



北海道大学  
大学院国際食資源学院  
Graduate School of Global Food Resources  
Hokkaido University

北海道大学大学院国際食資源学院 | 2019~2020概要

Hokkaido University  
Graduate School of  
Global Food Resources



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# 1. Message from the Dean

Among the numerous problems facing the world today, food-, land-, and water-related issues are particularly important. These include difficulties with food resources, food safety, food waste, food and the environment, water resource management and water quality, land degradation, and public health, among others. Starvation and poverty are critical in a global perspective. To resolve these global issues in the 21st century, we must have extensive knowledge as well as lofty aspirations and a definite sense of purpose in seeking a solution to overcome today's challenges. As a strategy of response to issues related to food, land, and water, we need to construct a unified technical system and a locus for human resource development.

To find strategic solutions for global food, land, and water troubles, *glocal* (global and local) leaders who can contribute to regional issues with a global perspective must be fostered. The aim of the Graduate School of Global Food Resources is to develop international leaders with a frontier spirit to confront the crucial contemporary challenges pertaining to world's food, land, and water resources. Our talented students in this graduate school will have a great opportunity in their courses to gain a broad perspective spanning multiple dimensions and in-depth knowledge in their chosen subject.

Students who are passionate and ambitious and have strong interest and the motivation to tackle issues in food, land, and water resources worldwide are very welcome to this graduate school at Hokkaido University.

Dean

Takashi Inoue

Professor, Research Faculty  
of Agriculture





## 1. 学院長からのメッセージ



今日、様々な懸案に直面する世界情勢のなかにあって、とりわけ食料に関わる種々の課題は重要度を増している。食資源の確保はもちろんのこと、流通と貿易、食の安全、食品の廃棄、環境との調和、水資源管理や水質保全、砂漠化等の土地劣化の抑制、公衆衛生の確保、地域振興、等々の問題が山積している。世界各地において貧困や飢餓といった問題も解決をみない。これら 21 世紀の社会が抱える食・水・土資源と関連問題の解決を図るには、広範な知識のみならず、解決策追求のための強い意欲と明確な意志を持つことが求められる。そのための方策として、一貫した人材育成システムの構築が必要とされている。

世界的な食・水・土資源にまつわる課題に対して戦略的解決策を見出すためには、地域の課題を世界の中に位置づけて俯瞰的にとらえることのできる「グローバル」なリーダーが育たねばならない。2017 年 4 月にスタートした国際食資源学院の目標は、世界の食・水・土資源の重要課題にフロンティア精神を持って向き合うことのできる未来の国際的リーダーを育成することにある。そのため、本学院における学修では、文理融合的な多方面にわたる幅広い視野と深い知識、様々な経験を得る機会を提供していく。カリキュラムの特徴の一つであるワンダーフォーゲル型学習などにより、卓越したジェネラリスト的素養と、多面的多元的に解決策を提案できる総合力のあるスペシャリスト的素養の双方を具備する人材を養成する。学生諸君には本学キャンパスでの勉学と研究のみならず、部屋を飛び出して各地の現場で見聞きし体験して、自らの研究を深めていくことを期待する。

世界の諸問題に取り組んでいこうという強い意欲と大志をもつ学生諸君を歓迎したい。

学院長

井 上 京

大学院農学研究院・教授



## 2. Educational Principles

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### The Master's Course

Originating from the four basic principles of this university (Frontier Spirit, Global Perspectives, All-round Education, and Practical Learning), the educational principle of this graduate school is to raise talented and capable individuals who:

- Have broad perspectives on a global scale combined with a deep interest in local society
- Understand the importance of food resources as a survival strategy in the twenty-first century
- Have a noble spirit that rejects selfishness and seeks to contribute to the human society

Based on the educational principles above, we raise international leaders who understand the diverse and multilayered food resource problems facing the world and are capable of presenting specific solutions to these problems and putting them into practice. To that end, we conduct leading, academic, and synthetic educational research that integrates humanities and sciences. The educational goal is to produce talented individuals endowed with both wide-ranging knowledge and capability of understanding the world's food-resource problems from a comprehensive perspective and the expertise to be able to suggest solutions to those problems and put them to practice.

### The Doctoral Course

Hokkaido University functions under four essential tenets: Frontier Spirit, Global Perspectives, All-round Education, and Practical Learning. Given these tenets, the Graduate School of Global Food Resources awaits applications from candidates who have the following motivations, qualities, and objectives:

#### ● Motivation for enrollment:

- the desire to work on cutting-edge research leveraging the insight and perspective gained from master's study
- the self-drive to discover problems that present themselves at domestic and overseas sites and the confidence to work autonomously on resolving them
- the desire to solve problems independently while receiving guidance from Japanese and foreign teachers
- the aspiration to not only convert research results into research papers but also to apply the research in practical situations
- the willingness to take a self-sufficient leadership role in using research results

#### ● Qualifications required for applicants:

- a global perspective with a deep interest in community and society
- sufficient background knowledge, necessary communication skills, and language proficiency in English to tackle a host of problems related to food, land and water resources
- the aptitude to research food resource sites of domestic and abroad and discover their problems
- the ability to return research results to solve the problem of the region and community
- the capacity to provide leadership in the context of teamwork in local communities as well as internationally

#### ● Objectives for admission:

The ideal applicant is not just a researcher who writes papers, but an individual who can autonomously build new proposals that leverage research results and can, without direction, confidently apply this expertise as a food resource expert at the local level. In other words, we are looking for people who can—through the integrated arts and sciences master's program—cultivate advanced skills in problem identification and can inculcate within themselves a global perspective that enables them to take a broad view toward discovering the elements necessary to solve the problem at hand. We welcome applications from candidates who are capable of developing the ability to polish the various problem-solving skills acquired during their master's degree studies and are willing to independently take paths that lead to optimal answers to the problems they encounter. Certainly, our ideal aspirant is a person who can, apart from problem-solving, also convincingly communicate knowledge and can discuss the broad issues effectively. Ultimately, however, the person we are looking for is someone who has the practical abilities to incorporate academic research endeavors, their results, and the knowledge acquired through them on the ground at the local level to lead a team and to solve the specific problems that occur.

## 2. 教育理念

### 修士課程

大学の4つの基本理念「フロンティア精神、国際性の涵養、全人教育、実学の重視」のもとで本学院は、

- 地球規模の広い視野と地域社会への深い関心を併せ持っている
- 21世紀の生存戦略として食資源の重要性を理解している
- 利己を捨て人類社会に貢献したい高邁な精神を持っている

人材を育成することを教育の理念とする。

上記の教育理念に基づいて、世界が直面する多様かつ重層的な食資源問題を理解し、具体的な解決策を提示・実践できる国際的リーダーを養成する。そのため、先端的、学際的かつ総合的な文理融合型の教育研究を実施し、世界の食資源問題を俯瞰的にとらえることのできる幅広い知識と、問題解決を実践できる専門性を兼ね備えた人材を輩出することを教育目標とする。

### 博士後期課程

大学の4つの基本理念「フロンティア精神、国際性の涵養、全人教育、実学の重視」の下で、本学院では以下のような動機と資質、目標を有する入学志望者を求める。

#### ●入学動機

- ・修士で培った洞察力と俯瞰力を持って先端研究に取り組みたい
- ・国内外の現場で自ら問題発見しこれと主体的に取り組みたい
- ・国内外の教員の指導を受けながら、自らが問題解決に当たりたい
- ・研究成果を論文化するだけでなく現場に応用したい
- ・研究成果を実践する際には自らリーダーシップを発揮したい

#### ●入学志望者に求める資質

- ・地球規模の広い視野と地域社会への深い関心がある
- ・食水土資源の問題群に取り組む十分な知識背景と、基礎的なコミュニケーション力・英語力がある
- ・国内外の食資源現場に滞在し、自ら問題発見する力がある
- ・研究成果を地域の問題解決へ還元する力がある
- ・地域社会や国際社会でチームワークをリードできる力がある

