

### Naruki Hiranuma (a.k.a., Seonggi Moon)

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#### a. Professional Preparation

West Texas A&M University	Environmental Science	M.S.	2005
Texas A&M University	Atmospheric Science	Ph.D.	2010
Pacific Northwest National Lab	Atmospheric Science	Postdoc	2012

#### b. Appointments

2021 –	Associate Professor, West Texas A&M Univ., Dept. of Life, Earth and Environmental Sciences, Canyon, TX
2019 – 2022	Adjunct Professor, Texas Tech Univ., Dept. of Environmental Toxicology, Lubbock, TX
2016 – 2021	Assistant Professor, West Texas A&M Univ., Dept. of Life, Earth and Environmental Sciences, Canyon, TX
2012 – 2016	Research Scientist (TV-L 13), Karlsruhe Institute of Technology, Institute for Meteorology and Climate Research – Atmospheric Aerosol Research, Karlsruhe, Germany

#### c. External Grants (last five years)

2022 –	<i>Characterization and application of a high-resolution microfluidic device in atmospheric ice nucleation research and integrated science teaching (PI)</i> . Grant specification - U.S. DOE Atmospheric System Research program; Amount: <b>\$150,000</b> ; Source - U.S. DOE; Funding ID: RDPP (DE-SC0023066); Award Period Covered: 08/01/2022 - 2/29/2024
2021 –	<i>Chemical Imaging of Particles from TRACER field study (Co-I)</i> . Grant specification - EMSL user grant; Source - U.S. DOE, Funding ID: 51867; Award Period Covered: 10/1/2021 - 9/30/2022
2021 –	<i>Investigation of the Aerosol Impact on the Surface-Atmosphere Interactions (Co-I)</i> . Grant specification - EMSL user grant; Source - U.S. DOE, Funding ID: 51866; Award Period Covered: 10/1/2021 - 9/30/2022
2020 –	<i>MRI: Acquisition of a surface &amp; sorption characterization instrument to enable multi-disciplinary research at a rural West Texas HSI (Co-PI)</i> . Grant specification – NSF MRI; Amount <b>\$257,361</b> ; Source - NSF, Funding ID: 2018383; Award Period Covered: 08/25/2020 - 08/24/2022
2020 –	<i>CAREER: The Role of Ice-Nucleating Particles and Their Feedback on Clouds in Warming Arctic Climate (PI)</i> . Grant specification – NSF CAREER; Amount <b>\$500,000</b> ; Source - NSF, Funding ID: 1941317; Award Period Covered: 07/01/2020 -06/30/2025
2018 –	<i>Implications of Aerosol Physicochemical Properties Including Ice Nucleation at ARM Mega Sites for Improved Understanding of Microphysical Atmospheric Cloud Processes (PI)</i> . Grant specification – DOE Early Career Research Program (ECRP) Award; Amount <b>\$750,000</b> ; Source - U.S. DOE, Office of Science; Funding ID: DE-SC0018979; Award Period Covered: 09/01/2018 - 08/31/2023
2019 – 2020	<i>Small Field Campaign: Aerosol-Ice Formation Closure Pilot Study (Co-PI)</i> . Grant specification - U.S. DOE Atmospheric System Research program; Amount: <b>\$357,055</b> ; Source - U.S. DOE; Funding ID: FAP (DE-SC0020006); Award Period Covered: 05/01/2019 - 10/31/2020
2018 – 2019	<i>Investigation of Morphological and Mixing State Properties of Aerosol and Ice Crystal Residual Particles from the Atlantic Sector of the Arctic (PI)</i> . Grant specification -

- Environmental Molecular Sciences Laboratory (EMSL) General Cycle grant; Source - U.S. DOE, Funding ID: 50504; Award Period Covered: 10/01/2018 - 09/30/2019
- 2018 – 2020 *Fate & Transport of Antimicrobial-Resistant Bacteria in Feedyard Dust: filling the gaps (Collaborator)*. Grant specification - Texas A&M AgriLife Research Air Quality Research Seed Grant Program; Amount **\$247,735**; Source - Texas A&M AgriLife Research, Funding ID: N/A; Award Period Covered: 09/01/2018 - 08/31/2020
- 2018 *AIDA (Aerosol Interaction and Dynamics in the Atmosphere) Investigation on Ice Nucleation Activity of Dust Particles Emitted from Cattle Feeding Operations in Texas Panhandle (PI)*. Grant specification - Transnational Access under EUROCHAMP-2020; Amount **\$13,405**; Source - EUROCHAMP-2020, Funding ID: 730997; Award Period Covered: 10/01/2018 - 11/30/2018
- 2018 *Ice Nucleating Particles in the Arctic Region (Collaborator)*. Grant specification – CNR grant; Amount **\$8,000**; Source - National Research Council - Institute of atmospheric sciences and climate, Funding ID: INPAR; Award Period Covered: 04/15/2018 - 09/30/2018

#### d. Memberships

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- 2012 – Member, Conference Network: European Geosciences Union (EGU)
- 2007 – Member, Conference Network: American Geophysical Union (AGU)
- 2007 – Member, Conference Network: American Meteorological Society (AMS)

#### e. Awards and Scholarships/Fellowships

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- 2023 University Distinction in Sponsored Research Award, West Texas A&M University
- 2023 PCANS College Intellectual Contributions Award, West Texas A&M University
- 2020 University Intellectual Contributions Award, West Texas A&M University
- 2020 PCANS College Intellectual Contributions Award, West Texas A&M University
- 2020 NSF CAREER Award, National Science Foundation
- 2019 PCANS College Intellectual Contributions Award, West Texas A&M University
- 2018 Early Career Research Program Award, U.S. DOE, Office of Science
- 2017 Ny-Ålesund Atmosphere Flagship Program Travel Award, Norwegian Polar Institute
- 2009 PNNL Summer Research Institute Fellowship, Battelle / Pacific Northwest National Lab
- 2008 National Atmospheric Deposition Program (NADP) Travel Award, NADP
- 2007 AMS Student Presentation Award, AMS
- 2006 NASA Tropospheric Chemistry Program Travel Scholarship, AMS
- 2005 Pathways to the Doctorate Fellowship, Texas A&M University System
- 2004 Student Endowment Scholarship, West Texas A&M University

#### f. Synergistic & Leadership Activities

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- 2022 – Environmental Molecular Sciences Laboratory User Executive Committee member
- 2019 – Topical advisory panel and guest editor of the *Atmosphere* from Multidisciplinary Digital Publishing Institute
- 2016 – Academic mentor for 2 postdocs and 16 students at WTAMU
- 2014 – Workshop co-organizer and transnational user of the AIDA chamber
- 2013 – Symposium organizer, session chair, and co-chair at conferences of the American Meteorological Society and American Geophysical Union
- 2009 – Reviewer of > 50 renowned peer-reviewed journals and grant applications for the National Science Foundation, the U.S. Department of Energy, and international agencies from the U.K. and Italy

#### g. Peer-reviewed Publications (\*WTAMU student)

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1. Li, G., \*Wilbourn, E. K., Cheng, Z., Wieder, J., Fagerson, A., Pasquier, J. T., Henneberger, J., Motos, G., Traversi, R., Brooks, S. D., Mazzola, M., China, S., Nenes, A., Lohman, U., \*Hiranuma, N., and Kanji, Z. A.: Physicochemical characterization and source apportionment of Arctic ice nucleating particles observed in Ny-Ålesund in Autumn 2019, *Atmos. Chem. Phys.*, under review.

