

## CURT ALLAN BRONKHORST

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### Professional Interests

Mechanics of Materials, Mathematics, Computational Mechanics, Materials Science

### Experience

UNIVERSITY OF WISCONSIN – MADISON Madison, WI

February 2019 – present

Professor of Applied Mechanics

Department of Mechanical Engineering

Department of Engineering Physics – affiliate appointment

Department of Materials Science and Engineering – affiliate appointment

Honorary Commander – 115<sup>th</sup> Fighter Wing – WI ANG – 2019 – 2024

Faculty Liaison – Astronaut Scholarship Foundation

Advisor – Wisconsin Security Research Consortium

Badger Talks Speaker – Engineering, Mathematics, Physics, Leadership

Mentor – UW Undergraduate Research Scholar Program

NORTHLAND PARTNERS, LLC Verona, WI

March 2019 – present

President

LOS ALAMOS NATIONAL LABORATORY Los Alamos, NM

September 2002 – present

Guest Scientist, Theoretical Division – Fluid Dynamics & Solid Mechanics – 2019 - present

Senior Scientist 5, Theoretical Division – Fluid Dyn. & Solid Mechanics – 2017 - 2019

Scientist 4, Theoretical Division – Fluid Dynamics & Solid Mechanics – 2005 - 2017

Technical Staff Member, Theoretical Division – Fluid Dynamics – 2002 - 2005

DoD/DOE Joint Munitions Program – Comp. Mech. Mats. Project Leader – 2013-2018

MaRIE Scientific Functional Requirements Leader – Metals Dynamics – 2008-2018

MaRIE Board of Directors Member – Theory, Modeling & Computation – 2008-2018

MaRIE Board of Directors Member – Multi-Probe Diagnostic Hall – 2008-2018

Sandia National Laboratory Predictive Engineering Science Panel Member – 2008-2018

DOE Advanced Simulation & Computing - Materials Modeling Project Leader – 2004-2010

Co-Principal Investigator – LDRD 20170033DR *Material Processing to Performance: A Path to Physically-Based Predictive Capability* – 2017-2019.

Co-Investigator, LANL lead – *Transforming Additive Manufacturing through Exascale Simulation*, Office of Science (ASCR) – 2017-2020.

Principal Investigator – LDRD 20150431ER *Sub-Grid Meso-Scale Model for Twinning and Slip Processes* – 2015-2017.  
Co-Investigator – LDRD 20150594ER *Spatial and Extreme Value Processes for Bridging Micro- and Macro-Scales in Materials* – 2015-2017.  
Co-Investigator – LDRD 20120707DR *Accelerating Materials Certification through Co-Design* - 2012-2014.  
Principal Investigator – LDRD 20110615ER *Three-Dimensional Quantification of Metallic Microstructures in the Presence of Damage* – 2011-2012.  
Co-Investigator – LDRD 20110029DR *Innovative and Validated Sub-micron to Meso-scale Modeling of the Evolution of Interface Structure and Properties under Extreme Strains* – 2011-2013.  
Co-Investigator – LDRD 20100026DR *Isolating the Influence of Kinetic and Spatial Effects on Dynamic Damage Evolution* – 2010-2012.  
Principal Investigator – THERMOS plutonium project at U1a/NTS/TA-53 – 2007-2008.

WEYERHAEUSER COMPANY Federal Way, WA  
July 1991 - January 1997, August 1997 – September 2002.  
Senior Research Scientist, Fiber Sciences Research.

WEYERHAEUSER INTERNATIONAL COMPANY Tokyo, Japan  
January 1997 - August 1997.  
Visiting Scientist, Nippon Paper Industries Co., Ltd.

### **Education**

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA  
Doctor of Philosophy, Mechanical Engineering, June 1991.  
Master of Science, Mechanical Engineering, June 1988.

UNIVERSITY OF WISCONSIN - MADISON Madison, WI  
Bachelor of Science, Mechanical Engineering, June 1985.  
Bachelor of Science, Mathematics, June 1985.  
Graduated with Distinction.  
Tau Beta Pi and Phi Kappa Phi Honor Societies membership.

### **Awards and Honors**

2012 Defense Programs Award of Excellence, Implosion Predictive Capability, NNSA, DOE  
2012 Los Alamos Awards Program, ASC Tri-Lab Damage Working Group  
2009 Defense Programs Award of Excellence, W76 Alternate Material Team, NNSA, DOE  
2009 DOE Office of Science Outstanding Mentor Award  
2008 Distinguished Performance Award, THERMOS Project, Los Alamos National Laboratory  
2007 Defense Programs Award of Excellence, THERMOS Project, NNSA, DOE  
2007 Distinguished Performance Award, Radiography Team, Los Alamos National Laboratory  
2007 Defense Programs Award of Excellence, Pu work at LANSCE, NNSA, DOE

### **Professional Affiliations & Service**

International Journal of Plasticity – Associate Editor (2019 – present)  
International Journal for Multiscale Computational Engrng. – Editorial Board (2023 – present)  
ASME Journal of Engineering Materials & Technology – Associate Editor (2014 – 2020)

Int. J. for Multiscale Comp. Eng. – Guest Editor – Damage Micromechanics (vol. 21(2,3), 2023)  
International Journal of Plasticity – Guest Editor – Additive Manufacturing (2021)  
J. Dynamic Behavior of Materials – Guest Editor – High Pressure Plast. (vol. 7(2), 2021)  
Computational Mechanics – Guest Editor (vol. 61(1,2), 2018)  
International Journal of Fracture – Guest Editor (vol. 208(1,2), 2017)  
International Journal of Plasticity – Guest Editor (vol. 26(8), 2010)

ASME Materials Division Executive Committee – December 2020 - present

American Society of Mechanical Engineers (ASME) – Fellow  
The Minerals, Metals & Materials Society (TMS) – Member  
American Physical Society (APS) – Member  
Society of Engineering Science (SES) – Member  
Materials Research Society (MRS) – Member  
European Mechanics Society (EMS) – Member  
American Academy of Mechanics – Member  
Experimental Aircraft Association (EAA) – Member

### **University of Wisconsin Teaching**

EMA 705, Advanced Topics in Finite Elements, Spring 2020  
EMA 703, Plasticity Theory & Physics, Fall 2019/2021/2023, New Course  
EMA 622, Mechanics of Continua, Spring 2020/2021/2023, New Course  
EMA 519, Fracture Mechanics, Spring 2021/2022  
EMA 405, Practicum in Finite Element Method, Fall 2020/2021/2022  
EMA 303, Mechanics of Materials, Fall 2022

### **University of Wisconsin Service**

UW College of Engineering, Defense & Cyber Security Task Force, lead, 2022 - present  
UW – Madison, Faculty Liaison for Astronaut Scholarship Foundation, 2019 - present  
UW College of Engineering, New Undergraduate Lab Design Committee, Chair, 2020  
UW College of Engineering, Computational Infrastructure Committee, 2019 – present  
UW Engineering Physics Department, Associate Chair for Undergraduate Studies, 2020- present  
UW Engineering Physics Department, Post-Tenure Review Committee, 2019-present  
UW Engineering Physics Department, Undergraduate Studies Committee, 2019-present  
UW Engineering Physics Department, Graduate Studies Committee, 2019-present  
UW College of Engineering, Undergraduate Scholarship Review Committee, Summer 2019  
NSF Review Panel P191734, 1630 MOMS: Hard Materials, 4/10/2019  
NSF Review Panel P220381, 1630 MoMS CAREER: Metals/Ceramics/Glasses, 10/25-26/21

### **Student Mentorship**

#### ***Post-doctoral research associates***

Dr. Satyapriya Gupta, since 10/2019 – 10/2020.  
Post-doctoral researcher on the development of new single crystal model for Ni-based superalloys. Funded from the University of Wisconsin Alumni Research Foundation.

*Present Occupation:* University Assistant, Technische Universität Graz.

Dr. Charles Lieou, 3/2018 – 12/2020.

Post-doctoral researcher on development of new theories for the thermodynamic representation of plasticity and dynamic recrystallization. Funded from DoE/DoD LANL Joint Munitions Program.

*Present Occupation:* Research Scientist, University of Tennessee – Knoxville.

Dr. Biao Feng, 8/2016-7/2019.

Post-doctoral researcher on modeling of plasticity and structural phase transformation under shock loading conditions. Funded under DoE LANL Advanced Simulation & Computing Program.

*Present Occupation:* Lead Scientist, Kimberly-Clark Corporation.

Dr. Tao Jin, 10/2016-9/2019.

Post-doctoral researcher on development of computational techniques for representation of localized deformation. Funded from DoE/DoD LANL Joint Munitions Program.

*Present Occupation:* Assistant Professor, Department of Mechanical Engineering, University of Ottawa.

Dr. Anil Kumar, 3/2016-6/2018.

Post-doctoral researcher on DFT calculations probing the linkage between plasticity and structural phase transformation provided partial funding. Funded from LANL Laboratory Directed Research & Development Program and LANL Advanced Simulation & Computing Program.

Dr. Hansohl Cho, 9/2016 – 10/2018.

Post-doctoral researcher on development of computational techniques for representation of localized deformation. Funded from LANL Laboratory Directed Research & Development Program.

*Present Occupation:* Assistant Professor, School of Mechanical and Aerospace Engineering, Korea Advanced Institute of Science and Technology), Daejeon, Republic of Korea.

Dr. Benjamin Hansen, 6/2012 - 9/2015.

Post-doctoral researcher focused on dislocation mechanics and representation within continuum theories of plasticity, funded from LANL Laboratory Directed Research & Development Program.

*Present occupation:* Security Officer, U.S. State Department.

