



**Chemical
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Environmental Pollution and Health Impacts: Measurements, Sources and Solutions

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NATIONAL REPORT PUBLICATIONS

National Academies of Sciences, Engineering and Medicine 2022. The Chemistry of Fires at the Wildland-Urban Interface. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26460>.

SCIENTIFIC JOURNAL PUBLICATIONS

Harries, Megan, David Allen, Femi Adetona, Michelle Bell, Marilyn Black, Jeffrey Burgess, Fred Dryer, Amara Holder, Ana Mascarenas, Fernando Rosario-Ortiz, Anna Stec, Barbara Turpin, and Judith Zelkoff. "A Research Agenda for the Chemistry of Fires at the Wildland-Urban Interface: A National Academies Consensus Report." *Environ. Sci. Technol.* 56 (2022): 15189-15191. <https://doi.org/10.1021/acs.est.2c07015>.

Zhang, Qian, Rodney Weber, Todd Luxton, Derek M. Peloquin, Eric J. Baumann, and Marilyn S. Black. "Metal Compositions of Particle Emissions from Material Extrusion 3D Printing: Emission Sources and Indoor Exposure Modeling." *Science of The Total Environment*, in press available online (2022): 160512. <https://doi.org/10.1016/j.scitotenv.2022.160512>.

Norris, Christina, Ross Edwards, Chinmay Ghoroi, James J. Schauer, Marilyn Black and Michael H. Bergin. "A Pilot Study to Quantify Volatile Organic Compounds and Their Sources Inside and Outside Homes in Urban India in Summer and Winter during Normal Daily Activities." *Environments* 9 (2022): 75-97. <https://doi.org/10.3390/environments9070075>.

Zhang, Qian, Aika Davis, Marilyn Black. "Emissions and Chemical Exposure Potentials from Stereolithography Vat Polymerization 3D Printing and Post-processing Units." *ACS Chemical Health & Safety* 29 (2022): 184-191. <https://pubs.acs.org/doi/pdf/10.1021/acs.chas.2c00002>.

Yang, Irene, Jeannie Rodriguez, Christa Young Wright, Yi-Juan Hu. "Oral Microbiome of Electronic Cigarette Users: A Cross-sectional Exploration." *Oral Diseases* (2022): 1-10. <https://doi.org/10.1111/odi.14186>

He, Linchen, Christina Norris, Xiaoxing Cui, Zhen Li, Karoline K. Barkjohn, Yanbo Teng, Lin Fang, Lili Lin, Qian Wang, Xiaojian Zhou, Jianguo Hong, Feng Li, Yinping Zhang, James J. Schauer, Marilyn Black, Michael H. Bergin, and Junfeng (Jim) Zhang. "Oral Cavity Response to Air Pollutant Exposure and Association with Pulmonary Inflammation and Symptoms in Asthmatic Children." *Environmental Research* 206 (2021): 112275. <https://doi.org/10.1016/j.envres.2021.112275>.

He, Linchen, Christina Norris, Xiaoxing Cui, Zhen Li, Karoline K. Barkjohn, Yanbo Teng, Lin Fang, Lili Lin, Qian Wang, Xiaojian Zhou, Jianguo Hong, Feng Li, Yinping Zhang, James J. Schauer, Marilyn Black, Michael H. Bergin, and Junfeng (Jim) Zhang. "Role of Endogenous Melatonin in Pathophysiologic and Oxidative Stress Responses to Personal Air Pollutant Exposures in Asthmatic Children." *Science of The Total Environment* 773 (2021): 145709. <https://doi.org/10.1016/j.scitotenv.2021.145709>.

He, Linchen, Christina Norris, Xiaoxing Cui, Zhen Li, Karoline K. Barkjohn, Collin Brehmer, Yanbo Teng, Lin Fang, Lili Lin, Qian Wang, Xiaojian Zhou, Jianguo Hong, Feng Li, Yinping Zhang, James J. Schauer, Marilyn Black, Michael H. Bergin, and Junfeng Jim Zhang. "Personal Exposure to PM_{2.5} Oxidative Potential in Association with Pulmonary Pathophysiologic Outcomes in Children with Asthma." *Environmental Science & Technology* 55, no. 5 (2021): 3101-11. <https://doi.org/10.1021/acs.est.0c06114>.

- Davis, Aika, P. Barry Ryan, Jordan A. Cohen, Debra Harris, and Marilyn Black. "Chemical Exposures from Upholstered Furniture with Various Flame Retardant Technologies." *Indoor Air* (2021). <https://doi.org/10.1111/ina.12805>.
- Harris, Debra, Aika Davis, Peter Barry Ryan, Jordan Cohen, Pravinray Gandhi, David Dubiel, and Marilyn Black. "Chemical Exposure and Flammability Risks of Upholstered Furniture." *Fire and Materials* 45 (2021): 167-80. <https://doi.org/10.1002/fam.2907>.
- Barkjohn, Karoline K., Christina Norris, Xiaoxing Cui, Lin Fang, Linchen He, James J. Schauer, Yinping Zhang, Marilyn Black, Junfeng Zhang, and Michael H. Bergin. "Children's Microenvironmental Exposure to PM_{2.5} and Ozone and the Impact of Indoor Air Filtration." *Journal of Exposure Science & Environmental Epidemiology* 30 (2020): 971-80. <https://doi.org/10.1038/s41370-020-00266-5>.
- He, Linchen, Xiaoxing Cui, Zhen Li, Yanbo Teng, Karoline K. Barkjohn, Christina Norris, Lin Fang, Lili Lin, Qian Wang, Xiaojian Zhou, Jianguo Hong, Feng Li, Yinping Zhang, James J. Schauer, Marilyn Black, Michael H. Bergin, and Junfeng Jim Zhang. "Malondialdehyde in Nasal Fluid: A Biomarker for Monitoring Asthma Control in Relation to Air Pollution Exposure." *Environmental Science & Technology* 54, no. 18 (2020): 11405-13. <https://doi.org/10.1021/acs.est.0c02558>.
- Barkjohn, Karoline K., Christina Norris, Xiaoxing Cui, Lin Fang, Tongshu Zheng, James J. Schauer, Zhen Li, Yinping Zhang, Marilyn Black, Junfeng (Jim) Zhang, and Michael H. Bergin. "Real-time Measurements of PM_{2.5} and Ozone to Assess the Effectiveness of Residential Indoor Air Filtration in Shanghai Homes." *Indoor Air* 31, no. 1 (2021): 74-87. <https://doi.org/10.1111/ina.12716>.
- Cui, Xiaoxing, Zhen Li, Yanbo Teng, Karoline K. Barkjohn, Christina L. Norris, Lin Fang, Gina N. Daniel, Linchen He, Lili Lin, Qian Wang, Drew B. Day, Xiaojian Zhou, Jianguo Hong, Jicheng Gong, Feng Li, Jinhan Mo, Yinping Zhang, James J. Schauer, Marilyn S. Black, Michael H. Bergin, and Junfeng Zhang. "Association Between Bedroom Particulate Matter Filtration and Changes in Airway Pathophysiology in Children with Asthma." *JAMA Pediatrics* 174, no. 6 (2020): 533-42. <https://doi.org/10.1001/jamapediatrics.2020.0140>.
- He, Linchen, Zhen Li, Yanbo Teng, Xiaoxing Cui, Karoline K. Barkjohn, Christina Norris, Lin Fang, Lili Lin, Qian Wang, Xiaojian Zhou, Jianguo Hong, Feng Li, Yinping Zhang, James J. Schauer, Marilyn Black, Michael H. Bergin, and Junfeng (Jim) Zhang. "Associations of Personal Exposure to Air Pollutants with Airway Mechanics in Children with Asthma." *Environment International* 138 (2020): 105647. <https://doi.org/10.1016/j.envint.2020.105647>.
- Barkjohn, Karoline K., Michael H. Bergin, Christina Norris, James J. Schauer, Yinping Zhang, Marilyn Black, Min Hu, and Junfeng Zhang. "Using Low-cost Sensors to Quantify the Effects of Air Filtration on Indoor and Personal Exposure Relevant PM_{2.5} Concentrations in Beijing, China." *Aerosol and Air Quality Research* 20, no. 2 (2020): 297-313. <https://doi.org/10.4209/aaqr.2018.11.0394>.
- Brehmer, Collin, Christina Norris, Karoline K. Barkjohn, Mike H. Bergin, Junfeng Zhang, Xiaoxing Cui, Yanbo Teng, Yinping Zhang, Marilyn Black, Zhen Li, Martin M. Shafer, and James J. Schauer. "The Impact of Household Air Cleaners on the Oxidative Potential of PM_{2.5} and the Role of Metals and Sources Associated with Indoor and Outdoor Exposure." *Environmental Research* 181 (2020): 108919. <https://doi.org/10.1016/j.envres.2019.108919>.
- Liu, Meichen, Karoline K. Barkjohn, Christina Norris, James J. Schauer, Junfeng Zhang, Yinping Zhang, Min Hu, and Michael Bergin. "Using Low-cost Sensors to Monitor Indoor, Outdoor, and Personal Ozone Concentrations in Beijing, China." *Environmental Science: Processes & Impacts* 22, no. 1 (2020): 131-43. <https://doi.org/10.1039/C9EM00377K>.

- Zhang, Qian, Michal Pardo, Yinon Rudich, Ifat Kaplan-Ashiri, Jenny P. S. Wong, Aika Y. Davis, Marilyn S. Black, and Rodney J. Weber. "Chemical Composition and Toxicity of Particles Emitted from a Consumer-level 3D Printer Using Various Materials." *Environmental Science & Technology* 53, no. 20 (2019): 12054–61. <https://doi.org/10.1021/acs.est.9b04168>.
- Brehmer, Collin, Christina Norris, Karoline K. Barkjohn, Mike H. Bergin, Junfeng Zhang, Xiaoxing Cui, Jinping Zhang, Marilyn Black, Zhen Li, Martin Shafer, and James J. Schauer. "The Impact of Household Air Cleaners on the Chemical Composition and Children's Exposure to PM_{2.5} Metal Sources in Suburban Shanghai." *Environmental Pollution* 253 (2019): 190–98. <https://doi.org/10.1016/j.envpol.2019.07.003>.
- Norris, Christina, Lin Fang, Karoline K. Barkjohn, David Carlson, Jinping Zhang, Jinhan Mo, Zhen Li, Junfeng Zhang, Xiaoxing Cui, James J. Schauer, Aika Davis, Marilyn Black, and Michael H. Bergin. "Sources of Volatile Organic Compounds in Suburban Homes in Shanghai, China, and the Impact of Air Filtration on Compound Concentrations." *Chemosphere* 231 (2019): 256–68. <https://doi.org/10.1016/j.chemosphere.2019.05.059>.
- Davis, Aika Y., Qian Zhang, Jenny P.S. Wong, Rodney J. Weber, and Marilyn S. Black. "Characterization of Volatile Organic Compound Emissions from Consumer Level Material Extrusion 3D Printers." *Building and Environment* 160 (2019): 106209. <https://doi.org/10.1016/j.buildenv.2019.106209>.
- Fang, Lin, Christina Norris, Karoline Johnson, Xiaoxing Cui, Jiaqi Sun, Yanbo Teng, Enze Tian, Wei Xu, Zhen Li, Jinhan Mo, James Jay Schauer, Marilyn Black, Mike Bergin, Jim Zhang, and Jinping Zhang. "Toxic Volatile Organic Compounds in 20 Homes in Shanghai: Concentrations, Inhalation Health Risks, and the Impacts of Household Air Cleaning." *Building and Environment* 157 (2019): 309–18. <https://doi.org/10.1016/j.buildenv.2019.04.047>.
- Zhang, Qian, Girish Sharma, Jenny P. S. Wong, Aika Y. Davis, Marilyn S. Black, Pratim Biswas, and Rodney J. Weber. "Investigating Particle Emissions and Aerosol Dynamics from a Consumer Fused Deposition Modeling 3D Printer with a Lognormal Moment Aerosol Model." *Aerosol Science and Technology* 52, no. 10 (2018): 1099–1111. <https://doi.org/10.1080/02786826.2018.1464115>.
- Zhan, Ying, Karoline Johnson, Christina Norris, Martin M. Shafer, Mike H. Bergin, Jinping Zhang, Junfeng Zhang, and James J. Schauer. "The Influence of Air Cleaners on Indoor Particulate Matter Components and Oxidative Potential in Residential Households in Beijing." *Science of The Total Environment* 626 (2018): 507–18. <https://doi.org/10.1016/j.scitotenv.2018.01.024>.
- Zhang, Qian, Jenny P. S. Wong, Aika Y. Davis, Marilyn S. Black, and Rodney J. Weber. "Characterization of Particle Emissions from Consumer Fused Deposition Modeling 3D Printers." *Aerosol Science and Technology* 51, no. 11 (2017): 1275–86. <https://doi.org/10.1080/02786826.2017.1342029>.

CONFERENCE PROCEEDINGS

- Wright, Christa. "The Unknowns of Vaping: Oxidative Stress, Toxicity, and DNA Damage Across the Device Lifetime." In *The Toxicologist: Supplement to Toxicological Sciences*, Society of Toxicology (SOT) 61st Annual Meeting and ToxExpo, San Diego, CA, 2022. <https://www.toxicology.org/pubs/docs/Tox/2022Tox.pdf>.

