Răzvan V. Chereji

CONTACT

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SUMMARY

- Theoretical physicist, using statistical mechanics to model biological systems. My research focuses on DNA packaging, chromatin organization, and gene regulation.
- Author of >25 peer-reviewed articles (most of them as first or co-first author), more than 1000 citations (see my Google Scholar profile).
- Awarded for research, reviewing, and teaching; multiple prizes at international and national Physics Olympiads (see Awards section below).
- Invited author of a book chapter; invited keynote speaker at international conference in Canada; invited speaker at a summer school in Argentina; presented talks and posters at many conferences and seminars.
- Reviewer for many prestigious journals, such as Science, Nature, Biophysical Journal, Molecular Cell, Nucleic Acids Research, Genome Research.

EDUCATION

AWARDS

National Institutes of Health (NIH), NICHD, Bethesda, MD, U.S.A.

Research Fellow	2016-2019		
Visiting Fellow	2013-2016		
• Advisor: Dr. David J. Clark			
Rutgers, The State University of New Jersey, Piscataway, NJ, U.S	.A.		
Ph.D. in Physics	2007-2013		
 Advisor: Prof. Alexandre V. Morozov; Thesis link Cumulative GPA: 3.90 / 4 			
Babeş-Bolyai University, Cluj-Napoca, CJ, Romania			
B.Eng.	2002-2007		
 Advisor: Prof. Emil Vinţeler Graduated as valedictorian; Thesis GPA: 10 / 10; Cumulative Gl 	PA: 9.83 / 10		
Fellows Award for Research Excellence (FARE award), NIH "Outstanding Contribution in Reviewing" award from Genomics, Else Richard J. Plano Outstanding Teaching Assistant Award, Rutgers Univ	2017, 2018 vier 2017 versity 2009		
Silver Medal at the International Physics Olympiad, Indonesia	2002		
Excellency Diploma awarded by the President of Romania Bronze Medal at "Tuymaada" International Olympiad, Russia	2001, 2002 2001		
First Prize at Romanian National Physics Olympiad	1999, 2000, 2002		

PUBLICATIONS

26. Clark S, **Chereji RV**, Lee P, Fields RD, Clark DJ – Differential nucleosome spacing in neurons and glia, Neurosci Lett. (2019), doi: 10.1016/j.neulet.2019.134559

25. **Chereji RV**, Bryson TD, Henikoff S – Quantitative MNase-seq accurately maps nucleosome occupancy levels, Genome Biol. (2019), doi:10.1186/s13059-019-1815-z

24. **Chereji RV***, Eriksson PR*, Ocampo J*, Prajapati HK, Clark DJ – Accessibility of promoter DNA is not the primary determinant of chromatin-mediated gene regulation, Genome Res. (2019), doi: 10.1101/gr.249326.119

23. Ocampo J*, **Chereji RV***, Eriksson PR, Clark DJ – Contrasting roles of the RSC and ISW1/CHD1 chromatin remodelers in RNA polymerase II elongation and termination, Genome Res. 29, 407-417 (2019).

22. Hamdani O, Dhillon N, Hsieh T-HS, Fujita T, Ocampo J, Kirkland JG, Lawrimore J, Kobayashi TJ, Friedman B, Fulton D, Wu KY, **Chereji RV**, Oki M, Bloom K, Clark DJ, Rando OJ, Kamakaka RT - Transfer RNA Genes Affect Chromosome Architecture and Function via Local Effects, Mol. Cell. Biol. 39 (8), e00432-18 (2019).

21. Chang HW, Valieva ME, Safina A, **Chereji RV**, Wang J, Kulaeva OI, Morozov AV, Kirpichnikov MP, Feofanov AV, Gurova K, Studitsky VM – Mechanism of FACT Removal from Transcribed Genes by Anti-Cancer Drugs Curaxins, Science Advances 4 (11), eaav2131 (2018).

20. Mehta GD, Ball DA, Eriksson PR, **Chereji RV**, Clark DJ, McNally JG, Karpova TS - Single-Molecule Analysis Reveals Linked Cycles Of RSC Chromatin Remodeling and Ace1p Transcription Factor Binding in Yeast, Mol. Cell 72 (5), 875-887.e9 (2018).

