

MICHAEL J. MILLS
Taine G. McDougal Professor of Engineering

Department of Materials Science and Engineering

The Ohio State University
2136 Fontana Lab,
140 W. 19th Avenue Columbus, OH 43210
E-mail: mills.108@osu.edu

Tel: (614) 313 – 0337

Fax: (614) 292 – 1537

EDUCATION

Ph.D. in Materials Science and Engineering, Stanford University, 1985.
M.S. in Materials Science and Engineering, Stanford University, 1981.
B.S. in Materials Science and Engineering, San Jose State University, 1980.

POSITIONS HELD

- Department Chair, Materials Science and Engineering, The Ohio State University, 2019-present.
- Visiting Professor, University of California and the National Center for Electron Microscopy/Molecular Foundry, Lawrence Berkeley National Laboratory July 2016.
- Interim Department Chair, Materials Science and Engineering, The Ohio State University, 2014-2015.
- Visiting Professor, Ruhr University, Bochum, Germany, March-April 2010.
- Associate Director, Institute for Materials Research, The Ohio State University, 2007-2014.
- Taine G. McDougal Professor of Engineering, June 2004-present.
- Visiting Professor, University Paris, Institut Galilee, June-July 2005.
- Professor, The Ohio State University, October 2000-present.
- Associate Professor, The Ohio State University, September 1994 – 2000.
- Senior Member of Technical Staff, Sandia National Laboratories, 1988-94.
- Visiting Professor, Ecole Polytechnique Fédérale Lausanne, 1991 and 1994.
- Research Associate, Ecole Polytechnique Fédérale Lausanne, 1985-88.
- Research Assistant, Stanford University, 1980-85
- Research Assistant, Hewlett-Packard Integrated Circuits Processing Laboratory, 1978-80.

AWARDS

- 2022 Honorary doctorate from the Ruhr University, Bochum
- 2021 Heyn Medal of Honor from the DGM (Deutsche Gesellschaft für Materialkunde)
- 2018 Oleg D. Sherby Award from the Metals, Minerals, and Materials Society (TMS)
- 2018 Alexander Von Humboldt Research Award
- 2016 Visiting Professor, University of California, Berkeley
- 2014 Fellow of TMS
- 2011 Fellow of the American Society for Metals
- 2009 Lumley Research Award from College of Engineering, The Ohio State University
- 2004 Jacquet-Lucas Award from the International Metallographic Society and the American Society of Metals

- 2004 Lumley Interdisciplinary Research Award from College of Engineering, The Ohio State University
- 2003 Lumley Research Award from College of Engineering, The Ohio State University
- Miller Visiting Professorship, University of California, Berkeley, 2001
- Warren F. Savage Award for Best Paper in the Journal of the Welding Society for 1999
- 1999 Lumley Research Award from College of Engineering, The Ohio State University
- 1998 American Society for Metals Silver Medal
- 1996 Alexander Von Humboldt Research Fellowship
- 1992 U.S. Department of Energy, Office of Basic Energy Sciences, Materials Sciences Award for Outstanding Research in Metallurgy and Ceramics

SYNERGISTIC ACTIVITIES

- Developing and applying advanced characterization methods such as near-atomic scale EDS and diffraction contrast STEM imaging for the study of composition and defect structures in wide range of commercial structural alloys, including Ni-base and Co-base superalloy, titanium alloys, ferritic steels, shape memory alloys, aluminum alloys; and high entropy alloys.
- Served as Chair/Organizer for ICSMA 12 (International Conference on Strength of Materials); Chair of Integrative Aspects of Intermetallic Compounds at the Fall MRS Meeting, 2004; Co-Chair of Plasticity from the Atomic Scale to Constitutive Laws, TMS Annual Meeting, 2007; Program Committee for Superalloys 2012; Member of TMS Innovation Committee; Co-Chair of 2013 Gordon Conference on Physical Metallurgy; Co-Chair for ICOMAT 2017 (International Conference on Martensitic Transformations); Chair/Organizer (with P. M. Anderson) of ICSMA 18, held July 15-18 at The Ohio State University with 350 attendees.
- Co-participant in the Materials Science and Engineering Day in which students from area high schools (around 100 per year), including those from under-represented groups, learn about materials science and engineering. Led joint projects with undergraduates from Central State University on alloy microstructure and properties.
- Member of University Committee on Project CEOS, an NSF funded program on Comprehensive Equity at Ohio State, focused on improving the recruitment and retention of women faculty.
- Chair of the Peer Mentorship Committee of the Department of Materials Science at the Ohio State University (2014-2018).

COLABORATORS

(a) Graduate and Postdoctoral Advisors

PhD Advisor – William D. Nix, Stanford University; *Post-doc Advisor* – Jean-Luc Martin, EPFL

(c) Advisees (total: 32 PhD; 9 MS; 1 current graduate students; 14 Post-doctoral scholars, 2 current)

PhD Thesis:

- Srinivasan Rajagopalan (Exxon-Mobil Research Lab) 1999
- Satyarth Suri (Intel Corp) Aug 2000

- Thirumalai Neeraj (Exxon-Mobil Research Lab) Sept 2000
- Michael F. Savage (Assa Abloy) 2000
- Mark C. Carroll (Honeywell Inc) 2001
- Professor Karthik Subramanian (Indian Institute of Science-Bangalore) 2003
- Libor Kovarik (Pacific Northwest Lab) 2006
- David Norfleet (DVN Inc.) 2007
- Kinga Unocic (Oak Ridge National Lab) 2008
- Raymond Unocic (Oak Ridge National Lab) 2008
- Ryan Dehoff (Oak Ridge National Lab) 2008
- Matthew Brandes (Virginia Commonwealth Medical Program) 2008
- Badri Narayanan (Lincoln Electric Corp) 2009
- Professor Eric Payton (University of Cincinnati) 2009
- Ben Morrow (Los Alamos National Lab) 2011
- Patrick J. Phillips (JEOL Inc.) 2012
- Professor Jennifer Walley (Case Western Reserve University) 2012
- Fan Yang (BF Goodrich) 2012
- Daniel Coughlin (Los Alamos National Laboratory) 2013
- Hallee Deutchman (Fast Radius Corp.) 2013
- Matthew Bowers (Exponent Inc.) 2014
- Donald McAllister (Timken, Columbus) 2016
- Timothy Smith (NASA Glenn) 2016
- Lee Casalena (ThermoFisher) 2017
- Katalun Wertz (Air Force Research Lab) 2019
- Connor Slone (Exponent Inc) 2019
- Harrison Collin Whitt (Toso Inc) 2019
- Nicholas Krutz (GE Aviation) 2020
- Alejandro Hinojos (Sandia National Laboratories) 2023
- Colleen Hilla (Savannah River National Laboratory) 2023
- Ashton Egan (Friedrich-Alexander-Universität Erlangen) 2023
- Semanti Mukhopadhyay (Pacific Northwest Laboratories) 2023

Masters Thesis:

