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Associate Professor
Department of Chemical Engineering and Applied Chemistry
University of Toronto

EDUCATION

Ph.D. Chemical Engineering, California Institute of Technology, 2010
M.Sc. Chemical Engineering, California Institute of Technology, 2007
B.S. Chemical and Biomolecular Engineering, University of Pennsylvania, 2005

PROFESSIONAL APPOINTMENTS

Associate Professor, University of Toronto, 2019 – present
Assistant Professor, University of Toronto, 2013 – 2019
Postdoctoral Scholar, University of California, Berkeley, 2010 – 2013

PUBLICATIONS[1]

Published manuscripts for work at University of Toronto

1. Jathar S. H., Sharma N., Galang, A., Vanderheyden, C., Takhar, M.*, **Chan, A. W. H.**, Pierce, J. R., Volckens, J.: Measuring and modeling the primary organic aerosol volatility from a modern non-road diesel engine. Atmos. Env., 223, 117221, 2020
2. Chen, G.*, Wang, Q., Fan. Y., Han, Y., Wang, Y., Urch, B., Silverman, F., Tian, M., Su, Y., Qiu, X., Zhu, T., **Chan, A. W. H.**: Improved method for the optical analysis of particulate black carbon (BC) using smartphones, Atmos. Env., 224, 117291, 2020
3. Zeglinski, M. R., Turner, C. T., Zeng R.*, Schwartz, C., Santacruz, S., Pawluk, M. A., Zhao, H., **Chan, A.W.H.**, Carlsten, C., Granville, D. J.: Soluble Wood Smoke Extract Promotes Barrier Dysfunction in Alveolar Epithelial Cells through a MAPK Signaling Pathway, Sci. Rep., 9, 10027, 2019
4. Wang, S.*, Zhou, S., Tao, Y., Tsui, W. G., Ye, J.*, Yu, J. Z., Murphy, J. G., McNeill, V. F., Abbatt, J. P. D. and **Chan, A. W. H.**: Organic Peroxides and Sulfur Dioxide in Aerosol: Source of Particulate Sulfate, Environ. Sci. Technol., 53, 18, 10695-10704, 2019
5. Takhar, M.*, Stroud, C. A., and **Chan, A. W. H.**: Volatility Distribution and Evaporation Rates of Organic Aerosol from Cooking Oils and their Evolution upon Heterogeneous Oxidation, ACS Earth Space Chem, 3, 9, 1717–1728, 2019.
6. Kohl, L*, Meng, M*, de Vera, J., Bergquist, B., Cooke, C.A., Hustins, S., Jackson, B., Chow, C.W. and **Chan, A.W.H.**: Limited retention of wildfire-derived PAHs and trace elements in indoor environments, Geophys. Res. Lett., 46, https://doi.org/10.1029/2018GL080473, 2019
7. Ye. J.*, Van Rooy, P., Adam, C.H.*, Jeong, C.H., Urch, B., Cocker, D.R., Evans, G.J., **Chan, A. W. H.**: Predicting Secondary Organic Aerosol Enhancement in the Presence of

[1] *: group members

Atmospherically Relevant Organic Particles, ACS Earth Space Chem., 2 (10), 1035–1046 10.1021/acsearthspacechem.8b00093, 2018.

8. Ye, J.*, Abbatt, J. P. D., and **Chan, A. W. H.**: Novel pathway of SO_2 oxidation in the atmosphere: reactions with monoterpene ozonolysis intermediates and secondary organic aerosol, Atmos. Chem. Phys., 18, 5549-5565, https://doi.org/10.5194/acp-18-5549-2018, 2018.
9. Wang, S.*, Ye, J.*, Soong, R., Wu, B., Yu, L.*, Simpson, A. J., and **Chan, A. W. H.**: Relationship between chemical composition and oxidative potential of secondary organic aerosol from polycyclic aromatic hydrocarbons, Atmos. Chem. Phys., 18, 3987-4003, https://doi.org/10.5194/acp-18-3987-2018, 2018.
10. Ye, J.*, Salehi, S., North, M. L., Portelli, A. M.*, Chow, C. W. and **Chan, A. W. H.**: Development of a Novel Simulation Reactor for Chronic Exposure to Atmospheric Particulate Matter, Sci. Rep., 7, 42317,1–10, doi:10.1038/srep42317, 2017.
11. Ye, J.*, Gordon, C. A.* and **Chan, A. W. H.**: Enhancement in Secondary Organic Aerosol Formation in the Presence of Preexisting Organic Particle, Environ. Sci. Technol., 50, 3572–3579, 2016.
12. Goodman-Rendall, K. A. S.,* Zhuang, Y. R.,* Amirav, A. and **Chan, A. W. H.**: Resolving detailed molecular structures in complex organic mixtures and modeling their secondary organic aerosol formation, Atmos. Environ., 128, 276–285, doi:10.1016/j.atmosenv.2016.01.006, 2016.
13. Gordon, C. A.,* Ye, J.* and **Chan, A. W. H.**: Secondary Organic Aerosol Formation Enhanced by Organic Seeds of Similar Polarity at Atmospherically Relative Humidity, STEM Fellowship J., 1(2), 6–10, doi: 10.17975/sfj-2015-009, 2015.

