

RESUME

January 2023

1. PERSONAL DETAILS

Full Name: **Naama Lang-Yona**

Identity No: 043418292

Date and place of birth (optional): 09-Nov-1981, Petach Tikwa, Israel

Marital status (optional): Married + 3

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ORCID iD: <https://orcid.org/0000-0002-2650-2127>

Website: <https://lang-yona.net.technion.ac.il/>

2. ACADEMIC DEGREES

2009-2014 | PhD | Earth and Planetary Sciences | Weizmann Institute of Science

Thesis Title: "BioAerosols: Quantification, Species Distribution Characterization and the Effect of Climate Change and Air pollution on their Allergenic Activity"

Advisor: Prof. Yinon Rudich | *Graduated with Excellency*

2007-2009 | M.Sc | Environmental (changed later to Earth and Planetary) Sciences | Weizmann Institute of Science

Thesis Title: "Optical Properties of Complex Particles, Retrieved by Continuous-Wave Cavity Ring Down Aerosol Spectrometer (CW-CRD-AS)"

Advisor: Prof. Yinon Rudich | *Graduated with distinction*

2004-2007 | B.Sc | Biotechnology and Environmental Science | Tel-Hai Academic College

Graduated with distinction

3. ACADEMIC APPOINTMENTS

- **2021 - present** | Assistant professor | Civil and Environmental Engineering | Technion Institute of Technology.
- **2020 - 2021** | Researcher | Kinneret Limnological Laboratory | Israel Oceanographic & Limnological Research.
- **2020 - 2021** | Lecturer | Tel-Hai Academic College.
- **2018 - 2020** | Senior Intern | Plant and Environmental Sciences | Weizmann Institute of Science.
- **2014 - 2018** | Postdoctoral Fellow | Max Plank Institute for Chemistry, Mainz, Germany.
- **2014** | Postdoctoral Fellow | Earth and Planetary Sciences | Weizmann Institute of Science.

4. RESEARCH INTERESTS (briefly)

- Microbial interactions and modifications in the atmospheric environment, and the impact on their survival, health effects, and transport, as well as on environmental ecology and climate
- Expression patterns and functionality of bioaerosols.
- The impacts of anthropogenic climate change on bioaerosols and their related processes.

5. TEACHING EXPERIENCE

2022 - 23 | Environmental microbiology, for undergraduate students (main teacher); Technion Institute of Technology

2021 - 23 | Environmental Toxicology, for undergraduate students (main teacher); Technion Institute of Technology

2020 | Methods in Analytical Spectroscopy, for graduate students; Tel-Hai Academic College, Science and Technology Faculty

6. TECHNION ACTIVITIES

2022 - up to date | Faculty representative, The Technion Human Health Initiative (THHI) Collaborative Research Projects, Technion – Israel Institute of Technology, Haifa, Israel

7. DEPARTMENTAL ACTIVITIES

2022 - up to date | Member of the graduate student committee, Civil and Environmental Engineering Faculty, Environmental engineering unit, Technion – Israel Institute of Technology, Haifa, Israel

8. PUBLIC PROFESSIONAL ACTIVITIES

2014 - up to date | Peer-review for papers submitted to the journals Nature Communications, Nature Microbiology, Biogeosciences, Scientific Reports, Atmospheric Environment, The Science of the Total Environment, Journal of Fungal Ecology, Applied Microbiology, Atmospheric Chemistry & Physics, Plos One, Communication Earth & Environment.

2022 – up to date | Member of PhD Committee, Institute of Earth Sciences, Hebrew University of Jerusalem, Jerusalem, Israel

2022 – up to date | Member of PhD Thesis examination committee, Technion – Israel Institute of Technology, Haifa, Israel

2022 | Member of M.Sc Thesis examination Committee, Tel-Aviv University Tel-Aviv, Israel

9. MEMBERSHIP IN PROFESSIONAL SOCIETIES

- The Israel Society for Ecology and Environment
- The Israel Association for Aquatic Sciences
- The Israel Society for Microbiology
- European Geosciences Union
- The Israeli Association of Aerosol Research

10. FELLOWSHIPS, AWARDS AND HONORS

2022 | Aronson prize for junior faculty for excelling in teaching, Civil and Environmental Engineering Faculty, Technion – Israel Institute of Technology, Haifa, Israel

2018 | Women Bridging position for 2018/2019; Senior Intern at the Plant and Environmental Sciences Department, Faculty of Biochemistry, Weizmann Institute of Science.