2. **\*Wilbourn, E. K., \*Alrimaly, S., \*Williams, H., \*Hurst, J.,** McGovern, G. P., Anderson, T. A., and **Hiranuma, N.:** Integrated science teaching in atmospheric ice nucleation research: immersion freezing experiments, *J. Chem. Educ.*, 100, 1511-1522, 2023.
3. Knopf, D. A., Barry, K. R., Brubaker, T. A., Jahl, L. G., Jankowski, K. A. L., Li, J., Lu, Y., Monroe, L. W., Moore, K. A., Rivera-Adorno, F. A., **\*Sauceda, K. A.,** Shi, Y., Tomlin, J. M., **\*Vepuri, H. S. K.,** Wang, P., Lata, N. N., Levin, E. J. T., Creamean, J. M., Hill, T. C. J., China, S., Alpert, P. A., Moffet, R. C., **Hiranuma, N.,** Sullivan, R. C., Fridlind, A. M., West, M., Riemer, N., Laskin, A., DeMott, P. J., and Liu, X.: Aerosol–ice formation closure: a Southern Great Plains field campaign, *Bull. Am. Meteorol. Soc.*, E1952–E1971, <https://doi.org/10.1175/BAMS-D-20-0151.1>, 2021.
4. Rinaldi, M., **Hiranuma, N.,** Santachiara, G., Mazzola, M., Mansour, K., Paglione, M., **\*Rodriguez, C. A.,** Traversi, R., Becagli, S., Cappelletti, D. M., and Belosi, F.: Ice-nucleating particle concentration measurements from Ny-Ålesund during the Arctic Spring-Summer in 2018, *Atmos. Chem. Phys.*, 21, 14725-14748, 2021.
5. **Hiranuma, N.,** Auvermann, B. W., Belosi, F., Bush, J., **\*Cory, K. M.,** Georgakopoulos, D., Höhler, K., **\*Hou, Y.,** Saathoff, H., Santachiara, G., Shen, X., Steinke, I., Ullrich, R., Umo, N., **\*Vepuri, H. S. K.,** Vogel, F., and Möhler, O.: Laboratory and field studies of ice-nucleating particles from open-lot livestock facilities in Texas, *Atmos. Chem. Phys.*, 21, 14215-14234, 2021.
6. **\*Vepuri, H. S. K., \*Rodriguez, C. A.,** Georgakopoulos, D. G., Hume, D., Webb, J., Mayer, G. D., and **Hiranuma, N.:** Ice-nucleating particles in precipitation samples from the Texas Panhandle, *Atmos. Chem. Phys.*, 21, 4503-4520, 2021.
7. Möhler, O., Adams, M., Lacher, L., Vogel, F., Nadolny, J., Ullrich, R., Boffo, C., Pfeuffer, T., Hobl, A., Weiß, M., **\*Vepuri, H. S. V., Hiranuma, N.,** and Murray, B. J.: The Portable Ice Nucleation Experiment (PINE): a new online instrument for laboratory studies and automated long-term field observations of ice-nucleating particles, *Atmos. Meas. Tech.*, 14, 1143-1166, 2021.
8. Steinke, I., **Hiranuma, N.,** Funk, R., Höhler, K., Tüllmann, N., Umo, N. S., Weidler, P. G., Möhler, O., and Leisner, T.: Complex plant-derived organic aerosol as ice-nucleating particles – more than a sum of their parts?, *Atmos. Chem. Phys.*, 20, 11387-11397, 2020.
9. Kulkarni, G., **Hiranuma, N.,** Möhler, O., Höhler, K., China, S., Cziczo, D. J., and DeMott, P. J.: A new method for operating a continuous flow diffusion chamber to investigate immersion freezing: assessment and performance study, *Atmos. Meas. Tech.*, 13, 6631-6643, 2020.
10. **Hiranuma, N.,** Adachi, K., Bell, D. M., Belosi, F., Beydoun, H., Bhaduri, B., Bingemer, H., Budke, C., Clemen, H.-C., Conen, F., **\*Cory, K. M.,** Curtius, J., DeMott, P. J., Eppers, O., Grawe, S., Hartmann, S., Hoffmann, N., Höhler, K., Jantsch, E., Kiselev, A., Koop, T., Kulkarni, G., Mayer, A., Murakami, M., Murray, B. J., Nicosia, A., Petters, M. D., Piazza, M., Polen, M., Reicher, N., Rudich, Y., Saito, A., Santachiara, G., Schiebel, T., Schill, G. P., Schneider, J., Segev, L., Stopelli, E., Sullivan, R. C., Suski, K., Szakáll, M., Tajiri, T., Taylor, H., Tobo, Y., Ullrich, R., Weber, D., Wex, H., Whale, T. F., **\*Whiteside, C. L.,** Yamashita, K., Zelenyuk, A., and Möhler, O.: A comprehensive characterization of ice nucleation by three different types of cellulose particles immersed in water, *Atmos. Chem. Phys.*, 19, 4823-4849, 2019.
11. DeMott, P. J., Möhler, O., Cziczo, D. J., **Hiranuma, N.,** Petters, M. D., Petters, S. S., Belosi, F., Bingemer, H. G., Brooks, S. D., Budke, C., Burkert-Kohn, M., Collier, K. N., Danielczok, A., Eppers, O., Felgitsch, L., Garimella, S., Grothe, H., Herenz, P., Hill, T. C. J., Höhler, K., Kanji, Z. A., Kiselev, A., Koop, T., Kristensen, T. B., Krüger, K., Kulkarni, G., Levin, E. J. T., Murray, B. J., Nicosia, A., O'Sullivan, D., Peckhaus, A., Polen, M. J., Price, H. C., Reicher, N., Rothenberg, D. A., Rudich, Y., Santachiara, G., Schiebel, T., Schrod, J., Seifried, T. M., Stratmann, F., Sullivan, R. C., Suski, K. J., Szakáll, M., Taylor, H. P., Ullrich, R., Vergara-Temprado, J., Wagner, R., Whale, T. F., Weber, D., Welti, A., Wilson, T. W., Wolf, M. J., and Zenker, J.: The Fifth International Workshop on Ice Nucleation phase 2 (FIN-02): laboratory intercomparison of ice nucleation measurements, *Atmos. Meas. Tech.*, 11, 6231-6257, 2018.
12. Suski, K. J., Bell, D. M., **Hiranuma, N.,** Möhler, O., Imre, D., and Zelenyuk, A.: Activation of intact bacteria and bacterial fragments mixed with agar as cloud droplets and ice crystals in cloud chamber experiments, *Atmos. Chem. Phys.*, 18, 17497-17513, 2018.
13. Ghosh, N., Sherali, N., **Hiranuma, N.,** Banerjee, P., Sherali, S., Romero, R., Rogers, J., Bennert, J., Vitale, J., Saadeh, C., Revanna, C.: Air pollution with 2.5 micron particulate matters and testing the decay of the aerosol concentration as a function of time to compare the efficiency of AHPCO®

