

Marko Djordjevic

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Birthplace: Belgrade, Serbia
Citizenship: Serbia
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Scientific Interests

Computational systems biology, biophysical modeling, bioinformatics

Education

- October 2005: PhD in Physics, Columbia U., NY (thesis in biophysics and bioinformatics).
- Feb 2004: M. Phil. in Physics, Columbia University, NY.
- May 2002: M. A. in Physics, Columbia University, NY.
- June 2000: Diploma in Physics, Belgrade University, Faculty of Physics, Serbia.

Positions

- Dec 2014: Associate Professor of Biophysics, Leader of Computational Systems Biology Group, University of Belgrade, Faculty of Biology
- Sept 2010: Assistant Professor of Biophysics, U. of Belgrade, Faculty of Biology
- Sept 2008: Assistant Prof. of Physics, Arkansas State U. & The Arkansas Biosciences Institute.
- Apr 2008: Offer of Assistant Professorship in Biophysics at NORDITA (Nordic Institute for Theoretical Physics), Stockholm (declined).
- Oct 2005: Postdoctoral Fellow, Mathematical Biosciences Institute, Ohio State U.
- Jan 2001: Research Assistant, Dept. of Physics, Columbia U.
- Sept 2000: Faculty fellow, Dept. of Physics, Columbia U.
- Jun 1999: Diploma Thesis Research, Institute of Theoretical Physics, Belgrade.

Teaching experience

- *Molecular Biophysics* (Fall 2012 – Fall 2017), Multidisciplinary PhD Biophysics program, U. of Belgrade, Serbia.
- *Neuroinformatics* (Fall 2013), *Computational Immunobiology* (Fall 2013 and Fall 2014), PhD program Faculty of Biology, U. of Belgrade, Serbia.
- *Bioinformatics* (Spring 2012, Fall 2012 – Fall 2017); *Fundamentals of molecular biophysics* (Fall 2016); *Physics in Biology* (Fall 2010 – Fall 2017); Faculty of Biology, U. of Belgrade, Serbia.
- *Electricity and Magnetism* (Spring 2010); *Thermal Physics* (Fall 2009); *General Physics I* (Spring 2009); *Physics for health science professionals* (Fall 2008); Arkansas State U, AR.
- *Tutorial on ChIP-chip data analysis* (Spring 2007); *VIGRE working group in mathematical biology* (Fall 2006), The Ohio State U, Columbus, Ohio.
- *Introduction to experimental physics laboratory* (Fall 2001); *Introduction to physics laboratory* (Fall 2000 - Spring 2001), Columbia U, New York.

Awards

- March 2011: Marie Curie Fellowship, European Commission - REA, Brussels, Belgium
- Feb 2005: Keystone Symposia scholarship, Taos, New Mexico.

- Jan 2005: Feinberg Postdoctoral Fellowship, Weizmann Institute of Science, Israel (declined).
- Nov 1998: 'Prof. Dr. Djordje Zivanovic' Fellowship, awarded to the best student in generation, Faculty of Physics, Belgrade, Serbia.
- 1995 -2000 'Department of Science' Fellowship (awarded five times), Serbia.
- 1996-1999 'Madlena Jankovic' Fellowship, for success in diploma studies, Belgrade, Serbia.
- July 1995: The bronze medal, XXVI International Physics Olympiad, Canberra, Australia.

Academic supervision

Postdocs

- 2017-2019: Bojan Bozic, U. of Belgrade, Serbia
- 2017-2019: Jelena Guzina, U. of Belgrade, Serbia

PhD Students

- 2013 – 2017: Jelena Guzina, U. of Belgrade, Serbia
- 2015 – current: Andjela Rodic, U. of Belgrade, Serbia
- 2016 – current: Ognjen Milicevic, U. of Belgrade, Serbia
- 2019 – current: Marko Tumbas, U. of Belgrade, Serbia

PhD students' awards

- “2016. Young scientist research award”, awarded to Jelena Guzina by the Faculty of Biology, University of Belgrade, Serbia, Sept 2016.
- Award for the best oral presentation at the 8th Inter. Young Scientists School of Systems Biology and Bioinformatics, awarded to Andjela Rodic, Novosibirsk, Russia, Sept 2016
- Fellowship for the Advanced Lecture Course on Systems Biology, awarded by SYSBIO 2016 to Andjela Rodic, Innsbruck, Austria, Jan 2016
- Annual award for the best master thesis in Molecular Biology, awarded to Andjela Rodic by the Foundation "Goran Ljubijankic", Belgrade, Serbia, Dec 2015

