Aaron E. Tallman

1. **Name and academic rank:**

Aaron E. Tallman, Assistant Professor, Department of Mechanical and Materials Engineering

2. **Education – degree, discipline, institution, year**

Ph.D. Materials Science Engineering, Georgia Institute of Technology, 2018
M.S. Materials Science Engineering, Georgia Institute of Technology, 2015
B.S. Materials Science and Engineering, Rice University, 2012
B.A. Humanities-Theater, Rice University, 2012

3. **Academic experience – institution, rank, title**

Assistant Professor, Mechanical and Materials Engineering Department, 2021-present

4. **Non-academic experience – company or entity, title, brief description of position, when**

Los Alamos National Laboratory, MST Division, Postdoctoral Research Associate, 2018-2021

5. **Certifications or professional registrations**: N/A

6. **Current membership in professional organizations**

The Mineral, Metal and Material Society (TMS)
American Society of Metals (ASM)

7. **Honors and awards**: N/A

8. **Service activities (within and outside of the institution)**

Peer Reviewer for IMMI, JOM, Department Curriculum Committee

9. **Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation**

A. E. Tallman, R. Pokharel, D. Brown, and L. Capolungo, "Synthetic Data-Driven Predictions of Dislocation Density from Polycrystalline Ta Neutron Diffraction Line Profiles," presented at the International Materials Applications and Technologies ASM Annual Meeting 2021, St. Louis, MO.

A. E. Tallman, M. Arul Kumar, C. Matthews, and L. Capolungo, "Surrogate Modeling of Mechanistic Viscoplasticity: Application to Transient Conditions in HT-9 Cladding," *The Journal of The Minerals, Metals &Materials Society*, 2020. https://doi.org/10.1007/s11837-020-04402-2.

A. E. Tallman, M. Arul Kumar, A. Castillo, W. Wen, L. Capolungo, and Carlos. N. Tomé, "Data-driven constitutive model for the inelastic response of metals: application to 316H steel," *Integrating Materials andManufacturing Innovation*, 2020. https://doi.org/10.1007/s40192-020-00181-5.

A. E. Tallman, L. P. Swiler, Y. Wang, and D. L. McDowell, "Uncertainty propagation in reduced order models based on crystal plasticity," *Computer Methods in Applied Mechanics and Engineering*, vol. 365, p. 113009,Jun. 2020. https://doi.org/10.1016/j.cma.2020.113009.

A. E. Tallman, L. P. Swiler, Y. Wang, and D. L. McDowell, "14 - Hierarchical multiscale model calibration and validation for materials applications," in *Uncertainty Quantification in Multiscale Materials Modeling*, Y. Wangand D. L. McDowell, Eds. Woodhead Publishing, 2020, pp. 449–471.

D. Bamney, **A. E. Tallman**, L. Capolungo, D. E. Spearot, "Virtual diffraction analysis of dislocations and dislocation networks in discrete dislocation dynamics simulations." *Computational Materials Science*, vol. 174,2020. https://doi.org/10.1016/j.commatsci.2019.109473.

A. E. Tallman, K. S. Stopka, L. P. Swiler, Y. Wang, S. R. Kalidindi, and D. L. McDowell, "Gaussian-Process-Driven Adaptive Sampling for Reduced-Order Modeling of Texture Effects in Polycrystalline Alpha-Ti." *The Journal of The Minerals, Metals & Materials Society*, vol. 71, no. 8, 2019. https://doi.org/10.1007/s11837-019-03553-1.

A. E. Tallman, L. P. Swiler, Y. Wang, and D. L. McDowell, "Hierarchical top-down bottom-up calibration with consideration for uncertainty and inter-scale discrepancy of Peierls stress of bcc Fe." *Modelling and Simulationin Materials Science and Engineering*, vol. 27, no. 6, 2019. https://doi.org/10.1088/1361-651X/ab23e4.

A. E. Tallman, L. P. Swiler, Y. Wang, and D. L. McDowell, "Reconciled Top-down and Bottom-up Hierarchical Multiscale Calibration of bcc Fe Crystal Plasticity." *International Journal of Multiscale Computational Engineering*, vol. 15, no. 6, 2017. https://doi.org/10.1615/IntJMultCompEng.2017021859.

10. Briefly list the most recent professional development activities:
FIU Center for the Advancement of Teaching Book Group