Published manuscripts for prior PDF and graduate work

14. Hunter, J. F., Day, D. A., Palm, B. B., Yatavelli, R. L. N., **Chan, A. W. H.**, Kaser, L. Cappelin, L., Hayes, P. L., Cross, E. S., Carrasquillo, A. J., Campuzano-Jost, P., Stark, H., Zhao, Y., Hohaus, T., Smith, J. N., Hansel., A., Karl., T., Goldstein, A. H., Guenther, A., Worsnop, D. R., Thorton, J. A., Heald, C. L., Jimenez, J. L. and Kroll, J. H.: Comprehensive characterization of atmospheric organic carbon at a forested site, Nature Geoscience, 10, 748–753, 2017.
15. Worton, D. R., Decker, M., Isaacman-VanWertz, G., **Chan, A. W. H.**, Wilson, K. R. and Goldstein, A. H.: Improved molecular level identification of organic compounds using comprehensive two-dimensional chromatography, dual ionization energies and high resolution mass spectrometry, Analyst, 142, 2395–2403, 2017.
16. **Chan, A. W. H.**, Kreisberg, N. M., Hohaus, T., Campuzano-Jost, P., Zhao, Y., Day, D. A., Kaser, L., Karl, T., Hansel, A., Teng, A. P., Ruehl, C. R., Sueper, D. T., Jayne, J. T., Worsnop, D. R., Jimenez, J. L., Hering, S. V. and Goldstein, A. H.: Speciated measurements of semivolatile and intermediate volatility organic compounds (S/IVOCs) in a pine forest during BEACHON-RoMBAS 2011, Atmos. Chem. Phys., 16(2), 1187–1205, doi:10.5194/acp-16-1187-2016, 2016.
17. Worton, D. R., Zhang, H., Isaacman-Vanwertz, G., **Chan, A. W. H.**, Wilson, K. R. and Goldstein, A. H.: Comprehensive Chemical Characterization of Hydrocarbons in NIST Standard Reference Material 2779 Gulf of Mexico Crude Oil, Environ. Sci. Technol., 49(22), 13130–13138, doi:10.1021/acs.est.5b03472, 2015.

18. Timkovsky, J., **Chan, A. W. H.**, Dorst, T., Goldstein, A. H., Oyama, B. and Holzinger, R.: Comparison of advanced offline and in situ techniques of organic aerosol composition measurement during the CalNex campaign, Atmos. Meas. Tech., 8(12), 5177–5187, doi:10.5194/amt-8-5177-2015, 2015.
19. Ortega, J., Turnipseed, A., Guenther, A. B., Karl, T. G., Day, D. A., Gochis, D., Huffman, J. A., Prenni, A. J., Levin, E. J. T., Kreidenweis, S. M., Demott, P. J., Tobo, Y., Patton, E. G., Hodzic, A., Cui, Y. Y., Harley, P. C., Hornbrook, R. S., Apel, E. C., Monson, R. K., Eller, A. S. D., Greenberg, J. P., Barth, M. C., Campuzano-Jost, P., Palm, B. B., Jimenez, J. L., Aiken, A. C., Dubey, M. K., Geron, C., Offenberg, J., Ryan, M. G., Fornwalt, P. J., Pryor, S. C., Keutsch, F. N., Digangi, J. P., **Chan, A. W. H.**, Goldstein, A. H., Wolfe, G. M., Kim, S., Kaser, L., Schnitzhofer, R., Hansel, A., Cantrell, C. A., Mauldin, R. L. and Smith, J. N.: Overview of the Manitou experimental forest observatory: Site description and selected science results from 2008 to 2013, Atmos. Chem. Phys., 14(12), 6345–6367, doi:10.5194/acp-14-6345-2014, 2014.
20. Worton, D. R., Isaacman, G., Gentner, D. R., Dallmann, T. R., **Chan, A. W. H.**, Ruehl, C., Kirchstetter, T. W., Wilson, K. R., Harley, R. A. and Goldstein, A. H.: Lubricating oil dominates primary organic aerosol emissions from motor vehicles, Environ. Sci. Technol., 48(7), 3698–3706, doi:10.1021/es405375j, 2014.
21. Ruehl, C. R., Nah, T., Isaacman, G., Worton, D. R., **Chan, A. W. H.**, Kolesar, K. R., Cappa, C. D., Goldstein, A. H. and Wilson, K. R.: The influence of molecular structure and aerosol phase on the heterogeneous oxidation of normal and branched alkanes by OH, J. Phys. Chem. A, 117(19), 3990–4000, doi:10.1021/jp401888q, 2013.
22. Worton, D. R., Surratt, J. D., Lafranchi, B. W., **Chan, A. W. H.**, Zhao, Y., Weber, R. J., Park, J.-H., Gilman, J. B., De Gouw, J., Park, C., Schade, G., Beaver, M., Clair, J. M. S., Crounse, J., Wennberg, P., Wolfe, G. M., Harrold, S., Thornton, J. A., Farmer, D. K., Docherty, K. S., Cubison, M. J., Jimenez, J.-L., Frossard, A. A., Russell, L. M., Kristensen, K., Glasius, M., Mao, J., Ren, X., Brune, W., Browne, E. C., Pusede, S. E., Cohen, R. C., Seinfeld, J. H. and Goldstein, A. H.: Observational insights into aerosol formation from isoprene, Environ. Sci. Technol., 47(20), 11403–11413, doi:10.1021/es4011064, 2013.
23. Yee, L. D., Kautzman, K. E., Loza, C. L., Schilling, K. A., Coggon, M. M., Chhabra, P. S., Chan, M. N., **Chan, A. W. H.**, Hersey, S. P., Crounse, J. D., Wennberg, P. O., Flagan, R. C. and Seinfeld, J. H.: Secondary organic aerosol formation from biomass burning intermediates: Phenol and methoxyphenols, Atmos. Chem. Phys., 13(16), 8019–8043, doi:10.5194/acp-13-8019-2013, 2013.
24. **Chan, A. W. H.**, Isaacman, G., Wilson, K. R., Worton, D. R., Ruehl, C. R., Nah, T., Gentner, D. R., Dallmann, T. R., Kirchstetter, T. W., Harley, R. A., Gilman, J. B., Kuster, W. C., De Gouw, J. A., Offenberg, J. H., Kleindienst, T. E., Lin, Y. H., Rubitschun, C. L., Surratt, J. D., Hayes, P. L., Jimenez, J. L. and Goldstein, A. H.: Detailed chemical characterization of unresolved complex mixtures in atmospheric organics: Insights into emission sources, atmospheric processing, and secondary organic aerosol formation, J. Geophys. Res. Atmos., 118(12), 6783–6796, doi:10.1002/jgrd.50533, 2013.
25. Zhang, H., Ruehl, C. R., **Chan, A. W. H.**, Nah, T., Worton, D. R., Isaacman, G., Goldstein, A. H. and Wilson, K. R.: OH-initiated heterogeneous oxidation of cholestane: A model system for understanding the photochemical aging of cyclic alkane aerosols, J. Phys. Chem. A, 117(47), 12449–12458, doi:10.1021/jp407994m, 2013.

