

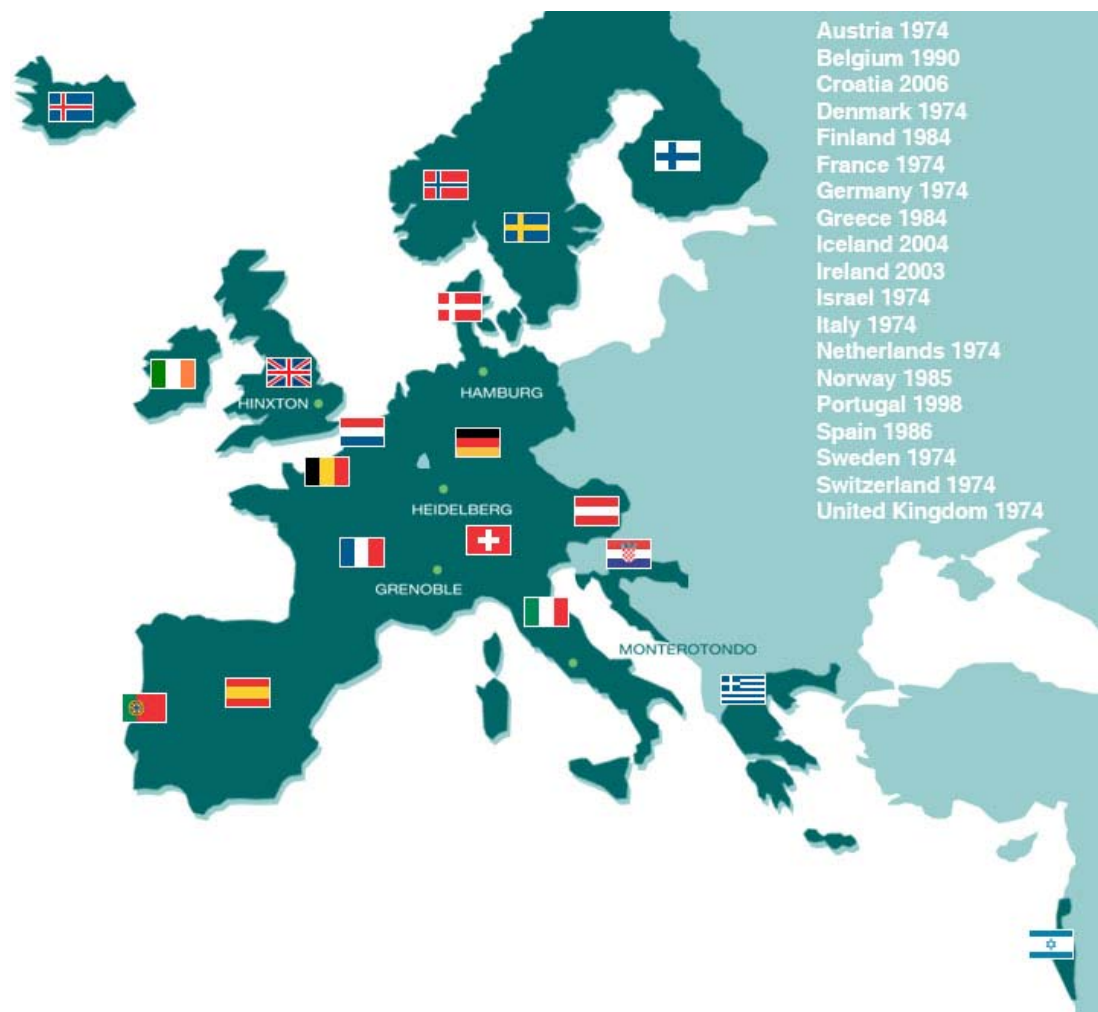
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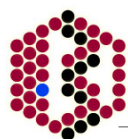


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EMBL Member States



June
2006



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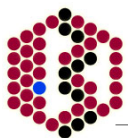


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EU and Associated States



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2006



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Heidelberg

Grenoble

Hamburg

Monterotondo

Hinxton

EBI

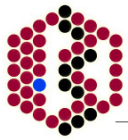
Service

Research

Training

Industry

June
2006



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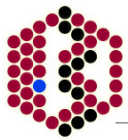
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Role of Bioinformatics

- To support experimental biology
 - To collect and archive data
 - To provide framework and integration
 - To give easy access to data
- To make new discoveries through data analysis

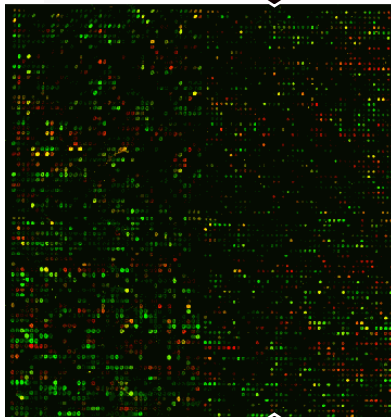


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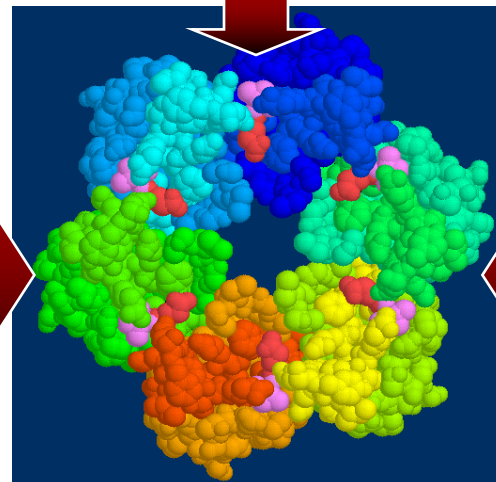
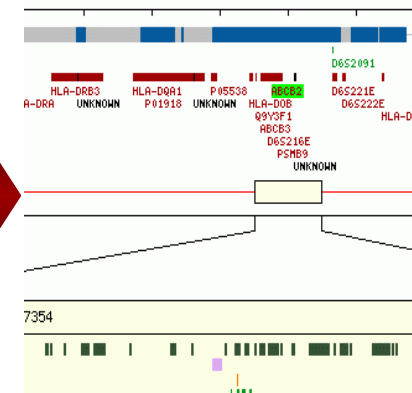


