

NOBUHIKO SHIGYO, Ph.D.

Forestry and Forest Products Research Institute, Matsunosato 1, Tsukuba, Japan

E-mail: nshigyo@ffpri.affrc.go.jp

ORCID ID: 0000-0002-7428-4902

Website: <https://nobuhikoshigyo.github.io>

APPOINTMENTS

April 2023-Present	Researcher (Tenured) Department of Forest Soils, Forestry and Forest Products Research Institute, Japan
Apr 2020-Mar 2023	Researcher (Tenure-Track) Department of Forest Soils, Forestry and Forest Products Research Institute, Japan
Apr 2018-Mar 2020	JSPS Research fellow The University of Tokyo Chichibu Forest, Graduate School of Agricultural and Life Science, The University of Tokyo, Japan

EDUCATION

Mar 2019	Ph.D. in Agriculture Graduate School of Agricultural and Life Science, The University of Tokyo, Japan Advisor: Dr. Toshihide Hirao
Mar 2016	MSc in Agriculture Graduate School of Horticulture, Chiba University, Japan Adviser: Dr. Kiyoshi Umeki
Mar 2014	BSc in Agriculture Faculty of Horticulture, Chiba University, Japan Advisor: Dr. Kiyoshi Umeki

PEER-REVIEWED PUBLICATIONS

*Corresponding author

Shigyo N*, Umeki K, Hirao T*. 2024. Soil microbial identity explains home-field advantage for litter decomposition. *New Phytologist*. **243**: 2146-2156.

Shigyo N*, Shichi K, Sugai K, Setsuko S. 2023. Diversity profiling of soil bacterial and fungal communities in the Ogasawara (Bonin) Islands, Japan. *Microbiology Resource Announcements*. **12**: e00644-23.

Shigyo N*, Furusawa H, Yamashita N, Nagakura J, Manaka T, Yamada T, Hirai K. 2022. Slope-induced factors shape bacterial communities in surface soils in a forested headwater catchment. *CATENA* **214**: 106253.

- Hirao T*, Fujii M, **Shigyo N**, Kojima H, Fukui M. 2021. Influence of understory vegetation on soil bacterial communities and nitrogen cycling gene abundance in cool-temperate and sub-alpine forests along an elevational gradient. *Pedobiologia* **87-88**: 150746.
- Shigyo N***, Hirao T. 2021. Saprotrophic and ectomycorrhizal fungi exhibit contrasting richness patterns along elevational gradients in cool-temperate montane forests. *Fungal Ecology* **50**: 101036.
- Shigyo N***, Umeki K, Hirao T. 2019. Seasonal dynamics of soil fungal and bacterial communities in cool-temperate montane forests. *Frontiers in Microbiology* **10**: 1944.
- Shigyo N***, Umeki K, Hirao T. 2019. Plant functional diversity and soil properties control elevational diversity gradients of soil bacteria. *FEMS Microbiology Ecology* **95**: fiz025.
- Umeki K*, Kawasaki M, **Shigyo N**, Hirao T. 2018. Inter- and intraspecific patterns in resprouting of trees in undisturbed natural forests along an elevational gradient in central Japan. *Forests* **9**: 672.
- Shigyo N***, Umeki K, Ohashi H, Kawada K, Hirao T. 2017. Phylogenetic constraints to soil properties determine elevational diversity gradients of forest understory vegetation. *Plant Ecology* **218**: 821-834.
- Tsunematsu N*, Yokoyama H, Honjo T, Ichihashi A, Ando H, **Shigyo N**. 2016. Relationship between land use variations and spatiotemporal changes in amounts of thermal infrared energy emitted from urban surfaces in downtown Tokyo on hot summer days. *Urban Climate* **17**: 67-79.

