

拠点形成研究交流報告：東北大学－ワーゲニンゲン大学・ユトレヒト大学シンポジウムを開催し、研究拠点形成事業を総括

東北大学農学研究科とオランダのワーゲニンゲン大学・ユトレヒト大学などの拠点校・協力校は、日本学術振興会研究拠点形成事業(先端型)の支援を受け、平成 29 年度から共同研究と人材交流を行ってきました。令和 4 年度は事業の最終年度にあたるため、令和 5 年 1 月 16 日～18 日にワーゲニンゲン大学において総括シンポジウムを行いました。日本側からは、教員と大学院生 16 名が参加し、オランダ側からはワーゲニンゲン大学 10 名、ユトレヒト大学 1 名が参加し、1 日目は全体シンポジウムにて動物免疫、食品免疫、植物免疫、海洋科学、シンクロトンなどに関する共同研究成果の発表と議論がなされました。また 2・3 日目は分科会が開催され、今後の共同研究継続について熱心な議論がなされました。さらに、東北大学－ユトレヒト大学の学術交流協定の延長が合意され、ワーゲニンゲン大学とも協定延長の話し合いが進んでいることから、今後、さらに東北大学とワーゲニンゲン大学・ユトレヒト大学の交流が活発化することが期待されます。また、研究拠点形成事業の支援により大学院生時代に留学を経験した方が、今回は特任助教としてシンポジウムで研究成果を発表をしたり、関連する研究分野の他大学の教員（東京農工大学、立命館大学、ドイツの Paul-Ehrlich-Institute）が本シンポジウムに参加するなど、本事業により若手人材育成や対象研究領域の活性化など具体的成果が現れていることが感じられました。

総括シンポジウム開催をサポートいただいた JSPS 研究拠点形成事業に感謝いたします。

（東北大学大学院農学研究科・高橋英樹）



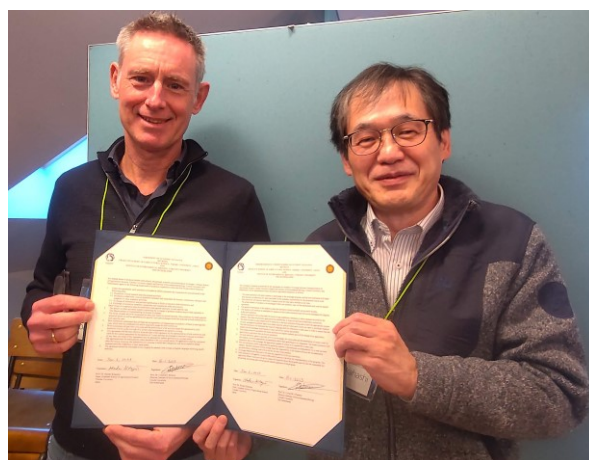
全体シンポジウム終了後の集合写真



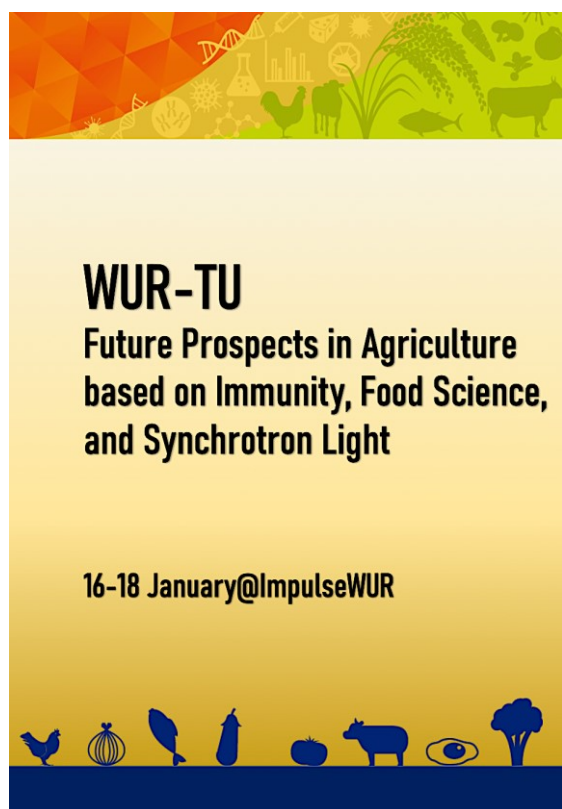
2023 年 1 月 16 日の全体シンポジウム（Wageningen University, Impulse building にて）