#### ●入学時の目標

論文を書くだけの研究者ではなく、研究成果に基づいて新たな企画提案を自ら構築し、それをもとに現地での実践活動においても食資源の専門家として遺憾なく能力を発揮できる人材を目指す。すなわち、修士課程より更に進んだ問題発見力を文理融合教育で培い、これに加えて世界を俯瞰できる国際性を備え、何が最も必要かを見抜ける卓越した力を求める。次いで、修士課程で取得した様々な問題解決力を研ぎ澄まし、自ら発見した問題に最適の答えを得ることのできる道筋を見通す能力を一層高める。そして、これらを広い世界の知性と議論できるコミュニケーション能力と問題提案力を備え、しかしそれだけではなく、究極的には自らの研究成果を地域や現場で実際に組み込んで、チームを率いて問題解決する実践力を具備することを目指す。

### 3. Educational Features

This graduate school provides distinctive education to realize its educational goals. Namely, this would be a curriculum that can train generalists through practical education and “Wandervogel training,” which is not found in existing graduate school education, based on education that integrates humanities and sciences to train T-type personnel. The goal here is to truly integrate humanities and sciences, different fields, and new, complex academic disciplines, all of which is born out of practical dialogue between the faculty and students.

In this graduate school, we accept talented individuals who have aspirations such as the following: “To perceive and solve problems from a wide-ranging perspective that integrates humanities and sciences,” “To receive practical experience-based education from locations at home and abroad,” “To explore, discover, solve, propose, and evaluate problems with one's own abilities,” “To be active in international society with a pioneer spirit,” “To master communication abilities, teamwork abilities, and the ability to take action,” and “To be active in research and in various fields of practical business.”

By accepting talented individuals, who have such high aspirations and qualities, from varied backgrounds, we raise talented personnel that are capable of responding to the society's need for diverse human resources.

#### Wandervogel Study in Global Food Resources Diagram

#### Wandervogel Study in Global Food Resources

|                   |   |
|-------------------|---|
| Purpose           | <ul style="list-style-type: none"> <li>Facing real challenges involving food resources, experiencing <b>locations at home and abroad</b></li> <li>Recognizing world food-resource problems</li> <li>An opportunity to tackle these as one's own problem</li> <li>Independently and enthusiastically <b>developing learning relevant to one's own interests</b></li> </ul>       |
| Shared Experience | <ul style="list-style-type: none"> <li>“<b>Post-Training</b>” is positioned as a course related to training to emphasize factual learning and heightening educational learning effects</li> <li>We aim at sharing experiences and improving team awareness by having <b>students hold discussions with each other about their individual Wandervogel experiences</b></li> </ul> |
| Safety Management | <ul style="list-style-type: none"> <li>Close contact with instructors from host organizations who are well versed in the local situation</li> <li>Returning home early is recommended during unstable political situations/when we ascertain information on communicable diseases, etc.</li> <li>Obligation of regular communication</li> </ul>                                 |

| Course Name   | Main Year | Number of Credits |     | Objective/Content   | Main Training Site                             |
|---|-----------|-------------------|-----|---|--|
| Wandervogel Study in Global Food Resources I                | MC1       | Required          | 1   | Independent study efforts for solving and improving food-resource problems in <b>Developed Countries</b> .  | Denmark  |
| Wandervogel Study in Global Food Resources II               | MC1       | Required          | 1   | Independent study efforts for solving and improving food-resource problems in <b>Developing Countries</b> .   | Myanmar  |
| Wandervogel Study in Global Food Resources III              | MC2       | Required Elective | 1   | Independent study efforts for solving and improving various food-resource problems in <b>Various Parts of the World</b> .   | Multiple (various overseas locations)          |
| Wandervogel Study in Global Food Resources IV               | MC2       | Required Elective | 1   | Recognize the challenges within agricultural groups/local governments, and independently study efforts for solving and improving food-resource problems <b>Within Japan</b> .                   | Multiple (various domestic locations)          |
| Wandervogel Research Internship in Global Food Resources V  | MC2       | Required Elective | [1] | Deepen expertise and conduct master's thesis research/research on designated topics at sites outside of school such as governments, research institutions, and corporations at home and abroad. | Multiple (various overseas/domestic locations) |
| Wandervogel Research Internship in Global Food Resources VI | DC 1~3    | Required          | 2   | Collaboration on advanced subjects in the field or industrial, governmental and/or academic research institutes in Japan and elsewhere and reporting on the results.                            | Multiple (various overseas/domestic locations) |

※ Courses where the number of credits is in [ ] are taken through multiple class titles, and they may be taken as any one of those courses.



### 3. 教育の特色

教育目標を実現するために、本学院では特色ある教育を提供する。それは、既存の大学院教育にはない「ワンダーフォーゲル型実習」による実学教育や、「T型人材養成」のための文理融合教育に基づき、ジェネラリストを養成できるカリキュラムである。その中で、教員と学生の実践的対話から生まれる真の文理融合・異分野融合、新しい複合学問領域創出を目指す。

また、本学院では、「文理融合の幅広い視点から問題をとらえ解決する」、「国内外の現場での実践的な体験型教育を受ける」、「問題の探索、発見、解決、提言、評価を自力で行う」、「パイオニア精神を持って国際社会で活躍する」、「コミュニケーション力、チーム力、行動力を身につける」、「研究だけでなく様々な実務分野で活躍する」といった志望を持つ人材を受け入れる。

このように高い志と資質を持つ人材や、様々なバックグラウンドを持つ人材を受け入れることで、社会の多様な人的資源のニーズに応えることができる人材を育成する。

#### 〈ワンダーフォーゲル型実習の図〉

#### ワンダーフォーゲル型実習

#### 趣 旨 ▶

- 食資源に関わる現実課題と向き合い、国内外の現場を体験
- 自己の課題として取り組むための契機
- 世界の食資源問題を認識
- 主体的・積極的に自身の関心とも関連づけて学習を発展

#### 体験の共有 ▶

- 事後の学習を重視し、教育学習効果を高めるため、実習関連科目として「事後演習」を配置
- 学生同士がそれぞれのワンダーフォーゲル経験についてディスカッションすることで、「体験の共有」と「チーム意識の向上」を狙う

#### 安全管理 ▶

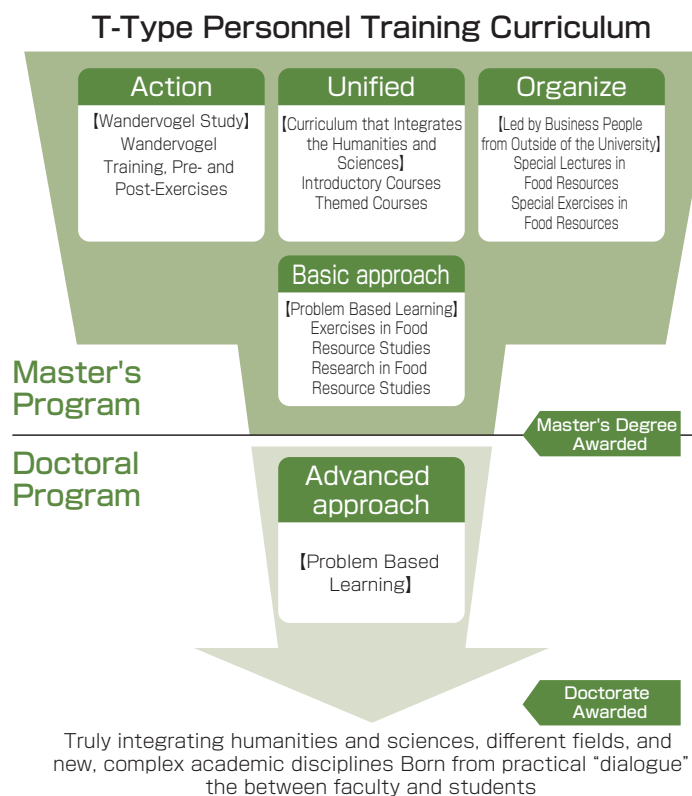
- 現地的情勢に詳しい受入機関教職員と密接な連絡
- 定期的な連絡の義務付け
- 政情不安・伝染病等の情報把握・早期帰国勧奨等