### ***PhD students***

Benjamin Butler, since 9/2023

PhD student working on mechanics and physics of damage in materials. Self-funded.

Raymond Rasmussen, since 9/2023

PhD student working on deformation and phase transformation of RHA martensitic alloy materials. Funded from the CEESEM.

Sam Dunham, since 9/2022

PhD student working on the design of metallic microstructures design to mitigate the nucleation and growth of pores in ductile materials. Funded from the NSF DMREF.

Jack Rees, since 9/2022

PhD student working on the thermo-mechanics of dynamically loaded high-strength steel alloys to enable high energy absorption capabilities. Funded from ARL.

Akhilesh Pedgaonkar, since 9/2020.

PhD student working on the thermo-mechanics deformation twinning via a computational framework to model explicitly deformation twins from nucleation, propagation, growth. Funded from the NSF.

Noah Schmelzer, since 9/2019.

PhD student working to develop a new macro-scale model for ductile damage that is thermodynamics and statistics based. Funded from the DOE.

Sudip Kunda, since 9/2019.

PhD student working in crystal mechanics on a new advanced stress gradient single crystal model to represent the influence of grain size on polycrystal flow stress. Funded from EP TA.

Lampros Svolos, 6/2017 – 8/2020.

Graduate student working with Prof. Haim Waisman at Columbia University. Has spent the past three summers funded under DoE/DoD Joint Munitions Program funding on application of phase field theory to the modeling of damage in metallic materials. Thesis Title: Efficient and Reliable Computational Methods in Coupled Thermo-Mechanical Problems: Shear Bands and Fracture of Metals.

*Present occupation:* Post-doc at Los Alamos National Laboratory, Theoretical Division.

Dr. Thaddeus Low, 6/2016 – 6/2018

PhD student with Prof. Stephen Niezgodka at The Ohio State University. Funded by me for one summer. Provided source code for VUMAT material subroutine. Thesis Title: Investigating the Stability of the  $\alpha/\omega$  Dual Phase Microstructure in Shock Impacted Zr.

*Present occupation:* Technical staff member, ANSYS Corp., Park City, UT.

Dr. Coleman Alleman, 6/2011 - 9/2015

PhD student with Prof. Somnath Ghosh at Johns Hopkins University. Funded by me through LANL ASC funding and co-advised with Ghosh. Developed homogenization theory for representation of polycrystal metallic material response. Thesis title: Distribution Enhanced Methods of Homogenization for Heterogeneous Materials and Multi-Scale Crystal Plasticity Modeling.

*Present occupation:* Technical Staff Member, Sandia National Laboratories, Livermore, CA.

Dr. Darby Luscher, 6/2007 - 9/2010.

PhD student with Prof. David McDowell at GATech. Funded by me through LANL ASC funding and co-advised with McDowell. Developed nonlocal mechanics theory for mitigation of mesh sensitivity under damage loading conditions. Thesis title: A Hierarchical Framework for the Multiscale Modeling of Microstructure Evolution in Heterogeneous Materials.

*Present occupation:* Group Leader, T-3, Los Alamos National Laboratory, Los Alamos, NM.

Dr. Benjamin Hansen - 2/2008 - 6/2011.

PhD with research on the development of dislocation substructure development during deformation, research advisor, academic advisor: Prof. Michael Ortiz, CalTech. Thesis title: Modeling Metallic Single Crystal Plastic Hardening through the Evolution of Dislocation Subgrain Structures.

*Present occupation:* Security Officer, U.S. State Department.

Dr. Michael Tonks - 6/2006 - 5/2010.

PhD with research on representing the statistical variability of large deformation plasticity with mean field theories, academic advisor: Prof. Daniel Tortorelli, UI-UC. Thesis title: Stochastic Mean-Field Polycrystal Plasticity Methods.

*Present occupation:* Professor, Department of Materials Science and Engineering, University Florida.

### ***MS students***

Sabine Zentgraf, 6/2015 - 12/2019.

MSc with research project on grain boundary physics related to nucleation of porosity from dynamic loading conditions, funded from LANL LDRD funding and University of Colorado – Colorado Springs funding.

*Present occupation:* Research Engineer, Los Alamos National Laboratory.

### **Funded Awards**

NSF-CMMI Award Number 2051355, 8/1/21-7/31/24, PI-Bronkhorst, Title: Collaborative Research: Coupled Explicit Thermodynamics of Plasticity - An Innovative Model for Twinning Crystals.

NSF-CMMI Award Number 2118399, 1/1/22-12/31/25, PI-Bronkhorst, Title: DMREF/Collaborative Research: Grain Interface Functional Design to Create Damage Resistance in Polycrystalline Metallic Materials.

DOE/NNSA-LANL Award Number 627234, 8/5/21-9/30/24, PI-Bronkhorst, Title: A Microstructure Sensitive Porosity Evolution Model for Extreme Loading Conditions.

DoD/ARL-Artificial Intelligence and Machine Learning Basic Research, 12/1/23-12/31/25, PI-Bronkhorst, Title: Center of Excellence for Extreme Events in Structurally Evolving Materials (CEESEM).

### **Pending Awards**

DOE/NNSA, 7/1/23-6/30/26, PI-Bronkhorst, Total Request \$488,179, Title: Extreme Event Response of Strategic Materials to Dynamic Insult.

## In-Process Journal Publications

Zhang, Y., Chen, N., Bronkhorst, C. A., Cho, H., Argus, R., (2023). *Data-Driven Statistical Reduced-Order Modeling and Quantification of Polycrystal Mechanics Leading to Porosity-Based Ductile Damage*. J. Mech. Phys. Solids, under review.

## Journal Publications

70. Lee, S., Cho, H., Bronkhorst, C. A., Clausen, B., Pokharel, R., Brown, D. W., Anghel, V., Gray III, G. T., (2023). *Deformation, Dislocation Evolution and the Non-Schmid Effect in Body-Centered-Cubic Single- and Polycrystal Tantalum*, Int. J. Plasticity 163, 103529.  
<https://www.sciencedirect.com/science/article/pii/S0749641923000153>
69. Vogler, T. J., Brown, J. L., Bronkhorst, C. A., (2021). *High-Pressure Dynamic Strength of Materials*, J. Dyn. Behavior Mats. 7, 169. <https://link.springer.com/article/10.1007/s40870-021-00308-5>
68. Svolos, L., Mourad, H. M., Bronkhorst, C. A., Waisman, H. (2021). *Anisotropic Thermal-Conductivity Degradation in the Phase-Field Method Accounting for Crack Directionality*, Engr. Fracture Mech. 245, 107554.  
<https://www.sciencedirect.com/science/article/pii/S0013794421000266>
67. Foster, R. C., Vander Wiel, S. A., Anghel, V., Bronkhorst, C. A. (2021). *Towards Random Generation of Microstructures of Spatially Varying Materials from Orthogonal Sections*. Comp. Mats. Sci. 192, 110313. <https://www.sciencedirect.com/science/article/pii/S0927025621000380>
66. Gupta, S., Bronkhorst, C. A. (2021). *Crystal Plasticity Model for Single Crystal Ni-based Superalloys: Capturing Orientation and Temperature Dependence of Flow Stress*, Int. J. Plasticity 137, 102896. <https://www.sciencedirect.com/science/article/pii/S0749641920304332>
65. Bronkhorst, C. A., Cho, H., Marcy, P. W., Vander Wiel, S. A., Gupta, S., Versino, D., Livescu, V., Gray III, G. T. (2021). *Local Micro-Mechanical Stress Conditions Leading to Pore Nucleation during Dynamic Loading*, Int. J. Plasticity 137, 102903.  
<https://www.sciencedirect.com/science/article/pii/S0749641920307488>
64. Lieou, C. K. C., Bronkhorst, C. A. (2021). *Thermomechanical Conversion in Metals: Dislocation Plasticity Model Evaluation of the Taylor-Quinney Coefficient*, Acta Mat. 202, 170.  
<https://www.sciencedirect.com/science/article/pii/S1359645420308351>
63. Feng, B., Bronkhorst, C. A., Liu, Z., Morrow, B. M., Cerreta, E. K., Li, W. H., Daphalapurkar, N. P. (2020). *Three-Dimensional Modeling and Simulations of Single-Crystal and Bi-Crystal Titanium for High-Strain-Rate Loading Conditions*, Int. J. Plasticity 133, 102771.  
<https://www.sciencedirect.com/science/article/pii/S0749641919307338>
62. Lieou, C. K. C., Bronkhorst, C. A. (2020). *Thermodynamic Theory of Crystal Plasticity: Formulation and Application to Polycrystal FCC Copper*, J. Mech. Phys. Solids 138, 103905.  
<https://www.sciencedirect.com/science/article/pii/S0022509620301411>
61. Svolos, L., Bronkhorst, C. A., Waisman, H. (2020). *Thermal-conductivity degradation across cracks in coupled thermo-mechanical systems modeled by the phase-field fracture method*, J. Mech. Phys. Solids 137, 103861.  
<https://www.sciencedirect.com/science/article/pii/S0022509619309317>