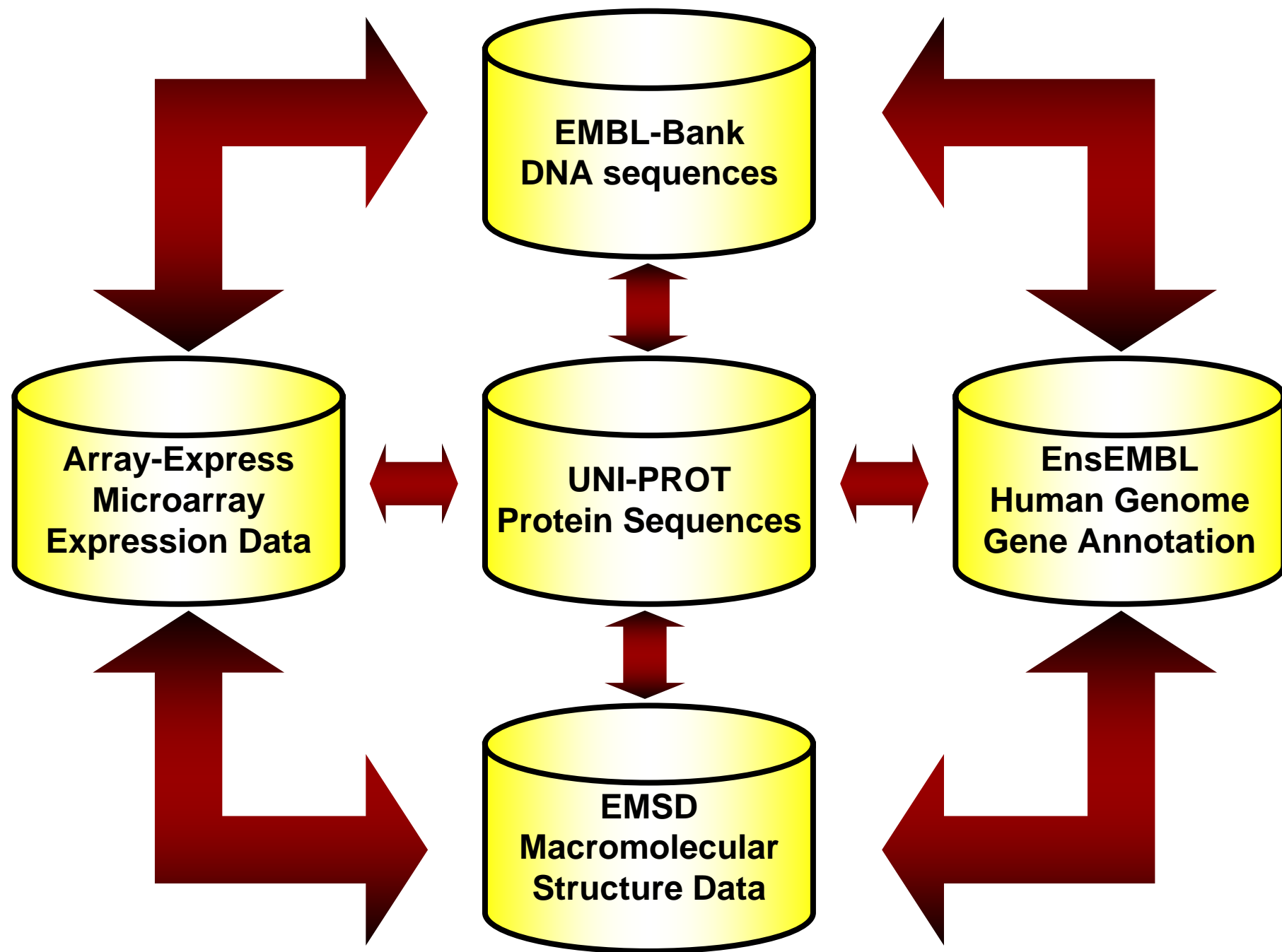
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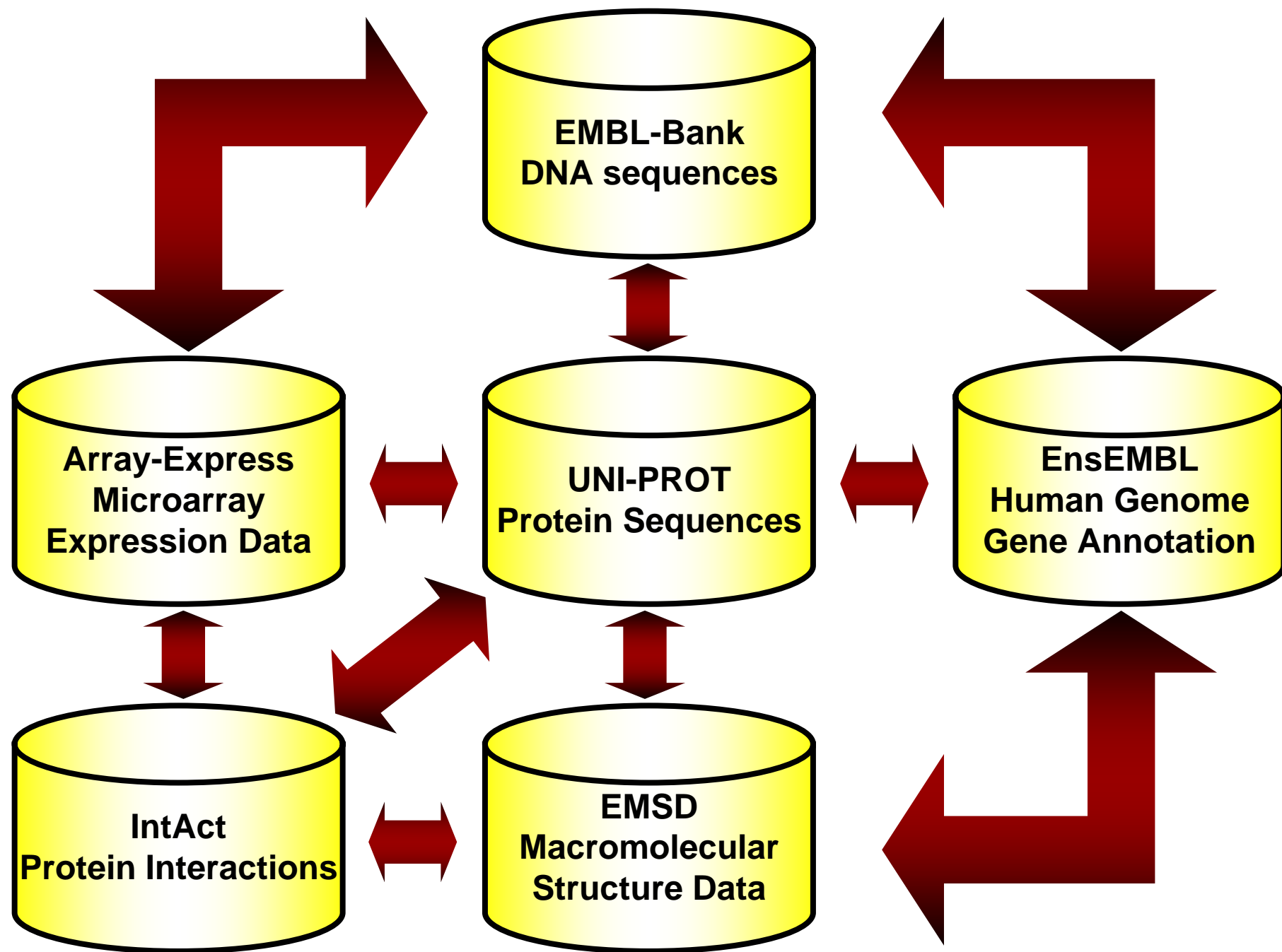
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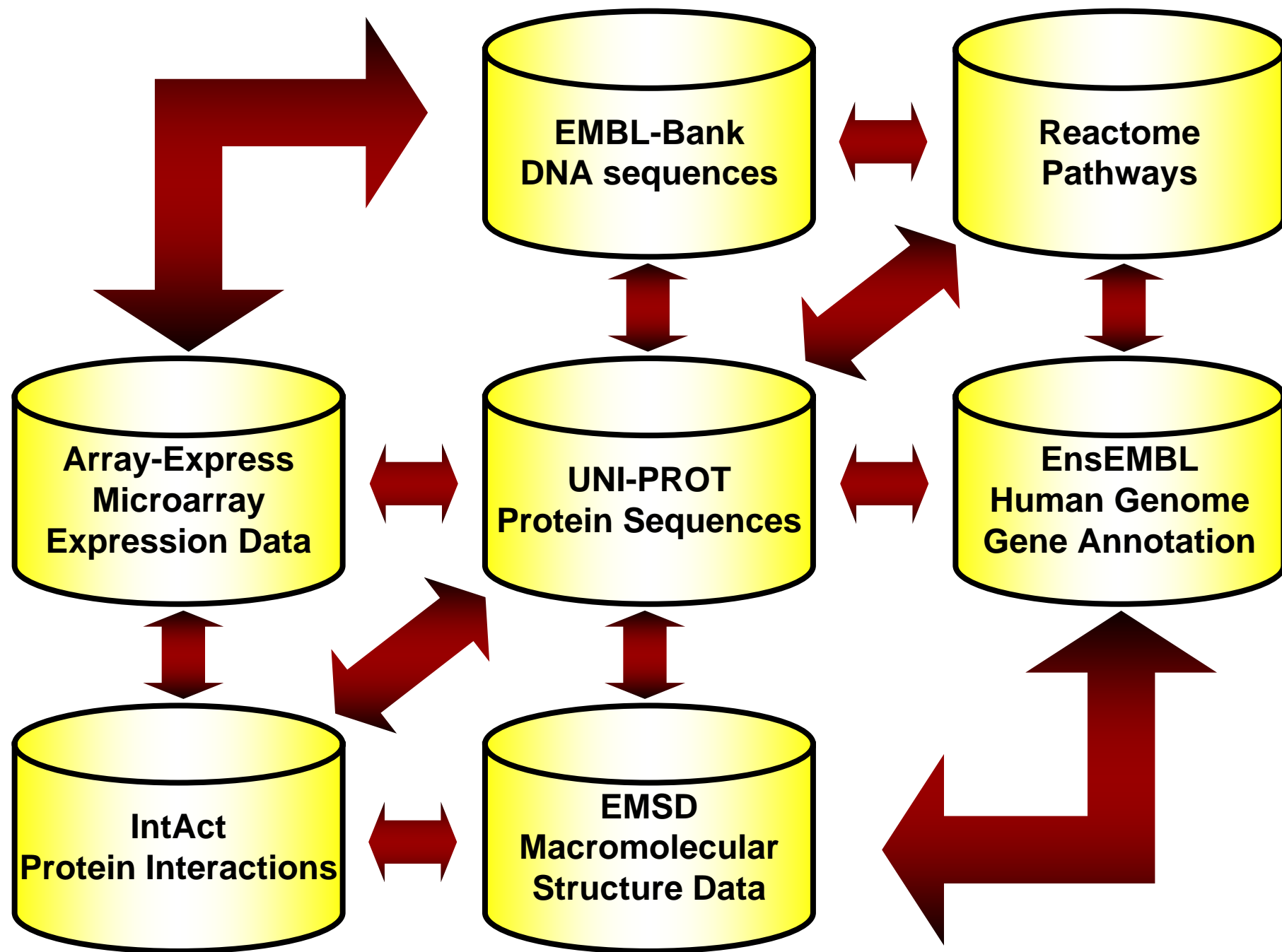


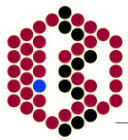
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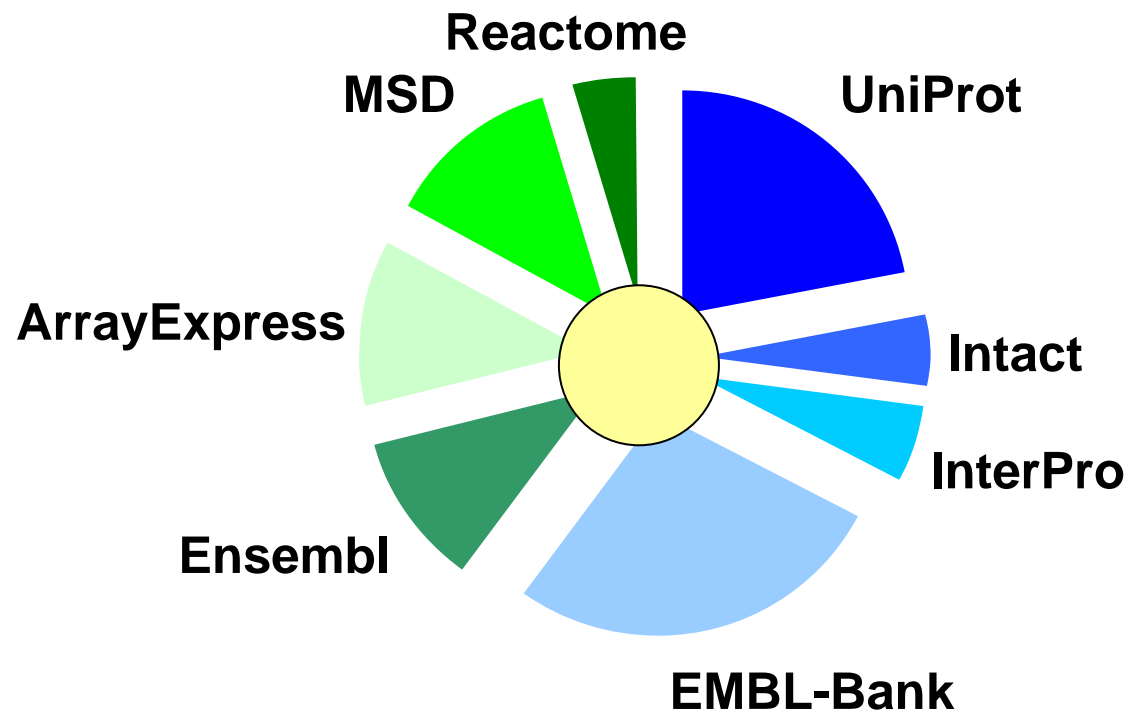
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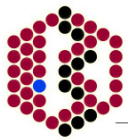
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Services at the EBI





