Exponent®
Engineering & Scientific Consulting

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Professional Profile

Dr. Seamone has expertise in engineering design, failure analysis, and composite materials, applying an analytical approach to solving complex technical challenges. He frequently collaborates on multi-disciplinary projects to deliver innovative, data driven insights that help clients understand and resolve critical engineering issues. His work emphasizes translating complex technical findings into clear, practical recommendations that drive sound decisions and tangible results. He provides a balanced perspective by drawing on experience across a variety of mechanical systems and materials applications, including aircraft structures, deployable space structures, composite overwrapped pressure vessels, medical devices, and consumer products. Dr. Seamone provides a balanced perspective that integrates deep technical knowledge with a strong appreciation for project objectives, schedule demands, and evolving business, safety, and regulatory considerations. He is passionate about using engineering analysis to support evidence based strategies that improve performance, reliability, and overall product integrity for every client engagement.

Dr. Seamone's work focuses on evaluating the performance, durability, and reliability of mechanical and composite systems for clients in the aerospace, transportation, energy, manufacturing, and consumer product sectors. He provides clients with specialized expertise in failure analysis, material characterization, and design optimization, helping clients identify root causes, enhance product performance, and reduce risk throughout the product life cycle.

Prior to joining Exponent, Dr. Seamone completed his Ph.D. in Aerospace Engineering at the University of Michigan where he researched impact damage tolerance of composite structures for aerospace applications. He then spent a year consulting on composite structure design for clients. He has built a strong foundation through academic and professional experiences focused on mechanical systems design and performance evaluation. His analyses and technical recommendations have guided design validation, and contributed to safer, more reliable engineering outcomes across a range of high performance applications.

Academic Credentials & Professional Honors

Ph.D., Aerospace Engineering, University of Michigan, Ann Arbor, 2024

M.S., Aerospace Engineering, University of Michigan, Ann Arbor, 2021

B.S., Civil Engineering, University of Colorado, Boulder, 2019

Honor society involvement

Chi Epsilon – Civil Engineering Honor Society

Tau Beta Pi – Engineering Honor Society

Phi Sigma Pi – Honor Society

University of Colorado

B.S. Civil Engineering - Cum laude

Prior Experience

Design Engineer, Digital Blue, 2025

Publications

Seamone, A., Devaru, S., Waas, A. M., & Ranatunga, V. (2025). Predictive modeling for hat-stiffener delamination during low velocity impact. Journal of Composite Materials, 59(3), 357-368.

Seamone, A., Shapiro, J. N., Zhao, Z., Aakalu, V. K., Waas, A. M., & Nelson, C. (2025). Eyelid motion tracking during blinking using high-speed imaging and digital image correlation. Journal of Biomechanical Engineering, 147(1), 014503.

Seamone, A., Davidson, P., Waas, A. M., & Ranatunga, V. (2024). Low velocity impact and compression after impact of thin and thick laminated carbon fiber composite panels. International Journal of Solids and Structures, 292, 112745.

Seamone, A., Davidson, P., Waas, A. M., & Ranatunga, V. (2022). Low velocity impact and compressive response after impact of thin carbon fiber composite panels. International Journal of Solids and Structures, 257, 111604.

Presentations

Seamone, A., Shapiro, J. N., Zhao, Z., Waas, A. M., & Nelson, C. (2024). High-Speed Imaging of Eyelid Blinking Motion using Digital Image Correlation. Investigative Ophthalmology & Visual Science, 65(7), 5886-5886.

Seamone, A. A., Lin, S., Waas, A. M., & Ranatunga, V. P. (2023, June). Interface Characterization of Hybrid M21 Composites Through DCB and ENF Experiments and Numerical Predictions. In ASME Aerospace Structures, Structural Dynamics, and Materials Conference (Vol. 87141, p. V001T01A017). American Society of Mechanical Engineers.

Seamone, A. A., Lin, S., Waas, A. M., & Ranatunga, V. (2023). Experimental and numerical study for hat-stiffener separation during low velocity impact. In Proceedings of the American Society for Composites-thirty-eighth technical conference.

Seamone, A., Davidson, P., & Waas, A. M. (2023). Knockdown in Load Bearing Capability of Thin and Thick Composites Due to Low Velocity Impact. In AIAA SCITECH 2023 Forum (p. 1904).

Seamone, A. A., Davidson, P., Waas, A. M., & Ranatunga, V. (2022). Effect of low velocity impact on the compressive load carrying capability of thick composites. In Proceedings of the American Society for Composites-thirty-seventh technical conference.

Seamone, A., Waas, A. M., Davidson, P., & Ranatunga, V. (2022). Influence of input parameters on Barely Visible Impact Damage (BVID) simulation. In AIAA SCITECH 2022 Forum (p. 0410).

Seamone, A., Waas, A. M., & Davidson, P. (2022). Experimental analysis of low velocity impact on carbon fiber reinforced polymer (CFRP) composite panels. In AIAA SCITECH 2022 Forum (p. 0409).

Seamone, A., Waas, A. M., Davidson, P., & Ranatunga, V. (2021). Experimental analysis of low velocity impact near the bvid limit on carbon fiber reinforced polymer panels. In Proceedings of the American Society for Composites-thirty-sixth technical conference.

Weigand, J. M., Thonstad, T., & Seamone, A. A. (2019). Long-Slotted Plate Connections for Enhancing the Robustness of Steel Gravity Systems against Column Loss: Preliminary Results.

Sharma, A. H., Rose, T. J., Seamone, A., Murphey, T. W., & Lopez Jimenez, F. (2019). Analysis of the column bending test for large curvature bending of high strain composites. In AIAA SCITECH 2019 Forum (p. 1746).

Rose, T. J., Sharma, A., Seamone, A., Jimenez, F. L., & Murphey, T. (2018). Carbon Unidirectional Composite Flexure Strength Dependence on Laminate Thickness. In Proceedings of the American Society for Composites Thirty-third technical conference.

Peer Reviews

Composite Science and Technology (Elsevier)