# C U R R I C U L U M  V I T A E

February 28, 2022
**David P. Field**

## PERSONAL DATA

Home Address: 2701 Klemgard Road, Pullman, WA
Home Phone: (509) 338-9624
Citizenship: USA

## EDUCATION

Ph.D. Mechanical Engineering, Yale University, December, 1991.

M.S. Mechanical Engineering, Brigham Young University, December, 1988.

B.S. Mechanical Engineering, University of Wyoming, August, 1987.

Areas of Research Interest:
Metal deformation and recrystallization, ferrous and non-ferrous metallurgy, structure evolution in ceramics, crystallographic texture, grain boundary structure, thin film and IC interconnect structure/properties relationships, and advanced experimental techniques.

## PROFESSIONAL EXPERIENCE

Washington State University (Aug. 2000-present) – Assist. Professor/Assoc. Professor/Professor,
Associate Dean for Research and Graduate Studies (June, 2013-present)
Interim Director, School of Mechanical and Materials Engineering (Aug. 2012-Aug. 2013)

Joint Center for Deployment and Research in Earth Abundant Materials (JCDREAM) – Interim Director, March 2016 - April 2019

TexSEM Laboratories, Inc. (July, 1994-Aug, 2000) – Director of Technology

Brigham Young University (Sept. 1994-Aug. 1997) – Adjunct Assistant Professor and Part time Assistant Professor

Alcoa Technical Center (August, 1991 - July, 1994) – Engineer / Sr. Engineer

## COURSES TAUGHT

Graduate Level

**MSE 511** – Deformation, Fall 2000

**MatS 571** – Surfaces (3 week section), Spring 2002, 2003, 2005, 2006, 2007

**MSE 513** – Crystal Plasticity, Fall 2004, Spring 2007

**MSE/MatS 516** – Phase Transformations,

Undergraduate Level

**MSE 110** – Intro to Materials Science, Fall 2002-03, 2008-13, Few lectures 2014-2017

**MSE 201/301** – Introduction to Matls. Sci, Summer 2001, Spring 2007, Fall 2010

**MSE 302** – Introduction to Elect. Matls,

Spring 2006, 2008

**MSE/MatS 521** – Statistics of Microstructures, Spring 2005, 2009, 2011, 2013, 2015

Summer 2001

**MSE 321** – Materials Characterization, Spring 2001 – 2006, 2008, 2011, 2012

**MSE 323** – Materials Characterization Lab, Spring 2001 – 2004, 2010, 2016, 2022

**MSE 401** – Metallic Matls, Fall 2001 – 2003, Fall 2005 – 2009, Spring 2010, 2012, 2013, 2014

**MSE 413** – Solid Mechanics, Fall 2011, 2013

**MSE 425/426** – Senior Thesis I/II, Fall 2001, Fall 2003, Spring 2004, Fall 2012

**PhD RESEARCH SUPERVISED**

| Student | Thesis Title | Date PhD Awarded |
|---|---|---|
| Pankaj Trivedi | Characterization of Dislocation Structures and their Influence on Processing of Al Alloys | MSE, May 2005 |
| Reza Shahbazian Yassar | Characterization and Modeling of Dislocation-Precipitation Interactions in Aluminum Alloys | MSE, Dec 2005 |
| J. Pablo Escobedo | Development and Analysis of Experiments to Measure the High Pressure Constitutive Behavior of Materials | ME, Dec 2007 |
| Alankar Alankar | Analysis of Dislocation Structure Evolution During Fatigue of High Strength Aluminum Alloys | ME, May 2010 |
| Nathaniel Sanchez | Texture evolution during shock deformation of aluminum | ME, Aug 2013 |
| Osama Fakron | SEM-Based Tomography of Turfs Comprised of Lineal Structures | ME, May 2014 |
| Zhe Leng | Texture Informed Crystal Plasticity Finite Element Modeling of Polycrystalline Material Deformation | MSE, Dec 2014 |
| Colin Merriman | Structural Evolution during Explosive Bonding of Dissimilar Metals | ME, May 2015 |
| Graden Hardy | Generating Triple Junction Distributions | ME, May 2015 |
| Yuri Hovanski | Friction stir welding of dissimilar aluminum alloys | ME, Aug 2015 |
| Khaled Adam | Monte Carlo modeling of structure evolution in High-Strength Al alloys | ME, Dec 2015 |

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|---|---|---|
| John Young | The Production of Fine Grained Magnesium Alloys Through Thermomechanical Processing for the Optimization of Microstructural and Mechanical Properties | MSE, Dec 2015 |
| Fan Zhang | Multiscale Investigation of the Relationship Between the Microstructure and Mechanical Properties in Dual Phase Steels | MSE, May 2016 |
| Jingyi Zhang | Characterization of High-Speed Friction Stir Weld Between Dissimilar Aluminum Alloys | ME, Dec 2017 |
| Julie Dewberry (co-advised with Ron Omberg) | Advanced Methodology and Modeling of Nuclear Core Restraint Deformation in a LMFB Environment | ME, Dec 2017 |
| Tarang Mungole | Deformation Mechanisms in Multilayer Materials at Small Length Scales | MSE, Aug 2018 |
| Vineet Joshi | Structure of U-10%Mo alloys | MSE, May 2020 |
| Maryam Jamalian | Development of Gradient Structures in Magnesium Alloys | ME, May 2020 |
| Ben Schuessler | Generalization and Stereological Determination of a Triple Junction Distribution | MSE, May 2021 |
| Sam Karcher (co-advised with John McCloy) | Influence of Rare Earth Doping and Irradiation on the Defects and Microstructure of Uranium Oxide Spent Nuclear Fuel Analogues | MSE, Dec 2021 |
| Claire Adams | Structure Evolution during Additive Manufacturing of Titanium Alloys | MSE, May 2024 expected |
| Catherine (Katy) Gosser | Parameter Optimization of Flux-cored Arc Welding (FCAW), Gas Metal Arc Welding (GMAW), and Shielded Metal Arc Welding (SMAW) of ASTM A36 Plate and A106 Pipe | MSE, May 2024 expected |

**MS RESEARCH SUPERVISED**

| Student | Thesis/Project Title | Date MS Awarded/expected |
|---|---|---|
| Tejodher Muppidi | Microstructure and Texture of Electroplated Copper Films and Damascene Lines | MSE, Aug. 2003 |
| J. Pablo Escobedo | Measurements of the Pressure-Dependent Dislocation Mobility in Oriented Mo Single Crystals | MSE, May 2004 |
| Colin Merriman | Observation of Dislocation Structure Evolution in Aluminum | MSE, Aug 2007 |
| Chia-Jeng Chung | Texture Development in Cu Damascene Lines and Thin Films | MSE, Aug 2007 |
| Sudip Kumar Sinha | Microstructural Dependence of Spall Response in Aluminum under Shock Loading (non-Thesis) | MSE, May 2009 |
| Chang-Kyu Yoon | Monte-Carlo Simulation of Structure | MSE, Aug 2009 |

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|---|---|---|
| | Evolution in Cu Lines | |
| Zhe Leng | Grain boundary analysis of HT9 steel after creep testing | MSE, Aug. 2010 |
| Jameson Root | Recrystallization of AA 7050 during hot rolling | MSE, Dec. 2010 |
| Hina Malik | Quantification of tangled linear arrays for use in modeling of one dimensional structures | ME, Dec. 2010 |
| Hao Yu | Structure evolution in transformer steels | MSE, Aug 2011 |
| Fan Zhang | Grain boundary damage during creep of Alloy 617 | MSE, Dec 2011 |
| Isaac Steele | Quantification of nanotopology in CNT turf structures (non-Thesis) | ME, May 2013 |
| Erin Diedrich | Structure evolution of FSW Al to Steel | MSE, Aug 2013 |
| Linxiao Zhao | Observation of grain boundary structure evolution | MSE, Dec 2013 |
| Alexander Plonczak | Control and Optimization of Prototype Instrument for Electro-Fountain Pen Lithography (non-Thesis) | MSE, Aug 2014 |
| Batholomew Kimani | FSW of dissimilar Al alloys (non-Thesis) | MSE, May 2016 |
| Karun Kalia | Grain size and Texture Analysis in U10Mo | ME, May 2017 |
| Longping (Robin) Zhu | Twin Boundaries in High Entropy Alloys (non-Thesis) | ME, May 2017 |
| German Valderama | Lean Manufacturing of Advanced Components (non-Thesis) | ENG, Dec 2018 |
| Jacqueline Reeve | Investigation of Recrystallization and Second Phase Particles in Lightly Deformed U 10% Mo Nuclear Fuel | MSE, May 2020 |
| Hamed Sadegh Kouhestani | Mechanical properties evaluation of novel ultra-high performance concrete containing high volume fly ash | ENG, May 2020 |
| Md. Mueed Jamal | Modeling of Local Deformation During Linear Corrugated Straightening | ME, Aug 2021 |
| Gunnar Blaschke | Characterization of High Entropy Alloys | Expected MSE, May 2023 |

**UNDERGRADUATE RESEARCH SUPERVISED (Bold name indicates published paper)**

| Student | Project Title | Date BS Awarded/expected |
|---|---|---|
| **Adam Mortensen** | Deformation of a Copper Bicrystal | Dec 2001 |
| Debbie Mahmood | Phase Analysis of Sintered W-V Carbides by EBSD | May 2001 |
| **Yasuyuki Kusama** | Hillock Formation in Cu Films | Dec 2001 |
| **J. Pablo Escobedo** (REU) | Superplasticity in Fine-Grained Ti-6Al-4V | May 2002 |
| Mark Walpole | Severe Plastic Deformation of Al and Ti | May 2002 |

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|---|---|---|
| | Using a Modified ECAE Approach | |
| Nathan Muntz | Analysis of Three Tool Types for Friction Stir Welding 7075-T6 Aluminum | May 2003 |
| Brian Mattson (REU) | Friction Stir Welding of 7075 Al | Dec 2003 |
| **Brian True** | Twin Boundary Migration in Deformed Cu | Dec 2003 |
| Jason Swaim (REU) | GB Structure of Superplastically Deformed Ti-6Al-4V | Dec 2003 |
| **Eva McGowan** | Processing of Ta for Sputtering Target Applications | May 2004 |
| Joe Flood | Grain Size Flow Stress Dependence in Friction-Stir Processed Aluminum | Dec 2005 |
| **Ryan Eames** | Grain Boundary Engineered Cu by Annealing under Shear Stress | May 2005 |
| Daryl Bolejack | Analysis of Radiographic Inspection of Steel by Image Processing - WTC | May 2005 |
| Matthew Foss | Twin Grain Development During Annealing of Heavily Deformed Copper | Dec 2005 |
| Jerrod Miller | Fatigue in Friction Stir Welded Ti | Dec 2006 |
| **Jeff Yanke** (REU) | Asymmetric Deformation of Ta Plate for Sputtering Target Applications | May 2005 |
| **Laura Bradford** | Recrystallization of ECAE Cu | May 2006 |
| **Ross Johnson** (REU) | Structure Evolution in Sputtered and Electro-plated Cu Films | May 2006 |
| Aaron Wilkinson | Fatigue in Friction Stir Welded Al 7050 | May 2007 |
| Ryuji Imoto | Equal Channel Angular Pressing of Aluminum | Dec 2007 |
| **Adam Hein (REU)** | Fatigue in FSW 7050 Aluminum | May 2008 |
| Sharla Hopkins (REU) | Fatigue of TRIP Steels | May 2009 |
| **Jameson Root** | Friction Stir Welded MMCs | May 2008 |
| Casey Stratton | Misorientation Analysis in High Tc Superconducting YBCO | May 2008 |
| **Julie Smith** | Phase Analysis in Trip Steels | May 2008 |
| Chris Melvin | Deep Drawing Steels | Dec 2008 |
| Greg Santone (REU) | Structure and Texture of LENS processed Ti | May 2009 |
| Cameron DuBois (REU) | Equal channel extrusion for grain refinement of commercial purity aluminum | May 2010 |
| Ashley Tracy | Pb-free solders | Dec 2008 |
| **Kale Stephenson** | Characterization of CNT turf structures | May 2009 |
| Ashley Braford Teare | GB structure in FSW Aluminum | Dec 2010 |
| David Koch | Zr-C Films and Coatings | Dec 2009 |
| **Lisa Behrens (REU)** | Structure Evolution in Hot Rolled AA 7050 | May 2011 |
| Mark Taylor (REU) | Microstructure in Ti FSW | May 2010 |
| Jon Jackson | Allotropic phase transformation in Ti | May 2010 |
| David McDonald | Surface chemistry of extrusion dies | May 2010 |
| John Bryson | IN 617 creep | Dec. 2010 |
| **Erin Diedrich** | TWIP steel structure evolution | Dec 2011 |
| Adam George | Texture in LENS Titanium | May 2013 |
| **Michael Heiden** | ECAE processed Mg | May 2012 |
| **John Young** | Texture analysis in FSW of A2 tool steels | May 2011 |
| **Garrett Kelly** | Statistics of linear arrays of structures | Dec 2010 |
| **Alyssa Arrigoni** | Pressure dependent deformation of Al, Brass | May 2011 |

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|---|---|---|
| | and Ti | |
| **Skylar Hatch** | Twin boundary evolution in IN 600 | HS and REU May 2016 |
| **Cory Parker (REU)** | GND Density in AA 7050 | May 2012 |
| **Jake Bair** | Twin boundary evolution in IN 600 | Dec 2012 |
| Juan Trevino | Deformation and structure evolution in CNT turfs | May 2013 |
| **Karen Nash** | Pressure dependent deformation of Al, Brass and Ti | May 2013 |
| Jose Marcial | GBE in alloy 617 | Dec 2013 |
| Mengil Deane | Mechanical Testing | Dec 2013 |
| Tyler Claus | GB structure development in Inconel | May 2013 |
| Mary O'Brien | GND Density in Aluminum Plate | May 2013 |
| Christopher Gay | Computational Materials Science | May 2014 |
| Kassiopeia Smith | Strength of CNT Filaments | May 2014 |
| Jonathan Lueck | Carbide Segregation in alloy 617 | Dec 2014 |
| Jace Barley | Carbon Nano-structures | May 2016 |
| Denise Blohowiak | Growth of CNT turfs | May 2016 |
| Sam Karcher | Heat Treating of DP Steel | May 2017 |
| Melanie Salmond | Fatigue of dissimilar FSW Al joints | HS |
| Tyler Chu | Structure of 302L SS Filaments | May 2019 |
| Kyle Hayes | Metallurgical Analysis of Stainless Steel Fibers | Dec 2016 |
| Kyle Andrews | Validating Confidence Index in EBSD | Dec 2016 |
| **Quentin Buck** | High Pressure Torsion Testing | May 2019 |
| Lucas Norstrem | Friction Stir Processing of Titanium | May 2017 |
| Cory Palmieri | Fatigue of High Speed FSW Structures, CNT Growth and Characterization | May 2020 |
| Ahmed Abdullah Nas Al-Yahyaai | Mechanical and Corrosion Testing of Multi-Layer Films | May 2017 |
| Ammar Albalushi | Mechanical and Corrosion Testing of Multi-Layer Films | Aug 2017 |
| Samir Alraisi | HPT of Pure Al rods with micro-hardness and EBSD analysis | Aug 2017 |
| Logan Winston | Twin boundary development in HEA alloys | May 2019 |
| Jessie Schweitzer | Growth and characterization of CNT turfs, Alpha Uranium formation in U10Mo | May 2021 |
| Ahmed A.S. Aldossary | Friction Stir Welds in Dissimilar Alum Alloys | May 2020 |
| Taylor Ellsworth | Heat Treating of Friction Stir Riveting in AA 7075 | May 2020 |
| Ziyad Said Al Mutari | Characterization of WC, VC hard materials | May 2020 |
| Apolinar Orea | High Entropy Alloys | May 2020 |
| Cody Christiansen | Formability Testing | Dec. 2020 |
| Blake Peters | Synthesis of CNTs by CVD | May 2021 |
| Gunnar Blaschke | Linear Corrugated Straightening of AZ31 | May 2021 |
| Corey Bisonette | Electropolishing of Titanium Alloys | May 2021 |
| Cameron Eyman | Bonding of UHMWPE and urethane films | May 2021 |
| Connor Toulou | Dictionary-Based EBSD Indexing | May 2022 |
| Jeffrey Washburn | Friction Stir Processing of Ti plate | May 2022 |
| Jordan Weaver | Fracture Toughness Measurements using | May 2023 |

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| Solon Simpson | Nanoindentation Techniques<br>Dictionary-Based EBSD Indexing | May 2023 |

**VISITING SCHOLARS HOSTED**

| Scholar | Institution | Dates |
|---|---|---|
| Prof. No-Jin Park | Kumoh Institute of Technology, South Korea | Aug 2004-May 2005 |
| Prof. Amrita Kundu | Jadavpur University, Calcutta, India | Aug 2015-Dec 2015 |
| Mr. Wen Feng | Nanjing University of Science and Technology (NUST), Nanjing, China | Aug 2015-Jan 2016 |
| Dr. Natalia DeVincentis | Rosario Instituto Tecnologico, Rosario, Argentina | Jun 2018-Sept 2018 |

**UNIVERSITY SERVICE**

WSU – MME Undergraduate Studies Committee, 2006-2012
WSU – MME Graduate Studies Committee, 2000-2007
WSU – MME Awards Committee, 2004-2008
WSU – MME Space Committee, 2009-2012
WSU – CEA Curriculum Assessment Committee, 2006-2011
WSU – WSU Admissions sub-committee, 2010-2014
WSU – MSEP Admissions and Graduate Studies Committee Chair 2011-12
WSU – Team Mentoring Program Faculty Advisor, 2008-present
WSU – Research Council (formerly ORAC), 2013-present
WSU – Grad and Prof Education Committee (GPEC), 2013-present
WSU – 120 day Research Study, Management and Integration Committee, 2014-15
WSU – ITSAC subcommittee on HPC, 2014-16
WSU – Showcase organizing committee, 2014-2018
WSU – Smart Systems Grand Challenge POC, 2015-present
WSU – Strategic Planning Committee, 2019-2020
WSU – Covid-19, Return to Research (and Implementation) Committees, 2020-21

