

Răzvan V. Chereji

CONTACT

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EDUCATION & RESEARCH

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

Research Fellow

2016–

- 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.

2007–2013

- 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

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***, Ocampo J*, Clark DJ – MNase-sensitive complexes in yeast: nucleosomes and non-histone barriers, In revision, Molecular Cell.

*** These authors contributed equally**

MANUSCRIPTS IN
PREPARATION

1. **Chereji RV***, Ramachandran S*, Henikoff S – Chemical cleavage mapping provides new insights into nucleosome spacing and phasing, In preparation.

*** These authors contributed equally**

2. **Chereji RV**, Elfving N, Bharatula V, 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, In preparation.

3. Johnson TA*, **Chereji RV***, Stavreva DA, Morris S, Hager GL, Clark DJ – Alternate Modes of Glucocorticoid Receptor Interaction with Enhancer and Promoter Chromatin, In preparation.

*** These authors contributed equally**

4. 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.

5. 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.

PRESENTATIONS

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| 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 Seminar, NIH, Bethesda, MD (seminar) | 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 |
| PGD Seminar, NIH, Bethesda, MD (seminar) | May 2015 |
| 11 th Annual NICHD Fellows Meeting, Washington, DC (poster) | May 2015 |
| Chromatin-DECODE Seminar, NIH, Bethesda, MD (invited talk) | Apr 2015 |
| NCI Symposium on Chromosome Biology, NIH, Bethesda, MD (poster) | Apr 2015 |
| Keystone Symposia: DNA Methylation / Epigenomics, Keystone, CO (poster) | Mar 2015 |
| APS March Meeting, San Antonio, TX (invited talk + contributed talk) | Mar 2015 |
| Biophysical Society 59 th Annual Meeting, Baltimore, MD (poster) | Feb 2015 |
| CSHL Epigenetics & Chromatin Meeting, Cold Spring Harbor, NY (poster) | Sep 2014 |
| PGD Seminar, NIH, Bethesda, MD (seminar) | Jun 2014 |

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| | 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 58th Annual Meeting, San Francisco, CA (poster) | Feb 2014 |
| | BioMaPS Institute for Quantitative Biology Student Seminar, Rutgers University, Piscataway, NJ (invited talk) | Sep 2013 |
| | National Institutes of Health, Bethesda, MD (invited talk) | Jun 2013 |
| | University of California San Francisco, San Francisco, CA (invited talk) | Jun 2013 |
| | 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 <ul style="list-style-type: none"> • Independent: Biophysical Journal, Epigenetics, PLoS ONE • Jointly with my adviser: Genome Research Service <ul style="list-style-type: none"> • Co-chair of the DDB Fellows' seminar committee • Member of the Chromatin-DECODE seminar committee Member <ul style="list-style-type: none"> • American Physical Society, Biophysical Society | 2015– 2016– |
| 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% GRE Subject: Physics, score: 990 / 990 | Aug 2008 Nov 2006 |

TECHNICAL SKILLS

Programming/Scripting Languages

- Currently used: MATLAB, R, 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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NICHD, National Institutes of Health
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Alexandre V. Morozov (Ph.D. advisor)

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Steven Henikoff

Member, Fred Hutchinson Cancer Research Center
Investigator, Howard Hughes Medical Institute
Professor, University of Washington, School of Medicine
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James R. Broach

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Alan G. Hinnebusch

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Program in Cellular Regulation and Metabolism, NICHD
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Gordon L. Hager

Chief, Laboratory of Receptor Biology and Gene Expression
Head, Hormone Action and Oncogenesis Section
Center for Cancer Research, NCI, NIH
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