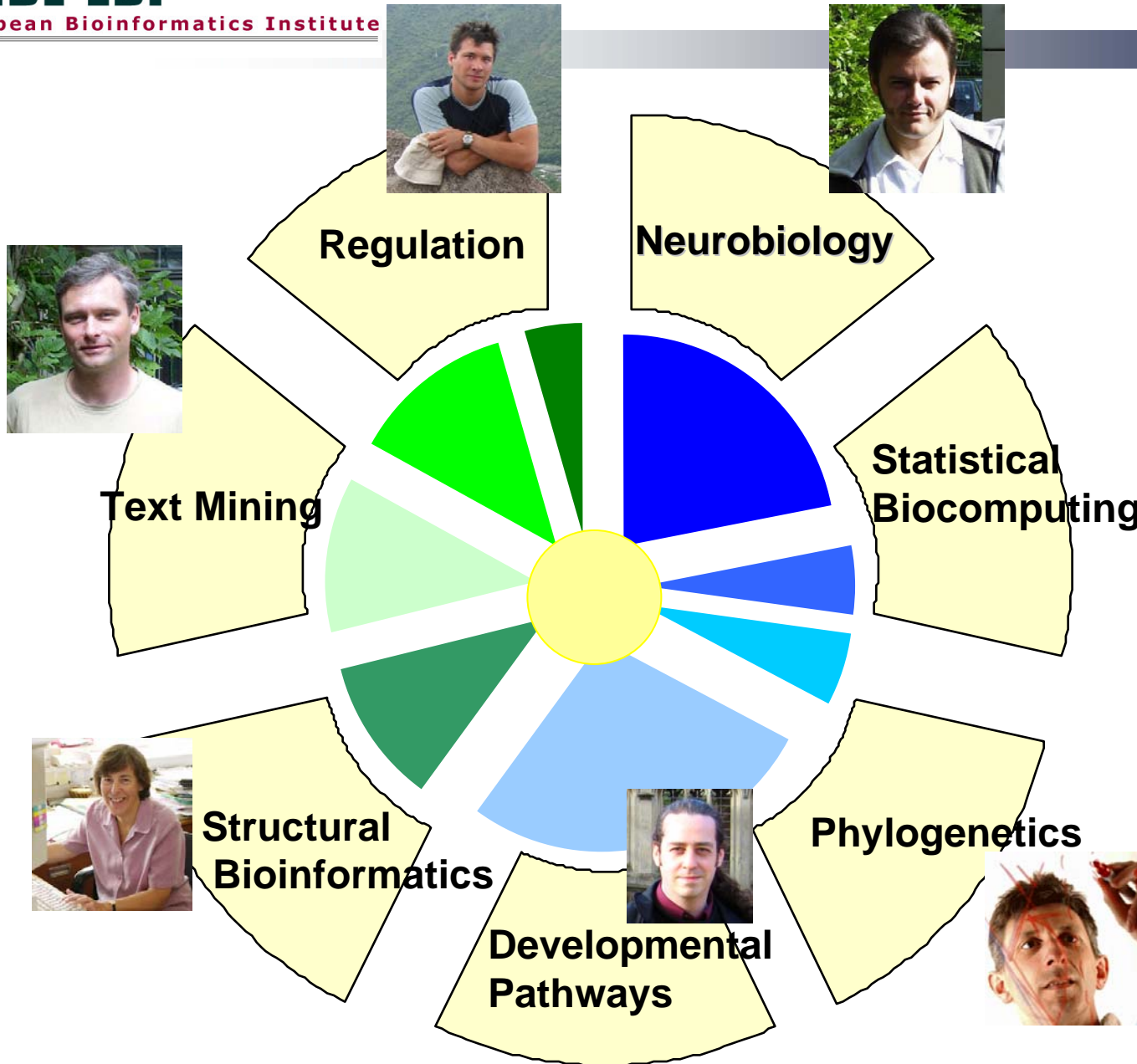
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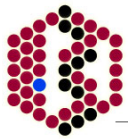
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EBI Research



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Collaboration

- All our major data resources are the products of international collaborations
- The EBI is a 'dry' site with no laboratories to generate data. All our groups collaborate with experimentalists; locally, within Europe and globally
- We actively participate in international efforts to develop data standards, e.g. MGED and microarray informatics (MIAME, MAGE), HUPO and the Proteomics Standards Initiative (PSI)



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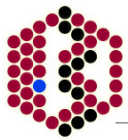


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List of collaborations

Alma Bioinformatics, Madrid, Spain; Amsterdam University, Amsterdam, The Netherlands; Anthony Nolan Foundation, London, UK; Australian National University, Canberra, Australia; Baylor College of Medicine, Houston, TX, USA; Biobase, Aarhus, Denmark; Biocomputing Centre, Vienna, Austria; Biomedical Centre, Uppsala, Sweden; Biotechnology Centre, Oslo, Norway; Boston University, Boston, MA, USA; Carnegie Institution, Washington, DC, USA; CellZome GmbH, Heidelberg, Germany; Centre Médical Universitaire, Geneva, Switzerland; Chembio, Hudson, MA USA; CNB-CSIC, Madrid, Spain; CNR-IBC, Monterotondo, Italy; Cold Spring Harbor Laboratory, NY, USA; Collexis, Rotterdam, The Netherlands; Compugen, Petach Tikva, Israel; Cornell University, Ithaca, NY, USA; CSC, Espoo, Finland; DDBJ, Mishima, Japan; DIMDI, Köln, Germany; DKFZ, Heidelberg, Germany; EDINA, Edinburgh, UK ; EKETA-ITI, Thessaloniki, Greece; European Molecular Biology Laboratory, Heidelberg, Germany; European Molecular Biology Organization, Heidelberg, Germany; European Patent Office, The Hague, The Netherlands; Fred Hutchison Cancer Research Center, Seattle, USA; Free University of Brussels, Brussels, Belgium; Gene-IT, Paris, France; Genome Sequencing Centre, St Louis, MO, USA; Genoscope, Evry, France; Georgia Institute of Technology, Atlanta, GA, USA Gesellschaft für Biotechnologische Forschung, Braunschweig, Germany; Harvard University, Boston, MA, USA; Human Genome Mapping Project Resource Centre, Hinxton, UK; IBM Raleigh, UK; IBM Research, Yorktown Heights, NY USA; ICGEB, Trieste, Italy; Indiana University, Bloomington, IN, USA; Information Genetique et Structurale, Marseille, France; inGenta, Oxford, UK ; INIST, Nancy, France; Inpharmatica, London, UK; INRA, Toulouse, France; Institut für BioChemie, Köln Germany; Institut Municipal d'Investigació Mèdica, Barcelona, Spain; Institut Pasteur, Paris, France; Institute of Marine Sciences, Nova Scotia, Canada; Institute of Molecular and Cell Biology, Singapore, Singapore; Institute of Molecular Biology and Biotechnology, University of Crete; ISREC, Epalinges, Switzerland; IT Innovation, UK ; IUPHAR, Irvine, CA, USA; Karolinska Institute, Stockholm, Sweden; Lady Davies Institute for Medical Research, McGill University, Montreal, Canada; LIGM, Montpellier, France; Linguamatics Cambridge, UK; LION Bioscience AG, Heidelberg, Germany; Max Planck Institut für Biochemie, Martinsried, Germany; Max-Planck-Institute for Molecular Genetics, Berlin, Germany; McGill University, Québec, Montreal, Canada; Memorial Sloan-Kettering Cancer Center, New York, NY, USA; Millennium Pharmaceuticals Inc., Cambridge, MA, USA; Mouse Genome Centre, MRC Harwell, Didcot, UK; MRC Laboratory of Molecular Biology, Cambridge, UK; National Institute of Genetics, Center for Information Biology, Japan; NCBI, Bethesda, MD, USA; NIH-NHGRI, Bethesda, MD, USA; North Carolina State University, Raleigh, NC, USA; Oracle Corp., Reading, UK Oracle Life Sciences, Burlington, NJ, USA Peking University, Beijing, P. R. China Plant Biotechnology Institute, Saskatoon, Canada Pompeu University, Barcelona, Spain Protein Data Bank, Brookhaven National Laboratory, NY, USA Research Collaboratory for Structural Bioinformatics, USA Rockefeller University, New York, NY, USA SANBI, Cape Town, Rep. South Africa; Silicon Graphics Inc., USA; SRI International, Menlo Park, CA, USA; Stanford University, Palo Alto, CA, USA; Swiss Institute for Bioinformatics, Geneva, Switzerland; Swiss Institute for Bioinformatics, Lausanne, Switzerland; Technical University of Denmark, Copenhagen, Denmark; The Jackson Laboratory, Bar Harbor, ME, USA; TIGR, Rockville, MD, USA; TimeLogic, Incline Village, NV, USA; Trinity College Dublin, Dublin, Ireland; Universidad Nacional de Quilmes, Buenos Aires, Argentina; Université Libre de Bruxelles, Brussels Belgium; Université Montpellier II, Montpellier, France; University College London, London, UK ; University of Bari, Bari, Italy; University of Bergen, Bergen, Norway; University of California Berkeley, CA, USA ; University of California Santa Cruz, CA, USA; University of Cambridge, Cambridge, UK; University of Dundee, Dundee, UK; University of Edinburgh, Edinburgh, UK; University of Helsinki, Helsinki, Finland; University of Illinois, Chicago, IL, USA; University of Ioannina, Greece; University of Köln, Köln, Germany; University of Liège, Liège, Belgium; University of Liverpool, Liverpool, UK; University of London, London, UK; University of Manchester, Manchester, UK ; University of Munich, Munich, Germany; University of Newcastle, Newcastle, UK ; University of Nijmegen, The Netherlands; University of Notre Dame, IN, USA; University of Nottingham, Nottingham, UK ; University of Oxford, Oxford, UK; University of Padua, Padua, Italy; University of Rome, Rome, Italy; University of Sheffield, Sheffield, UK ; University of Southampton, Southampton, UK ; University of Strasbourg, Strasbourg, France; University of Tampere, Tampere, Finland; University of Toronto, Ontario, Canada; University of Virginia, USA; University Rovira i Virgili, Tarragona, Spain; Uppsala University, Uppsala, Sweden; Washington University, MO, USA; Weizmann Institute, Rehovot, Israel; Wellcome Trust Sanger Institute, Hinxton, United Kingdom; Whitehead Institute, Cambridge, MA, USA