- Professor Paul R. Brenner (University of Notre Dame) 2000
- Patrick Wurm (Abbott) 2002
- Joseph Tatalovich (Abbott Laboratory) 2003
- Junho Moon (Samsung) 2005
- Steven Polasik (DNV Inc). 2005
- Daniel Corwin (Turbine Standard Ltd) 2007
- Katalun May (AK Steel) 2010
- Jonghan Kwon (Carnegie-Mellon Univ) 2012
- Katrina Boos (AFRL) 2017

Post-Doctoral Scholars:

- D-H. Vincent Hou (Micron Inc)
- Professor Perera I. Gouma (The Ohio State University)

- Peter M. Sarosi (ExxonMobil Research)
- Professor Dhriti Bhattacharyya (Australian Nuclear Sci. Tech. Org.)
- Holger Brehm (Fraunhofer Institute-Freiburg)
- Yi-Yun Li (Taiwan Semiconductor Manufacturing Company)
- Limei Yang (University of Sydney)
- Professor Martin F.-X. Wagner (Technical University Chemnitz, Institute of Materials Science and Engineering)
- Professor G. Babu Viswanathan (Research Professor, The Ohio State University)
- Tetsuya Matsunaga (NIMS)
- Professor Christopher Zenk (Friedrich-Alexander-Universität Erlangen)
- Jiashi Miao (OSU)
- Milan Hezcko (Czech Academy of Sciences)
- Veronika Mazanova (Czech Academy of Sciences)
- Gregory Sparks (UDRI)

Current Graduate Students:

Bryan Crossman

Current Post-Doctoral Scholars:

Jiashi Miao

COURSES TAUGHT (multiple offerings)

- MSE 205: Introduction to Materials Science and Engineering
- MSE 2010: Introduction to Materials Science and Engineering
- MSE 282: Materials Characterization Laboratory
- MSE 342: Microstructure and Characterization of the Materials
- MSE 565: Crystalline Defects
- MSE 715: Characterization of Materials (Graduate Level)
- MSE 855: Advanced Transmission Electron Microscopy (Graduate Level)
- MSE 3331: Junior Laboratory
- MSE 6747: Structure of Materials (Graduate Level)
- MSE 3261: Mechanical Behavior of Materials
- MSE 5761.71: Mechanical Behavior at Lower Temperatures
- MSE 5761.72: Mechanical Behavior of Materials at Higher Temperatures
- MSE 8755: Advanced Transmission Electron Microscopy

RESEARCH FUNDING

Funding from a diverse set of federal, industry, and state sources. Total funding since arriving at OSU in 1994 is over \$50M (\$40.5M in total funding on projects for which he is PI).

PEER REVIEWED JOURNAL ARTICLES

Google Scholar: <https://scholar.google.com/citations?user=ry6SassAAAAJ&hl=en>

1. M. J. Mills, J. C. Gibeling and W. D. Nix, "A Dislocation Loop Model for Creep of Solid Solutions Based on the Steady State and Transient Creep Properties of Al-5.5 at% Mg," *Acta Metall.*, **33**, p. 1503 (1985).
2. M. J. Mills, J. C. Gibeling and W. D. Nix, "Measurement of Anelastic Creep Strains in Al-5.5 at% Mg Using A New Technique: Implications for the Mechanism of Class I Creep," *Acta Metall.*, **34**, p. 915 (1986).
3. M. J. Mills and P. Stadelmann, "The Structure of Asymmetrical Tilt Boundaries Formed During Creep of [112] Oriented Aluminum Single Crystals," *J. de Physique*, **49**, p. C5-257, (1988).
4. M. J. Mills and P. Stadelmann, "A Study of the Structure of Lomer and 60° Dislocations in Aluminum Using High Resolution Transmission Electron Microscopy," *Phil. Mag. A*, **60**, p. 355 (1989).
5. M. J. Mills, "Determination of Compositional Ordering at Grain Boundaries in Boron-Doped Ni₃Al," *Scripta Metall.*, **23**, pp. 2061 (1989).
6. U. Dahmen, C. J. D. Hetherington, M. A. O'Keefe, K. H. Westmacott, M. J. Mills, M. S. Daw and V. Vitek, "Atomic Structure of a \square 99 Grain Boundary in Aluminum: A Comparison between Atomic Resolution Observation and Pair-Potential and Embedded Atom Simulations," *Phil. Mag. Lett.*, **62**, p. 327 (1990).
7. N. Baluc, H. P. Karnthaler and M. J. Mills, "Weak Beam Observation of the Four-Fold Dissociation of Superlattice Dislocations and the Determination of the Fault Energies in Ni₃(Al,Ta)," *Phil. Mag. A*, **64**, p. 137 (1991).
8. K. J. Hemker, M. J. Mills and W. D. Nix, "An Investigation of the Creep Properties of Ni₃Al Single Crystals at Intermediate Temperatures", *Acta Metall. Mater.*, **39**, p. 1901 (1991).
9. M. J. Mills, S. H. Goods, S. M. Foiles and J. R. Whetstone, "The Influence of Boron Segregation on the Structure and Mechanical Properties of Boundaries in Bicrystals of Ni₃Al," *Scripta Metall.*, **25**, p. 1283 (1991).
10. J. M. Pennison, U. Dahmen and M. J. Mills, "HREM Study of a \square 3 (112) Twin Boundary in Aluminum," *Phil. Mag. Lett.*, **64**, p. 277 (1991).
11. M. J. Mills and M. S. Daw, "High Resolution Transmission Electron Microscopy of Interfaces in Metals and Correlation with Atomistic Calculations," *Ultramicroscopy*, **40**, p. 247 (1992).
12. M. J. Mills and D. C. Chrzan, "Dynamical Simulation of Dislocation Motion in L1₂ Compounds," *Acta Metall. Mater.*, **40**, p. 3051 (1992).
13. K. J. Hemker, M. J. Mills and W. D. Nix, "A Critical Analysis of Existing Models for Plastic Flow in Ni₃Al: Comparisons with Transient Deformation Experiments," *J. Mater. Res. Soc.*, **7**, p. 2059 (1992).