MSc Students

- 2013: Jelena Guzina, U. of Belgrade, Faculty of Biology, Serbia
- 2014: Djordje Markovic, U. of Belgrade, Faculty of Biology, Serbia
- 2014: Marija Basic, U. of Belgrade, Faculty of Biology, Serbia
- 2015: Andjela Rodic, U. of Belgrade, Faculty of Biology, Serbia
- 2015: Nikola Dragic, U. of Belgrade, Faculty of Biology, Serbia
- 2017: Ivona Tomic, U. of Belgrade, Faculty of Biology, Serbia
- 2018: Stefan Graovac, U. of Belgrade, Faculty of Physics, Serbia
- 2019: Aleksa Ratarac, U. of Belgrade, Faculty of Biology, Serbia:
- 2019: Marko Tumbas, U. of Belgrade, Faculty of Biology, Serbia

Awarded Grants

Research

- PI, *Science Fund of the Republic of Serbia, The Serbian Science and Diaspora Collaboration Program*, 6417603, “Quantitative modeling of regulatory dynamics of CRISPR/Cas systems”, from 2020-2021.
- Co-PI (Faculty of Biology coordinator): *Science, Technology and Innovation Action Plan “One Belt And One Road” International Cooperation Projects, China*, 19430750600, “Shanghai-Islamabad-Belgrade joint innovation center on Antibacterial Resistance”, from 2019-2022.

- Co-PI (Faculty of Biology coordinator): *Swiss National Science Foundation, SCOPES project, IZ73Z0_152297*, “Bioinformatics and modeling of bacterial immune systems - understanding control of CRISPR/Cas”, from 2014-2017.
- PI (Scientist in charge): *FP7 Marie Curie International Reintegration grant, PIRG08-GA-2010-276996*, "Bioinformatic analysis of transcription regulation: a modeling approach", European Commission - Research Executive Agency, from 2011-2015.
- PI (Project leader): *Basic Science Research Grant, OI173052*, "Bioinformatic promoter predictions and theoretical modeling of gene circuits in bacteria", Ministry of Science and Technology - Republic of Serbia, from 2011-current.

Education (Infrastructure)

- PI (Project leader): *Development of Higher Education Grant*, "Infrastructure for computational biology laboratory at University of Biology, Faculty of Biology", Ministry of Science and Technology - Republic of Serbia, 2017-2018.

Community service

Journal Editor

- **Associate Editor:**
 - Frontiers in Genetics, Section in Bioinformatics and Computational Biology, Frontiers Journals.
- **Academic Editor:**
 - PLOS ONE, PLOS Journals.
- **Editorial Board member:**
 - Combinatorial Chemistry & High Throughput Screening, Bentham Science.
- **Review Editor:**
 - Frontiers in Molecular Biosciences, Frontiers Journals.

Journal Referee

Biochemistry (American Chemical Society), Bioinformatics (Oxford Journals), BMC Bioinformatics (BioMed Central), BMC Biotechnology (BioMed Central), BioTechniques (Informa Life Sciences), Bulletin of Mathematical Biology (The Society for Mathematical Biology), DNA Research (Oxford Journals), Frontiers in Genetics, Frontiers in Molecular Biosciences (Frontiers Journals), Nucleic Acids Research (Oxford University Press), Pacific Symposium on Biocomputing, Physical Biology (Institute of Physics), PLoS Computational Biology, PLoS ONE, Proceedings of the National Academy of Sciences of USA, Physical Review E, Physical Review Letters (American Physical Society), Journal of Bacteriology (American Society for Microbiology).

Reviewer of International Projects

- The Netherlands Organisation for Scientific Research (NWO, the Dutch Research Council), KLEIN Research Proposals
- Austrian Science Fund (FWF), Erwin Schrodinger Fellowships
- ERA-Chemistry Open Initiative, European Commission (trilateral Germany-Austria-Hungary)
- Dmitry Zimin Dynasty Foundation (Russia).

International Faculty Search Committee

- Skolkovo Institute of Science and Technology (Skoltech), Moscow, Russia. A member of the Subcommittee on Biomedicine, invited by Interim Provost Prof. Keith Stevenson, 2015 – 2017.

Conference Organization

- BELBi 2018 (Belgrade Bioinformatics Conference), Belgrade, Serbia, June 2018
- BELBi 2016 (Belgrade Bioinformatics Conference), Belgrade, Serbia, June 2016

- TABIS2013 (International Conference on Theoretical Approaches to BioInformation Systems), Belgrade, Serbia, Sept 2013
- 2nd and 3rd Young Researchers Workshop in Mathematical Biology, Columbus, OH, March 2007 and March 2008.