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Total ~ 259

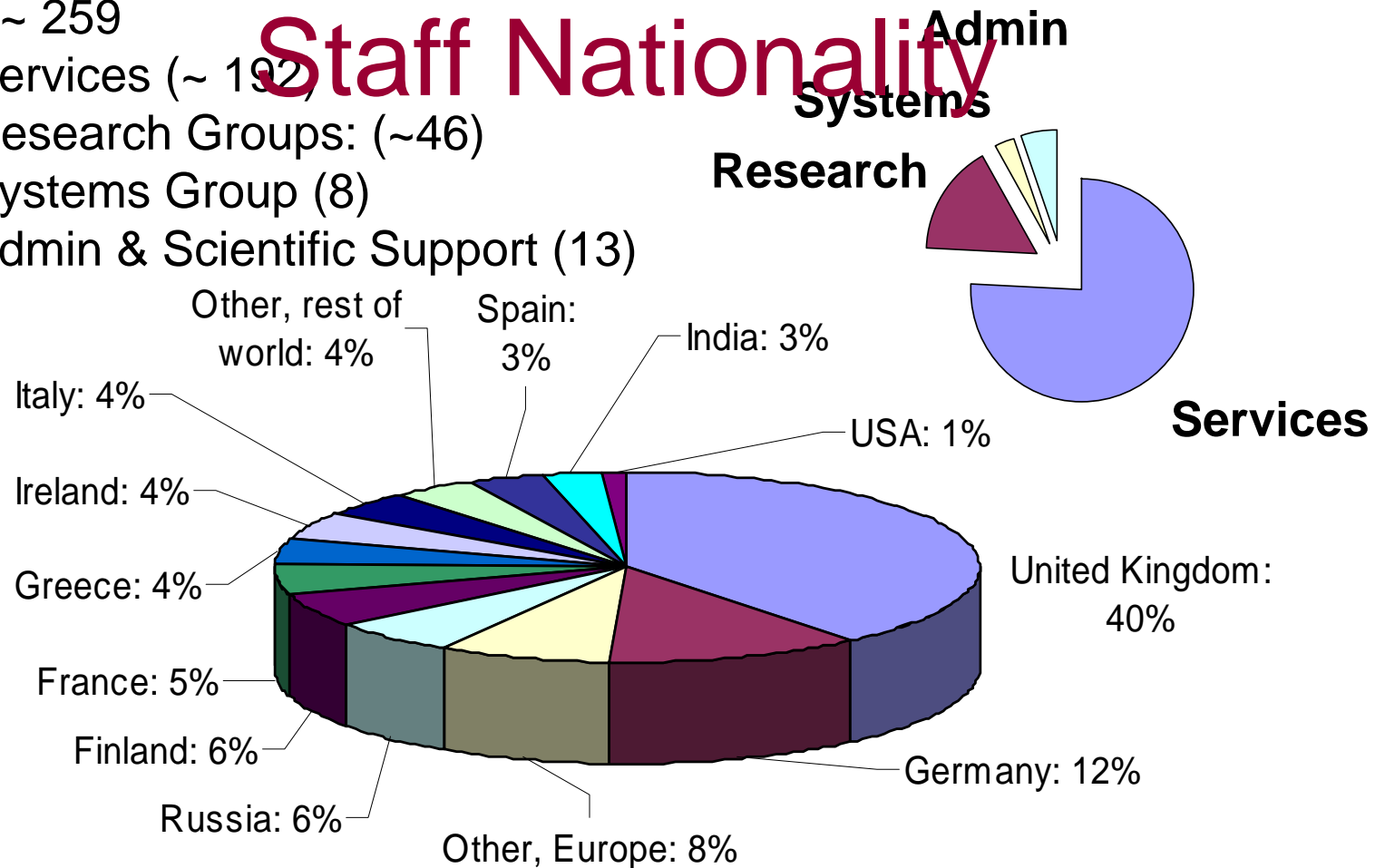
Services (~ 192)

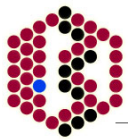
Research Groups: (~46)

Systems Group (8)

Admin & Scientific Support (13)

Staff Nationality





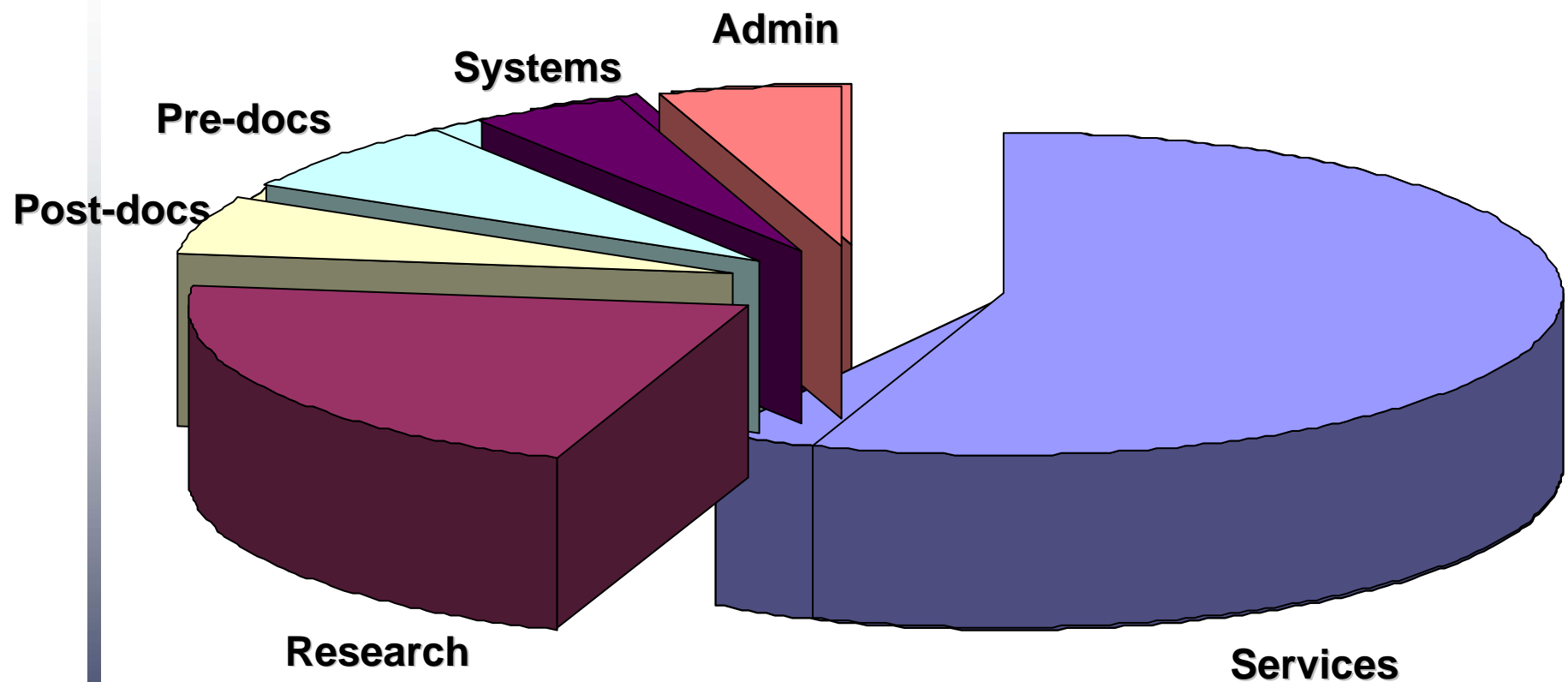
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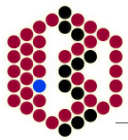
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Staff Division