| 科目の名称        | 主な年次   | 単位数      | 目的・内容   | 主な実習先           |
|--------------|--------|----------|---|-----------------|
| ワンダーフォーゲル実習Ⅰ | MC1    | 必修 1     | <u>先進国</u> における食資源問題の解決や改善に向けた取り組みを主体的に学習する。              | デンマーク           |
| ワンダーフォーゲル実習Ⅱ | MC1    | 必修 1     | <u>途上国</u> における食資源問題の解決や改善に向けた取り組みを主体的に学習する。              | ミャンマー           |
| ワンダーフォーゲル実習Ⅲ | MC2    | 選択必修 1   | <u>世界各地</u> における様々な食資源問題の解決や改善に向けた取り組みを主体的に学習する。          | 複 数<br>(海外各地)   |
| ワンダーフォーゲル実習Ⅳ | MC2    | 選択必修 1   | <u>日本国内</u> の農業団体・自治体等において、課題を認識し、解決や改善に向けた取り組みを主体的に学習する。 | 複 数<br>(国内各地)   |
| ワンダーフォーゲル実習Ⅴ | MC2    | 選択必修 [1] | 専門性を深化させ、海外・国内の行政・研究機関・企業等の学外現場において修士論文研究・特定課題研究を行う。      | 複 数<br>(海外国内各地) |
| ワンダーフォーゲル実習Ⅵ | DC 1～3 | 必修 2     | 国内外の現場や産・官・学の研究機関等で先端的課題について共同研究を行い、成果を整理し報告する。           | 複 数<br>(海外国内各地) |

※単位数の数字に〔 〕を付している授業科目は、複数の講義題目により行われ、それぞれ一の授業科目として履修することができる。

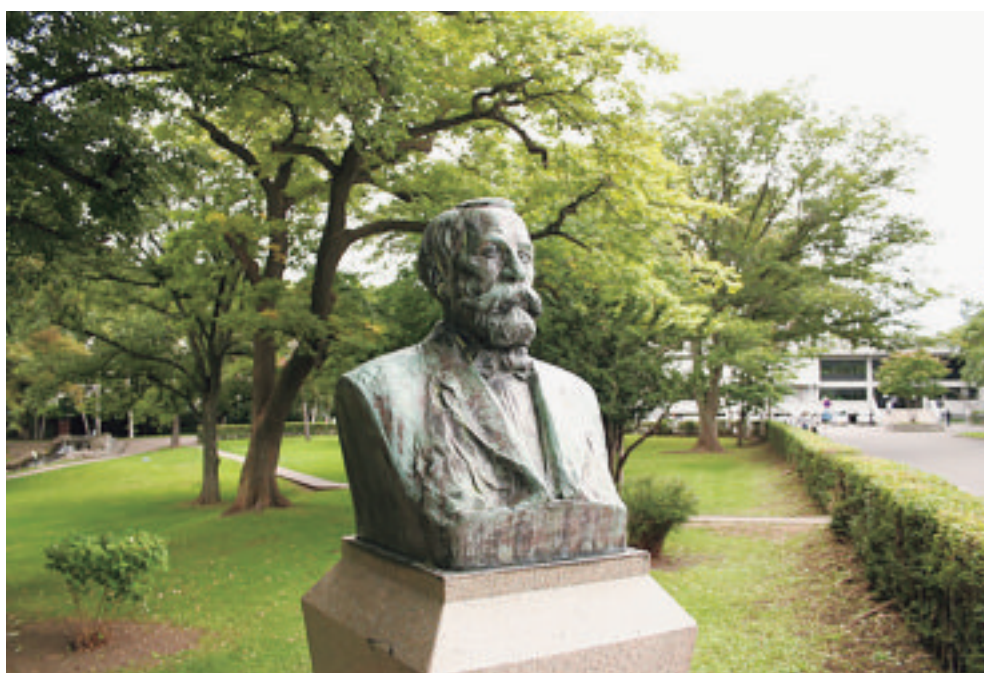
## T-Type Personnel Training Diagram

### T-Type Personnel Training Curriculum



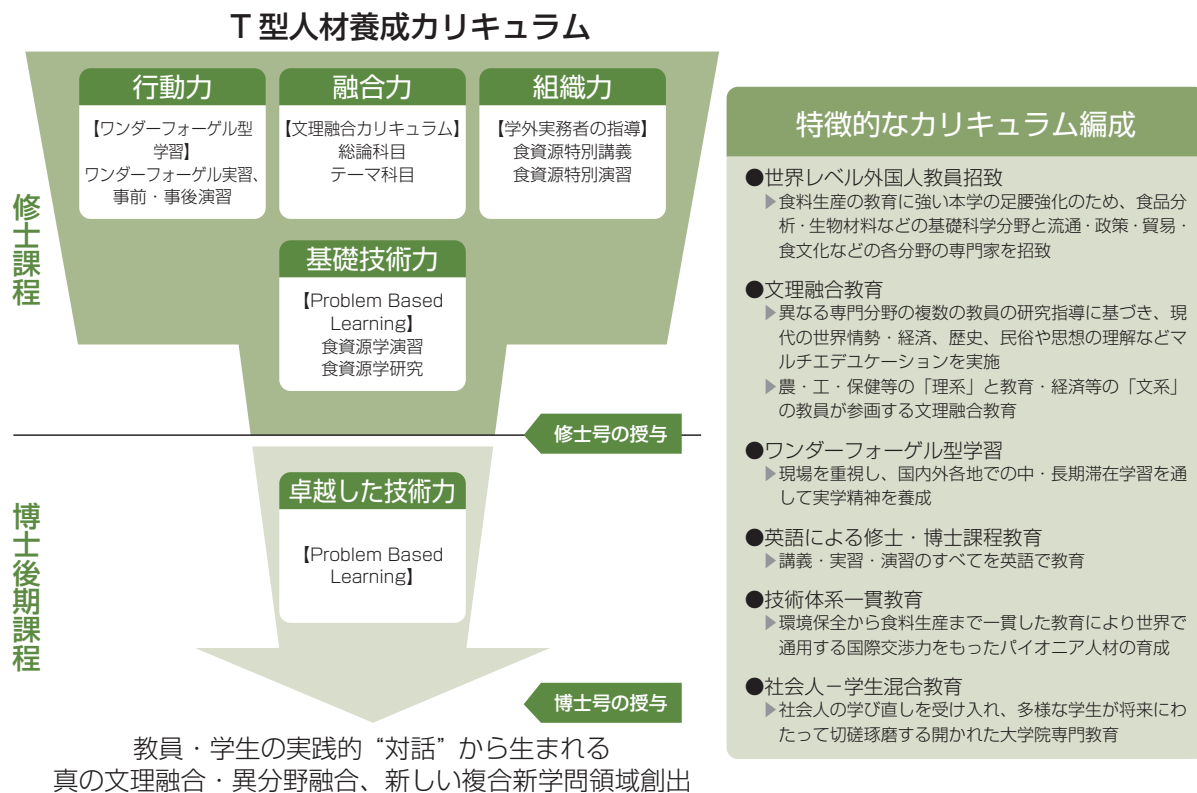
### Distinctive Curriculum Composition

- **World-Class Foreign Instructors Invited**
  - ▶ In order for this university (which is efficient in food production education) to strengthen its stance and footing, we invite experts in basic scientific fields such as food analysis, biomaterials, and all other fields such as distribution, policy, trade, and food culture.
- **Education that Integrates the Humanities and Sciences**
  - ▶ Based on research guidance from multiple instructors in different specialized fields, we implement "multi-education" for understanding the modern world's situation, economics, history, folklore, philosophy, and so on.
  - ▶ Education that integrates humanities and sciences is planned by instructors in "the sciences" of agriculture, engineering, and health, and "the humanities" of education and economics.
- **Wandervogel Study**
  - ▶ Emphasizes local sites and fosters the spirit of practical learning through mid/long-term study stays at various domestic or overseas locations.
- **Master's/Doctoral Program Education in English**
  - ▶ All education (lectures/training/exercises) is conducted in English.
- **Consistent Education in Technological Systems**
  - ▶ By means of a consistent education from environmental conservation to food production, we train talented, pioneering individuals with international negotiation abilities commonly used throughout the world.
- **Mixed Education with Working Adults and Students**
  - ▶ We accept working adults who wish to relearn and open up specialized graduate school education for diverse students who will diligently apply in the future.