Scientific society/board

- Vice President of the Serbian Society for Bioinformatics and Computational Biology
- Board member: Multidisciplinary PhD program in Biophysics, University of Belgrade

Publications

A. Articles

Average journal IF of **4.6**, cited **~1500** times (per Google Scholar), h-index **18**.

1. Milicevic O, Repac J, Bozic B, Djordjevic M and Djordjevic M, *A Simple Criterion for Inferring CRISPR Array Direction*. Front. Microbiol. **10**, 2054 (2019).
2. Djordjevic M, Rodic A, Graovac S, *From biophysics to 'omics and systems biology*, European Biophys Journal. **48**, 413, 2019
3. Bozic B, Repac J, Djordjevic M, *Endogenous Gene Regulation as a Predicted Main Function of Type I-E CRISPR/Cas System in E. coli*, Molecules **24**, E784, 2019.
4. Graovac S, Rodic A, Djordjevic M, Severinov K, Djordjevic M, *Effects of Population Dynamics on Establishment of a Restriction-Modification System in a Bacterial Host*, Molecules **24**, E198, 2019.
5. Djordjevic M, Stojku S, Djordjevic M and Huovinen P, *How to infer the shape of the QGP droplet from the data*, Phys. Rev. C Rapid Communications **100**, 031901 (2019).
6. Zigic D, Salom I, Auvinen J, Djordjevic M, Djordjevic M, *DREENA-B framework: first predictions of R_{AA} and v_2 within dynamical energy loss formalism in evolving QCD medium*, Physics Letters B **791**, 236, 2019.
7. Djordjevic M, Zigic D, Djordjevic M, Auvinen J, *How to test path-length dependence in energy loss mechanisms: analysis leading to a new observable*, Physical Review C **99**, 061902(R), 2019.
8. Blagojevic B, Djordjevic M, Djordjevic M, *Calculating hard probe radiative energy loss beyond the soft-gluon approximation: Examining the approximation validity*, Physical Rev C **99**, 024901, 2019.
9. Djordjevic M, Zigic D, Blagojevic B, Auvinen J, Salom I, Djordjevic M, *Dynamical energy loss formalism: from describing suppression patterns to implications for future experiments*, Nuclear Physics A **982**, 699, 2019.
10. Zigic D, Salom I, Auvinen J, Djordjevic M, Djordjevic M, *Joint R_{AA} and v_2 predictions for Pb+Pb collisions at the LHC within DREENA-C framework*, Journal of Physics G **46**, 085101, 2019.
11. Musharova O, Vyhovskyi D, Medvedeva S, Guzina J, Zhitnyuk Y, Djordjevic M, Severinov K, Savitskaya E, *Avoidance of Trinucleotide Corresponding to Consensus Protospacer Adjacent Motif Controls the Efficiency of Prespacer Selection during Primed Adaptation*, mBio **9**, e02169, 2018.
12. Guzina J, Chen WH, Stankovic T, Djordjevic M, Zdobnov E, Djordjevic M, *In silico Analysis Suggests Common Appearance of scaRNAs in Type II Systems and Their Association With Bacterial Virulence*, Frontiers in Genetics **9**, 474, 2018.
13. Klimuk E, Bogdanova E, Nagornykh M, Rodic A, Djordjevic M, Medvedeva S, Pavlova O, Severinov K, *Controller protein of restriction-modification system Kpn2I affects transcription of its gene by acting as a transcription elongation roadblock*, Nucleic Acids Research **46**, 10810, 2018.
14. Rodic A., Blagojevic B., Djordjevic, M. *Systems biology of bacterial immune systems: regulation of restriction-modification and CRISPR-Cas systems*, p. 37-58, In: Rajewsky N., Jurga S., Barciszewski J. (eds) Systems Biology. RNA Technologies. Springer, Cham (invited book chapter), 2018.
15. Djordjevic M, Djordjevic M and Zdobnov E, *Scoring Targets of Transcription in Bacteria Rather than Focusing on Individual Binding Sites*, Frontiers in Microbiology **8**, 2314, 2017.
16. Rodic A, Blagojevic B, Severinov K, Djordjevic M and Djordjevic M, *Features of CRISPR-Cas Regulation Key to Highly Efficient and Temporally-Specific crRNA Production*, Frontiers in Microbiology **8**, 2139, 2017.