26. Zhao, Y., Kreisberg, N. M., Worton, D. R., Isaacman, G., Gentner, D. R., **Chan, A. W. H.**, Weber, R. J., Liu, S., Day, D. A., Russell, L. M., Hering, S. V. and Goldstein, A. H.: Sources of organic aerosol investigated using organic compounds as tracers measured during CalNex in Bakersfield, J. Geophys. Res. Atmos., 118(19), 11388–11398, doi:10.1002/jgrd.50825, 2013.
27. Gentner, D. R., Isaacman, G., Worton, D. R., **Chan, A. W. H.**, Dallmann, T. R., Davis, L., Liu, S., Day, D. A., Russell, L. M., Wilson, K. R., Weber, R., Guha, A., Harley, R. A. and Goldstein, A. H.: Elucidating secondary organic aerosol from diesel and gasoline vehicles through detailed characterization of organic carbon emissions, Proc. Natl. Acad. Sci. U. S. A., 109(45), 18318–18323, doi:10.1073/pnas.1212272109, 2012.
28. Isaacman, G., **Chan, A. W. H.**, Nah, T., Worton, D. R., Ruehl, C. R., Wilson, K. R. and Goldstein, A. H.: Heterogeneous OH oxidation of motor oil particles causes selective depletion of branched and less cyclic hydrocarbons, Environ. Sci. Technol., 46(19), 10632–10640, doi:10.1021/es302768a, 2012.
29. Isaacman, G., Wilson, K. R., **Chan, A. W. H.**, Worton, D. R., Kimmel, J. R., Nah, T., Hohaus, T., Gonin, M., Kroll, J. H., Worsnop, D. R. and Goldstein, A. H.: Improved resolution of hydrocarbon structures and constitutional isomers in complex mixtures using gas chromatography-vacuum ultraviolet-mass spectrometry, Anal. Chem., 84(5), 2335–2342, doi:10.1021/ac2030464, 2012.
30. Kwan, A. J., **Chan, A. W. H.**, Ng, N. L., Kjaergaard, H. G., Seinfeld, J. H. and Wennberg, P. O.: Peroxy radical chemistry and OH radical production during the NO 3-initiated oxidation of isoprene, Atmos. Chem. Phys., 12(16), 7499–7515, doi:10.5194/acp-12-7499-2012, 2012.
31. Yasmeen, F., Szmigielski, R., Vermeylen, R., Gõmez-González, Y., Surratt, J. D., **Chan, A. W. H.**, Seinfeld, J. H., Maenhaut, W. and Claeys, M.: Mass spectrometric characterization of isomeric terpenoic acids from the oxidation of α-pinene, β-pinene, d-limonene, and 3-carene in fine forest aerosol, J. Mass Spectrom., 46(4), 425–442, doi:10.1002/jms.1911, 2011.
32. Galloway, M. M., Huisman, A. J., Yee, L. D., **Chan, A. W. H.**, Loza, C. L., Seinfeld, J. H. and Keutsch, F. N.: Yields of oxidized volatile organic compounds during the OH radical initiated oxidation of isoprene, methyl vinyl ketone, and methacrolein under high-NOx conditions, Atmos. Chem. Phys., 11(21), 10779–10790, doi:10.5194/acp-11-10779-2011, 2011.
33. Galloway, M. M., Loza, C. L., Chhabra, P. S., **Chan, A. W. H.**, Yee, L. D., Seinfeld, J. H. and Keutsch, F. N.: Analysis of photochemical and dark glyoxal uptake: Implications for SOA formation, Geophys. Res. Lett., 38(17), doi:10.1029/2011GL048514, 2011.
34. Chan, M. N., Surratt, J. D., **Chan, A. W. H.**, Schilling, K., Offenberg, J. H., Lewandowski, M., Edney, E. O., Kleindienst, T. E., Jaoui, M., Edgerton, E. S., Tanner, R. L., Shaw, S. L., Zheng, M., Knipping, E. M. and Seinfeld, J. H.: Influence of aerosol acidity on the chemical composition of secondary organic aerosol from β-caryophyllene, Atmos. Chem. Phys., 11(4), 1735–1751, doi:10.5194/acp-11-1735-2011, 2011.
35. Pye, H. O. T., **Chan, A. W. H.**, Barkley, M. P. and Seinfeld, J. H.: Global modeling of organic aerosol: The importance of reactive nitrogen (NOx and NO3), Atmos. Chem. Phys., 10(22), 11261–11276, doi:10.5194/acp-10-11261-2010, 2010.
36. Surratt, J. D., **Chan, A. W. H.**, Eddingsaas, N. C., Chan, M., Loza, C. L., Kwan, A. J., Hersey, S. P., Flagan, R. C., Wennberg, P. O. and Seinfeld, J. H.: Reactive intermediates