2017 | Best poster award; WE-Heraeus Seminar on Aerosol, Climate and Health, Bad Honeff, Germany.

2016 | Best lecture award; The 6th European Symposium on Aerobiology, Lyon, France.

2014 - 2016 | The National Postdoctoral Award Program for Advancing Women in Science; for outstanding achievements in science, Weizmann Institute of Science.

2014 | The Shimon Reich Memorial Prize; for excellence in doctoral studies, Feinberg Graduate School, Weizmann Institute of Science.

2013 | ACCESS XII, 12th Atmospheric Chemistry Colloquium for Emerging Senior Scientists, Gordon Research Conference (GRC) in Atmospheric Chemistry, Brookhaven, USA.

2011 | Israel Environmental and Health Fund; Doctoral Fellows Program, for research collaboration, Yale University, CT, USA.

2010 | The Dean's Prize; For excellence in Master studies, Feinberg Graduate School, Weizmann Institute of Science.

2009 | ACCENT - Goldschmidt Young Scientist Travel Award; Goldschmidt conference, Davos, Switzerland.

2008 | INTROP Short Visit and Exchange Grant (2042); For research collaboration, Jülich, Germany.

11. GRADUATE STUDENTS

PhD theses in progress

Shamil Rafeeq, 2022 – 2026, “The health effects of microorganisms in the atmospheric environment”, Primary supervisor: Dr. Naama Lang-Yona

Youfen Qian, 2022 – 2026, “Active Microbiota and the Key Biochemical Reactions on Stone Cultural Heritage”, Primary supervisor: Prof. Ji-Dong Gu, Secondary supervisor: Dr. Naama Lang-Yona

12. PUBLICATIONS

12.1 Theses

1. **M.Sc. thesis:** “Optical Properties of Complex Particles, Retrieved by Continuous-Wave Cavity Ring Down Aerosol Spectrometer (CW-CRD-AS)”, Weizmann Institute of Science, Supervisor: Prof. Yinon Rudich, Degree issued on May 2010 (Graduated with Distinction).
2. **Ph.D. thesis:** “BioAerosols: Quantification, Species Distribution Characterization and the Effect of Climate Change and Air pollution on their Allergenic Activity”, Weizmann Institute of Science, Supervisor: Prof. Yinon Rudich, Degree issued on May 2014 (Graduated with Excellency).

Refereed papers in professional journals

Published papers

1. **Lang-Yona, N.**, Rudich, Y., Segre, E., Dinar, E., Abo-Riziq, A. (2009). Complex Refractive Indices of Aerosols Retrieved by Continuous Wave-Cavity Ring Down Aerosol Spectrometer, *Anal. Chem.*, 81(5): 1762-1769.
2. **Lang-Yona, N.**, Abo-Riziq, A., Erlick C., Segre, E., Trainic, M., and Rudich, Y. (2010). Interaction of Internally Mixed Aerosols with Light, *Phys. Chem. Chem. Phys.*, 12: 21-31, DOI: 10.1039/b913176k. Feature Article.
3. **Lang-Yona, N.**, Rudich, Y., Mentel, Th.F., Bohne, A., Buchholz, A., Kiendler-Scharr, A., Kleist, E., Spindler, C., Tillmann, R., Wildt, J. (2010): The Chemical and Microphysical Properties of Secondary Organic Aerosols from Holm Oak Emissions, *Atmos. Chem. Phys.*, 10: 7253-7265, DOI:10.5194/acp-10-7253-2010.
4. Burshtein, N., **Lang-Yona, N.**, Rudich, Y. (2011). Ergosterol, Arabitol and Mannitol as Tracers for Biogenic Aerosols in the Eastern Mediterranean. *Atmos. Chem. Phys.*, 11(2):829.
5. **Lang-Yona, N.**, Dannemiller, K., Yamamoto, N., Burshtein, N., Peccia, J., Yarden, O., Rudich, Y. (2012). Annual Distribution of Allergenic Fungal Spores in Atmospheric Particulate Matter in the Eastern Mediterranean; A Comparative Study between Ergosterol and Quantitative PCR Analysis, *Atmos. Chem. Phys.*, 12: 2681-2690, DOI: 10.5194/acp-12-2681-2012.
6. **Lang-Yona, N.**, Levin, Y., Dannemiller, K.C., Yarden, O., Peccia, J., Rudich, Y. (2013). Changes in Atmospheric CO₂ Influence the Allergenicity of *Aspergillus fumigatus*, *Glob. Change Biol.*, 19: 2381–2388.
7. Dannemiller, K.C., **Lang-Yona, N.**, Yamamoto, N., Rudich, Y., & Peccia, J. (2014). Combining Real-Time PCR and Next-Generation DNA Sequencing to Provide Quantitative Comparisons of Fungal Aerosol Populations. *Atmos. Environ.*, 84:113-121.
8. **Lang-Yona N.**, Lehahn Y., Herut B., Burshtein N., Rudich Y. (2014). Marine Aerosol as a Possible Source for Endotoxins in Coastal Areas. *Sci. Tot. Environ.*, 499: 311-318.
9. **Lang-Yona N.**, Mazar Y., Rudich Y. (2015). Air-Sampled Filter Analysis for Endotoxins and DNA Content. *J. Vis. Exp.*, 7(109), e53444.