## 〈T 型人材養成の図〉

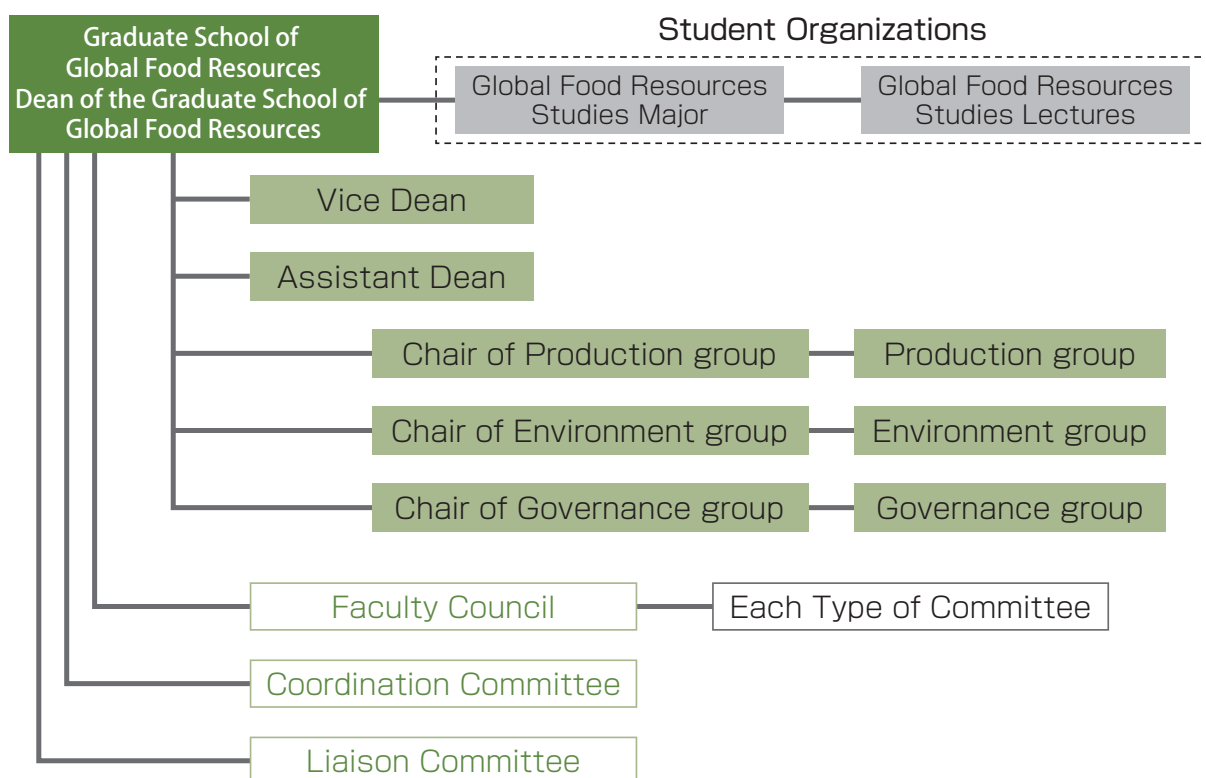
### T 型人材養成カリキュラム



## 4. History

|               |   |
|---------------|---|
| April 1, 2017 | Graduate School of Global Food Resources founded<br>The Master's Courses were established |
| April 1, 2019 | The Doctoral Courses were established   |

## 5. Organizational Diagram

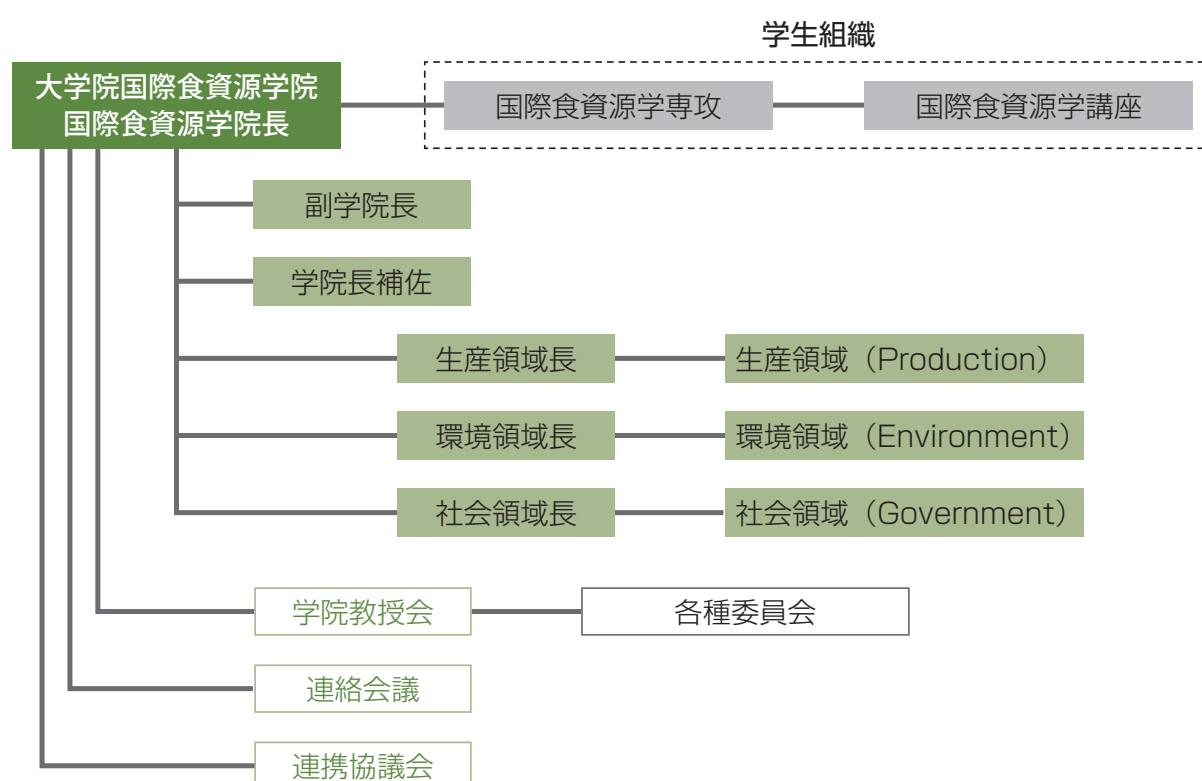




## 4. 沿革

|                 |                                |
|-----------------|--------------------------------|
| 平成 29 年 4 月 1 日 | 大学院国際食資源学院設置<br>修士課程（博士前期課程）開設 |
| 平成 31 年 4 月 1 日 | 博士後期課程開設                       |

