

# Răzvan V. Chereji

## CONTACT

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GitHub: [rchereji](https://github.com/rchereji)

## 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                | <b>2009</b>             |
| <b>Silver Medal</b> at the International Physics Olympiad, Indonesia | <b>2002</b>             |
| Excellency Diploma awarded by the President of Romania               | <b>2001, 2002</b>       |
| <b>Bronze Medal</b> at “Tuymaada” International Olympiad, Russia     | <b>2001</b>             |
| <b>First Prize</b> at Romanian National Physics Olympiad             | <b>1999, 2000, 2002</b> |

## PUBLICATIONS

11. Ocampo J\*, **Chereji RV\***, Eriksson PR, Clark DJ – Interplay among different ATP-dependent chromatin remodeling machines determines nucleosome spacing on active and inactive genes, *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

- |                                                                                                              |                 |
|--------------------------------------------------------------------------------------------------------------|-----------------|
| CSHL Epigenetics & Chromatin Meeting,<br>Cold Spring Harbor, NY (poster)                                     | <b>Sep 2016</b> |
| NICHD Scientific Retreat, NIH, Bethesda, MD (poster)                                                         | <b>Sep 2016</b> |
| 12 <sup>th</sup> Annual NICHD Fellows Meeting, Washington, DC (poster)                                       | <b>Apr 2016</b> |
| APS March Meeting, Baltimore, MD (contributed talk)                                                          | <b>Mar 2016</b> |
| Biophysical Society 60 <sup>th</sup> Annual Meeting, Los Angeles, CA (poster)                                | <b>Feb 2016</b> |
| PGD Seminar, NIH, Bethesda, MD (seminar)                                                                     | <b>Jan 2016</b> |
| NIH Research Festival, NIH, Bethesda, MD (poster)                                                            | <b>Sep 2015</b> |
| 34 <sup>th</sup> Summer Symposium in Molecular Biology,<br>Penn State University, State College, PA (poster) | <b>Jul 2015</b> |
| FASEB conference: Transcription, Chromatin, and Epigenetics,<br>Palm Beach, FL (poster)                      | <b>Jun 2015</b> |
| PGD Seminar, NIH, Bethesda, MD (seminar)                                                                     | <b>May 2015</b> |
| 11 <sup>th</sup> Annual NICHD Fellows Meeting, Washington, DC (poster)                                       | <b>May 2015</b> |
| Chromatin-DECODE Seminar, NIH, Bethesda, MD (invited talk)                                                   | <b>Apr 2015</b> |
| NCI Symposium on Chromosome Biology, NIH, Bethesda, MD (poster)                                              | <b>Apr 2015</b> |
| Keystone Symposia: DNA Methylation / Epigenomics,<br>Keystone, CO (poster)                                   | <b>Mar 2015</b> |
| APS March Meeting, San Antonio, TX (invited talk + contributed talk)                                         | <b>Mar 2015</b> |
| Biophysical Society 59 <sup>th</sup> Annual Meeting, Baltimore, MD (poster)                                  | <b>Feb 2015</b> |
| CSHL Epigenetics & Chromatin Meeting,<br>Cold Spring Harbor, NY (poster)                                     | <b>Sep 2014</b> |
| PGD Seminar, NIH, Bethesda, MD (seminar)                                                                     | <b>Jun 2014</b> |