10. **Lang-Yona N.**, Shuster-Meiseles T., Mazar Y., Yarden O., Rudich Y. (2016) Impact of Urban Air Pollution on the Allergenicity of *Aspergillus fumigatus* Conidia: Outdoor Exposure Study Supported by Laboratory Experiments. *Sci. Tot. Environ.*, 541:365-371.
11. Fröhlich-Nowoisky J., Kampf C.J, Weber B., Huffman A.J, Pöhlker C., Andreae M.O., **Lang-Yona N.**, Burrows, S.M., Gunthe, S., Elbert, W., Su, H., Hoor, P., Thines, E., Hoffmann, Th., Després, V.R., Pöschl, U. (2016) Bioaerosols in the Earth System: Climate, Health, and Ecosystem Interactions. *Atmos. Res.* 182: 346-376.
12. Reinmuth-Selzle K., Kampf C., Lucas K. **Lang-Yona N.**, Fröhlich-Nowoisky J., Shiraiwa, M., Lakey, P.S.J., Lai, S., Liu, F., Kunert, A.T., Ziegler, K., Shen, F., Sgarbanti, R., Weber, B., Bellinghausen, I., Saloga, J., Weller, M.G., Duschl, A., Schuppan, D., Pöschl, U. (2017) Air Pollution and Climate Change Effects on Allergies in the Anthropocene, *Environ. Sci. Technol.*, 50(8): 4119-4141.
13. **Lang-Yona N.**, Kunert, A.T., Vogel, L., Kampf, C.J., Bellinghausen, I., Saloga, J., Schink, A., Ziegler, K., Lucas, K., Pöschl, U., Weber, B., Fröhlich-Nowoisky, J. (2017): Fresh Water, Marine and Terrestrial Cyanobacteria Present Distinct Allergen Characteristics. *Sci. Tot. Environ.*, 612: 767-774.
14. Meusel H., Tamm A., Kuhn U., Wu D., Leifke A.L, Fiedler S., Ruckteschler N., Yordanova P., **Lang-Yona N.**, Lelieveld J., Hoffmann T., Pöschl U., Su H., Weber B., Cheng Y. (2017) Emission of Nitrous Acid from Soil and Biological Soil Crusts represents a Dominant Source of HONO in the Remote Atmosphere in Cyprus. *Atmos. Chem. Phys.*, 18(2): 799-813.
15. **Lang-Yona N.**, Maier, S., Macholdt, D., Müller-Germann, I., Yordanova, P., Rodriguez- Caballero, E., Jochum, K.P., Al-Amrid, A., Andreae, M., Fröhlich-Nowoisky, J., Weber, B. (2018): Insights into Microbial Involvement in Desert Varnish Formation retrieved from Metagenomic Analysis. *Environ. Microb. Rep.*, 10(3): 264-271.
16. **Lang-Yona N.**, Pickersgill, D.A., Maurus, I., Teschner, D., Wehking, J., Thines, E., Pöschl, U., Després, V.R., Fröhlich-Nowoisky, J. (2018). Diversity, Abundance, and Seasonal Dynamics of Plant-Pathogen Oomycetes in Continental Air. *Front. Microbiol.* 9:2673. doi:10.3389/fmicb.2018.02673.
17. Flores J.M., Bourdin G., Altaratz O., Trainic M., **Lang-Yona N.**, Dzimbani E., Steinau S., Tettich F., Planes S., Allemand D., Agostini S., Banaigs B., Boissin E., Boss E., Douville E., Forcioli D., Furla P., Galand P.E., Sullivan M., Gilson É., Lombard F., Moulin C., Pesant S., Poulain J., Reynaud S., Romac S., Sunagawa S., Thomas O.P., Troublé R., de Vargas C., Vega Thurber R., Voolstra C.R., Wincker P., Zoccola D., Bowler C., Gorsky G., Rudich Y., Vardi A., and Koren I. (2020). Marine Aerosols: Measurements by the Tara Pacific Expedition. *B. Am. Meteorol. Soc.*, 101(5): E536-E554, doi: <https://doi.org/10.1175/BAMS-D-18-0224.1>
18. **Lang-Yona N.**, Öztürk, F., Gat, D., Aktürk, M., Dikmen, E., Zarpas, P., Tsagkaraki, M., Mihalopoulos, N., Birgül, A., Kurt-Karakuş, P.B., Rudich, Y. (2020). Links between Airborne Microbiome, Meteorology, and Chemical Composition in Northwestern Turkey. *Sci. Tot. Environ.* 725:138227, doi: <https://doi.org/10.1016/j.scitotenv.2020.138227>.
19. Flores JM., Bourdin, G., Kostinski, A., Altaratz, O., Dagan, G., Lombard, F., Haëntjens, N., Boss, E., Sullivan, M.B., Gorsky, G., **Lang-Yona N.**, Trainic, M., Romac, S., Voolstra, C.R, Rudich, Y., Vardi, A., Koren, I. (2021) Diel cycle of sea spray aerosol concentration. *Nat. Com.*, 12(1): 5476, doi: <https://doi.org/10.1038/s41467-021-25579-3>
20. **Lang-Yona N.**, Flores JM., Haviv R., Alberti A., Poulain J., Belser C., Trainic M., Gat D., Ruscheweyh, HJ., Wincker P., Sunagawa S., Rudich Y., Koren I., Vardi A. (2022) Terrestrial and marine influence on atmospheric bacterial diversity over the north Atlantic and Pacific Oceans . *Com. Earth Environ.*, 3(121), doi: <https://doi.org/10.1038/s43247-022-00441-6>
21. **Lang-Yona N.**, Alster, A., Cummings, D., Freiman, Z., Kaplan-Levy, R., Lupu, A., Malinsky-Rushansky, N., Ninio, S., Sukenik, A., Viner-Mozzini, Y., Zohary, T. (2022) A first documentation of

