

EDUCATION

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

- 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

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

Group Leader, Robotics and Intelligent Systems Group, December 2020-Present

- Lead a team of 10+ researchers and technical staff by managing staff issues, performance evaluations, and career growth

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, Apr. 2014–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

CONFERENCE LEADERSHIP & WORKSHOPS

- 2021 National Academy of Engineers German-American Frontiers of Engineering Symposium. *Host Institution Conference Chair*. March 17-19, 2021. Virtual.

- Women in 3D Printing TIPE (Technology, Industry, People, Economics) 2021 Conference - **Technology Track Organizer/Lead**. Virtual. February 27-28, 2021. <<https://www.tipe3dprinting.com/>>.
- 2021 National Academy of Engineers German-American Frontiers of Engineering Symposium. **Host Institution Conference Chair**. March 17-19, 2021. Virtual.
- **Invited Workshop (3 hours)**: Elliott, Amelia M. 2021. “METAL AM TUTORIAL: Powder Processing: Quality, Handling & Safety for Performance.” In *PowderMet*. Orlando, FL. <https://www.mpif.org/Events/PowderMet2021/Program/MetalAMTutorial.aspx>.
- ASTM International Conference on Additive Manufacturing (ICAM 2021) **Scientific Organizing Committee (SOC)** for Sinter-Based Symposium – November 1-5, 2021.
- Powdermet 2021 - **AMPM Session Chair (3 Sessions)**
 - Advanced Synthesis and Powder Processing Monday, June 21, 2021
 - Metal AM Build Processes II Tuesday, June 22, 2021
 - Atomized Feedstock for AM Wednesday, June 23, 2021

MEDIA/OUTREACH

- “3D Printing Scientist Uses Million Dollar Machines to Research Energy-Efficient Manufacturing Methods at Oak Ridge National Laboratory, with Amy Elliott.” **Podcast Interview**, “Women with Cool Jobs.” Julie Berman. Aired July 15, 2021. <https://womenwithcooljobs.com/podcast>.
- “Energy Innovation – Trends in the Next Decade.” **Radio Interview**, “More Living with Jim Brogan,” Newstalk 98.7 WOKI, Knoxville. April 24th, 2021.
- Upcoming: “Amy Elliott, 3D Printing Scientist.” **TV Segment** for *Mission Unstoppable*. CBS. Anticipated airing Fall 2021.
- **Contestant and 2nd place finalist** on *The Discovery Channel’s* “The Big Brain Theory,” an engineering competition show where engineers design, build, and compete with machines to solve big problems (2013). <https://www.imdb.com/title/tt2865850/>.
- **AAAS IF/THEN Ambassadorship** – to make women STEM role models more visible through social media coaching and targeted outreach initiative. Current twitter following: >2,500 @amytheengineer.
- **On-camera host** for *The Science Channel’s* “Outrageous Acts of Science,” a show that features viral videos and explains the science behind them (2013-2019). <https://www.imdb.com/title/tt2857312>.
- **On Camera host** for RobotNation TV’s Robosub and RobotX Competitions (2014-2019). Robonation.org.

PUBLICATIONS AND PATENTS

BOOKS AND BOOK CHAPTERS

- **Invited book chapter**: Elliott, Amy M, Corson L Cramer, Peeyush Nandwana, Markus Chmielus, and Amir B T - Reference Module in Materials Science and Materials Engineering Mostafaei. 2021. “Binder Jet-Metals.” In *Encyclopedia of Materials: Metals and Alloys*. Elsevier. <https://doi.org/https://doi.org/10.1016/B978-0-12-819726-4.00144-7>.
- **Invited Book Chapter**: Elliott, Amy M., Peeyush Nandwana, Corson L. Cramer, Amir Mostafaei, and Markus Chmielus. 2021. “Binder Jet.” In *Metal Additive Manufacturing for Propulsion Applications*. AIAA.
- **Invited Book Chapter in Press**: Elliott, Amy M. 2021. “Inkjet-Based 3D Printing.” In *Women in 3D Printing: From Bones to Bridges and Everything in Between*, edited by Stacey M. DelVecchio. Springer.
- A. Elliott and C. Cramer, “Binder Jetting and Sintering in Additive Manufacturing,” in *Additive Manufacturing Processes*, ASM International, 2020, pp. 239–246.
- Book: **A. 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