revealed in secondary organic aerosol formation from isoprene, Proc. Natl. Acad. Sci. U. S. A., 107(15), 6640–6645, doi:10.1073/pnas.0911114107, 2010.
37. Kautzman, K. E., Surratt, J. D., Chan, M. N., **Chan, A. W. H.**, Hersey, S. P., Chhabra, P. S., Dalleska, N. F., Wennberg, P. O., Flagan, R. C. and Seinfeld, J. H.: Chemical composition of gas- and aerosol-phase products from the photooxidation of naphthalene, J. Phys. Chem. A, 114(2), 913–934, doi:10.1021/jp908530s, 2010.
38. Loza, C. L., **Chan, A. W. H.**, Galloway, M. M., Keutsch, F. N., Flagan, R. C. and Seinfeld, J. H.: Characterization of vapor wall loss in laboratory chambers, Environ. Sci. Technol., 44(13), 5074–5078, doi:10.1021/es100727v, 2010.
39. Claeys, M., Iinuma, Y., Szmigielski, R., Surratt, J. D., Blockhuys, F., Van Alsenoy, C., Böge, O., Sierau, B., Gómez-González, Y., Vermeylen, R., Van Der Veken, P., Shahgholi, M., **Chan, A. W. H.**, Herrmann, H., Seinfeld, J. H. and Maenhaut, W.: Terpenylic acid and related compounds from the oxidation of α-pinene: Implications for new particle formation and growth above forests, Environ. Sci. Technol., 43(18), 6976–6982, doi:10.1021/es9007596, 2009.
40. Chan, M. N., **Chan, A. W. H.**, Chhabra, P. S., Surratt, J. D. and Seinfeld, J. H.: Modeling of secondary organic aerosol yields from laboratory chamber data, Atmos. Chem. Phys., 9(15), 5669–5680, 2009.
41. Galloway, M. M., Chhabra, P. S., **Chan, A. W. H.**, Surratt, J. D., Flagan, R. C., Seinfeld, J. H. and Keutsch, F. N.: Glyoxal uptake on ammonium sulphate seed aerosol: Reaction products and reversibility of uptake under dark and irradiated conditions, Atmos. Chem. Phys., 9(10), 3331–3345, 2009.
42. **Chan, A. W. H.**, Galloway, M. M., Kwan, A. J., Chhabra, P. S., Keutsch, F. N., Wennberg, P. O., Flagan, R. C. and Seinfeld, J. H.: Photooxidation of 2-methyl-3-buten-2-ol (MBO) as a potential source of secondary organic aerosol, Environ. Sci. Technol., 43(13), 4647–4652, doi:10.1021/es802560w, 2009.
43. Ng, N. L., Kwan, A. J., Surratt, J. D., **Chan, A. W. H.**, Chhabra, P. S., Sorooshian, A., Pye, H. O. T., Crounse, J. D., Wennberg, P. O., Flagan, R. C. and Seinfeld, J. H.: Secondary organic aerosol (SOA) formation from reaction of isoprene with nitrate radicals (NO3), Atmos. Chem. Phys., 8(14), 4117–4140, 2008.
44. Surratt, J. D., Gómez-González, Y., **Chan, A. W. H.**, Vermeylen, R., Shahgholi, M., Kleindienst, T. E., Edney, E. O., Offenberg, J. H., Lewandowski, M., Jaoui, M., Maenhaut, W., Claeys, M., Flagan, R. C. and Seinfeld, J. H.: Organosulfate formation in biogenic secondary organic aerosol, J. Phys. Chem. A, 112(36), 8345–8378, doi:10.1021/jp802310p, 2008.
45. **Chan, A. W. H.**, Kroll, J. H., Ng, N. L. and Seinfeld, J. H.: Kinetic modeling of secondary organic aerosol formation: Effects of particle- and gas-phase reactions of semivolatile products, Atmos. Chem. Phys., 7(15), 4135–4147, 2007.
46. Kroll, J. H., **Chan, A. W. H.**, Ng, N. L., Flagan, R. C. and Seinfeld, J. H.: Reactions of semivolatile organics and their effects on secondary organic aerosol formation, Environ. Sci. Technol., 41(10), 3545–3550, doi:10.1021/es062059x, 2007.
47. Sorooshian, A., Ng, N. L., **Chan, A. W. H.**, Feingold, G., Flagan, R. C. and Seinfeld, J. H.: Particulate organic acids and overall water-soluble aerosol composition measurements from the 2006 Gulf of Mexico Atmospheric Composition and Climate Study (GoMACCS), J. Geophys. Res. Atmos., 112(13), doi:10.1029/2007JD008537, 2007.

