

Răzvan V. Chereji

CONTACT

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EDUCATION & RESEARCH

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

Research Fellow

2016–present

- National Institute of Child Health and Human Development (NICHD)
- Advisor: Dr. David J. Clark

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

Visiting Fellow

2013–2016

- National Institute of Child Health and Human Development (NICHD)
- Advisor: Dr. David J. Clark

Rutgers, The State University of New Jersey, Piscataway, NJ, U.S.A.

Ph.D.

2007–2013

- Department: Physics
- Dissertation: “Statistical Mechanics of Nucleosomes”
- Committee: Profs. Alexandre V. Morozov (advisor), Anirvan M. Sengupta, Gyan Bhanot, Joel L. Lebowitz, and James R. Broach (outside member)
- Cumulative GPA: 3.90 / 4

Babeş-Bolyai University, Cluj-Napoca, CJ, Romania

B.Eng.

2002–2007

- Department: Physics
- Thesis: “Differential Geometry in General Relativity and Yang-Mills Theory”
- Advisor: Professor Emil Vinteler
- Thesis GPA: 10 / 10
- Cumulative GPA: 9.83 / 10
- Graduated as valedictorian

AWARDS

Richard J. Plano Outstanding Teaching Assistant Award	2009
Silver Medal at the International Physics Olympiad, Indonesia	2002
Excellency Diploma awarded by the President of Romania	2001, 2002
Bronze Medal at “Tuymaada” International Olympiad, Russia	2001
First Prize at Romanian National Physics Olympiad	1999, 2000, 2002

PUBLICATIONS

13. **Chereji RV***, Bharatula V*, Elfving N, Blomberg J, Larsson M, Morozov AV, Broach 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.* DOI: 10.1093/nar/gkx491 (2017)
*** These authors contributed equally**
12. **Chereji RV***, Ocampo J*, Clark DJ – MNase-sensitive complexes in yeast: nucleosomes and non-histone barriers, *Molecular Cell* 65 (3), 565–577 (2017).
*** These authors contributed equally**
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)
*** These authors contributed equally**
10. Qiu H*, **Chereji RV***, Hu C, Cole HA, Rawal Y, Clark DJ, Hinnebusch AG – Genome-wide cooperation by HAT Gcn5, remodeler SWI/SNF, and chaperone Ydj1 in promoter nucleosome eviction and transcriptional activation, *Genome Res.* 26 (2), 211–225 (2016)
*** These authors contributed equally**
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)
*** These authors contributed equally**
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)
*** These authors contributed equally**
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)
*** These authors contributed equally**
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)

	<p>2. Chereji RV, Morozov AV – Statistical mechanics of nucleosomes constrained by higher-order chromatin structure, J. Stat. Phys. 144 (2), 379-404 (2011)</p> <p>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)</p>	
SUBMITTED MANUSCRIPTS	<p>1. Chereji RV*, Ramachandran S*, Bryson TD, Henikoff S – Precise genome-wide mapping of single nucleosomes and linkers in vivo, Submitted. * These authors contributed equally</p> <p>2. Johnson TA*, Chereji RV*, Stavreva DA, Morris S, Hager GL, Clark DJ – Pre-Programmed Glucocorticoid Receptor Enhancers are Marked by DNase I-accessible Nucleosomes, Submitted. * These authors contributed equally</p>	
MANUSCRIPTS IN PREPARATION	<p>1. Rawal Y, Qiu H, Chereji RV, Clark DJ, Hinnebusch AG – Genome-wide identification of functional and non-functional Gcn4 binding sites in promoters and coding regions in vivo, In preparation.</p> <p>2. Rawal Y, Qiu H, Chereji RV, Clark DJ, Hinnebusch AG – Chromatin remodeler SWI/SNF and histone chaperone Nap1 cooperate in removing H2B-containing non-nucleosomal structures that compete with PIC assembly, In preparation.</p> <p>3. Chang HW, Chereji RV, Kulaeva OI, Morozov AV, Gurova K, Studitsky VM – Anti-cancer drugs curaxins inhibit FACT action during Pol II transcription, In preparation.</p> <p>4. Clark S*, Chereji RV*, Lee P, Fields D, Clark DJ - Chromatin structure of dorsal root ganglia neurons and cortical glia, In preparation. * These authors contributed equally</p> <p>5. Ouda R, Sarai N, Patel M, Debrosse M, Nehru V, Bachu M, Chereji RV, Clark DJ, Ozato K - SPT6 interacts with NSD2 and facilitates interferon stimulated transcription, In preparation.</p>	
INVITED TALKS	<p>13th Annual NICHD Fellows Meeting, Washington, DC May 2017</p> <p>Departmental Seminar, Physics Department, University of Minnesota, Minneapolis, MN Apr 2017</p> <p>PGD Seminar, NIH, Bethesda, MD Jan 2017</p> <p>Departmental Seminar, Department of Computational and Systems Biology, University of Pittsburgh, Pittsburgh, PA Dec 2016</p> <p>Departmental Seminar, Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA Dec 2016</p> <p>Biophysics Seminar, Physics Department, University of Minnesota, Minneapolis, MN Nov 2016</p>	