- and Bi-Polar units in reducing the indoor particle counts, *European Scientific Journal*, 14, 26-40, 2018.
14. Ullrich, R., Hoose, C., Möhler, O., Niemand, M., Wagner, R., Höhler, K., **Hiranuma, N.**, Saathoff, H., and Leisner, T.: A new ice nucleation active site parameterization for desert dust and soot, *J. Atmos. Sci.*, 74, 699-717, 2017.
  15. **Hiranuma, N.**, Möhler, O., Kulkarni, G., Schnaiter, M., Vogt, S., Vochezer, P., Järvinen, E., Wagner, R., Bell, D. M., Wilson, J., Zelenyuk, A., and Cziczo, D. J.: Development and characterization of an ice-selecting pumped counterflow virtual impactor (IS-PCVI) to study ice crystal residuals, *Atmos. Meas. Tech.*, 9, 3817-3836, 2016.
  16. **Hiranuma, N.**, Möhler, O., Yamashita, K., Tajiri, T., Saito, A., Hoffmann, N., Hoose, C., Jantsch, E., Koop, T., and Murakami, M.: Ice nucleation by cellulose and its potential contribution to ice formation in clouds, *Nat. Geosci.*, 8, 273-277, 2015.
  17. **Hiranuma, N.**, Augustin-Bauditz, S., Bingemer, H., Budke, C., Curtius, J., Danielczok, A., Diehl, K., Dreischmeier, K., Ebert, M., Frank, F., Hoffmann, N., Kandler, K., Kiselev, A., Koop, T., Leisner, T., Möhler, O., Nillius, B., Peckhaus, A., Rose, D., Weinbruch, S., Wex, H., Boose, Y., DeMott, P. J., Hader, J. D., Hill, T. C. J., Kanji, Z. A., Kulkarni, G., Levin, E. J. T., McCluskey, C. S., Murakami, M., Murray, B. J., Niedermeier, D., Petters, M. D., O'Sullivan, D., Saito, A., Schill, G. P., Tajiri, T., Tolbert, M. A., Welti, A., Whale, T. F., Wright, T. P., and Yamashita, K.: A comprehensive laboratory study on the immersion freezing behavior of illite NX particles: a comparison of seventeen ice nucleation measurement techniques, *Atmos. Chem. Phys.*, 15, 2489-2518, 2015.
  18. Wex, H., Augustin-Bauditz, S., Boose, Y., Budke, C., Curtius, J., Diehl, K., Dreyer, A., Frank, F., Hartmann, S., **Hiranuma, N.**, Jantsch, E., Kanji, Z. A., Kiselev, A., Koop, T., Möhler, O., Niedermeier, D., Nillius, B., Rösch, M., Rose, D., Schmidt, C., Steinke, I., and Stratmann, F.: Intercomparing different devices for the investigation of ice nucleating particles using Snomax® as test substance, *Atmos. Chem. Phys.*, 15, 1463-1485, 2015.
  19. **Hiranuma, N.**, Paukert, M., Steinke, I., Zhang, K., Kulkarni, G., Hoose, C., Schnaiter, M., Saathoff, H., and Möhler, O.: A comprehensive parameterization of heterogeneous ice nucleation of dust surrogate: laboratory study with hematite particles and its application to atmospheric models, *Atmos. Chem. Phys.*, 14, 13145-13158, 2014.
  20. **Hiranuma, N.**, Hoffmann, N., Kiselev, A., Dreyer, A., Zhang, K., Kulkarni, G., Koop, T., and Möhler, O.: Influence of surface morphology on the immersion mode ice nucleation efficiency of hematite particles, *Atmos. Chem. Phys.*, 14, 2315-2324, 2014.
  21. **Hiranuma, N.**, Brooks, S. D., Moffet, R. C., Glen, A., Laskin, A., Gilles, M. K., Liu, P., MacDonald, A. M., Strapp, J. W., and McFarquhar, G. M.: Chemical characterization of individual particles and residuals of cloud droplets and ice crystals collected on board research aircraft in the ISDAC 2008 study, *J. Geophys. Res. Atmos.*, 118, 6564-6579, 2013.
  22. Shakya, K. M., Liu, S., Takahama, S., Russell, L. M., Keutsch, F. N., Galloway, M. M., Shilling, J. E., **Hiranuma, N.**, Song, C., Kim, H., Paulson, S.E., Pfaffenberger, L., Barmet, P., Slowik, J., Prevot, A. S. H., Dommen, J., and Baltensperger, U.: Similarities in STXM-NEXAFS spectra of atmospheric particles and secondary organic aerosol generated from glyoxal,  $\alpha$ -pinene, isoprene, 1,2,4-trimethyl benzene, and d-limonene, *Aerosol Sci. Technol.*, 47, 543-555, 2013.
  23. You, Y., Renbaum-Wolff, L., Carreras-Sospedra, M., Hanna, S. J., **Hiranuma, N.**, Kamal, S., Smith, M. L., Zhang, X., Weber, R. J., Shilling, J. E., Dabdub, D., Martin, S. T., and Bertram, A. K.: Images reveal that atmospheric particles can undergo liquid-liquid phase separations, *P. Natl. Acad. Sci. USA*, 109, 13188-13193, 2013.
  24. Zaveri, R. A., Shaw, W. J., Cziczo, D. J., Schmid, B., Ferrare, R. A., Alexander, M. L., Alexandrov, M., Alvarez, R. J., Arnott, W. P., Atkinson, D. B., Baidar, S., Banta, R. M., Barnard, J. C., Beranek, J., Berg, L. K., Brechtel, F., Brewer, W. A., Cahill, J. F., Cairns, B., Cappa, C. D., Chand, D., China, S., Comstock, J. M., Dubey, M. K., Easter, R. C., Erickson, M. H., Fast, J. D., Floerchinger, C., Flowers, B. A., Fortner, E., Gaffney, J. S., Gilles, M. K., Gorkowski, K., Gustafson, W. I., Gyawali, M., Hair, J., Hardesty, R. M., Harworth, J. W., Herndon, S., **Hiranuma, N.**, Hostetler, C., Hubbe, J. M., Jayne, J. T., Jeong, H., Jobson, B. T., Kassianov, E. I., Kleinman, L. I., Kluzek, C., Knighton, B., Kolesar, K. R., Kuang, C., Kubátová, A., Langford, A. O., Laskin, A., Laulainen, N., Marchbanks, R. D., Mazzoleni, C., Mei, F., Moffet, R. C., Nelson, D., Obland, M. D., Oetjen, H., Onasch, T. B., Ortega, I., Ottaviani, M., Pekour, M., Prather, K. A., Radney, J. G., Rogers, R. R., Sandberg, S. P., Sedlacek, A., Senff, C. J., Senum, G., Setyan, A.,