- Brehmer, Collin, Christina Norris, Karoline K. Barkjohn, Mike H. Bergin, Junfeng Zhang, Xiaoxing Cui, Yanbo Teng, Yingping Zhang, Marilyn Black, Zhen Li, and James J. Schauer. "The Influence of Indoor Air Cleaners on the Oxidative Potential and Sources of Metals in Indoor, Outdoor, and Personal Exposure of School Aged Children to PM_{2.5} in Suburban Shanghai, China." In *Indoor Air 2020 Conference Proceedings*, The 16th International Conference of Indoor Air Quality and Climate. Virtual, 2020.
https://www.isiaq.org/conference_proceedings.php.
- Davis, Aika, Jordan Cohen, P. Barry Ryan, Debra Harris, and Marilyn Black. "An Evaluation of Flame Retardant Exposure Routes from Upholstered Furniture." In *Indoor Air 2020 Conference Proceedings*, The 16th International Conference of Indoor Air Quality and Climate. Virtual, 2020.
https://www.isiaq.org/conference_proceedings.php.
- Norris, Christina, Michael H. Bergin, Yingping Zhang, Ross Edwards, Chinmay Ghoroi, Karoline K. Barkjohn, Junfeng Zhang, Marilyn Black, and James J. Schauer. "Quantifying Volatile Organic Compounds and Their Sources in Residences in Ahmedabad and Gandhinagar, India, and in Suburban Shanghai, China." In *Indoor Air 2020 Conference Proceedings*, The 16th International Conference of Indoor Air Quality and Climate. Virtual, 2020.
https://www.isiaq.org/conference_proceedings.php.
- Zhang, Qian, Aika Davis, Marilyn Black, and Rodney Weber. "Particle and Volatile Organic Compound Emissions from 3D Printers and Their Potential Exposure Risks." In *Indoor Air 2020 Conference Proceedings*, The 16th International Conference of Indoor Air Quality and Climate. Virtual, 2020.
https://www.isiaq.org/conference_proceedings.php.
- Zhang, Qian. "Emissions from Consumer-level 3D Printers." In *The Toxicologist: Supplement to Toxicological Sciences*, Society of Toxicology (SOT) 59th Annual Meeting & ToxExpo. Virtual, 2020.
<https://www.toxicology.org/pubs/docs/Tox/2020Tox.pdf>.
- Davis, Aika, Debra Harris, and Marilyn Black. "A Study of Chemical Exposure from Consumer Products Used in Residential Environments." In *ASHRAE Transactions*, American Society of Heating, Refrigerating and Air-Conditioning Engineers 2019 Annual Conference. Kansas City, MO, 2019.
<https://www.ashrae.org/news/esociety/ashrae-2019-annual-meeting-conference-proceedings-available>.
- Zhang, Qian, Aika Davis, Marilyn Black, and Rodney Weber. "Particle and Chemical Emissions from 3D Printers and Their Potential Health Impacts." In *ASHRAE Transactions*, American Society of Heating, Refrigerating and Air-Conditioning Engineers 2019 Annual Conference. Kansas City, MO, 2019.
<https://www.ashrae.org/news/esociety/ashrae-2019-annual-meeting-conference-proceedings-available>.
- Fang, Lin. "Characteristics and Inhalation Cancer Risks Assessment of Exposure to VOCs in 20 Asthmatic Children's Homes in Shanghai." In *Indoor Air 2018 Conference Proceedings*, The 15th International Conference of Indoor Air Quality and Climate. Philadelphia, PA, 2018. https://www.isiaq.org/ia_2018_proceedings_page.php.
- Weber, Rodney, Qian Zhang, Aika Davis, and Marilyn Black. "Emissions from Consumer Fused Deposition Modelling 3D Printers and Their Potential Health Impact." In *Indoor Air 2018 Conference Proceedings*, The 15th International Conference of Indoor Air Quality and Climate. Philadelphia, PA, 2018.
https://www.isiaq.org/ia_2018_proceedings_page.php.

Weber, Rodney, Qian Zhang, Jenny Wong, Marilyn Black, and Aika Davis. "Fine Particulate and Chemical Emissions from Desktop 3D Printers." In *Printing for Fabrication 2016*, The 32nd International Conference on Digital Printing Technologies (NIP). Manchester, UK, 2016. <http://toc.proceedings.com/34567webtoc.pdf>

Davis, Aika, Marilyn Black, Qian Zhang, Jenny P. S. Wong, and Rodney Weber. "Fine Particulate and Chemical Emissions from Desktop 3D Printers." In *Indoor Air 2016 Conference Proceedings*, The 14th International Conference of Indoor Air Quality and Climate. Ghent, Belgium, 2016. <https://www.isiaq.org/docs/Proceedings.pdf>.

Davis, Aika, Marilyn Black, Qian Zhang, Jenny P. S. Wong, and Rodney Weber. "Fine Particulate and Chemical Emissions from Desktop 3D Printers." In *ASHRAE Transactions*, American Society of Heating, Refrigerating and Air-Conditioning Engineers 2016 Annual Conference. St. Louis, MO, 2016. https://www.techstreet.com/ashrae/standards/ashrae-transactions-2016-annual-conference-st-louis-vol-122-part-2?product_id=1937126.

SUMMIT PROCEEDINGS

Underwriters Laboratories Inc. 4th Furniture Flammability and Human Health Summit. "A Summary: Managing Fire and Chemical Exposure Risks of Residential Upholstered Furniture." Virtual, 2021. <https://chemicalinsights.org/wp-content/uploads/FFHH-Virtual-Summit-Summary-05.06.21-Final.pdf>.

Underwriters Laboratories Inc. 3rd Furniture Flammability and Human Health Summit. "Proceedings of the Furniture Flammability and Human Health Summit." Atlanta, GA, 2017. <https://chemicalinsights.org/wp-content/uploads/2019/02/2017-FF-Summit-Proceedings.pdf>.

Underwriters Laboratories Inc. 1st 3D Printing and Human Health Summit. "Proceedings of the Safety Science of 3D Printing Summit." Atlanta, GA, 2017. https://chemicalinsights.org/wp-content/uploads/2017/06/3DP_Proceedings_Final.pdf.

Underwriters Laboratories Inc. 2nd Furniture Flammability and Human Health Summit. "Proceedings of the Furniture Flammability and Human Health Summit." Atlanta, GA, 2014. <https://chemicalinsights.org/wp-content/uploads/2017/06/Doc-4-Proceedings-of-the-Furniture-Flammability-and-Human-Health-Summit-held-May-20-22-2014.pdf>.

Underwriters Laboratories Inc. 1st Furniture Flammability and Human Health Summit. "A Read-Out of Furniture Flammability and Human Health." Atlanta, GA, 2013. https://chemicalinsights.org/wp-content/uploads/2013_FFHH_Summit_Summary.pdf

KEY TECHNICAL PRESENTATIONS

Black, Marilyn and Cristi Bell-Huff. "Chemicals of Concern for Building and EHS Managers." Presented at the Campus Safety, Health, and Environment Management Association (CSHEMA) Webinar Series, Virtual, November 17, 2022.

- Black, Marilyn and Debra Harris. "Chemistry 101 for Building Professionals." Presented at the GreenCE/Ron Blank Webinar, Virtual, November 14, 2022.
- Black, Marilyn and Holley Henderson. "Specifying Residential Upholstered Furniture to Safeguard Human Health." Presented at the American Society of Interior Designers (ASID) Virginia Chapter Meeting, Virtual, November 10, 2022.
- Black, Marilyn, Debra Harris, and Birgitte Messerschmidt. "Wildfires + Resilience: Whole Building Approach from Design to Occupancy." Presented at the Greenbuild International Conference and Expo, San Francisco, CA, November 3, 2022.
- Black, Marilyn and Debra Harris. "Chemistry 101 for Building Managers." Presented at the International Facility Managers Association's (IFMA) Environmental Stewardship Utilities & Sustainability (ESUS) Webinar Series, Virtual, October 19, 2022. <https://www.youtube.com/watch?v=7wuKZGnMM1o>.
- Bell-Huff, Cristi and Holley Henderson. "From Research to Impact – Storytelling Science for a Safer World." Presented at the Campus Safety and Environmental Management Association (CSHEMA) 2022 Fall Symposium, Princeton, NJ, October 11, 2022.
- Zhang, Qian, Christa Wright, Aika Davis, and Marilyn Black. "Impacts of 3D Printing and Mitigation Strategies on Particle Exposures in School Environments." Presented at the American Association for Aerosol Research (AAAR) Annual Conference, Raleigh, NC, October 4, 2022.
- Black, Marilyn, and Debra Harris. "Chemistry 101 for Building Managers." Presented at the 2022 International Facility Management Association (IFMA) Worldwide Workplace, Nashville, TN, September 29, 2022.
- Holley Henderson. "Design It Healthy, Keep it Healthy: Strategies to Support Resilient Interiors." Presented at the American Society of Interior Designers (ASID) National Conference, GATHER 2022, Miami, FL, September 22, 2022.
- Black, Marilyn. "Design It Healthy, Keep It Healthy: Strategies to Support Resilient, Healthy Interiors." Presented at the Green CE/Ron Blank Webinar, Virtual, September 20, 2022. <https://www.greence.com/Webinars/Design-It-Healthy-Keep-It-Healthy-Strategies> .
- Wright, Christa. "The Utility of CometChip in Nanogenotoxicological Studies." Presented at the International Conference on Environmental Mutagens (ICEM), 53rd Annual Meeting of the Environmental Mutagenesis and Genomics Society (EGMS), Ottawa, Ontario, August 27, 2022.
- Black, Marilyn and Dwayne Sloan. "Balance Between Human Health and Fire Safety in the Built Environment." Presented at the American Home Furnishings Alliance (AHFA) Summit 2022, Colfax, NC, August 18, 2022.
- Black, Marilyn, Debra Harris, Amara Holder, and Birgitte Messerschmidt. "Resiliency, Urban Wildfires, and Materials." Presented at the American Institute of Architects (AIA) Conference on Architecture 2022, Virtual, July 28, 2022.
- Wright, Christa, Aika Davis, Qian Zhang, and Marilyn Black. "Investigating and Mitigating the Health Impacts of 3D Printer Emissions." Presented at 2022 Campus Safety and Environmental Management Association (CSHEMA) National Conference, Scottsdale, AZ, July 8-13, 2022. https://chemicalinsights.org/wp-content/uploads/WRIGHT_CSHEMA_FINAL_JULY-Summary-07.22.pdf

- Black, Marilyn. "Design It Healthy, Build It Healthy, Keep It Healthy: Strategies to Support Resilient, Healthy Interiors." Presented at 2022 Neocon, Virtual, June 13, 2022. https://chemicalinsights.org/wp-content/uploads/Summary-NeoCon2022_Presentation.pdf
- Black, Marilyn and Duane Sloan. "Balance Between Human Health and Fire Safety in the Built Environment." Presented at the National Fire Protection Association (NFPA) Conference & Expo, Boston, MA, June 7, 2022.
- Davis, Aika and Qian Zhang. "Pop-up: 3D Printing in Schools "Exposures and Engineering Controls." Presented at American Industrial Hygiene Conference & Expo (AIHce), Nashville, TN, May 23, 2022.
- Black, Marilyn and Holley Henderson. "Specifying Residential Upholstered Furniture to Safeguard Human Health." Professional Development Course presented at the GreenCE, Virtual, May 20, 2022. <https://www.greence.com/Webinars/Specifying-Residential-Upholstered-Furniture>
- Share, Melanie and Holley Henderson. "Achieving Good Indoor Air Quality." Presented at National Science Teaching Association (NSTA) National Conference, Houston, TX, April 1, 2022. https://chemicalinsights.org/wp-content/uploads/NSTA_Final_Presented_040122-Summary.pdf
- Wright, Christa. "The Unknowns of Vaping: Oxidative Stress, Toxicity, and DNA Damage Across the Device Lifetime." Presented at the Society of Toxicology (SOT) 61st Annual Meeting and ToxExpo, San Diego, CA, March 31, 2022. https://chemicalinsights.org/wp-content/uploads/Summary_SOT-2022_ULCI-Chemical-Insights-PPT_.pdf
- Davis, Aika. "Indoor Air Quality Assessment of Classrooms with 3D Printers." Presented at the American Chemical Society (ACS) Spring 2022 National Meeting & Expo, San Diego, CA, March 20, 2022. https://chemicalinsights.org/wp-content/uploads/ACSspring2022_3DP_Summary-Slides_03.24.22.pdf
- Black, Marilyn. "Indoor Air Quality in Campus Buildings: Why and How to Address Emerging Risks." Presented at the Campus Safety, Health, and Environmental Management Association (CSHEMA) Spring Symposium, Orlando, FL, February 23, 2022.
- Black, Marilyn. "Before Disaster Strikes: A Picture Can be Worth a Thousand Words & Dollars." Presented at the National Association of Home Builders (NAHB) International Builders' Show, Orlando, FL, February 8, 2022.
- Black, Marilyn, and Ryan Lisk. "Keeping Campus Buildings Healthy: Managing 3D Printer Emissions for Occupant Safety and Health." Presented at the Campus Safety, Health, and Environmental Management Association (CSHEMA) Training Webinar, Virtual, November 16, 2021. <https://youtu.be/epKa74R9jA4>
- Davis, Aika, and Qian Zhang. "3D Printing, Is It Safe? Updates and New Findings on 3D Printer Emissions." Presented at the Institute of Electrical and Electronics Engineers (IEEE) Computer Society Chicago Chapter Webinar, Virtual, October 27, 2021.
- Jeon, Ji Soo, Aika Davis, Qian Zhang, Roby Greenwald, Marilyn Black, and Christa Wright. "The Influence of Ageing on the Genotoxic Potential of Electronic Nicotine Delivery System Aerosols: An In Vitro Assessment." Presented at the National Institute of Health (NIH) Tobacco Regulatory Science Meeting (TRSM), Virtual, October 20, 2021. <https://chemicalinsights.org/wp-content/uploads/2021-NIH-Tobacco-Regulatory-Science-Abstract.pdf>