60. Marcy, P. W., Vander Wiel, S. A., Storlie, C. B., Livescu, V., Bronkhorst, C. A. (2020). *Modeling Material Stress using Integrated Gaussian Markov Random Fields*. J. Appl. Statistics 47, 1616-1636. <https://www.tandfonline.com/doi/full/10.1080/02664763.2019.1686131>
59. Jin, T., Mourad, H. M., Bronkhorst, C. A., Beyerlein, I. J. (2019). *Incorporation of Deformation Twinning in Single-Crystal Elasto-Viscoplasticity Model with Embedded Weak Discontinuity*. J. Mech. Phys. Solids 133, 103723. <https://www.sciencedirect.com/science/article/pii/S0022509619304466>
58. Jin, T., Mourad, H. M., Bronkhorst, C. A., Livescu, V., Zhang, X., Linder, C., Regueiro, R. A. (2019). *Three Dimensional Finite Element Formulation for Shear Localization with Global Tracking of Embedded Weak Discontinuities*. Comp. Meth. Appl. Mech. Engr. 353, 416-447. <https://www.sciencedirect.com/science/article/pii/S0045782519302804>
57. Feng, B., Bronkhorst, C. A., Addessio, F. L., Morrow, B. M., Li, W. H., Lookman, T., Cerreta, E. K. (2019). *Coupled Nonlinear Elasticity, Plastic Slip, Twinning, and Phase Transformation in Single Crystal Titanium for Plate Impact Loading*. J. Mech. Phys. Solids 127, 358-385. <https://www.sciencedirect.com/science/article/pii/S0022509618309219>
56. Livescu, V., Beyerlein, I. J., Bronkhorst, C. A., Dippo, O. F., Ndefru, B. G., Capolungo, L., Mourad, H. M. (2019). *Microstructure Insensitive Twinning: A Statistical Analysis of Incipient Twins in High-Purity Titanium*. Materialia 6, 100303. <https://www.sciencedirect.com/science/article/pii/S2589152919300997>
55. Lieou, C. K. C., Mourad, H. M., Bronkhorst, C. A. (2019). *Strain Localization and Dynamic Recrystallization in Polycrystalline Metals: Thermodynamic Theory and Simulation Framework*. Int. J. Plasticity 119, 171-187. <https://www.sciencedirect.com/science/article/pii/S0749641918305461>
54. Bronkhorst, C. A., Mayeur, J. R., Livescu, V., Pokharel, R., Brown, D. W., Gray III, G. T. (2019). *Structural Representation of Additively Manufactured 316L Austenitic Stainless Steel*. Int. J. Plasticity 118, 70-86. <https://www.sciencedirect.com/science/article/pii/S0749641918307654>
53. Jin, T., Mourad, H. M., Bronkhorst, C. A. (2019). *A Comparative Study of Shear Band Tracking Strategies in Three-Dimensional Finite Elements with Embedded Weak Discontinuities*. Finite Elements in Analysis & Design 155, 11-31. <https://www.sciencedirect.com/science/article/pii/S0168874X18304438>
52. Lieou, C. K. C., Bronkhorst, C. A. (2018). *Dynamic Recrystallization in Adiabatic Shear Banding: Effective-Temperature Model and Comparison to Experiments in Ultrafine-Grained Titanium*. Int. J. Plasticity 111, 107-121. <https://www.sciencedirect.com/science/article/pii/S0749641918302821>
51. Weaver, J. S., Li, N., Mara, N. A., Jones, D. R., Cho, H., Bronkhorst, C. A., Fensin, S., Gray III, G. T. (2018). *Slip Transmission of High Angle Grain Boundaries in Body-Centered Cubic Metals: Micropillar Compression of Pure Ta Single and Bi-Crystals*. Acta Mat. 156, 356-368. <https://www.sciencedirect.com/science/article/pii/S1359645418305147>
50. Feng, B., Bronkhorst, C. A., Addessio, F. L., Morrow, B. M., Cerreta, E. K., Lookman, T., Lebensohn, R. A., Low, T. (2018). *Coupled Nonlinear Elasticity, Plastic Slip, and Twinning in*



- Single Crystal Titanium Loaded by Split-Hopkinson Pressure Bar*. J. Mech. Phys. Solids 119, 274-297. <https://www.sciencedirect.com/science/article/pii/S0022509618309219>
49. Cho, H., Bronkhorst, C. A., Mourad, H. M., Mayeur, J. R., Luscher, D. J. (2018). *Anomalous Plasticity of Body-Centered-Cubic Crystals with Non-Schmid Effects*. Int. J. Solids Struct. 139-140, 138-149. <https://www.sciencedirect.com/science/article/pii/S0020768318300313>
48. Pang, B., Case, S., Jones, I. P., Millett, J. C. F., Whiteman, G., Chiu, Y. L., Bronkhorst, C. A. (2018). *The Defect Evolution in Shock Loaded Tantalum Single Crystals*. Acta Mat. 148, 482-491. <https://www.sciencedirect.com/science/article/pii/S1359645417310431>
47. Versino, D., Bronkhorst, C. A. (2018). *A Computationally Efficient Ductile Damage Model Accounting for Micro-Inertia*. Comp. Meth. Appl. Mech. Engr. 333, 395-420. <https://www.sciencedirect.com/science/article/pii/S0045782518300306>
46. Kumar, A., Bronkhorst, C. A., Lookman, T. (2018). *First-Principles Study of the  $\alpha$ - $\omega$  Phase Transformation in Ti and Zr Coupled to Slip Modes*. J. Appl. Phys. 123, 045903. <https://aip.scitation.org/doi/10.1063/1.5007074>
45. Ghosh, S., Bronkhorst, C. A. (2018). *Foreword – Special Issue “Integrated Structure – Material Modeling*, Comp. Mech. 61, 1-2. <https://link.springer.com/article/10.1007/s00466-017-1506-0>
44. Jin, T., Mourad, H. M., Bronkhorst, C. A., Livescu, V. (2018). *Finite Element Formulation with Embedded Weak Discontinuities for Strain Localization under Dynamic Conditions*. Comp. Mech. 61, 3-18. <https://link.springer.com/article/10.1007/s00466-017-1470-8>
43. Bronkhorst, C. A., Ghosh, S. (2017). *Integrated Computational Structure – Material Modeling of Deformation and Failure under Extreme Conditions*, Int. J. Fract. 208, 1-3. <https://link.springer.com/article/10.1007/s10704-017-0253-8>
42. Versino, D., Alberto, T., Bronkhorst, C. A. (2017). *Data Driven Modeling of Plastic Deformation*. Comp. Methods Appl. Mech. Engr. 318, 981-1004. <https://www.sciencedirect.com/science/article/pii/S0045782516314499>
41. Francois, M. M., Sun, A., King, W. E., Henson, N. J., Tourret, D., Bronkhorst, C. A., Carlson, N. N., Newman, C. K., Haut, T., Bakosi, J., Gibbs, J. W., Livescu, V., Vander Wiel, S. A., Clarke, A. J., Schraad, M. W., Blacker, T., Lim, H., Rodgers, T., Owen, S., Abdeljawad, F., Madison, J., Anderson, A. T., Fattebert, J.-L., Ferencz, R. M., Hodge, N. E., Khairallah, S. A., Walton, O. (2017). *Modeling of Additive Manufacturing Processes for Metals: Challenges and Opportunities*. Current Opinion in Sol. State and Mats. Sci. 21, 198-206. <https://www.sciencedirect.com/science/article/pii/S1359028616300833?via%3Dihub>
40. Mourad, H. M., Bronkhorst, C. A., Plohr, J. N., Livescu, V. and Cerreta, E. K. (2017). *Modeling and Simulation Framework for Dynamic Strain Localization in Elasto-viscoplastic Metallic Materials subject to Large Deformations*. Int. J. Plasticity 88, 1-26. <https://www.sciencedirect.com/science/article/pii/S0749641916301668>
39. Vacchani, S., Trujillo, C., Mara, N., Livescu, V., Bronkhorst, C. A., Gray III, G. T., Cerreta, E. K. (2016). *Local Mechanical Property Evolution during High Strain-Rate Deformation of Tantalum*. J. Dyn. Behavior Mats. 2, 511-520. <https://link.springer.com/article/10.1007/s40870-016-0085-z>



38. Lieberman, E. J., Lebensohn, R. A., Mehasche, D. B., Bronkhorst, C. A., Rollett, A. D. (2016). *Microstructural Effects on Damage Evolution in Shocked Copper Polycrystals*. Acta Mat. 116, 270-280. <https://www.sciencedirect.com/science/article/pii/S1359645416304852>
37. Morrow, B. M., Lebensohn, R. A., Trujillo, C. P., Martinez, D. T., Addressio, F. L., Bronkhorst, C. A., Lookman, T., Cerreta, E. K. (2016). *Characterization and Modeling of Mechanical Behavior of Single Crystal Titanium Deformed by Split-Hopkinson Pressure Bar*, Int. J. Plasticity 82, 225-240. <https://www.sciencedirect.com/science/article/pii/S0749641916300365>
36. Bronkhorst, C. A., Gray III, G. T., Addressio, F. L., Livescu, V., Bourne, N. K., MacDonald, S. A., Withers, P. J. (2016). *Response and Representation of Ductile Damage under Varying Shock Loading Conditions in Tantalum*, J. Appl. Phys. 119, 085103. Cover Article. <https://aip.scitation.org/doi/10.1063/1.4941823>
35. Long, C. C., Zhang, D. Z., Bronkhorst, C. A., Gray III, G. T. (2016). *Representing Ductile Damage with the Dual Domain Material Point Method*, Comput. Methods Appl. Mech. Eng. 300, 611-627. <https://www.sciencedirect.com/science/article/pii/S0045782515004016>
34. Alleman, C., Luscher, D. J., Bronkhorst, C. A., Ghosh, S. (2015). *Distributed-Enhanced Homogenization Framework and Model for Heterogeneous Elasto-Plastic Problems*, J. Mech. Phys. Solids 85, 176-202. <https://www.sciencedirect.com/science/article/pii/S0022509615301551>
33. Mayeur, J. R., Beyerlein, I. J., Bronkhorst, C. A., Mourad, H. M. (2015). *Incorporating Interface Affected Zones into Crystal Plasticity*, Int. J. Plasticity 65, 206-225. <https://www.sciencedirect.com/science/article/pii/S0749641914001806>
32. Zong, H., Ding, X., Lookman, T., Li, J., Sun, J., Cerreta, E. K., Escobedo, A. P., Addressio, F. L., Bronkhorst, C. A. (2014). *Collective Nature of Plasticity in Mediating Phase Transformation under Shock Compression*, Phys. Rev. B 89, 220101 – 1-5. <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.89.220101>
31. Mayeur, J. R., Beyerlein, I. J., Bronkhorst, C. A., Mourad, H. M. (2013). *The Influence of Grain Interactions on the Plastic Stability of Heterophase Interfaces*, Materials 7, 302-322. <https://www.mdpi.com/1996-1944/7/1/302>
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### **Significant Conference & Meeting Contributions**

Bronkhorst, C. A., Jin, T., Lieou, C. K. C., Rees, J. E., (2023). Structural and Thermodynamic Representation of Adiabatic Shear Banding. 27<sup>th</sup> International Conference on Plasticity, Damage, and Fracture, 3 – 8 January 2023, Punta Cana, Dominican Republic, Keynote.