**PROFESSIONAL ACTIVITIES, AWARDS AND HONORS**

Visiting Appointments:

- Visiting Professor, Laboratoire d'etudes de microstructures et de mechaniques des materiaux (LEM3), Universite de Metz/Universite de Lorraine, Paul Verlaine, Metz, France, 2010 (LETAM), 2011, 2012, 2014
- Prof. Brahm Prakash Visiting Chair Professor, Indian Institute of Science, Bangalore, India, 2016-17

Organized Symposia:

- JCDREAM Symposium, Earth Abundant Materials Research in Washington State, Everett, WA, Oct. 8, 2018
- JCDREAM Symposium, Earth Abundant Materials Research in Washington State, Everett, WA, Oct. 3-4, 2016
- Predictive Modeling of the Co-Evolution of Microstructure and Properties, USNCCM,

San Diego, July 26-30, 2015
- Quantification of Texture and Microstructure Gradients in Polycrystalline Materials, MS&T 2012, Pittsburgh, October 7-11, 2012
- Challenging Applications in EBSD Measurement and Analysis, Microscopy & Microanalysis, Nashville, August 7-11, 2011
- Microstructure Sensitive Design, MS&T 2009, Pittsburgh, October, 25-29, 2009
- DOE Workshop: 4-Dimensional characterization of Materials and Damage – Annapolis, MD, Aug 16-19, 2009. Organized section on 3D EBSD and conventional tomography.
- Metrology in Thin Films, TMS Annual Meeting, Orlando, Feb 25- Mar. 1, 2007
- Three-Dimensional Experimental Measurements and Simulations, Plasticity, Halifax, Nova Scotia, July 2006
- Brent Adams Honorary Symposium on Homogenization Techniques and Microstructure Design and Characterization, Plasticity, Halifax, Nova Scotia, July 2006
- Thermoelectric Materials and Applications, MS&T 06, Cincinnati, Oct. 2006
- Structure-Property Relationships in Functional Materials, MS&T 06, Cincinnati, Oct. 2006
- Refractory Metals in Electronic Applications, TMS, San Francisco, February, 2005
- Texture and Microstructure of Thin Films and Coatings, TMS, San Francisco, February, 2005
- Texture in Electronic and Magnetic Films, MRS, San Francisco, April, 2002
- Friction Stir Welding and Processing, Indianapolis, TMS, Indianapolis, October, 2001
- EBSD of Electronic Materials, Pullman, May, 2001
- Texture Analysis for Quality and Process Control, ASM, St. Louis, October, 2000.
- Applications of Orientation Imaging, Salt Lake City, April, 2000.
- Texture and Properties of Thin Films, TMS, Chicago, October, 1998.

Committees/Conferences/Editorial:
- ASM – Texture and Anisotropy Committee (Chair, 2001-2005)
- ASM – Welding and Joining Committee
- TMS – Thin Films and Interfaces Committee (Vice Chair, 2003-2005, Chair, 2005-2007)
- TMS – Advanced Characterization, Testing and Simulation Committee (Vice Chair, 2020-present)
- MRS – Faculty advisor for student MRS chapter in Pullman, (April, 2004-2013)
- Material Advantage – Faculty advisor (Aug. 2012-2016)
- Member of International Committee of ITAP (International Conference on Texture, Anisotropy and Plasticity) – Gottingen, Germany, Sept. 2009
- Member of Scientific Committee of Thermec 2003 (held in Madrid), and Thermec 2006 (Vancouver, BC), and Thermec 2009 (Berlin, Germany), Thermec 2011 (Quebec, Canada)
- Member of organizing committee for the 15$^{th}$ International Conference on Textures of Materials (ICOTOM 15), Pittsburgh, June 2008
- Member of Editorial Board – Advances in Materials Science and Engineering, 2007 – 2012
- Associate Editor – Materials Characterization, 2009 – 2020
- Member of International Advisory Committee – 6$^{th}$ International Conference on

Nanomaterials by Severe Plastic Deformation (Nano SPD 6), Metz, France, June 23-28, 2014
- Member of Editorial Board - Advanced Structural and Chemical Imaging, 2013 – Present
- Member of International Advisory Committee, International Conference on Friction based Processes, Bangalore, India, September 3-5, 2014
- Local Organizing Committee, International Conference on Textures of Materials (ICOTOM 18), St. George, UT, 5-10 Nov, 2017
- ASME Journal of Engineering Materials Technology – Associate Editor for Special Issue in honor of Hussein Zbib, 2021
- Metals – Member of Editorial board, 2021 – present
- Editor-in-Chief – Materials Characterization, 2021 – present

External PhD Examinership:
- Cape Town University, South Africa, 2001
- McGill University, Montreal, Canada, 2005
- Andhra University, Vishakapatnam, India, 2006
- Monash University, Australia, 2011
- Univ. British Columbia, Canada, 2012
- University of New South Wales, Australia, 2013
- IISC, Bangalore, India, 2015
- University of New South Wales, Australia, 2016
- IISC, Bangalore, India, 2016
- IIT Kanpur, India, 2017
- IISC, Bangalore, India, 2019
- Univ. Saskatchewan, Canada, 2019
- IIT Madras, India, 2020
- IIT Kanpur, India, 2021
- IIT Kharagpur, India, 2021
- Univ. British Columbia, Canada, 2022

Consulting:
- Intel – 1997-2001
- Honeywell – 2003
- Cabot Corporation – 2003-2011
- Oak Ridge National Laboratory – 2004-2006
- EDAX – 2004, 2007, 2014
- LumenIQ – 2004
- Unicep Corp – 2006
- Wagstaff, Inc. – 2007
- Medtronic – 2007-2010
- Ambature – 2010-2011
- Tape Solar – 2011
- Global Advanced Metals – 2011-12
- Ormond, LLC – 2013

- Kaiser Aluminum – 2020

Awards/Honors

- GIAN Award, Jadavpur University, Kolkata, India, Feb 2018
- Brahm Prakash Visiting Chair, IISC, Bangalore, India, 2016-17
- TMP Program, MLK Distinguished Service Award, 2015
- Honorary Member, Golden Key International, 2014
- Fellow, ASM International, 2013
- Best Paper in Physical Sciences, Microscopy and Microanalysis Vol. 17, 2011
- Visiting Professor, Laboratoire d'etudes de microstructures et de mechaniques des materiaux (LEM3), Universite de Metz/Universite de Lorraine, Metz, France, 2010 (LETAM), 2011, 2012, 2014
- WSU MME Outstanding Research Award – 2006, 2007
- TMS EMPMD service award – 2007
- GPSA Outstanding Advisor Award (WSU) – 2004
- WSU MSE Excellence in Teaching Award – 2002, 2005, 2006
- TSL/EDAX Outstanding Technical Contribution – 2000
- ASM International Committee Chair – 2000-2005
- AMD Award for Technical Excellence – 1995
- Wyoming Honors Scholarship – 1981-86
- Union Pacific Scholarship – 1981

Reviewership:

Journals/Proceedings:

Acta Materialia
Advanced Engineering Materials
Advanced Materials
Advances in Manufacturing
American Ceramic Society Proceedings
Applied Physics
Applied Physics A
Applied Physics Letters
ASM International Symposia Proceedings
ChemPhysChem
Composite Interfaces
Computational Materials Science
Computers, Materials, and Continua (CMC)
Critical Reviews in Solid State Materials Sciences
Crystal Research and Technology
Crystals
Electronic Devices
High Temperature Materials and Processes
ICOTOM Proceedings
IEEE Transactions

Integrating Materials and Manufacturing Innovation
International Journal of Advanced Manufacturing Technology
International Journal of Cast Metals Research
International Journal of Fatigue
International Journal of Fracture
International Journal of Materials and Product Technology (IJMPT).
International Journal of Mechanical Sciences
International Journal of Plasticity
International Journal of Solids and Structures
International Materials Reviews
Institute of Materials, Minerals and Mining (UK)
IOP Conference Series: Materials Science and Engineering
JOM: Journal of the Minerals, Metals, and Materials Society
Journal of Alloys and Compounds
Journal of the American Ceramic Society
Journal of Applied Crystallography
Journal of Applied Physics
Journal of Electronic Materials
Journal of Engineering Fracture Mechanics
Journal of Engineering Materials and Technology
Journal of Engineering Tribology
Journal of Materials (JOM)
Journal of Materials Engineering and Performance
Journal of Materials and Design
Journal of Materials Processing Technology
Journal of Materials Research
Journal of Materials Research and Technology
Journal of Materials Science
Journal of the Mechanical Behavior of Biomedical Materials
Journal of Mechanical Engineering Science
Journal of Mechanical Sciences
Journal of the Mechanics and Physics of Solids
Journal of Metallurgy
Journal of Microscopy
Journal of Nuclear Materials
Journal of Physics and Chemistry of Solids
Journal of Process Mechanical Engineering
Journal of Testing and Evaluation
Journal of Undergraduate Research
Journal of Vacuum Science and Technology
Journal of Zhejiang University-Science A
Materialia
Materials
Materials Characterization
Materials Chemistry and Physics
Materials Letters

Materials Research Society Symposia Proceedings
Materials Science and Engineering (A)
Materials Science Forum
Materials Sciences and Applications
Materials Today
Mechanics of Materials
Metallography, Microstructure and Analysis
Metallurgical and Materials Transactions (A)
Micron
Microscopy and Microanalysis
NanoSPD Proceedings
Nature
Nature Communications
Nature Materials
Nuclear Engineering and Design
Philosophical Magazine
Philosophical Magazine Letters
Philosophical Transactions of the Royal Society
Phys Stat Solidi
Rare Metals
Research Letters in Materials Science
Science
Science Advances
Scripta Materialia
Solid State Technology
Steel Research International
Strojniški vestnik- Journal of Mechanical Engineering
Surface and Coatings Technology
Thin Solid Films
TMS Symposia Proceedings
Ultramicroscopy
Wear

Government Organizations/Foundations/Funding Agencies:
Air Force Office of Scientific Research (US)
Army Corp. Engineering Research and Development Center (US)
Austrian Science Fund (FWF)
Canada Research Chairs Program
Cooperative Research and Development Fund
Dept. of Energy (US), BES
Dept. of Energy (US), NEUP
Dept. of Energy (US), OIT
Engineering and Physical Science Research Council (EPSRC, UK)
French National Research Agency (ANR)
German Research Foundation (DFG)
Israeli Science Foundation

KSEF (Kentucky Science and Education Fund)
Le STUDIUM (Loire valley Institute for Advanced Studies)
M.J. Murdock Charitable Trust (US)
National Science Foundation (US)
Netherlands Science and Technology (STW)
NSERC (Canada)
Office of Naval Research (US)
Petroleum Research Fund (ACS)
Research Foundation-Flanders (Fonds Wetenschappelijk Onderzoek-Vlaanderen (FWO))
Swiss National Science Foundation (SNSF)

Invited Lectures/Seminars

- DP Field, "Microstructural Evolution during Deformation of Polycrystals with Gradient Microstructures," AMPMT, Tirupati, India Feb. 1-2, 2021 (virtual).
- DP Field, "EBSD Advanced Topics," IFIR – conicet, Rosario, Argentina, Oct. 10-11, 2019.
- DP Field, JP Young, and M Jamalian, "Characterization of Heterogeneous Structures," CIASEM 15 (15° Congreso Interamericano de Microscopia), Buenos Aires, Argentina, Oct. 3, 2019.
- DP Field, K Kalia, VV Joshi, "Observation of Grain Growth in U 10Mo Alloys," RexGG (7th International Conference on Recrystallization and Grain Growth), Ghent, Belgium, August 8, 2019.
- DP Field, "Analysis of Defect Structures in Deformed Metals Using EBSD," MS&T'18, Columbus, OH, Oct. 17, 2018.
- DP Field, "Using EBSD characterization of geometrically necessary dislocations to validate and improve crystal plasticity models," Microstructure and Property Relationship of Polycrystalline Materials: Characterization and Modelling, Carlos Tome Retirement Symposium, Santa Fe, NM, Sept. 20-21, 2018.
- DP Field, "Excess Dislocation Density near Boundaries as a Function of GB Texture," ICOTOM 18, St. George UT, November 2017
- DP Field, T Mungole, "Mechanical and Physical Characterization of Ti/TiN Nano-laminate Structures," MS&T 17, Pittsburgh, PA, October, 2017.
- DP Field, Z. Leng, F. Wagner, and N. Allain –Bonasso, "Heterogeneous dislocation density modeling of interstitial free steel," Materials 4.0 Summer School, Dresden, Germany. September, 2017.
- DP Field, "EBSD: History, Applications and Perspectives," Keynote lecture at 26° Congreso Brasileiro de Microscopio, Buzios, RJ, Brazil. June, 2017.
- DP Field, Z. Leng, F. Wagner, and N. Allain–Bonasso, "Using EBSD Characterization of GNDs to Validate and Improve Crystal Plasticity Models," 26° Congreso Brasileiro de Microscopio, Buzios, RJ, Brazil. June, 2017.
- DP Field, "Early Development and Establishment of EBSD as a Standard Analysis Tool," Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Brazil, June, 2017.
- DP Field, "EBSD Observation of Deformation at Grain Boundaries," TMS Annual Meeting, San Diego, CA, Feb. 26 – March 3, 2017
- DP Field, "Forensic Analysis of Plastic Strain for Complex Deformation Processes," Conference on Deformation and Texture of Materials, Jadavpur University, Kolkata, India, Feb. 16, 2017
- DP Field, "Microstructure Development during Indirect Extrusion," International Conference on Texture, Micro-Texture, and Mechanical Behavior, 2017, Bangalore, India, Feb. 13-15, 2017
- DP Field, V Joshi, JP Young, C Lavendar, et al, "Microstructure Development During Shear Assisted Indirect Extrusion," Intl. Materials Research Congress XXV, Cancun, Mexico, August 15-19, 2016
- DP Field, SI Wright, "Introduction to Modern EBSD Practice," Workshop given at IMRC, Cancun, MX, August 14, 2016
- DP Field, "New Developments in EBSD," Workshop given at IISC, Bangalore, India, July 28, Aug. 2, 5, 8, 2016
- DP Field, "Modeling and Experiments in Polycrystalline Deformation," Purdue, University, Nov. 16, 2015
- DP Field, "Using EBSD to estimate defect content in polycrystalline materials," Advanced Structural and Chemical Imaging, 2015, Pullman, WA May 20-22, 2015

- DP Field, "EBSD Observation of annealing twin boundaries in FCC metals," Oregon State Univ, Corvalis, OR, April 16, 2015
- DP Field, "Measurement and Modeling of defects in deformed metals," TMS Annual Meeting, Orlando, March 13-17, 2015
- DP Field, Characterization and Mechanical Properties of Carbon Nanotube Turf Structures, Portland St. Univ, Nov. 2014
- DP Field, "Industry Partnerships in R&D for Manufacturing and Aerospace at WSU," Aerospace Futures Alliance Meeting, Everett, WA, Sept. 26, 2014
- DP Field, Y Hovanski, H Yu, and EE Patterson, Friction Stir Joining Using Scribe Tool Technology, International Conference on Friction based Processes, Bangalore, India, September, 2014
- DP Field, Ultrafine Grained Materials using the Trianvil Test Apparatus, NanoSPD6, Metz, France, June, 2014
- DP Field, TMS, San Diego, Feb. 16-19, 2014
- DP Field, Crystal Plasticity Modeling and Experiments to Measure the Spatial Distribution of GND Dislocations in IF Steel, Plasticity, Freeport, The Bahamas, Jan 3-8, 2014
- DP Field and K Adam, "Recrystallization of 7xxx series Al alloys" Rex &GG, Sydney, Australia, May 5-10, 2013
- DP Field, "Analysis of deformation structures using EBSD," Symposium in honor of Oscar Ruano, U. Politecnica de Valencia, Valencia, Spain, Sept. 23-25, 2012.
- DP Field, "Microstructure Optimization of Laser-Engineered Net-Shape (LENS) Formed Ti," EBSD 2012, Pittsburgh, PA, June 20, 2012
- DP Field, "Observations of dislocation structure in AA 7050 by EBSD," International Conference on Textures of Materials 16 (ICOTOM 16) Bombay, India, December 12-17, 2011.
- DP Field, "Pressure dependent shear strength in Ta and Mo," LEM3, Metz, France, June 11, 2011.
- DP Field, "Deformation heterogeneity and excess dislocation density measurements," Plasticity 2011, Puerto Vallarta, Mexico Jan. 2011.
- DP Field, "Analyzing Deformation Structures using EBSD," Metz University, France, June, 2010.
- DP Field, "Comparison of Strain Measurement by X-ray Microdiffraction and EBSD," International Conference on Texture and Anisotropy of Polycrystals, ITAP3, Gottingen, Germany, Sept. 22-25, 2009.
- DP Field, "Current State of Three-dimensional EBSD: Operation, Application and Challenges," DOE Workshop on 4D Characterization of Materials and Damage, Annapolis, MD, Aug. 16-19, 2009.
- DP Field, JP Escobedo, DH Lassila, M. Leblanc, J Florando, "Pressure Dependent Shear Strength in Ta Foils," Keynote (invited) presentation at Plasticity '09, St. Thomas, USVI, Jan 2-9, 2009
- DP Field, "Structure Evolution in Thin Metal Films," Japan OIM Academy, Tokyo, Japan, Nov. 20, 2008
- DP Field, "Advanced Applications of EBSD," Tohoku University Departmental Seminar, Sendai, Japan, Nov 21, 2008
- DP Field, "Texture Evolution in Friction Stir Processed Aluminum," Eighth International Welding Symposium, Kyoto, Japan, Nov. 18, Kyoto, Japan
- DP Field, "Electron Backscatter Diffraction: Operation and Applications," Tutorial Lecture given in conjunction with Microscopy and Microanalysis '08, Albuquerque, NM, Aug. 2008
- SI Wright and DP Field, "EBSD: Physics, techniques and applications," Workshop given as part of International Conference on Textures of Materials 15, (ICOTOM 15), Pittsburgh, PA, June, 2008
- DP Field, "EBSD Step size dependence of dislocation density," Microscopy and Microanalysis, Miami, Fl, Aug. 2007
- DP Field, "Analysis of phase fractions in complex steels: EBSD vs. X-Ray" Hyundai Steel Corp, Incheon, Korea, June, 2007
- DP Field, "Structural analysis of thin conductor lines as related to electromigration and stress voiding," Samsung Corporation, Suwon, Korea, June, 2007
- DP Field, "Advanced structural analysis by EBSD," as part of EBSD workshop held at Suncheon University, June, 2007
- DP Field, "Dislocation Density Measurement by EBSD," Meeting of the Royal Microscopy Society, Glasgow, Scotland, March, 2007
- DP Field, "Analysis of grain boundary structure by EBSD," MSU, Starkville, MS, July, 2006