- Greenwald, Roby, Christa Wright, Aika Davis, Qian Zhang, and Ji Soo Jeon. "Physicochemical and Toxicological Characterization of Electronic Nicotine Delivery Systems." Presented at the American Association for Aerosol Research (AAAR) Annual Conference, Virtual, October 19, 2021. <http://aaarabstracts.com/2021/viewabstract.php?pid=538>
- Zhang, Qian, Aika Davis, and Marilyn Black. "Particle Emissions from Fused Filament Fabrication 3D Printers and Their Impacts on Indoor Air Quality in School Environments." Presented at the American Association for Aerosol Research (AAAR) Annual Conference, Virtual, October 18, 2021. https://chemicalinsights.org/wp-content/uploads/AAAR-2021_3DP_summary-deck.pdf
- Black, Marilyn and Ryan Lisk. "Keeping Campus' Buildings Healthy: Managing 3D Printer Emissions for Occupant Safety and Health." Presented at the Association for the Advancement of Sustainability in Higher Education (AASHE) Virtual Global Conference on Sustainability in Higher Education, Virtual, October 12, 2021.
- Black, Marilyn. "Better Health by Managing Your Indoor Environment." Presented at NeoCon 2021, Chicago, IL, October 5, 2021. <https://www.youtube.com/watch?app=desktop&v=fAeA2VA3ur4&feature=youtu.be>
- Zhang, Qian, Aika Davis, Marilyn Black, and Rodney Weber. "3D Printing Emissions and Their Impacts on Health and Indoor Air Quality." Presented at RAPID + TCT 2021 Conference, Chicago, IL, September 15, 2021. <https://chemicalinsights.org/wp-content/uploads/Rapid-TCT-2021-Abstract-1.pdf>
- Zhang, Qian, Aika Davis, Marilyn Black, and Rodney Weber. "Exposure to Particle and Volatile Organic Compound Emissions from Consumer Level 3D Printers." Presented at ISES 2021 – International Society of Exposure Science 31st Annual Meeting, Virtual, September 1, 2021.
- Black, Marilyn. "Chemical Insights." Presented at the 68th Annual Campus Safety, Health, and Environmental Management Association (CSHEMA) Conference, Virtual, July 26 - 28, 2021.
- Black, Marilyn. "Keeping School Buildings Healthy: Emerging Issues in Managing for Occupant Safety and Health." Presented at The Association for Learning Environments (GA4LE): Enhancing the Educational Experience Georgia Chapter Summer Conference, Jekyll Island, GA, June 28, 2021.
- Black, Marilyn, and Anna Stec. "Composition of Urban Materials and Their Combustion Products." Presented at the Chemistry of Urban Wildfires: An Information-Gathering Session by the National Academies of Sciences, Engineering, and Medicine, Virtual, June 8, 2021.
- Zhang, Qian, and Aika Davis. "Emissions and Exposure Levels Associated with 3D Printing in Schools and Universities." Presented at the American Industrial Hygiene Conference & Expo (AIHce EXP) 2021, Virtual, May 26, 2021.
- Zhang, Qian, Aika Davis, Marilyn Black, and Rodney J. Weber. "Emissions from Material Extrusion and Vat Photopolymerization 3D Printers Using a Chamber Study." Presented at the American Industrial Hygiene Conference & Expo (AIHce EXP) 2021, Virtual, May 26, 2021.
- Zhang, Qian, Aika Davis, Marilyn Black, and Rodney Weber. "Emissions from Consumer-level 3D Printers and the Health Impacts." Presented at the National Institute for Occupational Safety and Health (NIOSH) Pathology and Physiology Research Branch (PPRB) Seminar, Virtual, March 10, 2021. https://chemicalinsights.org/wp-content/uploads/NIOSH-2021_3DP_summary_for-newsletter-and-website.pdf.

- Brehmer, Collin, Christina Norris, Karoline K. Barkjohn, Mike H. Bergin, Junfeng Zhang, Xiaoxing Cui, Yanbo Teng, Yiping Zhang, Marilyn Black, Zhen Li, and James J. Schauer. "The Influence of Indoor Air Cleaners on the Oxidative Potential and Sources of Metals in Indoor, Outdoor, and Personal Exposure of School Aged Children to PM_{2.5} in Suburban Shanghai, China." Presented at Indoor Air 2020 - the 16th International Conference of Indoor Air Quality and Climate, Virtual, November 1, 2020. https://chemicalinsights.org/wp-content/uploads/IA2020_ExtAbstract_final_CB.pdf.
- Davis, Aika, Jordan Cohen, Peter Barry Ryan, Debra Harris, and Marilyn Black. "An Evaluation of Flame Retardant Exposure Routes from Upholstered Furniture." Presented at Indoor Air 2020 - the 16th International Conference of Indoor Air Quality and Climate, Virtual, November 1, 2020. https://chemicalinsights.org/wp-content/uploads/2020/03/ADavis_IA2020_ExtAbstract5.doc.pdf.
- Norris, Christina, Michael H. Bergin, Yiping Zhang, Ross Edwards, Chinmay Ghoroi, Karoline K. Barkjohn, Junfeng Zhang, Marilyn Black, and James J. Schauer. "Quantifying Volatile Organic Compounds and Their Sources in Residences in Ahmedabad and Gandhinagar, India, and in Suburban Shanghai, China." Presented at Indoor Air 2020 - the 16th International Conference of Indoor Air Quality and Climate, Virtual, November 1, 2020. https://chemicalinsights.org/wp-content/uploads/IA2020_ExtAbstract_final_Norris.pdf.
- Zhang, Qian, Aika Y. Davis, Marilyn Black, and Rodney J. Weber. "Particle and Volatile Organic Compound Emissions from 3D Printers and Their Potential Exposure Risks." Presented at Indoor Air 2020 - the 16th International Conference of Indoor Air Quality and Climate, Virtual, November 1, 2020. https://chemicalinsights.org/wp-content/uploads/2020/04/Indoor-air-2020-3DP-ext-abstract_2.pdf.
- Black, Marilyn, Aika Davis, and Qian Zhang. "NFP Chemical Safety-Human Health Research: 'Science for Safer, Healthier Tomorrow.'" Presented at the William Henry Merrill Society Webinar, Virtual, October 21, 2020.
- Black, Marilyn, and Peter Barry Ryan. "Keeping Your Buildings Healthy: Managing 3D Printer Emissions for Occupant Safety and Health." Presented at the ESUS (Environmental Stewardship Utilities & Sustainability) Community Webinar, Virtual, October 20, 2020. <https://www.youtube.com/watch?v=px|vICLCOGg>.
- Black, Marilyn. "3D Printing and Additive Manufacturing." Presented at the ASEAN (Association of Southeast Asian Nations) Consultative Committee on Standards and Quality Webinar, Virtual, October 16, 2020.
- Zhang, Qian, Marilyn Black, and Rodney J. Weber. "Particle Emissions and Chemical Emissions from Fused Filament Fabrication 3D Printers Using Emerging Filaments Including Metals." Presented at the 38th American Association for Aerosol Research (AAAR) Annual Conference, Virtual, October 6, 2020. <https://chemicalinsights.org/wp-content/uploads/AAAR-2020-Abstract-1.pdf>.
- Davis, Aika, Qian Zhang, and Marilyn Black. "VOC Emissions and Exposure from E-Cigarettes." Presented at ISES 2020 - International Society of Exposure Science 30th Annual Meeting, Virtual, September 21, 2020. https://chemicalinsights.org/wp-content/uploads/PO37_Davis_Aika_PDFv2-1.pdf.
- Thomas, Treye, Yong Qian, Mariana Farcas, Timothy R. Nurkiewicz, Sameer Patel, Aleksandr Stefaniak, and Qian Zhang. "Toxicological Exposure and Risk Assessment of Emissions from 3D Printers." Presented at the Society of Toxicology (SOT) 59th Annual Meeting & ToxExpo, Virtual, June 18, 2020. <https://chemicalinsights.org/wp-content/uploads/2020/07/Toxicological-Exposure-and-Risk-Assessment-of-Emissions-from-3D-Printers.pdf>.

- Zhang, Qian, Aika Y. Davis, Marilyn Black, and Rodney J. Weber. "Emissions from Consumer Level 3D Printers." Presented at the Society of Toxicology (SOT) 59th Annual Meeting & ToxExpo, Virtual, June 18, 2020. https://chemicalinsights.org/wp-content/uploads/2020/04/NEW-SOT2020_Emissions-from-consumer-3D-printers-2.pdf.
- Black, Marilyn, and Dwayne Sloan. "Fire Retardants and the Need to Balance Human Health and Fire Safety in the Built Environment." Presented at the National Fire Protection Association (NFPA) Conference & Expo, Virtual, June 17, 2020.
- Davis, Aika, Aleksandr Stefaniak, Rodney J Weber, Qian Zhang, and Marilyn Black. "Emissions, Exposure, and Health Impact of 3D Printing Processes." Presented at the American Industrial Hygiene Conference & Expo (AIHce EXP) 2020, Virtual, June 8, 2020.
- Davis, Aika, Marilyn Black, and Debra Harris. "A Study of Flame Retardants in Lounge Chairs and Electronics, and Their Impact on Emission, Exposure, and Flammability." Presented at the American Chemical Society (ACS) Spring 2020 National Meeting & Expo, Virtual, March 22, 2020. <https://chemicalinsights.org/wp-content/uploads/2020/04/ACS-2020-Philadelphia-abstract.pdf>.
- Zhang, Qian, Aika Y. Davis, Marilyn Black, and Rodney J. Weber. "Emissions from Consumer Level 3D Printers and Their Potential Health Impacts." Presented at the American Chemical Society (ACS) Spring 2020 National Meeting & Expo, Virtual, March 22, 2020. <https://chemicalinsights.org/wp-content/uploads/2020/04/ACS-2020-3DP-abstract.pdf>.
- Black, Marilyn, and Debra Harris. "Are Flame Retardant Issues Resolved?" Presented at the Sustainable Furnishings Council Essentials Webinar, Virtual, February 25, 2020. <https://vimeo.com/394971739>.
- Zhang, Qian, and Aika Davis. "3D Printing: Emissions and Exposure Mitigation Methods." Presented at the IEEE (Institute of Electrical and Electronics Engineers) Computer Society Chicago Chapter Webinar, Virtual, February 25, 2020.
- He, Linchen, Zhen Li, Yanbo Teng, Xiaoxing Cui, Karoline K. Barkjohn, Christina Norris, Lin Fang, Lili Lin, Qian Wang, Xiaojian Zhou, Jianguo Hong, Feng Li, Yiping Zhang, James J. Schauer, Marilyn Black, Michael H. Bergin, and Junfeng (Jim) Zhang. "Associations of Personal Exposure to Air Pollutants with Airway Mechanics and Lung Function in Children with Asthma." Presented at International Society for Environmental Epidemiology and International Society for Exposure Science - Asia Chapter (ISEE-ISES AC) Meeting, Daegu, South Korea, October 18, 2019.
- Davis, Aika, Debra Harris, and Marilyn Black. "A Study of Chemical Exposure from Consumer Products Used in Residential Environments." Presented at American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 2019 Annual Conference, Kansas City, MO, June 25, 2019. https://chemicalinsights.org/wp-content/uploads/2020/04/ADAVIS-ASHRAE-2019_extended_Abstract3.5.pdf.
- Zhang, Qian, Aika Davis, Marilyn Black, and Rodney Weber. "Particle and Chemical Emissions from 3D Printers and Their Potential Health Impacts." Presented at American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 2019 Annual Conference, Kansas City, MO, June 25, 2019. https://chemicalinsights.org/wp-content/uploads/2020/04/Extended_Abstract_ASHRAE_3DP_3qz.pdf.