- Shilling, J. E., Shrivastava, M., Song, C., Springston, S. R., Subramanian, R., Suski, K., Tomlinson, J., Volkamer, R., Wallace, H. W., Wang, J., Weickmann, A. M., Worsnop, D. R., Yu, X.-Y., Zelenyuk, A., and Zhang, Q.: Overview of the 2010 Carbonaceous Aerosols and Radiative Effects Study (CARES), *Atmos. Chem. Phys.*, 12, 7647-7687, 2012.
25. Liu, S., Shilling, J. E., Song, C., **Hiranuma, N.**, Zaveri, R. A., and Russell, L. M. Hydrolysis of organonitrate functional groups in aerosol particles, *Aerosol Sci. Technol.*, 46, 1359-1369, 2012.
  26. **Hiranuma, N.**, Kohn, M., Pekour, M. S., Nelson, D. A., Shilling, J. E., and Cziczo, D. J.: Droplet activation, separation, and compositional analysis: laboratory studies and atmospheric measurements, *Atmos. Meas. Tech.*, 4, 2333-2343, 2011.
  27. **Hiranuma, N.**, Brooks, S. D., Gramann, J., and Auvermann, B. W.: High concentrations of coarse particles emitted from a cattle feeding operation, *Atmos. Chem. Phys.*, 11, 8809-8823, 2011.
  28. Wright, M. E., Atkinson, D. B., Ziemba, L., Griffin, R., **Hiranuma, N.**, Brooks, S. D., Lefer, B., Perna, R., Rappenglück, B., and Luke, W. Extensive aerosol optical properties and aerosol mass related measurements during TRAMP/TexAQS 2006 – implications for PM compliance and planning, *Atmos. Environ.*, 44, 4035-4044, 2010.
  29. **Hiranuma, N.**, Brooks, S. D., Thornton, D. C. O., and Auvermann, B. W.: Atmospheric ammonia mixing ratios at an open-air cattle feeding facility, *J. Air Waste Manage. As.*, 60, 210-218, 2010.
  30. Upadhyay, J., Auvermann, B. W., Paila, A.N., and **Hiranuma, N.**: Open-path transmissometry to determine the atmospheric extinction efficiency of feedyard dust, *Transactions of the ASABE*, 51, 1433-1441, 2008.
  31. **Hiranuma, N.**, Brooks, S. D., Auvermann, B. W., and Littleton, R.: Using environmental scanning electron microscopy to determine the hygroscopic properties of agricultural aerosols, *Atmos. Environ.*, 42, 1983-1994, 2008.

#### **h. Unrefereed Publications (\*WTAMU student)**

1. **Hiranuma, N.**, **\*Wilbourn, E. K.**, and Howell, N.: Characterization of Water Sorption by Mineral Dust and Nonproteinaceous Biological Particles at Subzero Temperatures. *Authorea*. January 25, <https://doi.org/10.1002/essoar.10510277.1>, 2022.
2. **Hiranuma, N.**, and **\*Wilbourn, E. K.**: Integrated science teaching in atmospheric ice nucleation research: immersion freezing experiments. *PANGAEA*, <https://doi.org/10.1594/PANGAEA.952536>, 2022.
3. **Hiranuma, N.**, **\*Wilbourn, E. K.**, and Lacher, L.: Examining the Ice-Nucleating Particles from the Eastern North Atlantic (ExINP-ENA) Field Campaign Report, United States, DOE: <https://doi.org/10.5439/1845014>, 2021.
4. **Hiranuma, N.**, Knopf, D. A.: Examining the Ice-Nucleating Particles from SGP Part II (ExINP-SGP II) Final Campaign Report, United States, DOE: <https://doi.org/10.2172/1834632>, 2021.
5. Knopf, D. A., Riemer, N., China, S., DeMott, P. J., Fridlind, A., **Hiranuma, N.**, Kulkarni, G., Laskin, A., Levin, E., Liu, X., and Perkins, R.: Aerosol-Ice Formation Closure Laboratory Study (AEROICELAB)., For EUROCHAMP-TNA Program, AIDA-010-2021 ([www.eurochamp.org/tna-documents](http://www.eurochamp.org/tna-documents)), 2021.
6. **\*Hou, Y.**, **\*Hee, P.**, Umo, N.S., Möhler, O., and **Hiranuma, N.**: Characterization of Physicochemical Properties of Feedlot Dust Ice Crystal Residuals (ICRs). *Environ. Sci. Proc.*, 4, 23. DOI: <https://doi.org/10.3390/ecas2020-08438>, 2021.
7. **\*Vepuri, H.S.K.**, Lacher, L., Nadolny, J., Möhler, O., and **Hiranuma, N.**: Online Ice-Nucleating Particle Measurements in the Southern Great Plains (SGP) Using the Portable Ice Nucleation Experiment (PINE) Chamber. *Environ. Sci. Proc.*, 4, 25. DOI: <https://doi.org/10.3390/ecas2020-08469>, 2021.
8. Knopf, D. A., DeMott, P. J., Creamean, J., Hill, T., Riemer, N., **Hiranuma, N.**, Laskin, A., Sullivan, R., Fridlind, A., Liu, X., and West, M.: Aerosol-Ice Formation Closure Pilot Study (AEROICSTUDY) Field Campaign Report, United States, DOE: <https://doi.org/10.2172/1691464>, 2020.
9. **Hiranuma, N.**, **\*Vepuri, H. S. K.**: Examining the Ice-Nucleating Particles from the Southern Great Plains Field Campaign Report, United States, DOI: <https://doi.org/10.2172/1721707>, 2020.
10. **Hiranuma, N.**, **\*Vepuri, H. S. K.**, Lacher, L., Nadolny, J., and Möhler, O.: Characterization of a new Portable Ice Nucleation Experiment chamber (PINE) and first field deployment in the Southern Great Plains, *Earth and Space Science Open Archive*, DOI: <https://doi.org/10.1002/essoar.10502526.1>, 2020.

11. **\*Rodriguez, C. A., \*Vepuri, H. S. K., and Hiranuma, N.:** Implications of precipitation particle properties for improved understanding of ice-nucleating particles in West Texas, Earth and Space Science Open Archive, DOI: <https://www.essoar.org/doi/abs/10.1002/essoar.10502568.1>, 2020.
12. **\*Kimberly Cory, \*Joshua Mills, Yutaka Tobo, Kotaro Murata, Kumiko Goto-Azuma, \*Craig Whiteside, \*Bobby McCauley, \*Carolyn Bouma, and Naruki Hiranuma:** Laboratory measurements of immersion freezing abilities of non-proteinaceous and proteinaceous biological particulate proxies, Earth and Space Science Open Archive, DOI: <https://doi.org/10.1002/essoar.10500739.1>, 2019.
13. **\*Craig Whiteside, Yutaka Tobo, Sarah Brooks, Oliver Mulamba, Jessica Mirrielees, and Naruki Hiranuma:** Immersion freezing of coal combustion ash particles from the Texas Panhandle, Earth and Space Science Open Archive, DOI: <https://doi.org/10.1002/essoar.10500578.1>, 2019.
14. Adams, M., Barr, S., **Hiranuma, N.**, Rinaldi, M., Brunner, C., Freney, E., Bros, Y.: An inter-comparison of new ice-nucleating particle counters, For EUROCHAMP-TNA Program, AcCloud-001-2019 ([www.eurochamp.org/tna-documents](http://www.eurochamp.org/tna-documents)), 2019.
15. **Hiranuma, N.**, Auvermann, B. W., **\*Cory, K. M.**, Georgakopoulos, D., and Belosi, F.: AIDA (Aerosol Interaction and Dynamics in the Atmosphere) investigation on the ice nucleation activity of dust particles emitted from cattle feeding operations in the Texas Panhandle., For EUROCHAMP-TNA Program, AIDA-005-2018 ([www.eurochamp.org/tna-documents](http://www.eurochamp.org/tna-documents)), 2019.
16. **Hiranuma, N.**, Möhler, O., Wex, H., Kulkarni, G., Boose, Y., Bundke, U., Cziczko, D. J., Danielczok, A., Ebert, M., Garimella, S., Hoffmann, N., Höhler, K., Kanji, Z. A., Kiselev, A., Raddatz, M., and Stetzer, O.: Immersion freezing of clay minerals and bacterial ice nuclei, in: Nucleation and Atmospheric Aerosols, 19th International Conference, edited by: DeMott, P. J., and O'Dowd, C. D., AIP Publishing, Melville, New York, 914-917, 2013.
17. Möhler, O., **Hiranuma, N.**, Höhler, K., Hoose, C., Hummel, M., Niemand, M., Oehm, C., Schmitt, T., Steinke, I., and Wagner, R.: Parameterizations of ice formation derived from AIDA cloud simulation experiments, in: Nucleation and Atmospheric Aerosols, 19th International Conference, edited by: DeMott, P. J. and O'Dowd, C. D., AIP Publishing, Melville, New York, 851-858, 2013.
18. **Hiranuma, N.** and Brooks, S. D.: Technical report: The loss rate of Perma Pure PD-Series Dryer for low air flow applications. For Perma Pure LLC, 2007.
19. Auvermann, B. W., **Hiranuma, N.**, Heflin, K., and Marek, G.: Open-path transmissometry for measurement of visibility impairment by fugitive emissions from livestock facilities, American Society of Agricultural Engineers, 044010, DOI: <https://doi.org/10.13031/2013.17090>, 2004.