- DP Field, "Evolution of twin boundaries during annealing of low SFE materials," Gordon Conference, Holderness, NH, July, 2006
- DP Field, "Stereology of Triple Lines in Polycrystalline Materials," Brent Adams Honorary Symposium, Plasticity, Halifax, Nova Scotia, July, 2006
- DP Field, "Twin Boundary Development in Heavily Deformed Cu," Indo-US Forum, Vishakapatnam, India, December, 2005.
- DP Field, "Superplastic Behavior of Ultrafine Grained Ti," Workshop on Mechanical Behavior of Ultrafine Grained Materials, Univ. British Columbia, Vancouver, CA, Nov. 2005.
- DP Field, "Improving the Spatial Resolution of EBSD," MSA meeting, Honolulu, Hawaii, August, 2005.
- DP Field, "Texture Evolution in Thin Cu Films and Lines," 14th International Conference on Textures of Materials, Leuven, Belgium, July, 2005.
- DP Field and N. Li, "Microstructure in Friction Stir Welds of Magnesium," TMS symposium, Feb. 2005, San Francisco.
- DP Field, "Electron Backscatter Diffraction in Materials Science," Venezuelan Electron Microscopy Congress, October, 2004 – Caracas, Venezuela.
- DP Field, Workshop on Electron Backscatter Diffraction, Instituto Universitario de Tecnologia, October, 2004 – Caracas, Venezuela
- DP Field, JP Escobedo, D. Lassila, M. LeBlanc, and B. Bonner, "High Pressure Testing of Mo Single Crystals," Workshop on Multi-scale Modeling of Material Behavior, Jan. 2004 – Berkeley, CA
- D.P. Field, P. Trivedi, S.I. Wright, and M. Kumar, "Analysis of Local Orientation Gradients in Deformed Single Crystals," Frontiers of Electron Microscopy in Materials Science, Oct. 2003 – Berkeley, CA
- D.P. Field, "Analysis of Grain Fragmentation in Deformed Materials," Microscopy and Microanalysis, Aug. 2003 – San Antonio, TX
- D.P. Field, S.I. Wright, and P. Trivedi, "Microtextural Analysis of Grain Fragmentation in Aluminum," Thermec, July, 2003 – Madrid
- D.P. Field, "Characterization of Thin Cu Films and Lines for Interconnect Applications," Scanning, San Diego, CA, May 2003
- D.P. Field, Investigation of Cu Films and Structures for IC Interconnects, Univ. British Columbia Departmental Seminar, Vancouver, BC, Oct. 2002
- D.P. Field, Quantifying the Grain Boundary Character Distribution for Improved Material Performance, Gordon Research Conference on Physical Metallurgy, Holderness, NH, July 2002
- D.P. Field, Applications of EBSD to Investigations of Electronic Materials, Hitachi Electron Microscopy Meeting, June 2002, Pleasanton, CA.
- Field, D.P. "Electron Backscatter Diffraction Applications to Electronic Films," FMS/AVS Florida Chapter Annual Meeting, Orlando, FL, March 11-14, 2002.
- Field, DP, Mortensen, AW, Nowell, MM, and Campbell, GH, "Deformation at Crystallite Interfaces," Plasticity 2002, Aruba, Jan. 3-9, 2002.
- Field, DP and Wright, SI, "Introduction to Orientation Imaging Microscopy (OIM) and Recent Applications in Materials Science," Hitachi EM Users Meeting, Daejon, Korea, November 29-30, 2001.
- Field, D.P. "Investigating the Microstructure-Reliability Relationship of Cu Lines using EBSD," Advanced Micro Devices, Sunnyvale, CA, April 2001
- Field, D.P. "Structure Evolution in Cu Damascene Interconnects," Intel Corporation, Hillsboro, OR, Feb 2001
- Field, D.P. and Weiland, H. "Orientation Imaging of Heavily Deformed Materials," TMS Symposium on Electron Backscatter Diffraction, St. Louis, Oct 9-13, 2000.
- Field, D.P. and Dingley, D.J., V-ICEM, Margarita Island – OIM of Heavily Deformed Materials," Fifth InterAmerican Congress on Electron Microscopy, Isla de Margarita, Venezuela, October 24-28, 1999.
- Workshop on Texture Analysis and Measurement, McGill University, August, 1999.
- Field, D.P., "Orientation Imaging of Equal Channel Angular Extruded Cu," Idaho National Engineering Laboratory, January 7, 1999.
- Field, D.P., "An Introduction to OIM: Applications of Texture and Grain Boundary Structure," ASM Utah Chapter meeting, October 22, 1998.
- Field, D.P. Weiland, H., and Baggethun, P., "Imaging dislocation cell morphology in the SEM," Symposium in honor of Owen Richmond, Seven Springs, PA, October, 1998.

- Field, D.P., Sanchez, J.E. Jr., and Besser, P.R. "Texture and Grain Boundary Structure Evolution in Al-Cu Interconnect Lines," International Conference on Textures and Properties, Ekaterinburg, Russia, Sept. 1997.
- Field, D.P, "Orientation Imaging and Interconnect Reliability" Hewlett Packard, Thermal Ink Jet Division, Corvallis, OR, June 25, 1997.
- Field, D.P., "Interconnect Reliability: New Insights Obtained through Analysis by Orientation Imaging," Sematech Analytical Laboratory Managers Working Group meeting, April 16-17, 1997.
- Field, D.P., "Studies of Interconnect Reliability," Intel Corp., Hillsboro, OR, April 14, 1997.
- Field, D.P., "Recrystallization of 5xxx Series Aluminum Rolled Products," Alumax Technical Center, Golden, Colorado, April 11, 1997.
- Field, D.P., "Crystallographic Texture and Grain Boundary Structure: Real World Applications of Orientation Imaging," Univ. of Utah, Dept. of Metallurgy, April 9, 1997.
- Field, D.P., "Orientation Imaging Microscopy for Materials Research," Japan Institute of Metals, Symposium on the Texture of Metals, Tokyo, Japan, Aug. 22-23, 1996.
- Field, D.P., "Recent Advances in the Application of Orientation Imaging," Frontiers of Electron Microscopy, Oak Brook, IL, June, 1996.
- Field, D.P. and Palumbo, G., "Defining Optimal Grain Boundary Character for Engineered Structures," TMS symposium presentation, Cleveland, OH, October, 1995.
- Field, D.P., "An Overview of Orientation Imaging Microscopy," University of Toronto, Toronto, Canada, October, 1995.
- Field, D.P., "An Introduction to Orientation Imaging Microscopy," Kawasaki Steel, Chiba, Japan, Aug, 1995.
- Field, D.P., "Stereological Challenges in Grain Boundary Structure Investigation," Lawrence Livermore National Laboratory. September 29, 1994.
- Field, D.P., "Grain Boundary Character Effects on Intergranular Integrity," Knolls Atomic Power Laboratory, Schenectady, New York, June, 1994.
- Field, D.P., "Heterogeneity of Grain Boundary Performance in Creep and Fatigue," UC-San Diego, May, 3, 1994.
- Field, D.P., "The Significance of Grain Interactions in Polycrystal Deformation," Univ. California, Berkeley, CA, Apr. 28, 1994.
- Field, D.P., "Investigating the Crystallographic Structure of Grain Boundaries," FAMU/FSU, Tallahassee, FL, Mar. 14, 1994.

## DEVELOPMENT OF RESEARCH FACILITIES

- Apreo, Volume Scope with EBSD and EDS
- Corrugated Pressing Test Apparatus
- SEM in-situ heating stage
- High pressure torsion dies
- EDAX/TSL Hikari High Speed CCD camera for EBSD
- Cup Drawing Dies for Earring tests
- Equal Channel Angular Extrusion Dies
- FEI Sirion 200 FESEM – NSF Grant
- Firewire slow-scan CCD, Digiview, to augment the EBSD system.
- High resolution scanner to use with radiographic images (from LumenIQ)
- Scanning Electron Microscope ($LaB_6$ filament) – JEOL 840a (from Intel)
- Scanning Electron Microscope – CamScan Series IV
- Orientation Imaging System –TexSEM Laboratories
- EDS System with Light Element Detector – EDAX Falcon
- Asymmetric Rolling Testing Apparatus for MTS
- Reciprocating Equal Channel Extrusion Apparatus for MTS
- High Pressure Trianvil Testing Apparatus – with LLNL

## RESEARCH GRANTS/CONTRACTS

- DP Field, “Tailoring the Properties of Multi-Phase Materials Through the Use of Correlative Microscopy and Machine Learning,” Battelle-INL, 2/2022-9/2023, $135K
- DP Field, “Effect of Grain Boundary and Triple Junction Character on Phase Transformations in Alloys,” Battelle-PNNL, 6/2021-9/2021, $25K
- DP Field, BJ Schuessler, “DGRP: SHAPE processing and structural analysis,” Battelle-PNNL, 7/2019-7/2021, $120K
- D.P. Field, “Investigation of Recrystallization and Grain Growth in Uranium 10 wt% Molybdenum,” Battelle-PNNL, 1/2019-9/2019, $55K
- M. Knoblauch, D.P. Field, H. Beyenal, “Acquisition of Volume Scope” Murdock Foundation, 8/2018-8/2020, $450K
- DP Field, “Formability determination of SHAPE processed Mg alloys,” Battelle-PNNL, 4/2018-9/2018, $15,295
- DP Field, “Strength of CNT filaments after treatment,” Odyseuss Technologies, 9/2013-12/2019 $115K
- H Zbib, DP Field, G Ayoub, B Mansour, “Multiscale modeling and optimization of advanced interface materials for high energy environments,” QNRF 2/2015-6/2018, $315K
- DP Field, “Microstructural Characterization of FSW in Aluminum Alloys,” Battelle-PNNL, 9/2016-9/2018, $98K
- DP Field, “Grain Size and Texture Analysis of U 10% Mo specimens by EBSD and ECCI,” DOE-PNNL, 1/2014-9/2018, $72K
- DP Field, B Fromm, “Microstructure Reconstruction for Phase Field Models”, INL 8/2013-8/2015, $157K
- H Zbib, A Ruimi, DP Field, “Advanced High Strength Steel,” Qatar National Research Fund, 1/2013-12/2015, $332K
- DF Bahr, DP Field, “REU: Advanced Materials Characterization,” 2011-2014, $279K
- H Zbib, G. Kridli, DP Field, “Twin Roll Cast Magnesium, Experiments and Modeling,” Qatar National Research Fund, 11/2010-11/2013, $348K
- DP Field, “Development of a triple junction distribution function, 3DF,” NSF, 7/2010-6/30/2014, $328K (REU supplements in 2012 and 2013)
- S Mesarovic, DP Field, DF Bahr, “NIRT: Mechanics of NanoTurfs: Multiscale Modeling, Experiments and Characterization,” National Science Foundation, 6/1/2009-5/31/2012, $754,299
- DP Field, “Simulations and Experiments to Measure Structural Evolution IN AA 7050,” Kaiser Aluminum, 1/1/2009 to 12/31/2012, $312033
- DP Field, “Software to Interpret EBSD Data for Parent Grain Identification and Lath Packet Spacing Measurement,” BYU, 8/16/2008-8/31/2009, $28691
- DP Field, DF Bahr, “Development of an Introductory Engineering Course with an Eye towards Education, Retention, and Recruitment,” Samuel H. and Patricia W. Smith Teaching and Learning Grant, WSU, 4/1/2008 - 3/30/2009, $2500
- DP Field (KO Findley), “FEMET Curriculum Development Grant,” AIST Foundation, 8/2006-8/2011, $25K
- C. Richards and D.P. Field, “REU: Introduction to Multi-scale Engineering,” NSF, 2008-2011, $225K
- DP Field, “Experiments to Understand the Effect of Pressure on the Strength of Metals,” LLNL, 2008-2009, $40K
- DP Field, “Characterization of Explosively Bonded Materials,” Pacific Aerospace and Electronics, 2007-2008, $25K
- DF Bahr, DP Field, et al “Development and Implementation of an Intensive Short Course, Seminar, and Mentoring for Introducing Undergraduates to Research in Engineering,” NSF 2007-2010, $149K
- DP Field, “Pressure-Dependent Mechanical Response in Polycrystals,” LLNL, 3/2007-4/2008, $30K.
- DP Field, DF Bahr, MG Norton, T. Dickenson, IMR: Acquisition of a FESEM for Characterization of Advanced Materials and Development of Improved EBSD Tools, NSF 0414294 (1/9/04-31/8/07) - $252K
- Observation and Prediction of Dislocation Patterns in Three Dimensions, DARPA, Alcoa/Northrupp Grumman subcontract (6/04-12/07) – $237K
- DP Field, “Analysis of Retained Austenite in Trip Steels,” PNNL, 2005, $10K.

- B.Q. Li and D.P. Field - "Development of Integrated Methodology for Thermomechanical Processing of Al Alloys." U.S. DOE Office of Industrial Technology grant extension, 8/2004-8/2005 $62K
- DP Field, "Pressure-Dependent Mechanical Response in Polycrystals," LLNL, 8/2004-12/2006, $92K.
- DP Field, Orientation Imaging Analysis of Ta Tensile Specimen, LLNL subcontract, $25K, April, 2004-May, 2005.
- DP Field, Quantitative Analysis of Radiographic Images for Thickness Measurements and Defect Analysis, Washington Technology Center and LumenIQ - $48K (2004).
- DP Field, Analysis of Deformation and Annealing Behavior of ECAE Processed Copper, INEEL – BBWI subcontract, 2003 – $25K.
- DP Field, Analysis of Ta Sputtering Targets and Ta wire, Cabot Corporation, 2003, - $17,500.
- DP Field, Experiments to Measure Pressure Dependent Dislocation Mobility in Mo, LLNL Subcontract No. B530385 - $54K (2003).
- DP Field, Analysis of Deformation and Annealing Behavior of ECAE Processed Copper, INEEL - BBWI (subcontract 00006), 2002 – $25K.
- DP Field, Diffraction and Atomic Force Microscopy Analysis of Ta Sputtering Targets, Cabot Corporation, 2002, - $5K.
- B.Q. Li and D.P. Field - "Development of Integrated Methodology for Thermomechanical Processing of AL Alloys." U.S. DOE Office of Industrial Technology grant no. DE-FC07-01ID14189, 8/2001-8/2004 $356K
- DP Field - INEEL - BBWI (subcontract 00000291), "Orientation Imaging of Materials Processed by Equal Channel Angular Extrusion." 2001 - $8K
- DP Field, Structure evolution in Cu damascene interconnect lines, 2001 - Advanced Micro Devices. $25K

## PUBLICATIONS

### Books and Journals Edited

- S. Suwas and DP Field, editors, Advances in Texture and Microtexture: Measurements, Analyses, and Application, Springer, 2022 (In progress).
- DP Field, H Garmestani, T Khraishi, M Zikry "Special Issue: The Behavior of Crystalline Materials: In Honor of Professor Hussein Zbib," J. Eng. Matls. Tech, volume 144 (2022).
- Electron Backscatter Diffraction in Materials Science 2, Eds. AJ Schwartz, M Kumar, BL Adams and DP Field, Springer US, 2009.
- LN Brewer, DP Field, and CC Merriman, "Mapping and Measuring Plastic Deformation Using EBSD," in Electron Backscatter Diffraction in Materials Science 2, Eds. AJ Schwartz, M Kumar, DP Field and BL Adams 2009.
- RA Schwarzer, DP Field, BL Adams, M Kumar, and AJ Schwartz, "Present state of electron backscatter diffraction and prospective developments," in Electron Backscatter Diffraction in Materials Science 2, Eds. AJ Schwartz, M Kumar, DP Field and BL Adams 2009.
- DP Field and M Kumar "Electron Backscatter Diffraction of Aluminum Alloys," in DS MacKenzie and GE Totten, Eds, Analytical Characterization of Aluminum, Steel, and Superalloys, Taylor and Francis Group, New York, NY (2006), pp. 519-573 (*invited chapter*).
- DP Field, CA Michaluk, R Ravichandran, and GA Rozak, Journal of Electronic Materials Special Issue, **Vol 34 No. 12** (Dec. 2005)
- D.P. Field, "Textured Structures," in ASM Handbook Volume 9: Metallography and Microstructures, Ed. G.F. VanderVoort, ASM International, Materials Park, OH, 2004, p. 215-226. (*Invited Chapter*)
- DP Field, MM Nowell and QT Jiang, Journal of Electronic Materials Special Issue, **Vol 31 No. 1** (Jan. 2002).
- PW DeHaven, DP Field, SD Harkness IV, JA Sutliff, JA Szpunar, L Tang, T Thomson, and MD Vaudin, Magnetic and Electronic Films – Microstructure, Texture and Application to Data Storage, Materials Research Society Symposium Proceedings Volume **721**, 2002.
- KV Jata, MW Mahoney, RS Mishra, SL Semiatin, and DP Field, Friction Stir Welding and Processing, The Minerals Metals and Materials Society, Warrendale, PA, 2001.