Bronkhorst, C. A., Schmelzer, N. J., Chen, N., Argus, R. M., (2022). *Computational Representation of Ductile Damage under Dynamics Loading Conditions*. Computing in Engineering Forum, University of Wisconsin – Madison, 20-21 Sept. 2022. Invited.

Bronkhorst, C. A., Lieou, C. K. C., Mourad, H. M., Anghel, V., (2021). *Thermo-Mechanics of Large Deformation Shear Banding*. TMS Annual Meeting. Invited.

Bronkhorst, C. A., Marcy, P. W., Cho, H., Vander Wiel, S. A., Gupta, S., Anghel, V., Gray III, G. T. (2021). *Structural Response Statistics of Deformed Polycrystals Leading to Rare Events*. TMS Annual Meeting. Invited.

Bronkhorst, C. A., Cho, H., Zentgraf, S., Livescu, V., Marcy, P. W., Vander Wiel, S. A., Versino, D., Jones, D. R., Gray III, G. T. (2020). *Structural Conditions at Grain Boundaries during High Pressure Loading*. 26<sup>th</sup> International Conference on Plasticity, Damage and Fracture, 3-8 January 2019, Rivera Maya, Mexico. Invited.

Lieou, C. K. C., Bronkhorst, C. A. (2020). *Thermodynamic Theory of Recrystallization: Formulation and Application to 316L SS Shear*. 26<sup>th</sup> International Conference on Plasticity, Damage and Fracture, 3-8 January 2020, Rivera Maya, Mexico. Invited.

Feng, B., Bronkhorst, C. A., Morrow, B. M., Cerreta, E. K. (2019). *Structural Phase Transformation in Single Crystal Titanium during Dynamic Loading*, MRS Fall Meeting, Boston, MA, 1-6 Dec., Invited.

Bronkhorst, C. A., Lieou, C. K. C., Jin, T., Mourad, H. M. (2019). *Structural Evolution of Metals during Adiabatic Shear Banding*. XV International Conference on Computational Plasticity. Fundamentals and Applications, Barcelona, Spain, 3-5 September 2019. Invited.

Bronkhorst, C. A., Jin, T., Lieou, C. K. C., Mourad, H. M. (2019). *Prediction and Numerical Representation of Shear Banding in Metals*. Damage and Failure of Engineering Materials under Extreme Loading Conditions, European Mechanics Society Colloquium 605, Madrid, Spain, 21-24 May, 2019. Invited.

Bronkhorst, C. A., Cho, H., Zentgraf, S., Fensin, S. J., Gray III, G. T., Jones, D. R., Livescu, V., Marcy, P. W., Mourad, H. M., Hahn, E. N., Runnels, B., Vander Wiel, S. A. (2019). *Inter-Granular Mechanics of Metallic Ductile Damage under Dynamic Loading Conditions*, Annapolis, MD, 3-5 April, Invited.

Bronkhorst, C. A., Turner, J., Belak, J., Barton, N., Cho, H., Fensin, S. J., Gray III, G. T., Jones, D. R., Livescu, V., Marcy, P. W., Zentgraf, S. (2019). *Inter-Granular Mechanics of Metallic Ductile Damage towards Advanced Material Certification*. International Conference on Plasticity, Damage and Fracture 2019, Panama City, Panama, 3-9 January 2019. Keynote.



Bronkhorst, C. A., Cho, H., Fensin, S. J., Gray III, G. T., Jones, D. R., Livescu, V., Marcy, P. W., Hahn, E. N., Mourad, H. M., Runnels, B., Vander Wiel, S. A., Zentgraf, S. (2018). *Inter-Granular Mechanics of Metallic Ductile Damage under Dynamic Loading Conditions*. 55<sup>th</sup> Annual Technical Meeting, Society of Engineering Science, Madrid, Spain, 10-12 September 2018. Keynote.

Bronkhorst, C. A., Lieou, C. K. C., Mourad, H. M., Livescu, V. (2018). *Nano-Mechanics Questions related to Damage in Metallic Materials*. 2018 Center of Nano-Technology Annual Meeting, Santa Fe, NM, 24-25 September. Invited.

Bronkhorst, C. A., Cho, H., Fensin, S. J., Gray III, G. T., Jones, D. R., Livescu, V., Marcy, P. W., Hahn, E. N., Mourad, H. M., Runnels, B., Vander Wiel, S. A., Zentgraf, S. (2018). *Meso-to-Macro Mechanics of Metallic Ductile Damage under Dynamic Loading Conditions - Grain Boundary Factors Related to Void Formation*. 10<sup>th</sup> European Solid Mechanics Conference, Bologna, Italy, 2-6 July, 2018. Invited.

Bronkhorst, C. A., Cho, H., Fensin, S. J., Gray III, G. T., Jones, D. R., Livescu, V., Marcy, P. W., Hahn, E. N., Mourad, H. M., Runnels, B., Vander Wiel, S. A., Zentgraf, S. (2018). *Grain Boundary Factors Related to Void Formation*. U. S. National Congress of Theoretical Appl. Mechanics Meeting. Northwestern University, Chicago, IL. Invited.

Bronkhorst, C. A., Cho, H., Gray III, G. T., Jones, D. R., Livescu, V., Marcy, P. W., Mourad, H. M., Runnels, B., Vander Wiel, S. A., Zentgraf, S. (2018). *Grain Boundary Factors Related to Void Formation*. TMS Annual Meeting, Phoenix Convention Center, March 12-15. Invited.

Bronkhorst, C. A., Cho, H., Gray III, G. T., Jones, D. R., Livescu, V., Luscher, D. J., Mourad, H. M., Versino, D. (2018). *Physical and Computational Aspects of Engineering Damage Mechanics*. TMS Annual Meeting, Phoenix Convention Center, March 12-15. Invited.

Bronkhorst, C. A., T. Jin, H. M. Mourad, V. Livescu (2018). *Modeling of Adiabatic Shear Band Formation in Austenitic Stainless Steel*. TMS Annual Meeting, Phoenix Convention Center, March 12-15.

Bronkhorst, C. A., Livescu, V., Brown, D. W., Mayeur, J. R., Capolungo, L., Vander Wiel, S. A. (2018). *Quantifying the Plastic Flow and Structural State of Additively Manufactured Stainless Steels*. International Conference on Plasticity, Damage and Fracture 2018, San Juan, Puerto Rico, Jan. 3-8, 2018. Keynote.

Bronkhorst, C. A., Livescu, V., Brown, D. W., Mayeur, J. R., Capolungo, L., Vander Wiel, S. A. (2017). *Quantifying the Structural State of Additively Manufactured Stainless Steels*. USACM Thematic Conference on Recent Advances in Integrated Computational and Experimental Methods for Additive Manufacturing, Colorado School of Mines, Sept. 6-8. Invited.

Bronkhorst, C. A., Livescu, V., Brown, D. W., Mayeur, J. R., Capolungo, L., Vander Wiel, S. A. (2017). *Towards Quantifying the Plastic Flow and Structural State of Additively Manufactured Stainless Steels*. MACH 2017, Annapolis, MD, April 5-7.

Bronkhorst, C. A., Addessio, F. L., Mourad, H., M., Livescu, V., Beyerlein, E. K., Cerreta, E. K., Lookman, T., Dippo, O. (2016). *A Study of Phase Transformation, Twin Formation and Early Stage Growth in High-Purity Titanium*. MRS Fall Meeting, Boston, MA, Nov. 27 – Dec. 2. Invited.

Bronkhorst, C. A., Luscher, D. J., Mourad, H. M., Marcy, P. W., VanderWiel, S. A., Bourne, N., Gray III, G. T., Livescu, V., Cerreta, E. K. (2016). *Meso to Macro Mechanics of Metallic Ductile Damage under Dynamic Loading Conditions*. Soc. Engr. Sci. Annual Tech. Meeting, Univ. Maryland – College Park, October 4-6.

Mourad, H. M., Bronkhorst, C. A., Livescu, V., Cerreta, E. K., Plohr, J. N., Luscher, D. J., Mayeur, J. R., Gray III, G. T. (2016). Prediction and Numerical Representation of Adiabatic Shear Banding in Metals, IUTAM Integrated Computational Structure – Material Modeling of Deformation & Failure under Extreme Conditions, Baltimore, MD, June 20-22. Invited.

Addressio, F. L., Lookman, T., Bronkhorst, C. A., Cerreta, E. K., Brown, D. W., Bolme, C. A., Lebensohn, R. A., Morrow, B., Rigg, P. A. (2016). *Single Crystal Zr, Ti Phase Transformations under Dynamic Loading Conditions*. International Symposium on Plasticity, January 3-8, Keauhou Bay, HI. Keynote.

