

## 研究科長あいさつ Dean's Welcome Message



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本学の自然科学研究科は、昭和62（1987）年4月に博士課程研究科として発足した後、平成17（2005）年度からは、複数学部を基礎学部として、前期課程と後期課程を一体化した区分制総合大学院として、岡山大学の目的である「人類社会の持続的進化のための新たなパラダイム構築」の一翼を担ってきました。その後も再編を行い、平成30（2018）年4月には、本研究科の一部が分離して工学における医学応用分野の確立を目指すヘルスシステム統合科学研究科が発足しました。同時に、異分野基礎科学研究所を基盤として、様々な先端基礎科学分野を横断的に学ぶ学際基礎科学専攻の設置により、現在は博士前期課程7専攻、博士後期課程5専攻、および5年一貫制博士課程1専攻の体制になっています。

産業革命以後の目覚ましい科学技術の発展により、我々の生活は快適かつ便利になりました。反面、エネルギーや環境問題など解決すべき問題が山積です。科学や技術の力によって、これらの問題を解決するための人材を養成することは大学の大きな使命であります。すなわち、科学上の新たな発見や技術の発展において、世界をリードできるしっかりとした専門性と、複雑な問題に対応できる多面的な知識に基づく柔軟性を兼ね備える人材の育成が必要です。このような観点から、現在の自然科学研究科は、科学および技術の進展を牽引する基礎科学と応用工学を両翼として、それぞれの専門分野の「深化」を図るとともに理学と工学の「融合」を取り入れた大学院になっています。また、総合性と学際性を有した国際的に活躍する研究者、技術者、教育者を育成できるように「機能分化」と「協調」の両立が可能な教育・研究組織となっています。さらに、社会の要請に応える教育研究組織として、世界のリーディング大学に伍して卓越した研究成果を発信するとともに、その最先端の研究に裏打ちされた教育により自立して問題を解決し、グローバルに活躍できる人材育成を目指しています。同時に、環境生命科学研究科と連携

する「研究科横断Flex BMDコース」などにより、異分野融合教育を行うとともに、学部と大学院のスムーズな接続を図っています。

人類社会の持続的発展のために科学技術の果たすべき役割は非常に重要であり、そのための人材を育成する自然科学研究科の責務は計り知れず重いものと考えます。本研究科は「深化」と「融合」の実践により、卓越した教育研究を担う大学院として「学都」岡山大学を実現するとともに、科学技術のグローバル化、Society 5.0 社会の構築、地域はもちろん、日本の産業や社会の活性化、それらを通して、国連の掲げる持続可能な開発目標(SDGs)に大きく貢献することを目指します。

現在、世界は未曾有の危機に直面しています。本研究科は岡山大学の中核を担う部局の一つとして、ポストコロナの時代に夢のある、持続可能な社会を実現すべく、世界最高水準の研究成果の創出と人材育成・輩出を継続します。本研究科の教育・研究・人材資源を活用し、そのような社会実現に少しでも近づけるよう、大学を取り巻く関係者の皆様との連携を一層深めて参りたいと考えています。

The Graduate School of Natural Science and Technology, Okayama University was inaugurated in April 1987 as a doctoral program. Since 2005, reorganization was done to integrate independent master's and doctoral courses into postgraduate courses, transforming our postgraduate organization into a graduate school comprising the first- and second-phase doctoral programs. Since then, the Graduate School has been instrumental in accomplishing the purpose of Okayama University, namely, "Building up a new paradigm for a sustainable world." In April 2018, part of this Graduate School was spun off to become the Graduate School of Interdisciplinary Science and Engineering in Health Systems, which aims to establish a discipline of engineering that is effectively applicable to medical science. Also, the Division of Interdisciplinary Science was newly established in the doctoral course based on the Research Institute for Interdisciplinary Science, in order to pursue a wide variety of cutting-edge fundamental sciences transcending disciplinary boundaries. As a result, our research and education organization currently consists of seven divisions in the master's course, five divisions in the doctoral course, and one five-year Ph.D. course.

Ever since the Industrial Revolution, science and technology have developed remarkably, making our everyday lives more convenient and comfortable. On the other hand, however, we are now confronting an increasing number of challenges, including energy and environmental problems. The major mission of our university is to nurture human resources capable of resolving these emerging problems by exercising their scientific and engineering capabilities. In other words, we should develop individuals who combine solid expertise to lead the world in making pioneering discoveries and significant scientific progress, with the flexibility to manage urgent and complex problems based on multifaceted knowledge. With this view, the Graduate School of Natural Science and Technology focuses on fundamental science and applied engineering, both of which drive scientific and engineering advancement, so as to keep on "deepening" knowledge in each discipline and produce synergistic effects through the "integration" of science and engineering. In addition, the Graduate School is an educational and research organization that makes both "functional specialization" and "cooperation" possible to cultivate researchers, engineers, and school teachers who can play an active role in the international arena, capitalizing on comprehensive and interdisciplinary competencies. Furthermore, as an education and research organization responding to society and ranked as a world-leading university, this Graduate School disseminates worldwide prominent research results and aims at training personnel who can play active roles in global society and are able to solve problems independently at the highest level of education. At the same time, we have set up an interdisciplinary sub-major course, the "Flex BMD Course," in cooperation with the Graduate School of Environmental and Life Science, to provide education integrating different fields of specialization, and ensure a smooth connection between doctoral, master's and undergraduate courses.

Science and technology human resources play a crucial role in achieving the sustainable development of humanity. In this respect, I believe that the Graduate School of Natural Science and Technology, whose objective is to cultivate such personnel, assumes an extremely grave responsibility. The Graduate School is working to evolve Okayama University into a distinctive "academic capital," as a postgraduate institute that is committed to prominent education and research by implementing the aforementioned "deepening" and "integration" initiatives. The Graduate School also strives to greatly contribute to scientific and technological globalization, and to the revitalization of Japanese industries, local communities and society as a whole—toward the creation of "Society 5.0," while helping achieve the Sustainable Development Goals (SDGs) advocated by United Nations.

The world is now facing an unprecedented crisis. As one of the institute that play a central role at Okayama University, the Graduate School will continue to produce world-class research outputs as well as human resources in order to realize a sustainable society with dreams in the post-corona era. In order to make use of the education, research, and human resources of the Graduate School to bring the society closer to reality as much as possible, we would like to further deepen our cooperation with our communities and stakeholders.