- Zhang, Qian, and Aika Davis. "Particle and Chemical Emissions from Additive Manufacturing." Presented at RAPID + TCT 2019 Conference, Detroit, MI, May 21, 2019. <https://chemicalinsights.org/wp-content/uploads/2020/04/RAPID-TCT-abstract-v2.pdf>.
- Zhang, Qian, Aika Davis, Marilyn Black, and Rodney Weber. "Potential Health Impacts of Particle and Volatile Organic Compound Emissions from Consumer Level 3D Printers." Presented at the American Chemical Society (ACS) Spring 2019 National Meeting & Expo, Orlando, FL, April 3, 2019. https://chemicalinsights.org/wp-content/uploads/2020/04/2019-ACS_3DP_abstract_v2.pdf.
- Weber, Rodney, Qian Zhang, Jenny Wong, Aika Davis, and Marilyn Black. "Characterization of Particle and Chemical Emissions from 3D Printers." Presented at United States Environmental Protection Agency (US EPA) Webinar, February 1, 2019.
- Johnson, Karoline, Shiyang Ma, Michael Bergin, Christina Norris, Tongshu Zheng, Xiaoxing Cui, James Schauer, Yinping Zhang, Marilyn Black, and Junfeng Zhang. "The Influence of Air Filtration on Indoor Air Pollution and Children's Personal Exposure to PM_{2.5} and Ozone in Shanghai, China." Presented at the American Geophysical Union (AGU) Joint International Network in Geoscience (JING) Meeting on Atmospheric PM_{2.5}, Xi'an, China, October 16, 2018.
- Black, Marilyn. "Emissions and Health Hazards from Consumer Level 3D Printers." Presented at Quantifying Exposure to Engineered Nanomaterials Workshop by US Consumer Product Safety Commission and Department of Labor, Washington, D.C., October 1, 2018.
- Davis, Aika, and Marilyn Black. "Emissions and Health Hazards from Consumer Level 3D Printers." Presented at the IEEE (Institute of Electrical and Electronics Engineers) Product Safety Engineering Society (PSES) Chicago Chapter, September 26, 2018.
- Johnson, Karoline, Shiyang Ma, Michael Bergin, Christina Norris, Tongshu Zheng, Xiaoxing Cui, James Schauer, Yinping Zhang, Marilyn Black, and Junfeng Zhang. "Children's Personal and Microenvironmental Exposures to PM_{2.5} and Ozone in Shanghai, China." Presented at the 2018 Air Sensors International Conference (ASIC), Oakland, CA, September 12, 2018. <https://chemicalinsights.org/wp-content/uploads/2018/10/Air-Sensors-International-Conference-2018.pdf>.
- Johnson, Karoline, Christina Norris, Tongshu Zheng, Michael Bergin, James Schauer, Junfeng Zhang, Marilyn Black, and Yinping Zhang. "Deployment of Low-cost Sensors to Assess the Impacts of Portable Air Filtration on Indoor PM_{2.5} and Associated Personal Exposure." Presented at the 10th International Aerosol Conference, St. Louis, MO, September 2, 2018.
- Zhang, Qian, Michal Pardo, Jenny P. S. Wong, Aika Y. Davis, Marilyn S. Black, Yinon Rudich, and Rodney J. Weber. "Toxicity of Particles Generated from a Consumer Fused Deposition Modeling 3D Printer Using Animal, Cellular and Acellular Models." Presented at the 10th International Aerosol Conference, St. Louis, MO, September 2, 2018. https://chemicalinsights.org/wp-content/uploads/2018/10/IAC_poster_qian_2-1.pdf.
- Davis, Aika, Marilyn Black, and Debra Harris. "A Study on Flame Retardants in Residential Furniture and Impact on Human Exposure and Flammability Control." Presented at the International Society of Exposure Science and the International Society for Environmental Epidemiology (ISES-ISEE) 2018 Joint Annual Meeting, Ottawa, Canada, August 26, 2018.

- Norris, Christina, Fang Lin, Karoline K. Johnson, James J. Schauer, Junfeng (Jim) Zhang, Yinping Zhang, Marilyn Black, and Michael Bergin. "Volatile Organic Compounds in Homes in Shanghai, China: Identification of Pollutant Sources and Impact of Air Purifier Use on Pollutant Levels." Presented at the International Society of Exposure Science and the International Society for Environmental Epidemiology (ISES-ISEE) 2018 Joint Annual Meeting, Ottawa, Canada, August 26, 2018.
- Fang, Lin. "Characteristics and Inhalation Cancer Risks Assessment of Exposure to VOCs in 20 Asthmatic Children's Homes in Shanghai." Presented at Indoor Air 2018 - the 15th International Conference of Indoor Air Quality and Climate, Philadelphia, PA, July 24, 2018.
- Weber, Rodney, Qian Zhang, Aika Davis, and Marilyn Black. "Emissions from Consumer Fused Deposition Modelling 3D Printers and Their Potential Health Impact." Presented at Indoor Air 2018 - the 15th International Conference of Indoor Air Quality and Climate, Philadelphia, PA, July 24, 2018. https://chemicalinsights.org/wp-content/uploads/2018/10/IA2018_abstract_4.pdf.
- Black, Marilyn. "Human Health in the Built Environment: A Study on Chemical Exposure Risk and Flammability of Upholstered Furniture and other Consumer Products." Presented at NeoCon, Chicago, IL, June 1, 2018.
- Bergin, Michael H. "Assessing the Impacts of Air Filtration on Indoor and Personal Exposure Relevant Concentrations of PM_{2.5} and Volatile Organic Compounds in Suburban Shanghai, China." Presented at Lawrence Berkeley National Laboratory Workshop on Energy and Environment of Residential Buildings in China, 2018.
- Johnson, Karoline, Michael Bergin, Christina Norris, Junfeng Zhang, Yinping Zhang, and James Schauer. "The Application of Low-cost Air Quality Sensors to Monitor Portable Air Filtration Device Performance and Personal Exposure in Beijing, China." Presented at the 36th American Association for Aerosol Research (AAAR) Annual Conference, Raleigh, NC, October 17, 2017.
- Zhan, Ying, Karoline Johnson, Christina Norris, Martin M. Shafer, Mike H. Bergin, Yinping Zhang, Junfeng Zhang, and James J. Schauer. "The Influence of Air Cleaners on Concentrations of Indoor Particulate Matter Components and Oxidative Potential in Beijing, China." Presented at the 36th American Association for Aerosol Research (AAAR) Annual Conference, Raleigh, NC, October 17, 2017.
- Zhang, Qian, Girish Sharma, Jenny P. S. Wong, Aika Y. Davis, Marilyn S. Black, Pratim Biswas, and Rodney J. Weber. "Investigating Particle Emissions from a Consumer Fused Deposition Modeling 3D Printer with a Lognormal Moment Aerosol Dynamic Model." Presented at the 36th American Association for Aerosol Research (AAAR) Annual Conference, Raleigh, NC, October 17, 2017. <https://chemicalinsights.org/wp-content/uploads/2017/10/AAAR-Poster-Oct.-2017.pdf>.
- Weber, Rodney, Qian Zhang, Jenny Wong, Aika Davis, and Marilyn Black. "Fine Particulate and Chemical Emissions from FFF/Desktop 3D Printers." Presented at the Additive Manufacturing Users Group (AMUG) Conference, Chicago, IL, March 19, 2017. <https://chemicalinsights.org/wp-content/uploads/2018/10/ADavisAMUG2017-03222017-sharable.pdf>.
- Davis, Aika, Marilyn Black, and Stephen Kerber. "Chemical Exposures Related to Upholstered Furniture and Other Consumer Products." Presented at Indoor Air 2016 - the 14th International Conference of Indoor Air Quality and Climate, Ghent, Belgium, September 14, 2016.

Davis, Aika, Marilyn Black, Qian Zhang, Jenny P. S. Wong, and Rodney Weber. "Fine Particulate and Chemical Emissions from Desktop 3D Printers." Presented at Indoor Air 2016 - the 14th International Conference of Indoor Air Quality and Climate, Ghent, Belgium, September 14, 2016. <https://chemicalinsights.org/wp-content/uploads/2017/06/Doc-5-Indoor-Air-2016-Fine-Particulate-and-Chemical-Emissions-from-Consumer-3D-Printers.pdf>.

Weber, Rodney, Qian Zhang, Jenny Wong, Marilyn Black, and Aika Davis. "Fine Particulate and Chemical Emissions from Desktop 3D Printers." Presented at Printing for Fabrication 2016 - the 32nd International Conference on Digital Printing Technologies (NIP), Manchester, UK, September 14, 2016.

Davis, Aika, Marilyn Black, Qian Zhang, Jenny P. S. Wong, and Rodney Weber. "Fine Particulate and Chemical Emissions from Desktop 3D Printers." Presented at American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 2016 Annual Conference, St. Louis, MO, June 25, 2016. <https://chemicalinsights.org/wp-content/uploads/2017/06/Doc-4-ASHRAE-2016-Fine-Particulate-and-Chemical-Emissions-from-Desktop-3D-Printers.pdf>.

Black, Marilyn, and Debra Harris. "Chemical Exposure from Upholstered Furniture and Other Consumer Products." Presented at NeoCon, Chicago, IL, June 1, 2016.

Zhang, Qian, Jenny P. S. Wong, Aika Y. Davis, Marilyn S. Black, and Rodney J. Weber. "Emissions from Consumer 3D Printers." Presented at the 34th American Association for Aerosol Research (AAAR) Annual Conference, Minneapolis, MN, October 1, 2015. <https://chemicalinsights.org/wp-content/uploads/2017/06/Doc-3-AAAR-Emissions-from-Consumer-3D-Printers.pdf>.

STANDARDS AND GUIDANCE DOCUMENTS

Underwriters Laboratories Inc. "UL 200A: Use of DIY Filtration Devices During Wildfires." Underwriters Laboratories Inc: Marietta, GA, 2022. https://chemicalinsights.org/wp-content/uploads/UL-200A_1_20220413.pdf.

Underwriters Laboratories Inc. "UL 118F: Managing Fire and Chemical Exposure Risks of Residential Upholstered Furniture." Underwriters Laboratories Inc: Marietta, GA, 2021. https://chemicalinsights.org/wp-content/uploads/UL-118F_04.19.21_FINAL.pdf.

ANSI. "ANSI/CAN/UL 2904 Standard Method for Testing and Assessing Particle and Chemical Emissions from 3D Printers." American National Standards Institute: Washington, D.C., US, 2019.

TECHNICAL REPORTS

"Volatile Organic Compounds (VOCs) Released from Electronic Nicotine Delivery Systems (ENDS)." Report 280, November 2022. https://chemicalinsights.org/wp-content/uploads/Chemical-Insights_VOC-Report-11.29.22.pdf

"A Summary Report: Dosimetric and Toxicological Analysis of 3D Printer Emitted Particles." Report 270, September 2022. https://chemicalinsights.org/wp-content/uploads/Chemical-Insights_3D-Toxicity-Report_final.pdf

- "A Summary Report: Research Data on Upholstered Furniture Fire Barriers." Report 260, November 2021. https://chemicalinsights.org/wp-content/uploads/R260_Barrier-Research_112921.pdf
- "Physiochemical and Toxicological Characterization of Electronic Nicotine Delivery Systems." Report 250, September 2021. https://chemicalinsights.org/wp-content/uploads/R250_Physicochemical-and-Toxicological-Characterization-of-Electronic-Nicotine-Delivery-Systems_092821.pdf.
- "Filtration Strategies for Reducing Chemical and Particle Emissions from 3D Printing." Report 210, July 2021. <https://chemicalinsights.org/wp-content/uploads/3DP-Filtration-2021.pdf>
- "Wildfire Safety Research: An Evaluation of DIY Air Filtration." Report 200, July 2021. <https://chemicalinsights.org/wp-content/uploads/DIY-Box-Fan-Report-2021.pdf>
- "A Summary Report: Particle and Chemical Emissions from a Vat Photopolymerization 3D Printer." Report 240, May 2021. <https://chemicalinsights.org/wp-content/uploads/2021-Summary-Report-Particle-and-Chemical-Emissions-from-a-Vat-Photopolymerization-3D-Printer.pdf>.
- "A Summary Report: The Effect of Filtration on Particle and Chemical Emissions from a 3D Printer." Report 170, March 2021. https://chemicalinsights.org/wp-content/uploads/2021-Summary-Report-Effects-of-Filtration-on-Particle-and-Chemical-Emissions-from-3D-Printers_revised.pdf.
- "Effects of a Filter Setup on Particle and Chemical Emissions from a 3D Printer." Report 180, February 2021. <https://chemicalinsights.org/wp-content/uploads/Website-Metal-Analysis-Summary-Report-180.pdf>
- "Toxicological Exposure and Risk Assessment of Emissions from 3D Printers." Report 230, July 2020. <https://chemicalinsights.org/wp-content/uploads/2020/07/Toxicological-Exposure-and-Risk-Assessment-of-Emissions-from-3D-Printers.pdf>.
- "2019 Annual Summary Report: 3D Printer Emission Research." Report 140, May 2020. <https://chemicalinsights.org/wp-content/uploads/2019-3D-Printing-Annual-Report.pdf>.
- "2019 Executive Summary Report: 3D Printer Emission Research." Report 130, May 2020. <https://chemicalinsights.org/wp-content/uploads/2019-3D-Printing-Summary-Report.pdf>.
- "Human Health in the Built Environment: A Study of Chemical Exposure Risk and Flammability of Upholstered Furniture and Consumer Electronics." Report 050, April 2019. https://chemicalinsights.org/wp-content/uploads/2019/04/Human-Health-in-the-Built-Environment_FINAL.pdf.
- "Summary Report: Characterization of Volatile Organic Compound Emissions from Consumer Level Material 3D Printers and Their Relationship with Particle Emissions." Report, December 2018. https://chemicalinsights.org/wp-content/uploads/2018/12/VOCs_3DP_112018.pdf.
- "Summary Report: Chemical Composition and Toxicity of Particles Emitted from a Consumer-Level 3D Printer Using Various Materials." Report, November 2018. https://chemicalinsights.org/wp-content/uploads/2018/11/Toxicity_3DPrinting.pdf.
- "Research Report and Preliminary Study: Chemical Exposure & Flammability Study on Upholstered Furniture from the U.S. and U.K." Report 010, June 2016. https://chemicalinsights.org/wp-content/uploads/2019/03/USUK_PreliminaryStudy.pdf.

"3D Printing: Health Effects of Ultrafine Particle Emissions." Report, August 2015. https://chemicalinsights.org/wp-content/uploads/2018/12/Emory_UFPS_2015.pdf.

"Ultrafine Particles: An Update – What, Where, Why, Concern." Report, June 2015. <https://chemicalinsights.org/wp-content/uploads/2017/06/Doc-2-Ultrafine-Particles-An-Update-What-Where-Why-Concern.pdf>.