17. Rodic A, Blagojevic B, Zdobnov E, Djordjevic M and Djordjevic M, *Understanding key features of bacterial restriction-modification systems through quantitative modeling*, BMC Systems Biology, **11**:377, 2017.
18. Guzina J and Djordjevic M, *Mix-and-matching as a promoter recognition mechanism by ECF σ factors*, BMC Evolutionary Biology, **17**:12, 2017.
19. Nikolic M, Stankovic T, Djordjevic M, *Contribution of bacterial promoter elements to transcription start site detection accuracy*, J of Bioinformatics and Computational Biology **15**: 1650038, 2017.
20. Guzina J, Djordjevic M, *Promoter recognition by ECF σ factors: analyzing DNA and protein interaction motifs*, Journal of Bacteriology **198**:1927, 2016.
21. Morozova N, Sabantsev A, Bogdanova E, Fedorova Y, Maikova A, Vedyaykin A, Rodic A, Djordjevic M, Khodorkovskii M, Severinov K, *Temporal dynamics of methyltransferase and restriction endonuclease accumulation in individual cells after introducing a restriction-modification system*, Nucleic Acids Research **44**:790, 2016.
22. Guzina J, Djordjevic M, *Bioinformatics as a first-line approach for understanding bacteriophage transcription*, Bacteriophage **5**:e1062588, 2015 (invited review paper).
23. Guzina J, Djordjevic M, *Inferring bacteriophage infection strategies from genome sequence: analysis of bacteriophage 7-11 and related phages*, BMC Evolutionary Biology **15**:S1, 2015.
24. Djordjevic M and Djordjevic M, *Predictions of heavy-flavor suppression at 5.1 TeV Pb+Pb collisions at the CERN Large Hadron Collider*, Physical Review C **92**:024918, 2015.
25. Zukher I, Novikova M, Tikhonov A, Nesterchuk M, Osterman I, Djordjevic M, Sergiev P, Sharma C, Severinov K, *Ribosome-controlled transcription termination is essential for the production of antibiotic microcin C*, Nucleic Acids Research **42**:11891, 2014.
26. Djordjevic M, *Integrating sequence analysis with biophysical modelling for accurate transcription start site prediction*, Journal of Integrative Bioinformatics **11**(2):240, 2014 (invited review paper).
27. Djordjevic M, Djordjevic M and Blagojevic B, *RHIC and LHC jet suppression in non-central collisions*, Physics Letters B **737**:298, 2014.
28. Djordjevic M and Djordjevic M, *LHC jet suppression of light and heavy flavor observables*, Physics Letters B **734**:286, 2014.
29. Djordjevic M and Djordjevic M, *Heavy flavor puzzle from data measured at the BNL Relativistic Heavy Ion Collider: Analysis of the underlying effects*, Physical Review C **90**:034910, 2014.
30. Djordjevic M and Djordjevic M, *Understanding the strong suppression patterns at RHIC and LHC*, Modern Physics Letters A **29**: 1430035, 2014 (invited review paper).
31. Djordjevic M, Djordjevic M, *Explaining the fine hierarchy in pion and kaon suppression at LHC: Importance of fragmentation functions*, Journal of Physics G **41**:055104, 2014.
32. Djordjevic M, *Efficient transcription initiation in bacteria: an interplay of protein-DNA interaction parameters*, Integrative Biology **5**(5):796, 2013.
33. Djordjevic M, *Modeling bacterial immune systems: strategies for expression of toxic - but useful - molecules*, Biosystems **112**(2):139, 2013.
34. Djordjevic M, Djordjevic M, *A simple biosynthetic pathway for large product generation from small substrate amounts*, Physical Biology **9**(5): 056004, 2012.
35. Djordjevic M, Djordjevic M, Severinov K, *CRISPR transcript processing: a mechanism for generating a large number of small interfering RNAs*, Biology Direct **7**(1): 24, 2012.
36. Pavlova O, Lavysch D, Klimik E, Djordjevic M, Ravcheev DA, Gelfand MS, Severinov K, Akulenko N, *Temporal regulation of gene expression of the Escherichia coli bacteriophage phiEco32*, Journal of Molecular Biology, **416**(3): 389, 2012.
37. Djordjevic M, Djordjevic M, *Generalization of radiative jet energy loss to non-zero magnetic mass*, Physics Letters B **709**:229, 2012.