#### **i. Oral Presentations and Lectures (†invited; \*WTAMU postdoc/student)**

1. †**Hiranuma, N., \*Wilbourn, E. K.**, Martin, C., ... Möhler, O. et al.: Towards the development of a baseline in ground-based ice-nucleating particle properties across the world, AGU Fall Meeting, Chicago, IL, USA, Dec., 2022.
2. †**Hiranuma, N., \*Wilbourn, E. K., \*Vepuri, H. S. K., and \*Waza, A. A.:** Towards the development of a baseline in ground-based ice-nucleating particle (INP) properties at three fixed ARM sites, 2022 ARM/ASR PI Meeting, Rockville, MD, Oct., 2022.
3. **\*Wilbourn, E. K.**, Lacher, L., Mazzola, M., Möhler, O., and **Hiranuma, N.:** A global comparison of aerosol properties, including ice-nucleating particles, measured during autumn field campaigns with online and offline techniques, EGU22-10216, European Geosciences Union General Assembly, Vienna, Austria, May, 2022.
4. Knopf, D. A., Barry, K. R., Brubaker, T. A., Jahl, L. G., Jankowski, K. A., Li, J., Lu, Y., Monroe, L. W., Moore, K. A., Rivera-Adorno, F. A., **\*Sauceda, K. A.**, Shi, Y., Tomlin, J. M., **\*Vepuri, H. S. K.**, Wang, P., Lata, N. N., Levin, E. J. T., Creamean, J. M., Hill, T. C. J., China, S., Alpert, P. A., Moffet, R. C., **Hiranuma, N.**, Sullivan, R. C., Fridlind, A. M., West, M., Riemer, N., Laskin, A., DeMott, P. J., and Liu, X.: A Southern Great Plains pilot field campaign to evaluate a field-observational approach to aerosol-ice formation closure, 102<sup>th</sup> American Meteorological Society Annual Meeting, 14<sup>th</sup> Symposium on Aerosol–Cloud–Climate Interactions, Online, Jan., 2022.
5. Shi, Y., Liu, X., **\*Hou, Y., \*Alrimaly, S. S., \*Wilbourn, E. K.**, Mazzola, M., Traversi, R., and **Hiranuma, N.:** Interannual and interseasonal variabilities and sources of ice-nucleating particles in the Arctic: Insights from model simulations and long-term measurements from Ny-Ålesund, 102<sup>th</sup> American Meteorological Society Annual Meeting, 14<sup>th</sup> Symposium on Aerosol–Cloud–Climate Interactions, Online, Jan., 2022.

6. Knopf, D. A., Barry, K. R., Brubaker, T. A., Jahl, L. G., Jankowski, K. A., Li, J., Lu, Y., Monroe, L. W., Moore, K. A., Rivera-Adorno, F. A., **\*Sauceda, K. A.**, Shi, Y., Tomlin, J. M., **\*Vepuri, H. S. K.**, Wang, P., Lata, N. N., Levin, E. J. T., Creamean, J. M., Hill, T. C. J., China, S., Alpert, P. A., Moffet, R. C., **Hiranuma, N.**, Sullivan, R. C., Fridlind, A. M., West, M., Riemer, N., Laskin, A., DeMott, P. J., and Liu, X.: A field-observational approach to conduct an aerosol-ice formation closure study using physicochemical particle characteristics, Pacificchem 2021, Honolulu, HI, USA, Dec., 2021.
7. Shi, Y., Liu, X., **\*Hou, Y.**, **\*Alrimaly, S. S.**, **\*Wilbourn, E. K.**, Mazzola, M., Traversi, R., and **Hiranuma, N.**: Interannual and interseasonal variabilities and sources of ice-nucleating particles in the Arctic: Insights from model simulations and long-term measurements from Ny-Ålesund, AGU Fall Meeting, New Orleans, LA, USA, Dec., 2021.
8. Raman, A., **\*Wilbourn, E. K.**, Hill, T. C. J., Singh, B., Zhang, K., Ma, P. L. DeMott, P. J., **Hiranuma, N.**, and Burrows, S. M.: Evaluating ice nucleating particles from E3SM model in the Southern Ocean and Eastern North Atlantic ocean, AGU Fall Meeting, New Orleans, LA, USA, Dec., 2021.
9. **\*Wilbourn, E. K.**, **Hiranuma, N.**, **\*Vepuri, H. S. K.**, Lacher, L., Nadolny, J., and Möhler, O.: Comparing online and offline measurements of ice nucleating particles from two autumn field campaigns, American Association of Aerosol Research (AAAR) Annual Conference, Online, Oct., 2021.
10. **†Hiranuma, N.**: Examining ice-nucleating particle (INP) from NOAA BRW GML (ExINP), Interagency Arctic Research Policy Committee (IARPC) Atmosphere Collaboration Team and Arctic Observing Systems Sub-Team joint meeting focused on observing technologies deployed in support of Arctic atmospheric science, Online, Oct., 2021.
11. **†Hiranuma, N.**, **\*Vepuri, H. S. K.**, and **\*Wilbourn, E. K.**: An abundance of ice-nucleating particles in the Atlantic sector of the Arctic and the mid-latitude sites, TAMU-ATMO seminar, College Station, TX, USA, Sept., 2021.
12. **\*Wilbourn, E. K.**, **Hiranuma, N.**, **\*Vepuri, H. S. K.**, Lacher, L., Nadolny, J., and Möhler, O.: A comparison of aerosol particle sources and ice-nucleating particle properties from the Eastern North Atlantic and U.S. Southern Great Plains, European Aerosol Conference 2021, Online, Aug., 2021.
13. Möhler, O., Bertozzi, B., Bogert, P., **Hiranuma, N.**, Höhler, K., Hoose, C., Lacher, L., Schiebel, T., Schneider, J., Schorr, T., Steinke, I., Ullrich, R., Umo, N., Vogel, F., and Wagner, R.: A comprehensive set of parameterizations for primary ice formation in clouds as derived from AIDA cloud simulation experiments, International Conference on Clouds and Precipitation 2021, Online, Aug., 2021.
14. **Hiranuma, N.**, **\*Vepuri, H. S.K.**, and **\*Wilbourn, E. K.**: Implications of aerosol physicochemical properties including ice nucleation at ARM mega sites for improved understanding of microphysical atmospheric cloud processes, DOE EESSD Early Career Presentation, Online, Feb., 2021.
15. Lacher, L., Vogel, F., Nadolny, J., Ullrich, R., Büttner, N., Adams, M., Boffo, C., Pfeuffer, T., Hobl, A., Weiß, M., **\*Vepuri, H. S. K.**, **\*Wilbourn, E. K.**, **Hiranuma, N.**, Murray, B. J., and Möhler, O.: Characterization and first applications of the Portable Ice Nucleation Experiment (PINE), 10<sup>th</sup> virtual INP Colloquium, Online, Jan., 2021.
16. Knopf, D., Barry, K., Brubaker, T., Jahl, L., Li, J., Lu, Y., Monroe, L., Moore, K., Rivera-Adorno, F., **\*Sauceda, K.**, Shi, Y., Tomlin, J., **\*Vepuri, H. S. K.**, Wang, P., Levin, E., Creamean, J., Hill, T., China, S., Moffet, R., **Hiranuma, N.**, Sullivan, R., Fridlind, A., West, M., Riemer, N., Laskin, A., DeMott, P., and Liu, X.: A field-observational approach to aerosol-ice formation closure, 101<sup>th</sup> American Meteorological Society Annual Meeting, 13<sup>th</sup> Symposium on Aerosol–Cloud–Climate Interactions, Online, Jan., 2021.
17. **†Hiranuma, N.** and PINE-c Team: Portable Ice Nucleation Experiment (PINE) chamber: remote measurements of ice-nucleating particles (INPs) at multiple atmospheric observatories, TAMU-ATMO webinar, College Station, TX, USA, Nov., 2020.
18. **†Hiranuma, N.**, **\*Vepuri, H. S. K.**, Lacher, L., Nadolny, J., and Möhler, O: The Portable Ice Nucleation Experiment chamber (PINE): laboratory characterization and field test for its semi-automated ice-nucleating particle measurements in the Southern Great Plains, EGU2020-12385, DOI: <https://doi.org/10.5194/egusphere-egu2020-12385>, EGU Sharing Geoscience Online, May, 2020.

