

Rebecca Tafoya

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EDUCATION

University of Texas at Austin **2021 – Present**

Ph.D. in Chemical Engineering
1st year graduate student
Advisor: Delia Milliron

University of New Mexico (UNM) **2017 – 2021**

B.S. in Chemical Engineering, *summa cum laude*
Concentration: Materials Processing

EMPLOYMENT EXPERIENCE

Research and Development Intern, Sandia National Labs **2018 – 2021**

- Conduct research related to additive printing for flexible electronics.
- Code using Python and Arduino to create software for modular, custom-built printer.
- Design mechanical parts in SolidWorks and print using SLA and fused-deposition 3-D printers.
- Characterize and collect data by taking SEM images, electrical measurements, and profilometry.
- Create robust MatLab codes for expedited data processing and data analysis.

Clerical Intern, Sandia National Labs **Summer 2018**

- Condense and simplify code for an aerospace systems analysis manual utilizing LaTeX.

Supplemental Instructor, UNM Center for Academic Success **Spring 2018**

- Create and facilitate extra instruction sessions for the Engineering Calculus 1 class at UNM.
- Tutor students with direct one-on-one instruction.

PUBLICATIONS AND PRESENTATIONS

Peer Reviewed Journal Publications:

1. **Tafoya, R.R.**; Cook, A.W.; Kaehr, B.; Downing, J.R.; Hersam, M.C.; Secor, E.B. Real-Time Optical Process Monitoring for Structure and Property Control of Aerosol Jet Printed Functional Materials. *Advanced Materials Technologies*, 2020. <https://doi.org/10.1002/admt.202000781>
2. **Tafoya, R.R.**; Secor E.B. Understanding and mitigating process drift in aerosol jet printing. *IOP, Flexible and Printed Electronics*, 2020, 5, 015009. <https://doi.org/10.1088/2058-8585/ab6e74>
3. **Tafoya, R.R.**; Secor, E.B. Understanding effects of printhead geometry in aerosol jet printing. *IOP, Flexible and Printed Electronics*, 2020, 5, 035004. <https://doi.org/10.1088/2058-8585/aba2bb>
4. Martinez-Acosta, A.; **Tafoya, R.R.**; Quinones, S.A.; Secor, E.B. Modular motion control software development to support a versatile, low-cost aerosol jet platform for printed electronics. *Elsevier, Additive Manufacturing*, 2020, 40, 101932. <https://doi.org/10.1016/j.addma.2021.101932>

5. **Tafoya, R.R.**; Gallegos, M.A.; Downing, J.R.; Gamba, L.; Kaehr, B.; Coker, E.N.; Hersam, M.C.; Secor, E.B. Morphology and electrical properties of high-speed flexography-printed graphene. *Springer, Microchimica Acta*. <revisions submitted November 18th, 2021>

Conference Poster Presentations:

1. **Tafoya, R.R.**; Kaehr, B.; Secor, E.B. Multimaterial Aerosol Jet Printing of Functionally Graded Nanocomposites. 2019 Annual AIChE Student Conference Poster Presentation. Nov. 8-11th, 2019. Orlando, FL.
2. **Tafoya, R.R.**; Secor, E.B. Digital Fabrication of Compositionally-Graded Nanocomposites using Multimaterial Aerosol Jet Printing. Poster Presentation at the 31st Rio Grande Symposium on Advanced Materials. Sept. 16th, 2019. Albuquerque, NM.

TECHNICAL SKILLS

Laboratory Equipment for Materials Processing and Characterization:

Selective Laser Sintering, Aerosol Jet Printing, Plasma Etch, Scanning Electron Microscopy (including sputter coating), 3-D Printing (including stereolithography and fused deposition), Stylus Profilometry, 4-Point Probe

Programming and Analytical Tools:

MATLAB (including Simulink), Python, Java, Arduino, COMSOL, ASPEN Plus, LaTeX, SolidWorks CAD Software, RStudio, LabVIEW, Microsoft Excel

AWARDS AND HONORS

Cockrell School of Engineering Doctoral Fellowship	2021 – Present
New Mexico Scholars Scholarship	2017 – 2021
- Top 5% of graduating class	
UNM School of Engineering Scholarship	2018 – 2021
Tau Beta Pi Engineering Honors Society Member	2020 – Present
UNM STEP Fellowship	2018 – 2019

LEADERSHIP AND COMMUNITY INVOLVEMENT

President , UNM American Institute of Chemical Engineers (AIChE)	2020 – 2021
Vice-President , AIChE UNM	2019 – 2020
Conference Chair , AIChE UNM	2018 – 2019
Car Team Engineer , AIChE UNM	2017 - 2021
<ul style="list-style-type: none"> • Engineer a 40 cm x 30 cm sized car that starts and stops chemically to compete in a regional conference against other universities. The 2018-2019 car won 1st place at the regional AIChE conference. 	