38. Djordjevic M, *Redefining Escherichia coli σ^{70} promoter elements: -15 motif as a complement of the -10 motif*, Journal of Bacteriology, **193**(22): 6305, 2011.
39. Pougach K, Semenova E, Bogdanova E, Datsenko KA, Djordjevic M, Wanner BL, and Severinov K, *Transcription, transcripts processing and function of E. coli CRISPR locus*, Molecular Microbiology, **77**(6): 1367, 2010
40. Djordjevic M, *Inferring protein-DNA interaction parameters from SELEX experiments*. Methods in Molecular Biology, **674**: 195, 2010 (invited book chapter).
41. Djordjevic M and Bundschuh R, *Open complex formation by bacterial RNA polymerase – a quantitative model*, Biophysical Journal, **94**(11): 4233, 2008.
42. Bogdanova E, Djordjevic M, Papapanagiotou I, Heyduk T, Kneale G and Severinov K, *Transcription regulation of the type II restriction-modification system AhdI*, Nuclear Acids Research, **36**(5): 1429, 2008.
43. Djordjevic M, *SELEX experiments: novel prospects applications and data analysis for inferring regulatory pathways*, Biomolecular Engineering **24**(2):179, 2007 (invited review paper).
44. Sevostyanova A, Djordjevic M, Kuznedelov K, Naryshkina T, Gelfand M, Severinov K and Minakhin L, *Temporal regulation of viral transcription during development of Thermus thermophilus bacteriophage phiYS40*, Journal of Molecular Biology **366**(2):420, 2007.
45. Djordjevic M, Semenova E, Shraiman B and Severinov K, *Quantitative analysis of transcription strategy by a virulent bacteriophage*, Virology, **354**(2):240, 2006.
46. Djordjevic M, Sengupta A M, *Quantitative modeling and data analysis of SELEX experiments*, Physical Biology **3**:13, 2006.
47. Semenova E, Djordjevic M, Shraiman B and Severinov K, *The tale of two RNA polymerases: transcription profiling and gene expression strategy of bacteriophage Xp10*, Molecular Microbiology **55**:764, 2005.
48. Djordjevic M, Sengupta A M and Shraiman B, *A biophysical approach to transcription factor binding site discovery*, Genome Research **13**(11):2381, 2003.
49. Sengupta A M, Djordjevic M, Shraiman B, *Specificity and robustness in transcription control networks*, Proceedings of the National Academy of Science **99**:2072, 2002.
50. Mendas I, Djordjevic M and Markovic M, *Properties of the nonclassical maximum-entropy states*, Journal of Physics A: Mathematical and General **33**:921, 2000.

B. Books

1. Grbic B, Djordjevic M, Popovic-Bozic M and Stosic M, *International physics olympiads 1967-1996, Collected problems and solutions* (in Serbian), Serbian Physical Society Press (2000) [ISBN 86-17-08245-3].
2. Djordjevic M, *Biophysics and bioinformatics of transcription regulation in bacteria and bacteriophages*, PhD Thesis (2005) [ISBN 05-42-23846-2].
3. Djordjevic M and Djordjevic M, *Fundamentals of physics for biologists: Collected problems and solutions* (in Serbian), University of Belgrade – Faculty of Biology press (2014) [ISBN 978-867078-112-2]

Algorithms and Practical Applications

- QPMEME – Quadratic Programming Method of Energy Matrix Estimation.
- Kinetic modeling based analysis of bacteriophage gene expression.
- Statistical mechanics based method of SELEX (Systematic Evolution of Ligands by EXponential enrichment) data analysis.
- Biophysically based method for estimate of prokaryotic promoter kinetic parameters.
- Kolmogorov-Smirnov based method for direct regulatory target recognition.

Attended Interdisciplinary Programs and Schools

- Evolution of Molecular Networks, Kavli Institute for Theoretical Physics, Santa Barbara, California, January 2007.
- Networks in Growth, Death and Aging, Kavli Institute for Theoretical Physics, Santa Barbara, California, February 2005.
- The 22nd Jerusalem Winter School in Theoretical Physics, Biological Networks and Evolution, Jerusalem, Israel, January 2005.
- Bio-Molecular Networks, Kavli Institute for Theoretical Physics, Santa Barbara, California, Spring 2003.
- Project Lab in Molecular Genetics, Columbia University, New York, Fall 2002.