Gloeotrichia pismus in Lake Kinneret: identification and characterization of a successful epiphytic colonial cyanobacterium. *J. Phycol.*, doi: <https://doi.org/10.1111/jpy.13301>

Submitted papers

1. **Lang-Yona, N.**, Flores, JM., Nussbaum, I., Koren, I., Vardi, A. (*Under rev.*) Airborne algicidal bacteria may control cell fate in the oceanic blooms.
2. Tastassa, A., Sharabi, Y., **Lang-Yona, N.** (*Under rev.*) Aero-microbiology: Directed Expansion to New Horizons. *A review article*.

15.2 Review papers (appear also in the main list)

1. Fröhlich-Nowoisky J., Kampf C.J, Weber B., Huffman A.J, Pöhlker C., Andreae M.O., **Lang-Yona N.**, Burrows, S.M., Gunthe, S., Elbert, W., Su, H., Hoor, P., Thines, E., Hoffmann, Th., Després, V.R., Pöschl, U. (2016) Bioaerosols in the Earth System: Climate, Health, and Ecosystem Interactions. *Atmos. Res.* 182: 346-376.
2. Reinmuth-Selzle K., Kampf C., Lucas K. **Lang-Yona N.**, Fröhlich-Nowoisky J., Shiraiwa, M., Lakey, P.S.J., Lai, S., Liu, F., Kunert, A.T., Ziegler, K., Shen, F., Sgarbanti, R., Weber, B., Bellinghausen, I., Saloga, J., Weller, M.G., Duschl, A., Schuppan, D., Pöschl, U. (2017) Air Pollution and Climate Change Effects on Allergies in the Anthropocene, *Environ. Sci. Technol.*, 50(8): 4119-4141.

