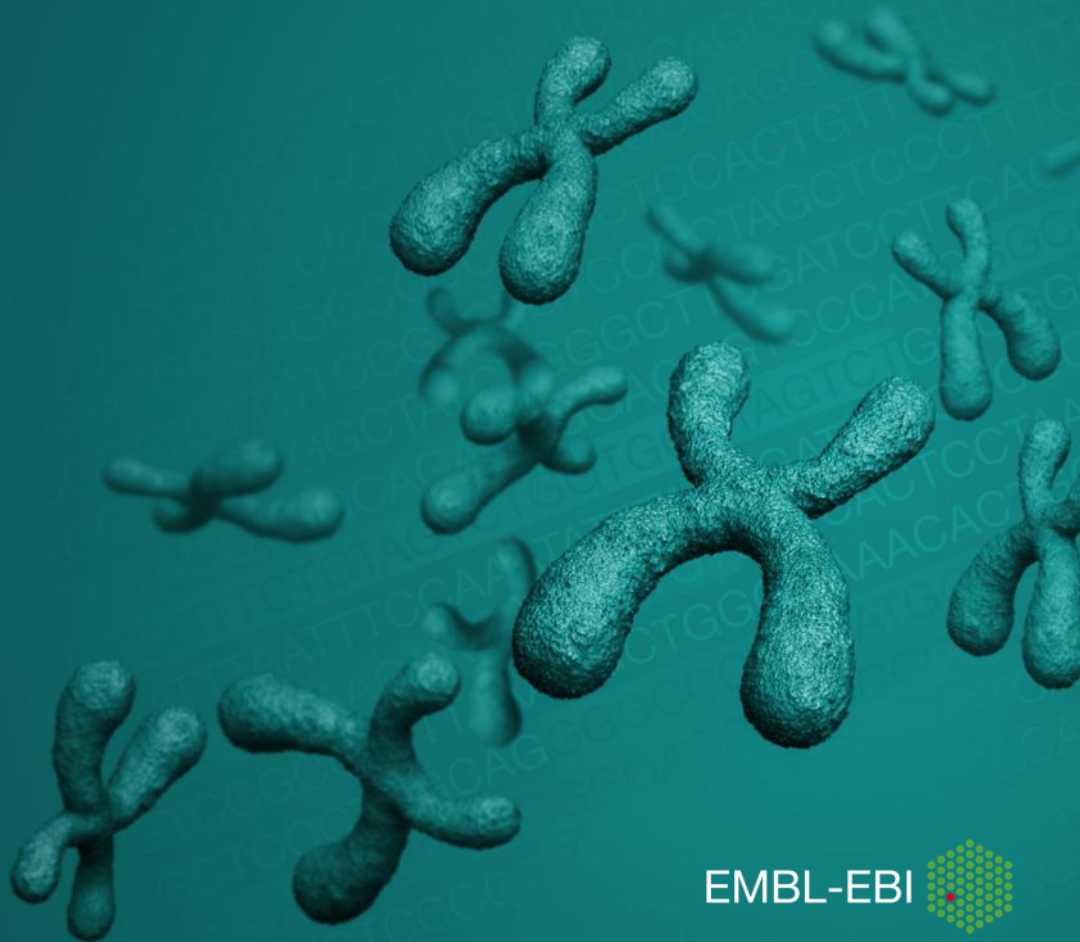


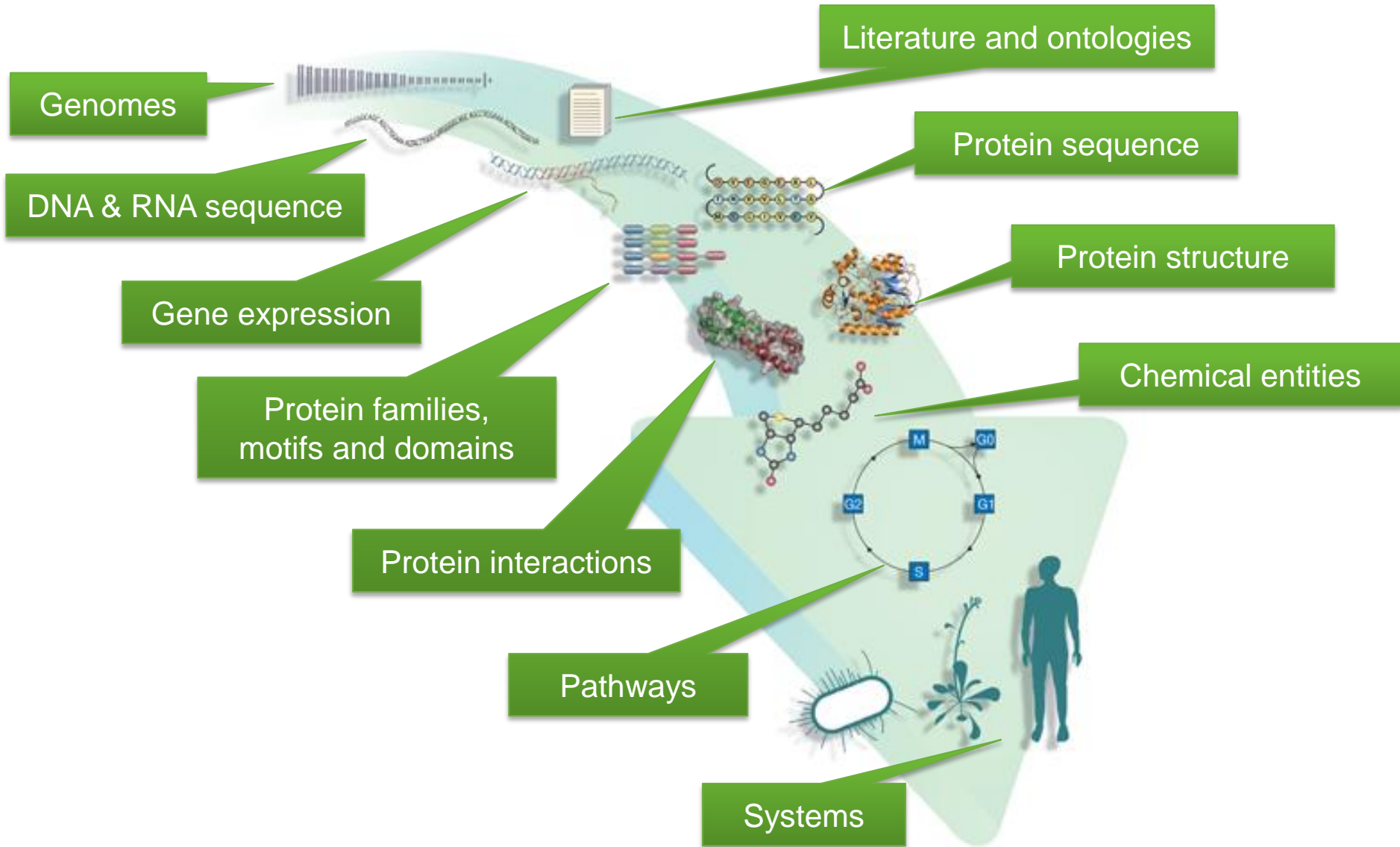
Taxonomic perspectives on sequence data

Guy Cochrane

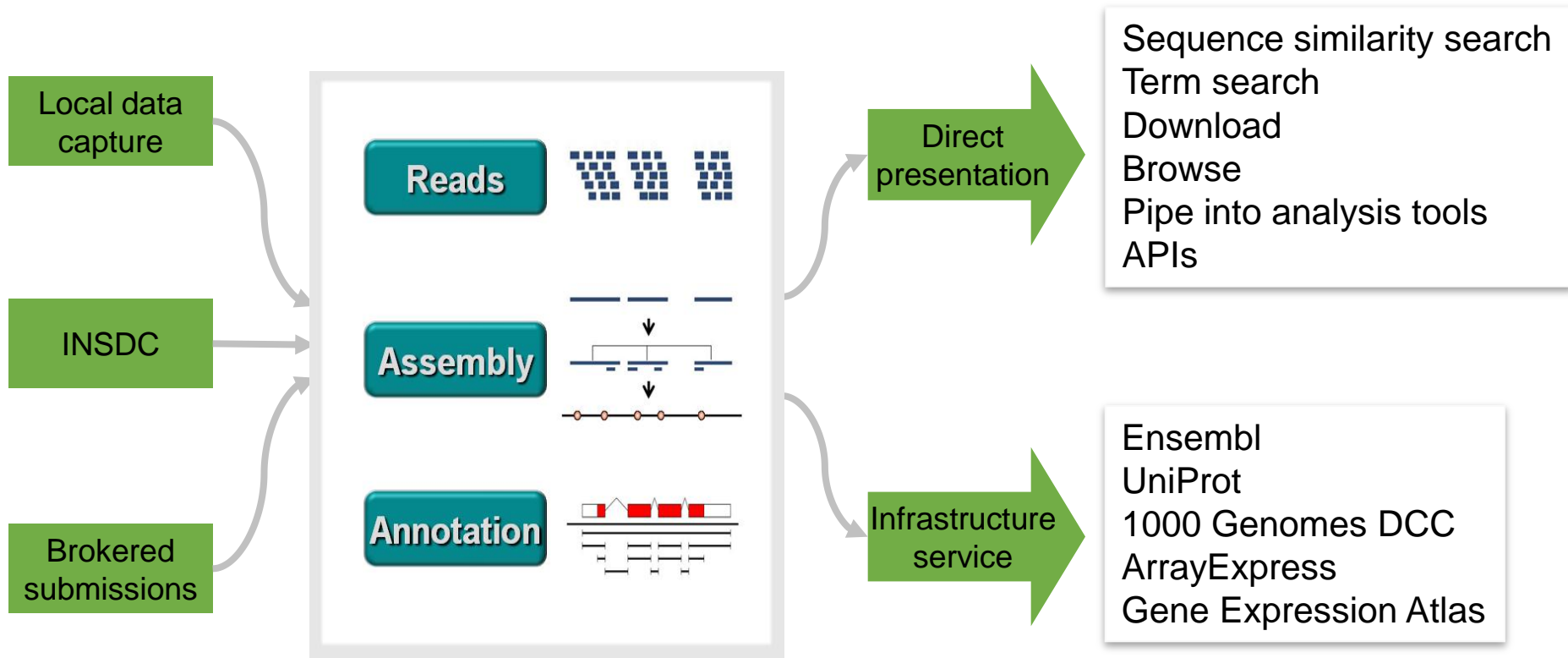


- I have a limited budget to conserve habitats and retain biodiversity; tell me about the **genetic diversity** of the populations in those habitats to guide my decision.