14. D. C. Chrzan and M. J. Mills, "Criticality in the Plastic Deformation of Ni₃Al," *Phys. Rev. Lett.*, **69**, p. 2795 (1992).
15. T. A. Friedmann, K. F. McCarty, E. J. Klaus, H. A. Johnsen, M. J. Mills, D. K. Ottesen and R. H. Stulen, "Ion-Assisted Pulsed Laser Deposition of Cubic Boron Nitride on Si (100) Substrates," *Appl. Phys. Lett.*, **61**, p. 2406 (1992).
16. K. J. Hemker, B. Viguier and M. J. Mills, "Dislocation Core Structures in the Ordered Intermetallic Alloy TiAl," *Mater. Sci. Eng. A*, **164**, p. 391 (1993).
17. M. H. Yoo, S. L. Sass, C. L. Fu, M. J. Mills, D. M. Dimiduk and E. P. George, "Deformation and Fracture of Intermetallics," *Acta Metall. Mater.*, **41**, p. 987 (1993).
18. M. J. Mills, "High Resolution Transmission Electron Microscopy and Atomistic Calculations of Grain Boundaries in Metals and Intermetallics," *Mat. Sci. and Eng. A*, **166**, p. 35 (1993).
19. D. C. Chrzan and M. J. Mills, "Collective Behavior and Superdislocation Motion in Ni₃Al," *Mater. Sci. Eng., Mater. Sci. Eng. A*, **164**, p. 82 (1993).
20. M. J. Mills and D. B. Miracle, "The Structure of <100> and <110> Dislocation Cores in NiAl," *Acta metall. mater.*, **41**, p. 85 (1993).
21. K. J. Hemker and M. J. Mills, "Measurement of APB and CSF Energies in Binary and Boron-Doped Ni₃Al Using Weak Beam TEM," *Phil. Mag A*, **68**, p. 305 (1993).
22. T. A. Friedmann, P. Mirkarimi, D. L. Medlin, K. F. McCarty, E. J. Klaus, D. R. Boehme, H. A. Johnsen, M. J. Mills, D. K. Ottesen, J. C. Barbour, "Ion-Assisted Pulsed Laser Deposition of Cubic Boron Nitride Films," *J. Appl. Phys.*, **76**, p. 3088-3101 (1994).
23. M. J. Mills, M. S. Daw and S. M. Foiles, "High Resolution Transmission Electron Microscopy Studies of Dislocation Cores in Metals and Intermetallic Compounds," *Ultramicroscopy*, **56**, pp. 79-93 (1994).
24. S. H. Stobbs, D. L. Medlin, M. J. Mills and W. M. Stobbs, "A Comparison of the Analysis of the Fresnel Contrast in High-Resolution and Low-Resloution Images for the Characterization of the Rigid-Body Displacements at a Grain Boundary," *Journal of Microscopy*, **176**, pp. 45-53 (1994).
25. D. L. Medlin, T. A. Friedmann, P. B. Mirkarimi, M. J. Mills, K. F. McCarty, "Evidence for Rhombohedral Boron-Nitride in Cubic Boron-Nitride Films Grown by Ion-Assisted Deposition," *Phys. Rev. B*, **50**, pp. 7884-7887 (1994).
26. D. L. Medlin, T. A. Friedmann, P. B. Mirkarimi, P. Rez, M. J. Mills, K. F. McCarty, "Microstructure of Cubic Boron-N-tride Thin-Films Grown by Ion-Assisted Pulsed-Laser Deposition," *J. Appl. Phys.*, **76**, pp. 295-303 (1994).
27. T. A. Friedmann, K. F. McCarty, E. J. Klaus, J. C. Barbour, W. M. Clift, H. A. Johnsen, D. L. Medlin, M. J. Mills, D. K. Ottesen, "Pulsed-Laser Deposition of BN onto Silicon (100) Substrates at 600°C," *Thin Solid Films*, **237**, pp. 48-56 (1994).

28. K. F. McCarty, M. J. Mills, D. L. Medlin, T. A. Friedmann, "Growth and Characterization of Epitaxial Cubic Boron Nitride Films on Silicon - Comment", *Phys. Rev. B*, **50**, pp. 8907-8910, (1994).
29. D. C. Chrzan and M. J. Mills, "Criticality in the Plastic Deformation of L1₂ Intermetallic Compounds," *Phys. Rev. B*, **50**, pp. 30 (1994).
30. M. J. Mills, J. E. Angelo, M. S. Daw, J. D. Weinberg and D. B. Miracle, "Fine Structure of a<011> Dislocations and the Mechanical Properties of NiAl in the Hard Orientation," *Mat. Sci. Eng. A*, **A192/193**, pp. 134-141 (1995).
31. D. C. Chrzan, S. H. Goods and M. J. Mills, "Theory of Transient Creep in the L1₂ Intermetallic Compounds Displaying the Yield Strength Anomaly," *Mat. Sci. Eng. A*, **A192/193** pp. 254-264 (1995).
32. J. E. Angelo and M. J. Mills, "Investigations of the Misfit Dislocation Structure at a CdTe(001)/GaAs(001) Interface Using Stillinger-Weber Potentials and High Resolution Transmission Electron Microscopy," *Phil. Mag. A*, **72**, pp. 635-650 (1995).
33. J. M. K. Wiezorek, P. M. DeLuca, M. J. Mills and H. L. Fraser, "Deformation Mechanisms in a Binary Ti-48Al Alloy with Lamellar Microstructure", *Phil. Mag. Lett.*, **75**, pp. 271 (1997).
34. D. L. Medlin, C. B. Carter, J. E. Angelo and M. J. Mills, "Climb and Glide of a/3<111> Dislocations in an Aluminum $\square=3$ Grain Boundary", *Phil. Mag. A*, **75**, pp. 733, (1997).
35. J. M. K. Wiezorek, M. J. Mills and H. L. Fraser, "Deformation and Fracture Characteristics in TiAl at Room Temperature and 800°C," *Mater. Sci. Eng. A*, **234**, pp. 1106-1109, (1997).
36. S. Suri, D.-H. Hou, T. Neeraj, G. S. Daehn, J. M. Scott, R. W. Hayes and M. J. Mills, "Creep of Titanium Alloys at Lower Temperatures", *Mater. Sci. and Eng. A*, **A234-236**, pp. 996 (1997).
37. M. J. Mills, R. Srinivasan and M. S. Daw, "Observation and Modelling of <011> Dislocations in NiAl at Intermediate Temperatures," *Phil. Mag. A*, **77**, pp. 823 (1998).
38. R. Srinivasan, M. F. Savage, M. S. Daw, R. D. Noebe and M. J. Mills, "Decomposition of a<111> and a<101> Dislocations in Hard-Oriented NiAl," *Scripta Mater.*, **39**, pp. 457-464 (1998).
39. M. F. Savage, R. Srinivasan, M. S. Daw, T. Lograsso and M. J. Mills, "Dislocation Processes and Deformation Behavior in (Fe,Ni) Al Single Crystals," *Mater. Sci. Eng. A*, **A258**, p. 20-26 (1998).
40. P. I. Gouma, K. Subramanian, Y-W. Kim, and M. J. Mills, "Annealing Studies of \square -Titanium Aluminides Alloyed with Light Elements for Creep Strengthening", *Intermetallics*, **6**, pp. 689-693 (1998).

