

Conducator doctorat: C.S.I. Dr. Habil. Vlad Cojocaru

Tematica concursului de admitere la doctorat (loc cu bursa):

1. Principiile ce stau la baza structurilor tri-dimensionale ale biomoleculilor (proteine, acizi nucleici, lipide, glucide)
2. Tehnici experimentale si computationale pentru determinarea structurilor biomoleculilor
3. Organizarea genomului in eucariote
4. Etape in regularea genelor
5. Concepte de baza in Linux si programare
6. Concepte de baza in Modelare Moleculara

Bibliografie:

- Stryer, L., et al. (2019): *Biochemistry*. 9th Edition
- Sanger, W. (1984): *Principles of Nucleic Acids Structure*. Springer Verlag.
- Stigliano A.F. (2020): *Biomolecular Interfaces*. Springer Verlag
- Leach, A. R. (2001): *Molecular Modeling: Principles and Applications*. (2nd or 3rd edition)
- Schlick, T. (2013): *Molecular Modeling and Simulation: An Interdisciplinary Guide*
- Mistelli, T. (2020): The Self-Organizing Genome: Principles of Genome Architecture and Function. *Cell* 183(1):28-45 (<https://doi.org/10.1016/j.cell.2020.09.014>)
- Lambert SA et al (2018): The Human Transcription Factors (<https://doi.org/10.1016/j.cell.2018.01.029>)
- Zaret KS (2020). Pioneer Transcription Factors Initiating Gene Network Changes (<https://doi.org/10.1146/annurev-genet-030220-015007>)

Software tutoriale recomandate:

VMD (<https://www.ks.uiuc.edu/Research/vmd/>)

Amber (www.ambermd.org)

Haddock (<https://www.bonvinlab.org/software/>)

Chimera (<https://www.cgl.ucsf.edu/chimera/>)

Pymol: (<https://github.com/schrodinger/pymol-open-source>)