PRESENTATIONS

- Shigyo N**. How fungal communities explain variations in mixed leaf litter decomposition. 12th International Mycological Congress, Maastricht, Netherlands, August 2024. Poster.
- Yamada T, **Shigyo N**, Hirai K, Sano T, Nagakura J, Nishikawa S, Matsuoka H. Effect of wood ash application on seedling growth and soil properties in a young *Cryptomeria japonica* forest, Japan. IUFRO 2024 XXVI World Congress, Stockholm, Sweden, June 2024. Poster.
- Shigyo N**. Leaf litter nitrogen-fixing communities in Japanese cedar plantations: diversity and its response to environmental factors. The 36th JSME Annual Meeting & the 13th ASME, Hamamatsu, Japan, November 2023. Poster.
- Paing AMM, **Shigyo N**, Tsumura Y, Yoshida T, Takagi M, Hisamoto Y, Goto S. The relationship between fungal communities and growth of *Betula ermanii* populations in five planting sites. The 134th Annual Meeting of the Japanese Forest Society, Online, March 2023. Poster.
- Paing AMM, **Shigyo N**, Tsumura Y, Takagi M, Hisamoto Y, Goto S. Diversity of soil fungal communities associated with *Betula ermanii* in five transplanted sites. The 3rd International Symposium of Long-term Forest Monitoring Research in Asia, Yogyakarta (Online hybrid), Indonesia, March 2023. Poster.

- Shigyo N**, Furusawa H, Sakata T, Hosokawa N, Hirai K. Influence of leaf litter species on nitrifying microbial communities in mineral soil. The 133th Annual Meeting of the Japanese Forest Society, Online, March 2022. Poster (in Japanese).
- Yamada T, **Shigyo N**, Hirai K, Sano T, Nagakura J, Nishikawa S, Matsuoka H. Influences of wood ash on soil microbial fauna on a young *Cryptomeria japonica* stand at 4 years after application. The 133th Annual Meeting of the Japanese Forest Society, Online March 2022. Poster (in Japanese).
- Shigyo N**, Furusawa H, Yamashita N, Nagakura J, Manaka T, Yamada T, Hirai K. Variations in litter and mineral soil layer characteristics associated with slope position shape bacterial communities in a forested headwater catchment. The 34th JSME Annual Meeting, Online, November 2021. Poster (in Japanese).
- Shigyo N**, Furusawa H, Yamashita N, Nagakura J, Manaka T, Yamada T, Hirai K. Spatial distribution of bacterial community and function in litter and soil layers at a headwater catchment scale. The 132th Annual Meeting of the Japanese Forest Society, Online March 2021. Poster (in Japanese).
- Yamada T, Hirai K, Sana T, **Shigyo N**, Nagakura J, Nishikawa S, Matsuoka H. Fluctuations of soil chemical properties on Sugi plantation over four years after application of wood ash. The 132th Annual Meeting of the Japanese Forest Society, Online March 2021. Poster (in Japanese).
- Shigyo N**, Hirao T. Influence of interguild interactions of soil fungi on organic matter decomposition. The 131st Annual Meeting of the Japanese Forest Society, Nagoya, Japan, March 2020. Poster (in Japanese).
- Shigyo N**, Hirao T. Tree functional diversity regulates fungal guild diversity in cool temperate montane forests. Asian Mycological Congress, Mie, Japan, October 2019. Poster.
- Shigyo N**, Umeki K, Hirao T. Temporal dynamics of home-field advantage for litter decomposition and soil microbial identity. The 33th JSME annual meeting, Yamanashi, Japan, September 2019. Poster (in Japanese).
- Shigyo N**, Umeki K, Hirao T. Endemism of soil microbial communities for litter decomposition. The 130th Annual Meeting of the Japanese Forest Society, Niigata, Japan, March 2019. Poster (in Japanese).
- Umeki K, Kawasaki M, **Shigyo N**, Hirao T. Inter- and intraspecific patterns in resprouting of trees in undisturbed natural forests in the Chichibu mountains. The 130th Annual Meeting of the Japanese Forest Society, Niigata, Japan, March 2019. Poster (in Japanese).
- Shigyo N**, Hirao T, Umeki K. Influence of tree phenology on seasonal dynamics of soil microbial communities. The 129th Annual Meeting of the Japanese Forest Society, Kochi, Japan, March 2018. Oral (in Japanese).
- Shigyo N**, Hirao T, Umeki K. Effects of understory vegetation on the functions and resilience of soil bacterial communities in forests. The 2nd Joint Conference of the Societies for Environmental Microbiology 2017. Sendai, Japan, August 2017. Poster (in Japanese).