- I study the **function of the XYZ1 gene**; using **molecular polymorphism** data, I wish to relate the chemical environments of the organisms that have a copy of the gene to its **functional organisation**.
- I need a single **molecular identification technique** that will allow me to discriminate between individuals, family groups, populations, ecotypes, species, genera, etc.
- As an ecologist, I wish to understand **evolutionary mechanisms** that lead to tolerance of a particular environmental challenge

EMBL – European Bioinformatics Institute



European Nucleotide Archive (ENA)

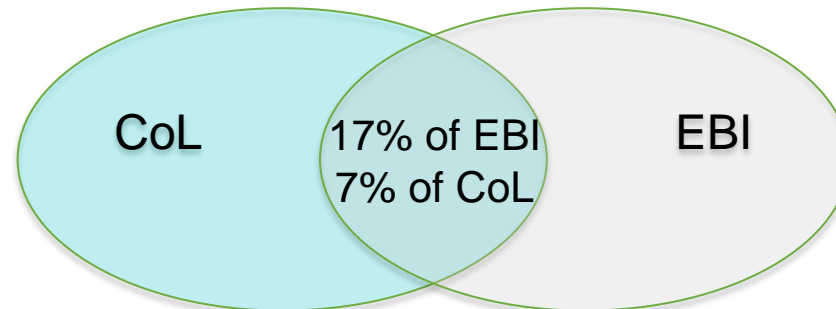


<http://www.ebi.ac.uk/ena/>

Helpdesk
Training
Standards development
Community building
Technology development