## 5. 組織図



## 6. Directors

|                   |   |
|-------------------|---|
| Dean              | Takashi Inoue (Professor, Research Faculty of Agriculture)                |
| Vice-Dean         | Masashi Takahashi (Professor, Research Faculty of Agriculture)            |
| Production Chair  | Toshihiko Yamada (Professor, Field Science Center for Northern Biosphere) |
| Environment Chair | Yoshitaka Uchida (Associate Professor, Research Faculty of Agriculture)   |
| Governance Chair  | Hajime Kubota (Professor, Graduate School of Economics and Business)      |



## 6. 役 職 員

|           |         |                       |
|-----------|---------|-----------------------|
| 学 院 長     | 井 上 京   | (大学院農学研究院・教授)         |
| 副 学 院 長   | 高 橋 昌 志 | (大学院農学研究院・教授)         |
| 生 産 領 域 長 | 山 田 敏 彦 | (北方生物圏フィールド科学センター・教授) |
| 環 境 領 域 長 | 内 田 義 崇 | (大学院農学研究院・准教授)        |
| 社 会 領 域 長 | 久保田 肇   | (大学院経済学研究院・教授)        |



## 7. Faculty

### 1) Full-Time Faculty

#### ① Production

Along with the improvement of productivity and efficiency of food and bioenergy at home and abroad, there is also increasing interest in sustainability of harmony with the environment, agricultural ecosystem services, food safety, and health management.

Research and educational policies in this area implement the following three points by making full use of fundamental information involving food and bioenergy production, fungi, genomes, genetic resources, and food health management: 1) the improvement of productivity and efficiency of agricultural and livestock products and the effective use of local resources, including biodiversity, ecosystem services, and unused resources; 2) the detection and evaluation of post-harvest processes pertaining to improvement in the quality of agricultural and livestock products, freshness preservation, and food safety; 3) the search for new parameters for effects on health and the development of evaluative analysis using trace-amount, high-sensitivity detection and analysis technology. In implementing them, the goal is to produce talented personnel who can tackle the challenge of improving sustainable food resource production at home and abroad and who can contribute to creating new industries.

The full-time faculty members grouped under the Production Area are shown below.

| Job Title           | Name              | Degree   | Research Fields  | Affiliation  |
|---------------------|-------------------|--|--|--|
| Professor           | Teruo Sone        | Doctor of Philosophy (Agriculture)             | Applied Microbiology                                   | Research Faculty of Agriculture, Hokkaido University             |
|                     | Masashi Takahashi | Doctor of Philosophy (Agriculture)             | Animal Reproductive Physiology                         | Research Faculty of Agriculture, Hokkaido University             |
|                     | Toshihiko Yamada  | Doctor of Agriculture                          | Crop Production Science                                | Field Science Center for Northern Biosphere, Hokkaido University |
| Associate Professor | Seiji Takeda      | Doctor of Philosophy (Pharmaceutical Sciences) | Health Functional Foods                                | Faculty of Health Sciences, Hokkaido University                  |
|                     | Taichi Takasuka   | Ph. D. in Biological Sciences                  | Biochemistry<br>Microbial Sciences<br>Protein Sciences | Research Faculty of Agriculture, Hokkaido University             |
| Lecturer            | Itsuro Takamura   | Doctor of Philosophy (Agriculture)             | Plant Breeding   | Research Faculty of Agriculture, Hokkaido University             |





## 7. 担当教員紹介

### (1) 専任教員

#### ①生産領域 (Production)

国内外における食料やバイオエネルギーの生産性・効率性向上とともに環境と調和した持続性、農業の生態系サービス、食品安全性ならびに健康管理への関心がより高まっている。

本領域の研究および教育方針は、食品やバイオエネルギー生産、菌類、ゲノム、遺伝資源、食健康管理に関わる基盤知見を駆使して、(1) 農畜産物等の生産性、効率性の向上、生物多様性と生態系サービス、未利用資源を含む地域資源の有効利用、(2) 農畜産物の品質向上、鮮度保持、安全性向上にかかるポストハーベストプロセスに関する検出・評価、(3) 健康への効果に対する新たな指標の探索、微量高感度検出解析技術を使った評価解析開発、を実施する中で、国内外における持続的な食資源生産向上への課題に取り組み、新産業創出に貢献できる人材を輩出することを目標とする。

生産領域に区分される専任教員は、次表のとおり。

| 職 名 | 氏 名     | 学 位                           | 専門分野                 | 所属等                   |
|-----|---------|-------------------------------|----------------------|-----------------------|
| 教 授 | 曾 根 輝 雄 | 博士（農学）                        | 応用微生物学               | 北海道大学大学院農学研究院         |
|     | 高 橋 昌 志 | 博士（農学）                        | 家畜生殖生理学              | 北海道大学大学院農学研究院         |
|     | 山 田 敏 彦 | 農学博士                          | 作物生産科学               | 北海道大学北方生物圏フィールド科学センター |
| 准教授 | 武 田 晴 治 | 博士（薬学）                        | 健康機能性食品              | 北海道大学大学院保健科学研究院       |
|     | 高須賀 太 一 | Ph. D. in Biological Sciences | 生化学<br>微生物学<br>蛋白質科学 | 北海道大学大学院農学研究院         |
| 講 師 | 高牟禮 逸 朗 | 博士（農学）                        | 植物育種学                | 北海道大学大学院農学研究院         |



## ② Environment

In this area, we conduct research on the sustainable management and re-use of food-related resources — including both qualitative and quantitative aspects of soil, land, and water — for food production and safety. To do that, we study how to monitor, understand, and evaluate those resources. Furthermore, we seek methods for managing the flow of energy and circulation of materials in the pedosphere and human biosphere.

We conduct research and education based on the following mid-term plan: 1) Develop technology for monitoring resources on various scales of time and space; 2) Understand the impact of human activity on the Earth and develop sustainable methods for controlling resources; 3) Search for methods to evaluate diversified resources in the pedosphere and human biosphere to quantify the resilience of resources.

The full-time faculty members grouped under the Environmental Area are shown below.

| Job Title           | Name                | Degree   | Research Fields  | Affiliation   |
|---------------------|---------------------|--|--|---|
| Professor           | Takashi Inoue       | Doctor of Philosophy (Agriculture)                 | Land and Water Management  | Research Faculty of Agriculture, Hokkaido University        |
| Associate Professor | Kazunobu Ishii      | Doctor of Philosophy (Agriculture)                 | Applied Bioproduction Engineering                                      | Research Faculty of Agriculture, Hokkaido University        |
|                     | Yoshitaka Uchida    | Ph. D. in Environmental Biogeochemistry            | Environmental Biogeochemistry  | Research Faculty of Agriculture, Hokkaido University        |
|                     | Tomomichi Kato      | Doctor of Philosophy (Science)                     | Plant Ecology<br>Agricultural Meteorology                              | Research Faculty of Agriculture, Hokkaido University        |
|                     | Toshikazu Kawaguchi | Doctor of Philosophy (Earth Environmental Science) | Sensor Engineering<br>Environmental Mediation<br>Environmental Science | Faculty of Environmental Earth Science, Hokkaido University |
| Lecturer            | Junichi Kashiwagi   | Doctor of Philosophy (Agriculture)                 | Soil Conservation  | Research Faculty of Agriculture, Hokkaido University        |
| Assistant Professor | Mokhtar Guizani     | Doctor of Philosophy (Engineering)                 | Water Treatment, Reuse and Resources Recovery                          | Faculty of Engineering, Hokkaido University                 |



## ②環境領域 (Environment)

本領域では、食の生産と食の安全のために、土壌、土地、水の質・量の両方を含む食に関する資源の持続的な管理と再利用について研究を行う。そのために、それら資源をモニターすること、理解すること、そして、評価することを学習する。更に、土壌圏と人間の生活圏において、エネルギーの流れと物質の循環を管理する方法を探索する。