CFAI センター長 白川教授の Opening Remarks



東北大学ーユトレヒト大学学術協定が延長される



アブストラクトブックの表表紙



アブストラクトブックの裏表紙

Program

Monday 16 January 2023

09:00 – 09:20 Welcome & Coffee

09:20 – 09:30 Opening remarks: **Hitoshi Shirakawa (TU)**

Session 1: Animal Immunology *Chair: Tomonori Nochi (9:30-10:30)*

09:30 – 09:50 **Tomonori Nochi (TU)** "Identification of heat stress (HS)-sensitive and -insensitive immune cells in the cecal tonsils and the entire cecum of broiler chickens"

09:50 – 10:10 **Mutsumi Furukawa (TU)** "Maternal and infant immunity in mammals"

10:10 – 10:30 **Christine Jansen (WUR)** "The natural killers of avian viruses"

Session 2: Nutritional Immunology *Chair: Masako Toda (10:30-11:30)*

10:30 – 10:45 **Masako Toda (TU)** "Anti-inflammatory and anti-allergy functions of dietary and microbiome-derived molecules"

10:45 – 11:00 **Keita Nishiyama (TU)** "Microbial metabolite and cross-talk of gut microbiota"

11:00 – 11:15 **Joost van Neerven (WUR)** "Breastfeeding and early life nutrition to support immunity in early life"

11:15 – 11:30 **Hitoshi Shirakawa (TU)** "Introduction of Research Seeds in Lab. Nutrition, Tohoku University"

11:30 – 13:00 Lunch

Session 3: Plant Immunology *Chair: Hideki Takahashi (13:00-14:00)*

13:00 – 13:20 **Richard Kormelink (WUR)** "The story behind Ty-1: an epigenetic defense system against Geminiviruses"

13:20 – 13:40 **Shuhei Miyashita (TU)** "Antiviral population resistance of land plants by suicidal death of the infected individuals"

13:40 – 14:00 **Corné Pieterse (UU)** "The root microbiome and plant immunity"

Session 4: Marine Science *Chair: Geert Wiegertjes (14:00-15:00)*

14:00 – 14:15 **Toshiki Nakano (TU)** "Effect of chemicals on fish health: Supplements, antibiotics, and environmental contaminants."

14:15 – 14:30 **Kazue Nagasawa (TU)** "Recent efforts for reproductive immunology in placenta fish and bivalve using transplantation techniques"

14:30 – 14:45 **Jurgen Batsleer (WUR)** "Fisheries advice and innovation"

14:45 – 15:00 **Geert Wiegertjes (WUR)** "From pregnant fish to synchrotron-supported studies of earstones"

15:00 – 15:30 Coffee break

Session 5: Synchrotron *Chair: Masahiko Harata (15:30-16:30)*

15:30 – 15:45 **Masahiko Harata (TU)** "The next-generation synchrotron facility "NanoTerasu" at Tohoku University: New light for agricultural sciences"

15:45 – 16:00 **Yuki Takayama (TU)** "Visualization of micro/nano hierarchical structures via synchrotron X-rays"

16:00 – 16:15 **Masafumi Hidaka (TU)** "Feasibility Study on Synchrotron Radiation Application in Agriculture and Food: Our Approach with a View to Utilization of NanoTerasu"

16:15 – 16:30 **Joshua Dijkman (WUR)** "How 3D Imaging reveals the micro-macro connection in fluid dynamics"

16:30 – 17:30 Drinks and Discussion

17:50 – 18:00 Closing remarks

18:30 Dinner "Blauw"

- Sectional Meeting -

Animal Immunology and Nutritional Immunology Group

Tuesday 17, January 2023

Sectional Meeting (Zodiac building, Room E1244)

