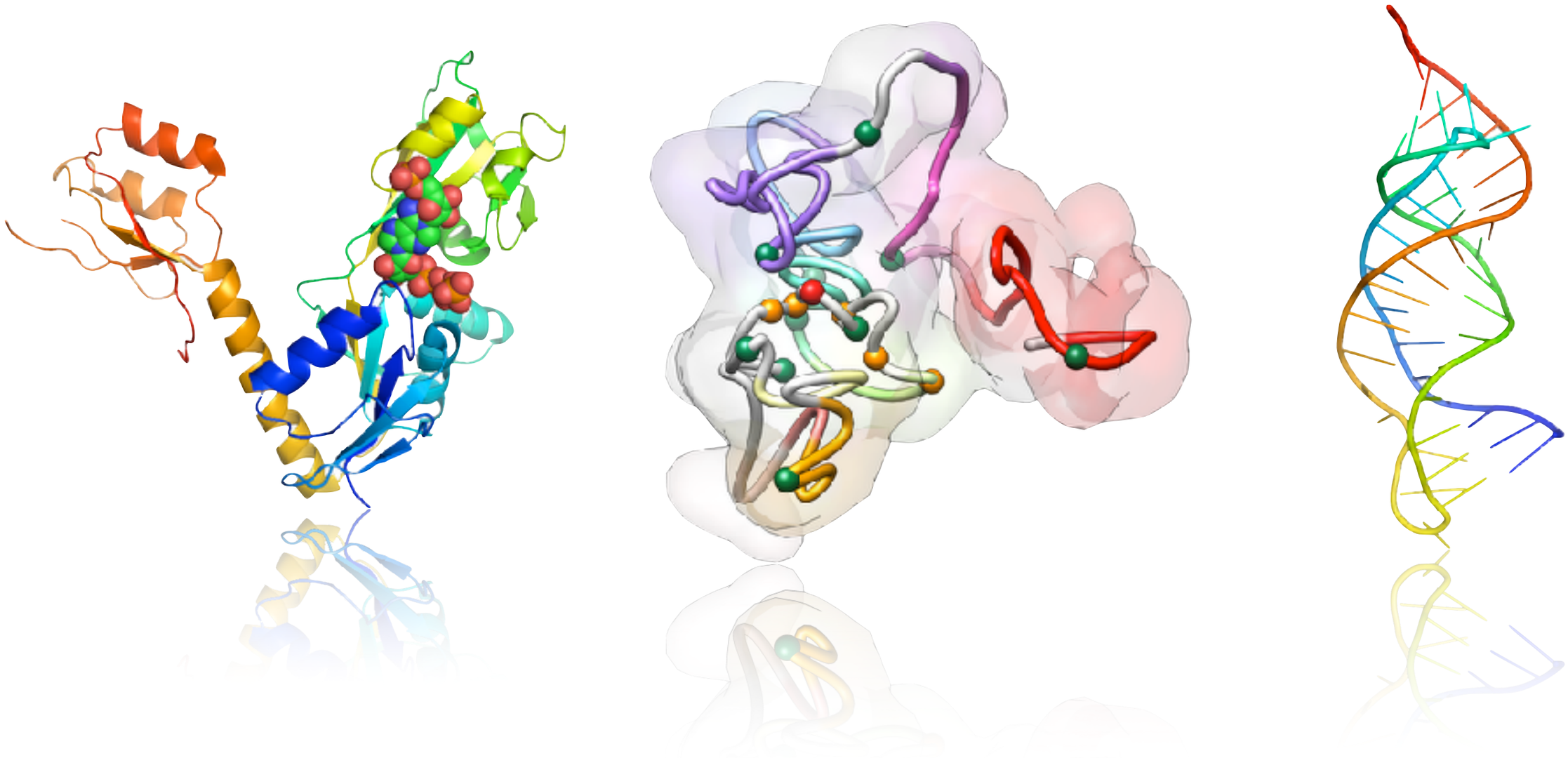
3DAROC18:
3C-based data analysis and 3D reconstruction of chromatin folding

François Serra, David Castillo & Marc A. Marti-Renom
Structural Genomics Group (CNAG-CRG)