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|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
|                            | NICHD Scientific Retreat, NIH, Bethesda, MD (poster)                                                                                                                                                                                                                                                                                                                                                             | <b>Jun 2014</b>                                                                                                                                    |
|                            | 10 <sup>th</sup> Annual NICHD Fellows Meeting, Washington, DC (poster)                                                                                                                                                                                                                                                                                                                                           | <b>Apr 2014</b>                                                                                                                                    |
|                            | APS March Meeting, Denver, CO (contributed talk)                                                                                                                                                                                                                                                                                                                                                                 | <b>Mar 2014</b>                                                                                                                                    |
|                            | Biophysical Society 58th Annual Meeting,<br>San Francisco, CA (poster)                                                                                                                                                                                                                                                                                                                                           | <b>Feb 2014</b>                                                                                                                                    |
|                            | BioMaPS Institute for Quantitative Biology Student Seminar,<br>Rutgers University, Piscataway, NJ (invited talk)                                                                                                                                                                                                                                                                                                 | <b>Sep 2013</b>                                                                                                                                    |
|                            | National Institutes of Health, Bethesda, MD (invited talk)                                                                                                                                                                                                                                                                                                                                                       | <b>Jun 2013</b>                                                                                                                                    |
|                            | University of California San Francisco, San Francisco, CA (invited talk)                                                                                                                                                                                                                                                                                                                                         | <b>Jun 2013</b>                                                                                                                                    |
|                            | APS March Meeting, Baltimore, MD (contributed talk)                                                                                                                                                                                                                                                                                                                                                              | <b>Mar 2013</b>                                                                                                                                    |
|                            | Biophysical Society 57 <sup>th</sup> Annual Meeting, Philadelphia, PA (poster)                                                                                                                                                                                                                                                                                                                                   | <b>Feb 2013</b>                                                                                                                                    |
|                            | 108 <sup>th</sup> Statistical Mechanics Conference,<br>Rutgers University, Piscataway, NJ (contributed talk)                                                                                                                                                                                                                                                                                                     | <b>Dec 2012</b>                                                                                                                                    |
|                            | The 8 <sup>th</sup> Gotham-Metro Condensed Matter Meeting,<br>The New York Academy of Sciences, New York, NY (poster)                                                                                                                                                                                                                                                                                            | <b>Nov 2012</b>                                                                                                                                    |
|                            | Biophysical Society Pennsylvania Network Meeting,<br>Lehigh University, Bethlehem, PA (poster)                                                                                                                                                                                                                                                                                                                   | <b>Sep 2012</b>                                                                                                                                    |
| PROFESSIONAL<br>ACTIVITIES | <b>Reviewer</b> <ul style="list-style-type: none"> <li>• Independent: Biophysical Journal, Epigenetics, PLoS ONE</li> <li>• Joint with my adviser: Genome Research</li> </ul> <b>Service</b> <ul style="list-style-type: none"> <li>• Co-chair of the DDB Fellows' seminar committee</li> </ul> <b>Member</b> <ul style="list-style-type: none"> <li>• American Physical Society, Biophysical Society</li> </ul> | <b>2015–</b>                                                                                                                                       |
| TEACHING<br>EXPERIENCE     | General Physics II<br>General Physics II<br>Extended Analytical Physics II<br>Extended Analytical Physics I<br>General Physics II<br>Extended Analytical Physics II<br>Extended Analytical Physics I                                                                                                                                                                                                             | <b>Summer 2012</b><br><b>Summer 2010</b><br><b>Spring 2010</b><br><b>Fall 2009</b><br><b>Summer 2009</b><br><b>Spring 2009</b><br><b>Fall 2008</b> |
| SCHOLARSHIPS               | Graduate Assistantship, Rutgers University<br>Teaching Assistantship, Rutgers University<br>Excellence Fellowship, Rutgers University<br>University Merit Scholarship, Babeş-Bolyai University<br>Romanian Ministry of Education Scholarship<br>"Petrom" Scholarship, OMV Petrom S.A.                                                                                                                            | <b>2010–2013</b><br><b>2008–2010</b><br><b>2007–2008</b><br><b>2002–2007</b><br><b>2002–2007</b><br><b>2002–2007</b>                               |
| TEST SCORES                | Ph.D. Candidacy Examination, overall percentage: <b>89.1%</b><br>GRE Subject: Physics, score: <b>990 / 990</b>                                                                                                                                                                                                                                                                                                   | <b>Aug 2008</b><br><b>Nov 2006</b>                                                                                                                 |

## TECHNICAL SKILLS

### **Programming/Scripting Languages**

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

### **Genomics Data Analysis**

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

### **Other skills**

- $\text{\LaTeX}$ , Illustrator, InDesign, Dreamweaver

## REFERENCES

### **David J. Clark** (Post-doctoral advisor)

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### **Alexandre V. Morozov** (Ph.D. advisor)

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### **Steven Henikoff**

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Investigator, Howard Hughes Medical Institute  
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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**

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