Journal Articles (Bold name indicates undergraduate researcher)

- S Karcher, R Mohun, T Olds, M Weber, K Kriegsman, X Zhao, X Guo, C Corkhill, DP Field, J McCloy, "Benefits of using multiple Raman laser wavelengths for characterizing defects in UO2" J. Raman Spect. (2022) https://doi.org/10.1002/jrs.6321
- A Afrouzian, CJ Groden, DP Field, S Bose, and A Bandyopadhyay, Additive manufacturing of Ti-Ni reactive bimetallic structures, Matls and Design, 215 (2022), 110461 https://doi.org/10.1016/j.matdes.2022.110461
- Jacqueline I. Reeve, Benjamin J. Schuessler, William E. Frazier, David P. Field, Vineet V. Joshi, "The role of second phase particles and grain boundaries on recrystallization: Quasi-in situ experiments and modeling in U-10Mo alloy system," J. Nucl. Matls. 559 (2022), 153445 https://doi.org/10.1016/j.jnucmat.2021.153445
- Mehdi Hamid, Maryam Jamalian, Natalia De Vincentis, **Quentin Buck**, and DP Field, "Multiscale Modeling of the Strength and Ductility Paradox for High Pressure Torsion Samples with Gradient Microstructure," J. Eng. Matls. Tech, 144 (2022) 011013. https://doi.org/10.1115/1.4051901
- DP Field, H Garmestani, T Khraishi, M Zikry "Special Issue: The Behavior of Crystalline Materials: In Honor of Professor Hussein Zbib," J. Eng. Matls. Tech, 144 (2022) 010201. https://doi.org/10.1115/1.4052487
- K. Adam and DP Field, "Analyzing Recrystallization Behavior of Heterogeneous Structures Single-Phase Al Alloys," Materialia, 19 (2021), 101190, https://doi.org/10.1016/j.mtla.2021.101190
- BJ Schuessler, DP. Field, NR Overman, and VV. Joshi, "The effect of homogenization heat treatment on the texture evolution in U-10Mo alloy," Metal. Mater. Trans. A. (2021). https://doi.org/10.1007/s11661-021-06349-8
- Natalia De Vincentis, DP Field "Factors Affecting Confidence Index in EBSD Analysis," Ultramicroscopy 225 (2021) 113269. https://doi.org/10.1016/j.ultramic.2021.113269
- K. Adam and DP Field, "Developing novel heterogenous microstructures to balance between strength and ductility without restoration processes in commercial Al alloys," Mechanics of Advanced Materials and Structures, 28 (2021) 1862941. https://doi.org/10.1080/15376494.2020.1862941
- A Heidarzadeh, S Mironov, R Kaibyshev, G Çam, A Simar, A Gerlich, F Khodabakhshi, A Mostafaei, DP Field, JD Robson, A Deschamps, and PJ Withers, "Friction stir welding/processing of metals and alloys: A comprehensive review on microstructural evolution," Progress in Materials Science (2021). https://doi.org/10.1016/j.pmatsci.2020.100752
- Amrita Kundu and David P. Field, "Influence of Microstructural Heterogeneity and Plastic Strain on Geometrically Necessary Dislocation Structure Evolution in Single and Two-Phase Alloys," Matls. Char. 170 (2020) 110690. https://doi.org/10.1016/j.matchar.2020.110690
- M Jamalian, JI Reeve, and DP Field, "Thermal behavior of AZ31 gradient microstructure after cold severe surface plastic deformation," Matls. Char. 169 (2020) 110630. https://doi.org/10.1016/j.matchar.2020.110630
- NS De Vincentis, DP Field, "Analysis on Determination of Correct Solutions in Orientation Imaging Microscopy," Microscopy and Microanalysis 26 S1 (2020), 15-16 https://doi.org/10.1017/S1431927620000318
- A Kundu, DP Field, PC Chakraborti, "Effect of Strain and Strain Rate on the Development of Deformation Heterogeneity during Tensile Deformation of a Solution Annealed 304 LN Austenitic Stainless Steel: An EBSD Study," Matls. Sci. Eng. A 773 (2020) 138854. https://doi.org/10.1016/j.msea.2019.138854
- M Jamalian and DP Field, "Effect of gradient microstructures on strengthening and toughening of AZ31," Matls. Sci. Eng. A 771 (2020) 138615. https://doi.org/10.1016/j.msea.2019.138615
- N Overman, S Jana, DP Field, C Lavender, and V Joshi, "An electron backscatter diffraction analysis of grain boundary initiated discontinuous precipitation in U-10Mo," J. Nucl. Matls. 529 (2020) 151940. https://doi.org/10.1016/j.jnucmat.2019.151940
- M. Jamalian and DP Field, "Gradient microstructure and enhanced mechanical performance of magnesium alloy by severe impact loading," J. Matls. Sci. Tech. 36 (2020) 45-49. https://doi.org/10.1016/j.jmst.2019.06.013

- C. Wang, Z Xu, DK Fagan, DP Field, CA Lavender, VV Joshi, "Quantifying and Qualifying Alloys Based on Level of Homogenization: A U-10 wt% Mo Alloy Case Study," J. Eng. Matls. Tech, 142(1): 011012 (2020) https://doi.org/10.1115/1.4044891
- M Jamalian, M Hamid N DeVincentis, **Q Buck**, DP Field, HM Zbib, "Creation of heterogeneous microstructures in copper using high-pressure torsion to enhance mechanical properties," Matls. Sci. Eng A 756 (2019) 142-148. https://doi.org/10.1016/j.msea.2019.04.024
- S. Takajo, CC Merriman, SC Vogel, and DP Field, "In-situ EBSD study on the cube texture evolution in 3mass% Si steel complemented by ex-situ EBSD experiment - from nucleation to grain growth," Acta Mater. 166 (2019) 100-112. https://doi.org/10.1016/j.actamat.2018.11.054
- M Jamalian and DP Field, "Effects of shot peening parameters on gradient microstructure and mechanical properties of TRC AZ31," Matls. Char. 148 (2019) 9-16. https://doi.org/10.1016/j.matchar.2018.12.001
- T Mungole, J Zhang, B Mansoor, G Ayoub, and DP Field, "Bifurcation in deformation mechanism to overcome strength-ductility paradox in metal-ceramic multilayer thin-films," Appl. Phys. Lett. 113, 101902 (2018); https://doi.org/10.1063/1.5041344
- A Kundu and DP Field, "Geometrically Necessary Dislocation Density Evolution in Interstitial Free Steel at Small Plastic Strains," Metall and Mat Trans A 49 (2018) 3274-3282. https://doi.org/10.1007/s11661-018-4693-1
- B Mansoor, CA Usman, T Mungole, G Ayoub, and DP Field, "Corrosion mechanism in PVD deposited nano-scale titanium nitride thin film with intercalated titanium for protecting the surface of silicon," Electrochimica Acta 64 (2018) 69-82. https://doi.org/10.1016/j.electacta.2018.01.042
- KF Adam, D Zöllner, and DP Field, "3D Microstructural Evolution of Primary Recrystallization and Grain Growth in Cold Rolled Single-Phase Aluminum Alloys," Modelling Simul. Mater. Sci. Eng, 26 (2018) 035011. https://doi.org/10.1088/1361-651X/aaa146
- J Zhang, P Upadhyay, Y Hovanski, and DP Field, "High-Speed Friction Stir Welding of AA7075-T6 Sheet: Microstructure, Mechanical Properties, Micro-texture, and Thermal History," Metall. Trans. A 49 (2018) 210–222. https://doi.org/10.1007/s11661-017-4411-4
- T. Mungole, B. Mansoor, G. Ayoub, DP Field, "Bifurcation in Deformation Behavior of Cu and Ta by Accumulative Roll-Bonding at High Temperature," Scripta Mater. 136 (2017) 87-91. http://dx.doi.org/10.1016/j.scriptamat.2017.04.012
- KF Adam, Z-D Long and DP Field, "Analysis of Particle-Stimulated Nucleation (PSN)-Dominated Recrystallization for Hot-Rolled 7050 Aluminum Alloy," Metall. Mater. Trans. A 48 (2017) http://dx.doi.org/10.1007/s11661-017-3967-3
- K Adam, JM Root, Z-D Long, and DP Field, "Modeling the Controlled Recrystallization of Particle-Containing Aluminum Alloys" J. of Mater. Eng. and Perform, 26 (2017) 207-213 http://dx.doi.org/10.1007/s11665-016-2436-2
- Jingyi Zhang, **Karyn Nash, Alyssa Arrigoni**, Juan P. Escobedo, Jeff N. Florando, David P. Field "Hydrostatic pressure effect on mechanical behavior and texture evolution of Al and Brass," Matls. Sci. Eng. A 769 (2017) 155-161 http://dx.doi.org/10.1016/j.msea.2016.10.030
- H Lyu, A Ruimi, DP Field, and HM Zbib, "Plasticity in Materials with Heterogeneous Microstructures," Metall. Mater. Trans. A 47 (2016) 6608-6620 http://dx.doi.org/10.1007/s11661-016-3802-2
- A Kundu and DP Field, "Influence of Plastic Deformation Heterogeneity on Development of Geometrically Necessary Dislocation Density in Dual Phase Steel," Mater. Sci. Eng. A, 667 (2016), 435-443 http://dx.doi.org/10.1016/j.msea.2016.05.022
- G Cheng, F Zhang, A Ruimi, DP Field, and X Sun, Quantifying the Effects of Tempering on Individual Phase Properties of DP980 Steel with Nanoindentation," Mater. Sci. Eng. A 667 (2016), 240–249 http://dx.doi.org/10.1016/j.msea.2016.05.011
- EE Patterson, Y Hovanski, and DP Field, "Microstructural Characterization of Friction Stir Welded Aluminum-Steel Joints," Metall Mater Trans 47A (2016) 2815-2829, http://dx.doi.org/0.1007/s11661-016-3428-4
- F Zhang, A Ruimi PC Wo, and DP Field, "Morphology and distribution of martensite in dual phase DP980 steel and its relation to the multiscale mechanical behavior," Matls. Sci. Eng. A 659 (2016) 93-103 http://dx.doi.org/10.1016/j.msea.2016.02.048
- F Zhang, A Ruimi, DP Field, "Phase identification of dual phase (DP980) steels by EBSD and nanoindentation techniques," Microsc. Microanal. (2016) http://dx.doi.org/10.1017/S1431927615015779

- GB Hardy and DP Field, "Reliability of Twin-Dependent Triple Junction Distributions Measured from a Section Plane," Acta Mater, 103 (2016) 809-822. http://dx.doi.org/10.1016/j.actamat.2015.10.038
- SI Wright, DP Field, MM Nowell, "Post processing effects on GND calculations from EBSD-based orientation measurements," IOP Conf. Series: Materials Science and Engineering 89 (2015) 012049. http://dx.doi.org/10.1088/1757-899X/89/1/012049
- Péter J. Szabó, David P. Field, Bertalan Jóni, Jelena Horky and Tamás Ungár, "Bimodal Grain-Size Distribution Enhances Strength and Ductility Simultaneously in a Low-Carbon Low-Alloy steel" Metall. Mater. Trans. A 46 (2015) 1948-1957. http://dx.doi.org/10.1007/s11661-015-2783-x
- G Hardy and DP Field, "The Parameters and Fundamental Zones of Twin Dependent Triple Junction Distributions," Metall. Mater. Trans. A, 46 (2015) 2273-2284. http://dx.doi.org/10.1007/s11661-015-2800-0
- JP Young, H Askari, Y Hovanski, MJ Heiden, and DP Field, "Thermal Microstructural Stability of AZ31 Magnesium after Severe Plastic Deformation," Materials Characterization 101 (2015) 9-19. http://dx.doi.org/10.1016/j.matchar.2014.12.026
- O Fakron and DP Field, "3D Image Reconstruction of Fiber Systems Using Electron Tomography," Ultramicroscopy, 149 (2015) 21-25. http://dx.doi.org/10.1016/j.ultramic.2014.10.012
- JP Young, G. Ayoub, B. Mansoor, D.P. Field, "The effect of hot rolling on the microstructure, texture and mechanical properties of twin roll cast AZ31 Mg," J. Matls. Proc. Tech, 216 (2015) 315-327. http://dx.doi.org/10.1016/j.jmatprotec.2014.09.023
- MC Teague, BS Fromm, MR Tonks, and DP Field, "Using Coupled Mesoscale Experiments and Simulations to Investigate High Burn-up Oxide Fuel Thermal Conductivity" JOM, 66 (2014), 2569-2577. http://dx.doi.org/10.1007/s11837-014-1160-3
- H Askari, H Zbib, J Young, G Ayoub, DP Field, "Prediction of flow stress and textures of AZ31 magnesium alloy at elevated temperature," Phil Mag, 94 (2014), 3353–3367. http://dx.doi.org/10.1080/14786435.2014.958589
- **J. Bair**, **S. Hatch** and DP Field, "Formation of annealing twin boundaries in nickel," Scripta Mater. 81 (2014), 52-55. http://dx.doi.org/10.1016/j.scriptamat.2014.03.008
- Hesam Askari, John Young, David Field, Ghassan Kridli, Dongsheng Li & Hussein Zbib, "A study of the hot and cold deformation of twin-roll cast magnesium alloy AZ31," Phil Mag, 94 (2014), 381-403. http://dx.doi.org/10.1080/14786435.2013.853884
- JP Escobedo, DP Field, MM Leblanc, JN Florando, and DH Lassila, "Influence of pressure on the microstructural evolution of Ta during shear deformation," Scripta Mater. 80 (2014), 21-24. http://dx.doi.org/10.1016/j.scriptamat.2014.02.006
- Z Leng, DP Field, and A Alankar, "Dislocation density based crystal plasticity finite element simulation of Al bicrystal with grain boundary effects," MRS Symp. Proceedings, Vol. 1651 (2014) http://dx.doi.org/10.1557/opl.2014.52
- A Alankar, DP Field, D Raabe, "On the plastic anisotropy of electro-deposited pure iron having sharp <111> // ND crystallographic texture: analysis using a physics based crystal plasticity model" Int. J. Plasticity 52 (2014), 18-32. http://dx.doi.org/10.1016/j.ijplas.2013.03.006
- O.V. Kononenko, V.N. Matveev, D.P. Field, D.V. Matveev, S.I. Bozhko, D.V. Roshchupkin, E.E. Vdovin, and A.N. Baranov, "Investigation of structure and transport properties of graphene grown by low-pressure no flow CVD on polycrystalline Ni films" Nanosystems: Physics, Chemistry, Mathematics, 5 (2014), 117-122.
- DP Field, A Lewis, AD Rollett, and SI Wright, "Foreward: Quantification of texture and microstructure gradients in polycrystalline materials," Metallurgical and Materials Transactions A, 44 (2013) http://dx.doi.org/10.1007/s11661-013-1908-3
- **EE Patterson**, YD Zhang, and DP Field, "Characterization of TWIP steel", Materials Characterization, 85 (2013), 100-110. http://dx.doi.org/10.1016/j.matchar.2013.08.016
- Z. Leng, A. Alankar, DP Field, N. Allain-Bonasso, F. Wagner, "Dislocation Density Based Crystal Plasticity Finite Element Model of Polycrystals with Grain Boundary Effect" Proceedings of the 2nd World Congress on Integrated Computational Materials Engineering: ICME 2013, Eds. M. Li. C. Campbell, K. Thornton, E. Holm, and P. Gumbsch, TMS, Pittsburgh, p. 271-276.
- F. Zhang and DP Field, "Characterization of creep damaged grain boundaries of alloy 617," Metall. Mater. Trans. A, 44A, 4927-4936 (2013). http://dx.doi.org/10.1007/s11661-013-1975-5

