

## **EDUCATION**

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***Post-Doc – Manufacturing Systems Research, Oak Ridge National Lab*** ***Oak Ridge, TN***  
Apr. 2014 – Aug. 2015 : Binder Jet Additive Manufacturing (3D Printing) Research

***Ph.D. – Mechanical Engineering, Virginia Tech*** ***Blacksburg, VA***  
Aug. 2009 – Mar. 2014  
*Dissertation title:* “Additively Manufactured Physical Unclonable Functions: the Effects of Quantum Dot Nanoparticles on PolyJet Direct 3D Printing.”

***B.S. – Mechanical Engineering, Tennessee Tech University*** ***Cookeville, TN***  
Aug. 2004 – May 2009

## **SUMMARY OF SKILLS**

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- Specific expertise in additive manufacturing (AM, “3D printing”) includes inkjet-based polymer and metal AM systems
- Heavily experienced with a variety of AM systems including fused deposition modeling, selective laser sintering, ExOne metal binder jetting, and Objet PolyJet technology
- Demonstrated ability to manage research projects and personnel to meet research targets
- Demonstrated aptitude for public engagement in scientific and technical presentations

## **RESEARCH EXPERIENCE AND EMPLOYMENT**

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### **Oak Ridge National Lab’s (ORNL) Manufacturing Demonstration Facility (MDF)**

#### ***Research Staff, Aug. 2015–Present***

- Principle investigator: binder jet technology, budget authority greater than \$1M
- Conduct research tasks related to binder jet AM, including printing experimental powder systems and maintaining and modifying research equipment
- Consult industry and fellow scientists at ORNL on how best to utilize AM technology
- Mentor student interns and develop workforce pipeline

#### ***Post-Doctoral Research Associate, Aug. 2013–Aug. 2015***

- Lead researcher in inkjet-based additive manufacturing, specifically focusing on metals with binder jet with ExOne systems. Manage machines and develop new technology for new materials
- Collaborate with industry partners to identify research avenues, consult on appropriate AM technologies for specific applications, and educate visitors on AM technologies and applications

### **Virginia Tech Mechanical Engineering DREAMS Lab**

#### ***Research Associate, Aug. 2009–Jun. 2013***

- Worked heavily with a variety of AM technologies including Stratasys, Objet, and SinterStations
- Led the DreamVendor project, the first unit of its kind in which any user may insert a 3D model file and get their model printed right in front of them: [www.dreams.me.vt.edu/dreamvendor](http://www.dreams.me.vt.edu/dreamvendor)

## **PUBLICATIONS AND PATENTS**

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### **BOOKS**

- Elliott and C. Waters, *Additive Manufacturing for Designers: A Primer*. SAE International, 2019.
- Fidan, A. Elliott, M. Cossette, T. Singer, and E. Tackett, “The Development and Implementation of Instruction and Remote Access Components of Additive Manufacturing,” in *Cyber-Physical Laboratories in Engineering and Science Education*, Cham: Springer International Publishing, 2018, pp. 331–342.

- O. Ivanova, A. Elliott, T. Campbell, and C. Williams, “Additive Manufacturing (AM) of Quantum Dot Nano-Inks,” in *Nanotechnology 2012: Electronics, Devices, Fabrication, MEMS, Fluidics, and Computational (Volume 2)*, CRC Press, 2012, pp. 275–278.