Bronkhorst, C. A., Bourne, N., Gray III, G. T., Livescu, V., Storlie, C. B., Vander Wiel, S. A., Addressio, F. L., Cerreta, E. K., Luscher, D. J., Ardeljan, M., Knezevic, M. (2015). *Porosity Based Damage and Failure in Polycrystalline Tantalum – Structural Linkages*. TMS Annual Meeting, Orlando, FL, March 15-19. Invited.

Bronkhorst, C. A., Bourne, N., Gray III, G. T., Livescu, V., Storlie, C. B., Vander Wiel, S. A., Cerreta, E. K., Ardeljan, M., Knezevic, M. (2015). *Deformation Induced Porosity Nucleation Mechanisms in Polycrystalline Metallic Materials*, International Symposium on Plasticity, January 3-8, Montego Bay, Jamaica. Keynote.

Addressio, F. L., Lookman, T., Bronkhorst, C. A., Greeff, C. W., Brown, D. W., Cerreta, E. K., Rigg, P. A., Bolme, C. A. (2014). *Micromechanics of Dynamic Solid-to-Solid Phase Transformations*, SES Annual Technical Meeting, Purdue University, October 1-3. Invited.

Bronkhorst, C. A., Mayeur, J. R., Beyerlein, I. J., Mourad, H. M., Carpenter, J. S., McCabe, R. J., Pathak, S., Mara, N. A. (2014). *Interface Morphology Evolution within Accumulated Roll Bonded Cu/Nb Layered Composites*, SES Annual Technical Meeting, Purdue University, October 1-3. Invited.

Mayeur, J. R., Beyerlein, I. J., Mourad, H. M., Bronkhorst, C. A., Carpenter, J. S., McCabe, R. J., Pathak, S., Mara, N. A. (2014). *Modeling the Interface Formation within Cu/Nb Layered Composites by Accumulated Roll Bonding*, MRS Spring Meeting & Exhibit, San Francisco, CA, April 21-25. Invited.

Mayeur, J. R., Beyerlein, I. J., Bronkhorst, C. A. (2014). *A Study of Interfacial Sliding in Cu/Nb Bicrystals*. TMS Annual Meeting, San Diego, CA, February 17-20.

Mayeur, J. R., Beyerlein, I. J., Bronkhorst, C. A., Mourad, H. M. (2014). *Numerical Integration of a Crystal Plasticity Model with Additional Slip Constraints Imposed by Material Interfaces*. TMS Annual Meeting, San Diego, CA, February 17-20.

Addressio, F. L., Lookman, T., Bronkhorst, C. A., Brown, D. W., Cerreta, E. K., Rigg, P. A. (2014). *Micromechanics of Dynamic Solid-to-Solid Phase Transformations*. TMS Annual Meeting, San Diego, CA, February 17-20.

Bronkhorst, C. A., Mayeur, J. R., Beyerlein, I. J., Mourad, H. M., Carpenter, J. S., McCabe, R. J., Mara, N. A., Cerreta, E. K. (2013). *Modeling and Manufacture of Cu/Nb Nano-Layered*

*Composites by Accumulated Roll Bonding*. Army Research Office Workshop on Issues and Challenges in Nano Manufacturing and Advanced Manufacturing. North Carolina State University, Raleigh, NC. October 1-2. Invited.

Bronkhorst, C. A., Luscher, D. J., Lieberman, E., Cerreta, E. K., Livescu, V., Gray, G. T. (2013). *Computational Interrogation of Dynamic Pore Nucleation in Polycrystalline Metallic Materials*. Army Research Office Workshop on Challenges in Integrated Computational Structure-Material Modeling of High Strain-Rate Deformation and Failure in Heterogeneous Materials. Johns Hopkins University, Baltimore, MD. September 5-6. Invited.

Bronkhorst, C. A., Luscher, D. J., Lieberman, E., Cerreta, E. K., Livescu, V., Gray, G. T. (2013). *Computational Interrogation of Dynamic Pore Nucleation in Polycrystalline Metallic Materials*. 12<sup>th</sup> U.S. National Congress on Computational Mechanics, Raleigh, NC, July 22-25. Invited.

Bronkhorst, C. A., Mayeur, J. R., Beyerlein, I. J., Mourad, H. M., Hansen, B. L., Sintay, S. D., Carpenter, J. S., McCabe, R. J., Mara, N. A. (2013). *Modeling the Crystallographic and Morphological Evolution of Cu/Nb Layered Composites by Accumulated Roll Bonding*. 12<sup>th</sup> U.S. National Congress on Computational Mechanics, Raleigh, NC, July 22-25. Invited.

Bronkhorst, C. A., Hansen, B. L., Mayeur, J. R., Beyerlein, I. J., Mourad, H. M., Carpenter, J. S., McCabe, R. J., Mara, N. A. (2013). *Meso-Scale Modeling of Cu/Nb Layered Composites during Accumulated Roll Bonding*. TMS Annual Meeting, San Antonio, TX, March 3-7.

Bronkhorst, C. A., Hansen, B. L., Mayeur, J. R., Beyerlein, I. J., Mourad, H. M., Carpenter, J. S., McCabe, R. J., Mara, N. A. (2013). *Meso-Scale Modeling of Cu/Nb Layered Composites during Accumulated Roll Bonding*. International Symposium on Plasticity, January 3-8, Nassau, Bahamas. Keynote.

Hansen, B. L., Carpenter, J. S., Sintay, S., Mayeur, J. R., Bronkhorst, C. A., Beyerlein, I. J., Mourad, H. M., McCabe, R. J., Mara, N. A. (2012). *Modeling the Crystallographic Texture of Cu/Nb Layered Composites by Accumulated Roll Bonding*. SES 49<sup>th</sup> Annual Technical Meeting, Atlanta, GA, October 10-12. Invited.

Bronkhorst, C. A., Mourad, H. M., Addessio, F. L., Cerreta, E. K., Bingert, J. (2011). *Representing Shear Localization under Dynamic Loading Conditions*, THERMEC 2011, Aug. 1-5, Quebec City, Canada. Invited.

Bronkhorst, C. A., Hansen, B. L., Tonks, M. R., Ross, A. R., Cerreta, E. K., Bingert, J. F. (2011). *Models for the Large Plastic Deformation Response of Polycrystalline Metals*, Workshop on Uncertainty Quantification and Multiscale Materials Modeling, June 13-15, Santa Fe, NM. Invited.

Bronkhorst, C. A., Cerreta, E. K., Dennis-Koller, D., Bourne, N., Gray, G. T., Tonks, D., Hansen, B. L., Lebensohn, R. (2011). *Examination of the Damage and Failure Response of Tantalum and Copper under Varied Shock Loading Conditions*, TMS Annual Meeting, Feb. 27 – March 3, San Diego, CA.

Bronkhorst, C. A., Dennis-Koller, D., Cerreta, E. K., Bourne, N., Gray III, G. T. (2011). *Examination of the Damage and Failure Response of Tantalum and Copper under Varied Shock Loading Conditions*, Plasticity 2011, Jan. 3 - 8, Puerto Vallarta, Mexico. Keynote.

- Bronkhorst, C. A., Hansen, B. L., Mourad, H. M., Tonks, D. M., Ross, A. R., Cerreta, E. K., Bingert, J. F. (2010). *Microstructural Evolution of Polycrystalline Tantalum Exposed to Large Deformation Shear*, New Models and Hydrocodes for Shock Wave Processes in Condensed Matter, Paris, 24-28 May. Invited.
- Bronkhorst, C. A., Hansen, B. L., Beyerlein, I. J., Wang, Z., Tonks, M. R. (2009). *Continuum to Micro-Scale Representation of Metallic Polycrystal Deformation Behavior*, MS&T 09, Pittsburgh, PA, Oct. 25-29. Invited.
- Bronkhorst, C. A., Hansen, B. L., Maudlin, P. J., Ross, A. R., Cerreta, E. K., Swadener, G., Bingert, J. F., Gray III, G. T. (2009). *Microstructural Evolution of Polycrystalline Tantalum Exposed to Large Deformation Shear*, Plasticity 2009, Jan. 3 – 8, St. Thomas, USVI. Keynote.
- Bronkhorst, C. A., Hansen, B. L., Maudlin, P. J., Cerreta, E. K., Xue, Q., Gray III, G. T. (2008). *Examining the Role of Deformation Heterogeneity in Polycrystal Localization Behavior*, Plasticity 2008, January 3 – 8, Kona, HI. Keynote.
- Bronkhorst, C. A. (2007). *THERMOS – An Experimental and Computational Study of Small-Scale Deformation/Damage/Failure Physics*, JOWOG 32 Materials, LANL, June 18 – 22.
- Bronkhorst, C. A. (2007). *THERMOS – An Experimental and Computational Study of Small-Scale Deformation/Damage/Failure Physics*, JOWOG 32 Primary, AWE Aldermaston, April 23 – 27.
- Bronkhorst, C. A., Busso, E. P., Mason, T. A., Cerreta, E. K., and Hansen, B. L. (2006). *Multi-Scale Statistics of Polycrystal Deformation*, Plasticity 2006, July 17-22, Halifax, NS. Invited.
- Bronkhorst, C. A., Maudlin, P. A., Cerreta, E. K., Mason, T. A., and Gray III, G. T. (2005). *A Polycrystal Plasticity Examination of Localization in Tantalum Top-hat Geometry Samples*, Plasticity 2005, Jan. 3-8, Kauai, HI. Invited.
- Bronkhorst, C. A., Duong, T., Riedemann, J. R. (2002). *The Simulation of Paper as an Elasto-Plastic Stochastic Network*, in Plasticity, Damage and Fracture at Macro, Micro and Nano Scales, A. S. Khan and O. Lopez-Pamier eds., proceedings of Plasticity '02, NEAT Press, Maryland. Invited.
- Bronkhorst, C. A., Foss, W. R. (1999), *The Response of Paper to Moisture in the Hygroscopic Range*, Empire States Paper Research Institute fall meeting, Syracuse, NY, Oct. 20.
- Foss, W., Bronkhorst, C. A., Bennett, K. A. (1999). *A Model of Heat and Mass Transport in Paper Sheets During Moisture Sorption from Air*, proceedings of Fourth International Symposium on Moisture and Creep Effects on Paper, Board and Containers, Grenoble, France, pp. 267-278.
- Barzyk, D., Bronkhorst, C. A., Campbell, R., Eklund, R. (1998). *Aspects of Fibre Morphology Influencing Sheet Properties*, Progress in Paper Physics Seminar, Vancouver, BC, Aug. 9-14.
- Bronkhorst, C. A., Duong, T. (1997), *Paper as an Elastic-Plastic Fibrous Composite*, The Society of Fiber Science and Technology annual meeting, Tokyo, June 18-20.
- Bronkhorst, C. A., Riedemann, J. R. (1994). *The Creep Deformation Behaviour of Corrugated Containers in a Cyclic Moisture Environment*, presented at the Moisture-induced Creep Behaviour of Paper and Board conference, Stockholm, Sweden, December 5-7.