- **JP Young**, DP Field, TW Nelson, "Material Flow During Friction Stir Welding of HLSA 65 Steel," Metall. Mater. Trans. A, 44 (2013) 3167-3175 http://dx.doi.org/10.1007/s11661-013-1684-0
- CF Gu, L Toth, DP Field, JJ Fundenberger, YD Zhang, "Room temperature equal channel angular pressing of a magnesium alloy," Acta Mater. 61 (2013) 3027-3036. http://dx.doi.org/10.1016/j.actamat.2013.01.063
- Z Leng and DP Field, "Damage susceptibility of Sigma 3 boundaries in HT 9 steel subjected to high temperature creep," Metall. Mater. Trans. A, 43A (2012) 3539-3546.. http://dx.doi.org/10.1007/s11661-012-1286-2
- O.M. Fakron and D.P. Field, "SEM-Based Electron Tomography of Turfs Comprised of Lineal Structures," 1st International Conference on 3D Materials Science, Eds. M. DeGraef, HF Poulsen, A Lewis, J. Simmons, G. Spanos, July 2012, TMS, Pittsburgh, pp. 233-238..
- J.P. Young, **M.J. Heiden**, Y. Hovanski, and D.P. Field, "Microstructural analysis of severe plastic deformed twin roll cast AZ31," in Mg2012: 9th International Conference on Magnesium Alloys and their Applications, Eds. W.J. Poole and K.U. Kainer, 2012, pp. 1087-1094.
- A. Alankar, HM Zbib, DP Field, "Explicit incorporation of cross-slip in a dislocation density based crystal plasticity model," Phil. Mag, 92 (2012) 3084–3100 http://dx.doi.org/10.1080/14786435.2012.685964
- N Biswas, J Ding, V Balla, A Bandyopadhyay, DP Field, "Deformation and Fracture Behavior of Laser Processed Dense and Porous Ti6Al4V Alloy Under Static and Dynamic Loading" Matls. Sci. Eng. A, 549 (2012) 213– 221 http://dx.doi.org/10.1016/j.msea.2012.04.036
- N. Allain-Bonasso, F. Wagner, S. Berbenni, and D.P. Field, "A Study of the heterogeneity of plastic deformation in IF steel by EBSD" Matls. Sci. Eng. A, 548 (2012) 56–63 http://dx.doi.org/10.1016/j.msea.2012.03.068
- A. Alankar, IN Mastorakos, DP Field, and HM Zbib, "Determination of dislocation interaction strengths using discrete dislocation dynamics of curved dislocations," J. Eng. Mater. Technol, 134 (2012) 021018 (4 pages) http://dx.doi.org/10.1115/1.4005917
- DP Field, CC Merriman, N. Allain-Bonasso, F. Wagner "Quantification of Dislocation Structure Heterogeneity in Deformed Polycrystals by EBSD" Modelling Simul. Mater. Sci. Eng. 20 (2012) 024007 http://dx.doi.org/10.1088/0965-0393/20/2/024007.
- Z Leng and DP Field "Dislocation Density Based Crystal Plasticity Finite Element Simulation of Alpha-Iron," in Materials Challenges in Current and Future Nuclear Technologies (Mat. Res. Soc. Symp. Proc. 1383 (2012) http://dx.doi.org/10.1557/opl.2012.213
- F Zhang and DP Field, "Grain Boundary Analysis of Crept Alloy 617," in Materials Challenges in Current and Future Nuclear Technologies (Mat. Res. Soc. Symp. Proc. 1383 (2012) (http://dx.doi.org/10.1557/opl.2012.243).
- **CG Parker**, DP Field, "Observation of Structure Evolution during Annealing of 7xxx Series Al Deformed at High Temperature" Light Metals 2012, Ed. CE Suarez, TMS, Pittsburgh, PA, 2012, pp. 383-386.
- Yuri Hovanski, Michael Santella, Saumyadeep Jana, Hao Yu, David Field, Tsung-Yu Pan, Siva Pilli, "Solid State Joining of Magnesium to Steel" Magnesium Technology 2012, Eds. S Mathaudhu, W Sillekens, N Hort, N Neelameggham, TMS, Pittsburgh, PA, 2012, pp. 11-16.
- CC Merriman, DP Field, "Observations of dislocation structure in AA 7050 by EBSD," Materials Science Forum Vols. 702-703 (2012) pp 493-498 (http://dx.doi.org/10.4028/www.scientific.net/MSF.702-703.493)
- AD Rollett, F Wagner, N Allain-Bonasso, DP Field, R Lebensohn, "Comparison of Gradients in Orientation and Stress between Experiment and Simulation" Materials Science Forum Vols. 702-703 (2012) pp 463-468 (http://dx.doi.org/10.4028/www.scientific.net/MSF.702-703.463).
- F Wagner, N Allain-Bonasso, S Berbenni, and DP Field, **"**On the use of EBSD to study the heterogeneity of plastic deformation," Materials Science Forum Vols. 702-703 (2012) pp 245-252 (http://dx.doi.org/10.4028/www.scientific.net/MSF.702-703.245).
- A Alankar, and DP Field, "Modeling of deformation microstructure - strain hardening and crystallographic reorientation of crystallites in a columnar polycrystal," Materials Science Forum Vols. 702-703 (2012) pp 196-199 (http://dx.doi.org/10.4028/www.scientific.net/MSF.702-703.196)
- SI Wright, MM Nowell and DP Field, "A Review of Strain Analysis using EBSD," Microscopy and Microanalysis, 17 (2011) 316-329 (http://dx.doi.org/10.1017/S1431927611000055 )
- I. Robertson, C. Schuh, J. Vetrano, N. Browning, D.P. Field, R. Dunin-Borkowski, MK Miller, I. Baker, D. Dunand, D. Juul-Jensen, B. Kabius, T. Kelly, S. Lozano-Perez, A. Misra, G. Rohrer, and A.D. Rollett, "Towards an integrated materials characterization toolbox," J. Matls. Res, 26 (2011) 1341-1383 (http://dx.doi.org/10.1557/jmr.2011.41 )

- A. Goyal, DP Field, R Held, J Mannhart, LF Allard, and K More, "Grain boundary networks in high performance, heteroepitaxial, YBCO films on polycrystalline, cube-textured metals," Phil Mag. Letters, 91 (2011) 246-255 (http://dx.doi.org/10.1080/09500839.2010.548345).
- H Malik, **KJ Stephenson**, DF Bahr, and DP Field, "Quantitative Characterization of Carbon Nanotube Turf Topology by SEM Analysis," J. Mat. Sci. 46 (2011) 3119–3126 (http://dx.doi.org/10.1007/s10853-010-5192-y )
- DP Field and A. Alankar, "Observation of Lattice Rotation during Deformation of a Cu Bi-Crystal," Metall. Mater. Trans, 42 (2011) 676-683 (http://dx.doi.org/10.1007/s11661-010-0570-2 )
- DP Field, KR Magid, IN Mastorakos, JN Florando, DH Lassila, and JW Morris Jr. "Mesoscale Strain Measurement in Deformed Crystals: A Comparison of X-ray Microdiffraction with Electron Backscatter Diffraction," Phil Mag, 90 (2010) 1451-1464. (http://dx.doi.org/10.1080/14786430903397297 )
- JP Escobedo, DP Field, JN Florando, M Leblanc, and DH Lasilla "The Tri-anvil Test Apparatus: Measurement of Shear Strength under Pressure," Rev. Sci. Instr, 81 (2010) 013908-1-013908-8. (http://dx.doi.org/10.1063/1.3294426 )
- DP Field, CC Merriman and IN Mastorakos, "Two- and Three-Dimensional EBSD Measurement of Dislocation Density in Deformed Structures," Solid State Phenomena, 160 (2010) 17-22. (http://dx.doi.org/10.4028/www.scientific.net/SSP.160.17 )
- A. Alankar, IN Mastorakos, and DP Field, "Development of a 3D Crystal Plasticity Model that Tracks Dislocation Density Evolution," Solid State Phenomena, 160 (2010) 57-62. (http://dx.doi.org/10.4028/www.scientific.net/SSP.160.57 )
- CK Yoon and DP Field, "Evolution of Annealing Twins in Sputtered Cu Films" J. Electr. Matls. 39 (2010), 191-199. (http://dx.doi.org/10.1007/s11664-009-0998-6 )
- DP Field, **L Behrens**, and JM Root, "Identification of Particle Stimulated Nucleation during Recrystallization of AA 7050," CMC - Computers, Materials and Continua, vol. 14, no.3, pp.171-183, 2009.
- A Alankar, IN Mastorakos, and DP Field, "A dislocation density based 3D crystal plasticity model for pure aluminum" Acta Mater, 57 (2009) 5936–5946. (http://dx.doi.org/10.1016/j.actamat.2009.08.028)
- **JM Root**, DP Field and TW Nelson, "Crystallographic Texture in Friction Stir Welded Aluminum Metal Matrix Composites," Metall. Mater. Trans. A, 40 (2009) pp. 2109-2114 (http://dx.doi.org/10.1007/s11661-009-9883-4).
- CJ Chung, DP Field, NJ Park, and **RG Johnson**, "Simulation of Structure Evolution in Copper Films," Thin Solid Films, 517 (2009) pp. 1977-1982.
- DP Field "Electron Backscatter Diffraction: Operation and Application," Microsc Microanal 14(Suppl 2), p. 506-507, 2008.
- CC Merriman, DP Field and P Trivedi, "Orientation dependence of dislocation structure evolution during cold rolling of aluminum," Mat Sci Eng A494 (2008) 28-35.
- PB Trivedi, JR Asay, YM Gupta, and DP Field, "Influence of grain size on the tensile response of aluminum under plate impact loading" J. Appl. Phys. 102 (2007) pp. 083513-1 – 083513-9.
- D Pirzada, P Trivedi, D Field, and GJ Cheng, "Effect of film thickness and laser energy density on the microstructure of α-GaAs films after excimer laser crystallization," J. Appl. Phys 102 (2007) pp. 013516-1 – 013516-9.
- DP Field, **LT Bradford**, MM Nowell, and TM Lillo, "The role of twin boundaries during recrystallization of copper," Acta Mater, 55 (2007) pp. 4233-4241.
- RS Yassar, S. Mesarovic, and DP Field, "Micromechanics of hardening of elastic-plastic crystals with elastic inclusions: I – Dilute concentration" Int. J. Plasticity 23 (2007), 1901-1917.
- SH Lee, NJ Park, DP Field, and PR Besser, "Effect of film thickness on the annealing texture in sputtered and electroplated Cu films," Adv. Matls. Research, 15-17 (2007) pp. 982-987.
- **JP Escobedo**, SN Patankar, DP Field, and FH Froes, "Superplastic behavior of fine grained Ti-6Al-4V." Materials Technology, 21 (2006), pp. 84-87.
- MA Al-Khedher, R.S. Yassar, C. Pezeshki, and DP Field, "A novel structural-based approach to model the age hardening behaviour of aluminium alloys," Modeling Simul. Mater. Sci. Eng. 14 (2006) pp. 905-921.
- PB Trivedi, DP Field, RS Yassar, and R Alldredge, "Microstructural evolution and observed stress response during hot deformation of 5005 and 6022 Al alloys," Mat. Sci. Eng, A 425 (2006) pp. 205-212.

- RS Yassar, M Cai, DP Field, X Chen, JR Asay, "The effect of shock-loading on the aging behavior of an Al-Mg-Si alloy," J. Mat. Sci 41 (2006) pp. 1711-1720.
- X Chen, JR Asay, SK Dwivedi, and DP Field, "Spall Behavior of Aluminum with Varying Microstructures," J. Appl. Phys 99, (2006) pp. 023528-1 – 023528-13.
- NJ Park and DP Field, "Predicting Thickness Dependent Twin Boundary Formation in Sputtered Cu Films," Scripta Mater, **54** (2006), pp. 999-1003.
- DP Field, **RC Eames**, and TM Lillo, "The Role of Shear Stress in the Formation of Annealing Twin Boundaries in Copper," Scripta Mater, **54** (2006), pp. 983-986.
- NJ Park, DP Field, MM Nowell, and PR Besser, "Effect of Film Thickness on the Evolution of Annealing Texture in Sputtered Copper Films," J. Electr. Matls, **34** (2005) pp. 1500-1508.
- DP Field, **JM Yanke, EV McGowan**, and CA Michaluk, "Microstructural Development in Asymmetric Processing of Ta Plate," J. Electr. Matls, **34** (2005) pp. 1521-1525.
- R.S. Yassar, D.P. Field, and H. Weiland, "TEM and DSC Studies on the precipitation sequence in an Al-Mg-Si alloy; AA6022," J. Mat. Res. **20** (2005) pp. 2705-2711.
- R.S. Yassar, D.P. Field, and H. Weiland, "The Effect of Cold Deformation on the Kinetics of the β Precipitates in an Al-Mg-Si Alloy," Metall. Mater. Trans, **36A** (2005) pp. 2059-2065.
- SI Wright and DP Field, "Scalar Measures of Texture Heterogeneity" Materials Science Forum, **495-497** (2005) pp. 201-212.
- SI Wright, DP Field, and MM Nowell "Impact of Local Texture on Recrystallization and Grain Growth via In-Situ EBSD," Materials Science Forum, **495-497** (2005) pp. 1121-1130.
- DP Field, JE Sanchez, Jr, N-J Park, and PR Besser, "Texture Evolution in Thin Cu Films Lines," Materials Science Forum, **495-497** (2005) pp. 1323-1332.
- JB LeBret, MG Norton, DF Bahr, DP Field and KG Lynn, "Characterization of low angle grain boundaries in yttrium orthovanadate" J. Mat. Sci. **40** (2005) 3347-3353.
- R.S. Yassar, D.P. Field, and H. Weiland, "The effect of predeformation on the β″ and β′ precipitates and the role of Q′ phase in an Al–Mg–Si alloy; AA6022," Scripta Materialia **53** (2005) pp. 299–303.
- D.P. Field, M.M. Nowell, P. Trivedi, S.I Wright and T.M. Lillo, "Local Orientation Gradient and Recrystallization of Deformed Copper," Solid State Phenomena, **Vol. 105** (2005) pp. 157-162.
- R. Prasannavenkatesan, B.Q. Li, D.P. Field, and H. Weiland, "A Parallel Macro/Micro Elastoplasticity Model for Aluminum Deformation and Comparison with Experiments," Metall. Mater. Trans, **36A** (2005) pp. 241-256.
- D.P. Field, P. Trivedi, S.I. Wright, and M. Kumar, "Analysis of Local Orientation Gradients in Deformed Single Crystals," Ultramicroscopy, **103** (2005) pp 33-39.
- T. Muppidi, D.P. Field, J.E. Sanchez Jr, and C. Woo, "Barrier layer, geometry and alloying effects on the microstructure and texture of electroplated copper thin films and damascene lines," Thin Solid Films, **471** (2005) pp. 63– 70.
- MM Nowell, DP Field, SI Wright, and TM Lillo, "In-Situ EBSD Investigation of Recrystallization in ECAE Processed Copper," Matls. Sci. Forum, **Vols. 467-470**, (2004) pp. 1401-1406.
- R.S. Yassar and D.P. Field, "Influence of Predeformation on Precipitation Kinetics and Aging Behavior of the AA6022 Alloy," TMS Letters, **1** (2004) pp. 83-84.
- P.B. Trivedi and D.P. Field, "Experimental Analysis of Local Orientation Gradient using EBSD," TMS Letters, **1** (2004) pp. 9-10.
- M. Cai, D.P. Field, and G.W. Lorimer, "A Systematic Comparison of Static and Dynamic Ageing of Two Al-Mg-Si Alloys," Mat Sci Eng. A, **373** (2004) pp. 65-71.
- D.P. Field, **B.W. True**, T.M. Lillo, and J.E. Flinn, "Observation of Twin Boundary Migration During Deformation of Copper," Mat Sci Eng A, **372** (2004) pp. 173-179.
- P. Trivedi, D.P. Field and H. Weiland, "Alloying Effects on Dislocation Substructure Evolution of Aluminum Alloys," Intl. J. Plasticity, **50** (2004) pp. 459-476.
- D.P. Field, T. Muppidi, and J.E. Sanchez, Jr, "Electron Backscatter Diffraction Characterization of Inlaid Cu Lines for Interconnect Applications," Scanning, **25** (2003) pp. 309-315.
- D.P. Field, S.I. Wright, and P. Trivedi, "Microtextural Analysis of Grain Fragmentation in Aluminum," Matls. Sci. Forum, **Vols. 426-432**, (2003) pp. 3739-3744.
- S.I. Wright, D.P. Field and M.M. Nowell, "The Applicability of Conventional Fiber Texture Analysis Techniques in Electron Backscatter Diffraction," Matls. Sci. Forum, **Vols. 426-432**, (2003) pp. 3685-3690.

- D.P. Field, "Characterization of Thin Cu Films and Lines for Interconnect Applications," Scanning, **Vol 25** (2003) pp. 99-100.
- D.F. Bahr, K.A. Nibur, **K.R. Morasch**, and D.P. Field, "Hydrogen and Deformation: Nano- and Microindentation Studies," JOM, **Vol 55 No. 2** (Feb 2003), pp. 47-50.
- David P. Field and Tracy W. Nelson, "Tool Geometry Dependence of Local Texture in Friction Stir Welds of 7050 Aluminum Plate," Materials Science Forum, **408-412**, pp. 1507-1512 (2002).
- Stuart I. Wright, David P. Field, Ron Witt and Chris A. Michaluk, "On the Development of New Scalar Measures of Heterogeneity," Materials Science Forum, **408-412**, pp. 113-118 (2002).
- Christopher A. Michaluk, David P. Field, Kevin A. Nibur, Stuart I. Wright, and Ronald A. Witt, "Effects of Local Texture and Grain Structure on the Sputtering Performance of Tantalum," Materials Science Forum, **408-412**, pp. 1621-1626 (2002).
- S.N. Patankar**, J.P. Escobedo**, D.P. Field, G. Salishchev, R.M. Galeyev, O.R. Valiakhmetov and F.H. (Sam) Froes, "Superior Superplastic Behavior in Fine Grained Ti-6Al-4V Sheet," J. Alloys and Compounds, **345** (2002) 221–227.
- Field, D.P., Kononenko, O.V. and Matveev, V.N. "The Microstructure of Cu Films Deposited by the Self-Ion Assisted Technique," J. Electr. Matls. **31**, 40-44 (2002).
- Field, D.P., Dornisch, D., and Tong, H.H., "Investigating the Microstructure-Reliability Relationship in Cu Damascene Lines," Scripta Mater, **45**, 1069-1075 (2001).
- Field, D.P., Nelson, T.W., Hovanski, Y., and Jata, K.V., "Heterogeneity of Crystallographic Texture in Friction Stir Welds of Aluminum," Metallurgical and Materials Transactions A, **32A**, 2869-2877 (2001).
- Kononenko, O.V., Matveev, V.N., and Field, D.P. "Electromigration Properties of Multigrain Aluminum Thin Film Conductors as Influenced by Grain Boundary Structure," J. Matls. Res, **16**, 2124-2129 (2001).
- Flinn, J.E., Field, D.P., Korth, G.E., Lilo, T.M., and Macheret, J. "The Flow Stress Behavior of OFHC Polycrystalline Copper," Acta Mater, **49**, 2065-2074 (2001).
- Field, D.P. and Michaluk, C.A., "Analysis of Texture Gradients in Ta Sputtering Targets" CDROM, Section G4, **Vol 117/3** "Special Issue: Journal of Materials Processing Technology, Eds. T.Chandra, K Higashi, C.Suryanarayana & C.Tome, Elsevier Science, UK (October 2001).
- O.V. Kononenko, V. N. Matveev, and D. P. Field, "The Energy of Activation of Electromigration in Aluminum Conductors Tested by the Drift-Velocity Method," Russian Microelectronics, **29**, p. 316 (2000).
- Kononenko, O.V., Matveev, V.N., and Field, D.P. "Electromigration Activation Energy in Aluminum Conductors Tested by the Drift Velocity Method," Scripta mater. **42**, 621-626 (2000).
- Field, D.P. and Dingley, D.J. "Orientation Imaging of Heavily Deformed Metals," Revista Latinoamericana de Metalurgia y Materiales, **19**, 37-42 (1999).
- Field, D.P., "QC for IC Interconnects?" Vacuum and Thin Films, pp. 36-40, Jan. 1999.
- Wright, S.I. and Field, D.P., "Recent Studies of Local Texture and Its Influence on Failure" Mat. Sci. Eng. **A257**, 165-170, 1998.
- Keller, R.R., Nucci, J.A., and Field, D.P., "Local Texture and Grain Boundary Structure Characterization in Voided Copper Interconnects," J. Elect. Materials, **26**, 996-1001 (1997).
- Nucci, J.A., Keller, R.R., Field, D.P., and Shacham-Diamand, Y., "Grain Boundary Misorientation Angle and Voiding in Oxide Passivated Copper Lines," Applied Physics Letters, **70**, 1242-1244 (1997).
- Keller, R.R., Nucci, J.A., and Field, D.P., "Local Texture and Grain Boundary Structure Characterization in Voided Copper Interconnects," J. Elect. Materials, **26**, 996-1001 (1997).
- Field, D.P., Sanchez, J.E. Jr., Besser, P.R., and Dingley, D.J., "Analysis of Grain Boundary Structure in Al-Cu Interconnects," J. Applied Physics, **82**, 2383-2392 (1997).
- Field, D.P., "Recent Advances in the Application of Orientation Imaging," Ultramicroscopy, **67**, 1-9 (1997).
- Dingley, D.J. and Field, D.P., "Electron Backscatter Diffraction and Orientation Imaging Microscopy," Materials Science and Technology, **13**, 69-78 (1997).
- Field, D.P. and Dingley, D.J., "Microstructure Mapping of Interconnects by Orientation Imaging Microscopy," J. Electronic Materials, **25**, 1767-1771 (1996).
- Morawiec, A. and Field, D.P., "Rodrigues Parameterization for Orientation and Misorientation Distributions," Phil. Mag., **73A**, 1113-1130 (1996).
- Field, D.P., Nelson, T.W., and Dingley, D.J., "An Experimental Investigation of Grain Boundary Structure Effects on Grain Growth," Materials Science Forum, **204-206**, 735 (1996).