48. Ng, N. L., Chhabra, P. S., **Chan, A. W. H.**, Surratt, J. D., Kroll, J. H., Kwan, A. J., McCabe, D. C., Wennberg, P. O., Sorooshian, A., Murphy, S. M., Dalleska, N. F., Flagan, R. C. and Seinfeld, J. H.: Effect of NOx level on secondary organic aerosol (SOA) formation from the photooxidation of terpenes, Atmos. Chem. Phys., 7(19), 5159–5174, 2007.
49. Ng, N. L., Kroll, J. H., **Chan, A. W. H.**, Chhabra, P. S., Flagan, R. C. and Seinfeld, J. H.: Secondary organic aerosol formation from m-xylene, toluene, and benzene, Atmos. Chem. Phys., 7(14), 3909–3922, 2007.

AWARDS AND HONORS

Tier 2 Canada Research Chair in Atmospheric Chemistry and Health, 2020-2025
Faculty of Applied Sciences and Engineering Early Career Teaching Award, 2019
Dean's Catalyst Professorship, 2018
Ontario-China Young Scientist Exchange Program, 2017
Bill Burgess Teacher of the Year Award for Large Classes (Chemical Engineering), 2017
Ontario Early Researcher Award, 2017
Connaught New Researcher Award, 2013
California Institute of Technology Graduate Dean's Award for Outstanding Leadership, 2010
National Science Foundation Graduate Research Fellowship, Honorable Mention, 2006, 2007

GRANTS

Year	Funding Source and Proposal Title	Role	Total amount	PI share
2019 – 2021	Faculty of Applied Science and Engineering, CECSeed: "Detecting Particulate Matter Exposure Using Machine Learning" (co-lead PI: Shahrokh Valaee)	Co-PI	$60,000	$30,000
2018 – 2021	Faculty of Applied Science and Engineering, Dean's Catalyst Professorship: "Air Quality in Indigenous Communities"	Sole PI	$225,000	$225,000
2018 – 2019	Health Canada First Nations Environmental Contaminants Program: "Monitoring of Heavy Metal Exposure from House Dust" (lead PI: Chung-Wai Chow)	Co-PI	$100,000	$25,000
2018 – 2019	Environment and Climate Change Canada, Grants and Contracts: "Measuring and Modeling the Volatility Distribution of Atmospheric Organics"	Sole PI	$36,000	$36,000
2017– 2018	Canadian Institute for Health Research, Project Grant: "Health Effects of Air Pollution: Assessment of Respiratory	Co-PI	$100,000	$25,000

	Health in Northern Alberta (AReNA)" (lead PI: Chung-Wai Chow)			
2017 – 2018	Natural Sciences and Engineering Research Council, Engage Grant: "Identification of malodorous compounds in automotive coverstocks"	Sole PI	$25,000	$25,000
2017 – 2022	Ontario Ministry of Research and Innovation and Science, Early Researcher Award: "Role of particulate matter in inducing airway hypersensitivity"	Sole PI	$150,000	$150,000
2017 – 2019	Ontario Ministry of Environment and Climate Change, Best in Science Grant: "Effect of Fuel Composition on Black Carbon Emissions from Emerging Vehicle Technologies"	Lead PI (+ 2 co-PI)	$100,000	$50,000
2016 – 2018	Faculty of Applied Science and Engineering, Dean's Strategic Fund: "PHDI: Public Health Diagnostics Initiative" (lead PI: Amy Bilton)	Co-PI	$554,000	$56,000
2016 – 2018	Canadian Institute for Health Research, Operating Grant: Health Impacts of Alberta Wildfires: "Fire Ash Characterization and Evaluation of Toxicity (FACET): Long-Term Pulmonary Effects of Ash Exposure"	Lead PI (+ 5 co-PI)	$500,000	$282,000
2016 – 2018	Environment and Climate Change Canada, Grants and Contracts: "Measuring and Modeling the Volatility Distribution of Atmospheric Organics"	Sole PI	$72,000	$72,000
2016 – 2018	Faculty of Applied Science and Engineering, University of Toronto, EMHSeed Fund: "An Atmospheric Simulation Platform for Multi-pollutant Exposures *in vivo*" (co-lead-PI with Chung-Wai Chow)	Co-PI	$120,000	$60,000
2013 – 2018	Natural Sciences and Engineering Research Council, Discovery Grant: "Detailed Chemical Characterization of Atmospheric Organics by Gas Chromatography with Soft Ionization Mass Spectrometry"	Sole PI	$160,000	160,000
2013 – 2018	Canada Foundation for Innovation, John Evans Leaders Fund: "Laboratory for Atmospheric Organics"	Sole PI	$398,000 + $48,000 operating	$446,000
2014 – 2016	Environment and Climate Change Canada, Grants and Contracts: "Chemical	Sole PI	$66,000	$66,000

	Characterization of Organic Aerosol Emissions for Modelling Regional Air Quality"			
2013 – 2015	University of Toronto, Connaught New Research Award	Sole PI	$10,000	$10,000