19. Rawal Y*, **Chereji RV***, Qiu H, Ananthakrishnan S., Chhabi G., Clark DJ, Hinnebusch AG – SWI/SNF and RSC cooperate to reposition and evict promoter nucleosomes at highly expressed genes in yeast, Genes Dev. 32 (9-10), 695-710 (2018).

18. Ouda R, Sarai N, Nehru V, Patel MC, Debrosse M, Bachu M, **Chereji RV**, Eriksson PR, Clark DJ, Ozato K - SPT6 interacts with NSD2 and facilitates interferon-induced transcription, FEBS Lett. 592 (10), 1681-1692 (2018).

17. **Chereji RV**^{\dagger}, Clark DJ^{\dagger} – Major determinants of nucleosome positioning, Biophys. J. 114 (10), 2279-2289 (2018).

16. Rawal Y*, **Chereji RV***, Valabhoju V, Qiu H, Ocampo J, Clark DJ, Hinnebusch AG – Gcn4 binding in coding regions can activate internal and canonical 5' promoters in yeast, Mol. Cell 70 (2), 297-311 (2018).

15. **Chereji RV***, Ramachandran S*, Bryson TD, Henikoff S – Precise genome-wide mapping of single nucleosomes and linkers in vivo, Genome Biol. 19, 19 (2018).

14. Johnson TA*, **Chereji RV***, Stavreva DA, Morris S, Hager GL, Clark DJ – Conventional and Pioneer Modes of Glucocorticoid Receptor Interaction with Enhancer Chromatin in vivo, Nucleic Acids Res. 46 (1), 203-214 (2018).

13. Chereji RV*, Bharatula V*, Elfving N, Blomberg J, Larsson M, Morozov AV, Broach

^{*}These authors contributed equally

[†]Corresponding author

JR, Björklund S – Mediator binds to boundaries of chromosomally interacting domains and to proteins involved in DNA looping, RNA metabolism, chromatin remodeling, and actin assembly, Nucleic Acids Res. 45 (15), 8806-8821 (2017).

12. **Chereji RV***, Ocampo J*, Clark DJ – MNase-sensitive complexes in yeast: nucleosomes and non-histone barriers, Mol. Cell 65 (3), 565–577 (2017).

11. Ocampo J*, **Chereji RV***, Eriksson PR, Clark DJ – The ISW1 and CHD1 ATP-dependent chromatin remodelers compete to set nucleosome spacing in vivo, Nucleic Acids Res. 44 (10), 4625-4635 (2016).

10. Qiu H*, **Chereji RV***, Hu C, Cole HA, Rawal Y, Clark DJ, Hinnebusch AG – Genomewide cooperation by HAT Gcn5, remodeler SWI/SNF, and chaperone Ydj1 in promoter nucleosome eviction and transcriptional activation, Genome Res. 26 (2), 211-225 (2016).

9. **Chereji RV***, Kan T-W*, Grudniewska MK, Romashchenko AV, Berezikov E, Zhimulev IF, Guryev V, Morozov AV, Moshkin YM – Genome-wide profiling of nucleosome sensitivity and chromatin accessibility in Drosophila melanogaster, Nucleic Acids Res. 44 (3): 1036-1051 (2016).

8. **Chereji RV**, Morozov AV – Functional roles of nucleosome stability and dynamics, Brief. Funct. Genomics 14 (1), 50-60 (2015).

7. Cole HA, Ocampo J, Iben JR, **Chereji RV**, Clark DJ – Transcription of Induced Genes in Yeast Correlates with Differential Loss of Histone H2A-H2B Dimers from Coding Regions, Nucleic Acids Res. 42 (20), 12512-12522 (2014).

6. Ganguli D*, **Chereji RV***, Iben JR, Cole HA, Clark DJ – RSC-dependent Constructive and Destructive Interference between Opposing Arrays of Phased Nucleosomes in Yeast, Genome Res. 24 (10), 1637-1649 (2014).

5. **Chereji RV**, Morozov AV – Ubiquitous nucleosome crowding and unwrapping in the yeast genome, Proc. Natl. Acad. Sci. USA 111 (14), 5236-5241 (2014).