Structural Genomics Group

http://www.marciuslab.org



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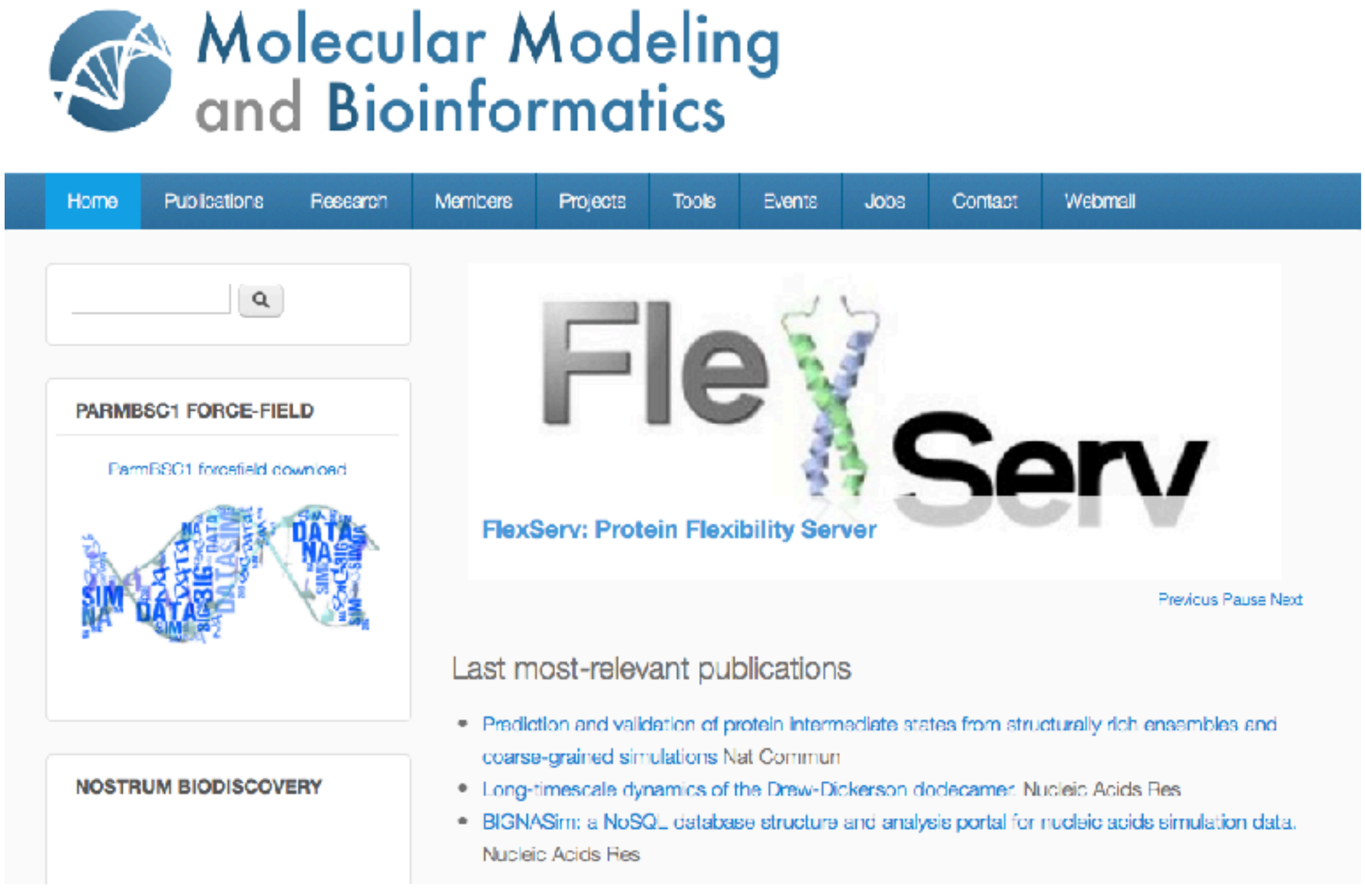
Molecular Modeling and Bioinformatics

http://mmb.pcb.ub.es/www/



MuG: Multiscale Complex Genomics

http://www.multiscalegenomics.eu/MuGVRE/

Multiscale Complex Genomics

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IRB BARCELONA INSTITUTE FOR RESEARCH IN BIOMEDICINE

BSC Barcelona Supercomputing Center Centro Nacional de Supercomputación

cnag

CRG Centre for Genomic Regulation

IGH CNRS

The University of Nottingham UNITED KINGDOM · CHINA · MALAYSIA

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Course outline

Theory · **Examples** · **Practice**

Day 1	**Overview to structure determination** (Marc) **3D modeling of the genomes and genomic domains** (Marc) **Introduction to linux & python** (David) **NGS and data handling** (David) **Hi-C data** (David)
Day 2	**Summary Day 1** (François) **Chromatin structure and Hi-C data** (Marc) **Integrative modeling applied to chromatin** (Marc) **Biological applications (I)** (Marc) **Hi-C contact matrices** (François)
Day 3	**Summary Day 2** (David) **Biological applications (II)** (Marc) **Compartment detection and analysis** (François) **Topologically Associated Domains** (François) **Comparison between experiments** (François)
Day 4	**Summary Day 3** (François) **Biological applications (III)** (Marc) **3D modeling of real Hi-C data with** TADbit (David) **3D Analysis and visualization** (David) **Final wrap-up** (Marc)
Day 5	**Summary Day 4** (Marc) **Multiscale Genomics: from genomes to structures** (Marc) **Nucleosome positioning & Dynamics** (Diana) **Coarse-Grained DNA** (Jürgen) **Chromatin Dynamics** (Jürgen)

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