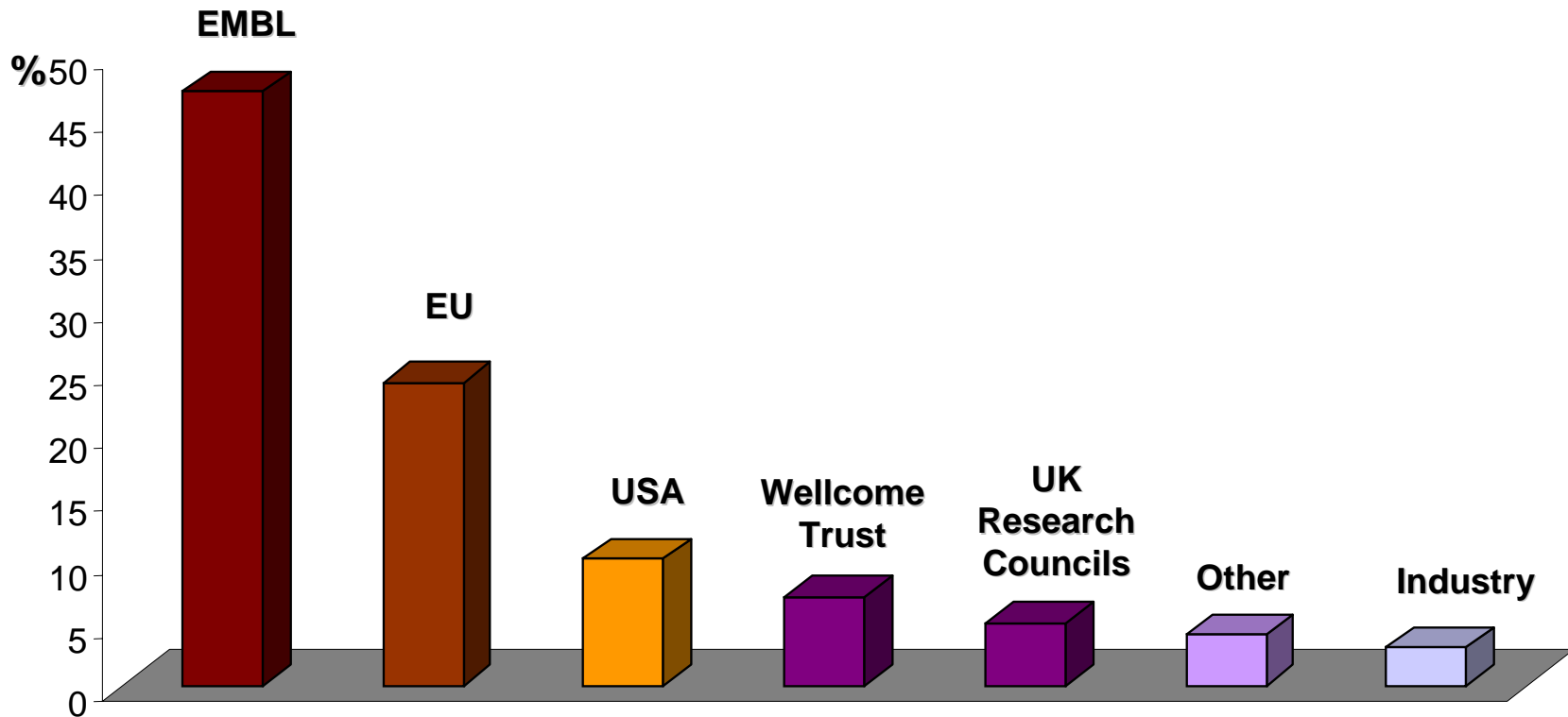
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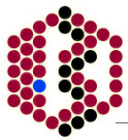
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EBI Funding (2004)





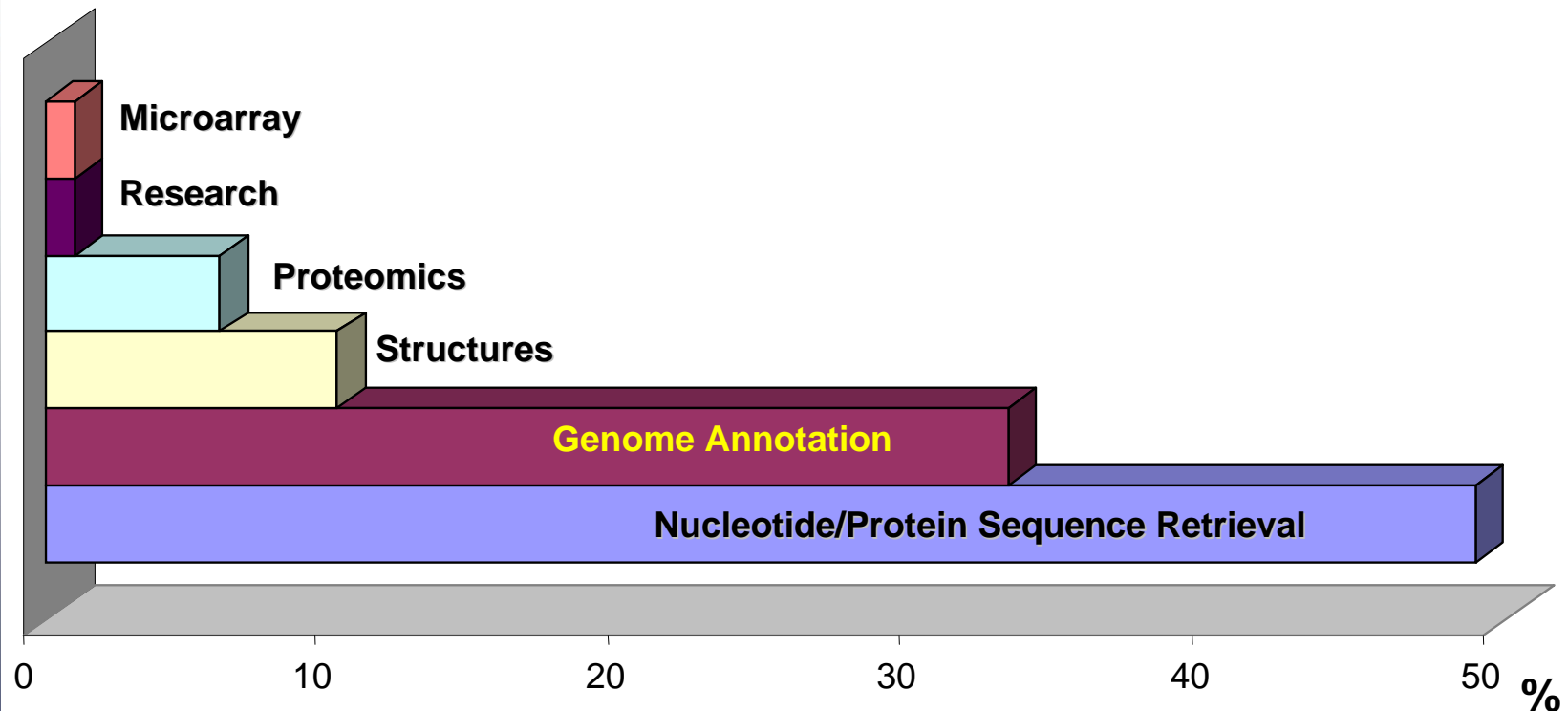
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Resources Accessed