19. Abdelmonem, A., Lützenkirchen, J., Ratnayake, S., and **Hiranuma, N.**: A spectroscopic view of mineral aerosol surface aging under atmospheric conditions, EGU2020-8279, DOI: <https://doi.org/10.5194/egusphere-egu2020-8279>, EGU Sharing Geoscience Online, May, 2020.
20. †**Hiranuma, N.** and \***Vepuri, H. S. K.**: Atmospheric ice-nucleating particles (INPs), American Chemical Society – WTAMU Chapter Seminar, Canyon, TX, Mar., 2020.
21. Steinke, I., **Hiranuma, N.**, Möhler, O., Burrows, S.: Complex organic particles from terrestrial sources as ice nucleators – more than a sum of their parts? American Association of Aerosol Research (AAAR) Annual Conference, Portland, OR, USA, Oct., 2019.
22. Möhler, O., and **Hiranuma, N.**: A comprehensive characterization of ice nucleation by three different types of cellulose particles, 12th International Conference on Carbonaceous Particles in the Atmosphere (ICCPA), Vienna, Austria, Apr., 2019.
23. †**Hiranuma, N.**: Measurements of immersion freezing efficiency of non-proteinaceous and proteinaceous biological aerosols, Lubbock, TX, USA, Nov., 2018.
24. †**Hiranuma, N.**, and 55 co-authors: A comprehensive laboratory study on the immersion freezing behavior of INUIT calibrants: lessons learned and future research directions, INUIT Final Conference and 2<sup>nd</sup> Atmospheric Ice Nucleation Conference, Grasellenbach, Germany, Feb.-Mar., 2018.
25. **Hiranuma, N.**, and 55 co-authors: A comprehensive dataset on the immersion freezing behaviour of cellulose particles, 98<sup>th</sup> American Meteorological Society Annual Meeting, 10<sup>th</sup> Symposium on Aerosol–Cloud–Climate Interactions, Austin, TX, USA, Jan., 2018.
26. Curtius, J., ... **Hiranuma, N.**, et al.: Heterogeneous Ice Nucleation of Dusts: Overview of Results from the INUIT Project, 98<sup>th</sup> American Meteorological Society Annual Meeting, 10<sup>th</sup> Symposium on Aerosol–Cloud–Climate Interactions, Austin, TX, USA, Jan., 2018.
27. DeMott, P. J., Möhler, O., Cziczo, D. J., **Hiranuma, N.**, Brooks, S. D., Petters, M. D., and FIN participant teams: Insights regarding ice nucleating particle measurement capabilities from laboratory and field measurements during the Fifth International Ice Nucleation Workshop, American Geophysical Union Fall Meeting, New Orleans, LA, USA, Dec., 2017.
28. †**Hiranuma, N.**, Möhler, O., Bell, D., El Khoury, P., Kovarik, L., Kulkarni, G., Laskin, A., Mahrt, F., Schiebel, T., Suski, K., Zelenyuk, A., INUIT/FIN-1/ISDAC Team: Chemical and physical characterization of atmospheric ice residuals, CNR-ISAC, Invited Seminar, Bologna, Italy, Oct., 2017.
29. Möhler, O., **Hiranuma, N.**, Cziczo, D. J., DeMott, P. J., Petters, M. D., and FIN participant teams: A Summary of Results from the Fifth International Ice Nucleation (FIN) Workshop Series, ICNAA, Helsinki, Finland, Jun., 2017.
30. †**Hiranuma, N.**, Möhler, O., Kulkarni, G., Laskin, A., Zelenyuk, A., and INUIT/FIN-1 Team: Chemical and physical characterization of fertile soil-derived ice residuals from the Fifth International Ice Nucleation workshop in November 2014 (FIN-1), EGU Annual Meeting, Vienna, Austria, Apr., 2017.
31. Steinke, I., Funk, R., **Hiranuma, N.**, Möhler, O., Zhang, K.: Immersion freezing properties of complex biological aerosols derived from plants, 5th Workshop - Microphysics of Ice Clouds - Vienna, Austria, Apr., 2017.
32. Schiebel, T., ... **Hiranuma, N.**, et al.: Contribution of Soil Organic Matter to the Ice Nucleation Activity of Arable Soil Dust Aerosol Particles, 97<sup>th</sup> American Meteorological Society Annual Meeting, 9<sup>th</sup> Symposium on Aerosol–Cloud–Climate Interactions, Seattle, WA, USA, Jan., 2017.
33. Möhler, O., ... **Hiranuma, N.**, and the INUIT and FIN participant teams: Coordinated laboratory and field research on the sources, distribution, and prediction of atmospheric ice-nucleating particles, 97<sup>th</sup> American Meteorological Society Annual Meeting, Seattle, 9<sup>th</sup> Symposium on Aerosol–Cloud–Climate Interactions, WA, USA, Jan., 2017.
34. †**Hiranuma, N.**: Chemical and physical characterization of ice residuals from the North Slope of Alaska during ISDAC2008 – Challenges in ArcticCARE-2017, Polar Meteorology and Glaciology Colloquium, NIPR, Tachikawa, Japan, Dec., 2016.
35. †**Hiranuma, N.**: The importance of bioaerosol-cloud interactions in climate studies - Physico-chemical and ice-nucleating properties of cellulose & its potential contribution to ice formation in clouds, Invited Seminar, Leipzig, Germany, Aug., 2016.