41. P. I. Gouma, S. A. Akbar, and M. J. Mills, "Microstructural Characterization of Sensors based on Electronic Ceramic Materials", *Journal of Metals*, **50**, presented as JOM-e, p. 1 (1998).
42. T. W. Nelson, J. C. Lippold and M. J. Mills, "Investigation of Boundaries and Structures in Dissimilar Metal Welds, *Science and Technology of Welding and Joining*, **3**, pp. 249-255 (1998).
43. P.I. Gouma, M. J. Mills, and Y-W. Kim, "Characterization of the Precipitation Process in a TiAl-based Alloy with Carbon and Silicon Additions", *Phil. Mag. Lett.*, **78(1)**, pp.59-66 (1998).
44. S. Suri, G. B. Viswanathan, T. Neeraj and M. J. Mills, "Room Temperature Deformation and Microstructural Characterization of Two Phase $\alpha\text{-}\beta$ Titanium Alloys ,"*Acta.Mater.*, **47**, pp. 1019-1034 (1999).
45. G. B. Viswanathan, V. K. Vasudevan and M. J. Mills, "Modification of the Jogged Screw Model for Creep of γ -TiAl", *Acta Mater.*, **47**, pp. 1399-1411 (1999).
46. T. Neeraj, D.-H. Hou, G. S. Daehn and M. J. Mills, "Phenomenological and Microstructural Analysis of Room Temperature Creep in titanium Alloys", *Acta mater.* **48**, pp.1225-1238 (2000).
47. D. A. Muller and M. J. Mills, "Electron Microscopy: Probing the Atomic Structure and Chemistry of Grain Boundaries, Interfaces and Defects," *Mater. Sci. Eng. A*, **260**, pp. 12-28 (1999).
48. M. C. Carroll, P. I. Gouma, M. J. Mills, G. S. Daehn and B. R. Dunbar, "Effects of Zn Additions on the Grain Boundary Precipitation and Corrosion of Al-5083," *Scripta Mater.*, **42**, pp. 335 (2000).
49. T. W. Nelson, J. C. Lippold and M. J. Mills, "Nature and Evolution of the Fusion Boundary in Ferritic-Austenitic Dissimliar Weld Metals Part I: Nucleation and Growth", *Welding Journal*, **78**, pp. 3295-3375 (1999).
50. P. I. Gouma, S. Banerjee, and M. J. Mills, "TiO₂-based Gas Sensors as Thick or Thin Films: An Evaluation of the Microstructure", *Ceramic Transactions: Dielectric Ceramic Materials*, **100**, pp. 419-428 (1999).
51. P. I. Gouma, P. K. Dutta and M. J. Mills, "Structural Stability of Titania Thin Films", *NanoStructured Materials*, **11**, pp. 1231-1237 (1999).
52. P. I. Gouma, M. J. Mills and K. H. Sandhage, "The Fabrication of Free-Standing Titania-based Gas Sensors by the Oxidation of Metallic Titanium Foils", *J. Am. Ceram. Soc.*, **83**, pp. 1007-1009 (2000).
53. R. Srinivasan; J. Brown; M. S. Daw; R. D. Noebe; M. J Mills, "The mechanics of slip transition at intermediate temperatures in <001>-oriented NiAl single crystals I. Experimental observations of the decomposition of a <111> dislocations in Ni-44 at.% Al", *Phil Mag A*, **80**, p. 2841-2854 (2000).
54. J. Brown; R. Srinivasan; M. J. Mills and M. S. Daw, "The mechanics of slip transition at intermediate temperatures in <001>-oriented NiAl single crystals II: A metastable state for a

- <111>{110} dislocations in NiAl and its role in their decomposition”, *Philosophical Magazine A*, **80**, p. 2855-2870 (2000).
55. R. Srinivasan, G.F. Eggeler and M. J. Mills, “ γ' -cutting as rate-controlling recovery process during high-temperature and low-stress creep of superalloy single crystals”, *Acta Mater.*, **48**, pp. 4867-4878 (2000).
56. P. I. Gouma and M. J. Mills, "Anatase to Rutile Transformation in Powders of Titania", *J. Am. Ceram. Soc.*, **84**, pp. 619-622 (2001).
57. S. Karthikeyan, G. B. Viswanathan, V. K. Vasudevan, Y-W. Kim and M. J. Mills, “Mechanisms and Effect of Microstructure on Creep of TiAl-Based Alloys”, *Structural Intermetallics 2001*, edited by K. J. Hemker, D. M. Dimiduk, H. Clemens, R. Darolia, H. Inui, J. M. Larsen, V. K. Sikka, M. Thomas and J. D. Whittenberger (TMS Publications, 2001), pp. 717-724.
58. R. Srinivasan, M. V. Nathal, M. S. Daw, G. F. Eggeler and M. J. Mills, “Mechanisms of Shearing of γ' Precipitates During High Temperature/ Low Stress Creep of Superalloy Single Crystals”, *Structural Intermetallics 2001*, edited by K. J. Hemker, D. M. Dimiduk, H. Clemens, R. Darolia, H. Inui, J. M. Larsen, V. K. Sikka, M. Thomas and J. D. Whittenberger (TMS Publications, 2001), pp. 423-430.
59. M. F. Savage, J. Tatalovich, M. D. Uchic, M. Zupan, K. J. Hemker and M. J. Mills, “Deformation Mechanisms and Microtensile Behavior of Single Colony Ti-6242Si“ *Mater. Sci. Eng. A*, 319-321, pp. 398-403 (2001).
60. T. Neeraj and M. J. Mills, “Short-Range Order (SRO) and Its Effect on the Primary Creep Behavior of a Ti-6wt% Al Alloy”, *Mater. Sci. Eng. A*, **319-321**, pp. 415-419 (2001).
61. S. Karthikeyan, G. B. Viswanathan, Y-W. Kim, V. K. Vasudevan and M. J. Mills, “Mechanisms and Effect of Microstructure on Creep of TiAl-Based Alloys”, *Creep and Fracture of Engineering Materials and Structures*, ed. J. D. Parker (Institute of Metals, London, 2001), pp. 55-64.
62. G. B. Viswanathan, R. W. Hayes and M. J. Mills, “A Study Based on Jogged-Screw Dislocations for High Temperature Creep in Ti Alloys”, *Mater. Sci. Eng. A*, **319-321**, pp. 706-710 (2001).
63. G. B. Viswanathan, S. Kartikeyan, M. J. Mills and V. K. Vasudevan, “Creep Properties of a Fully Lamellar Ti-48Al-2Cr-2Nb Alloy”, *Mater. Sci. Eng. A*, **319-321**, pp. 833-837 (2001).
64. M.C. Carroll, M. J. Mills, G.S. Daehn, P.I. Gouma, M.F. Savage, and Brady R. Dunbar, “Effects Of Minor Cu Additions on a Zn-Modified Al-5083 Aluminum Alloy”, *Mater. Sci. Eng. A*, **319-321**, pp. 425-428 (2001).
65. S. Karthikeyan, G. B. Viswanathan, V. K. Vasudevan, Y-W. Kim and M. J. Mills, “Mechanisms and Effect of Microstructure on Creep of TiAl-Based Alloys”, *Structural Intermetallics 2001*, edited by K. J. Hemker, D. M. Dimiduk, H. Clemens, R. Darolia, H. Inui, J. M. Larsen, V. K. Sikka, M. Thomas and J. D. Whittenberger (TMS Publications, 2001), pp. 717-724.