以下の中期的な計画に基づき、教育・研究を行う。(1) 様々な時空間スケールで資源をモニタリングする技術を開発する。(2) 人間の活動が地球へ及ぼす影響を理解し、資源を持続可能になるように制御する方法を開発する。(3) 資源の回復力を定量するために、土壌圏および人間の生活圏において多様化する資源を評価する方法を探索する。

環境領域に区分される専任教員は、次表のとおり。

| 職 名 | 氏 名      | 学 位   | 専門分野                   | 所属等               |
|-----|----------|---|------------------------|-------------------|
| 教 授 | 井 上 京    | 博士（農学）  | 水土管理学                  | 北海道大学大学院農学研究院     |
| 准教授 | 石 井 一 暢  | 博士（農学）  | 生物生産応用工学               | 北海道大学大学院農学研究院     |
|     | 内 田 義 崇  | Ph. D. in<br>Environmental<br>Biogeochemistry | 環境生命地球化学               | 北海道大学大学院農学研究院     |
|     | 加 藤 知 道  | 博士（理学）  | 植物生態学<br>農業気象学         | 北海道大学大学院農学研究院     |
|     | 川 口 俊 一  | 博士<br>(地球環境科学)                                | センサ工学<br>環境修復学<br>環境科学 | 北海道大学大学院地球環境科学研究院 |
| 講 師 | 柏 木 淳 一  | 博士（農学）  | 土壌保全学                  | 北海道大学大学院農学研究院     |
| 助 教 | グイザニモクタル | 博士（工学）  | 水処理、再利用<br>及び資源回復      | 北海道大学大学院工学研究院     |



### ③ Governance

As the globalization of the world's economy advances at a rapid pace, there are producer countries and corporations that are fully enjoying the benefits of globalization. However, laborers and producers engaged in industries that do not have a comparative advantage are impacted in various ways. It is also important to historically examine and verify the phenomenon of peasant farmers in developing countries who are marginalized due to colonial rule and the international political and economic order or due to agricultural policies, land reform, and collectivization by the state. Because these phenomena occur irrespective of a nation's stage of economic development, through research and education in this area, we study and analyze from various points of view the influence of globalization on economic entities that are expected to face marginalization. The purpose of conducting research in this area is to advance studies and research while monitoring changes in incomes, lifestyles, and happiness of peasant farmers, small-scale coastal fishers, small companies, and laborers. We raise talented individuals who are capable of being involved in and contributing to improve the well-being and welfare of such people and businesses.

The full-time faculty members grouped under the Governance Area are shown below.

| Job Title           | Name               | Degree                             | Research Fields                                 | Affiliation  |
|---------------------|--------------------|------------------------------------|---|--|
| Professor           | Hajime Kubota      | Ph. D. in Economics                | Mathematical Economics                          | Graduate School of Economics and Business, Hokkaido University   |
|                     | Takako Nabeshima   | Ph. D. in Political Science        | Political Science of Rural Community            | Research Faculty of Media and Communication, Hokkaido University |
|                     | Takashi Matsuishi  | Doctor of Philosophy (Agriculture) | Fish Stock Assessment                           | Faculty of Fisheries Sciences, Hokkaido University               |
| Associate Professor | Kuniyuki Kobayashi | Doctor of Philosophy (Agriculture) | Rural Development Food Network and Cooperatives | Research Faculty of Agriculture, Hokkaido University             |
| Lecturer            | Yoko Saito         | Doctor of Philosophy (Agriculture) | Agricultural Economics                          | Research Faculty of Agriculture, Hokkaido University             |





### ③社会領域 (Governance)

世界経済のグローバル化が急速に進展する中、グローバル化の便益を享受する国や企業などの生産主体がある一方で、比較優位のない産業に従事する労働者や生産者には、様々な負の影響が生じている。歴史的にも、植民地統治や国際政治経済の秩序により、また国家による農業政策や土地改革、集団化などにより、開発途上国の小農が周縁化した現象に対する考察・検証も重要となる。こうした現象は、国の経済発展段階に関わりなく生じることから、本領域の教育・研究においては、これらの影響を被ると予想される経済主体を対象に、グローバル化による影響を様々な視点から調査・分析を行う。本領域の研究の目的は、小農や小規模沿岸漁業者、小企業の労働者の所得や生活、幸福度 (happiness) の変化に注目しながら調査・研究を進め、彼らの福祉 (well-being) や厚生 (welfare) の向上に向けて課題解決に寄与することとし、これらに貢献できる人材を育成する。

社会領域に区分される専任教員は、次表のとおり。

| 職 名 | 氏 名     | 学 位                           | 専門分野             | 所属等                       |
|-----|---------|-------------------------------|------------------|---------------------------|
| 教 授 | 久保田 肇   | Ph. D. in Economics           | 数理経済学            | 北海道大学大学院経済学研究院            |
|     | 鍋 島 孝 子 | Doctorat en science politique | 農村政治学            | 北海道大学大学院メディア・コミュニケーション研究院 |
|     | 松 石 隆   | 博士 (農学)                       | 水産資源学            | 北海道大学大学院水産科学研究院           |
| 准教授 | 小 林 国 之 | 博士 (農学)                       | 地域連携経済学<br>協同組合学 | 北海道大学大学院農学研究院             |
| 講 師 | 齋 藤 陽 子 | 博士 (農学)                       | 農業経済学            | 北海道大学大学院農学研究院             |



## 2) Lecturing Faculty Members

### (Combined Positions)

| Job Title                               | Name                | Degree                                     | Affiliation  |
|---|---------------------|--|--|
| Professor                               | Tokiyoshi Ayabe     | Doctor of Medical Science                  | Faculty of Advanced Life Science, Hokkaido University  |
|   | Hajime Araki        | Doctor of Agriculture                      | Field Science Center for Northern Biosphere, Hokkaido University   |
|   | Yasumitsu Uraki     | Doctor of Science                          | Research Faculty of Agriculture, Hokkaido University   |
|   | Takeshi Saito       | Doctor of Medical Science                  | Faculty of Health Sciences, Hokkaido University  |
|   | Taro Yamauchi       | Doctor of Health Sciences                  | Faculty of Health Sciences, Hokkaido University  |
| Associate Professor                     | Shigeho Ijiri       | Doctor of Philosophy (Fisheris Science)    | Faculty of Fisheries Sciences, Hokkaido University   |
|   | Shigenobu Koseki    | Doctor of Philosophy (Agriculture)         | Research Faculty of Agriculture, Hokkaido University   |
|   | Masashi Nagano      | Doctor of Philosophy (Veterinary Medicine) | Faculty of Veterinary Medicine, Hokkaido University  |
| Lecturer                                | Keiji Okada         | Doctor of Philosophy (Agriculture)         | Research Faculty of Agriculture, Hokkaido University   |
| Assistant Professor                     | Hanako Bai          | Doctor of Philosophy (Agriculture)         | Research Faculty of Agriculture, Hokkaido University   |
|   | Tomohiro Mitani     | Doctor of Philosophy (Agriculture)         | Field Science Center for Northern Biosphere  |
| Specially Appointed Professor           | Brian Grant Fox     | Ph. D., Biochemistry                       | Professor, University of Wisconsin-Madison<br>Global Institution for Collaborative Research and Education (GI-CoRE), Hokkaido University           |
|   | Lance H. Baumgard   | Ph. D. in Animal Science                   | Professor, Iowa State University<br>Global Institution for Collaborative Research and Education (GI-CoRE), Hokkaido University                     |
|   | Robert Hackman      | Ph. D., Nutrition                          | Professor, University of California, Davis<br>Global Institution for Collaborative Research and Education (GI-CoRE), Hokkaido University           |
|   | Roger Brett Boulton | Ph. D., Chemical Engineering               | Professor, University of California, Davis<br>Global Institution for Collaborative Research and Education (GI-CoRE), Hokkaido University           |
| Specially Appointed Associate Professor | Shota Atsumi        | Doctor of Philosophy (Science)             | Associate Professor, University of California, Davis<br>Global Institution for Collaborative Research and Education (GI-CoRE), Hokkaido University |