36. Möhler, O., **Hiranuma, N.**, et al.: Suppression of the feldspar ice nucleation activity by thin coating layers of secondary organics and sulphuric acid, 17th International Conference on Clouds & Precipitation, Manchester, UK, Jul., 2016.
37. DeMott, P. J. ... **Hiranuma, N.**, et al.: Intercomparison of ice nucleation measurement methods: the Fifth International Ice Nucleation Workshop and ambient aerosol sampling, 17th International Conference on Clouds & Precipitation, Manchester, UK, Jul., 2016.
38. †**Hiranuma, N.**: Technical seminar on atmospheric bioaerosol, Invited Lecture, Weizmann Institute of Science, Rehovot, Israel, Jun., 2016.
39. †**Hiranuma, N.**: Technical seminar on spectrophotometry and aerosol-cloud interactions, Invited Lecture, University of Alaska – Fairbanks, AK, USA, Apr., 2016.
40. Schiebel, T., Höhler, K., Funk, R., Hill, T.C.J., **Hiranuma, N.**, Levin, E.J.T., Nadolny, J., Steinke, I., Suski, K.J., Ullrich, R., Wagner, R., Weber, I., DeMott, P.J., and Möhler, O.: Ice Nucleation Activity of Agricultural Soil Dust Aerosol, EGU Annual Meeting, Vienna, Austria, Apr., 2016.
41. †**Hiranuma, N.**: Technical seminar on atmospheric ice nucleation, Invited Lecture, PSI, Switzerland, Mar., 2016.
42. DeMott, P. J., Suski, K. J., Hill, T. C. J., Levin, E. J. T., McCluskey, C. S., Möhler, O., **Hiranuma, N.**, Schiebel, T., Hoehler, K., Petters, M. D., Bertram, A., Mason, R., Chou, C., and FIN Team: Assessing the varied sources of ice-nucleating particles from soils and their atmospheric abundances, AMS Conference, New Orleans, LA, USA, Jan., 2016.
43. Cziczo, D. J., DeMott, P. J., **Hiranuma, N.**, Möhler, O and FIN Team: Advances in understanding the role of aerosols in cirrus formation from the Fifth International Ice Nucleation (FIN) workshop (invited presentation), AMS Conference, New Orleans, LA, USA, Jan., 2016.
44. **Hiranuma, N.**, Hoose, C., Järvinen, E., Kiselev, A., Möhler, O., Schnaiter, M., Ulrich, R., Cziczo, D.J., Zawadowicz, M., Felgitsch, L., Grothe, H., Kulkarni, G., Reicher, N., Rudich, Y., and Tobo, Y: Ice nucleation by plant structural materials and its potential contribution to glaciation in clouds, AGU Fall Meeting, San Francisco, CA, USA, Dec., 2015.
45. Möhler, O., **Hiranuma, N.**, Cziczo, D., DeMott, P., Petters, M., and FIN teams: The fifth international ice nucleation workshop activities: overview and selected results, AGU Fall Meeting, San Francisco, CA, USA, Dec., 2015.
46. **Hiranuma, N.**: Getting ahead in making a cloud, DFG-JSPS Workshop on Aerosols, Max Planck Institute for Chemistry, Mainz, Germany, Nov., 2015.
47. †**Hiranuma, N.**: Technical seminar on a PCVI & cloud chamber, Invited Lecture, PSI, Switzerland, Jul., 2015.
48. Möhler, O., Hiranuma, N., Yamashita, K., Tajiri, T., Saito, A., Kiselev, A., Hoffmann, N., Hoose, C., Jantsch, E., Koop, T., and Murakami, M.: Ice nucleation by cellulose and its potential contribution to ice formation in clouds, IUGG General Assembly, Prague, Jun., 2015.
49. †**Hiranuma, N.**: Technical seminar on a cloud simulation chamber, Invited Lecture, KAUST, Saudi Arabia, May, 2015.
50. **Hiranuma, N.**, Möhler, O., Kiselev, A., Saathoff, H., Weidler, P., Shutthanandan, S., Kulkarni, G., Jantsch, E., and Koop, T.: Surface structure, crystallographic and ice-nucleating properties of cellulose, EGU Annual Meeting, Vienna, Austria, Apr., 2015.
51. Ullrich, R., **Hiranuma, N.**, Hoose, C., Möhler, O., Niemand, M., Steinke, I., Wagner, R.: Dust in AIDA cloud chamber immersion freezing experiments, AMS Annual Meeting, Phoenix, AZ, USA, Jan., 2015.
52. Ullrich, R., **Hiranuma, N.**, Hoose, C., Möhler, O., Niemand, M., Steinke, I., Wagner, R., Cziczo, D., Walter, C., Rieger, and D., Deetz, K.: Quantifying the contribution of soot and dust to ice formation in cirrus clouds – a model study using a new parameterization framework, AMS Annual Meeting, Phoenix, AZ, USA, Jan., 2015.
53. Möhler, O., **Hiranuma, N.**, Wex, H., Augustin, S., Curtius, J., Bingemer, H., Diehl, K., Mitra, S., Ebert, M., Kandler, K., Budke, C., and Koop, T.: A comprehensive laboratory study on the immersion freezing behavior of atmospherically relevant aerosols, International Aerosol Conference, Busan, Korea, Aug.-Sep., 2014.
54. **Hiranuma, N.**: Finding ice nucleating particles, 2<sup>nd</sup> Cross-disciplinary Meeting of Japanese Young Scientists in Europe, Rüdesheim am Rhein, Germany, Jul., 2014.

