

# Matthew Kasemer

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<b>EDUCATION</b>	Doctor of Philosophy Cornell University Title: A Framework for Modeling Discrete Deformation Twinning in Hexagonal Crystals	2018
	Master of Science Cornell University Title: The Influence of Mechanical Constraints Introduced by $\beta$ Annealed Microstructures on the Yield Strength and Ductility of Ti-6Al-4V	2015
	Bachelor of Science Rochester Institute of Technology Highest Honors, Honors Program	2012
<b>EXPERIENCE</b>	Max-Planck-Institut für Eisenforschung Postdoctoral Researcher, Department of Microstructure Physics and Alloy Design Project: Simulation of R-values of Aluminum Alloys (AMAG Austria Metall AG) Supervisors: Prof. Dr. Dierk Raabe, Dr. Franz Roters	2018 – Present
	University of Dayton Research Institute (AFRL) Contractor Project: Micromechanical Modeling of Titanium Alloys Supervisors: Dr. Mark Obstalecki	2018 – Present
	Cornell University Graduate Research Assistant, Cornell High Energy Synchrotron Source Project: Graduate theses Committee: Prof. Paul Dawson (chair), Prof. Matt Miller, Prof. Shefford Baker	2012 – 2018
	Rochester Institute of Technology Undergraduate Researcher, Mechanics Laboratory Project: Laboratory Activities to Illustrate the Importance of Low Cycle Fatigue Supervisors: Prof. Elizabeth DeBartolo, Prof. Stephen Boedo	2011 – 2012
	NASA Glenn Research Center Undergraduate Researcher, Mechanics and Life Prediction Branch Project: Viscoelastoplastic Deformation and Damage Response of Titanium Alloy, Ti-6Al-4V, at Elevated Temperatures Supervisor: Dr. Steven Arnold	2011 – 2012
<b>PUBLICATIONS</b>	<b>PUBLISHED</b>	
	[3] K. Chatterjee, M.P. Echlin, <u>M. Kasemer</u> , P.G. Callahan, T.M. Pollock, P. Dawson, “Prediction of Tensile Stiffness and Strength of Ti-6Al-4V using Instantiated Volume Elements and Crystal Plasticity,” <i>Acta Materialia</i> , vol. 157, pp. 21–32, 2018.	
	[2] <u>M. Kasemer</u> , M.P. Echlin, J.C. Stinville, T.M. Pollock, and P. Dawson, “On Slip Initiation in Equiaxed $\alpha/\beta$ Ti-6Al-4V,” <i>Acta Materialia</i> , vol. 136, pp. 288–302, 2017.	
	[1] <u>M. Kasemer</u> , R. Quey, and P. Dawson, “The Influence of Mechanical Constraints Introduced by $\beta$ Annealed Microstructures on the Yield Strength and Ductility of Ti-6Al-4V,” <i>Journal of the Mechanics and Physics of Solids</i> , vol. 103, pp. 179–198, 2017.	
	<b>SUBMITTED</b>	
	[1] <u>M. Kasemer</u> and P. Dawson, “A finite element methodology to incorporate kinematic activation of discrete deformation twins in a crystal plasticity framework,” <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019.	

**IN PREPARATION**

- [2] E. Zepeda-Alarcón, M. Kasemer, P. Dawson, and H.R. Wenk, “Texture Development in a Dual Phase Bridgmanite/Periclase Mineral Aggregate,” In preparation, 2019.
- [1] R. Quey, M. Kasemer, and P. Dawson, “Multiscale Polycrystals for the Finite Element Method: Generation and Meshing,” In preparation, 2019.

**CONFERENCES AND LECTURES****INVITED LECTURES**

- [1] “Crystal Plasticity Finite Element Modeling with Application to Titanium Alloys,” Air Force Research Laboratory, Dayton, Ohio, USA, November 2018.