## JOURNALS

- J. M. Arnold, C. L. Cramer, A. M. Elliott, P. Nandwana, and S. S. Babu, “Microstructure evolution during near-net-shape fabrication of  $\text{Ni}_x\text{Al}_y\text{-TiC}$  cermets through binder jet additive manufacturing and pressureless melt infiltration,” *Int. J. Refract. Met. Hard Mater.*, vol. 84, 2019.
- C. L. Cramer, A. M. Elliott, J. O. Kiggans, B. Haberl, and D. C. Anderson, “Processing of complex-shaped collimators made via binder jet additive manufacturing of  $\text{B}_4\text{C}$  and pressureless melt infiltration of Al,” *Mater. Des.*, vol. 180, 2019.
- C. L. Cramer, A. D. Preston, A. M. Elliott, and R. A. Lowden, “Highly dense, inexpensive composites via melt infiltration of Ni into WC/Fe preforms,” *Int. J. Refract. Met. Hard Mater.*, vol. 82, pp. 255–258, 2019.
- C. L. Cramer, P. Nandwana, R. A. Lowden, and A. M. Elliott, “Infiltration studies of additive manufacture of WC with Co using binder jetting and pressureless melt method,” *Addit. Manuf.*, vol. 28, pp. 333–343, 2019.
- Fidan *et al.*, “The trends and challenges of fiber reinforced additive manufacturing,” *Int. J. Adv. Manuf. Technol.*, Jan. 2019.
- Mostafaei, C. Hilla, E. L. Stevens, P. Nandwana, A. M. Elliott, and M. Chmielus, “Comparison of characterization methods for differently atomized nickel-based alloy 625 powders,” *Powder Technol.*, vol. 333, pp. 180–192, 2018.
- E. Pawlowski *et al.*, “Producing hybrid metal composites by combining additive manufacturing and casting,” *Adv. Mater. Process.*, vol. 175, no. 7, 2017.
- M. B. Stone, D. H. Siddel, A. M. Elliott, D. Anderson, and D. L. Abernathy, “Characterization of plastic and boron carbide additive manufactured neutron collimators,” *Rev. Sci. Instrum.*, vol. 88, no. 12, 2017.
- Z. Cordero, D. Siddel, W. Peter, and A. Elliott, “Strengthening of ferrous binder jet 3D printed components through bronze infiltration,” *Addit. Manuf.*, vol. 15, pp. 87–92, 2017.
- L. Li, B. Post, V. Kunc, A. Elliott, and P. Paranthaman, “Additive manufacturing of near-net-shape bonded magnets: prospects and challenges,” *Scr. Mater.*, vol. 135, no. 7, pp. 100–104, 2017.
- P. Nandwana, A. Elliott, D. Siddel, A. Merriman, W. Peter, and S. Babu, “Powder bed binder jet 3D printing of Inconel 718: Densification, microstructural evolution and challenges,” *Curr. Opin. Solid State Mater. Sci.*, 2017.
- Pawlowski *et al.*, “Damage-tolerant metal-metal composites via melt infiltration of additively manufactured preforms,” *Mater. Des.*, vol. 127, pp. 346–351, 2017.
- L. Li *et al.*, “A novel method combining additive manufacturing and alloy infiltration for NdFeB bonded magnet fabrication,” *J. Magn. Magn. Mater.*, vol. 438, pp. 163–167, Sep. 2017.
- Shafer, D. Siddel, and A. Elliott, “Cleated Print Surface for Fused Deposition Modeling,” *J. Mech. Eng. Autom.*, vol. 7, pp. 39–43, 2017.
- Levy, A. Miriyev, A. Elliott, S. Babu, and N. Frage, “Additive manufacturing of complex-shape graded TiC/steel composites,” *Mater. Des.*, vol. 118, pp. 198–203, 2017.
- Elliott, S. AlSalihi, A. Merriman, and M. Basti, “Infiltration of Nanoparticles into Porous Binder Jet Printed Parts,” *Am. J. Eng. Appl. Sci.*, vol. 9, no. 1, pp. 128–133, 2016.
- P. Paranthaman *et al.*, “Binder Jetting: A Novel NdFeB Bonded Magnet Fabrication Process,” *JOM*, vol. 68, no. 7, pp. 1978–1982, 2016.
- N. Meisel, A. Elliott, and C. Williams, “A procedure for creating actuated joints via embedding shape memory alloys in PolyJet 3D printing,” *J. Intell. Mater. Syst. Struct.*, vol. 26, no. 12, pp. 1498–1512, 2015.
- Elliott, A. Momen, M. Benedict, and J. Kiggans, “Experimental Study of the Maximum Resolution and Packing Density Achievable in Sintered and Non-Sintered Binder-Jet 3D Printed Steel Microchannels,”

in *Proceedings of the ASME International Mechanical Engineering Congress and Exposition, 2015, Vol 2A*, 2015.

- L. Love *et al.*, “The importance of carbon fiber to polymer additive manufacturing,” *J. Mater. Res.*, vol. 29, no. 17, pp. 1893–1898, 2014.
- Elliott, O. Ivanova, C. Williams, and T. Campbell, “Inkjet Printing of Quantum Dots in Photopolymer for Use in Additive Manufacturing of Nanocomposites,” *Adv. Eng. Mater.*, vol. 15, no. 10, pp. 903–907, 2013.