66. T. Neeraj and M. J. Mills, "Weak-Fringing Faults in Ti-6wt%Al," *Phil. Mag. A.*, **82**, pp. 779-802 (2001).
67. M. F. Savage, T. Neeraj and M. J. Mills, "Observation of Room Temperature Recovery During Creep of Titanium Alloys," *Metall. Trans. A*, **33**, p. 891 (2002).
68. L. Kovarik, P. I. Gouma, C. Kisielowski, S. A. Court and M. J. Mills, "High resolution transmission electron microscopy study of the early stages of aging in Al-Mg-Cu alloys", *Mat. Sci. Forum*, **396-402**, pp. 1043-1048 (2002).
69. S. Karthikeyan, G. B. Viswanathan, P. I. Gouma, Vijay K. Vasudevan, Y-W. Kim and M. J. Mills, "Mechanisms and Effect of Microstructure on Creep of TiAl-Based Alloys", *Mat. Sci. Eng. A*, **329**, pp. 621-630 (2002).
70. M. C. Carroll, R. G. Buchheit, G. S. Daehn and M. J. Mills, "Optimum trace copper levels for SCC resistance in a Zn-modified Al-5083 alloy", *Mater. Sci. Forum* **396-4**: 1443-1448 (2002).
71. R. W. Hayes, G. B. Viswanathan and M. J. Mills, "Creep behavior of Ti-6Al-2Sn-4Zr-2Mo: I. The effect of nickel on creep deformation and microstructure", *Acta Mater.*, **50**, pp. 4953-4963 (2002).
72. G. B. Viswanathan S. Karthikeyan, R.W. Hayes and M. J. Mills, "Creep Behavior of Ti-6Al-2Sn-4Zr-2Mo: II. Mechanisms of Deformation", *Acta Mater.*, **50**, pp. 4953-4963 (2002).
73. G. B. Viswanathan, S. Karthikeyan and M. J. Mills, "Application of a Modified Jogged-Screw Model for Creep of TiAl and γ -Ti Alloys", *Metall. Mater. Trans. A*, **33A**, pp. 329-336 (2002).
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58. L. Kovarik, S.A. Court, H.L. Fraser, M.J. Mills, "Structural Description of GPB/GPBII zones in Al-Cu-Mg Alloys". In: Hirsch J, Skrotzki B, Gottstein G, editors. Aluminium Alloys: Their Physical and Mechanical Properties. Aachen: Wiley-VCH, p.665 (2008).
59. L. Kovarik and M.J. Mills, "HAADF Imaging and Ab Initio Analysis of GPBII zone in Al-Cu-Mg alloys", Microscopy & Microanalysis (2008).
60. Catherine Rae¹, Vassili Vorontsov², Libor Kovarik³ and Michael Mills' Dislocations in a Ni-based Superalloy during Low Temperature Creep, Eurosuperalloys 2015.

Patents

1. M. J. Mills, K. H. Sandhage, P.-I. Gouma, "Free-Standing Fluid Sensors, Filters, and Catalyst Devices, and Methods Involving Same," U.S. Patent No. 6,689,322, Feb. 10, 2004.
2. M. J. Mills, K. H. Sandhage, P.-I. Gouma, "Free-Standing Fluid Sensors, Filters, and Catalyst Devices, and Methods Involving Same," U.S. Patent No. 6,682,700, Jan. 27, 2004.
3. Mark C. Carroll, Michael J. Mills, Rudolph G. Buchheit, Glenn S. Daehn, Bruce Morere, Paul Kobe, H. S. Goodrich, "5000 series alloys with improved corrosion properties and methods for their manufacture and use," U.S. Application 20040091386, May 13, 2004.

Selected Invited Presentations

1. "High Resolution Electron Microscopy of Defects in Ni₃Al," Annual meeting of the Electron Microscopy Society of America, San Antonio, August 1989.
2. "The Study of Defects in Metals Using High Resolution Transmission Electron Microscopy and Atomistic Calculations," Materials Research Society Spring Meeting, San Francisco, April 1990.
3. "Simulation of High Resolution TEM Images of Defects," International Electron Microscopy Society Meeting, Seattle, August 1990.
4. "The Study of Grain Boundaries Using High Resolution Transmission Electron Microscopy," ASU Winter TEM Symposium, Wickenburg, December 1991.
5. "A Dislocation Model of the Anomalous Flow Behavior in L₁₂ Compounds," Symposium on the Modelling of Deformation, Spring Meeting of the Metallurgical Society, February, 1991.
6. "The Structure and Properties of Grain Boundaries in Ni₃Al," Materials Research Society Fall Meeting, Boston, November 1991.
7. "Dynamical Simulation of Dislocation Motion in L₁₂ Compounds," DOE-Sponsored Workshop on Intermetallic Compounds, San Diego, September 1991, and DOE-Sponsored Workshop on Computational Issues in the Mechanical Behavior of Metals and Intermetallics, Williamsburg, September 1991.
8. "The Structure of Dislocation Cores in Intermetallic Compounds," Frontiers of Electron Microscopy, Oakland, April 1992.

9. "Quantitative High Resolution Transmission Electron Microscopy," National Center for Electron Microscopy Workshop on Quantitative Electron Micrscopy, Berkeley, August 1992.
10. "High Resloution Transmission Electron Microscopy and Atomistic Calculations of Grain Boundaries in Metals and Intermetallics," DOE-Sponsored Workshop on Grain Boundaries and Interface Phenomena in the High Temperature Plasticity of Solids, Berkeley, September 1992.
11. "Strengthening Mechansims in Ordered Intermetallic Compounds," International Conference on the Strength of Metals and Alloys (ICSMA-10)," Sendai, Japan, August 1994.
12. "HRTEM Studies of Dislocation Cores in Metals and Intermetallic Compounds, " International Conference on High-Voltage, High-Resolution Transmission Electron Microscopy," Stuttgart, Germany, February, 1994.
13. "Dislocation Cores and Mechanical Properties in NiAl," TMS Annual Meeting, Las Vegas, NV, February 1995.
14. "HREM of Dislocation Cores in Intermetallic Compounds," Microscopy Society of America, Kansas City, August, 1995.
15. "High Resolution Transmission Electron Microscopy of Grain Boundaries in Metals and Intermetallics," Joint International Meeting of the Japanese Institute of Metals and TMS on Advanced Materials and Technology for the 21st Century, Honolulu, Hawaii, December 1996.
16. "HRTEM Studies of Dislocations and Interfaces in TiAl", Materials Research Society Fall Meeting, Boston, November 1996.
17. "High Resolution Transmission Electron Microscopy of Interfaces and Dislocations in Intermetallics", Joint Meeting of the German, Swiss and Austrian Microscopy Societies, Ravensburg, Germany, September 1997.
18. "Interfaces and Deformation in Titanium Alloys," The David A. Smith Memorial Symposium on Boundaries and Interfaces in Materials, TMS Fall Meeting, Indianapolis, IN, September 1997.
19. "Dislocation Processes and Deformation Behavior in B2 Intermetallic Compounds of the (Ni, Fe) Al Pseudobinary Sysytem," Symposium on Iron Aluminides: Alloy Design, Processing, Properties and Applications, TMS Spring Meeting, San Antonio, February 1998.
20. "Creep of Titanium Aluminides," Kyoto Workshop on Intermetallic Compounds, Kyoto, March 1998.
21. "Mechanisms of Creep in Lamellar TiAl", Workshop on Creep of Titanium Alluminides, Wright-Patterson AFB (Bass Lake), Ohio, May 1998.
22. "Effect of Solute Additions on Dislocation Structure and Deformation of B2 Intermetallic Compounds", Symposium on Solute Effects in Intermetallic Compounds, TMS Annual Meeting, Rosemont, October 1998.
23. "Mechanisms of Creep in Titanium Alloys", Symposium on Creep of Advanced Alloys for the 21st Century, TMS Annual Meeting, February 1999.
24. "The Yield Strength Anomaly", NATO Advanced Study Institute on Multiscale Phenomena in Plasticity, Ouranopolis, Greece, September 1999.
25. "Deformation Core Structure and Deformation Mechanisms in Intermetallic Compounds", TMS Annual Meeting, Nashville, March 2000.
26. "Dislocation Processes in the Deformation of Titanium Aluminides", International Symposium on Structural and Functional Intermetallics, Vancouver, Canada, July 2000.
27. "Deformation Mechanisms in the (Fe, Ni) Al Pseudobinary System", Fall Meeting of the Materials Research Society, Boston, November 2000.