Bronkhorst, C. A. (1992). *Moisture Transfer through Combined Board during Changes in Relative Humidity*, presented at the Cyclic Humidity Effects on Paperboard Packaging conference, FPL, Madison, September 14-15.

Kalidindi, S. R., Bronkhorst, C. A., Anand, L. (1991). *On the Accuracy of the Taylor Assumption in Polycrystalline Plasticity*, in Boehler, J.P., and Khan, A.S. (eds.), *Anisotropy and Localization of Plastic Deformation*, Proceedings of Plasticity '91: The Third International Symposium on Plasticity and Its Current Applications, Elsevier, London, pp. 139-142.

Bronkhorst, C. A., Kalidindi, S. R., and Anand, L. (1991). *Evolution of Crystallographic Texture during the Deformation of Crystalline Solids*, TMS Annual Meeting, New Orleans, February.

Bronkhorst, C. A., Kalidindi, S. R., Anand, L. (1990). *An Experimental and Analytical Study of the Evolution of Crystallographic Texturing in FCC Materials*, presented at the International Conference on Textures of Materials, Avignon France, September.

### **Significant Technical Reports**

Batha, S., Bronkhorst, C. A., Brown, E., Carnes, J., Del Mauro, D., DeYoung, A., Freibert, F., Gray, G., Hooks, D., Martineau, R., Martz, J., Migliori, A., Poling, C., Prestridge, K., Schraad, M., Stevens, M., White, M. (2017) *VISTAS: Performance through Science*. Winter 2017.

Addessio, F. L., Bronkhorst, C. A., Bolme, C. A., Brown, D. W., Cerreta, E. K., Lebensohn, R. A., Lookman, T., Luscher, D. J., Mayeur, J. R., Morrow, B., Rigg, P. A. (2016). *A High-Rate Single Crystal Model including Phase Transformations, Plastic Slip, and Twinning*. LA-UR-16-26524.

Livescu, V., Bronkhorst, C. A., Vander Wiel, S. A., Mayeur, J. R., Brown, D. W., Dippo, O. (2016). *Capturing the Complexity of Additively Manufactured Microstructures*. LA-UR-16-23367.

Alleman, C., Ghosh, S., Luscher, D. J., Bronkhorst, C. A. (2016). *Distribution-Enhanced Homogenization: Application to Ductile Fracture in Dynamically Loaded BCC Tantalum*. SAND2016-5138C.

Mara, N. A., Beyerlein, I. J., Bronkhorst, C. A. (2015). *Damage-Tolerant Bulk Layered Nano-Composites*. LA-UR-15-29642.

Mara, N. A., Bronkhorst, C. A., Beyerlein, I. J. (2015). *Towards Intelligent Microstructural Design of Nano-Composite Materials – Lightweight, High Strength Structural/Armor Materials for Service in Extreme Environments*. LA-UR-15-29645.

Anderson, W., Beyerlein, I. J., Bronkhorst, C. A. (lead), Cerreta, E. K., Dennis-Koller, D., Kober, E., Gray, G. T., Jensen, B., Saumon, D., Schraad, M., Valone, S. (2014). *Flow down (Scientific to Facility Requirements) Document – Metals Manufacture and Age Aware Performance*. December 15. CD-0 Support Documentation. LA-UR-15-20795.

Chen, S.-R., Lopez, M., Cady, C., Martinez, D., Trujillo, C., Gray, G. T., Bronkhorst, C. A. (2014). *Mechanical Characterization of 304L Stainless Steel Shell*. June 4. LA-CP-14-20206.

Gray, G. T., Chen S.-R., Bronkhorst, C. A., Dennis-Koller, D., Cerreta, E. K., Cady, C. M., McCabe, R. J., Addressio, F. L., Schraad, M. W., Thoma, D. J., Lopez, M. F., Mason, T. A., Papin, P. A., Trujillo, C. P., Korzekwa, D. R., Luscher, D. J., Hixson, R. S., Maudlin, P. J., Kelly, A. M. (2012). *Characterization of Depleted-Uranium Strength and Damage Behavior*. Campaign 2 Level 2 Milestone Report. December 20. LA-UR-12-26963.

Tonks, D., Bronkhorst, C. A., Bingert, J. (2011). *Inertial Effects in Dynamical Ductile Damage in Copper and Tantalum*. LA-UR-11-07071.

Cady, C. M., Adams, C. D., Prime, M. B., Hull, L. M., Addressio, F. L., Bronkhorst, C. A., Brown, E. N., Liu, C., Sisneros, T. A., Brown, D. W., Blumenthal, W. R., Hamilton, W. H., Gray, G. T. (2011). *Characterization of S200-F Beryllium using Shock Loading and Quasi-Static Experiments*. Campaign 2 Level 2 Milestone Report. December 14. LA-UR-11-06976.

Addressio, F. L., Beyerlein, I. J., Bronkhorst, C. A., Ding, X., Hansen, B. L., Kaul, A. M., LeSar, R., Lookman, T., Preston, D. L., Tomé, C. N., Wang, Z. Q., (2010). *Modeling the Plastic Behavior of Single and Polycrystalline Metals in High Strain Rate Regimes*. Level 2 Milestone Report. LA-UR-10-06635.

Bronkhorst, C., Greeff, C., Gray III, G., Beyerlein, I., Saxena, A., Rigg, P., Boettger, J., Barber, J., Schraad, M., Kober, E., Funk, D., Fulton, D., Bourne, N., Adams, B., Ravichandran, R., Ghosh, S., Follansbee, P., (2010). *Microstructure Based Heterogeneity Evolution Leading to Material Phase Transformation and Damage/Failure Events*. MaRIE first experiment.

Freibert, F.J., Mitchell, J.N., Schwartz, D.S., Saleh, T., Bronkhorst, C.A., Schwartz, A., Blobaum, K., (2010). *MaRIE: A Tool for Process-Aware Plutonium Physics and Engineering Performance Exploration*. MaRIE first experiment.

Bronkhorst, C. A., Bourne, N., Gray III, G. T., (2009). *Modelling of Damage and Failure in Composite Flyer Impact Experiments*, DoE/DoD Joint Munitions Program TCG 1 year-end report.

Bronkhorst, C. A., Christensen, E. W., Wilke, M. D., Carrington, D. B., Holtkamp, D. B., Furlanetto, M. R., Furnish, M. D., King, N. S. P., Haines, T. J., Lutz, S., Smith, J. R., Hall, C. R., McDaniel, S. M., Lugo, J. L., Martinson, D. D., Mason, T. A., Tuzel, W. M., Custer, D. M., Kaufman, M. I., Malone, R. M., Frogget, B. C., Esquibel, D. L., Romero, V. T., Lare, G. A., Briggs, B., Iverson, A. J., Frayer, D. K., DeVore, D., Prime, M. B., Tonks, D. L., Zocher, M. A., Harstad, E. N., Maudlin, P. J., Addressio, F. L., Greeff, C., Sterbenz, S. M., Cata, B., Briggs, M. E. Huerta, D., Ramos, M., Gallegos, J., Rodriguez, P., Friebert, F., Clarke, S., Martinez, M., Smith, J., Nelson, D., Ormond, E., Cordova, S., Molina, I., Corrow, G., Hansen, M., Henderson, D., Mitton, C., Allen, R. S., Baros, T., Hampel, F. G., Neuman, A. D., Davis, C. C., Nothwang, T. A. , (2008). *Thermos - An Experimental and Computational Study of Small-Scale Deformation, Damage, and Failure Physics in Plutonium (U)*, Los Alamos National Laboratory Technical Report, LA-CP-08-00828.

Clements, B. E., Mas, E. M., Bronkhorst, C. A., Williams, T. O., (2005). *Micromechanics Models for Plastic Bonded High Explosives: Recent Developments*, LA-UR-05-7118.

Bronkhorst, C. A., Riedemann, J. R., Telling, R. T., Brown, S., (2002). *Influence of Fiber Morphology on the Behavior of Bleached and Unbleached Pulp Handsheets*, Weyerhaeuser Technical Report, May.

Bronkhorst, C. A., Riedemann, J. R. (2001). *The Axial Deformation Resistance of Wound Rolls*, Weyerhaeuser Technical Report, January.