## (2) 講義担当教員

〔兼任〕

| 職 名   | 氏 名                 | 学 位                          | 所属等  |
|-------|---------------------|------------------------------|--|
| 教 授   | 綾 部 時 芳             | 医学博士                         | 北海道大学大学院先端生命科学研究院  |
|       | 荒 木 肇               | 農学博士                         | 北海道大学北方生物圏フィールド科学センター  |
|       | 浦 木 康 光             | 理学博士                         | 北海道大学大学院農学研究院  |
|       | 齋 藤 健               | 医学博士                         | 北海道大学大学院保健科学研究院  |
|       | 山 内 太 郎             | 博士（保健学）                      | 北海道大学大学院保健科学研究院  |
| 准教授   | 井 尻 成 保             | 博士（水産学）                      | 北海道大学大学院水産科学研究院  |
|       | 小 関 成 樹             | 博士（農学）                       | 北海道大学大学院農学研究院  |
|       | 永 野 昌 志             | 博士（獣医学）                      | 北海道大学大学院獣医学研究院   |
| 講 師   | 岡 田 啓 嗣             | 博士（農学）                       | 北海道大学大学院農学研究院  |
| 助 教   | 唄 花 子               | 博士（農学）                       | 北海道大学大学院農学研究院  |
|       | 三 谷 朋 弘             | 博士（農学）                       | 北海道大学北方生物圏フィールド科学センター  |
| 特任教授  | Brian Grant Fox     | Ph. D., Biochemistry         | Professor, University of Wisconsin-Madison<br>北海道大学国際連携研究教育局（GI-CoRE）              |
|       | Lance H. Baumgard   | Ph. D. in Animal Science     | Professor, Iowa State University<br>北海道大学国際連携研究教育局（GI-CoRE）                        |
|       | Robert Hackman      | Ph. D., Nutrition            | Professor, University of California, Davis<br>北海道大学国際連携研究教育局（GI-CoRE）              |
|       | Roger Brett Boulton | Ph. D., Chemical Engineering | Professor, University of California, Davis<br>北海道大学国際連携研究教育局（GI-CoRE）              |
| 特任准教授 | 渥 美 正 太             | 博士（理学）                       | Associate Professor,<br>University of California, Davis<br>北海道大学国際連携研究教育局（GI-CoRE） |

Studies conducted based on the education provided by this graduate school are carried out at the Global Station for Food, Land and Water Resources at the Global Institute for Collaborative Research and Education (GI-CoRE), Hokkaido University.

All full-time faculty members are affiliated with the Global Institute for Collaborative Research and Education (GI-CoRE), Hokkaido University.

Diagram of GI-CoRE



Cultivating and Producing Global Human Resources Who Contribute to the Global Issue Solution





本学院で行う教育のもととなる研究は、主に北海道大学国際連携研究教育局（GI-CoRE）食水土資源グローバルステーションにて行う。

なお、全専任教員は、北海道大学国際連携研究教育局（GI-CoRE）に所属している。

〈GI-CoRE の図〉



世界の課題解決に貢献するグローバルな人材を育成・輩出!!



## (Concurrent Position)

| Job Title          | Name                       | Degree   | Affiliation   |
|--------------------|----------------------------|--|---|
| Part-Time Lecturer | Amanda Bayer               | Ph. D. in Horticulture   | Assistant Professor, University of Massachusetts Amherst  |
|                    | Juming Tang                | Ph. D., Agricultural/<br>Food Engineering                              | Professor, Washington State University  |
|                    | Peter James Hansen         | Ph. D. in Endocrinology-<br>Reproductive Physiology                    | Professor, University of Florida  |
|                    | Roger Brett Boulton        | Ph. D., Chemical Engineering   | Professor, University of California, Davis  |
|                    | Ryan Stewart               | Doctor of Philosophy   | Professor, Brigham Young University   |
|                    | Steven Buccola             | Ph. D. Agricultural Economics  | Professor, Oregon State University  |
|                    | Zhongli Pan                | Ph. D. Food Engineering  | Adjunct Professor, University of California, Davis  |
|                    | Nicolas Delbart            | Ph. D. in Remote Sensing<br>and Environmental Science                  | Associate Professor, University of Paris 7  |
|                    | Philippe Karpe             | Ph. D. in Public Law   | Senior Researcher, International expert and<br>International technical adviser, Law, Agricultural<br>Research For Development (CIRAD) |
|                    | Rickard Sandberg           | Ph. D. in Economics<br>Statistics                                      | Adjunct Associate Professor, Stockholm School of<br>Economics   |
|                    | Wayne Powell               |  | Professor, Scotland's Rural College   |
|                    | Naoyuki Funamizu           | Ph. D. in Engineering  | Executive Vice-President, Muroran Institute of Technology   |
|                    | Nobuhito Hobo              | Bachelor of Forestry   | Steering committee, National Graduate Institute for<br>Policy Studies   |
|                    | Oh Sang Kwon               | Ph. D. in Agricultural and<br>Resource Economics                       | Professor, Seoul National University  |
|                    | Tomoaki Nakatani           | Doctor of Philosophy<br>(Agriculture)<br>Ph. D. in Economic Statistics | Professor, Yokohama City University   |
|                    | Brian Joseph Jones         | Ph. D. in Cellular and<br>Molecular Biology                            | Associate Professor, The University of Sydney   |
|                    | James Fogarty              | Ph. D. in Agricultural<br>Economics                                    | Senior Lecturer, The University of Western Australia  |
|                    | Luciano Adrián<br>González | Ph. D. in Animal Production  | Associate Professor, The University of Sydney   |
|                    | Michael Alan Kertesz       | Ph. D. in Organic Chemistry  | Associate Professor, The University of Sydney   |
|                    | Ram Pandit                 | Ph. D. in Applied Economics  | Senior Lecturer, The University of Western Australia  |

## Locations of the Affiliated Institutions of Combined Position/Concurrent Position Faculty Members

## Instructors Invited from These Domestic Institutions

- ① National Graduate Institute for Policy Studies (GRIPS)
- ② Muroran Institute of Technology
- ③ Yokohama City University

## Instructors Invited from These Overseas Institutions

- ④ University of Wisconsin-Madison
- ⑤ Washington State University
- ⑥ University of Massachusetts Amherst
- ⑦ University of California, Davis
- ⑧ Brigham Young University
- ⑨ Oregon State University
- ⑩ University of Florida
- ⑪ Iowa State University
- ⑫ Université Paris Diderot (Paris-VII)
- ⑬ Agricultural Research For Development (CIRAD)
- ⑭ Stockholm School of Economics
- ⑮ Scotland's Rural College
- ⑯ Seoul National University
- ⑰ The University of Sydney
- ⑱ The University of Western Australia