28. "Cutting of Gamma-prime Particles During the High Temperature/Low Stress Creep of Ni-Based Superalloys," International Symposium on the Deformation and Microstructure of Intermetallics, Annual Meeting of TMS, New Orleans, February 2001.
29. "Deformation Mechanisms in Titanium Aluminides," Pacific Rim International Conference on Materials (PRICM-4), Honolulu, December 2001.
30. "Deformation Mechanisms During Creep of Titanium Alloys at Low temperatures," Creep Deformation: Fundamentals and Applications", TMS Spring Meeting, 2002.
31. "Slip Transmission Mechanisms across Alpha/Beta Interfaces in Titanium Alloys", Gordon Research Conference on Physical Metallurgy, Holderness School, July 2002.
32. "Electron Microscopy Based Studies of Engineering Alloys", Keynote lecture at DGM Materials Week, Munich, Germany September 2002.
33. "Low Temperature Creep and Dwell Fatigue in Ti Alloys", 10th World Conference on Titanium Alloys, July 2003
34. "Characterization of Deformation Mechanisms and Nanostructures in Engineering Alloys", Frontiers of Electron Microscopy and Microanalysis (FEMMS-2003), Berkeley, October 2003.
35. "A Modified Jogged-Screw Model For Creep of Titanium Alloys and Titanium Aluminides" TMS Spring Meeting, San Diego, March, 2003.
36. "Connecting Dislocation Fine Structure and High Temperature Creep of Superalloys", TMS Spring Meeting, Charlotte, NC, March, 2004.
37. "Application of A Modified Jogged-Screw Model For Creep Of Titanium Alloys and Titanium Aluminides" Multiscale-Modeling, Materials Resesearch Society Spring Meeting, April 2004.
38. "Deformation Mechanisms and Modeling of Cold Creep and Dwell Fatigue in Titanium Alloys, NUMIFORM-2004, Columbus, OH, June 2004.
39. "A Modified Jogged-Screw Model For Creep of Titanium Aluminides" International Symposium for Titanium Aluminides, Birmingham, July 2004.
40. "Low Temperature Creep Anomalies in Titanium Alloys", Spring Meeting of TMS, San Francisco, CA, February 2005.
41. "Modeling of Creep in Ni-Base Superalloys", Symposium in Honor of Prof. Wolfgang Blum (Keynote), May 11-14, 2005.
42. "Mechanisms and Modeling of Creep in Advanced Structural Materials", AFOSR Workshop on Integration of Characterization, Modeling and Rapid Manufacturing, Bretinau, Germany, May 23-25, 2005.
43. "Microstructure Analysis of Deformation Mechanisms in Ni-Base Superalloys" (Invited), Australian Microscopy and Microanalysis Society, February 6-10, 2006.
44. "Microstructure Analysis of Deformation Mechanisms in Ni-Base Superalloys", Workshop on Alloys for High Temperature Applications, Bayreuth, Germany, September , 2006.
45. "Introduction to the Jogged Screw Model of Creep", Workshop on Alloys for High Temperature Applications, Bayreuth, Germany, September, 2006.
46. "Mechanisms of Deformation in Ni-Base Superalloys at Intermediate Temperatures" (Plenary), International Conference on Strength of Materials, X'ian, China, June 2006.
47. "Deformation Processes in Ni-Base Superalloys" Euromat-Nuremburg August 2007
48. "Size Effects in Dislocation Processes in Microcrystal deformation," TMS Orlando 2008-Symposium in Honor of Prof. Hael Mughrabi
49. "Importance of Reordering in the High Temeprature Deformation of Ni-Base Superalloys," Symposium in Honor of F. R. N. Nabarro, Materials Research Society Spring Meeting (2008)
50. "Mechanisms of Creep in Superalloys at Intermediate Temperatures," (Keynote), International Conference on Creep of Engineering Materials, Bayreuth, June 2008.

51. "Structural Description of GPB/GPBII zones in Al-Cu-Mg Alloys", International Conference on Aluminium Alloys (ICAA11), Aachen, Germany, September 22-26, 2008 (Keynote delivered by L. Kovarik).
52. "Microstructure- and Micromechanism-Sensitive Modeling of Creep and Fatigue in Ni-Base Superalloys", Gordon Research Conference of Physical Metallurgy, Proctor Academy, Andover NH (2009).
53. "Characterization and Modeling of Superalloy Performance," Cambridge University Workshop on Superalloys, Cambridge, England, August 2009.
54. "Creep Deformation in Superalloys: Characterization and Modeling", International Conference on High Temperature and High Strength Structural Materials, Hong Kong, October 2009.
55. "Metastable Phase Formation in Aluminum Alloys," Adelboden Werkstoffseminar, February 2010 (Plenary).
56. "Mechanisms of Deformation in Superalloys", Symposium to Honor Vasek Vitek, TMS Annual Meeting, Seattle, February, 2010.