TECHNICAL BRIEFS, BULLETINS, APPLICATION NOTES AND FACT SHEETS

"4-Phenylcyclohexene - A Common Air Pollutant." Technical Brief TB 480. https://chemicalinsights.org/wp-content/uploads/TB-480_4-Phenylcyclohexene_v2_11.28.pdf

"Benzene - A Common Air Pollutant." Technical Brief TB 470. https://chemicalinsights.org/wp-content/uploads/TB-470_Benzene_final.pdf

"A Strategic Research Initiative on Air Pollution Exposure in Child Care Settings." Technical Brief TB 460. https://chemicalinsights.org/wp-content/uploads/TB-460_APECCS_10.7.pdf

"Perchloroethylene - A Common Air Pollutant." Technical Brief TB 450. https://chemicalinsights.org/wp-content/uploads/TB-450_Perchloroethylene.pdf

"Styrene - A Common Air Pollutant." Technical Brief TB 440. https://chemicalinsights.org/wp-content/uploads/TB-440_Styrene.pdf

"Naphthalene - A Common Air Pollutant." Technical Brief TB 430. https://chemicalinsights.org/wp-content/uploads/TB-430_Naphthalene.pdf

"Understanding Vaping or Electronic Nicotine Delivery Systems." Technical Brief TB 420. https://chemicalinsights.org/wp-content/uploads/TB-420_ENDS-6.pdf

"Strategies to Protect Air Quality During Wildfires: Considerations for Do-It-Yourself Filtration." Application Note AN 200. https://chemicalinsights.org/wp-content/uploads/AN_200_061322.pdf

"2-Butoxyethanol – A Common Air Pollutant." Technical Brief TB 410. https://chemicalinsights.org/wp-content/uploads/TB-410_2-Butoxyethanol.pdf.

"A Strategic Research Initiative on African American Susceptibility to Periodontal Disease due to Electronic Nicotine Delivery Systems (ENDS) Usage." Technical Brief TB 400. https://chemicalinsights.org/wp-content/uploads/TB-400_ENDS.pdf

"Decamethylcyclopentasiloxane – A Common Air Pollutant." Technical Brief TB 390. https://chemicalinsights.org/wp-content/uploads/TB-390_Decamethylcyclopentasiloxane.pdf

"Methylene Chloride - A Common Air Pollutant." Technical Brief TB 380. https://chemicalinsights.org/wp-content/uploads/TB-380_Methylene-Chloride.pdf

"Xylene – A Common Air Pollutant." Technical Brief TB 370. <https://chemicalinsights.org/wp-content/uploads/Technical-Brief-Xylene.pdf>

"Specifying Upholstered Furniture Fire Barriers." Application Note AN 100. [https://chemicalinsights.org/wp-content/uploads/AN100_Specifying Upholstered Furniture Fire Barriers.pdf](https://chemicalinsights.org/wp-content/uploads/AN100_Specifying_Upholstered_Furniture_Fire_Barriers.pdf)

"CelTox Sampler – An Overview." Technical Brief TB 360. https://chemicalinsights.org/wp-content/uploads/TB360_CelTox_112921.pdf

"Ethylbenzene – A Common Air Pollutant." Technical Brief TB 350. https://chemicalinsights.org/wp-content/uploads/TB350_Ethylbenzene_112321.pdf

"Phenol – A Common Air Pollutant." Technical Brief TB 340. https://chemicalinsights.org/wp-content/uploads/TB340_Phenol.pdf

"Ethylene Glycol – A Common Air Pollutant." Technical Brief TB 330. https://chemicalinsights.org/wp-content/uploads/TB330_Ethylene_glycol_092821.pdf.

"Chemical Releases from Burning Upholstered Furniture and Electronics." Technical Brief TB 320. https://chemicalinsights.org/wp-content/uploads/TB320_Chemical-Releases-from-Burning-Upholstered-Furniture-and-Electronics_092821.pdf.

"Acetophenone – A Common Air Pollutant." Technical Brief TB 310. <https://chemicalinsights.org/wp-content/uploads/Acetophenone.pdf>.

"Study Protocols for Indoor Air Quality Monitoring in Schools." Technical Brief TB 300. https://chemicalinsights.org/wp-content/uploads/TB-300_IAQ-Monitoring-in-Schools.pdf.

"A Strategic Research Initiative on the Dosimetric and Toxicological Analysis of 3D Printer Emitted Particles." Technical Brief TB 290. https://chemicalinsights.org/wp-content/uploads/TB-290_A-Strategic-Research-Initiative-on-the-Dosimetric-and-Toxicological-Analysis-of-3D-Printer-Emitted-Particles-.pdf.

"Acetaldehyde – A Common Air Pollutant." Technical Brief TB 280. <https://chemicalinsights.org/wp-content/uploads/Acetaldehyde.pdf>.

"Toluene – A Common Air Pollutant." Technical Brief TB 270. https://chemicalinsights.org/wp-content/uploads/FactSheet_Toluene-1.pdf.

"Understanding Wildfires." Technical Brief TB 260. https://chemicalinsights.org/wp-content/uploads/FactSheet_Wildfires.pdf.

"Formaldehyde – A Common Air Pollutant." Fact Sheet 250. https://chemicalinsights.org/wp-content/uploads/FactSheet_Formaldehyde.pdf

"A Strategic Research Initiative on Wildfires and Public Health." Technical Brief TB 230. <https://chemicalinsights.org/wp-content/uploads/Wildfire-Technical-Brief.pdf>.

"A Strategic Research Initiative on Physiochemical and Toxicological Assessment of Electronic Nicotine Delivery System." Technical Brief TB 110. https://chemicalinsights.org/wp-content/uploads/2019/11/ENDS_Technical-Brief.pdf.

"A National Taskforce on Residential Upholstered Furniture Flammability and Human Health." Technical Brief TB 220. https://chemicalinsights.org/wp-content/uploads/FFHH-Taskforce_Brief.pdf.

"Fire Regulations and Flame Retardant Usage Trend." Technical Bulletin TB 210. https://chemicalinsights.org/wp-content/uploads/FireRegulations_Brief.pdf.

"Organic Flame Retardant Exposure." Technical Bulletin TB 200. https://chemicalinsights.org/wp-content/uploads/2020/07/FRExposure_Brief.pdf.

"Residential Fire Statistics." Technical Bulletin TB 190 rev.1. https://chemicalinsights.org/wp-content/uploads/TB_Residential_Fire_Statistics.pdf.

"Coronavirus Aerosol." Technical Brief TB 180. <https://chemicalinsights.org/wp-content/uploads/2020/03/Coronavirus-Aerosols.pdf>.

"Flame Retardants: Balancing Benefits and Risks." Technical Bulletin TB 170. https://chemicalinsights.org/wp-content/uploads/2020/03/Flame-Retardants_WHO.pdf.

"A Strategic Research Initiative for Extended Research on Furniture Chemical Exposure." Technical Brief TB 130. https://chemicalinsights.org/wp-content/uploads/2020/05/FurnitureFlammability_ResearchExpansion.pdf.

"Phase 1 Research on Chemical and Particle Emissions from 3D Printing." Fact Sheet 120. https://chemicalinsights.org/wp-content/uploads/2019/09/3DPrinting_BasicFacts.pdf.

"A Strategic Research Initiative for Extended Research on Pollutant Exposure in India." Technical Brief TB 150. https://chemicalinsights.org/wp-content/uploads/2019/11/IndiaAirPollution_ResearchExpansion.pdf.

"A Strategic Research Initiative for Extended Research on Pollutant Exposure in China." Technical Brief TB 140. https://chemicalinsights.org/wp-content/uploads/2019/10/ChinaAirPollution_ResearchExpansion.pdf.

"A Strategic Research Initiative for Extended Research on 3D Printing School Studies." Technical Brief TB 100. https://chemicalinsights.org/wp-content/uploads/2019/09/3DPrint_IAQSchools.pdf.

"A Strategic Research Initiative for Extended Research on 3D Printing Emission Studies." Technical Brief TB 090. https://chemicalinsights.org/wp-content/uploads/2019/09/3DPrint_EmissionStudies.pdf.

"VOC and Aldehyde Analysis Methods Used in Research Studies." Technical Brief TB 080. https://chemicalinsights.org/wp-content/uploads/2019/09/VOC_Aldehyde_Methods.pdf.

"Methodologies for Studying Furniture Flame Retardant Exposure." Technical Brief TB 070. https://chemicalinsights.org/wp-content/uploads/2019/04/FurnitureFlammability_Methodologies.pdf.

"Methodologies for Studying Furniture Flammability." Technical Brief TB 060. https://chemicalinsights.org/wp-content/uploads/2019/04/FurnitureFlammability_FlameAnalysis.pdf.

"Research on Chemical Exposure and Flammability Risks of Upholstered Furniture and Consumer Electronics." Basic Facts TB 050. https://chemicalinsights.org/wp-content/uploads/2019/04/FurnitureFlammability_BasicFacts.pdf.

"ANSI/CAN/UL 2904: Standard Method for Testing and Assessing Particle and Chemical Emissions from 3D Printers." Technical Brief TB 040. http://chemicalinsights.org/wp-content/uploads/2019/05/3DPrint_Standard_Brief_Version-2.pdf

"A Strategic Research Initiative for China Air Quality: The Influence of Outdoor and Indoor Air Pollution on Acute Respiratory Responses of School Children in China." Technical Brief TB 030. https://chemicalinsights.org/wp-content/uploads/2019/02/ChinaStrategy_Brief.pdf.

"A Strategic Research Initiative for 3D Printing: Safety Convergence for Manufactured Products." Technical Brief TB 020. https://chemicalinsights.org/wp-content/uploads/2019/02/3DPrint_Brief.pdf.

"A Strategic Research Initiative for Furniture Flame Retardants and Flammability." Technical Brief TB 010. https://chemicalinsights.org/wp-content/uploads/2019/02/FurnitureFlame_Brief.pdf.

OTHER PUBLICATIONS

Black, Marilyn. "Aerosol Transmission: The Science Behind Good IAQ and Safer Spaces." *FMJ*, March/April 2021. http://fmj.ifma.org/publication/?m=30261&i=699223&view=articleBrowser&article_id=3968078.

Black, Marilyn. "Indoor Air Quality and Use of 3D Printers in Schools." *USGBC*, December 4, 2020. <https://www.usgbc.org/articles/indoor-air-quality-and-use-3d-printers-schools>.

Black, Marilyn. "Printing Hazards: Managing 3D Printer Emissions for Safety & Health." *FMJ*, November/December 2020. <http://fmj.ifma.org/publication/?m=30261&i=679917&p=48>.

Black, Marilyn. "Indoor Air Quality Tips Every School Should Follow Before Reopening." *The Learning Counsel: Research and Context on the Digital Education Experience*, August 11, 2020.

Black, Marilyn. "3D Printing Presents Health Risks: Tips on Protecting Your Workers." *IndustryWeek*, August 10, 2020. <https://www.industryweek.com/operations/safety/article/21138777/3d-printing-presents-health-risks-tips-on-protecting-your-workers>.

Black, Marilyn. "3D Printer Emissions Under Scrutiny as Usage Grows." *Industry Today*, May 19, 2020. <https://industrytoday.com/3d-printer-emissions-under-scrutiny-as-usage-grows/>.

Black, Marilyn. "3D Printing Safety 101: How Schools Can Safely Use 3D Printers in the Classroom." *The Learning Counsel: Research and Context on the Digital Education Experience*, April 28, 2020.

Black, Marilyn. "Are Flame Retardant Issues Solved?" *Furniture World News*, April 17, 2020. <https://www.furninfo.com/furniture-industry-news/11708>.

TOOLKITS

"Specifying Residential Upholstered Furniture to Safeguard Human Health and Well-Being: A Toolkit for Reducing Fire and Chemical Risks." Toolkit. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021. https://chemicalinsights.org/wp-content/uploads/FFHH_Toolkit_042821.pdf.

"3D Printer School Safety: A Guide for Supporting Indoor Air Quality & Human Health for K-12 Students." Toolkit. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2020. https://chemicalinsights.org/wp-content/uploads/2020/07/3D_Printer_School_Safety.pdf.

"3D Printer Safety: A Guide for Supporting Indoor Air Quality & Human Health for Higher Education." Toolkit. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2020. <https://chemicalinsights.org/wp-content/uploads/3DP-General-Toolkit.pdf>

LEARNING ASSETS

- “3D Printers and Air Quality: Health Effects and Mitigation Strategies for Use of 3D Printers in Higher Education.” Handout. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2022. https://chemicalinsights.org/wp-content/uploads/3DPrintersandAirQualityHigherEd_062022.pdf
- “DIY Box Fan Air Cleaner Safety Tips.” Handout. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021. https://chemicalinsights.org/wp-content/uploads/Box_Fan_Handout_090921.pdf.
- “Keeping Schools Healthy: Strategies for Good Air Quality.” Handout. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021. https://chemicalinsights.org/wp-content/uploads/IAQ_Strategies_Final.pdf.
- “Keeping Schools Healthy: Ventilation & Filtration Fundamentals.” Handout. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021. https://chemicalinsights.org/wp-content/uploads/Ventilation_Strategies_Final.pdf.
- “How to Use 3D Printers Safely in Schools.” Poster. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021. <https://chemicalinsights.org/wp-content/uploads/3DP-School-Poster.pdf>.
- “Resources for Using 3D Printers Safely in Schools.” Handout. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021.
- “3D Printer: Innovate. Create. Be Safe.” Sticker. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021.
- “3D Printer Safety: 10 Ways to Promote Healthy Indoor Air Quality While Using a 3D Printer.” Poster. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021. https://chemicalinsights.org/wp-content/uploads/3DP_Top_Ten_Handout.pdf.
- “3D Printer Mitigation Checklist.” Handout. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2020. https://chemicalinsights.org/wp-content/uploads/2020/07/Toolkit_Checklist_generic.pdf.