- Field, D.P. and Dingley, D.J., "Microtexture Analysis in Aluminum Thin Films," Solid State Technology, **38 (11)**, 91 (1995).
- Field, D.P., "On the Asymmetric Domain of Cubic Misorientations," Scripta Metall. Mater, **32**, 67-70 (1995).
- Field, D.P., "Quantification of Partially Recrystallized Polycrystals using Electron Back-Scatter Diffraction," Materials Sci. and Engineering, **A190**, 241-246 (1995).
- Field, D.P., Weiland, H., and Kunze, K., "Intergranular Cracking in Aluminum Alloys," Canadian Metallurgical Quarterly, **34**, 203-210 (1995).
- Panchanadeeswaran, S. and Field, D.P., "Texture Evolution During Plane Strain Deformation of Aluminum," Acta Metall. et Mater, **43**, 1683-1692 (1995).
- Field, D.P., Sample, V.M. and Rader, R.S., "Determination of the High Temperature Softening Kinetics in a Material by Measuring the Evolution of Hot Flow Stress," J. Testing and Evaluation., **22**, 530-536 (1994).
- Sample, V.M. and Field, D.P., "Constant Temperature-Compensated Strain Rate Testing of Aluminum," J. Testing and Evaluation, **22**, 127-131 (1994).
- Field, D.P., "Evidence for the Existence of a Special Class of Crystallographic Misorientations." Materials Science Forum, Vol. **157-162**, pp. 1175-1180 (1994).
- Field, D.P. and Weiland, H., "The Dependence of Dislocation Density and Cell Size on Crystallographic Orientation in Aluminum." Materials Science Forum, Vol. **157-162**, pp. 1181-1188 (1994).
- Field, D.P. and Adams, B.L., "Measurement of Interface Damage Heterogeneity," Textures and Microstructures, **20**, 217-230, (1993).
- Field, D.P. and Adams, B.L., "Heterogeneity of Intergranular Damage in Copper Crept in Plane-Strain Tension." Metall. Trans., **23A**, 2515-26, (1992).
- Adams, B.L. and Field, D.P., "Measurement and Representation of Grain Boundary Texture." Metall. Trans., **23A**, 2501-13, (1992).
- Field, D.P. and Adams, B.L., "Interface Cavitation Damage in Polycrystalline Copper." Acta Metall. et Mater, **40**, 1145-1157 (1992).
- Adams, B.L. and Field, D.P. "A Statistical Theory of Creep in Polycrystalline Materials," Acta Metall. et Mater, **39**, 2405-2417 (1991).
- Field, D.P., Adams, B.L., and Zhao, J.-W. "Analysis of Grain Boundary Cavitation Damage in Copper" Textures and Microstructures, Vols. **14-18**, pp. 977-982 (1991).
- Field, D.P. and Adams, B.L. "Unrecoverable Strain Hardening in Torsionally Strained OFHC Copper," ASME Journal of Eng. Mat. and Tech, **112**, 315-320 (1990).

## Technical Conference Papers

- B. Schuessler and DP Field, "Extracting triple junction orientations from section planes," Proceedings of ICOTOM 19, IOP Conf. Ser.: Mater. Sci. Eng. 1121 (2021) 012041 https://doi.org/10.1088/1757-899X/1121/1/012041
- K. Kalia, WE Frazier, DP Field, and VV Joshi, "Observation of Grain Growth in U-10Mo alloy," J. Phys.: Conf. Ser. 1270 (2019) 012029. https://doi.org/10.1088/1742-6596/1270/1/012029
- M Jamalian, VV Joshi, S Whalen, C Lavender, and DP Field, "Microstructure and Texture Evolution of Magnesium Alloy after Shear Assisted Processing and Extrusion (ShAPE)," IOP Conf. Ser.: Mater. Sci. Eng. 375 (2018) 012007 https://doi.org/10.1088/1757-899X/375/1/012007
- T Mungole, J Zhang, B Mansoor, G Ayoub, and DP Field, "Transmission Kikuchi diffraction from nano-crystalline Ti and TiN thin-films," IOP Conf. Ser.: Mater. Sci. Eng. 375 (2018) 012009 https://doi.org/10.1088/1757-899X/375/1/012009
- J Zhang, Y Hovanski, P Upadhyay, and DP Field, "Local texture evolution and mechanical performance of ultra-high-speed friction stir weld of AA 6111-T4 sheets," TMS Series, Volume Part F8, 2018, pp 249-257. https://doi.org/10.1007/978-3-319-72484-3_27
- Jingyi Zhang, Piyush Upadhyay, Yuri Hovanski, and DP Field "High-speed FSW aluminum alloy 7075 microstructure and corrosion properties," in Friction Stir Welding and Processing IX. Eds. Y Hovanski, RS Mishra, Y Sato, P Upadhyay, and D Yan, 2017, p. 125-135.
- Z Leng, A Alankar, N Allain-Bonasso, F Wagner, and DP Field, "Using EBSD Characterization of Geometrically Necessary Dislocations to Validate and Improve Crystal Plasticity Models," Acta Microscopica 26 Suppl. B (2017) 380-381.

- KFM Adam and DP Field, “"Modeling the ViscoPlastic Behavior of Commercial Aluminum Alloys as a Function of Recrystallized Grain Fractions and Texture" Contributed papers from Materials Science and Technology 2016, Salt Lake City, UT, p. 369-376.
- F Zhang, A Ruimi, DP Field, “Effect of Martensite on Strength of Dual Phase (DP) Steel,” Contributed Papers from MS&T15, October 4 – 8, 2015, Greater Columbus Convention Center, Columbus, Ohio, USA, pp. 901-908.
- T Mungole, B Mansoor, G Ayoub, DP Field, “Evolution of Microstructure and Microtexture in a Cu/Ta Multilayer during Accumulative Roll-Bonding at High Temperature,” Contributed Papers from MS&T15, October 4 – 8, 2015, Greater Columbus Convention Center, Columbus, Ohio, USA, pp. 1503-1510.
- G. Hardy and D.P. Field, “Measuring Twin Dependent Triple Junction Distributions from a Single Section Plane,” Proceedings of ICOTOM 17, (August, 2014, Dresden, Germany) Materials Science and Engineering, IOP Conference Series, 2015
- JP Young, H. Askari, Y. Hovanski, **MJ Heiden**, and DP Field, “Microstructural Stability after Severe Plastic Deformation of AZ31 Magnesium,” Proceedings of NanoSPD6, Metz, France, June, 2014. IOP Conf. Series: Materials Science and Engineering, 63 (2014) 012077. http://dx.doi.org/10.1088/1757-899X/63/1/012077
- Z. Leng, A. Alankar, DP Field, N. Allain-Bonasso, F. Wagner, "Dislocation Density Based Crystal Plasticity Finite Element Model of Polycrystals with Grain Boundary Effect" Proceedings of the 2nd World Congress on Integrated Computational Materials Engineering: ICME 2013, Eds. M. Li. C. Campbell, K. Thornton, E. Holm, and P. Gumbsch, TMS, Pittsburgh, p. 271-276.
- C Bathias, D Field, S Antolovich, PC Paris, “Microplasticity, microdamage, microcracking in ultrasonic fatigue,” 13th International Conference on Fracture 2013, ICF 2013, Volume 6 (2013) 5048-5057
- O.M. Fakron and D.P. Field, “SEM-Based Electron Tomography of Turfs Comprised of Lineal Structures,” 1st International Conference on 3D Materials Science, Eds. M. DeGraef, HF Poulsen, A Lewis, J. Simmons, G. Spanos, July 2012, TMS, Pittsburgh, pp. 233-238. http://dx.doi.org/10.1002/9781118686768.ch36
- J.P. Young, **M.J. Heiden**, Y. Hovanski, and D.P. Field, “Microstructural analysis of severe plastic deformed twin roll cast AZ31,” in Mg2012: 9th International Conference on Magnesium Alloys and their Applications, Eds. W.J. Poole and K.U. Kainer, 2012, pp. 1087-1094.
- Z Leng and DP Field “Dislocation Density Based Crystal Plasticity Finite Element Simulation of Alpha-Iron,” in Materials Challenges in Current and Future Nuclear Technologies (Mat. Res. Soc. Symp. Proc. 1383 (2012) http://dx.doi.org/10.1557/opl.2012.213)
- F Zhang and DP Field, “Grain Boundary Analysis of Crept Alloy 617,” in Materials Challenges in Current and Future Nuclear Technologies (Mat. Res. Soc. Symp. Proc. 1383 (2012) http://dx.doi.org/10.1557/opl.2012.243).
- IC Steele, **JJ Trevino**, and DP Field, “Quantifying Structure Evolution of CNT Turfs,” ,” in Materials Research Society Symposium Proceedings, Fall, 2011. Accepted.
- **CG Parker**, DP Field, “Observation of Structure Evolution during Annealing of 7xxx Series Al Deformed at High Temperature” Light Metals 2012, Ed. CE Suarez, TMS, Pittsburgh, PA, 2012, pp. 383-386.
- Yuri Hovanski, Michael Santella, Saumyadeep Jana, Hao Yu, David Field, Tsung-Yu Pan, Siva Pilli, “Solid State Joining of Magnesium to Steel” Magnesium Technology 2012, Eds. S Mathaudhu, W Sillekens, N Hort, N Neelameggham, TMS, Pittsburgh, PA, 2012, pp. 11-16.
- CC Merriman, DP Field, “Observations of dislocation structure in AA 7050 by EBSD,” Materials Science Forum Vols. 702-703 (2012) pp 493-498 (http://dx.doi.org/10.4028/www.scientific.net/MSF.702-703.493)
- AD Rollett, F Wagner, N Allain-Bonasso, DP Field, R Lebensohn, “Comparison of Gradients in Orientation and Stress between Experiment and Simulation” Materials Science Forum Vols. 702-703 (2012) pp 463-468 (http://dx.doi.org/10.4028/www.scientific.net/MSF.702-703.463).
- F Wagner, N Allain-Bonasso, S Berbenni, and DP Field, **“**On the use of EBSD to study the heterogeneity of plastic deformation,” Materials Science Forum Vols. 702-703 (2012) pp 245-252 (http://dx.doi.org/10.4028/www.scientific.net/MSF.702-703.245).
- A Alankar, and DP Field, “Modeling of deformation microstructure - strain hardening and crystallographic reorientation of crystallites in a columnar polycrystal,” Materials Science Forum Vols. 702-703 (2012) pp 196-199 (http://dx.doi.org/10.4028/www.scientific.net/MSF.702-703.196)
- G. Hardy and D. Field, “A Triple Junction Distribution Function,” Proceedings of MS&T 2011, TMS, Warrendale, PA, 2011, p. 378-384.

- O.M. Fakron and D.P. Field, "SEM-Based Electron Tomography of Turfs and Mats of 1-D Structures," Microscopy and Microanalysis, 17 (Suppl. 2), 2011, 990-991 (http://dx.doi.org/10.1017/S1431927611005824)
- H. Yu, Y. Hovanski, and D.P. Field, "Observation of local texture in friction stir welding of Mg alloy AZ31B to Steel," Microscopy and Microanalysis, 17 (Suppl. 2), 2011, 418-419 (http://dx.doi.org/10.1017/S1431927611002960)
- **GM Kelley** and DP Field, "Characterization of Curvature in CNT Turf Structures from Two-Dimensional Images," MRS Proceedings, Vol. 1283 (2011), mrsf10-1283-b05-05. (http://dx.doi.org/10.1557/opl.2011.548)
- A. Alankar, I.N. Mastorakos, and D.P. Field, "Grain interactions and dislocation density evolution during channel die compression of aluminum," in TMS 2010 – Light Metals, Ed. J.A. Johnson, TMS (2010) p. 579-584
- Z Leng and DP Field "Grain Boundary Analysis of HT9 Steel after Accelerated Creep Testing," in *Basic Actinide Science and Materials for Nuclear Applications*, edited by J.K. Gibson, S.K. McCall, E.D. Bauer, L. Soderholm, T. Fanghaenel, R. Devanathan, A. Misra, C. Trautmann, B.D. Wirth (Mater. Res. Soc. Symp. Proc. Vol. 1264**,** Warrendale, PA, 2010), 243-251.
- JP Escobedo, DP Field, DH Lassila, MM LeBlanc and JA Florando, "Pressure Dependent Shear Strength in Ta Foils," in Macro- to Nano-scale Inelastic Behavior of Materials: Plasticity, Fatigue and Fracture, Proceedings of Plasticity '09, Eds. AS Khan and B Farrokh, NEAT Press, Fulton, Maryland, pp. 280-282, 2009.
- DP Field, **JM Root**, **JA Miller**, **A Hein**, and TW Nelson, Texture and Microstructure Effects on Fatigue Behavior of Friction Stir Processed AA 7050," Proceedings of the 8th International Welding Symposium, Eds. Y. Hirata and M Tanaka, Japan Welding Society, p. 142 (2008).
- JP Escobedo, DP Field, and DH Lassila, "Shear Strength and Texture Evolution in Tantalum Foils," TMS 2008, Annual Meeting & Exhibition, Supplemental Proceedings, 137th, New Orleans, LA, United States, Mar. 9-13, 2008 (2008), 1 349-354.
- DP Field, CC Merriman and **JM Smith**, Excess dislocation density measurement dependence on EBSD step size," Microscopy and Microanalysis 13, Supplement 2, (2007) 920-921.
- CJ Chung, DP Field, NJ Park and C Woo "Texture Evolution in Cu Films and Lines," Mater. Res. Soc. Symp. Proc. Vol. 990 (2007) Materials Research Society 0990-B08-23
- GJ Cheng, D Pirzada, P Trivedi, DP Field, "Effect of Film Thickness and Laser Energy Density on the Structural Characteristics of Laser-Annealed Polycrystalline Gallium Arsenide Films," Proceedings of IMECE2006 2006 ASME International Mechanical Engineering Congress and Exposition, November 2006, Chicago, Illinois, IMECE2006-16247.
- JP Escobedo, D Field, D Lassila, and M LeBlanc, "A novel mechanical method to measure shear strength in specimens under pressure," MRS Symp. Proc. 929 (2006) pp. 99-104.
- DP Field, NJ Park, PR Besser, and JE Sanchez, Jr, "Structure Evolution in Plated Cu Films," Mater. Res. Soc. Symp. Proc. **Vol. 863** (2005) pp. 203-208.
- RS Yassar, A Alamr, MG Norton, DF Bahr, DP Field, "TEM characterization of thin passive films grown on austenitic stainless steels," Proceedings of 4th ASM International Surface Engineering Congress and 19th International Conference on Surface Modification Technologies (August 1-3, 2005), Minneapolis, MN.
- F. Arenas, E. Barrios, D. Field, L. Bejar, "Analytical Electron Microscopy Investigation of Hard Metals," Microsc Microanal 11(Suppl 2), 2005, p. 1858.
- MM Nowell, DP Field, SI Wright, D Dingley, P Scutts and S Suzuki, "Orientation Imaging of Recrystallization, Grain Growth and Phase Transformations using In-Situ Heating," Microsc Microanal 11(Suppl 2), 2005, p. 1494.
- DP Field, "Improving the Spatial Resolution of EBSD," Microsc Microanal 11(Suppl 2), 2005, p. 52.
- M.Cai, G.W. Lorimer, and D.P. Field, "Dynamic Ageing of Two Al-Mg-Si Alloys Using Equal Channel Angular Extrusion," in Proceedings of the 9th International Conference on Aluminium Alloys (2004), Edited by J.F. Nie, A.J. Morton and B.C. Muddle, Institute of Materials Engineering Australasia Ltd, Sydney, pp. 204-211.
- D.F. Bahr, K.A. Nibur, K.R. Morasch, and D.P. Field, "Probing Hydrogen – Deformation Interactions Using Nanoindentation," in Hydrogen Effects on Material Behavior and Corrosion Deformation

Interactions, Eds. N.R. Moody, A.W. Thompson, R.E. Ricker, G.W. Was, and R.H. Jones, TMS, Pittsburgh, 2003, pp. 165-172.