55. Möhler, O., **Hiranuma, N.**, Hoffmann, N., Kiselev, A., Leisner, T., Wex, H., Augustin, S., Curtius, J., Danielczok, A., Diehl, K., Ebert, M., Kandler, K., Budke, C., Koop, T., Schill, G. P., Murakami, M., Kulkarni, G., Murray, B. J., Kanji, Z., Cziczo, D. J., Petters, M., and DeMott, P. J.: A summary of immersion freezing results from the ice nucleation research unit INUIT, AMS, Boston, MA, USA, Jul., 2014.
56. Lamb, K. D., Clouser, B., Sarkozy, L., Stutz, E., Kühnreich, B., Landsberg, J., Habig, J., **Hiranuma, N.**, Wagner, R., Ebert, V., Kerstel, E., Saathoff, H., Möhler, O., and Moyer, E. J.: Implications of the ISOCLOUD campaigns at the AIDA cloud chamber for ice growth in cold cirrus, AMS, Boston, MA, USA, Jul., 2014.
57. **Hiranuma, N.**, Möhler, O., Yamashita, K., Tajiri, T., Saito, A., Kiselev, A., Hoose, C., and Murakami, M.: Ice nucleation by cellulose and its potential impact on clouds and climate, EGU Annual Meeting, Vienna, Austria, Apr., 2014.
58. Ullrich, R., **Hiranuma, N.**, Hoose, C., Möhler, O., Niemand, M., Steinke, I., and Wagner, R.: Developing a new parameterization framework for the heterogeneous ice nucleation of atmospheric aerosol particles, EGU Annual Meeting, Vienna, Austria, Apr., 2014.
59. Möhler, O., **Hiranuma, N.**, Höhler, K., Hoose, C., Niemand, M., Schmitt, T., Steinke, I., Ullrich, R., and Wagner, R.: Laboratory cloud simulation experiments on ice nucleation processes, Centre Européen de Calcul Atomique et Moléculaire Workshop, Zurich, Switzerland, Apr., 2014.
60. **Hiranuma, N.**, Hoffmann, N., Paukert, M., Steinke, I., Hummel, M., Kiselev, A., Dreyer, A., Zhang, K., Kulkarni, G., Koop, T., Hoose, C., and Möhler, O.: Influence of surface morphology on the heterogeneous ice nucleation efficiency of hematite particles, AGU Fall Meeting, San Francisco, CA, USA, Dec., 2013.
61. Möhler, O., **Hiranuma, N.**, Höhler, K., Hoose, C., Hummel, M., Niemand, M., Oehm, C., Schmitt, T., Steinke, I., and Wagner, R.: Parameterizations of ice formation derived from AIDA cloud simulation experiments, Plenary talk, International Conference on Nucleation and Atmospheric Aerosols (ICNAA) 2013, Fort Collins, CO, USA, Jun., 2013.
62. **Hiranuma, N.**, Möhler, O., Wex, H., Kulkarni, G., Boose, Y., Bundke, U., Cziczo, D. J., Danielczok, A., Ebert, M., Garimella, S., Hoffmann, N., Höhler, K., Kanji, Z.A., Kiselev, A., Raddatz, M., and Stetzer, O.: Immersion freezing of clay minerals and bacterial ice nuclei, European Science Foundation Atmospheric Ice Nucleation Workshop, Vienna, Austria, Apr., 2013.
63. †**Hiranuma, N.** and Möhler, O.: Immersion freezing of clay minerals and its temperature dependence, Invited Lecture, MRI, Tsukuba, Japan, Jan., 2013.
64. **Hiranuma, N.**: Technique for separation of droplets from the interstitial components, 2012 DMT User Group Meeting, Boulder, CO, USA, Nov., 2012.
65. †**Hiranuma, N.**, Kohn, M., Pekour, M. S., Nelson, D. A., Shilling, J. E., and Cziczo, D. J.: Cloud droplets, ready for prime time, Invited Lecture, Karlsruhe Institute of Technology, Germany, Feb., 2012.
66. **Hiranuma, N.**, Brooks, S. D., Thornton, D. C. O., Auvermann, B. W., and Fitz, D. R.: Concentration, size distributions, and transport of agricultural aerosols, NADP Conference, Madison, WI, USA, Oct., 2008.
67. **Hiranuma, N.**, Brooks, S. D., Cheek, L., Thornton, D. C. O., Auvermann, B. W., and Littleton, R.: Optical, morphological, hygroscopic, and chemical properties of agricultural aerosols, International Symposium on Advanced Environmental Monitoring, Honolulu, HI, USA, Feb., 2008.
68. **Hiranuma, N.**, Brooks, S. D., Auvermann, B. W., and Littleton, R.: Size distribution and hygroscopic properties of agricultural aerosols, AMS Conference, San Antonio, TX, USA, Jan., 2007.

#### **j. Poster Presentations (\*WTAMU faculty/postdoc/student)**

1. **Hiranuma, N.**, \***Wilbourn, E. K.**, \***Williams, H.**, \***Alrimaly, S.**, \***Hurst, J.**, \***McGovern, G. P.**, and Anderson, T. A.: Integrated Science Teaching in Atmospheric Ice Nucleation Research: Immersion Freezing Experiments, 18<sup>th</sup> Faculty Research Poster Session, West Texas A&M Unive., Canyon, TX, Mar., 2023.
2. \***Diep, T.**, Lata, N. N., Cheng, Z., Mazzola, M., Gilardoni, S., \***Wilbourn, E. K.**, \***Hurst, J.**, \***Ogle, H.**, **Hiranuma, N.**, and China, S.: Chemical properties and ice nucleation activities of aerosol particles collected from the Atlantic sector of the Arctic, 18<sup>th</sup> Faculty Research Poster Session, West Texas A&M Unive., Canyon, TX, Mar., 2023.

3. **Oko, E., Pittino, F., Moroni, B., Nawrot, A., Shi, Y., Liu, X., Gandolfi, I., Cappelletti, D., and Hiranuma, N.:** Potential impact of the Arctic glacier recession on our climate, 18<sup>th</sup> Faculty Research Poster Session, West Texas A&M Unive., Canyon, TX, Mar., 2023.
4. **\*Hurst, J., \*Wilbourn, E. K.,** McCubbin, I. B., Bailey, A., Koolik, L., Roesch, M., de Espana, C. D., Brooks, S. D., Cziczo, D. J., Hallar, A. G., and **Hiranuma, N.:** Using a pumped counterflow virtual impactor at a high-elevation observatory to analyze the physicochemical properties of cloud residuals and aerosol particles, 18<sup>th</sup> Faculty Research Poster Session, West Texas A&M Unive., Canyon, TX, Mar., 2023.
5. **Hiranuma, N., Wilbourn, E. K., Williams, H., Alrimaly, S., Hurst, J., McGovern, G. P.,** and Anderson, T. A.: Integrated Science Teaching in Experimental Atmospheric Ice Nucleation Research, 103<sup>th</sup> American Meteorological Society Annual Meeting, 15<sup>th</sup> Symposium on Aerosol–Cloud–Climate Interactions, Denver, Jan., 2023.
6. **\*Diep, T., Lata, N. N., Cheng, Z., Mazzola, M., Gilardoni, S., \*Wilbourn, E. K., \*Hurst, J., \*Ogle, H., Hiranuma, N.,** and China, S.: Chemical composition and immersion freezing activities of aerosol particles in the European Arctic, AGU Fall Meeting, Chicago, IL, USA, Dec., 2022.
7. Raman, A., **\*Wilbourn, E. K.,** Mikhail, P., **Hiranuma, N.,** and Burrows, S. M.: Towards understanding the causes of prediction errors in atmospheric INP concentrations, AGU Fall Meeting, Chicago, IL, USA, Dec., 2022.
8. **Hiranuma, N., \*Wilbourn, E. K., \*Waza, A. A., ... Möhler, O. et al.:** Ice-nucleating particle (INP) monitoring at the Alaskan Arctic site, 2022 ARM/ASR PI Meeting, Rockville, MD, Oct., 2022.
9. Li, G., **\*Wilbourn, E. K.,** Cheng, Z., Wieder, J., Fagerson, A., Pasquier, J. T., Henneberger, J., Brooks, S. D., Mazzola, M., China, S., **\*Hiranuma, N.,** and Kanji, Z. A.: Physicochemical Characterization and Source Apportionment of Arctic Ice Nucleating Particles Measured in Ny-Ålesund in Autumn 2019, 11<sup>th</sup> IAC, Athens, Greece, Sept., 2022.
10. **\*Hurst, J., \*Wilbourn, E. K.,** McCubbin, I. B., Bailey, A., Koolik, L., Roesch, M., de Espana, C. D., Brooks, S. D., Cziczo, D. J., Haller, G. A., and **Hiranuma, N.:** Application of a field-deployed pumped counterflow virtual impactor to characterize the composition of aerosol particles and cloud residuals from a high-elevation site, AMS Collective Madison Meeting, Madison, WI, USA, Aug., 2022.
11. **\*Hiranuma, N., \*Wilbourn, E. K., \*Vepuri, H. S. K., ... Möhler, O. et al.:** Abundance of ice-nucleating particles in the mid-latitude continental, remote marine, and Alaskan Arctic sites, AMS Collective Madison Meeting, Madison, WI, USA, Aug., 2022.
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#### **k. Additional Information**

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Please allow me to explain another name that may appear on my documents. I was born in Japan as an ethnic-Korean resident with the official Korean name (i.e., passport name) of SEONGGI MOON and a Japanese name; NARUKI HIRANUMA. I currently live and work in the U.S. Please note that all of my scientific presentations and papers have been published with "Naruki Hiranuma", as evident in my publication record.