- Shigyo N**, Hirao T, Umeki K. Fungal community associated with cellulose decomposition: response to environmental and seasonal variations. The 128th Annual Meeting of the Japanese Forest Society, Kagoshima, Japan, March 2017. Poster (in Japanese).
- Shigyo N**, Hirao T, Umeki K. Does plant functional diversity increase functional diversity of soil microbes? The 64th Annual Meeting of the Ecological Society of Japan, Tokyo, Japan, March 2017. Poster (in Japanese).
- Shigyo N**, Umeki K, Hirao T. Relative importance of soil properties and plant diversity for elevational diversity gradients of soil bacteria. The 31th JSME annual meeting, Yokosuka, Japan, October 2016. Poster (in Japanese).
- Shigyo N**, Umeki K, Hirao T. Elevational diversity patterns of understory vegetation are determined by soil properties and light conditions. The 7th Symposium of Asian University Forest Consortium, Furano, Japan, October 2016. Poster.
- Tsunematsu N, Yokoyama H, Honjo T, Ichihashi A, Ando H, **Shigyo N**. Relationship between spatiotemporal changes in amounts of thermal infrared energy and land use variations in downtown Tokyo at summer midday. Japan Geoscience Union Meeting 2017. Chiba, Japan, May 2017. Oral (in Japanese).
- Shigyo N**, Umeki K, Hirao T. Relating belowground microbes to functional diversity of trees along an elevational gradient. The 127th Annual JFS Meeting, Fujisawa, Japan, March 2016. Poster (in Japanese).
- Tsunematsu N, Yokoyama H, Honjo T, Ichihashi A, Ando H, Matsumoto F, Seto Y, **Shigyo N**. Impacts of urban heat island mitigation strategies on surface temperatures in downtown Tokyo. The 9th International Conference on Urban Climate, Toulouse, France, July 2015. Oral.
- Uchida R, Kurosawa S, Kondoh, H, **Shigyo N**, Okayama S, Saito S, Hitomi T, Morishige T, Moda T, Kobayashi T, Umeki K, Takahashi T. Flowering status and its factors of *Rhododendron dilatatum* and *Rhododendron kiyosumense* in the southern part of the Boso Peninsula. The 46th Annual Meeting of the Japanese Society of Revegetation Technology, Fujisawa, Japan, September 2015. Poster (in Japanese).

GRANTS & FELLOWSHIPS

1 JPY = 0.0063 USD, 0.059 EUR, 0.050 GBP, 0.0056 CHF, 0.0094 AUD, and 0.0086 CAD (June 25, 2024)

Aug 2024	The Sasakawa Grants for Science Fellows, the Japan Science Society (grant number F24-202; 347,000 JPY)
Apr 2023-Mar 2027	Grant-in-Aid for Early-Career Scientists, JSPS (grant number 23K17070; 3,600,000 JPY)
Jul 2022-Mar 2024	A research grant of the Forestry and Forest Products Research Institute (grant number #202206; 3,242,000 JPY)

Apr 2020-Mar 2023	Grant-in-Aid for Early-Career Scientists, JSPS (grant number 20K20003; 1,900,000 JPY)
Apr 2018-Mar 2020	Grant-in-Aid for JSPS Research Fellow (DC2), JSPS (grant number 18J14438; 1,500,000 JPY)
Apr 2016-Mar 2017	The Sasakawa Scientific Research Grants, the Japan Science Society (grant number 28-628; 700,000 JPY).

AWARDS & HONORS

Mar 2021	Student Incentive Award, Japanese Forest Society
Aug 2017	Excellent Poster Award, the 2017 Joint Conference of the Societies for Environmental Microbiology
Mar 2017	Student Poster Award, the 131th Annual Meeting of Japanese Forest Society
Oct 2016	Student Poster Award, the 31th JSME annual meeting

PROFESSIONAL AFFILIATIONS

2023-Present	American Society for Microbiology (ASM)
2020-Present	Japanese Society of Forest Environment
2016-Present	Ecological Society of Japan (ESJ)
2016-Present	Japanese Society of Microbial Ecology (JSME)
2015-Present	Japanese Forest Society (JFS)

PEER REVIEWER

Manuscript review

Annals of Microbiology (1), *Botanical Studies* (1), *CATENA* (6), *Ecological Research* (1), *Forest Ecology and Management* (4), *Frontiers in Microbiology* (1), *Functional Ecology* (1), *Geoderma* (1), *Journal of Arid Land* (1), *Journal of Forest Research* (3), *Microbial Ecology* (3), *Molecular Ecology* (1), *MycoKeys* (1), *Plant Ecology* (1), *Progress in Earth and Planetary Science* (1), *Scandinavian Journal of Forest Research* (1)