- D. B. Gilmer *et al.*, “Additive manufacturing of strong silica sand structures enabled by polyethyleneimine binder,” *Nat. Commun.*, vol. 12, no. 1, p. 5144, Dec. 2021.
- Fahima Islama, Jiao Lina, Thomas Huegler, Ian Lumsden, David Anderson, Amy Elliott Bianca Haberl, Garrett Granroth. “Computational Optimization of A 3D Printed Collimator.” *Journal of Neutron Research*. Submitted Spring 2021.
- Gilmer, Dustin, Lu Han, Eunice Hong, Derek Siddel, Alexander Kisliuk, Shiwang Cheng, Dan Brunermer, Amy Elliott, and Tomonori Saito. 2020. “An In-Situ Crosslinking Binder for Binder Jet Additive Manufacturing.” *Additive Manufacturing* 35 (October): 101341. <https://doi.org/10.1016/j.addma.2020.101341>.
- Mudanyi, Rina K., Corson L. Cramer, Amy M. Elliott, Kinga A. Unocic, Qianying Guo, and Dhananjay Kumar. 2021. “W-ZrC Composites Prepared by Reactive Melt Infiltration of Zr₂Cu Alloy into Binder Jet 3D Printed WC Preforms.” *International Journal of Refractory Metals and Hard Materials* 94 (January): 105411. <https://doi.org/10.1016/j.ijrmhm.2020.105411>.
- Cramer, Corson L, **Amy M Elliott**, Edgar Lara-Curzio, Alexis Flores-Betancourt, Michael J Lance, Lu Han, Jesse Blacker, Artem A Trofimov, Hsin Wang, and Ercan Cakmak. 2021. “Properties of SiC-Si Made via Binder Jet 3D Printing of SiC Powder, Carbon Addition, and Silicon Melt Infiltration.” *Journal of the American Ceramic Society*.
- Mostafaei, Amir, **Amy M Elliott**, John E Barnes, Fangzhou Li, Wenda Tan, Corson L Cramer, Peeyush Nandwana, and Markus Chmielus. 2021. “Binder Jet 3D Printing—Process Parameters, Materials, Properties, Modeling, and Challenges.” *Progress in Materials Science* 119: 100707.
- Mudanyi, Rina K., Corson L. Cramer, **Amy M. Elliott**, Kinga A. Unocic, Qianying Guo, and Dhananjay Kumar. 2021. “W-ZrC Composites Prepared by Reactive Melt Infiltration of Zr₂Cu Alloy into Binder Jet 3D Printed WC Preforms.” *International Journal of Refractory Metals and Hard Materials* 94 (January): 105411. <https://doi.org/10.1016/j.ijrmhm.2020.105411>.
- Cramer, Corson L., Herb Armstrong, Alexis Flores-Betancourt, Lu Han, **Amy M. Elliott**, Edgar Lara-Curzio, Tomonori Saito, and Kashif Nawaz. 2020. “Processing and Properties of SiC Composites Made via Binder Jet 3D Printing and Infiltration and Pyrolysis of Pre-ceramic Polymer.” *International Journal of Ceramic Engineering & Science*, September, ces2.10070. <https://doi.org/10.1002/ces2.10070>.
- Gilmer, Dustin, Lu Han, Eunice Hong, Derek Siddel, Alexander Kisliuk, Shiwang Cheng, Dan Brunermer, **Amy Elliott**, and Tomonori Saito. “An in-situ crosslinking binder for binder jet additive manufacturing.” *Additive Manufacturing* (2020): 101341.
- Kass, Michael, Munidhar Biruduganti, Brian Kaul, John Storey, Douglas Longman, **Amelia Elliott**, and Derek Siddel. Performance of a Printed Bimetallic (Stainless Steel and Bronze) Engine Head Operating under Stoichiometric and Lean Spark Ignited (SI) Combustion of Natural Gas. No. 2020-01-0770. SAE Technical Paper, 2020.
- A. Mostafaei *et al.*, “Binder jet 3D printing – Process parameters, materials, properties, and challenges,” *Prog. Mater. Sci.*, p. 100707, Jun. 2020.
- Cramer, Corson L., Trevor G. Aguirre, Natalie R. Wieber, Richard A. Lowden, Artem A. Trofimov, Hsin Wang, Jiaqiang Yan, M. Parans Paranthaman, and **Amy M. Elliott**. “Binder jet printed WC infiltrated with pre-made melt of WC and Co.” *International Journal of Refractory Metals and Hard Materials* 87 (2020): 105137.
- Cramer, Corson L., Peeyush Nandwana, Jiaqiang Yan, Samuel F. Evans, **Amy M. Elliott**, Chins Chinnasamy, and M. Parans Paranthaman. “Binder jet additive manufacturing method to fabricate near net shape crack-free highly dense Fe-6.5 wt.% Si soft magnets.” *Heliyon* 5, no. 11 (2019): e02804.