LANDING PAGES

- “Wildfires and Human Health.” Landing Page. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2022. <https://chemicalinsights.org/wildfires/#/>
- “3D Printers: Innovate. Create. Be Safe.” Landing Page. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021. <https://chemicalinsights.org/3dp/#/>.
- “Furniture Flammability and Human Health.” Landing Page. Chemical Insights, an Institute of Underwriters Laboratories Inc., 2021. <https://chemicalinsights.org/ffhh/#/>.

E-LEARNING MODULES

Specifying Residential Upholstered Furniture to Safeguard Human Health. Chemical Insights (ASID Knowledge Contributor), in partnership with the American Society of Interior Designers (ASID), 2022.

<https://learn.asid.org/products/specifying-residential-upholstered-furniture-to-safeguard-human-health>

Keeping School Buildings Healthy: Making the Case for Healthy, Clean Environments. Chemical Insights, in partnership with Environmental Protection Agency (EPA) Asthma Community Network (ACN), 2021.

<https://chemicalinsights.org/courses/keeping-school-buildings-healthy-making-the-case-for-healthy-clean-environments/>

Keeping Your Buildings Healthy: Managing 3D Printer Emissions. Chemical Insights, in partnership with International Facility Management Association (IFMA), 2021. <https://chemicalinsights.org/courses/keeping-your-buildings-healthy-managing-3d-printer-emissions-for-occupant-safety-and-health/>.

3D Printers & Indoor Air Quality. Chemical Insights, 2020. <https://chemicalinsights.org/courses/test-your-knowledge-3d-printers-and-indoor-air-quality/>.

Maintaining Healthy Indoor Air Quality During COVID-19: What You Need To Know. Chemical Insights, 2020.

<https://chemicalinsights.org/courses/maintaining-healthy-indoor-air-quality-during-covid-19-what-you-need-to-know/>.

Emissions, Exposure, and Health Impact of 3D Printing Processes Professional Development Course. Chemical Insights, in partnership with American Industrial Hygiene Association (AIHA), 2020.

<https://learning.aiha.org/courses/32572>.

The Story of Chemical Insights, An Institute of Underwriters Laboratories Inc. Cantilever Instruction + Design, n.d.

https://cantilever-instruction.com/chemicalinsights/story_html5.html.

E-LEARNING VIDEOS

An Interview with Annette Stelmack. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=rFP8FUQhXv4>

An Interview with Birgitte Messerschmidt. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=8wkVww2CUfE>

An Interview with Dr. Debra Harris. Cantilever Instruction + Design, 2022.

https://www.youtube.com/watch?v=4ipB_2nRbtE

Chemistry 101 for Building Managers. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=7wuKZGnMM1o>

NeoCon 2022: Design it Healthy, Keep it Healthy. Cantilever Instruction + Design, 2022.

<https://youtu.be/KMkWe-0Rwo0>

Research for a Safer and Healthier Tomorrow (three minute). Society of Toxicology, 2022.

<https://www.youtube.com/watch?v=oy-rbNUCo0Y>

Research for a Safer and Healthier Tomorrow (one minute). Society of Toxicology, 2022.

<https://www.youtube.com/watch?v=aOsSQNX9iYg>

Research for a Safer and Healthier Tomorrow (full). Society of Toxicology, 2022.

<https://www.youtube.com/watch?v=vYQnWlUV23o>

A Decision Tree: Considering Upholstered Furniture Fabrication Strategies. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=zYl8Uqob15M>

Fire Barrier Performance Specifications. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=GlpGAgpDHyo>

Fire Trends in the U.S. Cantilever Instruction + Design, 2022. <https://www.youtube.com/watch?v=IMCebNlv6r0>

Human Health Impacts of Flame Retardant Exposure. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=vmQ5GM9-cuA>

Issuing Flammability Standards. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=L21OxVOfoBw>

Next Steps for Designers. Cantilever Instruction + Design, 2022. <https://www.youtube.com/watch?v=amlzZPYcz7s>

Overview: Furniture Flammability and Human Health. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=LytIV4GX8X8>

The History of Flammability Standards in the U.S. Cantilever Instruction + Design, 2022.

<https://www.youtube.com/watch?v=LHZlosmLgkY>

When to Use a Fire Barrier. Cantilever Instruction + Design, 2022. https://www.youtube.com/watch?v=bGhOk_UY9BQ

Learn More About Our Research on Electronic Nicotine Delivery Systems (ENDS). Cantilever Instruction + Design, 2021.

<https://www.youtube.com/watch?v=g5DknVUWqB0>

Installing a Fire Barrier. Cantilever Instruction + Design, 2021.

https://www.youtube.com/watch?app=desktop&v=LenSF9fvmXs&list=PLVxn85_ikhGQuvYeYFeJir7yd3wGs

A History of Chemical Insights Furniture Flammability and Human Health Initiative. Cantilever Instruction + Design, 2021.

https://www.youtube.com/watch?v=e5Aoi07ch3g&list=PLVxn85_ikhGQuvYeYFeJir7yd3wGs_FtT&index=2

Behind the Scenes: Robiesitz. Cantilever Instruction + Design, 2021.

<https://www.youtube.com/watch?app=desktop&v=8RhSTny8NgY>

Clearing the Air on COVID-19. Arketi, 2020.

<https://chemicalinsights.org/covid-19/>

Disinfecting and Cleaning. Cantilever Instruction + Design, 2020.

<https://www.youtube.com/watch?app=desktop&v=FKpiBZSxzP0>

Precautionary Measures. Cantilever Instruction + Design, 2020. <https://www.youtube.com/watch?v=w8zWRdBV4hs>

Understanding Aerosol Transmission. Cantilever Instruction + Design, 2020.

<https://www.youtube.com/watch?v=uiwOgQccqoc>.

Ventilation. Cantilever Instruction + Design, 2020. <https://www.youtube.com/watch?v=jM-jjBzK-II>.

Why Is Indoor Air Quality Important? Cantilever Instruction + Design, 2020.

<https://www.youtube.com/watch?v=U0REPEvxFDI>.

3D Printer Basics. Cantilever Instruction + Design, 2020. <https://www.youtube.com/watch?v=ALpZmlZ2Tz4>.

3D Printer Mitigation Strategies Location. Cantilever Instruction + Design, 2020. <https://www.youtube.com/watch?v=6-nDbgGXwx4>.

3D Printer Mitigation Strategies Operation. Cantilever Instruction + Design, 2020.

<https://www.youtube.com/watch?v=0Z-BIQYrA2k>.

3D Printer Mitigation Strategies Purchasing. Cantilever Instruction + Design, 2020.

<https://www.youtube.com/watch?v=qxE720CTda8>.

3D Printer Research Findings. Cantilever Instruction + Design, 2020. <https://www.youtube.com/watch?v=LLpgu5Fuc6Y>.

3D Printer Research Overview. Cantilever Instruction + Design, 2020. <https://www.youtube.com/watch?v=XDiaaK0tvc>.

3D Printer Standard. Cantilever Instruction + Design, 2020. <https://www.youtube.com/watch?v=zesDPRqLei8>.

Behind the Scenes: Chemical Insights' 3D Printer Research. Cantilever Instruction + Design, 2020.

<https://www.youtube.com/watch?v=va8CZAUtMu8>.

About Chemical Insights. Cantilever Instruction + Design, 2020.

https://www.youtube.com/watch?v=6zh3_gOexFw&list=PLVxn85_ikhGTesoULGnmgsctNdnNlvSd&index=1.

About Chemical Insights: A Collaborative Research Approach. Cantilever Instruction + Design, 2020.

https://www.youtube.com/watch?v=6z_9n5TMktg&list=PLVxn85_ikhGTesoULGnmgsctNdnNlvSd&index=4.

About Chemical Insights: A Focus on Human Exposure. Cantilever Instruction + Design, 2020.

https://www.youtube.com/watch?v=nNm5-78gv_8&list=PLVxn85_ikhGTesoULGnmgsctNdnNlvSd&index=3

About Chemical Insights' Mission. Cantilever Instruction + Design, 2020.

https://www.youtube.com/watch?v=Z08zPjSM7Bw&list=PLVxn85_ikhGTesoULGnmgsctNdnNlvSd&index=2

About Chemical Insights' Process. Cantilever Instruction + Design, 2020.

https://www.youtube.com/watch?v=uXSluiA4KZ4&list=PLVxn85_ikhGTesoULGnmgsctNdnNlvSd&index=5

Chemical Insights, An Institute of Underwriters Laboratories Inc. SOT Tv, 2020.

<https://www.youtube.com/watch?app=desktop&v=vfOTFxY63xM>.

Chemical Insights' Chair Burns. Cantilever Instruction + Design, 2020. <https://www.youtube.com/watch?v=Tz9AcajFjUs>

INTERNAL REPORTS (FOR RESEARCH PURPOSES ONLY)

"Particle and Chemical Emissions from MakerBot Method X 3D Printer with Clean Air™ Filter System." Internal Report 220, September 2021.

"Effects of Filtration on Particle and Chemical Emissions from MakerBot Method X Printer: An Update of Filtration Design." Internal Report 190, July 2021.

"Effects of a Filter Setup on Particle and Chemical Emissions from MakerBot Method X Printer." Internal Report 160, January 2021.

"Report for Particle and Chemical Emissions from Markforged 3D Printers (Test Product Description: Markforged X7 and Metal X)." Internal Report 090, August 2020.

"Report for Particle and Chemical Emissions from MakerBot 3D Printer (Test Product Description: MakerBot Method X)." Internal Report 150, July 2020.

"Research Emission Results for Markforged, Inc. (Test Product Description: Markforged Metal X)." Internal Report 120, June 2020.

"Report for Particle and Chemical Emissions from MakerBot 3D Printer (Test Product Description: MakerBot Method)." Internal Report 110, June 2020.

"Research Emission Results for MakerBot Industries LLC (Test Product Description: MakerBot Method and Method X)." Internal Report 100, April 2020.

"Data Comparison on Conducting ANSI/CAN/UL 2904 for UL Environment and Sustainability (Test Product Description: Markforged X7)." Internal Report 080, February 2020.

"Research Emission Results for Markforged, Inc. (Test Product Description: Markforged X7 and Metal X)." Internal Report 070, January 2020.

E-NEWSLETTERS

"Foresight: Wishing You a Happy and Healthy Holiday Season." Chemical Insights.org (e-newsletter), December 21, 2022. <https://mailchi.mp/chemicalinsights/dec2022issue-13824678>

"Foresight: Convening Experts to Share Scientific Insights." Chemical Insights.org (e-newsletter), November 30, 2022. <https://mailchi.mp/chemicalinsights/nov2022issue>

"Foresight: Research-Backed Insights for Professionals." Chemical Insights.org (e-newsletter), October 31, 2022. <https://mailchi.mp/chemicalinsights/october2022issue-13703010>

"Foresight: Research into the Human Health Impact of 3D Printing Emissions." Chemical Insights.org (e-newsletter), September 29, 2022. <https://mailchi.mp/chemicalinsights/september2022issue-13699818?e=50b4b3850e>

"Foresight: Actionable Scientific Information for Professionals." Chemical Insights.org (e-newsletter), August 31, 2022. <https://mailchi.mp/chemicalinsights/august2022issue-13695494>

- "Foresight: Wildfire Resources." Chemical Insights.org (e-newsletter), July 28, 2022. <https://mailchi.mp/chemicalinsights/july2022issue-13691385>
- "Foresight: Chemical Insights Research Institute Publishes New DIY Filtration Application Notes." Chemical Insights.org (e-newsletter), June 30, 2022. <https://mailchi.mp/chemicalinsights/june2022issue-13686041>
- "Foresight: Chemical Insights Research Institute Launches New Research and Webinar to Protect Human Health." Chemical Insights.org (e-newsletter), May 31, 2022. <https://mailchi.mp/chemicalinsights/may2022issue-13660986>
- "Foresight: New Continuing Education Course and Guidance Document." Chemical Insights.org (e-newsletter), April 27, 2022. <https://mailchi.mp/chemicalinsights/april2022issue>
- "Foresight: Chemical Insights Research Institute & Partners Share Timely Resources." Chemical Insights.org (e-newsletter), March 29, 2022. <https://mailchi.mp/chemicalinsights/march2022issue-13643702>
- "Foresight: CIRI's Research Identifies Human Health Risks from Chemical Exposure." Chemical Insights.org (e-newsletter), February 24, 2022. <https://mailchi.mp/chemicalinsights/feb2022issue>
- "Foresight: 2022 Highlights." Chemical Insights.org (e-newsletter), January 25, 2022. <https://mailchi.mp/chemicalinsights/jan2022issue>
- "Foresight: 2021 Highlights." Chemical Insights.org (e-newsletter), December 22, 2021. <https://mailchi.mp/chemicalinsights/dec2021issue>
- "Foresight: New Environmental Research Journal Article." Chemical Insights.org (e-newsletter), November 30, 2021. <https://mailchi.mp/chemicalinsights/nov2021issue>
- "Foresight: Toxicology Health Sciences Center Expands." Chemical Insights.org (e-newsletter), October 27, 2021. <https://mailchi.mp/chemicalinsights/oct2021issue>
- "Foresight: Latest Summary Report on E-Cigarettes and Vaping." Chemical Insights.org (e-newsletter), September 29, 2021. <https://mailchi.mp/chemicalinsights/sept2021issue>.
- "Foresight: Chemical Insights Releases New Research on DIY Air Cleaners." Chemical Insights.org (e-newsletter), August 31, 2021. <https://mailchi.mp/chemicalinsights/new-research-with-partners-on-emerging-topics-announced?e=%5bUNIQID>.
- "Foresight: Chemical Insights Releases New Research on DIY Air Cleaners." Chemical Insights.org (e-newsletter), July 31, 2021. <https://us17.campaign-archive.com/?u=576ed13f0a3c1a6cd9efcfc24&id=3d3b9fbd47>.
- "Foresight: Chemical Insights Releases New 3DP Educational Tools." Chemical Insights.org (e-newsletter), June 30, 2021. <https://us17.campaign-archive.com/?u=576ed13f0a3c1a6cd9efcfc24&id=cd9bb28b7b>.
- "Foresight: Chemical Insights and EPA Conducting Wildfire Research." Chemical Insights.org (e-newsletter), May 28, 2021. <https://mailchi.mp/chemicalinsights/wildfire-research-with-epa>.
- "Foresight Special Edition: Furniture Flammability and Human Health." Chemical Insights.org (e-newsletter), April 30, 2021. https://mailchi.mp/chemicalinsights/specialedition_ffhh.
- "Foresight: Join Our Virtual Summit." Chemical Insights.org (e-newsletter), March 30, 2021. <https://mailchi.mp/chemicalinsights/join-our-virtual-summit>.