A total of 7.6 Tb transferred over the web in 2004

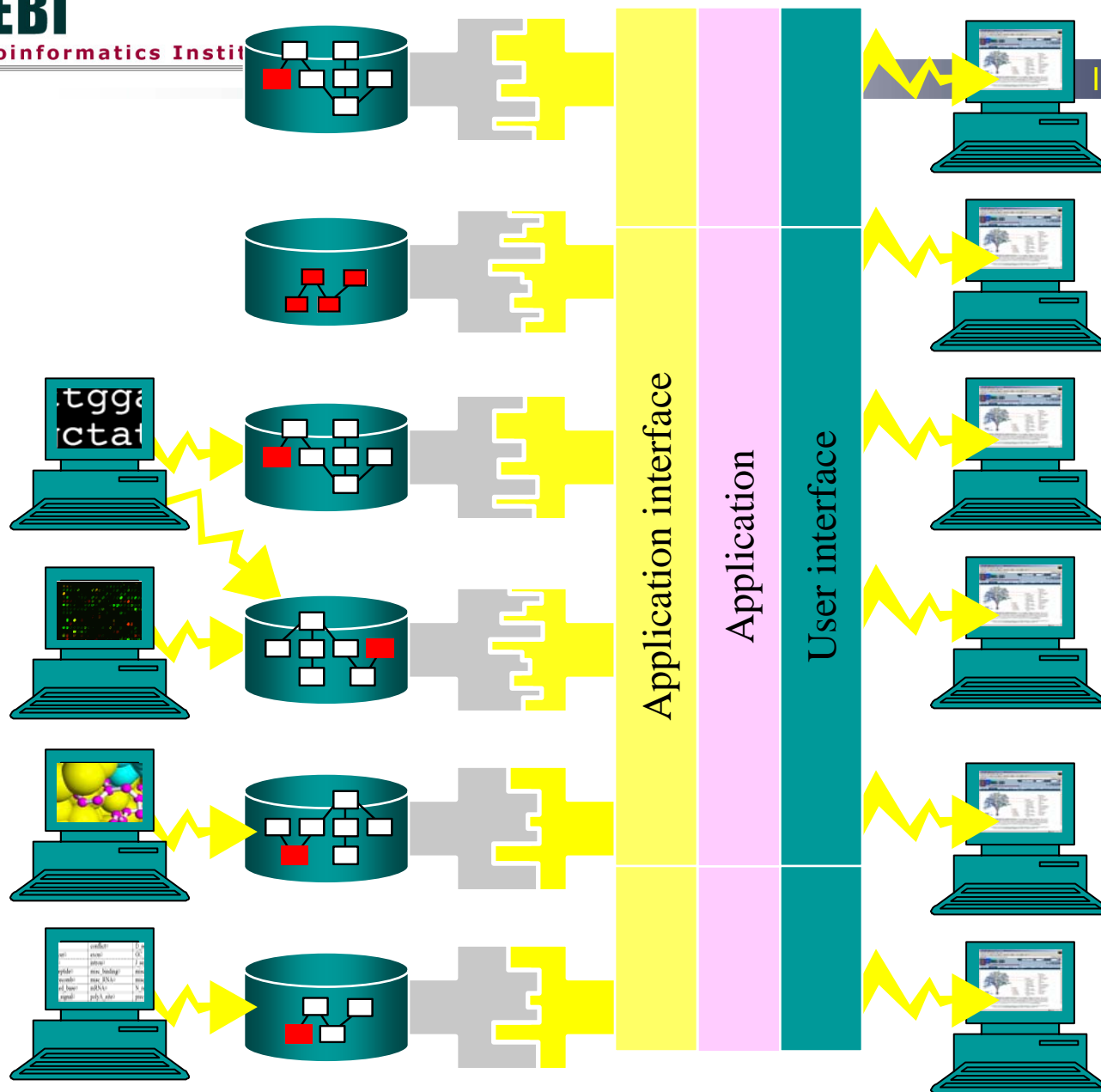


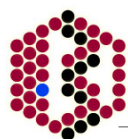
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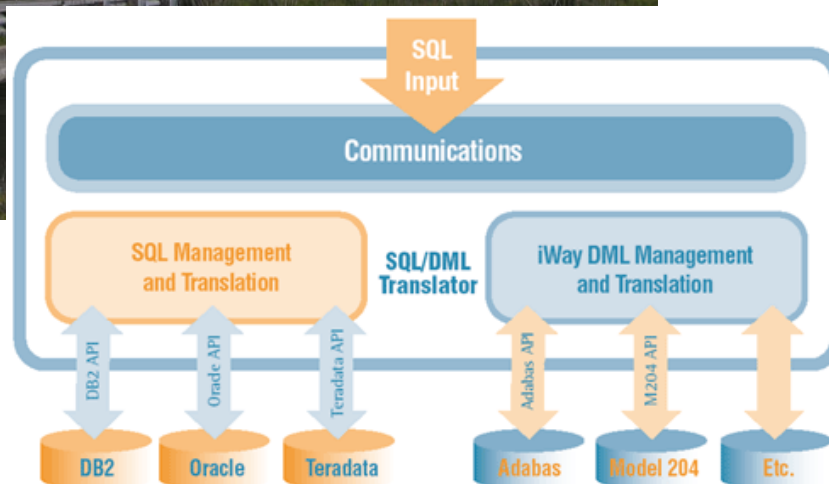
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ORACLE



EMBL

Uniprot

MSD

ArrayExpress

IntAct

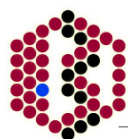
Integr8

Interpro

ChEBI

IntEnz

Proteome



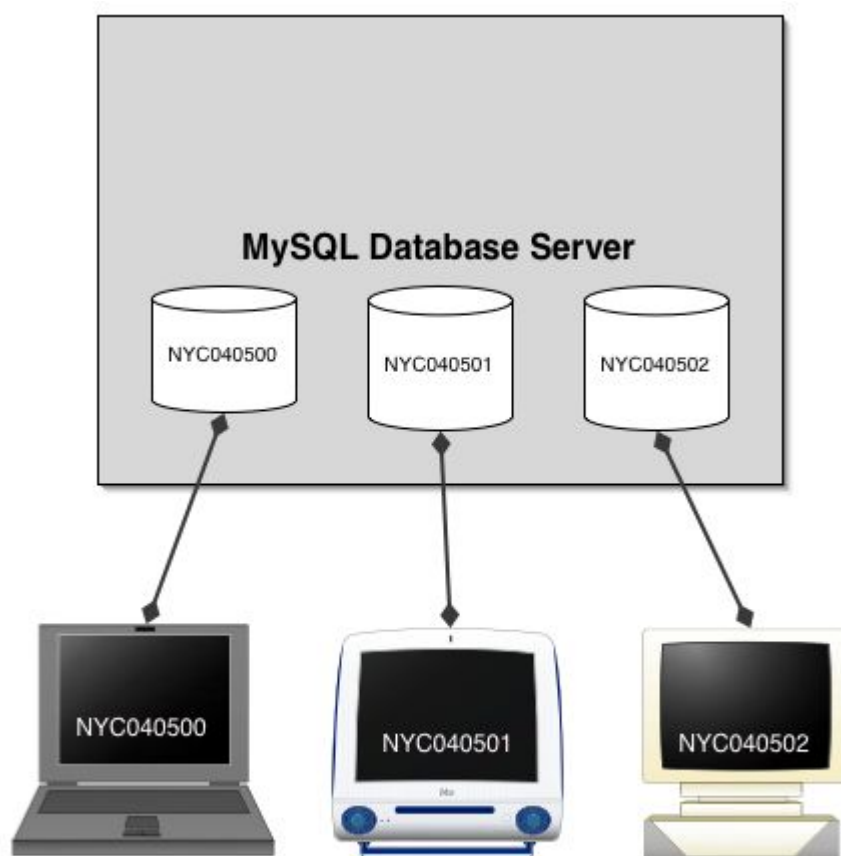
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MySQL



MySQL Clients

Ensembl

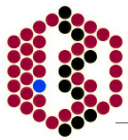
DAS

Reactome

BioMart

**Expression
Profiling DB**

**Catalytic Site
Atlas**



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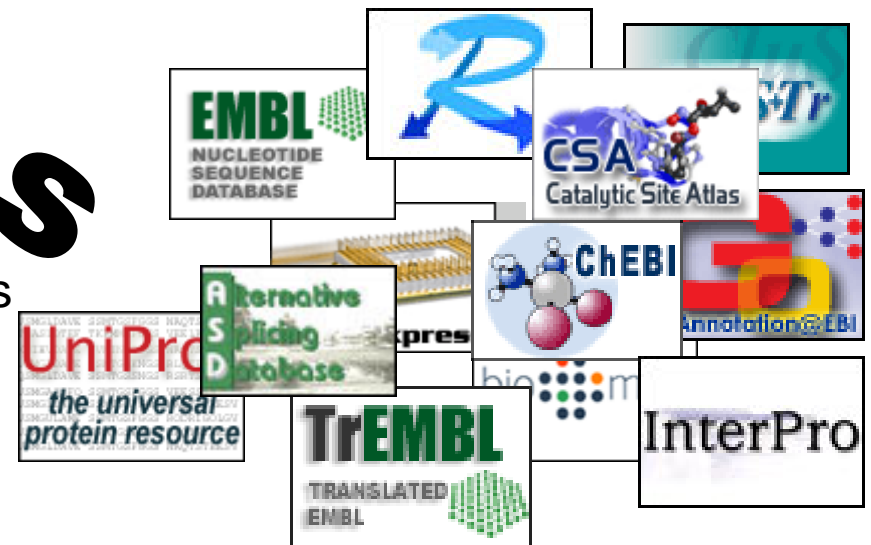