16. CONFERENCES

Plenary, keynote or invited talks

1. “Cyanobacteria link Global Change and Health Risks - New Insights”, **The Annual Conference of the Israel Society of Ecology and Environmental Sciences**, The Hebrew University, Jerusalem, Israel, 2015 (*Invited*).
2. “Microbes in the Air: Health Effects & Transport of Airborne Microbiota”, **Helmholtz-Weizmann Mini Symposium**, The Weizmann Institute of Science, Rehovot, Israel, 2019 (*Invited*).

Contributed Talks and Posters

1. “Optical properties of biogenic aerosols Retrieved by a newly-build Continuous Wave - Cavity Ring Down Aerosol Spectrometer (CW-CRD-AS)”, **The Israeli Association for Aerosol Research**, Tel Aviv, Israel, 2009 (*Oral presentation*).
2. “Aerosol’s Microstructure: how does it rule the interactions with light?” **The Goldschmidt Conference**, Davos, Switzerland, 2009 (*Poster presentation*).
3. “Fungal Bio-Aerosols Quantification - Comparison between q-PCR and Ergosterol Analysis”. **The Israeli Association for Aerosol Research**, Weizmann Institute, Israel, 2012 (*Poster presentation*).
4. “Changes in atmospheric CO₂ influence the allergenicity of *A. fumigatus*”. **Israeli Molecular Mycology Meeting**, Faculty of agriculture, Rehovot, 2013 (*Oral presentation*).
5. “Changes in atmospheric CO₂ influence the allergenicity of *A. fumigatus*”. **The Israeli Association for Aerosol Research**, Tel Aviv, Israel, 2013 (*Oral presentation*).
6. “Changes in atmospheric CO₂ influence the allergenicity of *A. fumigatus*”. **ACCESS XII meeting**, Long island, USA, 2013 (*Oral presentation*).
7. “Changes in atmospheric CO₂ influence the allergenicity of *A. fumigatus*”. **The Gordon Research Conference in Atmospheric Chemistry**, Mount snow resort, Vermont, USA 2013 (*Poster presentation*).

8. “Changes in atmospheric CO₂ influence the allergenicity of *A. fumigatus*”. **The 2nd Israeli Graduate Student Symposium on Environmental Health**, Israel Institute of Technology, Technion, Haifa, 2013 (*Oral presentation*).
9. “Changes in atmospheric CO₂ influence fungal spores’ allergenicity”. **American Geophysical Union**, San Francisco, CA, USA 2013 (*Poster presentation*).
10. “Cyanobacteria Allergen Characterization”. **Mainz Allergy-Workshop**, Mainz University Clinic, Mainz, Germany, March 2016 (*Oral presentation*).
11. “Cyanobacteria as Aeroallergens”. **The 6th European Symposium on Aerobiology**, Lyon, July 2016 (*Oral presentation*). Awarded as best lecture.
12. “Fresh Water, Marine and Terrestrial Cyanobacteria Present Distinct Allergen Characteristics”. **Mainz Allergy-Workshop**, Mainz University Clinic, Mainz, Germany, March 2017 (*Oral presentation*).
13. “Desert Varnish Formation Mechanism: In-depth Examination of the Possible Microbial Contribution”. **European Geosciences Union conference**, Vienna, May 2017 (*Oral presentation*).
14. “New Insights on Cyanobacterial Health Effects”, **638. WE-Heraeus Seminar on Aerosol, Climate and Health**, Bad Honeff, Germany, 2017 (*Poster presentation*). Awarder as best poster.
15. “Airborne Microbiota over the Pacific Ocean: Diversity, Origin, & Transport”. **TARA-Pacific Consortium Annual Meeting**, Evry, May 2019 (*Oral presentation*).
16. “Terrestrial and marine Influence on atmospheric bacterial diversity over the North Atlantic and Pacific Oceans”. **ISME 18 conference**, Lausanne, August 2022 (*Oral presentation*).

Participation in organizing conferences

- The 8th Conference on Active Research by Environmental Science Students (CARESS), Weizmann Institute of Science, Rehovot, Israel, 2011 member of the organizing committee and session chair.
- The 9th Conference on Active Research by Environmental Science Students (CARESS), Weizmann Institute of Science, Rehovot, Israel, 2013, member of the organizing committee and session chair.