- D.P. Field, "Analysis of Grain Fragmentation in Deformed Materials," Microsc Microanal **9(Suppl 2)**, pp. 76-77, 2003.
- T. Muppidi, DP Field, and JE Sanchez, Jr. "Effect of Barrier Layers on the Texture and Microstructure of Copper Films," MRS Symp. Proc., **Vol. 766**, E2.2.
- D.P. Field, M.M. Nowell, and O.V. Kononenko, "Observation of Grain Growth in Cu Films by In-Situ EBSD Analysis," MRS Symp. Proc., **Vol. 766**, E4.5.
- P Trivedi, DP Field, and H Weiland, "Effect of alloy chemistry on microstructural evolution during deformation of Al alloys," in Hot Deformation of Aluminum Alloys III, Edited by Z. Jin, A. Beaudoin, T. Bieler, and B. Radhakrishnan, TMS, Pittsburgh, 2003, pp. 51-59.
- R. Prasannavenkatesan, B.Q. Li, D.P. Field and H. Weiland, "A Finite Element Model for Crystal Plasticity During Large Deformation and Comparison with Experimental Measurements," in Hot Deformation of Aluminum Alloys III, Edited by Z. Jin, A. Beaudoin, T. Bieler, and B. Radhakrishnan, TMS, Pittsburgh, 2003, pp. 279-288.
- Oleg V. Kononenko, Victor N. Matveev, Andrei G. Vasiliev, Ivan Khorin, Tejodher Muppidi, David P. Field, "Texture and microtexture of copper films prepared by the self-ion assisted deposition technique on barrier layers with different structure," Mat. Res. Soc. Symp. Proc. Vol. **721**, pp. 67-72, 2002.
- T. Muppidi, **Y. Kusama** and D.P. Field, "Effect of Texture on Hillock Formation in Aluminum Films," Mat. Res. Soc. Symp. Proc. Vol. **721**, pp. 123-128, 2002.
- Field, DP, Mortensen, AW, Nowell, MM, and Campbell, GH, "Deformation at Crystallite Interfaces," Plasticity, Damage and Fracture at Macro, Micro and Nano Scales, Ed. A.S. Khan and O. Lopez-Pamies, NEAT Press, Fulton, MD, 2002, pp. 69-71.
- Field, D.P., Nelson, T.W., Hovanski, Y, and Bahr, D.F., "Texture Effects on Corrosion Behavior of Friction Stir Welded 7075 Aluminum," in Friction Stir Welding and Processing, proceedings of a symposium held Nov. 4-8, 2001 in Indianapolis, IN. Eds. K.V. Jata, M.W. Mahoney, R.S Mishra, S.L. Semiatin, and D.P. Field, TMS (The Minerals, Metals & Materials Society), pp. 83-92.
- Nelson, T.W., Hovanski, Y. and Field, D.P., "Friction Stir Welding," Proceedings of ASM symposium on Friction Stir Welding, St. Louis, MO, Oct, 2000.
- Weiland, H. and Field, D.P., "Characterization of Deformed Microstructures by OIM," *Inst. Phys. Conf. Ser. No 165: Symposium 5, 2nd Conf. Int. Union Microbeam Analysis Societies, Kailua –Kona, Hawaii, 9-13 July, 2000*, pp. 193-194.
- Jeong, H.T., Szpunar, J.A., Field, D.P., and Lee, K.T., "A Role of Texture and Orientation Clustering in Electromigration Failure of Aluminum Interconnects" Proceedings of the Twelfth International Conference on Textures of Materials, Edited by Jerzy A. Szpunar, NRC Research Press, Ottawa, 1999 pp. 1369-1374.
- Field, D.P., "Texture Evolution in Cu Damascene Lines," Proceedings of the Twelfth International Conference on Textures of Materials, Edited by Jerzy A. Szpunar, NRC Research Press, Ottawa, 1999 pp. 1309-1314.
- Michaluk, C.A., Smathers, D.B., and Field, D.P., "Effects of Localized Texture on Sputter Performance of Tantalum," Proceedings of the Twelfth International Conference on Textures of Materials, Edited by Jerzy A. Szpunar, NRC Research Press, Ottawa, 1999 pp. 1357-1362.
- Nelson, T.W., Hunsaker, B., and Field, D.P. "Local Texture Characterization of Friction Stir Welds in 1100 Aluminum," Proceedings of the First Intl. Symposium on Friction Stir Welding (on CD-ROM), Thousand Oaks, CA, 1999.
- Field, D.P. and Nowell, M.M, "Recrystallization and Growth of Pure Cu Damascene Structures" The fourth International Conference on Recrystallization and Related Phenomena, Edited by T. Sakai and H.G. Suzuki, The Japan Institute of Metals, 1999, pp. 851-856.
- Alani, R., Field, D.P., and Ogura, K., "SEM Specimen Preparation by Broad Beam Etching for Enhanced Channeling and Orientation Imaging," *Microsc. Microanal,* **5** Suppl 2: Proceedings Microscopy Society of America 1999, pp. 910-911.
- Field, D.P. Weiland, H., and Baggethun, P., "Imaging dislocation cell morphology in the SEM," in The Integration of Material, Process and Product Design, Eds. N. Zabaras, R. Becker, L. Lalli, and S. Ghosh. A.A. Balkema, Rotterdam, Brookfield, VT, 1999, pp. 27-32.
- Field, D.P. and Sanchez, J.E. Jr., "Observation of Preferred Growth in Al-0.5%Cu Lines," in Grain Growth in Polycrystalline Materials III, H. Weiland, B.L. Adams, and A.D. Rollett, eds, The Minerals, Metals &

Materials Society, pp. 523-528, 1998.

- Nowell, M.M. and Field, D.P., "Texture and Grain Boundary Structure Dependence of Hillock Formation in Thin Metal Films," Mat. Res. Soc. Symp. Proc. **516**, pp. 115-120 (1998).
- Kalnas, C.E., Keller, R.R., and Field, D.P., "Crystallographic Characterization of Interconnects by Orientation Mapping in the SEM," in Characterization and Metrology for ULSI Technology, D. G. Seiler, W. M. Bullis, A. C. Diebold, R. McDonald, and T. Shaffner, eds., 1998.
- Field, D.P. and Wang, P.-H. "Development of a Preferred Grain Boundary Structure in Al-Cu Interconnects," in Boundaries and Interfaces in Materials: The David A. Smith Symposium, Eds. R.C. Pond, W.A.T. Clark, A.H. King, and D.B. Williams, The Minerals, Metals & Materials Society, pp. 323-328, 1998.
- Sanchez J.E. Jr., Besser, P.R., and Field, D.P., "Microstructure Formation and Evolution in Advanced Interconnect Systems: Implications for Reliability," Fourth International Workshop on Stress-Induced Phenomena in Metallization, June, 1997, Tokyo, Japan; American Institute of Physics Conference Proceedings, Volume 418, pp. 230-235.
- Besser, P.R., Sanchez J.E. Jr., Field, D.P., Pramanick, S, and Sahota, K, "The Microstructure and Electromigration Performance of Damascene-Fabricated Aluminum Interconnects," Mat. Res. Soc. Symp. Proc. **473**, pp. 217-222 (1997).
- Besser, P.R., Sanchez J.E. Jr., Field, D.P., Pramanick, S, and Sahota, K, "The Microstructure and Electromigration Performance of Damascene-Fabricated Aluminum Interconnects," Mat. Res. Soc. Symp. Proc. **472**, pp. 313-318 (1997).
- Field, D.P., Kononenko, O.V., and Matveev, V.N., "Relationship Between Structure and Electromigration Characteristics of Pure Aluminum Films," Mat. Res. Soc. Symp. Proc. **473**, pp. 369-375 (1997).
- Wright, S.I. and Field, D.P., "Analysis of Multiphase Materials Using Electron Backscatter Diffraction," *Proc. Microscopy and Microanalysis 1997,* Eds. Bailey, G.W., Dimlich, R.V.W., Alexander, K.B., McCarthy, J.J., and Pretlow, T.P., 561-562 (1997).
- Field, D.P., "Incorporating a Measurable Description of Dislocation Cell Morphology into State Variable Models," in Physics and Mechanics of Finite Plastic and Viscoplastic Deformation, Ed. A.S. Khan, Proceedings of Plasticity '97: The Sixth International Symposium on Plasticity and Its Current Applications, Juneau, Alaska, July, 1997, p. 21-22.
- Wright, S.I., Dingley, D.J., and Field, D.P., "Determining Deformation, Recovery, and Recrystallization Fractions From Orientation Imaging Microscopy (OIM) Data," *Proc. Microscopy and Microanalysis 1996*, Eds. Bailey, G.W., Corbett, J.M., Dimlich, R.V.W., Michael, J.R., and Zaluzec, N.J., 352-353 (1996).
- Glass, S.J., Michael, J.R., Readey, M.J., Wright, S.I., and Field, D.P., "Characterization of Microstructure and Crack Propagation in Alumina using OIM," *in Ceramic Microstructure: Control at the Atomic Level*, Eds. A.P. Tomsia and A. Glaeser, Plenum Press, New York, pp. 803-813, 1998.
- Besser, P.R., Sanchez, J.E. Jr., and Field, D.P., "The Linewidth Dependence of Microstructures in Damascene-Fabricated Aluminum Interconnects," Advanced Metallization and Interconnect Systems for ULSI Applications in 1996. Eds. R. Havemann, J. Schmitz, H. Komiyama, and K. Tsubouchi. Vol. **XII**, pp. 89-95 (1997).
- Field, D.P., Nucci, J.A., and Keller, R.R., "Interconnect Failure Dependence on Crystallographic Structure," Proc. 22nd International Symposium for Testing and Failure Analysis (ISTFA 22), Los Angeles, pp. 351-355 (1996).
- Weiland, H., Field, D.P., and Adams, B.L., "Local Texture Evolution During Deformation by In-Situ OIM Analysis," Proceedings of the Eleventh International Conference on Textures of Materials (ICOTOM-11), Xi'an, China, Sept. 16-20, 1996, Eds. Z. Liang, L. Zuo, and Y. Chu, pp. 1414-1419.
- Field, D.P., Wright, S.I., and Dingley, D.J., "Multi-phase Texture Analysis by Orientation Imaging Microscopy," Proceedings of the Eleventh International Conference on Textures of Materials (ICOTOM-11), Xi'an, China, Sept. 16-20, 1996, Eds. Z. Liang, L. Zuo, and Y. Chu, pp. 94-99.
- Field, D.P., Dingley, D.J., Wright, S.I., Nowell, M.M., "Orientation Imaging Microscopy for Materials Research," Symposium on the Texture of Metals, Japan Institute of Metals, pp. 16-25, Tokyo, Japan, Aug. 22-23, 1996.
- Dingley, D.J. and Field, D.P., "An Experimental Investigation of Grain Boundaries, the Coincident Site Lattice Theory, and their Relevance to Material Properties," The Donald McLean Symposium: Structural Materials, Engineering Application through Scientific Insight, Eds. E.D. Hondros and M. McLean, The Institute of Materials, London (1996) pp. 23-41.

- Dingley, D.J. and Field, D.P., "Investigation of Aluminum Thin Films using Electron Backscatter Diffraction and the New Technique of Orientation Imaging Microscopy," in Polycrystalline Thin Films: Structure, Texture, Properties, and Applications II, Nov. 27- Dec. 1, 1995, Boston, Mass. Eds. H.J. Frost, M.A. Parker, C.A. Ross, and E.A. Holm., Mat. Res. Soc. Symp. Proc. **403**, 197-206 (1996).
- Field, D.P. and Weiland, H., "In-Situ Observation of Deformation by Orientation Imaging Microscopy," Institute for Mechanics and Materials, Report No. 95-21, p. 33 (1995). Institute of Mechanics and Materials Symposium for Young Investigators, Nov. 11-12, 1995.
- Field, D.P., Dingley, D.J., Nowell, M.M., and Adams, B.L., "Analysis of Grain Boundary Structure in Aluminum Thin Films by Orientation Imaging Microscopy," Proc. 21st International Symposium for Testing and Failure Analysis (ISTFA 21), p. 49-54 (1995).
- Weiland, H, Field, D.P., and Adams, B.L., "In-Situ Observation of Orientation Changes on Metallic Surfaces," *Proc. Microscopy and Microanalysis*, Eds. Bailey, G.W., Ellisman, M.H., Hennigar, R.A., and Zaluzec, N.J., 246-247 (1995).
- Alvis, R., Dingley, D.J., and Field, D.P., "Observation of Grain Superstructure in Thin Aluminum Films by Orientation Imaging Microscopy," *Proc. Microscopy and Microanalysis*, Eds. Bailey, G.W., Ellisman, M.H., Hennigar, R.A., and Zaluzec, N.J., 436-437 (1995).
- Weiland, H. and Field, D.P., "Automatic Analysis of Kikuchi Diffraction Patterns," Proceedings of the 32nd Annual Meeting of the Microscopy Society of America, New Orleans, July 31-Aug 5, 1994, p. 900-901.
- Sample, V.M., Jaworski, A.P., and Field, D.P., "A Comparison of Parameter Evaluation Procedures for a Two-Internal State Variable Constitutive Model" in Material Parameter Estimation for Modern Constitutive Equations, ASME MD V **43** 1993, ASME, New York, pp. 227-242.
- Sample, V.M. and Field, D.P., "Materials Testing at Constant Temperature-Compensated Strain Rates," in *Computer Applications in Shaping and Forming of Materials*, pp. 275-283. Ed. M.Y. Demeri, TMS symposium, Denver, CO, February, 1993.
- Adams, B.L. and Field, D.P. "Statistical Theory for Creep of Polycrystals" in *Modelling the Deformation of Crystalline Solids*, Eds. T.C. Lowe, A. D. Rollett, P. S. Follansbee, and G. S Daehn, The Minerals, Metals & Materials Society, Metals Park, Ohio, 1991, p. 71-84.

## Technical Presentations (not including those listed as invited, above)

- J. Mueed, **G. Blaschke**, and DP Field, "Designed heterostructures in AZ31 using linear corrugated straightening," TMS Annual Meeting, Anaheim, CA, March 1, 2022
- Claire Adams, K. Traxel, A. Bandyopadhyay, and DP Field, "Characterization of Stresses as a Function of AM Processing Parameters in Commercially Pure Ti " MS&T 21, Columbus, OH, October, 2021.
- DP Field, B. Fromm, A Alankar, Z Leng, "Characterization of Defect Content in IF Steels using EBSD," TMS Annual meeting, Phoenix, AZ, March 2018
- M. Jamalian, V. Joshi, and DP Field, "Microstructure and Texture Evolution of Magnesium alloy after Shear Assisted Processing and Extrusion (ShAPE)," ICOTOM 18, St. George UT, November 2017
- Jingyi Zhang, Cory Palmieri, Piyush Upadhyay, Yuri Hovanski, and David P. Field, "Using EBSD in the characterization of heterogeneous microstructure created in high speed friction stir welded aluminum alloy," ICOTOM 18, St. George UT, November 2017
- T Mungole, B Mansoor, G Ayoub, and DP Field, "Transmission EBSD on Ti/TiN Multilayer thin films," ICOTOM 18, St. George UT, November 2017
- Jingyi Zhang, Piyush Upadhyay, Yuri Hovanski, and DP Field "High-speed FSW aluminum alloy 7075 microstructure and corrosion properties," MS&T 17, Pittsburgh, PA, October 2017
- DP Field, "The Joint Center for Deployment and Research in Earth Abundant Materials (JCDREAM)," Clean Tech Symposium, Seattle WA, June, 2017.
- T Mungole, B. Mansoor, G. Ayoub, and DP Field, "Deformation Mechanisms in Ti/TiN Multi-layered Thin Films," TMS Annual Meeting, San Diego, CA, Feb. 26 – March 3, 2017
- M Jamalian and DP Field, "Strengthening Mechanism of AZ31 Magnesium with Gradient Structure," TMS Annual Meeting, San Diego, CA, Feb. 26 – March 3, 2017
- K Kalia and DP Field, "Recrystallization Texture in U10Mo Alloy," TMS Annual Meeting, San Diego, CA, Feb. 26 – March 3, 2017