Talks

A. Conferences and Workshops

1. *Analysis of CRISPR/Cas non-canonical functions*, International Moscow Conference on Computational Molecular Biology (MCCMB19), Moscow, Russia, Jul 2019.
2. *Biophysics and Bioinformatics of CRISPR/Cas and restriction-modification systems in bacteria*, *Second Congress of Biologists in Serbia*, Kladovo, Serbia, Sept 2018.
3. *Assessing CRISPR-Cas design principles by biophysical modeling*, 14th International Conference on
4. *Fundamental and Applied Aspects of Physical Chemistry (Physical Chemistry 2018)*, Belgrade, Serbia, Sept 2018 (given by PhD student Andjela Rodic).
5. *Including population dynamics effects in modeling regulation of bacterial restriction modification systems*, Physical Chemistry 2018, Belgrade, Serbia, Sept 2018 (given by PhD student Stefan Graovac).
6. *Integrating computational systems biology and bioinformatics in research and education*, Neuronet Initiative Project, International experience in education programs, Novosibirsk, Russia, Aug 2018.
7. *A Kolmogorov-Smirnov based approach for predicting targets of transcription*, WIBSB 2018, First Sino-Russian Workshop on Integrative Bioinformatics and Systems Biology, Novosibirsk, Russia, Aug 2018.
8. *CRISPR-Cas regulation: a systems biology approach*, BGRS/SB2018, 11th International Multiconference on Bioinformatics of Genome Regulation and Structure/Systems Biology Novosibirsk, Russia, Aug 2018.
9. *A Kolmogorov-Smirnov based approach for predicting bacterial transcription targets*, BelBI2018 - Belgrade Bioinformatics Conference, Belgrade, Serbia, Jun 2018.
10. *Biophysical modeling of bacterial immune systems: analyzing regulation of CRISPR-Cas and restriction-modification systems*, RBC2018, Zrece, Slovenia, May 2018.
11. *Understanding key features of CRISPR/Cas system induction through modeling*, International Moscow Conference on Computational Molecular Biology (MCCMB17), Moscow, Russia, Jul 2017.
12. *Modelling Expression Dynamics of Bacterial Immune Systems*, First Congress of Molecular Biologists of Serbia (CoMBoS2017), Belgrade, Serbia, Sept 2017.
13. *CRISPR/Cas: from bacterial immune system to new biotechnology applications*, JRC-ICGEB joint workshop genome editing and related technologies, Trieste, Italy, Nov 2016.
14. *CRISPR/Cas and restriction-modification systems: from bacterial immune systems to biotechnology applications*, CRISPR Biotechnology Workshop, Belgrade City Library, Dec 2016 (given by PhD students Andjela Rodic and Tamara Stankovic).
15. *Transcription initiation by alternative σ factors: revising the rigidity paradigm*, 10th International Multiconference: BGRS/SB2016, Novosibirsk, Russia, Sept 2016 (given by PhD student Jelena Guzina).
16. *Modeling CRISPR/Cas system induction: the significance of cooperative transcription regulation*, BGRS/SB2016, Novosibirsk, Russia, Sept 2016 (given by PhD student Andjela Rodic).

17. *Transcription initiation by alternative σ factors*, BELBI2016 - Belgrade Bioinformatics Conference, Belgrade, Serbia, June 2016 (given by PhD student Jelena Guzina).
18. *Examining regulation of restriction-modification systems by quantitative modeling*, BELBI2016 - Belgrade, Serbia, June 2016 (given by PhD student Andjela Rodic).
19. *Achieving a rapid expression of toxic (but useful) molecules within cell*, BELBI2016 - Belgrade, Serbia, June 2016 (given by PhD student Bojana Blagojevic).
20. *From biophysical modeling to bioinformatics*, Belgrade International Molecular Life Science Conference for Students, Belgrade, Serbia, Jan 2015.
21. *Inferring bacteriophage infection strategies from genome sequence: analysis of acteriophage 7-11 and related phages*, Bacteriophages 2015, London, UK, Jan 2016 (given by PhD student Jelena Guzina).
22. *Towards Accurate Transcription Start Site Prediction: a modelling approach*, German Conference on Bioinformatics (GCB2014), Bielefeld, Germany, September 2014.
23. *Modeling bacterial immune systems: CRISPR/CAS regulation*, The 9th international Conference on Bioinformatics of Genome Regulation and Structure\Systems Biology (BGRS\SB-2014), Novosibirsk, Russia, June 2014.
24. *A biophysical approach to bacterial transcription start site prediction*, The 9th international Conference on Bioinformatics of Genome Regulation and Structure\Systems Biology (BGRS\SB-2014), Novosibirsk, Russia, June 2014.
25. *Integrating Sequence Analysis with Biophysical Modelling for Accurate Transcription Start Site Prediction*, 10th International Symposium on Integrative Bioinformatics (IB2014), Newcastle, UK, May 2014.
26. *Bioinformatic analysis of bacterial promoters*, TABIS 2013 - Theoretical Approaches to BioInformation Systems 2013, Belgrade, Serbia, September 2013.
27. *Bioinformatics analysis of gene expression strategies of bacterial viruses*, TABIS 2013, Belgrade, Serbia, September 2013 (given by PhD student Jelena Guzina).
28. *CRISPR transcript processing: an unusual mechanism for rapid production of small RNAs*, ICSB 2012 - The 13th International Conference on Systems Biology, Toronto, CA, Aug 2012.
29. *Predictions of bacterial transcription start sites - a biophysical approach*, RBC 2012 - The 5th Regional biophysics conference, Kladovo, Serbia, Sept 2012.
30. *Transcription Start Site Prediction in Bacteria*, DMBI 2012 - International Meeting on Data Mining in Bioinformatics, Belgrade, Serbia, Jun 2012.
31. *CRISPR transcript processing: an unusual mechanism for rapid production of desired molecules*, IPCAT 2012 - 9th International Conference on Information Processing in Cells and Tissues, Trinity College, Cambridge, UK, Apr 2012.
32. *A Genome-wide Analysis of Poised Promoters in Bacteria*, 7th Annual Rocky Mountains Bioinformatics Conference, Snowmass Village, Colorado, Dec 2009.
33. *Biophysical modeling of transcription initiation in bacteria*, 8th International conf. on Information Processing in Cells and Tissues (IPCAT 2009), Francini Ascona, Switzerland, Apr 2009.
34. *Quantitative modeling of transcription initiation in bacteria*, BioSysBio Conference 2009, Cambridge, UK, Mar 2009.
35. *Using biophysics to investigate engineering principles behind transcription initiation*, Engineering principles in Biological Systems, Cold Spring Harbor, NY, Dec 2008.
36. *Biophysical modeling of transcription initiation*, 2008 APS March Meeting, New Orleans, Louisiana, Mar 2008.
37. *Theoretical modeling of transcription initiation by bacterial RNA polymerase*, Partners Meeting, OSU MBI, Columbus, Ohio, Nov 2007.

