Christian Kraus Curriculum Vitae

**Work Address:**

Chair of Animal Physiology, Department of Biology, Realfabygget  
NTNU Trondheim

Gløshaugen, Høgskoleringen 5  
NO-7034 Trondheim, Norway

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**Education:**

09-10/2024 **Sensory Ecology**

Participation in the course “Sensory Ecology” at Lund University, Sweden (Course Leaders: Prof. Dr. Eric Warrant, Prof. Dr. Marie Dacke, Prof. Dr. Bill Hannson, Prof. Dr. Christer Löfstedt)

06/2024 **Bergen Summer Research School (BSRS)**   
Participation in the courses “Stress and Mental Health in Education” (Course Leader: Dr. Catalina Franco, Norwegian School of Economics) and “Systems Thinking and creative Problem Solving” (Course Leaders: Prof. Dr. Birgit Kopainsky, University of Bergen and Dr. Ingunn Johanne Ness, University of Bergen)   
Scientific director: Prof. Dr. Erlend Eidsvik, The Arctic University of Norway

Since 05/2022 **PhD Student** Department of Biology, Animal Physiology Section, NTNU Trondheim, primary Supervisor: assoc. Prof. Dr. Basil el Jundi, second supervisor: Prof. Dr. May‑Britt Moser, third supervisor: Dr. Ragnhild Irene Jacobsen

10/2021 – 04/2022 **PhD Student**

Department of Behavioral Physiology and Sociobiology, Julius-Maximilians-University of Würzburg, Germany   
Supervisor: Dr. Basil el Jundi

04/2019 – 09/2021 **Master Student** „Biosciences” Julius-Maximilians-University of Würzburg, Germany (Overall grade: 1.0, “passed with distinction”), M.Sc. Thesis: “Coding of heading direction information in the monarch butterfly central complex” in the department of Behavioral Physiology and Sociobiology (Dr. Basil el Jundi, Grade of Thesis: 1.0)

08/2015 – 03/2019 **Bachelor Student** „Biology”Julius-Maximilians-University of Würzburg, Germany (Overall grade: 1.5 “good”, B.Sc. Thesis: “Visual Landmark Orientation in Monarch Butterflies” in the department of Behavioral Physiology and Sociobiology (Dr. Basil el Jundi, Grade of Thesis: 1.0)

09/2006 – 07/2014 **“Abitur”, A-Levels** Gymnasium Raubling, Germany(Grade: 2.0)

**Employment History:**

Since 05/2022 **Researcher**  
el Jundi Lab, Department of Biology, Animal Physiology Section, NTNU Trondheim, Norway

10/2021-04/2022 **Research Assistant**   
el Jundi Lab, Department of Behavioral Physiology and Sociobiology, Julius-Maximilians-University of Würzburg, Germany

**Experience:**

Field work:

10/2023-12/2023 Field work at Texas A&M University, College Station, Texas, USA with Monarch butterflies (*Danaus plexippus*) Topic: "The migratory compass of Monarch butterflies: Long-term properties of compass neurons in the central complex”  
 Supervisor: assoc. Prof. Dr. Basil el Jundi, NTNU, Trondheim  
 Collaborators: Prof. Dr. Christine Merlin, Texas A&M University  
 Dr. Ying Zhang, Texas A&M University

10/2022-11/2022 Field work at Texas A&M University, College Station, Texas, USA with monarch butterflies (*Danaus plexippus*) Topic: "The migratory compass of monarch butterflies: Longterm properties of compass neurons in the central complex”  
 Supervisor: assoc. Prof. Dr. Basil el Jundi, NTNU, Trondheim  
 Collaborators: Prof. Dr. Christine Merlin, Texas A&M University  
 Dr. Ying Zhang, Texas A&M University

Teaching:

2024 Investigating the integration of multiple visual cues in the Monarch butterfly (Danaus plexippus) compass  
Master Thesis of Julie Siria Karoliussen Koren

2023 Directional cue integration at different solar elevations

from behaviour to neurons  
 Master thesis of Linnéa Jürgensen

Since 2021 Co-Supervision of individual student practical courses

2018,2020, 2021 5th Semester Practical Course **“Integrative Biology II”** (WS)  
 Topic: Flight-simulator experiments in the monarch butterfly

**Publi****cations:**

Beetz MJ, **Kraus C**, el Jundi B (2023) Neural representation of goal direction in the monarch butterfly brain. *Nature Commun* 14, 5859. https://doi.org/10.1038/s41467-023-41526-w

Franzke M, **Kraus C**, Gayler M, Dreyer D, Pfeiffer K, el Jundi B (2022) Stimulus-dependent orientation strategies in monarch butterflies. J Exp Biol 225: jeb243687.

Beetz MJ, **Kraus C**, Franzke M, Dreyer D, Strube-Bloss MF, Rössler W, Warrant EJ, Merlin C, el Jundi B (2022) Flight-induced compass representation in the monarch butterfly heading network. Curr Biol ​32: 338-349.

Franzke M\*, **Kraus C**\*, Dreyer D, Pfeiffer K, Beetz MJ, Stöckl AL, Foster JJ, Warrant EJ, el Jundi B (2020) Spatial orientation based on multiple visual cues in non-migratory monarch butterflies. J Exp Biol 223: jeb223800. \*Equal contribution

​​**Conference contributions:**

2023 Christian Kraus, M. Jerome Beetz, Basil el Jundi  
 Poster: Differences in the heading coding between walking and flying Monarch butterflies  
 International Conference on Invertebrate Vision, July 27th-August 3rd, 2023

2022 Christian Kraus, M. Jerome Beetz, Basil el Jundi

Poster: Differences in heading-direction coding between walking and flight in the monarch butterfly central complex  
Structure and Function of the Insect Central Complex, October 9th-12th, 2022

2021 Christian Kraus, M. Jerome Beetz, Basil el Jundi

Poster: Influence of idiothetic cues on sun-compass neurons in monarch butterflies  
14th Göttingen Meeting of the German Neuroscience Society, March 22nd-30th, 2021

**Grants:**

06/2024 Mobility Grant for the duration of the Bergen Summer Research School

02/2023 PhD travel grant 2023 of the Department of Biology at NTNU

10/2021-03/2025 Doctoral Scholarship of the “Studienstiftung des deutschen Volkes “ (German Academic Scholarship Foundation)