**CONFERENCE PRESENTATIONS**

- [2] M. Kasemer, R. Quey, D. Boyce and P. Dawson, “Investigating the Influence of Microstructural Features on the Yield Strength and Ductility of Ti-6Al-4V,” at *International Workshop on Mechanistic Behaviour of HCP Alloys*, University of Oxford, Oxford, England, UK, March 2016.
- [1] M. Kasemer, E. Wielewski, R. Quey, and P. Dawson, “Investigating the Influence of Microstructural Features on Strength and Ductility of  $\beta$  Annealed Ti-6Al-4V,” at *3rd World Congress on Integrated Computational Materials Engineering*, Colorado Springs, Colorado, USA, June 2015.

**CONFERENCE PROCEEDINGS**

- [2] S. Boedo, E. DeBartolo, and M. Kasemer, “Laboratory Activities to Illustrate the Importance of Low Cycle Fatigue,” *2013 ASEE Annual Conference & Exposition*, Atlanta, Georgia, USA, June 2013.
- [1] S. Arnold, B. Lerch, A. Saleeb, and M. Kasemer, “Viscoelastoplastic Deformation and Damage Response of Titanium Alloy, Ti-6Al-4V, at Elevated Temperatures,” *International Symposium on Plasticity and its Current Applications*, Nassau, Bahamas, January 2013.

**TEACHING EXPERIENCE****GRADUATE TEACHING ASSISTANT**

MAE3280: Experimental and Applied Mechanics of Structures= 2018  
 Cornell University, Profs. Matt Miller and Nikolaos Bouklas  
 Recipient, Sibley School Excellence in Graduate Teaching Assistance Prize

**WORKSHOPS**

InSitu Workshop 2018  
 Sibley School of Mechanical and Aerospace Engineering, Cornell University

Modelling the Micromechanics of Polycrystalline Materials Workshop 2016  
 University of Glasgow

InSitu Workshop 2014  
 Cornell High Energy Synchrotron Source, Cornell University

**STUDENT MENTORSHIP**

Kayleigh Nelson 2016  
 University of Glasgow  
 Doctoral student of Prof. Euan Wielewski

Eloisa Zepeda-Alarcón 2015  
 University of California, Berkeley  
 Doctoral student of Prof. Hans-Rudolf Wenk  
 Crystal plasticity modeling of geological materials  
 Currently: Postdoctoral Research Fellow, Los Alamos National Laboratory

Joshua Ren 2015  
 Cornell University  
 Mechanical engineering undergraduate student  
 Visualization of variable fields on simulated deformed specimens

<b>GRANTS &amp; AWARDS</b>	UDRI/AFRL Grant, Micromechanical Modeling of Titanium Alloys	2018
	Sibley School Excellence in Graduate Teaching Assistance Prize	2018
	Cornell University International Graduate Research Grant	2016
	Cornell University Conference Grant	2016
	Cornell University Conference Grant	2015
	RIT Outstanding Undergraduate Scholar	2012
<b>PROFESSIONAL MEMBERSHIPS</b>	The Materials, Metals, and Minerals Society	
	American Society of Mechanical Engineers	
	Tau Beta Pi	
<b>OTHER WORK EXPERIENCE</b>	LORD Corporation Engineering Design Intern	2009 – 2010
<b>REFERENCES</b>	<b>Prof. Paul Dawson</b>	
	Joseph C. Ford Professor of Engineering, Emeritus Sibley School of Mechanical and Aerospace Engineering Cornell University 405 Upson Hall Ithaca, New York 14850, USA prd5@cornell.edu +1 607 255 3466	
	<b>Prof. Dr. Dierk Raabe</b> Director, Max-Planck-Institut für Eisenforschung Department of Microstructure Physics and Alloy Design Max-Planck-Straße 1 40237 Düsseldorf, Germany d.raabe@mpie.de +49 211 6792 340	
<b>Dr. Romain Quey</b> Researcher, CNRS Centre SMS École des Mines de Saint-Étienne 158 cours Fauriel 42023 Saint-Etienne Cedex 2, France romain.quey@mines-stetienne.fr +33 4 77 42 66 23		