Allison M. Crow

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Research Interests: Engineering surface and interfacial chemistries to develop global sustainable energy solutions.

Education:

08/19 – Present **University of Colorado Boulder**, Boulder, CO
- PhD in Chemical Engineering, Advisor: Wilson Smith

09/12-06/16 **Stanford University**, Stanford, CA
- B.Sc. degree in Chemical Engineering, conferred 6/16

09/09-06/12 **Tabb High School**, Yorktown, VA

09/08-06/09 **Thomas Jefferson High School for Science and Technology**, Alexandria, VA
- Symposium to Advance Research Presenter

Patent:

Connell, John; Wohl JR, Christopher; Doss, Jereme; Crow, Allison; Kim, William. 2016. Synthesis of Copolyimides Containing Fluorine and Silicon Surface Modifying Agents. US Patent 15079434 filed March 24, 2016.

Academic Research Publications:

"Synthesis and characterization of copolyimides containing fluorine and silicon surface-modifying agents" John W Connell, Christopher J Wohl, Allison M Crow, William T Kim, Michelle H Shanahan, Jereme R Doss, Yi Lin. *High Performance Polymers*. 2017. https://doi.org/10.1177/0954008317698315

"Biomass Catalytic Pyrolysis on Ni/ZSM-5: Effects of Nickel Pretreatment and Loading" Matthew M. Yung, Anne K. Starace, Calvin Mukarakate, Allison M. Crow, Marissa A. Leshnov, and Kimberly A. Magrini. *Energy & Fuels* ***2016*** 30 *(7),* 5259-5268. DOI: 10.1021/acs.energyfuels.6b00239

"Unidirectional Adsorption of Bifunctional 1,4-Phenylene Diisocyanide on the Ge(100)-2 × 1 Surface" Bonggeun Shong, Tania E. Sandoval, Allison M. Crow, and Stacey F. Bent. *The Journal of Physical Chemistry Letters* ***2015*** 6 *(6),* 1037-1041. DOI: 10.1021/acs.jpclett.5b00098

"Further Investigation Into The Use Of Laser Surface Preparation Of Ti-6Al-4V Alloy For Adhesive Bonding." Frank L. Palmieri, Allison Crow, Anna Zetterberg, John Hopkins, Christopher J. Wohl, John W. Connell, Marcus A. Belcher, and Kay Y. Blohowiak. SAMPE. In *Spring Conference Electronic Proceedings*. 2014.

Industry Research Publications:

Crow, Allison et al. *A New EV Horizon: Insights From Shenzhen's Path to Global Leadership in Electric Logistics Vehicles*. Rocky Mountain Institute, 2019.

Crow, Allison et al. *Ushering In New Mobility with User-Centered Design*. Rocky Mountain Institute, 2019.

Keeton, Andy; Crow, Allison; Daniels, Lynn; Karfs, Tim; and Levy, David. *Mapping Incentives to Change: How Commutifi's Commuter Score Can Influence Sustainable Commuting.* Rocky Mountain Institute, 2018. www.info.rmi.org/mobility_commuter_score

Crow, Allison, *Choosing to Ditch the Car Commute: What Helps Office Workers Decide*. Rocky Mountain Institute, 2017. www.rmi.org/choosing-ditch-car-commute-helps-office-workers-decide

Crow, Allison, *How Safe Are Self-Driving Cars?* Rocky Mountain Institute, 2017. www.rmi.org/safe-self-driving-cars

Research Experience:

12/16 – 08/19 **Senior Associate**, Rocky Mountain Institute, Boulder, CO
- Accelerating the electric, autonomous, mobility as a service transportation paradigm
- Data analysis and business model development for US, Bermuda, and China mobility markets
- Institute "go-to" data analyst driving change through detailed number management
- Delivering impactful industry publications as lead researcher and as project manager

07/16 – 08/16 **Alternative Fuels R&D** (Intern), Carbon Recycling International, Reykjavík, Iceland
- Modeled cost-emissions tradeoffs for alternative transportation systems

- Identified market options for island-based renewable fuel production

01/13 – 06/16 **Bent Research Group**, Stanford University, Stanford, CA

- Undergraduate researcher for Semiconductor Organic Functionalization group
- Characterized controlled attachment of organic materials for custom-tailored properties

06/15 – 08/15 **NREL SULI Catalysis Research Engineer** (Intern), Golden, CO

- Synthesized and tested catalysts for biomass pyrolysis vapor phase upgrading
- Designed novel research project using design of experiments
- Published report on improved catalytic activity and stability

06/14 - 08/14 **NASA LARSS Polymer Research Engineer** (Intern), NASA Langley, Hampton, VA

- Synthesized and characterized a series of novel copolyimides
- NASA Technology Invention Disclosure submitted for work (**Patent:** US15079434)
- Supervised, mentored, and lab trained two junior interns
- Presented research at the 2014 Aeronautics Student Forum at NASA Langley

06/13 - 08/13 **NASA LARSS Materials Research** (Intern)

05/12 - 08/12 **NASA Aeronautics Materials Research Engineer** (Intern), NASA Langley, Hampton, VA

- Tested a novel surface preparation method for titanium and aluminum alloys for aerospace applications in collaboration with Boeing
- Primary liaison for experiment collaboration between Boeing and NASA
- Defined and led design of experiments for multi-summer project

09/11 - 5/12 **NASA Langley Research Mentorship**, NASA Langley, Hampton, VA

- Used CFD to analyze air flow over a UAV and assessed flight parameters

06/11 - 07/11 **High School Summer Honors Intern**, Jefferson Lab, Newport News, VA

- Investigated lead inhalation exposure throughout DOE laboratory

Additional Experience:

09/14 – 06/15 **Stanford Residential Assistant (RA)**, Stanford, CA

09/13 – 11/15 **Stanford Alumni Center Homecoming Reunion Team Leader**, Stanford, CA

01/13 - 9/13 **CALPIRG Energy Service Corps Fundraising Chair**, Stanford, CA

Honors/Awards:

- 2018 Way To Go Workplace Champion Award
  - In recognition of leadership, innovation, and achievement in promoting commute options in the workplace. Presented by Denver Regional Council of Governments.
- Stanford University Class of 2016 Award of Excellence
  - Honoring graduating seniors who have demonstrated a sincere commitment to the university through involvement, leadership and extraordinary Stanford spirit.
- AIChE National Conference 2015 Student Poster Presenter
- 1st place NREL SULI research poster competition
- Mel Lane Grant from Woods Institute for the Environment at Stanford University
- Stanford Cardinal Cook-off 2016 Iron-Chef cooking competition winner

Skills:

- Computer: Proficient in MATLAB, Python, DFT Calculations, GaussView, ChemDraw, and Java
  Minimal work with CFD, Unix, and BASIC
- Language: Novice skill in American Sign Language and German

Additional Information:

- Current elite national road cyclist competing across the United States in professional cycling races

- Women's cycling mentor and advocate – working to create equity and opportunity for women in sport
- Recreational youth soccer coach – coaching middle school girls team emphasizing fun, teamwork, and healthy lifestyle through game play
- President and Women's Captain of Stanford Cycling leading team to 2nd place the team time trial event
- Leland Stanford Junior University Marching Band – PR and Recruitment Manager
- Yorktown, VA - Zweibrucken, Germany Student Exchange Program