

Curriculum Vitae, Christopher T. Goodin

CONTACT INFORMATION	Center for Advanced Vehicular Systems Mississippi State University	<i>E-mail:</i> cgoodin@cavs.msstate.edu <i>Cell:</i> (615) 336-1249
RESEARCH INTERESTS	<ul style="list-style-type: none">• Physics-based LIDAR simulations / supercomputing• Simulation of autonomous ground vehicles.• Ground vehicle mobility & vehicle dynamics simulation.• Tire-soil interaction simulation / terrain impacts on mobility.• Parallel rendering, graphics, and radiative transfer.	
EDUCATION	Vanderbilt University , Nashville, Tennessee Ph.D., Physics, 2008 Vanderbilt University , Nashville, Tennessee M.S., Physics, May, 2006 Mississippi College , Clinton, MS B.S., Mathematics and Physics, May, 2004	
HONORS AND AWARDS	<ul style="list-style-type: none">• Lagemann Award for Outstanding First-Year Graduate Student (Physics), Vanderbilt, 2005• Department of the Army Achievement Award for Civilian Service, 2011• ERDC R&D Award, 2012• Department of the Army Commander's Award for Civilian Service, 2013• Army Modeling and Simulation Award - Analysis, 2013• Distinguished Alumnus, Mississippi College Physics Department, 2014• ERDC Herbert D. Vogel Scientist Award, 2015• Department of the Army Superior Civilian Service Award, 2016	
SELECTED PUBLICATIONS	<p>Goodin, C., Sharma, S., Doude, M., Carruth, D., Dabbiru, L., & Hudson, C. (2019). Training of Neural Networks with Automated Labeling of Simulated Sensor Data (No. 2019-01-0120). SAE Technical Paper.</p> <p>Goodin, C., Carruth, D., Doude, M., & Hudson, C. (2019). Predicting the Influence of Rain on LIDAR in ADAS. <i>Electronics</i>, 8(1), 89.</p> <p>Goodin, C. T., McKinley, G. B., Cummins, C. L., & Priddy, J. D. (2019). Cosimulation of vehicle dynamics and terrain interaction to predict one-pass vehicle cone index. <i>International Journal of Vehicle Performance</i>, 5(1), 77-89.</p> <p>Durst, P. J., Goodin, C. T., Bethel, C. L., Anderson, D. T., Carruth, D. W., & Lim, H. (2018). A Perception-Based Fuzzy Route Planing Algorithm for Autonomous Unmanned Ground Vehicles. <i>Unmanned Systems</i>, 6(04), 251-266.</p> <p>Hudson, C. R., Goodin, C., Doude, M., and Carruth, D. W. (2018, August). Analysis of Dual LIDAR Placement for Off-Road Autonomy Using MAVS. In 2018 World Symposium on Digital Intelligence for Systems and Machines (DISA) (pp. 137-142). IEEE.</p> <p>Goodin, C., Doude, M., Hudson, C., and Carruth, D. (2018). Enabling Off-Road Autonomous Navigation-Simulation of LIDAR in Dense Vegetation. <i>Electronics</i>, 7(9), 154.</p>	

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- Goodin, Christopher, et al. "Unmanned ground vehicle simulation with the Virtual Autonomous Navigation Environment." *Military Technologies (ICMT), 2017 International Conference on.* IEEE, 2017.
- Goodin, Christopher, et al. "Calculating fractal parameters from low-resolution terrain profiles." *Journal of Terramechanics* 72 (2017): 21-26.
- Goodin, Christopher, and Jody D. Priddy. "Comparison of SPH simulations and cone index tests for cohesive soils." *Journal of Terramechanics* 66 (2016): 49-57.
- J.F. Peters, C. Goodin. "Software Implementation of a Polarized Bidirectional Reflectance Distribution Function Model for Ray-Tracing Applications." ERDC/GSL TR-15-23, 2015
- Goodin, Christopher, Zachary Prevost, and Bertrand Lemasson. "Simulation of Biologically-Inspired Control Algorithms for Teams of Ground Vehicles." *Conference on Autonomous and Robotic Construction of Infrastructure.* (2015): 105
- C. Goodin *et al.* "Vehicle and Sensor Performance Tradeoff Study with the Virtual Autonomous Navigation Environment." *Modeling and Simulation Journal, Winter 2013-2014.* DoD Modeling and Simulation Coordination Office, pp 7-14.
- Goodin, Christopher. "Analytic expressions for the black-sky and white-sky albedos of the cosine lobe model." *JOSA A* 30.5 (2013): 854-858.
- Goodin, Christopher, et al. "A probabilistic model for simulating the effect of airborne dust on ground-based lidar." *Active and Passive Signatures IV.* Vol. 8734. 2013.
- Goodin, C., et al. "The Virtual Autonomous Navigation Environment: High Fidelity Simulations of Sensor, Environment, and Terramechanics for Robotics." *Earth and Space 2012: Engineering, Science, Construction, and Operations in Challenging Environments.* 2012. 1441-1447.
- Goodin, Chris, et al. "High fidelity sensor simulations for the virtual autonomous navigation environment." *Simulation, Modeling, and Programming for Autonomous Robots* (2010): 75-86.
- Goodin, Chris, et al. "Sensor modeling for the virtual autonomous navigation environment." *Sensors*, 2009 IEEE. IEEE, 2009.
- C. Goodin *et al.* "Single particle states in neutron rich ^{101}Zr , $^{103,105,107}\text{Mo}$, and $^{109,111}\text{Ru}$." *Physical Review C* **80**,014318 (2009).
- C. Goodin *et al.* "g factors of first 2^+ states of neutron-rich Xe, Ba, and Ce isotopes" *Physical Review C* **79**(3), 034316 (2009).
- C. Goodin *et al.* "g factors, Spin-parity Assignments, and Multipole Mixing Ratios of Excited States in N=82 Isotones ^{134}Te , ^{135}I ." *Physical Review C* **78**, 044331 (2008).
- C. Goodin *et al.* "New results for the intensity of bimodal fission in barium channels of the spontaneous fission of ^{252}Cf ." *Physical Review C* **74**, 017309 (2006).