58. "Observations and Modeling of Transformation-Induced Plasticity During Pseudo-Elastic Deformation in Ni-Ti Microcrystals," SMST Conference, Asilomar, CA, May 16-20 2010 (Plenary).
59. "Microstructure and Creep Behavior of Nanocluster-Strengthened Ferritic Steels," MRS Spring Meeting, San Francisco, April 2010.
60. "Importance of Plasticity in the Pseudoelastic and Shape Memory Behavior of NiTi Alloys", International Conference on Shape Memory and Superelastic Technologies (SMST), Asilomar, CA May 16-20 2010.
61. "Creep, Fatigue and Dwell Fatigue in Polycrystalline Superalloys," EuroSuperalloys, Wildbad Kreuth, Germany, May 2010 (Plenary).
62. "Metastable Phases and Relationship to Mechanical Behavior in Al-Mg-Cu Alloys," PRICM 7 Conference, Cairns, Australia, August 1-5 2010.
63. "Early Stages of Aging in Al Alloys, "Monash Workshop on Advanced Characterisation and Modelling in Metals Research," Melbourne, Australia, August 6-7 2010 (Plenary).
64. "Microstructure, Mechanical Behavior and Modeling of a New Class of High Temperature Shape Memory Alloys," DOE Workshop on Mechanical Behavior and Radiation Effects, Washington DC, September 27-30 2010.
65. "Transformation-Induced Plasticity During Pseudo-Elastic Deformation in Ni-Ti Microcrystals," Symposium in Honor of David Pope, TMS Annual Meeting, 27 Feb - 3 Mar 2011, 2011.
66. "Mechanisms and Modeling of Deformation Processes in Ni Base Superalloys," AFRL Hybrid Disk Workshop, Dayton, Ohio, May 21-23, 2011.
67. "Characterization and Modelling of High Temperature Shape Memory Alloys," Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, May 29-June 1, 2011.
68. "Characterization and Modelling of High Temperature Shape Memory Alloys," International Workshop on the Frontiers of High temperature Structural Materials, Beijing, China, June 23-24, 2011.
69. "Integration of Characterization, Phase Field and Crystal Plasticity Modeling Of Ni-Base Superalloys," First International Conference on Integrated Computational Materials Science and Engineering, Seven Springs, July 10-14, 2011.
70. "Linking Microstructure and Mechanical Behavior of Several High Temperature Shape Memory Alloys," Ruhr University, Bochum, Germany, Sept. 5-7 (2011).
71. "Mechanisms of Deformation in Ni Base Superalloys at Intermediate Temperatures," EUROMAT, Montpellier, France, Sept. 11-14 (2011).

72. "STEM-Based Characterization of Structural Metallic Materials," Frontiers of Electron Microscopy, Sonoma, Sept. 18-22 (2011).
73. "Dislocation Fine Structure and Effects on Mechanical Behavior in Superalloys," Symposium in Honor of Patrick Veyssiére, TMS Annual Meeting, Orlando (2012).
74. "Characterization of Novel Precipitate Phases in Ni-Ti-X Alloys," MSE Departmental Colloquium, University of Illinois, March 26, 2012.
75. "STEM-Based Characterization of Defects in Materials," Workshop on Advances in Characterization of Materials, Los Alamos National Laboratory, April 1-3, 2012.
76. "Characterization of Novel Precipitate Phases in High Temperature Shape Memory Alloys and Understanding Their Effects on Properties," Metallkunde-Kolloquium WERKSTOFFFORSCHUNG für Wirtschaft und Gesellschaft, Lech, Austria, April 16-19 (2012).
77. "Deformation Mechanisms During Creep of Polycrystalline Superalloys," International Workshop on Superalloys, Birmingham, England, May 22-24 (2012).
78. "Mechanisms of Creep and Fatigue in Titanium Alloys," Creep 2012 Conference, Kyoto, Japan, May 27-31 (2012).
79. "Creep Behavior, Characterization and Modeling of a Nanocluster-Strengthened Ferritic Stainless Steel," Kyoto Workshop on High Temperature Materials," Kyoto, Japan, May 31-June 1 (2012).
80. "High Resolution Characterization of the Precipitation Behavior of an Al-Zn-Mg-Cu alloy," International Conference on Aluminum Alloys, Pittsburgh, June 3-7 (2012).
81. "Quantification and Prediction of Structure across the Lengthscales," Metals and Metallic Nanostructures Workshop, University of California, Santa Barbara, June 10-13 (2012).
82. "Creep Behavior, Characterization and Modeling of a Nanocluster-Strengthened Ferritic Stainless Steel," Colloquium at the Oak Ridge National Laboratory, Oak Ridge, July 6 (2012).
83. "Tutorial on STEM Diffraction Contrast Imaging," Microscopy and Microanalysis Society 2012, Phoenix, July 29-August 2 (2012).
84. "Nanocluster-Strengthened Ferritic Stainless Steels: Creep Behavior, Characterization and Modeling," International Conference on Strength of Materials (ICSMA 15), Bangalore, India, August 19-24 (2012).
85. "Deformation Mechanisms During Creep of Polycrystalline Superalloys," Royal Society Meeting on Superalloys by Design, Chicheley Hall, England, April 22-24 (2013).
86. "Characterization of Novel Precipitate Phases in Ni-Ti-Hf Alloys," Shape Memory Alloys Science and Technology (SMST 2013), Prague, Czech Republic, May 19-24 (2013).
87. "STEM-Based Characterization of Defects," Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, May 26-May 28 (2013).
88. "Creep and Fatigue of Titanium Alloys: Mechanisms and Microstructure-Based Modeling," Symposium in Honor of J.C. Williams and M. Loretto, TMS Annual Meeting, February, 2014.
89. "Using and Interpreting STEM based Techniques for Structural and Chemical Analysis of Superalloys," Ruhr University, Bochum, Germany, March 2014.
90. "STEM-Based Characterization of Defects in Metals and Alloys," *Advanced Microscopy of Titanium Alloys and PGMs Workshop*, Nelson Mandela Metropolitan University, Port Elizabeth, March, 2014.
91. "Shearing Mechanisms in Alloy 718," Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, May 26-May 28 (2014).

