

# Fritz Alexander Francisco

Email: fritz.a.francisco@gmail.com

## Personal

Born on January 07, 1989 in Macomb, Illinois, USA  
US/German Citizen

## Education

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2023 – current	<b>Postdoctoral Researcher</b> , University of Massachusetts Boston, Boston, USA
2019 – 2023	<b>PhD rer. nat.</b> , Humboldt Universität zu Berlin, Berlin, Germany ( <i>magna cum laude</i> )
2016 – 2019	<b>M.S. Biology</b> , Max Planck Institute for Ornithology, Radolfzell, Germany (1.3)
2011 – 2014	<b>B.S. Biology</b> , University of Konstanz, Germany (2.4)
2001 – 2009	<b>High School Diploma (Abitur)</b> , Gymnasium Pfarrkirchen, Germany (1.9)

## Work Experience

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2019 – 2022	<b>Guest Researcher</b> Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany
2019 – 2022	<b>PhD Representative on the Executive Board</b> Excellence Cluster "Science of Intelligence", Berlin, Germany
2022	<b>Field Assistant</b> , J. Krause, Teapa, Mexico
2018 – 2019	<b>Beekeeper / Lab Assistant</b> , G. Galizia Lab, Konstanz, Germany
2017	<b>Diver / Field Assistant</b> , A. Jordan Lab, Mpulungu, Zambia
2017	<b>Diver / Field Assistant</b> , I. Couzin Lab, Eilat, Israel
2017	<b>Translation work</b> , University of Konstanz, Konstanz, Germany
2015	<b>Field Assistant / Lab Technician</b> , P. Buston Lab, Southwater Caye, Belize
2009 – 2015	<b>Landscape Gardener</b> , H&W Irrigation systems, Steina, Germany
2009 – 2012	<b>Beekeeper</b> , APICON Apiary, Eggelham, Germany
2009 – 2010	<b>Civil Service</b> , Regional Hospital, Pfarrkirchen, Germany

## Grants, Fellowships and Awards

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2024	International Education Week Photo Contest, University of Massachusetts Boston (Winner)
2024	Joseph P. Healey Research Grant, University of Massachusetts Boston (10.000\$)
2010	Illinois State University Dean's List

## Academic Conference Presentations

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17 – 20.11.2022	<b>Conference of the Gesellschaft für Ichthyologie GfI e.V.</b> , Vienna, Austria
02 – 04.12.2021	<b>Conference of the Gesellschaft für Ichthyologie GfI e.V.</b> , Online
08 – 10.11.2019	<b>Conference of the Gesellschaft für Ichthyologie GfI e.V.</b> , Bonn, Germany
19 – 20.07.2018	<b>Alpine Tanganyikan Cichlid Symposium</b> , Konstanz, Germany
05.02.2017	<b>Symposium on Lake Tanganyikan Cichlid Behaviour</b> , Konstanz, Germany

## Research Training

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01 - 14.07.2022	<b>DINACON</b> , DreamSpace Academy, Batticaloa, Sri Lanka
22.05 - 11.06.2022	<b>CAJAL Summer School on Quantitative Approaches to Behaviour</b> Champalimaud, Lisbon, Portugal
02 - 03.10.2021	<b>Complex Networks and Collective Information Processing Workshop</b> Humboldt University, Berlin, Germany
30.04.2020	<b>Physics of Behavior Workshop (Virtual)</b> , TMLS, Emory University, USA
10 - 11.12.2018	<b>DeepLabCut Workshop</b> , Munich, Germany
15 - 21.07.2017	<b>Summer School LabEx Tulip</b> Integrative Biology & Ecology. Midi-Pyrénées, France

## Teaching

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Summer 2019	Research Assistant, University of Konstanz, Germany Field Course: Going Wild: Behavior and Ecology of Animals (#BIO-16900)
Summer 2018	Research Assistant, University of Konstanz, Germany Field Course: Going Wild: Behavior and Ecology of Animals (#BIO-16900)

## Mentorship/Advising

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Zeynep Daldaban, HU	Master's Thesis	2023
Suman Deyashi, HU	Master's Thesis	2023
Nele Russy, HU	Bachelor's Thesis	2023
Lily Racky, HU	Bachelor's Thesis	2023
Alessandra Escurra-Alegre, HU	Master's Thesis	2022
Christopher Schutz, HU	Bachelor's Thesis	2022
Jakob Sölter, HU	Student Project	2022
Helene Hollitzer, HU	Student Project	2021
Leonidas Skopeteas, HU	Bachelor's Thesis	2021

## Outreach

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10.11.2021	Berlin Science Week Presentation titled "Why Behaviour?"
01.02.2021	Invited Speaker, Undergraduate Journal Club, Freie Universität, Berlin, Germany
19.02.2021	Departmental Meeting, Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany

## Personal Qualifications

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- Fluent in English and German (native)
- Excellent experience in behavioral experiments, fish husbandry and process automation
- Good programming skills in HTML, L<sup>A</sup>T<sub>E</sub>X, R, Python, Arduino IDE and C++
- Good experience with UNIX Systems, OpenCV and Git
- Certified European Scientific Diver (KFT-ESD D-340)
- Certified AAUS Scientific Diver (Cert: #33644)
- German motorboat and sailing license (A,D, Patent Nr.: 6375678)

## Journal Articles

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Bierbach, D., Lukas, J., Gómez-Nava, L., **Francisco, F. A.**, Arias-Rodriguez, L., Krause, S.,...Krause, J. (2025). Collective escape waves provide a generic defence against different avian predators. Royal Society Open Science, 12(3), 241055.

Barr, T.S., Richards, A., **Francisco, F. A.** & Vidal, M.C. (2025) Diet C:N ratio and temperature influence the performance and colouration of tobacco hornworms. Ecological Entomology, 19.

Sampaio, E., Sridhar, V. H., **Francisco, F. A.** et al. (2024). Multidimensional social influence drives leadership and composition-dependent success in octopus-fish hunting groups. Nat Ecol Evol.

Escurra-Alegre, A., **Francisco, F. A.**, Schäfer, F., Wuertz, S., Kloas, W., & Bierbach, D. (2024). Behavioral repertoire of Arapaima gigas (Schinz, 1822) reared in captivity and its implication for welfare protocols: Behavior of the arapaima. Tropical Aquaculture, 2(1).

Kao, A. B., Banerjee, S. C., **Francisco, F. A.**, & Berdahl, A. M. (2024). Timing decisions as the next frontier for collective intelligence. Trends in Ecology & Evolution.

Ehlman, S. M., Scherer, U., Bierbach, D., **Francisco, F. A.**, Laskowski, K. L., Krause, J., & Wolf, M. (2023). Leveraging big data to uncover the eco-evolutionary factors shaping behavioural development. Proceedings of the Royal Society B, 290(1992), 20222115.

Majoris, J. E., **Francisco, F. A.**, Burns, C. M., Brandl, S. J., Warkentin, K. M., & Buston, P. M. (2022). Paternal care regulates the timing, synchrony and success of hatching in a coral reef fish. Proceedings of the Royal Society B, 289(1982), 20221466.

Bierbach, D., Gómez-Nava, L., **Francisco, F. A.**, Lukas, J., Musiolek, L., Hafner, V. V., ... & Krause, J. (2022). Live fish learn to anticipate the movement of a fish-like robot. Bioinspiration & Biomimetics.

Bierbach, D., **Francisco, F. A.**, Lukas, J., Landgraf, T., Maxeiner, M., Romanczuk, P., ... & Krause, J. (2021). Biomimetic robots promote the 3Rs Principle in animal testing. In ALIFE 2021: The 2021 Conference on Artificial Life. MIT Press.

Rodriguez-Santiago, M., Nührenberg, P., Derry, J., Deussen, O., **Francisco, F. A.**, Garrison, L. K., Garza, S. F., Hofmann, H. A. and Jordan, A. (2020). Behavioral traits that define social dominance are the same that reduce social influence in a consensus task. Proceedings of the National Academy of Sciences, 117(31), pp.18566-18573.

**Francisco, F. A.** & Nührenberg, P. and Jordan, A., High-resolution, non-invasive animal tracking and reconstruction of local environment in aquatic ecosystems. Movement Ecology 8.1 (2020): 1-12.

Majoris, J. E., **Francisco, F. A.**, Atema, J. and Buston, P. M., Reproduction, early development, and larval rearing strategies for two sponge-dwelling neon gobies, Elacatinus lori and E. colini. Aquaculture 483 (2018): 286-295.

## Preprints

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Kao, A. B., et al. "Timing decisions as the next frontier for collective intelligence". arXiv (2023).

**Francisco, F. A.**, et al. "Experienced social partners hinder learning performance in naive clonal fish." bioRxiv (2022).

**Francisco, F. A.**, Paul Nührenberg, and Alex L. Jordan. "High-resolution animal tracking with integration of environmental information in aquatic systems." bioRxiv (2020).

Rodriguez-Santiago, M., et al. "Behavioral traits that define social dominance are the same that reduce social influence in a consensus task." bioRxiv (2020).

## Journals Reviewed

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Animal Behaviour • Ecology and Evolution • Methods in Ecology and Evolution • Behavioral Ecology and Sociobiology • PCI Ecology • Journal of Fish Biology

Last updated: March 14, 2025