4. Elfving N*, **Chereji RV***, Bharatula V, Björklund S, Morozov AV, Broach JR – A dynamic interplay of nucleosome and Msn2 binding regulates kinetics of gene activation and repression following stress, Nucleic Acids Res. 42 (9), 5468-5482 (2014).

3. Petrenko N, **Chereji RV**, McClean MN, Morozov AV, Broach JR – Noise and interlocking signaling pathways promote distinct transcription factor dynamics in response to different stresses, Mol. Biol. Cell 24 (12), 2045-2057 (2013).

2. **Chereji RV**, Morozov AV – Statistical mechanics of nucleosomes constrained by higher-order chromatin structure, J. Stat. Phys. 144 (2), 379-404 (2011).

1. **Chereji RV**, Tolkunov D, Locke G, Morozov AV – Statistical mechanics of nucleosome ordering by chromatin-structure-induced two-body interactions, Phys. Rev. E 83 (5), 050903 (2011).

^{*}These authors contributed equally

BOOK CHAPTERS

1. Beati P*, **Chereji RV**^{*†} – Use of *plot2DO* for creating 2D occupancy plots, Invited chapter in Methods in Molecular Biology, In production.

INVITED TALKS

	Edgestream, Princeton, NJ	Sep 2019
	Workshop, IMPaM CONICET-UBA Institute, Buenos Aires, Argentina	Nov 2018
	Seminar, "Dr. Héctor N. Torres" Institute, Buenos Aires, Argentina	Nov 2018
	Keynote Speaker at The 3 rd International Conference on Molecular Biology & Nucleic Acids, Toronto, Canada	Aug 2018
	Biowulf Seminar Series, NIH, Bethesda, MD	Mar 2018
	Biophysical Society 62 st Annual Meeting, San Francisco, CA	Feb 2018
	13 th Annual NICHD Fellows Meeting, Washington, DC	May 2017
	Departmental Seminar, Physics Department, University of Minnesota, Minneapolis, MN	Apr 2017
	Departmental Seminar, Department of Computational and Systems Biology University of Pittsburgh, Pittsburgh, PA	, Dec 2016
	Departmental Seminar, Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA	Dec 2016
	Biophysics Seminar, Physics Department, University of Minnesota, Minneapolis, MN	Nov 2016
	Chromatin-DECODE Seminar, NIH, Bethesda, MD	Apr 2015
	APS March Meeting, San Antonio, TX (invited talk + contributed talk)	Mar 2015
	BioMaPS Institute for Quantitative Biology Student Seminar, Rutgers University, Piscataway, NJ	Sep 2013
	David Clark laboratory, NIH, Bethesda, MD	Jun 2013
	Jun Song laboratory, UCSF, San Francisco, CA	Jun 2013
OTHER	Pienbycical Society 62rd Appual Meeting, Paltimore, MD (poster)	Mar 2010
FRESENTATIONS	PGD Monday AM Seminar NIH, Bethesda, MD	Dec 2019
	CSHL Epigenetics & Chromatin Meeting	DEC 2018
	Cold Spring Harbor, NY (poster)	Sep 2018
	NICHD Scientific Retreat, NIH, Bethesda, MD (poster)	Sep 2018
	PGD Monday AM Seminar, NIH, Bethesda, MD	Jan 2018
	Workshop on Chromosome Biology, Bethesda, MD (contributed talk)	Dec 2017
	Washington Area Yeast Club Meeting, Bethesda, MD (contributed talk)	Nov 2017
	NICHD Scientific Retreat, NIH, Bethesda, MD (poster)	Sep 2017
	CSHL Mechanisms of Eukaryotic Transcription Meeting, Cold Spring Harbor, NY (poster)	Aug 2017