〔兼任〕

| 職 名       | 氏 名                        | 学 位  | 所属等   |
|-----------|----------------------------|--|---|
| 非常勤<br>講師 | Amanda Bayer               | Ph. D. in Horticulture   | Assistant Professor, University of Massachusetts Amherst  |
|           | Juming Tang                | Ph. D., Agricultural/<br>Food Engineering                              | Professor, Washington State University  |
|           | Peter James Hansen         | Ph. D. in Endocrinology-<br>Reproductive Physiology                    | Professor, University of Florida  |
|           | Roger Brett Boulton        | Ph. D., Chemical Engineering   | Professor, University of California, Davis  |
|           | Ryan Stewart               | Doctor of Philosophy   | Professor, Brigham Young University   |
|           | Steven Buccola             | Ph. D. Agricultural Economics  | Professor, Oregon State University  |
|           | Zhongli Pan                | Ph. D. Food Engineering  | Adjunct Professor, University of California, Davis  |
|           | Nicolas Delbart            | Ph. D. in Remote Sensing<br>and Environmental Science                  | Associate Professor, University of Paris 7  |
|           | Philippe Karpe             | Ph. D. in Public Law   | Senior Researcher, International expert and<br>International technical adviser, Law, Agricultural<br>Research For Development (CIRAD) |
|           | Rickard Sandberg           | Ph. D. in Economics<br>Statistics                                      | Adjunct Associate Professor, Stockholm School of<br>Economics   |
|           | Wayne Powell               |  | Professor, Scotland's Rural College   |
|           | Oh Sang Kwon               | Ph. D. in Agricultural and<br>Resource Economics                       | Profesor, Seoul National University   |
|           | 中 谷 朋 昭                    | Doctor of Philosophy<br>(Agriculture)<br>Ph. D. in Economic Statistics | 横浜市立大学 教授   |
|           | 船 水 尚 行                    | 工学博士   | 室蘭工業大学 理事・副学長   |
|           | 粗 信 仁                      | 林学士  | 政策研究大学院大学 政策研究院参与   |
|           | Brian Joseph Jones         | Ph. D. in Cellular and<br>Molecular Biology                            | Associate Professor, The University of Sydney   |
|           | James Fogarty              | Ph. D. in Agricultural<br>Economics                                    | Senior Lecturer, The University of Western Australia  |
|           | Luciano Adrián<br>González | Ph. D. in Animal Production  | Associate Professor, The University of Sydney   |
|           | Michael Alan Kertesz       | Ph. D. in Organic Chemistry  | Associate Professor, The University of Sydney   |
|           | Ram Pandit                 | Ph. D. in Applied Economis   | Senior Lecturer, The University of Western Australia  |

〈兼任・兼任教員の所属機関所在地〉

国内教員招致機関

- ① 政策研究大学院大学
- ② 室蘭工業大学
- ③ 横浜市立大学

海外教員招致機関

- ④ ウィスコンシン大学マディソン校
- ⑤ ワシントン州立大学
- ⑥ マサチューセッツ大学アマースト校
- ⑦ カリフォルニア大学デービス校
- ⑧ プリガムヤング大学
- ⑨ オレゴン州立大学
- ⑩ フロリダ大学
- ⑪ アイオワ州立大学
- ⑫ パリ第7大学
- ⑬ フランス農学開発国際協力研究センター
- ⑭ ストックホルム経済大学
- ⑮ スコットランズ・ルーラル大学
- ⑯ ソウル国立大学
- ⑰ シドニー大学
- ⑱ 西オーストラリア大学



## 8. Number of Faculty Members

Current as of April 1, 2019

| Classification      | Full-Time | Combined Position | Concurrent Position | Total |
|---------------------|-----------|-------------------|---------------------|-------|
| Professor           | 7         | 9                 | 0                   | 15    |
| Associate Professor | 7         | 4                 | 0                   | 12    |
| Lecturer            | 3         | 1                 | 0                   | 4     |
| Assistant Professor | 1         | 2                 | 0                   | 3     |
| Other               | 0         | 0                 | 20                  | 20    |
| Total               | 18        | 16                | 20                  | 54    |

## 9. Number of Students

Current as of April 1, 2019

| Major                              | Program                                 | Admissions Capacity | Number of Enrollees |
|------------------------------------|---|---------------------|---------------------|
| Global Food Resource Studies Major | Master's Degree Program 2 <sup>nd</sup> | 15                  | 17 (3)              |
|                                    | Master's Degree Program 1 <sup>st</sup> | 15                  | 19 (4)              |
|                                    | Doctoral Degree Program 1 <sup>st</sup> | 6                   | 6 (4)               |
| Total                              |   |                     | 42 (11)             |

※ Breakdown of international students in parentheses





## 8. 教 員 数

平成 31 年 4 月 1 日現在

| 区 分 | 専 任 | 兼 担 | 兼 任 | 合 計 |
|-----|-----|-----|-----|-----|
| 教 授 | 7   | 9   | 0   | 15  |
| 准教授 | 7   | 4   | 0   | 12  |
| 講 師 | 3   | 1   | 0   | 4   |
| 助 教 | 1   | 2   | 0   | 3   |
| その他 | 0   | 0   | 20  | 20  |
| 計   | 18  | 16  | 20  | 54  |

## 9. 学 生 数

平成 31 年 4 月 1 日現在

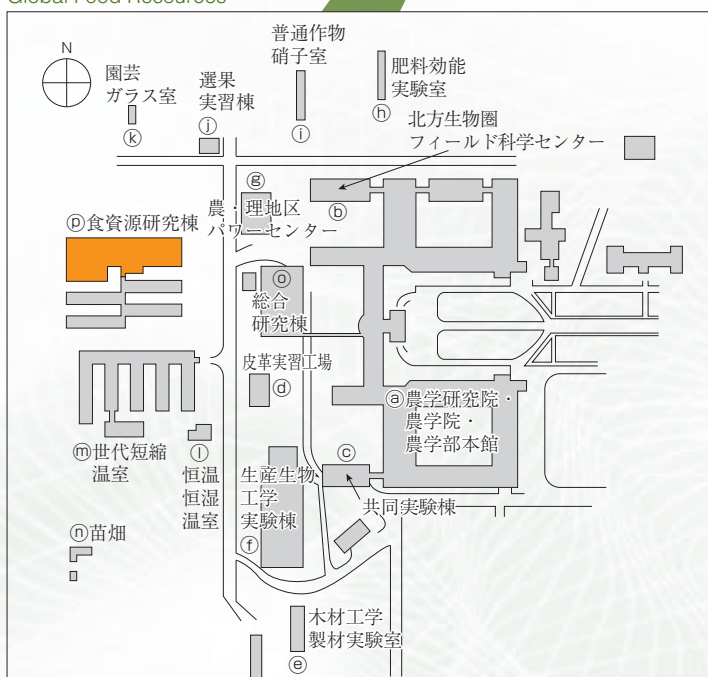
| 専 攻      | 課 程        | 入学定員 | 在籍者数    |
|----------|------------|------|---------|
| 国際食資源学専攻 | 修士課程 2 年   | 15   | 17 (3)  |
|          | 修士課程 1 年   | 15   | 19 (4)  |
|          | 博士後期課程 1 年 | 6    | 6 (4)   |
| 合 計      |            |      | 42 (11) |

※括弧内は外国人留学生で内数



# 北海道大学大学院国際食資源学院

Hokkaido University  
Graduate School of Global Food Resources  
Kita9, Nishi9, Kita-ku, Sapporo



- Ⓐ Research Faculty of Agriculture/Graduate School of Agriculture/School of Agriculture
- Ⓑ Field Science Center for Northern Biosphere
- Ⓒ Common Experiment Building
- Ⓓ Practical Leather and Fur Workroom
- Ⓔ Laboratory of Wood processing
- Ⓕ A Production Bionics Experiment Ridge
- Ⓖ Power Center
- Ⓗ A Manure Effect Laboratory
- Ⓘ Ordinary Crops Glass Room
- Ⓙ The Training Ridge Which Sorts Fruits (Experimental Farms)
- Ⓚ Gardening Glass Room
- Ⓛ Controlled Enviromental Greenhouse
- Ⓜ Greenhouse for Forced Regeneration of Plants
- Ⓝ Experimental Nursery
- Ⓞ Bioscience and Biotechnology Building
- Ⓟ Food Resources Research Building





北海道大学  
大学院国際食資源学院  
Graduate School of Global Food Resources  
Hokkaido University

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