Mapping taxonomies

- 167,793 EBI taxa map to CoL taxa:
 - 150,995 direct mappings
 - 16,798 more complex
- 665,007 EBI taxa do not map to CoL



- Granular access
 - User-facing warehouse, based on large analytical database, supporting daily content refresh, rapid query response times and high volume
 - Presented as RESTful service
 - Supports many concurrent filterable fields (100s) with no heavy impact on query time
 - Filter functions include taxonomic, special, temporal, text and dictionary
 - Outputs include data in a variety of formats, including report tables
 - http://www.ebi.ac.uk/ena/about/browser#data_warehouse
- Various data products
 - Taxonomy dumps (e.g. DWCA)
 - Mapping products

Taxon Portal

<http://www.ebi.ac.uk/ena/data/warehouse/search?portal=taxon>

Taxon: 10116 : *Rattus norvegicus* (Norway rat) [species]



[Send Feedback](#)

View: [XML](#)

Organism

Rattus norvegicus

Common Name

Norway rat

Synonyms

Rattus sp. strain Wistar, laboratory rat, Sprague-Dawley rat, Wistar rats, *Rattus* PC12 clone IS, zitter rats, Buffalo rat, brown rat, rats, rat

Rank

species

Lineage

[Eukaryota](#), [Metazoa](#), [Chordata](#), [Craniata](#), [Vertebrata](#), [Euteleostomi](#), [Mammalia](#), [Eutheria](#), [Euarchontoglires](#), [Glires](#), [Rodentia](#), [Sciurognathi](#), [Muroidea](#), [Muridae](#), [Murinae](#), [Rattus](#)

Catalogue of Life



This taxon is referred to as *Rattus norvegicus* (Berkenhout, 1769) in Species 2000 & ITIS Catalogue of Life: 25th June 2013; information for this taxon was derived from ITIS Global, Musser G.G..

Portal [Navigation](#) [Genetic code](#)

	Taxon		Taxon & descendants	
	Entries	Bases	Entries	Bases
Assembly				
Assembly	7	6 Gb	7	6 Gb
Sequence				
Sequence (Update)	109	1 Mb	109	1 Mb
Sequence (Release)	3047807	22 Gb	3047808	22 Gb
Coding				
Coding	69109	76 Mb	69109	76 Mb
Read				
Experiment	1042	6 Tb	1042	6 Tb
Run	1168	6 Tb	1168	6 Tb
Study	72	6 Tb	72	6 Tb
Analysis				
Analysis	0	0 bp	0	0 bp
Study	0	0 bp	0	0 bp
Study				
Study (Sequence)	88	0 bp	88	0 bp
Sample				

Taxon Portal entry points

Study
 Taxon
 Sample
 Marker

Select search conditions:

Taxonomy and related

Taxon name = ⊖

Include subordinate taxa

Environmental sample = True False

Strain = ⊖ ⊕

Sub-strain =

Sub-species =

Variety =

Cultivar =

Ecotype =

Isolate =

Serovar =

Serotype =


Sampling and collection

Specimen voucher = ⊖ ⊕

Bio material =

Culture collection =

RESTful

 **Taxon:** Taxon:10116

Portal Navigation Genetic code

- + [Eukaryota \(eucaryotes\) \[superkingdom\]](#)
- + [Metazoa \(metazoans\) \[kingdom\]](#)
- + [Chordata \(chordates\) \[phylum\]](#)
- + [Craniata \[subphylum\]](#)
- + [Gnathostomata \(jawed vertebrates\) \[superclass\]](#)
- + [Mammalia \(mammals\) \[class\]](#)
- + [Euarchontoglires \[superorder\]](#)
- + [Rodentia \(rodents\) \[order\]](#)
- + [Sciurognathi \[suborder\]](#)
- + [Muridae \[family\]](#)
- [Murinae \[subfamily\]](#)
 - [Margaretamys](#)
 - [Tonkinomys](#)
 - + [Saxatilomys](#)
 - [Lamottemys](#)
 - [Lamottemys okuensis : Mount Oku rat](#)
 - + [unclassified Murinae](#)

