

# Johannes Nicolaus Wibisana

PHD STUDENT

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## Summary

I am a 3rd year PhD student at the Okinawa Institute of Science and Technology at the Genomics and Regulatory Systems Unit. I am currently working to investigate the gene regulation of the scrambled genome of *Oikopleura dioica*. Previously, I have used single-cell omics and fluorescence imaging analysis to investigate NF-κB mediated transcriptional regulation in B cell. I am familiar with R, ImageJ macro and bash programming languages for image processing and analysis of multi-omics data. I also have experience with basic molecular biology experiments such as mammalian and avian cell culture, RNA-FISH, molecular cloning, genome editing and qPCR. Being highly adaptable and proactive, I am keen and can quickly grasp new concepts that can be applied to my current and future research.

## Education

### Okinawa Institute of Science and Technology

Okinawa, Japan

DOCTOR OF PHILOSOPHY

Apr. 2022 - Present

- Epigenetic landscape in the cryptic species of *Oikopleura dioica*. Genomics and Regulatory Systems Unit (PI: Nicholas Luscombe)
- Rotation projects:
  - Investigation of dental microwear analysis in fish-tetrapod transition. Macroevolution Unit (PI: Lauren Sallan)
  - Investigation of metabolic-related gene duplication in pomacentridae. Marine Eco-Evo-Devo Unit (PI: Vincent Laudet)

### Osaka University (Graduate School of Science)

Osaka, Japan

M.Sc IN BIOLOGICAL SCIENCES

Apr. 2020 - Mar. 2022

- Thesis research: NF-κB transcriptional regulation in B-cell, Laboratory for Cell Systems (PI: Mariko Okada)
- Awardee of the Honjo International Scholarship Foundation scholarship
- Others: In charge of laboratory website and bioinformatics training of visiting researchers

### Osaka University (Graduate School of Science)

Osaka, Japan

B.Sc IN BIOLOGICAL SCIENCES

Oct. 2016 - Mar. 2020

- Thesis research: NF-κB transcriptional regulation in B-cell, Laboratory for Cell Systems (PI: Mariko Okada)
- Awardee of the MEXT scholarship
- Selected for the AEARU 2018 Summer Camp in Hefei China
- Qualified for early graduation

## Publications

### RESEARCH ARTICLES

#### Modifiable clinical dental impression methods to obtain whole-mouth and detailed dental traits from vertebrates (doi:10.1002/jmor.70017)

Journal of Morphology

JN WIBISANA\*, RA SALLAN\*, T OTA, P PUCHENKOV, T KUBO, L SALLAN\*

2025

#### Less, but More: New Insights From Appendicularians on Chordate Fgf Evolution and the Divergence of Tunicate Lifestyles (doi:10.1093/molbev/msae260)

Molecular Biology and Evolution

G SANCHEZ-SERNA, J BADIA-RAMENTOL, P BUJOSA, A FERRANDEZ-ROLDAN, NP TORRES-AGUILA, M FABREGA-TORRUS, JN WIBISANA\*, MJ MANSFIELD, C PLESSY, NM LUSCOMBE, R ALBALAT, C CANESTRO

2025

#### The complete mitogenome of an unidentified *Oikopleura* species (doi:10.12688/f1000research.157311.1)

F1000Research

JN WIBISANA, C PLESSY\*, N DIERCKXSENS, J MIAO, NM LUSCOMBE

2024

#### Type 2 helper T cells convert into Interleukin-13-expressing follicular helper T cells after antigen repriming (doi:10.33611/trs.2022-010)

Translational and Regulatory Sciences

Y HARADA, T SASAKI, JN WIBISANA, M OKADA, C LIU, H UENO, PD BURROWS, M KUBO\*

2022

#### Enhanced transcriptional heterogeneity mediated by NF-κB super-enhancers (doi:10.1371/journal.pgen.1010235)

PLoS Genetics

JN WIBISANA, T INABA, H SHINOHARA, N YUMOTO, T HAYASHI, M UMEDA, M EBISAWA, I NIKAIIDO, Y SAKO, M OKADA\*

2022

#### ASURAT: functional annotation-driven unsupervised clustering of single-cell (doi:10.1093/bioinformatics/btac541)

Bioinformatics

K IIDA\*, J KONDO, JN WIBISANA, M INOUE, M OKADA

2022

## REVIEW ARTICLES

### Encoding and decoding NF- $\kappa$ B nuclear dynamics (doi:10.1016/j.ceb.2022.102103)

JN WIBISANA, M OKADA\*

*Current Opinion in Cell Biology*

2022

### Prediction of transcriptional regulation in immune cells through single-cell analysis

JN WIBISANA, K IIDA, M OKADA

*Journal of Clinical and Experimental  
Medicine (Igaku no Ayumi)*

2021

## BOOK CHAPTER

### Quantitative imaging analysis of NF- $\kappa$ B for mathematical modelling applications (doi:10.1007/978-1-0716-3008-2\_11)