- S Whalen, V Joshi, D Catalini, Curt Lavender, and DP Field, "Scaled-Up Fabrication of Thin-Walled ZK60 Tubing using Shear Assisted Processing and Extrusion (ShAPE," TMS Annual Meeting, San Diego, CA, Feb. 26 – March 3, 2017
- Jingyi Zhang, Piyush Upadhyay, Yuri Hovanski, and DP Field, "Mechanical and Microstructural Evaluation of High Speed FSW of Aluminum Alloys," TMS Annual Meeting, San Diego, CA, Feb. 26 – March 3, 2017
- DP Field, JP Escobedo, "Trianvil Test Apparatus for Pressure-Dependent Shear Strength Measurements on Oriented Mo Single Crystals," MRS Fall Meeting, Boston, MA, Nov. 28-Dec. 1, 2016
- J Zhang, P Upadhyay, Y Hovanski, DP Field, "Quantitative microstructure study of high speed FSW aluminum alloy," MS&T 2016, SLC, UT Oct. 23-27, 2016
- K Adam, DP Field, "Modeling the ViscoPlastic Behavior of Commercial Aluminum Alloys as a Function of Recrystallized Grain Fractions and Texture," MS&T 2016, SLC, UT Oct. 23-27, 2016
- F Zhang, A Ruimi, and DP Field, "Deformation Analysis and the Relation to Martensite Morphology and Distribution in Dual Phase Steels," MS&T 2016, SLC, UT Oct. 23-27, 2016
- V Joshi, C Lavendar A Soulami DP Field D Burkes, "Recrystallization and Texture Development in Rolled U-10 wt% Mo Alloys," TMS 2016,
- SI Wright, DP Field MM Nowell, "Post Processing Effects on EBSD based Dislocation Density Measurements," TMS 2016
- T Mungole, B Mansoor, G Ayoub, DP Field, "Effect of Shear Strain on the Evolution of Microstructure and Microtexture in Cu/Ta Multilayer during Accumulative Roll-Bonding at High Temperature," TMS 2016
- DP Field, "Using Conventional EBSD for Dislocation Structure Quantification," TMS 2016
- J Young, V Joshi, S Jana, E Nyberg, C Lavender and DP Field, "Material Flow During Shear Assisted Indirect Extrusion of Magnesium," MS&T 2015, Columbus, OH, Oct. 4-8, 2015
- K Adam and DP Field, "Simulation and Experimentation of Particle Stimulated Nucleation of Recrystallization in AA7050," MS&T 2015, Columbus, OH, Oct. 4-8, 2015
- F Zhang, A Ruimi, and DP Field, "Effect of Spatial Distribution of Martensite on Strength of Dual Phase Steel," MS&T 2015, Columbus, OH, Oct. 4-8, 2015
- T Mungole, B Mansoor, G Ayoub, and DP Field, "Evolution of Microstructure and Microtexture in a Cu/Ta Multilayer during Accumulative Roll-Bonding at High Temperature," MS&T 2015, Columbus, OH, Oct. 4-8, 2015
- F. Zhang, GB Hardy, and DP Field, "Effect of interface structure on metal integrity of alloy 617," MRS, Spring Meeting, San Francisco, CA April 21-25, 2014
- Z. Leng, DP Field, "Dislocation Density based crystal plasticity finite element simulation with grain boundary effect," MS&T 2013, Oct. 27-31, Montreal, Canada
- E.E. Patterson, H. Yu, DP Field, Y Hovanski, "Gradients in Friction Stir Welds of Dissimilar Metals" TMS Annual Meeting, San Antonio, March, 2013.
- F Zhang and DP Field, "Grain Boundary Analysis of Crept Alloy 617," in Materials Challenges in Current and Future Nuclear Technologies, MRS Fall meeting 2012, Boston, MA, Dec. 1-5, 2012
- F. Wagner, N. Allain-Bonasso, AD Rollett, and DP Field, Approche théorique et expérimentale de l'étude de l'hétérogénéité de la déformation plastique dans des aciers IF, Plasticité, Colloque Plasticité 2012, Metz, France, Apr, 2012.
- **CG Parker**, DP Field, "Observation of Structure Evolution during Annealing of 7xxx Series Al Deformed at High Temperature" TMS, Orlando, FL, 2012, pp. 383-386.
- O.M. Fakron and D.P. Field, "SEM-Based Electron Tomography of Turfs and Mats of 1-D Structures," Microscopy and Microanalysis, Nashville, TN, Aug. 2011.
- H. Yu, Y. Hovanski, and D.P. Field, "Observation of local texture in friction stir welding of Mg alloy AZ31B to Steel," Microscopy and Microanalysis, Nashville, TN, Aug. 2011.
- **GM Kelley** and DP Field, "Characterization of Curvature in CNT Turf Structures from Two-Dimensional Images," MRS Symp. Boston, MA, Fall 2010.
- Z Leng and DP Field "Grain Boundary Analysis of HT9 Steel after Accelerated Creep Testing," MRS Spring Meeting, San Francisco, Apr. 2010.
- **A. Teare** and DP Field, "Fatigue behavior of Friction Stir Welded AA 7050," TMS annual meeting, Seattle, WA Feb. 2010.

- H Malik, **KJ Stephenson**, DF Bahr, and DP Field, "Quantitative Characterization of Carbon Nanotube Turf Topology by SEM Analysis," TMS annual meeting, Seattle, WA Feb. 2010.
- A. Alankar, I.N. Mastorakos, and D.P. Field, "Grain interactions and dislocation density evolution during channel die compression of aluminum," TMS annual meeting, Seattle, WA Feb. 2010.
- DP Field, JM Root, A Alankar, IN Mastorakos, DP Field, "Modeling dislocation structure evolution in a crystal plasticity framework," Gordon Research Conference, Physical Metallurgy, Holderness, NH, Aug, 2009.
- CK Yoon and DP Field, "Modeling Twin Boundary Evolution in Thin Cu Films," TMS Annual Meeting, San Francisco, CA, Feb 15-19, 2009
- A Alankar, DP Field and I Mastorakos, "Dislocation density based crystal plasticity modeling," TMS Annual Meeting, San Francisco, CA, Feb 15-19, 2009
- DP Field, "Structure Evolution as a Function of Pressure in Heavily Deformed BCC Metals," MSU Workshop, Starkville, MS, June 23-25, 2008
- DP Field, J. Miller, and TW Nelson, Structure Gradients in FSW of Titanium," 15th International Conference on Textures of Materials (ICOTOM 15), Pittsburgh, PA, June, 2008
- CC Merriman and DP Field, "Texture in Explosively Bonded Aluminum Alloys," 15th International Conference on Textures of Materials (ICOTOM 15), Pittsburgh, PA, June, 2008
- A. Alankar and DP Field, "Dislocation-Based Crystal Plasticity Model for Prediction of Fatigue Crack Nucleation," 15th International Conference on Textures of Materials (ICOTOM 15), Pittsburgh, PA, June, 2008
- J Escobedo, D Field, and D Lassila, "Shear Strength and Texture Evolution in Tantalum Foils," Collected Proceedings: Minerals, Metals and Materials under Pressure, TMS Annual Meeting, New Orleans, Mar. 9-13, 2008.
- DP Field, CJ Chung, "Simulation of structure evolution in Cu films," GG&Rex 2007, Jeju Island, Korea, June, 2007
- DP Field, I Mastorakos, and CC Merriman, "Observation and Modeling of Dislocation Structures during Deformation of Aluminum," TMS 2007 – Orlando, FL
- DP Field, CJ Chung, NJ Park, RA Johnson, PR Besser, and C Woo, "Texture Evolution in Thin Cu Films and Lines," MS&T 2006, Oct. 2006, Pittsburgh, PA
- DP Field, RS Yassar, P Trivedi, "Analysis of Deformed Microstructures in AA5005 and AA6022," TMS Annual Meeting, March, 2006, San Antonio, TX
- MRS 2006, San Francisco, CA
- DP Field, CC Merriman and **JM Smith**, Excess dislocation density measurement dependence on EBSD step size," Microscopy and Microanalysis 13, Supplement 2, (2007) 920-921.
- CJ Chung, DP Field, NJ Park and C Woo "Texture Evolution in Cu Films and Lines," Mater. Res. Soc. Symp. Proc. Vol. 990 (2007) Materials Research Society 0990-B08-23
- GJ Cheng, D Pirzada, P Trivedi, DP Field, "Effect of Film Thickness and Laser Energy Density on the Structural Characteristics of Laser-Annealed Polycrystalline Gallium Arsenide Films," Proceedings of IMECE2006 2006 ASME International Mechanical Engineering Congress and Exposition, November 2006, Chicago, Illinois, IMECE2006-16247.
- JP Escobedo, D Field, D Lassila, and M LeBlanc, "A novel mechanical method to measure shear strength in specimens under pressure," MRS Symp. Proc. 929 (2006) pp. 99-104.
- DP Field, NJ Park, RA Johnson, MM Nowell, JE Sanchez, Jr, and PR Besser, "Modeling Grain Growth and Texture Evolution in Cu Films and Lines," MS&T 2005, Sept. 2005, Pittsburgh, PA.
- DP Field, NJ Park, PR Besser, and JE Sanchez Jr, "Structure Evolution in Cu Films and Lines," MRS Symposium, April 2005, San Francisco.
- DP Field, **E. McGowan, J. Yanke**, CA Michaluk, "Asymmetric Processing of Ta Plate for Sputtering Target Applications," TMS Symposium, Feb. 2005, San Francisco.
- DP Field, TW Nelson, "Analysis of Ultra-Fine Grained Structures in FSW Aluminum Alloys," Plasticity, Jan. 2005 – Kauai, Hawaii.
- DP Field, DOE Portfolio Review Meeting, Oct. 2004 – Chicago, IL.
- DP Field, MM Nowell, SI Wright, and TM Lillo, "Local Orientation Gradient and Recrystallization of Deformed Copper," International Conference on Texture and Anisotropy of Polycrystals – II (ITAP2), July, 2004 – Metz, France

- DP Field, T. Muppidi, "Twin Boundary Formation in Thin Copper Films," TMS 2004 – Charlotte, NC
- DP Field, "Texture Evolution in Cu Films and Lines," TMS 2004 – Charlotte, NC
- D.P. Field, DOE Portfolio Review Meeting, Nov. 2003 – Lexington, KY
- S.I. Wright, D.P. Field and M.M. Nowell, "The Applicability of Conventional Fiber Texture Analysis Techniques in Electron Backscatter Diffraction," Thermec, July 2003 – Madrid
- D.P. Field, M.M. Nowell, and O.V. Kononenko, "Observation of Grain Growth in Cu Films by In-Situ EBSD Analysis," MRS, April 2003 – San Francisco, CA
- T. Muppidi, DP Field, and JE Sanchez, Jr. "Effect of Barrier Layers on the Texture and Microstructure of Copper Films," MRS, April 2003 – San Francisco, CA
- RS Yassar, D.P. Field, "Calorimetric Study of Precipitation in a Deformed Al-Mg-Si Alloy: AA6022," TMS, March 2003 – San Diego, CA
- R. Prasannavenkatesan, B.Q. Li, D.P. Field and H. Weiland, "A Finite Element Model for Crystal Plasticity During Large Deformation and Comparison with Experimental Measurements," TMS, March 2003 – San Diego, CA
- P Trivedi, DP Field, and H Weiland, "Effect of alloy chemistry on microstructural evolution during deformation of Al alloys," TMS, March 2003 – San Diego, CA
- D.P. Field and T.W. Nelson, Tool Geometry Dependence of Local Texture in Friction Stir Welds of 7050 Aluminum Plate, ICOTOM 13, Seoul, Korea, Aug. 2002.
- T. Muppidi, **Y. Kusama** and D.P. Field, Effect of Texture on Hillock Formation in Aluminum Films, MRS Symposium, San Francisco, April 2002 – Poster Presentation.
- D.P. Field, **J.P. Escobedo**, and S.N. Patankar, Superplastic Behavior in Fine Grained Ti-6Al-4V Sheet, TMS Annual Meeting, Seattle, Feb. 2002.
- Field, DP, and Weiland, H, "Alloying Effects on Small Strain Deformation Behavior of Al Alloys," Plasticity, 2002, Aruba, Jan. 3-9, 2002.
- Field, D.P., Nelson, T.W. and Bahr, D.F. "Texture Effects on Corrosion Behavior of Friction Stir Welds of 7075 Al," TMS Symposium on Friction Stir Welding, Indianapolis, IN, Nov. 2001.
- Field, D.P., Kononenko, O.V., and Matveev, V.N., "Microstructure of Cu PIB Deposited Films," EBSD Applications to Electronic Materials, Pullman, WA, May, 2001.
- Field, D.P., Dornisch, D., and Tong, H.H., "Investigating the Microstructure-Reliability Relationship in Cu Damascene Lines," MRS symposium, San Francisco, CA Apr. 2001.
- Field, D.P. and Michaluk, C.A. "Analysis of Texture Gradients in Ta Sputtering Targets," Thermec, Las Vegas, NV, Dec, 2000.
- Field, D.P. and Dornisch, D. "EM Performance of Cu Damascene Conductors," ASM symposium, St. Louis, MO, Oct. 2000.
- Field, D.P. and Weiland, H. "Characterization of Deformed Structures," TMS symposium, St. Louis, MO, Oct. 2000.
- Field, D.P. and Nelson, T.W., "Microtexture in Friction Stir Welds of Al," Aeromat, Belleview, WA, June 26-29, 2000.
- Field, D.P. "Monte Carlo Modeling of Grain Growth in IC Interconnect Lines," TMS Symposium, Cincinnati, OH, Oct. 1999.
- Field, D.P., "Reliability of Cu Damascene Interconnect Lines," Twelfth International Conference on Textures of Materials, Montreal, Canada, August 1999.
- Field, D.P., "Grain Growth in Cu Damascene Lines," Recrystallization '99, Tsukuba, Japan, June 1999.
- Field, D.P., "SEM Analysis of Dislocation Cell Size in Heavily Deformed Metals," European EBSD Meeting, Liverpool, UK, March 11, 1999.
- Field, D.P., "Texture Evolution in Al Interconnect Lines," TMS, Symposium on Texture of Thin Films, Chicago, IL, October, 1998.
- Field, D.P. and Sanchez, J.E. Jr., "Observation of Preferred Growth in Al-0.5%Cu Lines," ICGG-3, Pittsburgh, PA, June 1998.
- Field, D.P. and Wang, P.-H. "Development of a Preferred Grain Boundary Structure in Al-Cu Interconnects," Boundaries and Interfaces in Materials: The David A. Smith Symposium, Eds. R.C. Pond, W.A.T. Clark, A.H. King, and D.B. Williams, The Minerals, Metals & Materials Society, pp. 323-328, 1998.
- Field, D.P., "Incorporating a Measurable Description of Dislocation Cell Morphology into State Variable

Models," in Physics and Mechanics of Finite Plastic and Viscoplastic Deformation, Ed. A.S. Khan, Proceedings of Plasticity '97: The Sixth International Symposium on Plasticity and Its Current Applications, Juneau, Alaska, July, 1997, p. 21-22.

- Field, D.P. "Post-Patterning Microstructure Evolution of Al-Cu Interconnect Lines," TMS Symposium on Evolution and Advanced Characterization of Thin Film Microstructures, Orlando, FL, February 1997.
- Field, D.P., Nucci, J.A., and Keller, R.R., "Interconnect Failure Dependence on Crystallographic Structure," Proc. 22nd International Symposium for Testing and Failure Analysis (ISTFA 22), Los Angeles, pp. 351-355 (1996).
- Field, D.P., "Quantification of Dislocation Cell Structure," ASM-TMS Materials Week, Symposium on Fundamentals of Deformation and Fracture, Cincinnati, OH, Oct. 6-10, 1996.
- Field, D.P., Wright, S.I., and Dingley, D.J., "Multi-phase Texture Analysis by Orientation Imaging Microscopy," Proceedings of the Eleventh International Conference on Textures of Materials (ICOTOM-11), Xi'an, China, Sept. 16-20, 1996.
- Field, D.P., Besser, P.R., Sanchez, J.E. Jr., and Dingley, D.J., "Analysis of Grain Boundary Structure in Al-Cu Interconnects," Japan Institute of Metals International Symposium/Intergranular and Interphase Boundaries, JIMIS-8/iib '96, Toyama, Japan, July 1-4, 1996.
- Field, D.P., "Grain Boundary Dependence of Stress Corrosion Cracking in 7XXX Series Al Alloys," AeroMat 96, Dayton, OH, June 1996.
- Field, D.P. and Dingley, D.J., "Microstructure Mapping of Interconnects by Orientation Imaging Microscopy," TMS Symposium, Anaheim, CA, February 1996.
- Field, D.P. and Weiland, H., "In-Situ Observation of Deformation by Orientation Imaging Microscopy," Institute of Mechanics and Materials Symposium for Young Investigators, Nov. 11-12, 1995.
- Field, D.P., Dingley, D.J., Nowell, M.M., and Adams, B.L., "Analysis of Grain Boundary Structure in Aluminum Thin Films by Orientation Imaging Microscopy," Proc. 21st International Symposium for Testing and Failure Analysis (ISTFA 21), p. 49-54 (1995).
- Field, D.P. and Dingley, D.J., "Stress Corrosion Cracking in Inconel Alloys," TMS symposium presentation, Cleveland, OH, October 1995.
- Field, D.P., Nelson, T.W., and Dingley, D.J., "An Experimental Investigation of Grain Boundary Structure Effects on Grain Growth," Second International Conf. on Grain Growth (ICGG-II), Kitakyushu, Japan, May 16-20, 1995.
- Field, D.P., "Intergranular Cracking in Aluminum Alloys," CIM Symposium on The Engineering Aspects of Grain Boundary and Interface Science, Toronto, Aug. 24, 1994.
- Field, D.P., "Evidence for the Existence of a Special Class of Crystallographic Misorientations." Presented at ICOTOM 10, Clausthal, Germany. September 1993.
- Field, D.P. and Weiland, H., "The Dependence of Dislocation Density and Cell Size on Crystallographic Orientation in Aluminum." Presented at ICOTOM 10, Clausthal, Germany. September, 1993.
- Sample, V.M. and Field, D.P., "Materials Testing at Constant Temperature-Compensated Strain Rates," Presented at TMS symposium on *Computer Applications in Shaping and Forming of Materials*, Denver, CO, February, 1993.
- Field, D.P. and Adams, B.L., "Measurement of Interface Damage Heterogeneity," Symposium on Microscale Textures of Materials, Cincinnati, 21-24, Oct. 1991.
- Field, D.P., Adams, B.L., and Zhao, J. "Analysis of Grain Boundary Cavitation Damage in Copper," *The Ninth International Conference on Textures of Materials* (ICOTOM 9), Avignon, France. September, 1990.

## Other Technical Reports

Patents

- Michaluk, C.A. and Field, D.P., "Method for Quantifying the Texture Homogeneity of a Polycrystalline Material," U.S. No. 6,462,339. Oct. 8, 2002.
- Field, D.P., and Dingley, D.J., "Method and Apparatus for Determining Crystallographic Characteristics in Response to Confidence Factors," U.S. No. 5,557,104. Sep. 17, 1996.
- Adams, B.L., Dingley, D.J., and Field, D.P., "Method and Apparatus for Identification of Crystallographic Defects," U.S. No. 5,466,934. Nov. 14, 1995.