INVITED SEMINARS AND CONFERENCE PRESENTATIONS

1. **Arthur Chan**, "Understanding semivolatile organic compounds in remote and urban atmospheres", University of Toronto Scarborough Environmental Chemistry Seminar, Toronto, ON, October 10, 2013
2. **Arthur Chan**, "Understanding semivolatile organic compounds in remote and urban atmospheres", York University Centre for Atmospheric Chemistry Seminar, Toronto, ON, October 24, 2013
3. **Arthur Chan**, "Understanding Organic Aerosols Through Chemical Characterization", University of Toronto School of Environment Seminar, Toronto, ON, October 1, 2014
4. **Arthur Chan**, "Sources, Processes and Properties of Secondary Organic Aerosol", Dalhousie University Atmospheric Sciences Seminar, Halifax, NS, December 3, 2015
5. Jianhuai Ye, Sepehr Salehi, Michelle North, Anjelica Portelli, Chung-Wai Chow, **Arthur Chan**, "Airway Hypersensitivity Induced by Exposure to Organic Aerosol", University of British Columbia Atmospheric Aerosols Seminar, Vancouver, BC, March 8, 2016
6. Jianhuai Ye, Sepehr Salehi, Michelle North, Legeng (Robin) Ye, Lauren Vysohlid, Anjelica Portelli, Chung-Wai Chow, **Arthur Chan**, "Relationship between organic aerosol composition, in vitro oxidative potential and in vivo airway hypersensitivity", Canadian Chemistry Conference, Halifax, NS, June 6, 2016
7. **Arthur Chan**, Kevin Goodman-Rendall, Shunyao Wang, Jianhuai Ye, Greg Evans, Mi Tian, Aviv Amirav, "Characterizing airborne particulate matter using ion-mobility mass spectrometry and GC with soft ionization mass spectrometry", University of Alberta Analytical Chemistry Seminar, Edmonton, AB, February 21, 2017
8. **Arthur Chan**, "FACET: Understanding ash exposure in post-fire Fort McMurray and associated health effects", Alberta Environment and Parks Seminar, Edmonton, AB, July 26, 2017
9. Shunyao Wang, Xiaomin Wang, Jianhuai Ye, Chung-Wai Chow, **Arthur Chan**, "Chemical Composition, Oxidative Potential and ROS from Particulate Matter", CIGIT Seminar, Chongqing, China, August 22, 2017
10. Jianhuai Ye, Shunyao Wang, Jonathan Abbatt, **Arthur Chan**, "Effects of SO2 on Secondary Organic Aerosol Formation: Reactive Intermediates in Monoterpene Ozonolysis", Guangzhou Institute of Geochemistry Seminar, Guangzhou, China, August 28, 2017
11. Jianhuai Ye, Shunyao Wang, Jonathan Abbatt, **Arthur Chan**, "Effects of SO2 on Secondary Organic Aerosol Formation: Reactive Intermediates in Monoterpene Ozonolysis", Peking University Seminar, Beijing, China, September 5, 2017
12. Jianhuai Ye, Shunyao Wang, Jonathan Abbatt, **Arthur Chan**, "Effects of SO2 on Secondary Organic Aerosol Formation: Reactive Intermediates in Monoterpene Ozonolysis", Chinese Meteorological Agency Seminar, Beijing, China, September 7, 2017

13. Jianhuai Ye, Shunyao Wang, Paul Van Rooy, David Cocker, Jonathan Abbatt and **Arthur Chan**, "Chemical Interactions between Organic and Inorganic Components in Atmospheric Aerosols", McGill University Department of Atmospheric and Ocean Sciences Seminar, Montreal, QC, February 12, 2018
14. Jianhuai Ye, Shunyao Wang, Paul Van Rooy, David C. Cocker, Jonathan Abbatt and **Arthur Chan**, "Chemical Interactions between Organic and Inorganic Components in Atmospheric Aerosols", Georgia Tech Department of Chemical Engineering Seminar, Atlanta, GA, USA, March 7, 2018
15. Lukas Kohl, Meng Meng, Xin Jing, Anthony Tuccitto, Alicia Hill-Turner, **Arthur Chan**, "Indoor concentrations of pollutants after 2016 Fort McMurray Wildfires", University of Calgary Department of Chemistry Seminar, Calgary, AB, July 19, 2018
16. Lukas Kohl, Sunya Wang, Meng Meng, Xin Jing, Anthony Tuccitto, Alicia Hill-Turner, Xiaoming Wang, Lindsay Woo, Joyce Wu, Emily DeHaas, Kelsey Yang, Chung-Wai Chow, Jeffrey Brook, Greg Wentworth, Colin Cooke, Xi Zhang, Hin Chu, **Arthur Chan**, "Respiratory Health Effects of Residual Wildfire Contaminants and Secondary Organic Aerosol", Telluride Science Research Center Workshop, Telluride, CO, USA, July 27, 2018
17. Shunyao Wang, Jianhuai Ye, Shouming Zhou, William Tsui, V. Faye MacNeill, Jonathan Abbatt and **Arthur Chan**, "Heterogeneous Chemistry of Sulfur Dioxide in the Atmosphere", Chinese University of Hong Kong Earth System Science Seminar, Hong Kong, July 31, 2018
18. Manpreet Takhar, Shao-Meng Li, **Arthur Chan**, "Physical and Chemical Properties of Cooking Oil Particles", City University of Hong Kong School of Environment Seminar, Hong Kong, August 1, 2018
19. Shunyao Wang, Jianhuai Ye, Shouming Zhou, Jonathan Abbatt, William Tsui, Faye MacNeill, and **Arthur Chan**, "Formation Mechanisms of Particulate Inorganic and Organic Sulfate", University of North Carolina, Chapel Hill, NC, USA, February 11, 2019
20. Lukas Kohl, Meng Meng, Joan de Vera, Bridget Berquist, Colin A. Cooke, Sarah Hustins, Brian Jackson, **Arthur Chan**, "Concentrations of heavy metals and polycyclic aromatic hydrocarbons in indoor house dust after 2016 Fort McMurray wildfires", United States Environmental Protection Agency, USA, February 13, 2019
21. Manpreet Takhar, Craig Stroud, **Arthur Chan**, "Gas-particle partitioning of cooking oil particles and evolution upon oxidation", Canadian Chemistry Conference & Exhibition, Quebec City, Quebec, June 7, 2019
22. Justin Dingle, Lukas Kohl, Yue Shi, Meng (Carol) Meng, Chung-Wai Chow, **Arthur Chan** "Indoor house dust: Sources, composition and potential health impacts", Society of Environmental Toxicology and Chemistry, Toronto, Ontario, November 6, 2019
23. Manpreet Takhar, Craig Stroud, **Arthur Chan**, "Laboratory investigation of food cooking organic aerosol", Environment and Climate Change Canada Air Quality Research Division Seminar, Toronto, Ontario, February 13, 2020
24. Shunyao Wang, Jianhuai Ye, Jiajun Han, Hui Peng, Wang Guo, Xiaomin Wang, Chung-Wai Chow, **Arthur Chan**, "Understanding the Chemistry of Particulate Matter Toxicity", York University Department of Chemistry Seminar, February 27, 2020