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Services

50 generated Data Resources

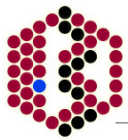
150 mirrored sites



Research

8 Research Groups

4 Core Services Groups

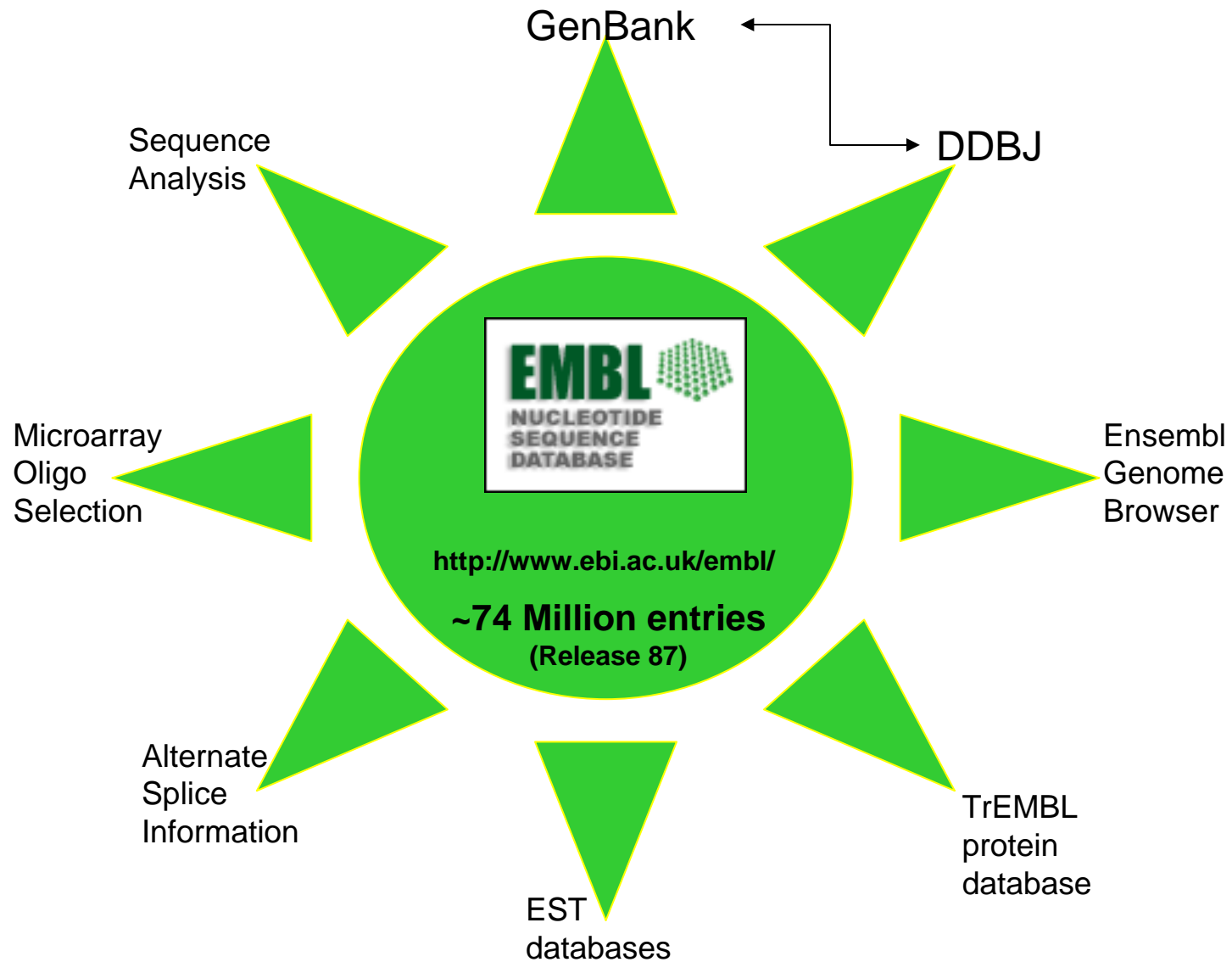


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ID BTBSCRYR standard; mRNA; MAM; 620 BP.
XX
AC X03006;
XX
SV X03006.1
XX
DT 28-JAN-1986 (Rel. 08, Created)
DT 12-SEP-1993 (Rel. 36, Last updated, Version 2)
XX
DE Bovine mRNA for lens beta-s-crystallin
XX
KW beta-crystallin; beta-gamma-crystallin; crystallin.
XX
OS Bos taurus (cattle)
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia;
OC Eutheria; Laurasiatheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovinae; Bos.
XX
RN [1]
RP 1-620
RX PUBMED; 4054100.
RA Quax-Jeuken Y.E.F.M., Driessen H., Leunissen J., Quax W.J., de Jong W.,
RA Bloemendal H.;
RT "Beta-s-crystallin: structure and evolution of a distinct member of the
RT beta-gamma-superfamily";
RL EMBO J. 4(10):2597-2602(1985).
XX
CC Data kindly reviewed (06-MAR-1986) by Y. Quax-Jeuken
XX

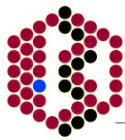
June
2006

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```
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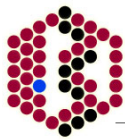
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SQ

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gatctttg	agaaaggg	gatt	ttaatgg	tca	gatgcatg	agaccacgga	360
catcatgg	agcagttc	caca	tgcggggag	gtccactc	ctgt	aaggtgctg	420
gatcttct	atgagctg	ccca	actaccgag	gcaggcag	tac	ctgtctggac	480
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aaataaaa	acattggc	atgc				taagcattat	620

//



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ID X03006; SV 1; linear; mRNA; STD; MAM; 620 BP.

XX

AC X03006;

XX

SV X03006.1

XX

DT 28-JAN-1986 (Rel. 08, Created)

DT 12-SEP-1993 (Rel. 36, Last updated, Version 2)

XX

DE Bovine mRNA for lens beta-s-crystallin

XX

KW beta-crystallin; beta-gamma-crystallin; crystallin.

XX

OS Bos taurus (cattle)

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia;

OC Eutheria; Laurasiatheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;

OC Bovinae; Bos.

XX

RN [1]

RP 1-620

RX PUBMED; 4054100.

RA Quax-Jeuken Y.E.F.M., Driessen H., Leunissen J., Quax W.J., de Jong W.,

RA Bloemendal H.;

RT "Beta-s-crystallin: structure and evolution of a distinct member of the

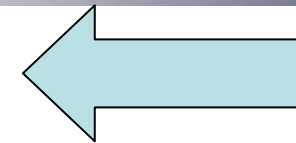
RT beta-gamma-superfamily";

RL EMBO J. 4(10):2597-2602(1985).

XX

CC Data kindly reviewed (06-MAR-1986) by Y. Quax-Jeuken

XX



Attention! Since EMBL release 87 (June 2006) the format of the ID-line has changed, and the SV-line has been removed!

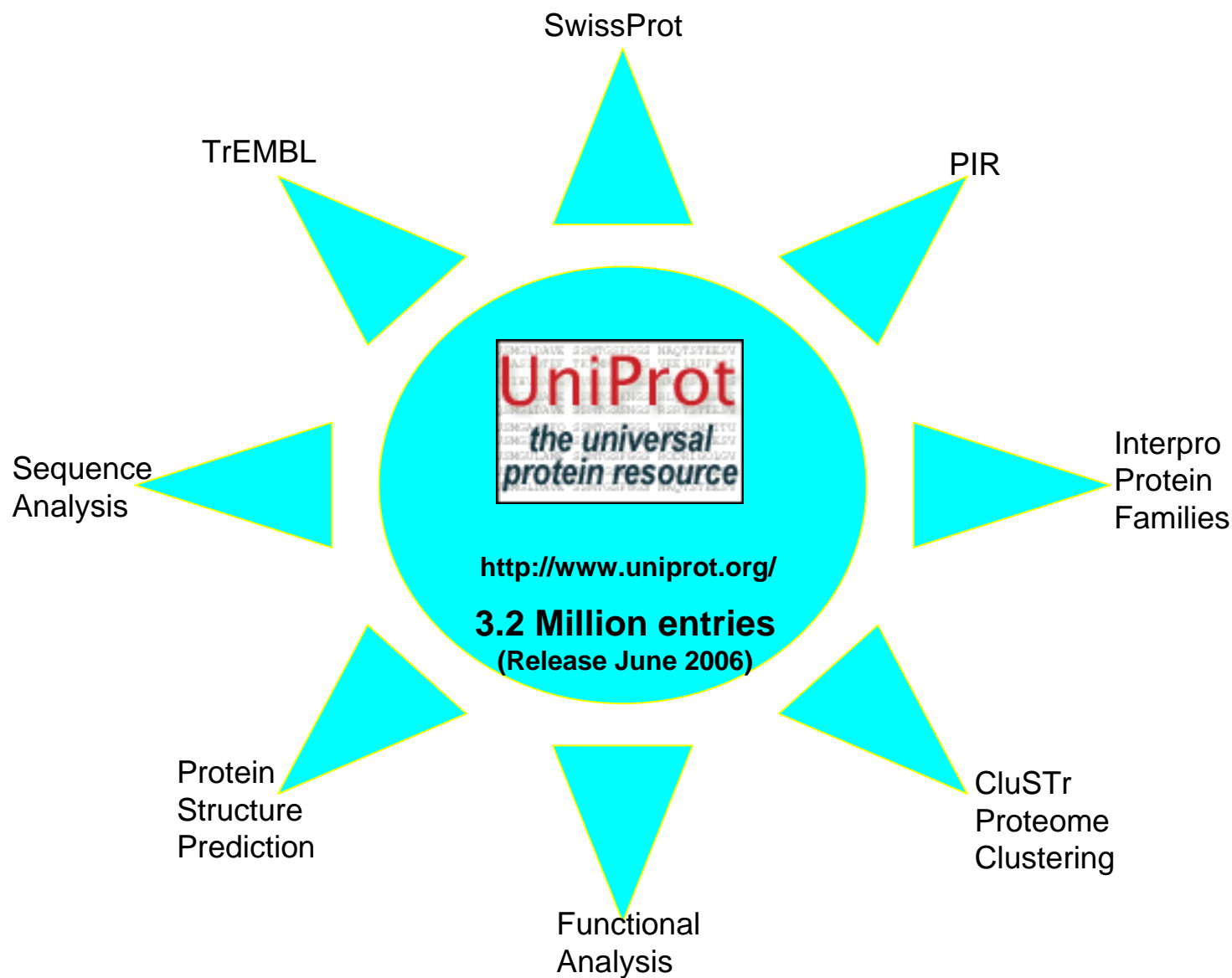


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```
ID DSX_DROME STANDARD; PRT; 549 AA.
AC P23023; P23024; Q95TA5; Q9VHY0;
DE Doublesex protein (Fruit fly)
OS Drosophila melanogaster (Fruit fly)
OC Eukaryota; Metazoa; Hexapoda; Insecta; Pterygota; Neoptera;
OC Endopterygota; Diptera; Muscomorpha; Ephydroidea;
OC Drosophilidae; Drosophila
KW 3D-structure
KW Nuclear
FT DNA_BINDING ID DSX_DROME Reviewed; 549 AA.
FT DOMAIN or
FT DOMAIN ID Q3ASY8_CHLCH Unreviewed; 36805 AA.
FT VARSPLIC
FT VARSPLIC 428 549 /FTId=VSP_001322 Missing (in isoform Female).
FT MUTAGEN 47 47 C->A,H: Abolishes DNA-binding.
FT MUTAGEN 50 50 H->Y: Abolishes DNA-binding.
FT MUTAGEN 59 59 H->Y: Abolishes DNA-binding.
FT MUTAGEN 68 68 C->D,Y: Abolishes DNA-binding.
FT MUTAGEN 70 70 C->Y: Abolishes DNA-binding.
FT MUTAGEN 91 91 R->Q: Abolishes DNA-binding.
FT CONFLICT 53 53 K -> N (in Ref. 4).
FT HELIX 45 48
FT TURN 49 51
FT TURN 55 58
FT HELIX 60 62
FT TURN 64 67
FT HELIX 71 80
SQ SEQUENCE 549 AA; 57410 MW; 3C1B92724E4CE083 CRC64;
MVSEENWNSD TMSDSDMIDS KNDVCGGASS SSGSSISPRT PPNCARCRNH GLKITLKGHK
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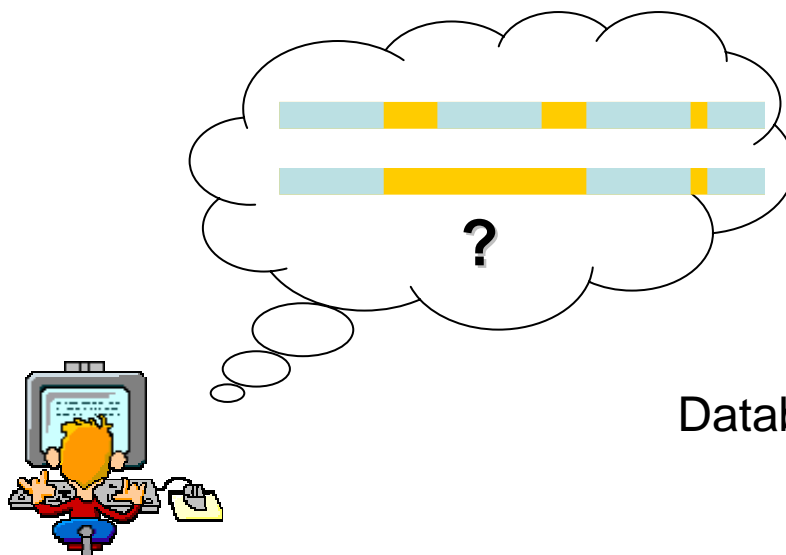