JN WIBISANA, T INABA, Y SAKO, M OKADA\*

*Methods in Molecular Biology*

2023

## Presentations

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### INTERNATIONAL

#### Gene regulation of the scrambled genome of *Oikopleura dioica*

EMBO LECTURE COURSE: EVOLUTIONARY AND COMPARATIVE GENOMICS (POSTER PRESENTATION)

*Nafplio, Greece*

Nov. 2024

#### Epigenetic landscape of the cryptic tunicate *Oikopleura dioica*

EMBO WORKSHOP: ANIMAL GENOMES (POSTER PRESENTATION)

*Sevilla, Spain*

Nov. 2021

#### Imaging and single-cell sequencing analysis of super-enhancer activation mediated by NF- $\kappa$ B in B cells

CELL SYMPOSIA: BIOLOGICAL ASSEMBLIES - PHASE TRANSITIONS AND MORE (POSTER PRESENTATION)

Nov. 2021

#### NF- $\kappa$ B mediated transcriptional regulation in B cell

COLD SPRING HARBOR LABORATORY BIOLOGY OF GENOMES 2021 (POSTER PRESENTATION)

Online

May 2021

#### NF- $\kappa$ B mediated transcriptional regulation in B cell

JAPAN-KOREA BILATERAL SYMPOSIUM BETWEEN IPR AND SNU ON ADVANCED ANALYSIS OF PROTEIN FUNCTION AND  
STRUCTURE (ORAL PRESENTATION)

*Seoul, South Korea*

Jan. 2020

#### NF- $\kappa$ B mediated transcriptional regulation in B cell

INTERNATIONAL CONFERENCE OF SYSTEMS BIOLOGY (POSTER PRESENTATION)

*Okinawa, Japan*

Nov. 2019

### DOMESTIC

#### Enhancer-mediated transcriptional regulation in *Oikopleura dioica*

THE 46TH ANNUAL MEETING OF THE MOLECULAR BIOLOGY SOCIETY OF JAPAN (POSTER PRESENTATION)

*Fukuoka, Japan*

Nov. 2024

#### Enhancer-mediated transcriptional regulation in *Oikopleura dioica*

THE 45TH ANNUAL MEETING OF THE MOLECULAR BIOLOGY SOCIETY OF JAPAN (POSTER PRESENTATION)

*Chiba, Japan*

Nov. 2022

#### Imaging and single-cell sequencing analysis of super-enhancer activation mediated by NF- $\kappa$ B in B cells

19TH IPR RETREAT (POSTER PRESENTATION)

Online

Nov. 2021

#### Imaging and single-cell sequencing analysis of super-enhancer activation mediated by NF- $\kappa$ B in B cells

CELL SYMPOSIA: BIOLOGICAL ASSEMBLIES - PHASE TRANSITIONS AND MORE (POSTER PRESENTATION)

Online

Nov. 2021

#### NF- $\kappa$ B mediated transcriptional regulation in B cell

COLD SPRING HARBOR LABORATORY BIOLOGY OF GENOMES 2021 (POSTER PRESENTATION)

Online

May 2021

#### NF- $\kappa$ B mediated transcriptional regulation in B cell

THE 58TH ANNUAL MEETING OF THE BIOPHYSICAL SOCIETY OF JAPAN (POSTER PRESENTATION)

Online

Sep. 2020

#### NF- $\kappa$ B mediated transcriptional regulation in B cell

JAPAN-KOREA BILATERAL SYMPOSIUM BETWEEN IPR AND SNU ON ADVANCED ANALYSIS OF PROTEIN FUNCTION AND  
STRUCTURE (ORAL PRESENTATION)

*Seoul, South Korea*

Jan. 2020

#### NF- $\kappa$ B mediated transcriptional regulation in B cell

18TH IPR RETREAT (ORAL PRESENTATION)