## CONFERENCES

- C. Cramer, A. Elliott, and J. Klett, “Oxides, Carbides (and Carbon), and Where to Print Them,” in AMUG, 2019.
- Elliott, T. Kurfess, and V. Paquit, “The Digital Factory: Democratization of Manufacturing Through Hybrid Technologies and the Effective Use of Data,” in AMUG, 2019.
- Cramer, P. Paranthaman, H. Wang, K. Nawaz, and A. Elliott, “Binder Jetting Materials for Energy Applications,” in TMS Annual Meeting & Exhibition, 2019.
- Gilmer, M. Lehmann, A. Elliott, and T. Saito, “Binder Development for Binder Jet Additive Manufacturing,” in TMS Annual Meeting & Exhibition, 2019.
- Siddel, C. Shafer, D. Goldsby, and A. Elliott, “The Effect of Powder Characteristics on the Binder Jet Process,” in TMS Annual Meeting & Exhibition, 2019.
- Gilmer, M. Lehmann, A. Elliott, and T. Saito, “Binder Development in Binder Jet Additive Manufacturing for Sand-casting,” in TMS Annual Meeting & Exhibition, 2019.
- C. Cramer, A. Elliott, D. Goldsby, B. Haberl, G. Granroth, and D. Anderson, “Net-shaping and Densification of Boron Carbide via Binder Jetting Followed by Pressureless Infiltration,” in TMS Annual Meeting & Exhibition, 2019.
- P. Nandwana, D. Siddel, C. Shafer, and A. Elliott, “Densification of H13 Tool Steel Components Fabricated via Binder Jet Additive Manufacturing for Tooling Applications,” in TMS Annual Meeting & Exhibition, 2019.
- C. Cramer and A. Elliott, “Binder Jet Additive Manufacturing and Pressureless Melt Infiltration of Large, Complex WC-Co Parts,” in TMS Annual Meeting & Exhibition, 2019.
- C. Cramer, P. Nandwana, A. Elliott, D. Siddel, C. Shafer, and R. Lowden, “Fabrication of WC-Co Metal Matrix Composites via Melt Infiltration Using Binder Jet Additive Manufacturing,” in *TMS Annual Meeting & Exhibition*, 2018.
- P. Nandwana, D. Siddel, C. Shafer, and A. Elliott, “Supersolidus Liquid Phase Sintering of H13 Tool Steel Fabricated via Binder Jet Additive Manufacturing,” in *TMS Annual Meeting & Exhibition*, 2018.
- C. Cramer, P. Nandwana, R. Lowden, P. Prichard, and A. Elliott, “Development of Cermets Made with Binder Jet AM and Pressureless Melt Infiltration,” in AMUG, 2018.
- Elliott, M. Benedict, and A. Momen, “Additive Manufacturing of Highly Reactive Lanthanides,” in *TMS Annual Meeting & Exhibition*, 2018.
- D. Gilmer *et al.*, “Enhanced Green Part Strength in Binder Jet Additive Manufacturing,” in *55th ACS National Meeting & Exposition*, 2018.
- D. Gilmer *et al.*, “Binder Development for Enhancing Green Part Strength in Binder Jet Additive Manufacturing,” in *MRS Spring Meeting & Exhibit*, 2018.
- Elliott, D. Siddel, and C. Shafer, “Net Shaping of Steel-Tungsten Metal Hybrid via Binder Jet Additive Manufacturing,” in *TMS Annual Meeting & Exhibition*, 2017.
- Elliott, “Roadmap for Binder Jet AM and Traditional Powdered Metal Part Production,” in *AMPM*, 2017.
- Elliott, “The Science of Additive Manufacturing and What the Future Holds,” in *Manufacturing Leadership Summit*, 2017.
- Pawlowski *et al.*, “Additive Manufacturing of Interpenetrating Phase Composites with Exceptional Damage-tolerance,” in *MS&T*, 2017.
- Waters, B. Ilogebde, M. Khan, and A. Elliott, “Surface Morphology of Additive Manufactured Metal Matrix Composites,” in *MS&T*, 2017.