88. "Observations and Modeling of Dislocation Interactions with Nanoscale Precipitates," Gordon Research Conference on Structural Nanomaterials, Morningside College, The Chinese University of Hong Kong, July (2014).
89. "STEM Based Characterization of Dislocations and Stacking Faults in Structural Materials," Microscopy and Microanalysis Society Meeting, Hartford, CT August (2014).
90. "STEM Based Characterization of Dislocations and Stacking Faults in Structural Materials," IMC2014, Prague, Czech, September (2014).
91. "Deformation Mechanisms in Superalloys: Improved Understanding Via Integrated Characterization and Modeling," OPTIMoM 2014, Pembroke, College, Oxford, UK, September (2014).
92. "Atomic Resolution Energy Dispersive Spectroscopy of Segregation Along SESFs in a Ni-Base Disk Alloys," Superalloys: From Atoms to Turbine Blades, Grainau, Germany, February 2015.
93. "Characterization and Modeling of Transformation-Induced Microstructure Evolution in NiTi Shape Memory Alloy," TMS Spring Meeting, March 2015.
94. TRANSFORMATION AND DEFORMATION MECHANISMS IN HIGH TEMPERATURE SHAPE MEMORY ALLOYS," 4th International Conference on Material Modelling, Berkeley, June 2015.
95. "Advanced Characterization of Deformation Mechanisms in Superalloys," International Conference on the Strength of Materials, Toulouse, France, June, 2015.
96. "Revealing Deformation Mechanisms in Superalloys Using STEM-Based Imaging and Spectroscopy," Electron Microscopy for Biological, Energy, Environment, and Energy Research (EMBEER 2015), July 2015.
97. "Characterizing Novel Deformation Mechanisms in Superalloys," International Conference on the Strength of Materials, Brno, Czech Republic, August 2015.
98. "Revealing Deformation Mechanisms in Superalloys Using STEM-Based Imaging and Spectroscopy," YUCOMAT 2015, Montenegro, August 2015.
99. "Advanced Electron Microscopy at CEMAS," Joint Workshop on Materials Research, Shanghai Jao Tong University, Shanghai, China, December 2015.
100. "Deformation Mechanisms In Superalloys Using Advanced STEM-Based Imaging and Spectroscopy," TMS Annual Meeting, Nashville, February 2016.
101. "Importance of Advanced Characterization Techniques for Understanding of Deformation Behavior in Structural Materials," TMS Structural Materials Division, TMS Annual Meeting, Nashville, February 2016.
102. "Creep and Fatigue Mechanisms in "Commercial" Titanium Alloys," Hexmat 2016, Cambridge, UK, March 2016.
103. "Review of Metallurgical & Microstructural Results of FAA Cold Dwell Program," Federal Aviation Administration Meeting on Cold Dwell Fatigue in Ti Alloys, Air Force Research Labs, Dayton, April 2016.
104. "Segregation at Stacking Faults and Dislocations During Creep in Superalloys," Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, May 2016.
105. "Using STEM-Based Imaging and Spectroscopy to Uncover Deformation Mechanisms in Superalloys," Materials Chain of the University Alliance of the Ruhr Universities, Bochum, Germany, May 2016.
106. "HAADF-STEM Analysis of Dislocation Cores in a High Entropy Alloy," Materials Research Society Fall Meeting, Boston, November 2016.

107. "HAADF and Diffraction Contrast STEM Analysis of Dislocation Cores in a High Entropy Alloy," Symposium on High Entropy Alloys, Ruhr University, Bochum, Germany, January 2017.
108. "New Insights Into Strengthening Mechanisms in Superalloys," 5th ESISM Conference, Kyoto, Japan, January 2017 (**plenary**)
109. "Importance of Reordering in the Intermediate Temperature Deformation of Ni Base Superalloys," Superalloys: From Atoms to Turbine Blades, Grainau, Germany, February 2017 (**plenary**)
110. "Atomic Resolution Analysis of Segregation Along SESFs in Ni-Based Disk Alloys," Symposium on Characterization of Structural Materials, TMS Annual Meeting, February 2017.
111. "New Insights Into Rate Limiting Deformation Processes in Ni-Base Superalloys," Symposium on Deformation Mechanisms in Materials, MRS Spring Meeting, April 2017.
112. "Revealing Deformation Mechanisms in Superalloys Using STEM-Based Imaging and Spectroscopy," MIMW Conference, University of Notre Dame, May 2017 (**plenary**)
113. "Mechanisms of Deformation in FCC Based High Entropy Alloys," Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, May 2017.
114. "New Insights Into Rate Limiting Deformation Processes in Ni-Base Superalloys", Creep 2017, St. Petersburg, Russia, June 2017.
115. "Revealing Transformation Mechanisms in High Temperature SMAs Using Advanced Electron Microscopy," International Conference on Martensitic Transformations (ICOMAT2017), Chicago, July 2017.
116. "Deformation Behavior of a High Entropy NiCoCr Alloy Involving e-Martensite Transformation," International Conference on Martensitic Transformations (ICOMAT2017), Chicago, July 2017.
117. "Revealing Deformation Mechanisms in Structural and Functional Materials Using STEM-Based Imaging and Spectroscopy," International Conference on Materials for Sustainable Systems (ICMaSS2017), Nagoya, Japan, September 2017. (**plenary**)
118. "Phase Transformation Strengthening of Superalloys," Monie A. Ferst Award Presentation in Honor of William D. Nix, Georgia Tech University, November 2017.
119. "Mechanisms of Deformation in FCC Based High Entropy Alloys," TMS Annual Meeting, Symposium on Coupling experiments and modeling to understand plasticity and failure, Phoenix, March 2018.
120. "Deformation by Dislocations, Twinning, and Phase Transformations in Multi-Principal Component FCC Solid Solutions," MRS Fall Meeting, Symposium on High Entropy Alloys, Boston, November 2018.
121. "New Reflections of Twinning in Superalloys and High Entropy Alloys," Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, May 2018.
122. "Deformation by Dislocations, Twinning, and Phase Transformations in Multi-Principal Component FCC Solid Solutions," Gordon Research Conference on Structural Nanomaterials, Hong Kong, August 2018. (**plenary**)
123. "Deformation by Dislocations, Twinning, and Phase Transformations in Multi-Principal Component FCC Solid Solutions," Priority Programme (Schwerpunktprogramm) Compositionally Complex Alloys - High Entropy Alloys, Karlsruhe, March 2019. (**plenary**)
124. Deformation by Dislocations, Twinning, and Phase Transformations in Multi-Principal Component FCC Solid Solutions," TMS Spring 2021.
125. "Localized Phase Transformations: A New Creep Strengthening Mechanism" Workshop on

- Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, September 2021.
126. "Localized Phase Transformations: A New Creep Strengthening Mechanism" Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, September 2021.
127. Mechanisms of Deformation during Monotonic and Cyclic Fatigue of High Entropy FCC Alloys, Symposium on High Entropy Alloys, Bochum, Germany, March 2022.
128. "Discovering Deformation Mechanisms in FCC Based Alloys Using Multi-modal Electron Microscopy Methods," RWTH Aachen University, March 2022.
129. "Deformation by Dislocations, Twinning, and Phase Transformations in Multi-Principal Component FCC Solid Solutions," TMS Spring 2022, Anaheim, CA.
130. "Localized Phase Transformations: A New Creep Strengthening Mechanism", MRS Spring 2022.
131. "Mechansims of Fatigue Deformation in CrCoNi Medium Entropy Alloy," International Conference on Strength of Materials (ICSMA-19), Metz, France, June 2022.
132. "Local Phase Transformation Driven Precipitation on Annealing Twin Boundaries in γ | γ' & γ | γ' | γ'' Alloys," Eurosuperalloys 2022, Bamberg, Germany, September 2022.
133. "Localized Phase Transformations: A New Creep Strengthening Mechanism", MRS Fall, Boston, MA, November 2022.
134. "Localized Phase Transformations: A New Creep Strengthening Mechanism", TMS Spring 2022, Anaheim, CA.
135. "New Developments in Oxide Dispersion strengthening of Metals," Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, May 2023.