*These authors contributed equally [†]Corresponding author

APS March Meeting, New Orleans, LA (contributed talk)	Mar 2017
Biophysical Society 61 st Annual Meeting, New Orleans, LA (poster)	Feb 2017
PGD Monday AM Seminar, NIH, Bethesda, MD	Jan 2017
NCI Symposium on Chromosome Biology, NIH, Bethesda, MD (poster)	Nov 2016
CSHL Epigenetics & Chromatin Meeting, Cold Spring Harbor, NY (poster)	Sep 2016
NICHD Scientific Retreat, NIH, Bethesda, MD (poster)	Sep 2016
12 th Annual NICHD Fellows Meeting, Washington, DC (poster)	Apr 2016
APS March Meeting, Baltimore, MD (contributed talk)	Mar 2016
Biophysical Society 60 th Annual Meeting, Los Angeles, CA (poster)	Feb 2016
PGD Monday AM Seminar, NIH, Bethesda, MD	Jan 2016
NIH Research Festival, NIH, Bethesda, MD (poster)	Sep 2015
34 th Summer Symposium in Molecular Biology, Penn State University, State College, PA (poster)	Jul 2015
FASEB conference: Transcription, Chromatin, and Epigenetics, Palm Beach, FL (poster)	Jun 2015
11 th Annual NICHD Fellows Meeting, Washington, DC (poster)	May 2015
PGD Monday AM Seminar, NIH, Bethesda, MD	May 2015
NCI Symposium on Chromosome Biology, NIH, Bethesda, MD (poster)	Apr 2015
Keystone Symposia: DNA Methylation / Epigenomics, Keystone, CO (poster)	Mar 2015
Biophysical Society 59 th Annual Meeting, Baltimore, MD (poster)	Feb 2015
CSHL Epigenetics & Chromatin Meeting, Cold Spring Harbor, NY (poster)	Sep 2014
NICHD Scientific Retreat, NIH, Bethesda, MD (poster)	Jun 2014
PGD Monday AM Seminar, NIH, Bethesda, MD	Jun 2014
10 th Annual NICHD Fellows Meeting, Washington, DC (poster)	Apr 2014
APS March Meeting, Denver, CO (contributed talk)	Mar 2014
Biophysical Society 58th Annual Meeting, San Francisco, CA (poster)	Feb 2014
APS March Meeting, Baltimore, MD (contributed talk)	Mar 2013
Biophysical Society 57 th Annual Meeting, Philadelphia, PA (poster)	Feb 2013
108 th Statistical Mechanics Conference, Rutgers University, Piscataway, NJ (contributed talk)	Dec 2012
The 8 th Gotham-Metro Condensed Matter Meeting, The New York Academy of Sciences, New York, NY (poster)	Nov 2012
Biophysical Society Pennsylvania Network Meeting, Lehigh University, Bethlehem, PA (poster)	Sep 2012

PROFESSIONAL ACTIVITIES

Reviewer

- Science
- Nature
- Nature Communications
- Molecular Cell
- Genome Research
- Biophysical Journal
- Nucleic Acids Research
- Cell Reports
- Epigenetics & Chromatin
- Scientific Reports
- Epigenetics
- PLoS ONE
- Genomics
- BMC Molecular Biology
- Journal of Biomolecular Structure & Dynamics

Service

	 Biophysical Society 62nd Annual Meeting Chair of the "Chromatin and the Nucleoid" session 	2018
	 3rd International Conference on Molecular Biology & Nucleic Aci Chair of the "Carcinogenesis, Gene Targets and Pathways" se Member of the DDB Fellows' seminar committee Chair Co-chair Member of the Chromatin-DECODE seminar committee 	ds 2018 ssion 2015–2019 2016–2017 2015–2016 2016–2019
	Member	
	 American Physical Society, Biophysical Society 	2009–2019
TEACHING EXPERIENCE	General Physics II General Physics II Extended Analytical Physics II Extended Analytical Physics I General Physics II Extended Analytical Physics II Extended Analytical Physics I	Summer 2012 Summer 2010 Spring 2010 Fall 2009 Summer 2009 Spring 2009 Fall 2008
SCHOLARSHIPS	Graduate Assistantship, Rutgers University Teaching Assistantship, Rutgers University Excellence Fellowship, Rutgers University University Merit Scholarship, Babeş-Bolyai University Romanian Ministry of Education Scholarship "Petrom" Scholarship, OMV Petrom S.A.	2010-2013 2008-2010 2007-2008 2002-2007 2002-2007 2002-2007
TEST SCORES	Ph.D. Candidacy Examination, overall percentage: 89.1% (best score) GRE Subject: Physics, score: 990 / 990	Aug 2008 Nov 2006