38. *The open complex formation by bacterial RNA polymerase*, poster spotlight at Q-bio Conference on Cellular Information Processing, Santa Fe, Aug 2007.
39. *Using in vitro selection to infer transcription regulatory networks*, Evolution of Molecular Networks, KITP, Santa Barbara, California, Feb 2007.
40. *Computational analysis of gene regulation*, Partners Meeting, OSU, Columbus, Ohio, Nov 2006.
41. *Computational search for transcription factor binding sites*, 9th Annual Conference on Computational Genomics, Baltimore, Maryland, Oct 2006.
42. *Quantitative modeling and data analysis of SELEX experiments*, 2006 APS March Meeting, Baltimore, Maryland, Mar 2006.
43. *Biophysics and bioinformatics of transcription*, Partners Meeting, OSU, Columbus, OH, Nov 2005.
44. *Quantitative modeling and analysis of data for SELEX experiments*, 91st Statistical Mechanics Conference, Piscataway, New Jersey, May 2004.
45. *Biophysical approach to identification of transcription factor binding sites*, 5th General Conference of the Balkan Physical Union, Vrnjacka Banja, Serbia, Aug 2003.
46. *A biophysical approach to transcription factor binding site discovery*, 88th Statistical Mechanics Conference, Piscataway, New Jersey, Dec 2002.

B. Colloquia and Seminars

1. *A biophysical approach to understanding gene expression regulation in bacteria*, Theoretical Physics Seminar, Jozef Stefan Institute, Ljubljana, Slovenia, Sept 2019.
2. *Regulatory dynamics of restriction-modification systems in bacteria: from biophysics models to synthetic biology*, Bioinformatics Seminar, Faculty of Mathematics, University of Belgrade, Belgrade, May 2019 (given by PhD students Andjela Rodic and Stefan Graovac).
3. *From protein-DNA interactions to systems biology*. Lecture Series in Honor of 2017 Nobel Prizes in Physiology or Medicine, Faculty of Physical Chemistry, University of Belgrade, Belgrade, Mar 2018.
4. *CRISPR/Cas and restriction-modification systems: modeling dynamics of bacterial immune system expression*, Bioinformatics Seminar, Faculty of Mathematics, University of Belgrade, Belgrade, Dec 2016 (given by PhD students Andjela Rodic and Bojana Blagojevic).
5. *Biophysical Modeling and Bioinformatics*, International Biophysics Week, Kolarac Foundation, Belgrade, Belgrade, March 2016 (given by PhD student Jelena Guzina).
6. *Modeling bacterial immune systems*, Seminar of Bioinformatics, Faculty of Mathematics, University of Belgrade, Belgrade, Nov 2015 (given by PhD student Andjela Rodic).
7. *Bioinformatics analysis of transcription regulation in bacteria and bacteriophages*, Bioinformatics seminar, Faculty of Mathematics, University of Belgrade, March 2015, Belgrade (given by PhD student Jelena Guzina).
8. *Biophysical Modeling and Bioinformatics of Gene Expression Regulation*, Colloquium at Faculty of Physics, University of Belgrade, Belgrade, Serbia, June 2014.
9. *Bioinformatics and Biological System Modeling*, Lecture Series in Honor of 150 Years of Faculty of Biology, University of Belgrade, Belgrade, Serbia, Nov 2013.
10. *Modeling the open complex formation by bacterial RNA polymerase*, NORDITA (Nordic Institute for Theoretical Physics) Seminar, Stockholm, Sweden, Mar 2008.
11. *Theoretical modeling of Gene Regulation*, ISU Mathematics Colloquium, Iowa State University, Ames, Iowa, Feb 2008.
12. *Modeling and Bioinformatics of Gene Transcription*, Frontiers in Systems and Integrative Biology, UCLA, Los Angeles, California, Feb 2008.
13. *Gene Regulation: Biophysical Modeling and Bioinformatics Applications*, Biophysics Seminar, Brown University, Providence, Rhode Island, Feb 2008.