- Elliott, P. Nandwana, C. Shackelford, and C. Waters, “Roadmap for Metal Hybrids Net-Shaped via Binder Jet Additive Manufacturing,” in *MS&T*, 2017.
- Z. Cordero, D. Siddel, R. Dinwiddie, and A. Elliott, “Slumping During the Sintering of Cantilevered Beams: Experiments and Theory,” in *MS&T*, 2017.
- Shackelford, J. Arnold, P. Nandwana, A. M. Elliott, and C. K. Waters, “Metal Matrix Composites formed by Titanium Carbide and Aluminum Net Shaped via Binder Jetting,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- J. Arnold, P. Nandwana, A. Elliott, and S. Babu. “Near Net-shape Fabrication of  $Ni_xAl_y-TiC_x$  Cermets by Binder Jet Additive Manufacturing and Pressureless Melt Infiltration,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- P. Nandwana, D. Siddel, and A. Elliott, “Development of Sintering Parameters for Full Densification of H13 Tool Steel Printed via Binder Jet Additive Manufacturing,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- Elliott, P. Nandwana, D. Siddel, and C. Shafer, “Net Shaping of Steel-tungsten Metal Hybrid via Binder Jet Additive Manufacturing,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- Shafer, A. Elliott, D. Siddel, G. Jatana, and W. Partridge Jr., “Accuracy and Variation in Small Channels Produced by Bronze Infiltration of Binder Jet Prints,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- Elliott, C. Shackelford, and C. Waters, “Roadmap for Metal Matrix Composite Development for Binder Jetting,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- Siddel, P. Nandwana, and A. Elliott, “Guidelines for Developing Binder Jet Printing Parameters for Various Powder Feedstocks,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- Elliott, P. Nandwana, J. Billings, and T. Saito, “Roadmap for Binder Jet Additive Manufacturing,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- M. French *et al.*, “Hypervelocity Impact of Additively Manufactured A356/316L Interpenetrating Phase Composites,” in *The 28th Annual International Solid Freeform Fabrication Symposium*, 2017.
- Levy, A. Miriyev, A. Elliott, and S. Babu, “Additive manufacturing of complex-shape graded TiC-steel composites,” in *41st International Conference and Expo on Advanced Ceramics and Composites*, 2017.
- Elliott, “Opportunities in Additive Manufacturing,” in *Music City Center*, 2017.
- P. Nandwana, A. McAlister, A. Elliott, W. Peter, and S. Babu, “Supersolidus Liquid Phase Sintering of Binder Jet 3D Printed Inconel 718,” in *POWDERMET*, 2017.
- P. Nandwana, A. Elliott, W. Peter, and S. Babu, “Supersolidus Liquid Phase Sintering of Inconel 718,” in *MS&T*, 2016.
- Elliott, P. Nandwana, D. Siddel, and B. Compton, “A Method for Measuring Powder Bed Density in Binder Jet Additive Manufacturing Process and the Powder Feedstock Characteristics Influencing the Powder Bed Density,” in *The 27th Annual International Solid Freeform Fabrication Symposium*, 2016, pp. 1031–1037.
- Elliott and L. Love, “Operator Burden in Metal Additive Manufacturing,” in *27th Annual International Solid Freeform Fabrication Symposium*, 2016, pp. 1890–1899.
- Shafer, D. Siddel, A. Merriman, and A. Elliott, “Cleated Print Surface for Fused Deposition Modeling,” in *27th Annual International Solid Freeform Fabrication Symposium*, 2016, pp. 1359–1365.
- Bailey, A. Merriman, A. Elliott, and M. Basti, “Preliminary Testing of Nanoparticle Effectiveness in Binder Jetting Applications,” in *27th Annual International Solid Freeform Fabrication Symposium*, 2016, pp. 1069–1077.
- Elliott, O. Ivanova, C. Williams, and T. Campbell, “An Investigation of the Effects of Quantum Dot Nanoparticles on Photopolymer Resin for use in PolyJet Direct 3D Printing,” in *The 23rd Annual International Solid Freeform Fabrication Symposium*, 2012, pp. 988–998.

