Răzvan V. Chereji

CONTACT

Section on Chromatin and Gene Expression
Division of Developmental Biology
NICHD, National Institutes of Health
Building 6A, Room 2A14
6 Center Drive
Bethesda, MD 20892, USA

Phone: 301-435-8670
E-mail: razvan.chereji@nih.gov
Website: rchereji.github.io
Google Scholar: goo.gl/QB8YEm
ORCID: 0000-0002-0572-6412
GitHub: rchereji

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, To appear in Nucleic Acids Res.
*** 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)

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)

SUBMITTED MANUSCRIPTS

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**

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**

MANUSCRIPTS IN PREPARATION

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.

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.

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.

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**

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.

INVITED TALKS

13^{th} Annual NICHD Fellows Meeting, Washington, DC **May 2017**

Departmental Seminar, Physics Department,
University of Minnesota, Minneapolis, MN **Apr 2017**

PGD Seminar, NIH, Bethesda, MD **Jan 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**

	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 61st 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**
	12th Annual NICHD Fellows Meeting, Washington, DC (poster)	**Apr 2016**
	APS March Meeting, Baltimore, MD (contributed talk)	**Mar 2016**
	Biophysical Society 60th Annual Meeting, Los Angeles, CA (poster)	**Feb 2016**
	NIH Research Festival, NIH, Bethesda, MD (poster)	**Sep 2015**
	34th 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**
	11th 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 59th 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**
	10th 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 57th Annual Meeting, Philadelphia, PA (poster)	**Feb 2013**

	108th Statistical Mechanics Conference, Rutgers University, Piscataway, NJ (contributed talk)	**Dec 2012**
	The 8th 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

- Independent:
  - Science
  - Biophysical Journal
  - Epigenetics
  - Journal of Biomolecular Structure & Dynamics
  - PLoS ONE
- Jointly with my advisor:
  - Nature
  - Genome Research
  - Nucleic Acids Research

Service

- Chair of the DDB Fellows' seminar committee **2016–present**
- Member of the Chromatin-DECODE seminar committee **2016–present**
- Co-chair of the DDB Fellows' seminar committee **2015–2016**

Member

- American Physical Society, Biophysical Society

TEACHING EXPERIENCE

General Physics II	**Summer 2012**
General Physics II	**Summer 2010**
Extended Analytical Physics II	**Spring 2010**
Extended Analytical Physics I	**Fall 2009**
General Physics II	**Summer 2009**
Extended Analytical Physics II	**Spring 2009**
Extended Analytical Physics I	**Fall 2008**

SCHOLARSHIPS

Graduate Assistantship, Rutgers University	**2010–2013**
Teaching Assistantship, Rutgers University	**2008–2010**
Excellence Fellowship, Rutgers University	**2007–2008**
University Merit Scholarship, Babeş-Bolyai University	**2002–2007**
Romanian Ministry of Education Scholarship	**2002–2007**
"Petrom" Scholarship, OMV Petrom S.A.	**2002–2007**

TEST SCORES

Ph.D. Candidacy Examination, overall percentage: **89.1%**	**Aug 2008**
GRE Subject: Physics, score: **990 / 990**	**Nov 2006**

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)
Senior Investigator, Division of Developmental Biology,
NICHD, National Institutes of Health
Building 6A Room 2A02
Bethesda, MD 20892, USA
Phone: 301-496-6966
Fax: 301-480-1907
E-mail: clarkda@mail.nih.gov

Alexandre V. Morozov (Ph.D. advisor)
Associate Professor
Department of Physics & Astronomy
Rutgers, The State University of New Jersey
136 Frelinghuysen Road
Piscataway, NJ 08854-8019, USA
Phone: 848-445-1387
Fax: 732-445-4320
E-mail: morozov@physics.rutgers.edu

Steven Henikoff
Member, Fred Hutchinson Cancer Research Center
Investigator, Howard Hughes Medical Institute
Professor, University of Washington, School of Medicine
1100 Fairview Ave. N
Seattle, WA 98109-1024, USA
Phone: 206-667-4515
Fax: 206-667-5889
E-mail: steveh@fhcrc.org

James R. Broach
Professor and Chair, Department of Biochemistry and Molecular Biology
Director, Penn State Hershey Institute for Personalized Medicine
Penn State College of Medicine
500 University Drive
Hershey, PA 17033-0858, USA
Phone: 717-531-8586
Fax: 717-531-7072
E-mail: jbroach@hmc.psu.edu

Alan G. Hinnebusch
Chief, Section on Nutrient Control of Gene Expression
Program in Cellular Regulation and Metabolism, NICHD
National Institutes of Health
Building 6, Room 230
Bethesda, MD 20892, USA
Phone: 301-496-4480
Fax: 301-496-6828
E-mail: alanh@mail.nih.gov

Gordon L. Hager
Chief, Laboratory of Receptor Biology and Gene Expression
Head, Hormone Action and Oncogenesis Section
Center for Cancer Research, NCI, NIH
Building 41, Room B-602
Bethesda, MD 20892, USA
Phone: 301-496-9867
Fax: 301-496-4951
E-mail: hagerg@dce41.nci.nih.gov