Samuel B. Inman

https://www.linkedin.com/in/samuel-b-inman/

Professional Experience:

Post-doc: Center for Integrated Nanotechnologies, Sandia National Laboratories, Albuquerque, NM *2024-Present*

Primary Supervisor: Brad L. Boyce

Education:

University of Virginia, Charlottesville, VA *2019-2024*

GPA 3.83/4.0, Doctorate of Philosophy: Materials Engineering

Thesis: Understanding Microstructural Phase Evolution, Compositional Partitioning, Passivation, and Corrosion Resistance of Multi-Phase Complex Concentrated Alloys

Advisor: John R. Scully

Masters of Engineering: Materials Engineering

Purdue University, West Lafayette, IN *2016-2019*

GPA 3.78/4.0, Bachelor of Science: Materials Engineering, Minor: Chemistry, Honors College

Research Advisors: Kevin P. Trumble, Michael S. Titus

Senior Design Sponsor: AIM-MRO and GE Aviation

Publications:

Total publications: 11 **First author publications:** 8 **h-index:** 6 **Citations:** 206

Stochastic room temperature creep of 316 L stainless steel *2025*

SB Inman, KW Garber, AE Robertson, NK Brown, R Dingervile, BL Boyce, International Journal of Plasticity, v. 189, p. 104326

Factors governing passivation behavior of Fe-Cr-Al-Ti alloys in sulfate containing acidified solutions: Uncovering the many roles of Ti *2025*

D Sur, **SB Inman**, KL Anderson, N Smith, J Qi, M Barbieri, C Wolverton, JR Scully, Materialia, v. 39, p. 102370,10.1016/j.mtla.2025.102370

Variation of the Passive Film on Compositionally Concentrated Dual-phase Al0.3Cr0.5Fe2Mn0.25Mo0.15Ni1.5Ti0.3 and Implications for Corrosion *2024*

SB Inman, MA Wischhusen, J Qi, SJ Poon, SR Agnew, JR Scully, Metallurgical and Material Transactions A, v. 55, i. 12, p. 4776, 10.1007/s11661-024-07572-9

Effect of Ti on the Corrosion Resistance of Al-Cr-Fe-Mn-Mo-Ni Single and Multi-Phase CCAs *2024*

SB Inman, J Han, DI Hoyos, J Qi, SR Agnew, K Ogle, JR Scully, Corrosion Science, v. 236, p. 112262, 10.1016/j.corsci.2024.112262

Passivation and Localized Corrosion Resistance of $Al_{0.3}Cr_{0.5}Fe_2Mo_xNi_{1.5}Ti_{0.3}$ Compositionally Complex Alloys: Effect of Mo Content *2024*

SB Inman, J Han, MA Wischhusen, J Qi, SJ Poon, K Ogle, JR Scully, Corrosion Science, v. 227, p. 111692, 10.1016/j.corsci.2023.111692

Design and Discovery of Compositionally Complex Alloys (CCA) that Include High Corrosion Resistance — *2024*

SB Inman, JR Scully, CORROSION, v. 80, i. 3, p.250, 10.5006/4451

Corrosion Behavior of a Compositionally Complex Alloy Utilizing Simultaneous Al, Cr, and Ti Passivation — *2024*

SB Inman, D Sur, J Han, K Ogle, JR Scully, Corrosion Science, v. 217, p. 111138, 10.1016/j.corsci.2023.111138

Lightweight, Low Cost Compositionally Complex Multiphase Alloys with Optimized Strength, Ductility and Corrosion Resistance: Discovery, Design and Mechanistic Understandings — *2023*

JJ Bhattacharyya, **SB Inman**, MA Wischhusen, J Qi, SJ Poon, JR Scully, SR Agnew, Materials & Design v. 228, p. 111831, 10.1016/j.matdes.2023.111831

Effect of Mn Content on the Passivation and Corrosion of $Al_{0.3}Cr_{0.5}Fe_2Mn_xMo_{0.15}Ni_{1.5}Ti_{0.3}$ Compositionally Complex Face-Centered Cubic Alloys — *2022*

SB Inman, J Han, AY Gerard, J Qi, MA Wischhusen, SR Agnew, SJ Poon, K Ogle, JR Scully, CORROSION, v. 78, i. 1, p. 32-48, 10.5006/3906 — *2020*

Controlling the corrosion resistance of multi-principal element alloys — *2020*

JR Scully, **SB Inman**, AY Gerard, CD Taylor, W Windl, DK Schreiber, P Lu, JE Saal, GS Frankel, Scripta Materialia, v. 188, i. 1, p. 96-101, 10.1016/j.scriptamat.2020.06.065

Planar Front Growth of Single Crystal Ni-Based Superalloy René N515

S Matsunaga, D Huang, **SB Inman**, JC Mason, D Konitzer, DR Johnson, MS Titus, JOM, v. 72, i. 5, p. 1794-1802, 10.1007/s11837-020-04091-x

Technical Presentations:

High-Throughput Creep Characterization for Use in Accelerated Aging Prediction — *2025*

