Usan Dan

(510) 944-5867 · usandan2@illinois.edu

EDUCATION

PhD in Neuroscience, Neuroscience Program **2021 - Present**
University of Illinois Urbana-Champaign

- Thesis advisor: Dr. Alison Bell
- Committee: Dr. Alison Bell, Dr. Eva Fischer, Dr. Justin Rhodes, Dr. Dave Zhao

BA in Molecular and Cell Biology: Neurobiology and English **2019**
University of California, Berkeley

RESEARCH

PhD Student **2021 - Present**
Bell Lab, University of Illinois Urbana-Champaign

- Investigate the neural and hormonal basis of parental care in two recently diverged ecotypes of three-spined stickleback (*Gasterosteus aculeatus*)
- Collection and analysis of single-nucleus RNAseq and spatial transcriptomic datasets
- Perform behavioural experiments involving hormonal and viral-mediated genetic manipulations of neuropeptides
- Broader interest in the neural and hormonal basis of social behaviour

Research Specialist **2019 - 2021**
Knight Lab, University of California, San Francisco

- Investigated the role of neuropeptides in the paraventricular hypothalamus (PVH) in energy homeostasis and osmoregulation; supervised by Dr. Zachary Knight at UCSF, and Courtney Hudson and Dr. Jennifer Garrison at the Buck Institute for Research on Aging

Undergraduate Research Assistant **2016 - 2019**
Dan Lab, University of California, Berkeley

- Assisted Dr. Fei Hu in investigating the mechanisms of top-down control by the prefrontal cortex, particularly in visual processing and related tasks, using optogenetic techniques in mice

PUBLICATIONS

Dan, U.*, Maciejewski, M.F.*, Schwaiger, E.[†], and Bell, A.M. (2024) Oxytocin influences parental care in male threespine stickleback across multiple time scales. *Hormones and Behavior, 166,* 105652. https://doi.org/10.1016/j.yhbeh.2024.105652
*co-first authors [†]undergraduate author

Hu, F., Kamigaki, T., Zhang, Z., Zhang, S., **Dan, U.,** and Dan, Y. (2019) Prefrontal corticotectal neurons enhance visual processing through the superior colliculus and pulvinar thalamus. *Neuron, 104*(6), 1141-1152.e4. https://doi.org/10.1016/j.neuron.2019.09.019

Jang, H., Sharma, A.B., **Dan, U.**, Wong, J.H., Knight, Z.A., Garrison, J.L. (In review) Dysregulation of the fluid homeostasis system by aging.

PRESENTATIONS

POSTER PRESENTATIONS

Dan, U., Madrigal, G., Zhao, D., Behrens, C., Catchen, J., and Bell, A.M. (2024, August) Insights from single-nuclei transcriptomics into the evolution and neural basis of parental care in two three-spined stickleback ecotypes
15th International Congress of Neuroethology, Berlin, Germany

Dan, U., Madrigal, G., Zhao, D., Behrens, C., Cao, K., Catchen, J., and Bell, A.M. (2023, August) Neural Cluster Abundance and Activation Differences in Two Behaviourally Divergent Ecotypes of Three-spined Stickleback, *Gasterosteus aculeatus*
Neuroethology: Behavior, Evolution and Neurobiology Gordon Research Seminar/Conference, Mount Snow, VT, USA

Dan, U. and Bell, A.M. (2022, July) Fine-tuning a Shoaling Assay for Functional Manipulation in Threespined Stickleback, *Gasterosteus aculeatus*
Animal Behavior Society meeting, San Jose, Costa Rica

ORAL PRESENTATIONS

Dan, U. (2022, July) Friendly or Feisty: Viral-Mediated Transgenesis in Threespined Stickleback
Workshop talk presented at Animal Behavior Society meeting, San Jose, Costa Rica

Dan, U. (2022, May) Applying Functional Genetic Tools to Shoaling Behaviour in Threespined Stickleback, *Gasterosteus aculeatus*
Lightning talk presented at Gene Networks in Neural & Development Plasticity DataBlitz, University of Illinois Urbana-Champaign, IL

TEACHING

Teaching Assistant **Spring 2023**
Introductory Microbiology Lab, University of Illinois Urbana-Champaign
- 1 semester, up to 24 undergraduates per section
- Taught and led 2 lab sections twice a week, graded lab reports

Facilitator **2018 - 2019**
The Art of Taiko Drumming DeCal, University of California, Berkeley
- Designed and taught a DeCal, student-run courses at UC Berkeley, with co-facilitators on both the performance techniques and cultural aspects of taiko drumming (traditional Japanese drumming)

MENTORSHIP AND OUTREACH

Student Success Committee (Formerly DEI Committee) **2022 - Present**
Neuroscience Program, University of Illinois Urbana-Champaign

- Monthly meetings to discuss DEI issues within the Neuroscience Program
- Brainstorm and plan programs to promote diversity in neuroscience research in the Urbana-Champaign community
- Revise and plan distribution of climate survey of the Neuroscience Program, to collect data on DEI issues within the program

Student Research Mentor **2021 - Present**
Bell Lab, University of Illinois Urbana-Champaign

- Train undergraduate students on laboratory techniques and guide their work in the lab, including independent projects
- Current mentees:
    - Julia Ciura
    - Link Lee
    - Anna Lehmann
    - Catherine Marquez
- Past mentees:
  *presented at undergraduate research symposium
  †completed project for graduating with distinction
    - Kaithren García*
    - Adi Nair*
    - Emma Schwaiger*†
    - Chloe Zant

Brain Awareness Week Committee **Spring 2022, 2023, 2024**
Neuroscience Program, University of Illinois Urbana-Champaign

- Plan and participate in outreach activities at local elementary and middle schools, educating the public about the brain and neuroscience

Genome Day Volunteer **Fall 2022, 2023**
Carl R. Woese Institute for Genomic Biology, University of Illinois Urbana-Champaign

- Plan and participate in Genome Day, an annual public open-house style community outreach event

PRECS Program Mentor **Summer 2022**
Bell Lab, University of Illinois Urbana-Champaign

- PRECS: Phenotypic Plasticity Research Experience for Community College Students provides summer full-time research opportunities to community college students
- Trained and guided research of PRECS student along with two co-mentors

AWARDS, HONOURS AND FELLOWSHIPS

Illinois Distinguished Fellowship ($75,000) **2021-Present**
University of Illinois Urbana-Champaign

ABS Student Research Grant ($700) **2025**
Animal Behavior Society

Conference Presentation Award ($250) **2024**
University of Illinois Urbana-Champaign

Spatio-temporal Dynamics in Communication Fellowship and Travel Award ($1840) **2023**
University of Cincinnati, Funding supported by NSF IOS-2010768

Honours in English **2019**
University of California, Berkeley

PROFESSIONAL MEMBERSHIPS

International Society for Neuroethology **2024 - Present**
Member

Animal Behavior Society **2022 - Present**
Member

ADDITIONAL SKILLS

Field Work **Summer 2023, 2024**
Nova Scotia, Canada

Scuba Diving: PADI Open Water Diver

Software: R, Bash, Python

Languages: English, Japanese, Chinese