<http://www.ebi.ac.uk/ena/data/warehouse/search?portal=taxon>

Marker Portal

Search query [Help](#)

Select domain:

- Assembly
- Sequence
- Coding
- Read
- Analysis
- Trace
- Study
- Taxon
- Sample
- Marker

Select search conditions:

Markers

Marker group =

Taxonomy and related

Taxon name =

Include subordinate taxa

Actin, beta

Alpha tubulin

Cytochrome B

Cytochrome C oxidase subunit I

Elongation factor 1-alpha

Eukaryotic elongation factor-2 kinase

Malate dehydrogenase

Maturase K

NADH dehydrogenase subunit 1 (ndhA)

NADH dehydrogenase subunit 2 (ndhB)

NADH dehydrogenase subunit 3 (ndhC)

NADH dehydrogenase subunit 4 (ndhD)

NADH dehydrogenase subunit 5 (ndhF)

Polymerase (RNA) II (DNA directed) polypeptide B

Recombination activating gene 2

Rhodopsin

Ribulose bisophosphate carboxylase

Tubulin, beta class I

petD cytochrome b6/f complex subunit 4

<http://www.ebi.ac.uk/ena/data/warehouse/search?portal=marker>

Marker Portal

Coding

Coding (4,570)

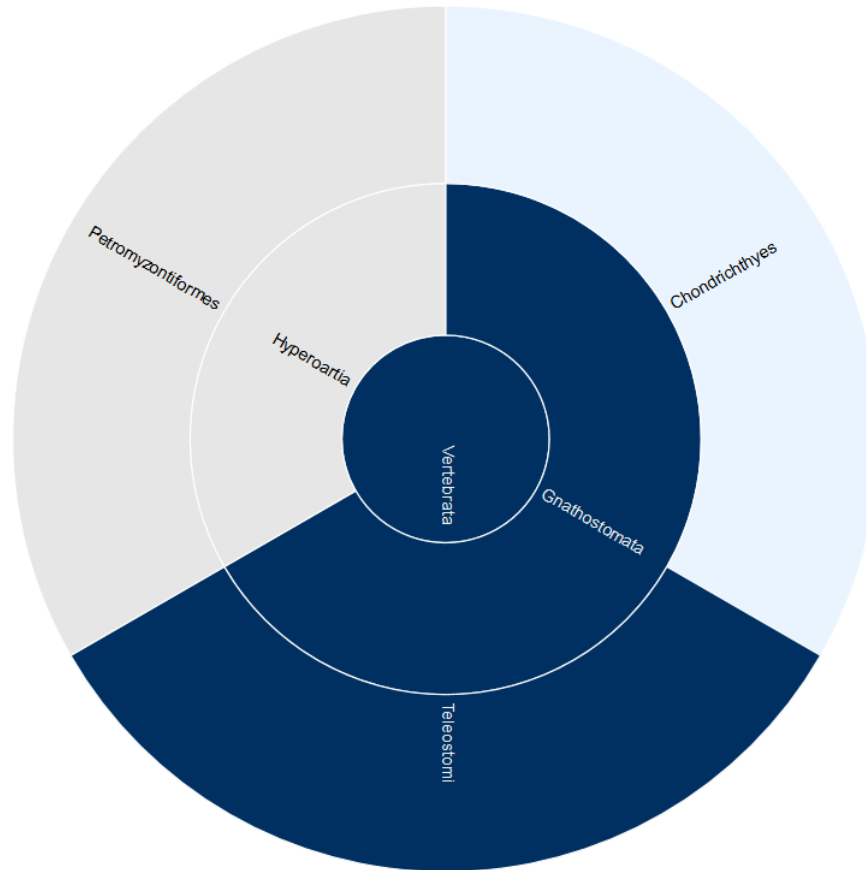
View: [TEXT](#)

Download: [TEXT](#)

Records

Reports

Marker



<http://www.ebi.ac.uk/ena/data/warehouse/search?portal=marker>

Acknowledgements

EBI Team

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Others

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