"Foresight: Our Latest Research." Chemical Insights.org (e-newsletter), February 23, 2021.

<https://mailchi.mp/chemicalinsights/our-latest-research>.

"Foresight: Find Out What Chemical Insights Is Working On." Chemical Insights.org (e-newsletter), January 27, 2021.

[https://us17.campaign-archive.com/?u=576ed13f0a3c1a6cd9efcfc24&id=77aceae1b7&e=\[UNIQID\]](https://us17.campaign-archive.com/?u=576ed13f0a3c1a6cd9efcfc24&id=77aceae1b7&e=[UNIQID]).

"Foresight: It's Time to Meet Chemical Insights." Chemical Insights.org (e-newsletter), December 15, 2020.

<https://us17.campaign-archive.com/?u=576ed13f0a3c1a6cd9efcfc24&id=709619df7a>.

PRESS RELEASES AND NEWS ALERTS

"News Alert: Holiday Safety Tips for Gifting and Operating 3D Printers." Chemical Insights, December 16, 2022.

<https://mailchi.mp/chemicalinsights/news-alert-3d-printer-gifting-december2022>

"News Alert: Selecting Upholstered Furniture to Reduce Safety Risks of Open Flame Fires Without the Use of Hazardous Flame Retardants." Chemical Insights, October 21, 2022.

<https://mailchi.mp/chemicalinsights/selecting-upholstered-furniture-to-reduce-safety-risks-of-fires-without-the-use-of-flame-retardants?e=50b4b3850e>

"Chemical Insights Research Institute Receives Prestigious Award from the National Institutes of Health." Business Wire (news release), May 5, 2022. <https://www.businesswire.com/news/home/20220505005023/en/Chemical-Insights-Research-Institute-Receives-Prestigious-Award-from-the-National-Institutes-of-Health>

"Chemical Insights Research Institute Releases Actionable Scientific Tools to Help Save Lives During Home Fires" Cision PR Newswire (news release), April 19, 2022. https://www.prnewswire.com/news-releases/chemical-insights-research-institute-releases-actionable-scientific-tools-to-help-save-lives-during-home-fires-301527956.html?tc=eml_cleartime

"Chemical Insights Research Institute Confirms Commitment to Studying Human Health Risks from Chemical Exposure." Business Wire (news release), February 22, 2022.

<https://www.businesswire.com/news/home/20220222005377/en/Chemical-Insights-Research-Institute-Confirms-Commitment-to-Studying-Human-Health-Risks-from-Chemical-Exposure>

"Chemical Insights Research Institute of Underwriters Laboratories Inc. Expands with Dr. Christa Wright to Lead Toxicology Health Sciences Center." Business Wire (news release), October 18, 2021.

<https://www.businesswire.com/news/home/20211018005989/en/Chemical-Insights-Research-Institute-of-Underwriters-Laboratories-Inc.-Expands-with-Dr.-Christa-Wright-to-Lead-Toxicology-Health-Sciences-Center>

"Chemical Insights Research Institute, Underwriters Laboratories Inc. Teams with EPA's Office of Research and Development to Evaluate Safety Risks of DIY Air Cleaners for Wildfire Indoor Pollution Control." Business Wire (news release), August 26, 2021. <https://www.businesswire.com/news/home/20210826005187/en/Chemical-Insights-Research-Institute-of-Underwriters-Laboratories-Inc.-Teams-with-EPA%E2%80%99s-Office-of-Research-and-Development-to-Evaluate-Safety-Risks-of-DIY-Air-Cleaners-for-Wildfire-Indoor-Pollution-Control>

"Chemical Insights Research Institute, Underwriters Laboratories Inc., and Georgia State University Announce Research Study on Vaping and E-Cigarettes." PR News Wire (news release), August 18, 2021.

<https://www.prnewswire.com/news-releases/chemical-insights-research-institute-underwriters-laboratories-inc-and-georgia-state-university-announce-research-study-on-vaping-and-e-cigarettes-301358006.html>

“Chemical Insights, an Institute of Underwriters Laboratories, Publishes UL 118F Guidance Document on the Science of Achieving Both Fire and Chemical Safety for Residential Upholstered Furniture.” American Association for the Advancement of Science (AAAS) EurekAlert.org (news release), April 21, 2021.

https://eurekaalert.org/pub_releases/2021-04/uli-cip042121.php.

“Chemical Insights Publishes eLearning Module COVID-19 and Its Impact on Indoor Air Quality.” Business Wire (news release), December 8, 2020. <https://www.businesswire.com/news/home/20201208005130/en/Chemical-Insights-Publishes-eLearning-Module-COVID-19-and-Its-Impact-on-Indoor-Air-Quality>.

“Chemical Insights Partners with EPA to Improve the Lives of People with Asthma.” Business Wire (news release), October 15, 2020. <https://www.businesswire.com/news/home/20201015005166/en>.

“Chemical Insights Publishes Educational Guide on Managing IAQ During the COVID-19 Pandemic and Beyond.” Business Wire (news release), September 11, 2020.

<https://www.businesswire.com/news/home/20200911005281/en/Chemical-Insights-Publishes-Educational-Guide-Managing-IAQ>.

“Chemical Insights’ 3D Printing Toolkit Now Available to Schools Through U.S. Department of Education’s Green Strides Portal.” Business Wire (news release), July 30, 2020.

<https://www.businesswire.com/news/home/20200730005164/en/Chemical-Insights%E2%80%99-3D-Printing-Toolkit-Schools-U.S>.

“Chemical Insights Earns Top Project of the Year Award from Environment + Energy Leader.” Business Wire (news release), July 23, 2020. <https://www.businesswire.com/news/home/20200723005596/en/Chemical-Insights-Earns-Top-Project-Year-Award>.

“Chemical Insights Partners with American Industrial Hygiene Association to Present Virtual Course on Health Impact of 3D Printer Emissions.” Business Wire (news release), June 4, 2020.

<https://www.businesswire.com/news/home/20200604005553/en/Chemical-Insights-Partners-American-Industrial-Hygiene-Association>.

“Chemical Insights Partners with Duke University to Research Air Pollution Impacts on Asthmatic Children.” Business Wire (news release), April 6, 2020. <https://www.businesswire.com/news/home/20200406005622/en/Chemical-Insights-Partners-Duke-University-Research-Air>.

“Chemical Insights Delivers Critical Pollutant Exposure Information You Can Trust.” Business Wire (news release), March 3, 2020. <https://www.businesswire.com/news/home/20200303005666/en>.

“New Study from UL Chemical Safety and Emory University Demonstrates Ways for Reducing Flame Retardant Exposure and Flammability Hazards of Residential Furniture.” CISION PR Newswire (news release), April 23, 2019. <https://www.prnewswire.com/news-releases/new-study-from-ul-chemical-safety-and-emory-university-demonstrates-ways-for-reducing-flame-retardant-exposure-and-flammability-hazards-of-residential-furniture-300833002.html>.

"UL Publishes ANSI/CAN/UL 2904 Standard for 3D Printers." CISION PR Newswire (news release), February 5, 2019. https://www.prnewswire.com/news-releases/ul-publishes-ansicanul-2904-standard-for-3d-printers-300789173.html?tc=eml_cleartime.

"UL Chemical Safety and Georgia Institute of Technology Release Pioneering 3D Printing Research." CISION PR Newswire (news release), November 12, 2018. <https://www.prnewswire.com/news-releases/ul-chemical-safety-and-georgia-institute-of-technology-release-pioneering-3d-printing-research-300748076.html?prn>.

PODCASTS AND LIVE BROADCASTS

Roedel, Kaleb. "Millions of homes are being built in fire-prone areas of Mountain West as wildfire risks grow." KNUR Public Radio. November 28, 2022. <https://www.kunr.org/energy-and-environment/2022-11-28/millions-homes-fire-prone-areas-mountain-west-wildfire-risks-grow>

Roman, Jesse. "Flame Retardant Chemicals in Furniture." NFPA. August 12, 2022. <https://nfpa.libsyn.com/flame-retardant-chemicals-in-furniture>

Lesseos, Sophia. "Wildfire Smoke Safety." KNDO/KNDU News. August 12, 2022. https://www.nbcrightnow.com/news/wildfire-smoke-safety/article_123dfdda-1a42-11ed-9942-1b7192785ac8.html

Edwards, Rebecca. "Safety Chat | The Ugly Truth About Flame Retardants with Dr. Marilyn Black." *Safewise.com* (podcast), July 21, 2021. <https://www.youtube.com/watch?v=4czinFVwp24>.

Nieminen, Robert. "Understanding Furniture Flammability and Human Health." *Interiors and Sources*, June 28, 2021. <https://iands.design/podcasts/45035/furniture-flammability-human-health>

Cichetti, Charlie. "Interview with Material Chemical Expert Dr. Marilyn Black." *Green Building Education Services: Green Building Matters* (podcast 175), May 27, 2021. <https://www.gbcs.com/green-building-matters-podcast/interview-with-material-chemical-expert-dr-marilyn-black/>

Michelson, Joan. "Risk, Tips for Kids & 3D Printers." *Insights and Tips from Remarkable Innovative Women on Green Connections Radio* (podcast), February 22, 2019. https://greenconnectionsradio.libsyn.com/risk-tips-for-kids-3d-printers-marilyn-black-ul-chemical-safety?tdest_id=376030.

Kloeppe, Sarah, and Christoph Trappe. "Health Risks of 3D Printers." *Buildings* (podcast), January 14, 2019. <https://www.buildings.com/articles/27763/health-risks-3d-printers>.

Wong, Kenneth. "Are Desktop 3D Printers Safe to Use?" *Digital Engineering* (podcast), December 13, 2018. <https://www.digitalengineering247.com/article/de-podcast-are-desktop-3d-printers-safe-to-use>.

OTHER ARTICLES

Kite-Powell, Jennifer. "New Research Shows Fumes From 3D Printers Can Create Human Health Hazards." *Forbes.com*, October 2, 2022. <https://www.forbes.com/sites/jenniferhicks/2022/10/02/new-research-shows-fumes-from-3d-printers-can-create-human-health-hazards/?sh=1af73e0548b6>

- "3 Tips for Making Safe, Healthy and Green Furniture Choices," U.S. Green Building Council's Green Home Guide, March 14, 2022. <https://www.greenhomeguide.com/know-how/article/3-tips-for-making-safe-healthy-and-green-furniture-choices>
- Chemical Processing Staff, "UL Research Institute Studies Health Risks from Chemical Exposure," Chemical Processing, February 25, 2022. <https://www.chemicalprocessing.com/industrynews/2022/ul-research-institute-studies-health-risks-from-chemical-exposure/>
- Kauppila, Ille. "3D Printing Emissions & Air Quality - A Practical Guide." All3DP Pro.com, January 22, 2022. <https://all3dp.com/1/3d-printing-emissions-air-quality/>
- Northington, Laurie "Chemical Insights Releases Summary Report on Fire Barriers for Upholstered Furniture," Home Furnishing's Business, January 5, 2022. <http://hfbusiness.com/hfbnow/ArticleId/22085/chemical-insights-releases-summary-report-on-fire-barriers-for-upholstered-furniture>
- Mitra, Puja. "MakerBot Achieves GREENGUARD Certification." *Tenlinks*, December 1, 2021. <https://www.tenlinks.com/news/makerbot-achieves-greenguard-certification/>
- "New Study Details All the Toxic Shit Spewed Out by 3D Printers." *Konitono*, November 27, 2021. <https://www.konitono.com/new-study-details-all-the-toxic-shit-spewed-out-by-3d-printers/>
- Shapiro, Debra. "3D Printer Safety Resources and Poster." *National Science Teaching Association (NSTA)*, October 26, 2021. <https://www.nsta.org/resources/freebies-science-teachers-october-26-2021>
- Hendrixson, Stephanie. "Vat Photopolymerization and VOC Emissions: Study Results and User Guidelines." *Additive Manufacturing Magazine*, September 25, 2021. <https://www.additivemanufacturing.media/articles/vat-photopolymerization-and-voc-emissions-study-results-and-user-guidelines>
- Stroud, Janet. "The Science Behind Good IAQ and Safer Spaces," *FMJ*, September 17, 2021. <https://www.fmlink.com/articles/science-behind-good-iaq-safer-spaces/>
- "Chemical Insights, Underwriters Laboratories and GSU Launch Research Initiative on Vaping and E-cigarettes." *Nicotine Science and Policy*, August 20, 2021. <https://nicotinepolicy.net/news-archive/109-2021/august-2021/5129-chemical-insights-underwriters-laboratories-and-gsu-launch-research-initiative-on-vaping-and-e-cigarettes>
- Henderson, Emily. "Chemical Insights, Underwriters Laboratories and GSU Launch Research Initiative on Vaping and E-cigarettes." *News-Medical.net*, August 20, 2021. <https://www.news-medical.net/news/20210820/Chemical-Insights-Underwriters-Laboratories-and-GSU-launch-research-initiative-on-vaping-and-e-cigarettes.aspx>
- "Research on DIY Air Cleaners to Reduce Wildfire Smoke Indoors | US EPA." *Environmental Protection Agency*, August 19, 2021. <https://www.epa.gov/air-research/research-diy-air-cleaners-reduce-wildfire-smoke-indoors>
- "Georgia State Begins Aerosol Research Study for ENDS." *Vapor Voice*, August 13, 2021. <https://vaporvoice.net/2021/08/13/georgia-state-begins-aerosol-research-study-for-ends/>
- "Georgia State Starts Research Initiative on Study of Electronic Nicotine Delivery Systems with Chemical Insights Nonprofit." *Georgia State University School of Public Health News Hub*, August 12, 2021. <https://news.gsu.edu/2021/08/12/gsu-starts-research-initiative-on-study-of-electronic-nicotine-delivery-systems-with-chemical-insights-nonprofit/>

"3D Printers Precautions and Safety." SV3DPRINTER, July 29, 2021.