14. *Biophysics and Bioinformatics of Gene Regulation*, Physics Colloquium, Western Kentucky University, Bowling Green, Kentucky, Feb 2008.
15. *Quantitative Modeling of Gene Regulation*, Mathematics Colloquium, West Virginia University, Morgantown, West Virginia, Feb 2008.
16. *Biophysical modeling of the open complex formation by bacterial RNA polymerase*, Physics Colloquium, National Central University, Taipei, Taiwan, Jan 2008.
17. *Theoretical modeling of transcription initiation in bacteria*, Center for Nonlinear Studies Seminar, LANL, Los Alamos, Dec 2007.
18. *Biophysics and bioinformatics approaches to gene expression regulation*, Iowa State University Mathematics Colloquium, Iowa State University, Ames, Nov 2007.
19. *Theoretical modeling of the open complex formation in bacteria*, Computational and Applied Mathematics Seminar, Iowa State University, Ames, Iowa, Nov 2007.
20. *Quantitative modeling of transcription initiation by bacterial RNA polymerase*, Applied Mathematics Colloquium, Columbia University, New York, Oct 2007.
21. *Quantitative modeling of transcription initiation in bacteria*, Brookhaven National Laboratory, Upton, New York, Oct 2007.
22. *Theoretical modeling of the open complex formation in bacteria*, Lunch Seminar, University of California at San Francisco, San Francisco, Oct 2007.
23. *Biophysics and bioinformatics of gene transcription*, Department of Biology Colloquium, Institute for Physiology and Biochemistry, Belgrade, Serbia, Sept 2007.
24. *Biophysics and bioinformatics of gene transcription*, Physics Colloquium, Faculty of Natural Sciences and Mathematics, Novi Sad, Serbia, Sept 2007.
25. *Quantitative modeling of transcription initiation in bacteria*, Theoretical Physics Seminar, Jozef Stefan Institute, Ljubljana, Slovenia, Aug 2007.
26. *Transcription factor binding energy vs. biological function*, Plant Biotechnology Seminar, Columbus, Ohio, Jan 2007.
27. *Search for transcription factor binding sites in eukaryotes: a principal limit and a novel method*, Plant Biotechnology Seminar, Columbus, Ohio, Jan 2006.
28. *Biophysics and bioinformatics of transcription regulation in bacteria and bacteriophages*, Postdoctoral Seminar, OSU MBI, Columbus, Ohio, Oct 2005.
29. *Bioinformatics of transcription regulation in bacteria and bacteriophages*, Computational Biology & Medical Informatics Seminar, IBM T. J. Watson Res. Center, Yorktown Heights, NY, Jan 2005.
30. *Quantitative analysis of gene expression regulation: a biophysical approach*, Rockefeller University, New York, New York, Jan 2005.
31. *Quantitative analysis of gene expression regulation: a biophysical approach*, Princeton University, Princeton, New Jersey, Jan 2005.
32. *Biophysics and bioinformatics of transcription regulation*, Computational Physics and Bioinformatics Group Seminar, Weizmann Institute of Science, Rehovot, Israel, Dec 2004.
33. *Computational analysis of gene expression regulation in bacteria and bacteriophages*, Brookhaven National Laboratory, Upton, New York, Dec 2004.
34. *Computational analysis of gene expression regulation in bacteria and bacteriophages*, Columbia University, New York, New York, Dec 2004.
35. *Computational approaches to transcription regulation*, Colloquium at Faculty of Physics, Belgrade, Serbia, Sept 2004.