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Biologists

Database Curators

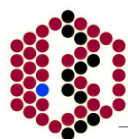
EMBL

UniProt

Reactome

Training

Outreach

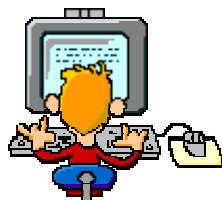
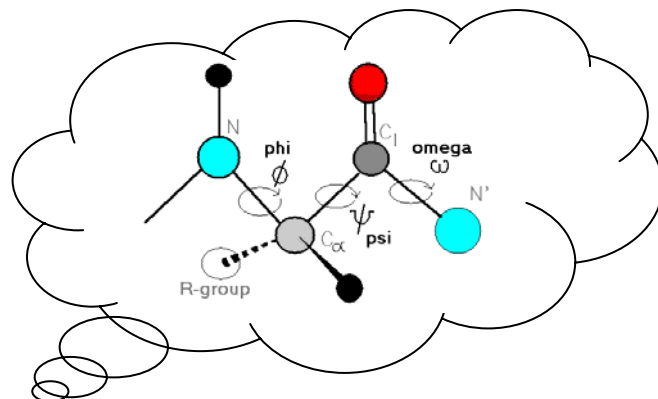


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Biologists
Physicists
Chemists

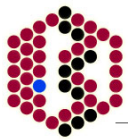
Macromolecular Structure Database

ChEBI

Catalytic Site Atlas

IntEnz

Protein-Protein Interactions

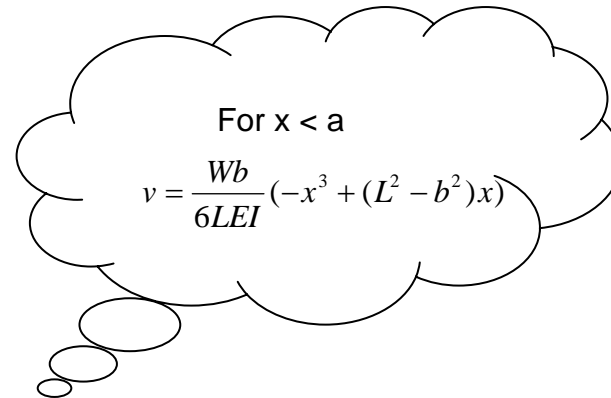
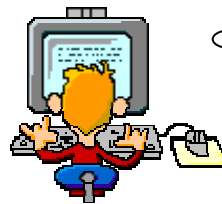


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For $x < a$

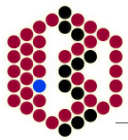
$$v = \frac{Wb}{6LEI} (-x^3 + (L^2 - b^2)x)$$

Mathematicians

Molecular Evolution

CluStr Proteome database

Microarray Database

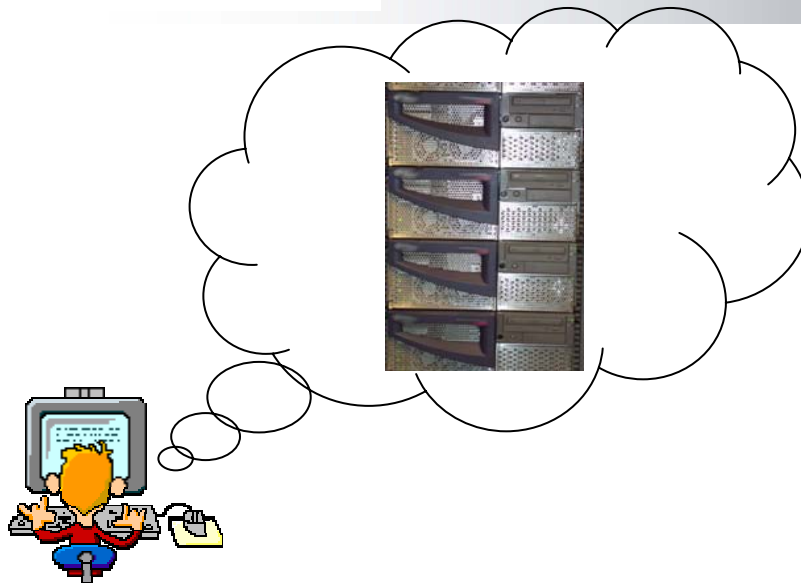


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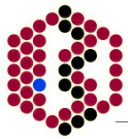
Information Technologists

External Services Team

Web Teams

Systems Group

Databases (e.g. BioMart)



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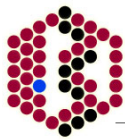


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Communication

- Mention the obvious
- Discuss formatting and interface
- Agree on the ultimate goal
- Give detailed bug reports





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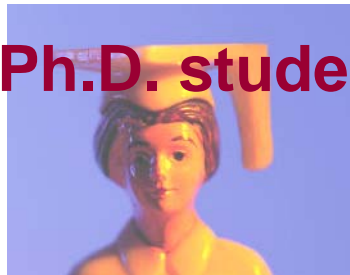
Academic - Bioinformaticians

Sandwich students

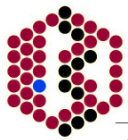


apply to individual research groups and stay generally for 6 – 12 months.

Ph.D. students



apply to individual research groups by an annual deadline. Undergo a selection process for a 3-4 year period of study

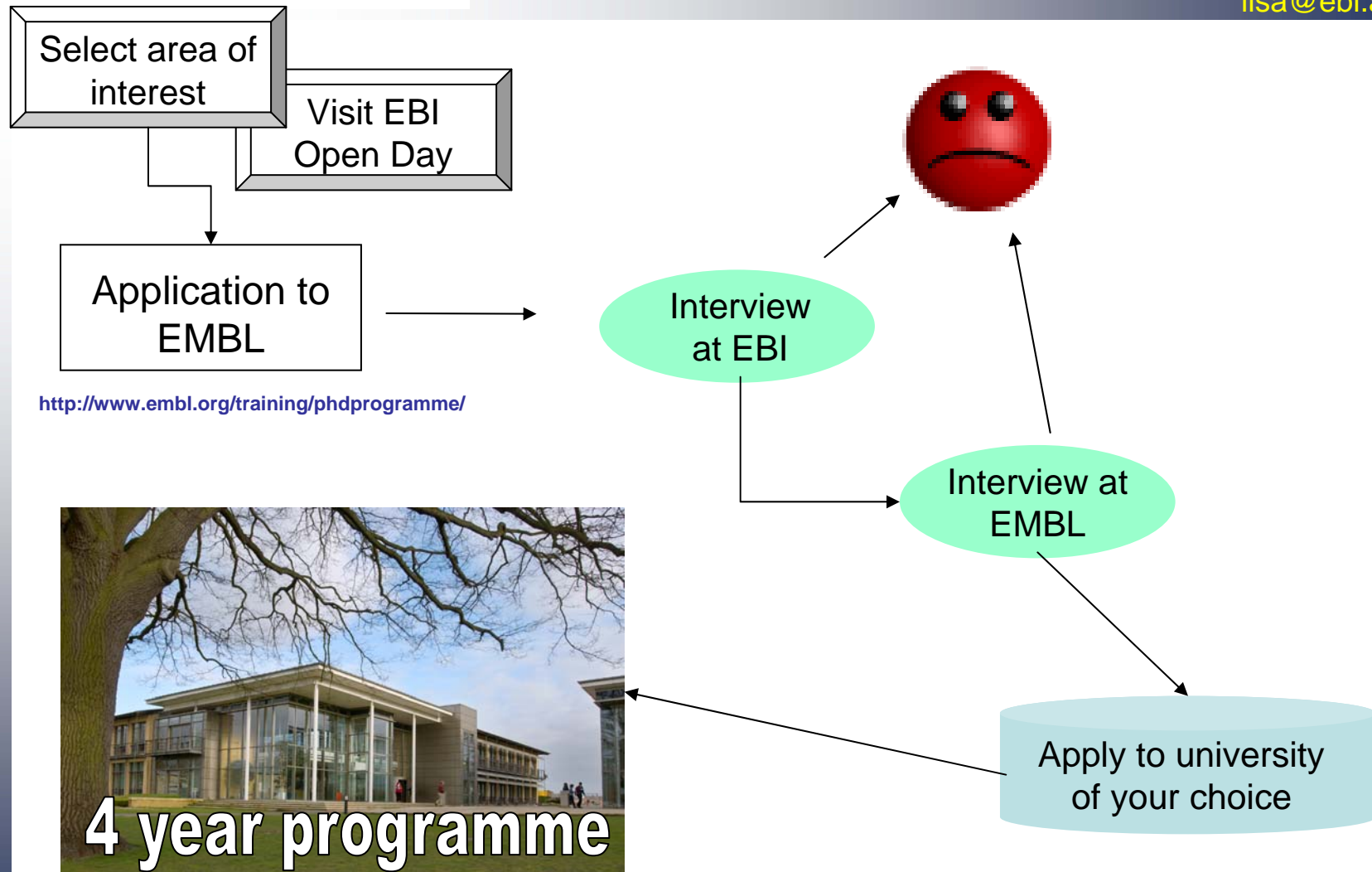


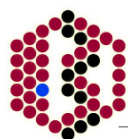
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Funding available for Europeans
and “three-year old citizens”



Marie Curie Fellowship awards offer
€1200/mth for 3-6 months study at EBI for
students from EU and associated states
(<http://www.ebi.ac.uk/MarieCurie/index.html>)