	PGD Seminar, NIH, Bethesda, MD	Jan 2016
	PGD Seminar, NIH, Bethesda, MD	May 2015
	Chromatin-DECODE Seminar, NIH, Bethesda, MD	Apr 2015
	APS March Meeting, San Antonio, TX (invited talk + contributed talk)	Mar 2015
	PGD Seminar, NIH, Bethesda, MD	Jun 2014
	BioMaPS Institute for Quantitative Biology Student Seminar, Rutgers University, Piscataway, NJ	Sep 2013
	David Clark laboratory invited talk, NIH, Bethesda, MD	Jun 2013
	Jun Song laboratory invited talk, UCSF, San Francisco, CA	Jun 2013
OTHER PRESENTATIONS	APS March Meeting, New Orleans, LA (contributed talk)	Mar 2017
	Biophysical Society 61 st Annual Meeting, New Orleans, LA (poster)	Feb 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
	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
	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
	10 th Annual NICHD Fellows Meeting, Washington, DC (poster)	Apr 2014
	APS March Meeting, Denver, CO (contributed talk)	Mar 2014
	Biophysical Society 58 th 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	<p>Reviewer</p> <ul style="list-style-type: none"> • Independent: <ul style="list-style-type: none"> • Science • Biophysical Journal • Epigenetics • Journal of Biomolecular Structure & Dynamics • PLoS ONE • Jointly with my advisor: <ul style="list-style-type: none"> • Nature • Genome Research • Nucleic Acids Research <p>Service</p> <ul style="list-style-type: none"> • Chair of the DDB Fellows' seminar committee • Member of the Chromatin-DECODE seminar committee • Co-chair of the DDB Fellows' seminar committee <p>Member</p> <ul style="list-style-type: none"> • American Physical Society, Biophysical Society 	<p>2016-present</p> <p>2016-present</p> <p>2015-2016</p>
TEACHING EXPERIENCE	<p>General Physics II</p> <p>General Physics II</p> <p>Extended Analytical Physics II</p> <p>Extended Analytical Physics I</p> <p>General Physics II</p> <p>Extended Analytical Physics II</p> <p>Extended Analytical Physics I</p>	<p>Summer 2012</p> <p>Summer 2010</p> <p>Spring 2010</p> <p>Fall 2009</p> <p>Summer 2009</p> <p>Spring 2009</p> <p>Fall 2008</p>
SCHOLARSHIPS	<p>Graduate Assistantship, Rutgers University</p> <p>Teaching Assistantship, Rutgers University</p> <p>Excellence Fellowship, Rutgers University</p> <p>University Merit Scholarship, Babeş-Bolyai University</p> <p>Romanian Ministry of Education Scholarship</p> <p>"Petrom" Scholarship, OMV Petrom S.A.</p>	<p>2010-2013</p> <p>2008-2010</p> <p>2007-2008</p> <p>2002-2007</p> <p>2002-2007</p> <p>2002-2007</p>
TEST SCORES	<p>Ph.D. Candidacy Examination, overall percentage: 89.1%</p> <p>GRE Subject: Physics, score: 990 / 990</p>	<p>Aug 2008</p> <p>Nov 2006</p>

TECHNICAL SKILLS

Programming/Scripting Languages

- Currently used: MATLAB, R, Python, Bash
- Used in the past: Basic, C, Fortran, FoxPro, Pascal

Genomic Data Analysis

- ATAC-seq, Chemical mapping data, ChIP-exo, ChIP-seq, DNase-seq, FAIRE-seq, MNase-seq, NET-seq, RNA-seq

Other skills

- Chimera, \LaTeX , Illustrator, InDesign, Dreamweaver

REFERENCES

David J. Clark (Post-doctoral advisor)

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Bethesda, MD 20892, USA
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Alexandre V. Morozov (Ph.D. advisor)

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Steven Henikoff

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James R. Broach

Professor and Chair, Department of Biochemistry and Molecular Biology
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Alan G. Hinnebusch

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Gordon L. Hager

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