*Osaka, Japan*

Nov. 2019

#### NF- $\kappa$ B mediated transcriptional regulation in B cell

INTERNATIONAL CONFERENCE OF SYSTEMS BIOLOGY (POSTER PRESENTATION)

*Okinawa, Japan*

Nov. 2019

## Research Experience

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### Genomics and Regulatory Systems Unit (PI: Nicholas Luscombe), Okinawa Institute of Science and Technology

Okinawa, Japan

PHD STUDENT

Mar. 2022 - Present

- Project: Epigenetic landscape in the cryptic species *O. dioica*
- Analysis of RNA-seq, ATAC-seq, CAGE, and other epigenetic sequencing data
- Improved genome annotation of *O. dioica*
- Developed a genome browser for *O. dioica*: oikobrowser.jnicolaus.com

### Macroevolution Unit (PI: Lauren Sallan), Okinawa Institute of Science and Technology

Okinawa, Japan

PHD ROTATION STUDENT

2023

- Project: Investigation of dental microwear analysis in fish-tetrapod transition
- Established fish facility for *Polypterus*
- Performed dental molding of fossils and subsequent scanning using confocal microscope

### Marine Eco-Evo-Devo Unit (PI: Vincent Laudet), Okinawa Institute of Science and Technology

Okinawa, Japan

PHD ROTATION STUDENT

2022

- Project: Investigation of metabolic gene duplication in clownfish
- Performed gene duplication analysis using computational phylogenetic analysis
- Performed fish dissection for RNA extraction and subsequent qPCR analysis

### Laboratory for Cell Systems (PI: Mariko Okada), Osaka University

Osaka, Japan

UNDERGRADUATE - MASTER'S STUDENT

Feb. 2019 - Mar. 2022

- Project: NF-κB mediated transcriptional regulation in B cell
- Performed quantitative imaging analysis of NF-κB nuclear translocation using confocal microscope and ImageJ
- Performed single-cell RNA-seq and single-cell ATAC-seq analysis to find the relationship between cis-regulatory elements and gene expression
- Performed single-molecule RNA-FISH and qPCR for the confirmation of RNA-seq results
- Performed cloning for both transient and permanent expression of fluorescent-tagged protein of interest
- In charge of side projects concerning RNA-seq analysis and training of visiting researchers on RNA-seq analysis

### Laboratory of Science and Innovation for Pain, Osaka University

Osaka, Japan

RESEARCH ASSISTANT

Apr. 2018 - Feb. 2019

- Performed mouse genotyping, RNA extraction and ELISA
- Performed image analysis of mouse MRI images
- In charge of laboratory cleanliness

### Bio Medical Wet Robotics Laboratory (PI: Morishima Keisuke), Osaka University

Osaka, Japan

ASSOCIATE PROJECT LEADER FOR OSAKA UNIVERSITY BIOMOD 2017-2018

2017-2018

- Performed basic DNA origami experiments
- Performed 3D modeling and computer simulated DNA origami design

### Laboratory of Cellular Life Science (PI: Naotada Ishihara), Osaka University

Osaka, Japan

RESEARCH INTERN

Sep. 2018 - Feb. 2019

- Project: Quantification of Mitochondrial Morphology
- Performed quantitative analysis of mitochondrial morphology using ImageJ
- Performed basic experiments such as mammalian cell culture and confocal imaging

## Honors & Awards

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Apr. 2020 - **Honjo International Scholarship Foundation Scholarship**

Japan

Mar. 2022

Sep. 2020 **Poster presentation award**, The 58th Annual meeting of the Biophysical Society of Japan

Japan

2018 **Bronze award**, BIOMOD 2018 Molecular Design Competition

U.S.A

2017 **Bronze award**, BIOMOD 2017 Molecular Design Competition

U.S.A

Sep. 2016 - **MEXT scholarship**

Japan

Mar. 2020

## Workshops

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Dec. 2022 EMBO Practical Course: Single-cell omics: deeper to genomics

Jul. 2020 第30回細胞生物学ワークショップ

Heidelberg,  
Germany  
Hyogo, Japan

## Qualifications

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2019 **N1**, Japanese Language Proficiency Test

## Organizations

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2019-2021 **Secretary General**, Indonesian Student Association in Japan

2018-2019 **President**, Indonesian Student Association in Japan (Osaka-Nara)

## Other skills

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**Web development** HTML, CSS (Bootstrap), Jekyll, AWS.

**3D printing and modeling** Basic 3D modeling using Fusion360 and Maya. Familiar with basic 3D printing techniques.