TMS Annual Meeting & Exhibition, Las Vegas, NV

Lateral Variation in Multi-phase HEA Passive Films: Implications for Corrosion Resistant Alloy Design — *2023*

TMS 3rd World Congress on High Entropy Alloys, Pittsburgh, PA

Design of Dual-Phase Corrosion-Resistant Compositionally Complex Alloys: Evaluating Elemental Partitioning and Passivation — *2023*

AMPP Annual Meeting and Expo, Denver, CO

Selected Student Presentation: Isolating Elemental Roles in Compositionally Complex Alloy Passivation — *2022*

Gordon Research Conferences: Aqueous Corrosion, New London, NH

Invited: Corrosion Resistance of Al-Cr-Ti Containing Compositionally Complex Alloys — *2022*

TMS Annual Meeting & Exhibition, Anaheim, CA

Invited: What Controls Corrosion and Passivation of Compositionally Complex Alloys? — *2022*

TMS Annual Meeting & Exhibition, Anaheim, CA
Presented on behalf of first author JR Scully

Design of Low Cost Compositionally Complex Alloys (CCAs) with Excellent Corrosion Resistance *2021*

TMS 2nd World Congress on High Entropy Alloys, Charlotte, NC

2019

Design of Lightweight Compositionally Complex Alloys (CCAs)

AAMP (NACE) CORROSION, Virtual

Poster Presentations:

Corrosion Inclusive Compositionally Complex Alloy (CCA) Design: A Case Study in the Al-Cr-Fe-Mn-Mo-Ni-Ti System *2023*

AMPP Annual Meeting and Expo, Denver, CO

Corrosion Inclusive Compositionally Complex Alloy (CCA) Design: A Case Study in the Al-Cr-Fe-Mn-Mo-Ni-Ti System *2022*

Gordon Research Conferences: Aqueous Corrosion, New London, NH

Corrosion Inclusive Compositionally Complex Alloy (CCA) Design: A Case Study in the Al-Cr-Fe-Mn-Mo-Ni-Ti System 2021

TMS 2nd World Congress on High Entropy Alloys, Charlotte, NC

Design of Low Cost, Lightweight Compositionally Complex Alloys (CCAs) with Excellent Corrosion Resistance 2021

AAMP (NACE) CORROSION, Virtual

Design of Low Cost, Light Weight Compositionally Complex Alloys (CCAs) 2019

Accepted to AAMP (NACE) CORROSION, Canceled

Technical Abilities:

- **Electrochemistry:** Polarization, EIS, ZRA
- **Metallurgical Skills:** XRD, Tensile testing, Vickers Hardness Test, Specimen Polishing and Etching
- **Microscopy:** SEM, EBSD, EDS, AFM, TEM analysis
- **Spectroscopy and Chemical Analysis:** XPS, Auger Electron Spectroscopy,
- **Computer Programming:** Python, C,
- **Statistical Analysis:** Z and T-Score Hypothesis Testing, Goodness of Fit, Regression Analysis
- **Language:** Native English Fluency, Conversational Spanish Fluency

Teaching and Academic Administration Experience:

UVA Engineering Teaching Fellow: Introduction to Materials Science *2023*

- Co-developed, instructed, and administered class with faculty teaching mentor
- Participated in UVA Center for Teaching Excellence Course Design Institute

Graduate Teaching Assistant: Corrosion, Batteries, and Fuel Cells *2022*

University of Virginia Undergraduate Recruitment Committee *2020-Present*

- Served as a graduate student representative on faculty recruitment committee

Professional Membership:

- The Minerals, Metals, and Materials Society (TMS) *2024-Present*
- Material Advantage: *2017-2021*
    - American Ceramic Society (ACerS)
    - Association for Iron & Steel Technology (AIST)
    - ASM International- The Materials Information Society
    - The Minerals, Metals, and Materials Society (TMS)
- The Electrochemical Society (ECS) *2021-2024*
- Association for Materials Protection and Performance (AMPP/ NACE) *2020-2024*

Engineering Outreach:

CORROSION, Corrosion Science, Scripta Materialia, and more: Reviewer *2020-Present*

UVA MSE Graduate Student Board: Qualifying Exam Chair *2022-2023*

UVA MSE Graduate Student Board: Service Chair *2020-2022*

UVA MSE Graduate Recruitment Committee *2020-Present*

UVA MSE Nanodays Volunteer *2019-Present*

Purdue Engineering Projects in Community Service (EPICS): Team Ecuador, Team VETS *2017, 2019*

Purdue University Material Advantage: Purdue MSE Ambassador *2018-2019*

Purdue University Material Advantage: Purdue MSE Safety Team *2018-2019*

Academic Awards:

- Fred D. Rosi Outstanding Citizen Award *2024*
- UVA Engineering Teaching Fellow *2023*
- AMPP student poster competition: First place Mars Fontana section *2023*
- Gordon Research Conferences selected student speaker *2022*
- Purdue University presidential scholar *2016-2019*
- Dr. Mysore A. Dayananda Academic Excellence Scholarship recipient *2018*
- Tau Beta Pi initiate *2018*