- L. Stiltner, A. Elliott, and C. Williams, “A Method for Creating Actuated Joints via Fiber Embedding in a Polyjet 3D Printing Process,” in *The 22nd Annual International Solid Freeform Fabrication Symposium*, 2011, pp. 583–592.

## TECHNICAL REPORTS

- Momen *et al.*, “Magnetocaloric Refrigerator Milestone 3.1.2.10: Identify testing procedures including processes to produce comparable beds for establishing performance,” ORNL/LTR-2016/161.
- Marquez, B. Armstrong, A. Elliott, and E. Lara-Curzio, “Additive Manufacturing of Dense Hexagonal Boron Nitride Objects,” ORNL/TM-2017/244.
- Momen *et al.*, “Magnetocaloric Refrigerator Final Report,” ORNL/TM-2016/700.
- Momen, A. Elliott, J. Kiggans Jr., “Magnetocaloric refrigerator Q3 Report,” ORNL/TM-2015/628.
- Z. Cordero and A. Elliott. “Collaboration for the Advancement of Indirect 3D Printing Technology,” ORNL/TM-2016/262.
- D. Nuttall, A. Elliott, B. Post, and L. Love, “Advanced Infusion Techniques with 3-D Printed Tooling,” ORNL/TM-2016/192.
- D. Splitter, A. Shyam, A. Elliott, and A. Pawlowski, “Additive Manufactured Bimetallic Gradients for High Demand Applications,” 2016.

## PATENTS

- Elliott, “Method for producing mechanical engagement between a build platform and additive manufacturing prints,” US10245781B2, 2019.
- Patent No. 8,938,965: P. Tatum III and A. Elliott, “Thermal Powered Reciprocating-Force Motor,” January 27, 2015.
- Patent No. 20160144563 (ORNL-elected): A. Elliott, “Build Platform that Provides Mechanical Engagement with Additive Manufacturing Prints,” May 26, 2016.
- Patent No. 20140288699: C. Williams, A. Elliott, D. McCarthy, and N. Meisel, “3D Printing Vending Machine,” September 25, 2014.

## INVENTION DISCLOSURES

- Disclosure, Subject Invention 201703942, M. Edwards, K. Hedrick, J. Klett, and A. Elliott (2017), “3D Metal Printing Method for Space Applications.”
- Disclosure, Subject Invention 201703925, G. Jatana, W. Partridge Jr., A. Elliott, and C. Shafer (2017), “High-Temperature EGR Probe Design for Exhaust Applications and Measurements.”
- Disclosure, Subject Invention 201703880, D. Anderson, A. Ramirez-Cuesta, M. Stone, A. Elliott, and D. Siddel (2017), “A Method for Producing Collimators and Other Components from Neutron Absorbing Materials Using Additive Manufacturing.”
- Disclosure, Subject Invention 201703866, Z. Cordero, A. Pawlowski, A. Shyam, D. Splitter, and A. Elliott (2017), “Additive Manufactured Interpenetrating Phase Composite.”
- Disclosure, Subject Invention 201703848, A. Elliott, J. Kiggans Jr., A. Momen, and M. Benedict (2017), “A Method for Forming a Caloric Regenerator.”
- Disclosure, Subject Invention 201603695, L. Li, B. Conner, A. Elliott, O. Rios, and P. Paranthaman, “Eutectic Alloy Compositions to Improve the Coercivity and Density of Binder Jet Printed Bonded Magnets.”
- Disclosure, Subject Invention 201603694, T. Saito, and A. Elliott (2016), “Development of Novel Binders Improving Binder Jet Green Part Strength.”
- Disclosure, Subject Invention 201603653, T. Muth, and A. Elliott (2016), “Treatment of Titanium Alloy 3-D Printed Components for Infiltration with Lightweight Alloys.”
- Disclosure, Subject Invention 201503620, A. Elliott, J. Kiggans Jr., A. Momen, and M. Benedict (2016), “High Resolution Microchannel 3D Printing and Sintering of MagnetoCaloric Materials (MCM).”

- Disclosure, Subject Invention 201403457, M. Noakes, F. List III, P. Joshi, C. Duty, and A. Elliott (2015), “3D Printed Electronics with Integrated Novel Liquid Cooling Channels.”