Druley, Kevin. "3D Printing Process Emissions May Cause 'Strong Irritation': Study." *Safety+Health Magazine*, July 29, 2021. <https://www.safetyandhealthmagazine.com/articles/21537-d-printing-process-emissions-may-cause-strong-irritation-study?linkId=126767299>.

Saunders, Sarah. "New UL Study Reveals VOC Emission Rates are Higher in SLA vs. FFF 3D Printing." *3DPrint.com*, July 19, 2021. <https://3dprint.com/283025/new-ul-study-reveals-voc-emission-rates-are-higher-in-sla-vs-fff-3d-printing/>.

Pyle, Carla. "Follow Up: Questions about Flame Retardants in Upholstery? Help is on the Way!" National Upholstery Association (blog), June 28, 2021. <https://nationalupholsteryassociation.org/news-blog/10708498>.

Northington, Laurie. "Chemical Insights, A New Toolkit Helps Interior Designers Select Furniture with Greater Flammability Protection." *Home Furnishings Business*, May 19, 2021. <http://hfbusiness.com/hfbnow/articleid/21388/chemical-insights-new-toolkit-helps-interior-designers-select-furniture-with-greater-flammability-protection>

Borneman, Jim. "Chemical Insights, An Institute of Underwriters Laboratories, Releases Toolkit to Help Interior Designers Specifying Furniture to Reduce Flame Retardant Exposure." *Textile World*, May 17, 2021. <https://www.textileworld.com/textile-world/2021/05/chemical-insights-an-institute-of-underwriters-laboratories-releases-toolkit-to-help-interior-designers-specifying-furniture-to-reduce-flame-retardant-exposure/>

Ledoux, Nicholas. "Chemical Insights Releases Toolkit to Help Interior Designers Specifying Furniture to Reduce Flame Retardant Exposure." *Furniture World Magazine*, May 10, 2021. <https://www.furninfo.com/Furniture-Industry-News/14010/>

Zinn, Harold. "In the News: May 2, 2021." *Product Safety Network News*, May 2, 2021. <http://www.productsafetynetworknews.com/2021/05/02/in-the-news-may-3-2021/>

"Chemical Insights Releases Interior Designer Toolkit." *Furniture, Lighting & Décor*, April 28, 2021. <https://www.furniturelightingdecor.com/chemical-insights-releases-interior-designer-toolkit>

"Chemical Insights, an Institute of Underwriters Laboratories, Releases Toolkit to Help Interior Designers Specifying Furniture to Reduce Flame Retardant Exposure." *Yahoo! Finance*, April 28, 2021.

"Free E-learning Module: Maintaining Healthy IAQ during COVID-19." *Safety+Health Magazine*, March 2, 2021. <https://www.safetyandhealthmagazine.com/articles/20909-free-e-learning-module-maintaining-healthy-iaq-during-covid-19>

DE Editors. "Editor's Pick: UL Certification for Emissions-free 3D Printing." *Digital Engineering 24/7*, January 6, 2021. <https://www.digitalengineering247.com/article/editors-pick-ul-certification-for-emissions-free-3d-printing/New-Products>

Listen, Vanesa. "School Guide to Offset the Invisible Threat in Fused Filament 3D Printing." *3DPrint.com*, August 12, 2020. <https://3dprint.com/271328/school-guide-to-offset-the-invisible-threat-in-fused-filament-3d-printing/>.

- K., Yosra. "Chemical Insights' 3D Printing Toolkit Gives Key Takeaways to Use 3D Printers Safely at Home or in Schools." *3D Adept Media*, July 31, 2020. <https://3dadept.com/chemical-insights-3d-printing-toolkit-gives-key-takeaways-to-use-3d-printers-safely-at-home-or-in-schools/>.
- "Particles Emitted by Consumer 3D Printers Could Hurt Indoor Air Quality." *Georgia Tech Research: Horizons*, October 7, 2019. <https://rh.gatech.edu/news/627220/particles-emitted-consumer-3d-printers-could-hurt-indoor-air-quality>.
- "Skin Contact Main Exposure Route for Flame Retardants in Furniture, Study Suggests." *Chemical Watch*, April 29, 2019. <https://chemicalwatch.com/76917/skin-contact-main-exposure-route-for-flame-retardants-in-furniture-study-suggests>.
- Albright, Brian. "UL Releases Emissions Standards for 3D Printers." *Digital Engineering*, February 26, 2019. <https://digitalengineering247.com/article/ul-releases-emissions-standards-for-3d-printers/prototype>.
- Michelson, Joan. "How to Keep Kids Safe From 3-D Printers, Adults Too." *Forbes*, February 20, 2019. <https://www.forbes.com/sites/joanmichelson2/2019/02/20/how-to-reduce-the-risks-of-3d-printers-especially-for-kids/?sh=2c5ad8a92c40>.
- Stevenson, Kerry. "The Deep Implications of UL2904 on 3D Printing." *Fabbaloo* (blog), February 8, 2019. <https://www.fabbaloo.com/blog/2019/2/8/the-deep-implications-of-ul2904-on-3d-printing>.
- Davies, Sam. "UL Publishes 3D Printing Standard for Testing and Assessing Particle and Chemical Emissions." *TCT Mag: 3D Printing & Additive Manufacturing Intelligence*, February 6, 2019. <https://www.tctmagazine.com/additive-manufacturing-3d-printing-news/ul-3d-printing-standard-particle-emission/>.
- O'Neal, Bridget. "ANSI/CAN/UL 2904 Standard: New Data on 3D Printer Particle Emissions & Safety Measures." *3DPrint.com*, February 6, 2019. <https://3dprint.com/235707/ansi-can-ul-2904-standard-new-data-3d-printer-particle-emissions-safety-measures/>.
- Vialva, Tia. "UL Publishes ANSI/CAN/UL 2904 Standard for Assessing 3D Printing Chemical Emissions." *3D Printing Industry*, February 6, 2019. <https://3dprintingindustry.com/news/ul-publishes-ansi-can-ul-2904-standard-for-assessing-3d-printing-chemical-emissions-148507/>.
- "New Standard ANSI/CAN/UL 2904 Addresses 3D Printer Emissions." *TSI* (blog), February 5, 2019. <https://tsi.com/blog/tsi-blogs/occupational-health-safety-blog/february-2019/new-standard-ansi-can-ul-2904-addresses-3d-printer-emissions/>.
- Rizzuto, Pat. "Indoor Air Pollution Standards Announced for 3D Printers." *Bloomberg Law*, February 5, 2019. <https://news.bloomberglaw.com/environment-and-energy/indoor-air-pollution-standards-announced-for-3d-printers>.
- Kloepple, Sarah. "Health Implications and Safety Tips for Desktop 3D Printing." *Buildings*, December 20, 2018. <https://www.buildings.com/articles/27785/health-implications-and-safety-tips-desktop-3d-printing>.
- Panjwani, Laura. "R&D Special Focus: 3D Printing." *R&D World*, December 19, 2018. <https://www.rdworldonline.com/rd-special-focus-3d-printing-2/>.

- Goldsberry, Clare. "New Research Finds Potential Health Impact from Consumer FDM 3D Printers." *Plastics Today*, December 17, 2018. <https://www.plasticstoday.com/3d-printing/new-research-finds-potential-health-impact-consumer-fdm-3d-printers>.
- Walter, Kenny. "Researchers Investigate Unsafe Emissions from 3D Printers." *R&D World*, December 5, 2018. <https://www.rdworldonline.com/researchers-investigate-unsafe-emissions-from-3d-printers/>.
- Molitch-Hou, Michael. "3D Printing Health Risks Identified by UL and Georgia Tech." *Engineering.com*, November 28, 2018. <https://www.engineering.com/story/3d-printing-health-risks-identified-by-ul-and-georgia-tech>.
- Saunders, Sarah. "UL and Georgia Tech Continue Research into Impact of 3D Printing Emissions on Indoor Air Quality." *3D Print.com*, November 20, 2018. <https://3dprint.com/230209/ul-and-georgia-tech-continue-research-into-impact-of-3d-printing-emissions-on-indoor-air-quality/>.
- Winick, Erin. "We Still Don't Know if 3-D Printers Pose a Health Risk – But I'm Taking No Chances." *MIT Technology Review*, November 15, 2018. <https://www.technologyreview.com/2018/11/15/139066/we-still-dont-know-if-3d-printers-pose-a-health-risk-but-im-taking-no-chances/>.
- "3D Printers Emit Dangerous Substances into the Air." *The Earth Chronicles of Life: Science*, November 13, 2018. <https://earth-chronicles.com/?s=3d+printers>.
- Clyburn, Thomas. "Another 3D Printer? Oh, Stop It, You're Killing Us. Perhaps Literally: Fears Over Ultrafine Dust." *The Register*, November 13, 2018. https://www.theregister.com/2018/11/13/3d_printer_toxins/.
- Albright, Brian. "UL Study Identifies Hazardous 3D Printer Emissions." *Digital Engineering*, November 12, 2018. <https://www.digitalengineering247.com/article/ul-study-identifies-hazardous-3d-printer-emissions/>.
- "Research Raises Awareness of Indoor Air Quality Risk from 3D Printers." Georgia Tech Research: Horizons, November 12, 2018. <https://rh.gatech.edu/news/614128/research-raises-awareness-indoor-air-quality-risk-3d-printers>.
- Vialva, Tia. "MIT, Yale and University of Nottingham Examine Environment Impact of 3D Printing." *3D Printing Industry*, September 5, 2018. <https://3dprintingindustry.com/news/environmental-impact-3d-printing-2-139330/>.
- Vialva, Tia. "Is 3D Printing Really as Ecofriendly as We Think It Is?" *3D Printing Industry*, July 17, 2018. <https://3dprintingindustry.com/news/is-3d-printing-really-as-ecofriendly-as-we-think-it-is-136335/>.
- Barash, Martina, and Pat Rizzuto. "Desktop 3D Printers: Sales Soaring, Emissions Standards Coming." *Bloomberg Law*, May 23, 2018. <https://news.bloomberglaw.com/safety/desktop-3d-printers-sales-soaring-emissions-standards-coming>.
- Pelly, Janet. "3D Printer Emissions Raise Concerns and Prompt Controls." *Chemical & Engineering News*, March 26, 2018. <https://cen.acs.org/materials/3-d-printing/3-D-printer-emissions-raise/96/i13>.
- Kassner, Michael. "3D Printing may be Hazardous to your Health: The case for a Particle Emissions Standard." *TechRepublic*, September 11, 2017. <https://www.techrepublic.com/article/3d-printing-may-be-hazardous-to-your-health-the-case-for-a-particle-emissions-standard/>.
- Scott, Clare. "UL Study Releases Data on Effects of 3D Printing on Human Health, Calls for New Standards." *3DPrint.com*, June 28, 2017. <https://3dprint.com/179369/3d-printing-emissions-study/>.

- Petch, Michael. "Is 3D Printing Safe? UL Publishes Safety Science of 3D Printing." *3D Printing Industry*, June 27, 2017. <https://3dprintingindustry.com/news/3d-printing-safe-ul-publishes-safety-science-3d-printing-117136/>.
- Kira. "3D Printer Emissions Study to Determine Impact on Air Quality and Health." *3ders* "3D Printer and 3D Printing News (blog)", December 8, 2015. <https://www.3ders.org/articles/20151208-3d-printer-emissions-study-determine-impact-air-quality-health.html>.
- Goehrke, Sarah Anderson. "How Safe is 3D Printing? UL Teams Up with Two Universities to Examine 3D Printing's Effect on Air Quality & Human Health." *3DPrint.com*, December 4, 2015. <https://3dprint.com/108795/ul-research-indoor-air-quality/>.



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