SUPERVISORY ACTIVITIES

Name	Degree / position	Years in group	Current position
Lukas Kohl	Postdoc	2017 – 2018 (1.5 yr)	Postdoctoral Scholar, University of Helsinki
Justin Dingle	Postdoc	2018 – present	
Mi Tian	Visiting Postdoc	2016	Assistant Professor, Chongqing Institute of Green and Intelligent Technologies, Chinese Academy of Sciences
Yunchun Li	Visiting Scholar	2019 – present	
Jianhuai Ye	PhD	2013 – 2017 (4 yrs)	Postdoctoral Scholar at Harvard University (Supervised by Scot Martin)
Manpreet Takhar	PhD	2015 – present	
Shunyao Wang	PhD	2016 – present	
Amirashkan Askari	PhD	2019 – present	
Kevin Goodman-Rendall	MASc	2014 – 2016 (2 yrs)	Mass spectrometry specialist, Bruker
Mohammad Asif Iqbal	MASc	2014 – 2015 (withdrawn)	PhD Student, University of Technology Sydney
Meng Meng	MASc	2016 – 2018 (2 yrs)	
Gang Chen	MASc	2016 – 2018 (2 yrs)	PhD student, ETH Zurich and Paul Scherrer Institute (Supervised by Andre Prevot)
Rui Zeng	MASc	2017 – 2019 (2 yrs)	Junior Consultant, Trinity
Farhana Islam	MASc	2017 – 2019 (2 yrs)	Research Assistant, NRC
Yuelun Shi	MASc	2018 – present	
Marcia Pedroza	MASc	2019 – present	
Jia Han	MSc	2019 – present	
Lauren Vysohlid	MEng	2016 – 2017 (1 yr)	Graduate Student, University of Toronto, Mississauga
Guangyu Song	MEng	2016 – 2017 (1 yr)	Teacher, Maple Leaf Education System
Kirsten Hoedlmoser	MEng	2017 – 2018 (1 yr)	Environmental Consultant, Intertek
Qimei Huang	MEng	2017 – 2018 (1 yr)	MEng Student, University of Toronto
Brittany Green	MEng	2018 – 2019 (1 yr)	
Farhana Hoque	Summer Undergrad	2013 (4 months)	
Yang Zhuang	Summer Undergrad	2014 (4 months)	
Madhushan Perera	Summer Undergrad	2014 (4 months)	Masters student, Cambridge University
Cullen Adam	Summer Undergrad	2014 (4 months)	Engineer in Training, Ontario Power Generation
Catherine Gordon	Summer Undergrad	2015 (4 months)	Process Engineer, NORAM Engineering
Jamie Mark	Summer Undergrad	2015 (4 months)	Engineering & Design Manager, Exactus Energy
Anjelica Portelli	Summer Undergrad	2015 (4 months)	Supply Chain & Manufacturing Group Consultant, Deloitte
Delin Mu	Summer Undergrad	2015 (4 months)	Engineer in Training, WSP
Legeng Yu	Summer Undergrad	2016 (4 months)	PhD Student, U of T
Ali Emam	Summer Undergrad	2016 (4 months)	
Mengxuan Cai	Summer Undergrad	2017 (4 months)	
Xin Jing	Summer Undergrad	2017 (4 months)	
Morgan Cooze	Summer Undergrad	2017 (4 months)	
Anthony Tuccitto	Summer Undergrad	2018 (4 months)	
Alicia Hill-Turner	Summer Undergrad	2018 (4 months)	Undergraduate student, U of T
Jinmyung Jang	Summer Undergrad	2019 (4 months)	Undergraduate student, U of T
Loay Nasser Salim Al Rashdi	Summer Undergrad	2019 (4 months)	Undergraduate student, U of T
Yinrui Xu	Summer Undergrad	2019 (4 months)	Undergraduate student, U of T

STUDENT SCHOLARSHIPS AND AWARDS

Graduate Scholarships

Scholarship	Student	Amount	Years
Colin Hahnemann Bayley Fellowship	Kevin Goodman-Rendall	$30,000	2014 – 2016
Ontario Trillium Scholarship	Jianhuai Ye	$40,000	2013 – 2017
Centre for Global Change Studies Summer Graduate Student Research Award	Jianhuai Ye	$5,000	2016
Centre for Global Change Studies Summer Graduate Student Research Award	Shunyao Wang	$5,000	2018