- J. M. Arnold, C. L. Cramer, **A. M. Elliott**, P. Nandwana, and S. S. Babu, “Microstructure evolution during near-net-shape fabrication of Ni_xAl_y-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 B₄C 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 Nitride 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**, “Clefted 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.

WORKSHOPS/WEBINARS

- Invited Workshop: Elliott, Amelia M. 2021. “METAL AM TUTORIAL: Powder Processing: Quality, Handling & Safety for Performance.” In *PowderMet*. Orlando, FL.
<https://www.mpif.org/Events/PowderMet2021/Program/MetalAMTutorial.aspx>.
- Invited Webinar: Elliott, Amelia M. “Principles of Debinding and Sintering.” May 26th, 2021. ASTM AAM CoE Webinar Series. <https://amcoe.org/training/principles-of-debinding-and-sintering>

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

- Saito, Tomonori, **Amy M. Elliott**, Daniel T. Brunermer, Dustin Blake Gilmer, Michelle Lehmann, and Huayun Yu. "Indirect additive manufacturing process using amine-containing adhesive polymers." U.S. Patent Application 16/243,507, filed July 9, 2020.
- **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. 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 & LECTURES

- **Elliott**, Amelia M. June 2, 2021. “Metal Additive Manufacturing at Oak Ridge National Laboratory.” Conference Presentation. *Holistic Innovations in Additive Manufacturing*. University of Waterloo. <https://nserc-hi-am.ca/2021/>.
- 1-hr seminar, “Principles of Debind and Sintering.” May 26, 2021. Webinar Series, “Sinter-Based AM.” ASTM (American Society for Testing and Materials) Center of Excellence. <<https://amcoe.org/training/principles-of-debinding-and-sintering.>>
- 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=cPCmQAgnDM
- Keynote, “My Path in STEM,” at the SWCC Governor’s School for Science and Technology, Oct. 26, 2013.

AWARDS AND HONORS

- ASTM International Additive Manufacturing Young Professional Award 2021
- Tennessee Valley YWCA 2021 Tribute To Women Science, Technology, And Environment Honoree
<https://ywcaknox.com/tribute-to-women/>
- Amy Elliott – Society of Manufacturing Engineers - Top 20 Women in Robotics 2021
<https://www.sme.org/technologies/articles/2021/february/twenty-women-making-their-mark-in-robotics-automation/>
- 2019-2021 AAAS (American Association for the Advancement of Science) IF/Then Ambassador
- 2019 ORNL Innovator
- R&D100 Award 2019: High Strength Binder System for Additive Manufacturing
- R&D100 Award 2017: Additively Printed High-Performance Magnets
- 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