08:30 – 08:55 Arrival and coffee

08:55 – 09:00 Welcome and opening by **prof Dr. Mangala Srinivas**

NUTRITIONAL IMMUNOLOGY

09:00 – 09:30 **Joost van Neerven (WUR)** “Breastfeeding and early life nutrition to support immunity in early life”

09:30 – 10:00 **Masako Toda (TU)** “Anti-inflammatory and anti-allergy functions of dietary and microbiome-derived molecules”

10:00 – 10:30 **Frank Blanco-Pérez (Paul-Ehrlich-Institut)** “Dietary fiber pectin: immunomodulatory properties and potential for allergy treatment”

10:30 – 10:45 Coffee break

10:45 – 11:15 **Coen Govers (WUR)** “Intestine-on-a-chip: polysaccharide-mediated immunomodulation as benchmark”

VETERINARY IMMUNOLOGY

11:15 – 11:45 **Edwin Tijhaar (WUR)** “Insect bite hypersensitivity in horses: Diagnostic test development and Immunotherapy”

11:45 – 12:15 **Tomonori Nochi (TU)** “Identification of a unique function of cecal tonsils in the avian gastrointestinal immune system”

12:15 – 12:45 Lunch

13:00 Social programme

Wednesday 18, January 2023

Sectional meeting & Discussion on collaborations (Zodiac building, Room E1244)

08:45 – 09:00 Arrival and coffee

09:00 – 09:30 **Christine Jansen (WUR)** “Functional studies of innate immune cells in the chicken intestine: a salmonella story”

09:30 – 09:50 **Anri Teshigahara (WUR)** “Morphological analysis of Peyer's patch organogenesis during immune development with 3D visualization technology”

09:50 – 10:10 **Shinya Yamauchi (TU)** “Roles of mannosylerythritol lipid-B components in antiicrobial activity against bovine mastitis-causing *Staphylococcus aureus*”

10:10 – 10:30 Coffee break

10:30 – 11:30 Discussion possible collaborations

11:30 – 12:00 Summary & wrap up

12:00 – 12:30 Lunch

- Sectional Meeting -

Plant Immunology Group

Participants: Hideki Takahashi (TU), Richard Kormelink (WUR), Toshiyuki Fukuhara (TUAT), Shuhei Miyashita (TU), Midori Tabara (RU), and Ryota Sasaki (TU)

Tuesday 17, January 2023

Sectional Meeting & Discussion on collaborations

09:00 – 09:15 Arrival and coffee

09:15 – 09:45 **Toshiyuki Fukuhara (Tokyo University of Agriculture and Technology: TUAT)**
“Interaction between an endogenous pararetrovirus and host RNA silencing”

09:45 – 10:15 **Midori Tabara (Ritsumeikan University: RU)** “Asymptomatic infection with virus on host plants”

10:15 – 10:40 Coffee break

10:40 – 11:00 **Ryota Sasaki (TU)** “Jumbophages as biocontrol agents against bacterial plant pathogen”

11:00 – 11:20 **Hideki Takahashi (TU)** “Virus latency and the impact on plants”

11:20 – 12:00 *Discussion on collaboration of “Role of virus persistent infection on environmental adaptation of host plants” funded by “Fostering Joint International Research program (B)” by JSPS*

12:00 – 12:45 Lunch

13:00 Social programme

Wednesday 18, January 2023

Discussion on collaborations and academic & student agreement

09:00 – 12:00 Discussion on collaborations (continuation of the previous day), and extension of agreement between WUR and TU

- Sectional Meeting -

Marine Science and Synchrotron Group

Sectional Meeting & Discussion on collaborations (Room B0503 in the Forum building)

Participants: Masahiko Harata (TU), Geert Wiegertjes (WUR), Joshua Dijkman (UA), Jurgen Batsleer (WUR), Yuki Takayama (TU), Toshiki Nakano (TU), Kazue Nagasawa (TU), and Masafumi Hidaka (TU) and many other including students

Tuesday 17- Wednesday 18, January 2023

Following the introductory talks on the 16th, the speakers will present more details about each topic. Short presentations by WUR and TU participants are also expected. Based on the issues and comments provided by the speakers and the participants, we will discuss future collaborations and joint-use of the next-generation synchrotron facility "NanoTerasu" in the field of marine and agricultural sciences.