Undergraduate scholarships

Scholarship	Student	Amount	Year
NSERC Undergraduate Summer Research Award	Madhushan Perera	$4,500	2014
NSERC Undergraduate Summer Research Award	Anjelica Portelli	$4,500	2015
NSERC Undergraduate Summer Research Award	Ali Emam	$4,500	2016
NSERC Undergraduate Summer Research Award	Morgan Cooze	$4,500	2017
NSERC Undergraduate Summer Research Award	Xin Jing	$4,500	2017
NSERC Undergraduate Summer Research Award	Alicia Hill-Turner	$4,500	2018
NSERC Undergraduate Summer Research Award	Anthony Tuccitto	$4,500	2018
William J. Dowkes Scholarship	Farhana Hoque	$4,285	2013
Centre for Global Change Studies Summer Undergraduate Scholarship	Cullen Adam	$6,000	2014
Centre for Global Change Studies Summer Undergraduate Scholarship	Delin Mu	$6,000	2015
Centre for Global Change Studies Summer Undergraduate Scholarship	Catherine Gordon	$6,000	2015
Centre for Global Change Studies Summer Undergraduate Scholarship	Legeng Yu	$6,000	2016
Centre for Global Change Studies Summer Undergraduate Scholarship	Mengxuan Cai	$6,000	2017
Centre for Global Change Studies Summer Undergraduate Scholarship	Jinmyung Jang	$6,000	2019
Centre for Global Change Studies Summer Undergraduate Scholarship	Yinrui Xu	$6,000	2019

Awards

Oral presentation award at Canadian Chemistry Conference 2016: Jianhuai (Jackie) Ye
Poster presentation award at Canadian Chemistry Conference 2016: Manpreet Takhar
Poster presentation award at International Aerosol Conference 2018: Manpreet Takhar, Shunyao Wang
Poster presentation award at American Association for Aerosol Research Conference 2019: Manpreet Takhar
Best overall presentation at UNdergraduate Engineering Research Day 2015: Catherine Gordon
Poster presentation award at UNERD 2018: Alicia Hill-Turner
Oral presentation award at UNERD 2017: Morgan Cooze
Oral presentation award at UNERD 2015: Anjelica Portelli
Poster presentation award at UNERD 2014: Cullen Adam
Oral presentation award at UNERD 2014: Madhushan Perera

UNIVERSITY TEACHING ACTIVITIES

University of Toronto, Department of Chemical Engineering Applied Chemistry

- Instructor for *CHE 249 Engineering Economic Analysis* (2013, 2014, 2015, 2016, 2017, 2019)
- Instructor for *CHE 230 Environmental Chemistry* (2016)
- Instructor for *CHE 460/JNC2503 Environmental Impacts and Pathways* (2017, 2018, 2019)
- Design project supervisor for *APS 490 Multidisciplinary Capstone Design* (2015-2016, 2018-2019)
- Engineering manager for *CHE 430 Capstone Design* (2019)
- Instructor for *CHE 1435 Fundamentals of Aerosol Physics and Chemistry* (2015, 2016, 2017, 2018)

University of California, Berkeley, Department of Environmental Science, Policy and Management

- Guest Lecturer for *Air Pollution* (Fall 2011, 2012)

California Institute of Technology, Department of Chemical Engineering

- Recitation leader & Grader for *Atmospheric Chemistry I* (Spring 2007)
- Recitation leader & Grader for *Principles of Chemical Engineering* (Fall 2007 & Fall 2008)

University of Pennsylvania, Department of Chemical and Biomolecular Engineering

- Recitation leader & Grader for *Chemical Process Control* (Spring 2005)

PROFESSIONAL ACTIVITIES

Member of Canadian Society for Chemistry (CSC), Canadian Society of Chemical Engineers (CSChE), Association of Environmental Engineering and Science Professors (AEESP), American Association for Aerosol Research (AAAR), American Geophysical Union (AGU)

Session chair at AAAR Annual Conference 2010, 2012-2019; Atmospheric Aerosol working group vice chair at AAAR Annual Conference 2017; Education Committee, 2017-2020; Atmospheric Aerosol working group chair at International Aerosol Conference 2018; Special symposium organizer of "From Aerosol Dosimetry and Toxicology to Health" at AAAR Annual Conference 2019

Symposium organizer of "Atmospheric Chemistry in a Changing Climate" at Canadian Chemistry Conference, May 2017

Symposium organizer of "Environmental Engineering" at Canadian Society of Chemical Engineers Conference, October 2018

Session organizer of "Airborne Particulate Matter: Linking Sources and Composition to Specific Health Effects" at American Geophysical Union Fall Meeting, December 2018

Journal reviewer for *Environmental Science and Technology*, *Atmospheric Environment*, *Atmospheric Chemistry and Physics*, *Journal of Geophysical Research*, *Journal of Air and Waste Management*, *Aerosol Science and Technology*, *Atmospheric Measurement Techniques*, *Analytical Chemistry, Journal of Aerosol Science, Environmental Pollution, Nature Communications, Communications Chemistry, Proceedings of National Academy of Science*

Grant proposal reviewer for US National Science Foundation, National Oceanic and Atmospheric Administration, Natural Science and Engineering Research Council of Canada, Canadian Centre for Clean Coal/Carbon and Mineral Processing Technologies, Mitacs, Clarkson University

Grant panel member for Australia National Health and Medical Research Council

DEPARTMENT AND UNIVERSITY SERVICE

Department Retreat Committee, 2014 – 2015
Progress Through The Ranks Committee, 2014
Industry Outreach Committee, 2015
Centre for Global Change Studies, Summer Internship Coordinator, 2015 – 2017
Advisory Committee for Chair Reappointment, 2016
Faculty Search Committee, 2016
Graduate Studies Committee, 2017 – present
Faculty Admissions Committee, 2018 – present
Faculty Advisor for University of Toronto Engineering Research Conference, 2020