

**Curriculum Vitae**  
**Albina Y. Borisevich**

Work:  
Center for Nanophase Materials Sciences  
Oak Ridge National Laboratory  
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**Professional Experience:**

2018-present Senior R&D Staff, Center for Nanophase Materials Sciences, ORNL  
2014-2018 Senior R&D Staff, Materials Science and Technology Division, ORNL  
2006-2013 Research Staff, Oak Ridge National Laboratory  
2002 – 2006 Postdoctoral Research Associate, Oak Ridge National Laboratory  
2000, 2001 Teaching Assistant, University of Pennsylvania  
1998-2002 Research Fellow, University of Pennsylvania

**Education:**

2002 Ph.D. Materials Science, University of Pennsylvania, Philadelphia, PA  
Dissertation: *Investigation of Li-Containing Dielectric Oxides for Microwave Applications*, advisor: Prof. Peter K. Davies  
2001 M.S. Materials Science, University of Pennsylvania, Philadelphia, PA  
1998 B.S. Materials Science, Moscow State University, Moscow, Russia

**Honors and Awards:**

2021 ORNL Awards Night, Award for Outstanding Scholarly Output by a Team  
2018 R&D 100 Award: The Atomic Forge  
2017 Significant Event Award: The Atomic Forge, Oak Ridge National Laboratory  
2015 Significant Event Award: Development of Scanning Electron Nanopositioning System, Oak Ridge National Laboratory  
2011 Materials Research Society Fall Meeting Poster Award  
2010 MS&T Ceramographic contest 1<sup>st</sup> place in “Combined Techniques”, 3<sup>rd</sup> place in “Transmission Electron Microscopy”  
2008 Materials Research Society Fall Meeting Poster Award  
2003 Microscopy Society of America Poster Award, Physical Applications of Microscopy and Microanalysis – first place  
2003 University of Pennsylvania School of Engineering and Applied Science S.J. Stein Prize  
2002 MRS Silver Graduate Student Award (Fall meeting)

**Research interests:** High-resolution structural studies with electron microscopy; structure evolution under external stimuli and across phase transitions

**Peer-reviewed publications:** 242 total, 3 *Science*, 1 *Nature*, 1 *PNAS*, 9 *Nature* family, 6 *Physical Review Letters*, 6 *Nano Letters*, 12 *ACS Nano*, 21 *Adv. Mater.* family,  $h=55$  (Web of Science),  $h=63$  (Google Scholar)

**Selected Publications:**

Juliane Weber, Vitalii Starchenko, Ke Yuan, Lawrence M. Anovitz, Anton V. Ievlev, Raymond R. Unocic, Albina Y. Borisevich, Matthew G. Boebinger, and Andrew G. Stack, Armoring of MgO by a Passivation Layer Impedes Direct Air Capture of CO<sub>2</sub>. *Environ. Sci. Technol.* **57** 14929 (2023)

- Bishnu P Thapaliya, Tao Wang, Albina Y Borisevich, Harry M Meyer III, Xiao-Guang Sun, Mariappan Parans Paranthaman, Craig A Bridges, Sheng Dai, In Situ Ion-Exchange Metathesis Induced Conformal LiF Surface Films on Cathode (NMC811) as a Cathode Electrolyte Interphase, *Adv. Func. Mater.* **33** 2302443 (2023)
- Kyle P. Kelley, Anna N Morozovska, Eugene A Eliseev, Vinit Sharma, Dundar E. Yilmaz, Adri C. T. van Duin, Panchapakesan Ganesh, Albina Borisevich, Stephen Jesse, Peter Maksymovych, Nina Balke, Sergei V Kalinin, Rama K Vasudevan, Oxygen Vacancy Injection as a Pathway to Enhancing Electromechanical Response in Ferroelectrics, *Adv Mater.* **34** 2106426 (2022)
- Ying Yang, Tianyi Chen, Lizhen Tan, Jonathan D Poplawsky, Ke An, Yanli Wang, German D Samolyuk, Ken Littrell, Andrew R Lupini, Albina Borisevich, Easo P George, Bifunctional nanoprecipitates strengthen and ductilize a medium-entropy alloy, *Nature*, **595**, 245 (2021)
- Three-Dimensional Integration of Functional Oxides and Crystalline Silicon for Optical Neuromorphic Computing Using Nanometer-Scale Oxygen Scavenging Barriers, Ortman, J. Elliott; Borisevich, Albina Y.; Kwon, Sunah; Posadas, Agham; Kim, Moon J.; Demkov, Alexander A. *ACS Applied Nano Mater* **4** 2153-2150 (2021)
- (journal cover)** J. H. Jang, Y.-M. Kim, Q. He, R. Mishra, L. Qiao, M.D. Biegalski, A.R Lupini, S.T. Pantelides, S.J. Pennycook, S.V. Kalinin, A.Y. Borisevich, In-Situ Observation of Oxygen Vacancy Dynamics and Ordering in the Epitaxial LaCoO<sub>3</sub> System, *ACS Nano* **11** 6942 (2017).

**Professional Activities:**

- Co-organizer, MRS Spring 2023 Symposium QM04: Charged Topological Defects in Functional Materials
- Co-organizer, 2017 Workshop on the Fundamental Physics of Ferroelectrics and Related Materials, Williamsburg, VA, Feb 2017
- Co-organizer of a 2013 10th Pacific Rim Conference on Ceramic and Glass Technology Symposium on “Advanced Characterization and Modeling of Ceramic interfaces”
- Proceedings volume editor for MRS Spring 2013 Symposium U “Measurements of Atomic Arrangements and Local Vibrations in Nanostructured Materials”
- Organizer of a 2013 APS March Meeting Focus Topic on "Dielectric, Ferroelectric and Piezoelectric Oxides"
- Editorial Board Member for *Frontiers in Materials*, *Scientific Reports*
- Reviewer for *Advanced Materials*, *Nature Materials*, *Nature Communications*, *PNAS*, others

**Postdocs advised:**

- Hye Jung Chang (Sep 2008 –Sept 2010); currently staff scientist at KIST, Seoul, Korea
- Donovan Leonard (Jan 2010 – May 2011); currently Senior TEM/Hardware engineer at Microsoft, Delft, Netherlands
- Jun He (with S. Pantelides, Oct 2009-June 2012), currently at UT Knoxville
- Young-Min Kim (Nov 2010-Nov2012), currently Associate Professor at Sungkyunkwan University, Suwon, Korea
- Jae Hyuck Jang (June 2012-Feb 2015), currently staff scientist at KBSI, Daejeon, Korea
- Qian He (Jan 2013-May 2016), currently Assistant Professor at National University of Singapore
- Rohan Mishra (with S. Pantelides, Sept 2012-June 2015), currently Associate Professor at Washington University at St. Louis
- Saurabh Ghosh (with S. Pantelides, June 2015-May 2017) – currently Research Associate Professor at SRM University, Chennai, India
- Axiel Yael Birenbaum (with V. Cooper August 2016-November 2018) – currently Cyber Security Consultant, freelance, Germany