Bronkhorst, C. A., Telling, R. T. (2000). *OCC Recycled Fiber and the Performance of Linerboard Materials*, Weyerhaeuser Technical Report, November.

Bronkhorst, C. A., Duong, T., Riedemann, J. R. (2000). *The Inelastic Deformation of Paper*, Weyerhaeuser Technical Report, August.

Xu, H., Bronkhorst, C. A., (2000). *A Mechanistic Description of Water Removal from a Wood Pulp Fiber*, Weyerhaeuser Technical Report, March.

Foss, W. R., Bronkhorst, C. A., Bennett, K. A., (2000). *Simultaneous Heat and Mass Transport in Paper Sheets during Moisture Sorption from Humid Air*, Weyerhaeuser Technical Report, February.

Foss, W. R., Bronkhorst, C. A., Bennett, K. A., Riedemann, J. R. (1999). *Absorption of Water Vapor by Paper Sheets*, Weyerhaeuser Technical Report, May.

Bronkhorst, C. A. (1999). *Transverse Compression of Single Sheets of Paper*, Weyerhaeuser Technical Report, February.

Riedemann, J. R., Bronkhorst, C. A. (1998). *Creep of Dole Banana Containers*, Weyerhaeuser Technical Report, December.

Bronkhorst, C. A., (1998). *Hygroexpansion of Length and Shape Altered Bleached Pulp Handsheets*, Weyerhaeuser Research Bulletin, September.

Riedemann, J. R., Bronkhorst, C. A., Hunter, F. R. (1997). *Warehouse Performance Enhancement of Laboratory Handsheets with Starch and Polymeric Strength Additives*, Weyerhaeuser Technical Report, September.

Bronkhorst, C. A., Telling, R. T. (1997). *The Influence of Out-of-Plane Mass Distribution on the Short-Span Compression Strength of Linerboard Materials*, Weyerhaeuser Technical Report, February.

Bronkhorst, C. A., Riedemann, J. R. (1996). *The Response of Never-Dried and Once-Dried Fiber Laboratory Linerboard to Changing Relative Humidity Conditions*, Weyerhaeuser Technical Report, November.

Bronkhorst, C. A., Riedemann, J. R., Telling, R. T. (1996). *The Influence of Annual Ryegrass Straw Pulp on Some Linerboard Performance Measures*, Weyerhaeuser Technical Report, December.

Bronkhorst, C. A., Telling, R. T. (1996). *Influence of Linerboard Fiber Orientation and Restrained Drying on the Twist Warp of Single Wall Combined Board*, Weyerhaeuser Technical Report, May.

Bronkhorst, C. A., Riedemann, J. R. (1995). *Constant Compressive Load Deformation Behavior of Corrugated Containers, Combined Board, and Paperboard in Cyclic Moisture Environments*, Weyerhaeuser Technical Report, May.



Riedemann, J. R., Bronkhorst, C. A., Goelzer, C. G. (1994). *Edgewise Compression Creep of Paperboard and Combined Board in Changing Relative Humidity Environments: Test Development*, Weyerhaeuser Technical Report, February.

Bronkhorst, C. A. (1993). *A Study of the Mechanical Behavior of Bleached Board Liquid Packaging Containers during Drop Test Basal Impact*, Weyerhaeuser Technical Report, December.

Riedemann, J. R., Bronkhorst, C. A. (1993). *A Review of Linerboard Edgewise Compression Strength Test Methods*, Weyerhaeuser Technical Report, November.

Bronkhorst, C. A., Bailey, L. (1992). *Examining the Effects of Relative Humidity and Load on the Equilibrium Mechanical State of Random Handsheets*, Weyerhaeuser Technical Report, December.

Bronkhorst, C. A. (1992). *Behavior and Performance of Corrugated Containers*, Weyerhaeuser Research Bulletin, July.

Bronkhorst, C. A. (1992). *Literature Review: Behavior and Performance of Corrugated Containers in Changing Relative Humidity Environments*, Weyerhaeuser Technical Report, May.

Bronkhorst, C. A. (1992). *Network Modelling: Part I- Introduction*, Weyerhaeuser Research Bulletin, April.

### **Recent Conference Leadership**

XVI International Conference on Computational Plasticity, Fundamentals and Applications (COMPLAS 2021) – Mini-Symposium: *Micromechanics of Ductile Damage*. C. A. Bronkhorst, M. Ortiz, Barcelona, Spain. September 7-10, 2021.

14<sup>th</sup> World Congress on Computational Mechanics (WCCM XIV) and 8<sup>th</sup> European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2020)– Mini-Symposium: *Advancements in Computational Poro-Plasticity and Ductile Fracture Modeling*; J. A. Moore, J. Wilkerson, C. A. Bronkhorst, January 11-15, 2021.

International Conference on Plasticity, Damage and Fracture 2020 – Mini-Symposium: *Physics and Mechanics of Metallic Material Interfaces*; J. R. Mayeur, C. A. Bronkhorst, Rivera Maya, Mexico, January 3-9, 2020.

Pan-American Congress of Applied Mechanics – Scientific Committee. University of Michigan, Ann Arbor MI, May 21-25, 2019.

International Conference on Plasticity, Damage and Fracture 2018 – Mini-Symposium: *Mechanics and Physics of Additively Manufactured Materials*; C. A. Bronkhorst, M. Wang. San Juan, Puerto Rico, January 3-9, 2018.

2017 MACH Conference – Scientific Committee. Annapolis, MD, April 5-7, 2017.

International Symposium on Plasticity 2017 – Mini-Symposium: *Theoretical and experimental studies of processing and deformation of Additively Manufactured Materials*; D. W. Brown, C. A. Bronkhorst. Puerto Vallarta, Mexico, Jan. 3-9, 2017.

Society of Engineering Science Annual Technical Meeting 2016 – Mini-Symposium: *Advances in Modeling and Simulation of Material Damage and Failure under Dynamic Conditions*; H. M. Mourad, D. J. Luscher, C. A. Bronkhorst. College Park, MD, Oct. 2-5.

IUTAM Symposium – *Integrated Computational Structure-Material Modeling of Deformation and Failure under Extreme Conditions*. Co-organizer, Scientific Committee, Baltimore, MD, June 20-22, 2016.

2016 MACH Conference – Scientific Committee. Annapolis, MD, April 6-8, 2016.

International Symposium on Plasticity 2016 – Mini-Symposium: *Microstructural Plasticity to Damage Processes under Dynamic Loading Conditions*; J. R. Mayeur, H. M. Mourad, C. A. Bronkhorst. Keauhou Bay, Hawaii, January 3-8, 2016.

2015 MACH Conference – Mini-symposium: *Meso to Macro-scale Modeling of Materials in Extreme Loading Environments*; C. A. Bronkhorst (Scientific Committee), D. J. Luscher. Annapolis, MD, April 8-10, 2015.

IUTAM Symposium – *Innovative Numerical Approaches for Materials and Structures in Multi-Field and Multi-Scale Problems: In Honor of M. Ortiz*. Session Chairman, September 1-4, 2014, Attendorn, Germany.

17<sup>th</sup> U. S. National Congress of Theoretical & Applied Mechanics – Mini-symposium: *In Honor of Lallit Anand*; D. L. Henann, S. Chester, Y. Wei, C. A. Bronkhorst, K. Kamrin. Michigan State University, East Lansing, MI, June 15-20, 2014.

17<sup>th</sup> U. S. National Congress of Theoretical & Applied Mechanics – Mini-symposium: *Mesomechanics and 3D Structure*; S. R. Kalidindi, C. A. Bronkhorst. Michigan State University, East Lansing, MI, June 15-20, 2014.

12<sup>th</sup> U. S. National Congress on Computational Mechanics – Mini-symposium: *Advances in Modeling and Simulation of Damage Evolution, Strain Localization, and Failure*; H. M. Mourad, D. J. Luscher, C. A. Bronkhorst, S. Ghosh. Raleigh, NC, July 22-25, 2013.

APS-SCCM & AIRAPT - 24 Joint Conference – High Pressure Strength Technical Committee. Seattle, WA, July 7-12, 2013.

International Symposium on Plasticity 2013 – Mini-Symposium: *Plasticity and Ductile Damage in Metallic Systems*; C. A. Bronkhorst, T. C. Germann, G. T. Gray III. Nassau, Bahamas, January 3-8, 2013.

Society for Engineering Science 49<sup>th</sup> Annual Technical Meeting – Mini-Symposium: *Defects in Materials*; I. J. Beyerlein, C. A. Bronkhorst. Georgia Tech., October 10-12, 2012.

International Workshop on Computational Mechanics of Materials 2012 – Mini-Symposium: *Modeling Material Damage Across Varying Physical Scales: Numerical Identification of Dominant Length Scale Parameters and their Relevance to Higher Scales*; D. J. Luscher, H. M. Mourad, C. A. Bronkhorst. Baltimore, MD, September 24-26, 2012.

International Symposium on Plasticity 2011 – Mini-Symposium: *Dynamic Materials Behavior and Modeling*; C. A. Bronkhorst, G. T. Gray III. Puerto Vallarta, Mexico, January 3-8, 2011.

### **Invited Lectures, Seminars & Posters**

*Thermo-Micromechanics of Ductile Damage in Structurally Evolving Materials*, Department of Materials Science and Engineering, Iowa State University, Nov. 14, 2022.

*Micromechanics and Statistics of Ductile Damage during Dynamic High-Triaxiality Loading*, Department of Mechanical Engineering, Marquette University, April 21, 2022.

*Micromechanics of Ductile Damage during High Triaxiality Loading of a Refractory Metal*, Department of Civil and Systems Engineering, Johns Hopkins University, March 8, 2021.