## INVITED TALKS

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- Keynote, “Additive Manufacturing: The Future of Tools,” and panelist on additive manufacturing applications for forging, Forge Fair 2019, May 21–23, 2019.
- Presentation, “Understanding 3D Printing Technology & its Impact on Product Development & Manufacturing,” at the Atlanta Technology Angels Educational Meeting, May 20, 2019.
- Presentation, “From Dust to Dreams: Shaping Powder into Parts with Additive Manufacturing,” at the Oak Ridge Chapter of ASM International Executive Committee Meeting, Apr. 25, 2019.
- Presentation, “From Dust to Dreams: Shaping Powder into Parts with Additive Manufacturing,” at the Energy and Environmental Sciences Energy Talks, Apr. 11, 2019.
- Presentation, “Opportunities in Additive Manufacturing,” for the Department of Materials Science and Engineering at the University of Tennessee, Knoxville, Apr. 9, 2019.
- Invited talk at the Oak Ridge Civic Music Association Chamber Concert, Feb. 9, 2019.
- Presentation, “Binder Jet Additive Manufacturing,” at Oak Ridge Postdoc Association seminar, Dec. 5, 2018.
- Presentation at ARC/ORAU Middle School Summer Science Academy’s science camp, Jul. 15, 2018.
- Presentation, “The Science of Additive Manufacturing and What the Future Holds,” for the UTC/CESC Distinguished Speakers Series, Feb. 23, 2018.
- Keynote at Tennessee Tech University’s Manufacturing Day Summit, Oct. 6, 2017.
- Presentation for Oak Ridge National Laboratory’s Neutron Sciences Directorate’s Women in Neutron Science Lunch and Learn Series, Jun. 9, 2017.
- Keynote, “Additive Manufacturing, Innovation, and Cool Stuff I Do,” at ASME E-Fest at Tennessee Tech University, Apr. 22, 2017.
- Presentation, “Research in Additive Manufacturing at Oak Ridge National Lab,” at the Women in Manufacturing Summit, Nashville, TN. Sept. 19–21, 2016.
- 3D Metal Printing Experience and Tech Tour, “Research in Metal Additive Manufacturing at Oak Ridge National Lab.” Livonia, MI, Aug. 19, 2016.
- Invited presentation at a NASA scholarship recognition reception for women and underrepresented groups in STEM fields, Apr. 23, 2016.
- Presentation, “Inkjet-based Additive Manufacturing: Versatility in 3D Printing,” for ORNL’s Physical Sciences Directorate’s Chemical & Materials Sciences Seminar, Sept. 9, 2015.
- Alumni lecture, “Amy, Additive Manufacturing, and the MDF,” at TTU, Cookeville, TN, Mar. 19, 2015.
- Presentation, “Additive Manufacturing: Past, Present, and Future,” for an ASME Holston Section monthly meeting in Kingsport, TN, June 2, 2015.
- Presentation, “The Next Generation of Materials that will Energize Your Creativity,” at the Cannon Trade Show, New York City, NY, Jun. 10, 2015 and Toronto, ON, Jun. 16, 2015.
- Presentation at Florida State University’s Stacking Layers Symposium, February 19–20, 2015.
- Invited presentation at Florida State University’s Stacking Layers Symposium, 2014.
- Invited talk for Pathways class at Career Magnet Academy, Aug. 28, 2014.
- Keynote for the Tennessee sectional meeting of the American Association of Physics Teachers, March 22, 2014.
- Virginia Tech TEDx, “Re-fostering Innovation in America,” 2013.  
[www.youtube.com/watch?v=cPCmQAqknDM](http://www.youtube.com/watch?v=cPCmQAqknDM)
- Keynote, “My Path in STEM,” at the SWCC Governor’s School for Science and Technology, Oct. 26, 2013.

## AWARDS AND HONORS

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- Tennessee Tech Engineering Young Alumnus of Achievement Award, 2017
- Minority Serving Institutions and Partnerships Program Significant Contribution Award, ORNL, 2016
- ORNL Significant Event Award, 2014
- Torgersen Research Award 3<sup>rd</sup> Place Poster, 2014
- GAANN Fellow, 2010–2011
- TTU Ms. Engineer, 2009
- TTU Engineering Joint Council Scholarship, 2006
- Dean's List, 2004–2014
- NASA Robotics Academy Alumni, 2005
- TTU Honors Program, 2004–2007