*Computational Prediction of Shear Banding and Deformation Twinning in Metals*, Department of Mathematics Applied Math and Computation Seminar, University of Wisconsin, March 6, 2020.

*Prediction and Numerical Representation of Shear Banding and Deformation Twinning in Metals*, Michigan State University, Nov. 17, 2019.

*A Discussion on Leadership*, Wisconsin Air National Guard, HQ 115<sup>th</sup> Medical Group, August 25, 2019

*Inter-Granular Mechanics of Metallic Ductile Damage under Dynamic Loading Conditions*, University of New Hampshire, Nov. 16, 2018.

*Theoretical and Physics Aspects of Representing Porosity-Based Ductile Damage*, University of Wisconsin – Madison, July 13, 2018.

*Theoretical Descriptions of Additive Manufactured Material and Adiabatic Shear Banding*, University of Wisconsin – Madison, Feb. 23, 2018.

*Soft Scale-Coupled Meso to Macro Mechanics of Metallic Plasticity and Ductile Damage*, University of Wisconsin – Madison, Dec. 5, 2017.

*Meso to (from) Macro Mechanics of Metallic Ductile Damage under Dynamic Loading Conditions*, Sandia National Laboratory, Nov. 9, 2017

*Quantifying the Plastic Flow and Structural State of Additively Manufactured Stainless Steels*, University of Michigan, May 11, 2017.

*Meso to Macro Mechanics of Metallic Ductile Damage under Dynamic Loading Conditions*, IS & T Capability Review, Computational Mechanics, LANL, June 2016.

*Single Crystal Zr, Ti Phase Transformations under Dynamic Loading Conditions*, Materials Capability Review, LANL, March 22, 2016.

*Dynamic Performance of Plutonium and Surrogate Metal Alloys: Plasticity, Phase Transformation, Damage and Failure of Metallic Materials*, NA-11 Requirement Review Board Meeting, LLNL, Sept. 26-27, 2016.

*Dynamic Performance of Plutonium and Surrogate Metal Alloys: Plasticity, Phase Transformation, Damage and Failure of Metallic Materials*, MaRIE External Advisory Board Meeting, LANL, Sept. 12, 2016.

*Dynamic Performance of Plutonium and Surrogate Metal Alloys: Plasticity, Phase Transformation, Damage and Failure of Metallic Materials*, MaRIE Partnership Workshop, LLNL, Aug. 15-16, 2016.

*Dynamic Performance of Plutonium and Surrogate Metal Alloys: Plasticity, Phase Transformation, Damage and Failure of Metallic Materials*, Multi-probe Diagnostic Hall Deep Dive, LANL, Jan. 20, 2015.

*Modeling of Plastically Dominated Ductile Damage within Polycrystalline Metallic Materials*, Joint Munitions Program Technical Advisory Committee Meeting, Albuquerque, NM, Aug. 23-25, 2016.

*Physics-Based Materials Modeling*, 11<sup>th</sup> LANSCE School on Neutron Scattering, Materials at the Mesoscale, Feb. 20, 2015.

*Accumulated Roll Bonded Layered Nano-Composites*, Army Research Laboratory, Aberdeen, MD, Nov. 20, 2014.

*Computational (Macro-Meso) Mechanics of Materials Performance*, Boeing, Oct. 8, 2014.

*Modeling the Interface Formation within Cu/Nb Layered Composites by Accumulated Roll Bonding*, University of Manchester, UK, June 11, 2014.

*Visco-SCRAM Past, Present, and Future*, US/UK Insensitive Munitions Project Agreement Meeting, Portsmouth, UK, June 9-11, 2015.

*Computational Mechanics Opportunities in Meso-Scale Materials Science*, UK HPC Consortium for Structural Mechanics Workshop, Oxford University, June 9, 2014.

*MaRIE 1.0: Manufacturing and Age Aware Representation of Dynamic Materials Behavior*, Predictive Science Panel, LANL, March 14, 2013.

*MaRIE – Microstructure Based Heterogeneity Evolution Leading to Phase Transformation & Damage/Failure Events*, National Academies of Science Visit, LANL, Aug. 30, 2012.

*Predicting Pore Nucleation via Heterogeneous Driving Stress and Weak Zone Distribution in Metallic Materials*, LANL Materials Institute Workshop, June 2012.

*Small-Scale Dynamic Damage/Failure Events*, Dynamic Compression Sector workshop, Advanced Photon Source, Argonne National Laboratory, Jan. 2012.

*Models for the Large Plastic Deformation Response of Polycrystalline Metals*, Workshop on Uncertainty Quantification and Multi-Scale Materials Modeling, Santa Fe, June 13-15, 2011.

*Theory Needs for Material Phase, Strength, and Damage*, Workshop on the 21<sup>st</sup> Century Needs and Challenges in Compression Science, Bishops Lodge Santa Fe, Sept. 23-25, 2009.

*Microstructure Evolution of Polycrystalline Metals Exposed to Large Deformation Shear*, The Ohio State University, April 10, 2009.

*Modeling Large Deformation, Damage, and Failure Physics in ASC Weapons Performance Codes*, JASONS Boost Study, San Diego, CA, June 2008.

*Thermo-Mechanical Behavior Overview – Multi-Scale Modeling of Shear Localization*, Materials Capability Review, April 28 – May 1, 2008.

*Weapons Damage and Failure Modeling at LANL with some Thoughts towards the Future*, NNSA Strength and Damage Workshop, Washington DC, January 16 – 17, 2008.

*Strength Modeling and Experimental Data Needs*, NNSA Strength and Damage Workshop, Washington DC, January 16 – 17, 2008.

*Update on Modeling Large Deformation / Damage / Failure Physics in Materials*, ASC Predictive Science Panel Review at LANL, October 31, 2007.

*Update on Modeling Large Deformation / Damage / Failure Physics in Materials*, NNSA HQ, Washington DC, October 31, 2007.

*Constitutive Modeling of Small-Scale Deformation / Damage / Failure Physics*, LANL ADWP Capability Review, August 23, 2007.

*THERMOS – An Experimental and Computational Study of Small-Scale Deformation / Damage / Failure Physics – Preliminary Results*, LANL Weapons Working Group Meeting 528, August 23, 2007.

*Basic Opportunities for Understanding and Design of Extreme Environment Materials*, DoE Office of Science Workshop on Materials in Extreme Environments, Washington DC, June 2007.

*THERMOS – An Experimental and Computational Study of Small-Scale Deformation / Damage / Failure Physics*, NNSA HQ, May 22, 2007.

*THERMOS – An Experimental and Computational Study of Small-Scale Deformation / Damage / Failure Physics*, Poster - 2007 Materials Capability Review, LANL, April, 2007.

*Investigating the Effects of Microstructure on Polycrystal Localization Behavior*, University of New Mexico Department of Mechanical Engineering, October 2006.

*Towards Predicting the Ductile Deformation and Failure Process*, Theoretical Division Review Committee, May 2006.

*Towards Predicting the Ductile Failure Process*, ASC PI Meeting, San Antonio TX, March 2005.

*Deformation Behavior of a Single Wood Pulp Fiber during Water Removal*, SCA Research, Sundsvall, Sweden, September 2000.

*The Response of Paper to Moisture in the Hygroscopic Range*, University of Washington, November, 1999.

*A Relationship between Fiber, Drying Restraint, and the Mechanical/Hygroexpansion Response of Paper*, Ahlstrom, Pont Eveque, France, March, 1999.

*A Relationship between Fiber, Drying Restraint, and the Mechanical/Hygroexpansion Response of Paper*, SCA Research, Sundsvall, Sweden, March, 1999.

*The Creep Deformation Behavior of Corrugated Containers in a Cyclic Moisture Environment*, Institute of Paper Science and Technology, Atlanta, February, 1998.

*The Mechanical Behavior of Low Basis Weight Fiber Systems*, Nippon Paper Industries, Central Research Lab, Tokyo, August, 1997.

*The Mechanics and Performance of Network Structures*, Nippon Paper Industries, Central Research Lab, Tokyo, August, 1996.

*A Relatively New Approach to the Micromechanical Modelling of the Mechanical Behavior of Non-Woven Fibrous Sheets*, SCA Research, Sundsvall, Sweden, December, 1994.

*A Relatively New Approach to the Micromechanical Modelling of the Mechanical Behavior of Non-Woven Fibrous Sheets*, Finnish Forest Products Research Institute (KCL), Helsinki, Finland, December, 1994.

Lectures - *The Mechanical Behavior of Paper*, University of Washington, ChE 402, Fall Quarter, 1993.

*A Quick Look at the Response of Paper and Corrugated Containers to Vapor Phase Moisture Content Changes*, Quaker Oats, Chicago, September, 1993.

*Evolution of Internal Stress State in Wound Rolls*, Nippon Paper Industries, Central Research Lab, Tokyo, June, 1993.

*Constitutive Modelling the Mechanical Behavior of Fiber and Fibrous Sheets*, University of Washington, November, 1992.

*Computational Mechanics of Paper as a Structural Composite*, SCA Research, Sundsvall, Sweden, July, 1992.

*Computational Mechanics of Paper as a Structural Composite*, Swedish Newsprint Research Institute (TFL), Stockholm, Sweden, July, 1992

*Plastic Deformation and Crystallographic Texture Evolution in F.C.C. Metals*, Alcoa Technical Center, Pittsburgh, April, 1991.

*Plastic Deformation and Crystallographic Texture Evolution in F.C.C. Metals*, University of Michigan, Ann Arbor, April, 1991.

*Plastic Deformation and Crystallographic Texture Evolution in F.C.C. Metals*, Iowa State University, Ames, March, 1991.