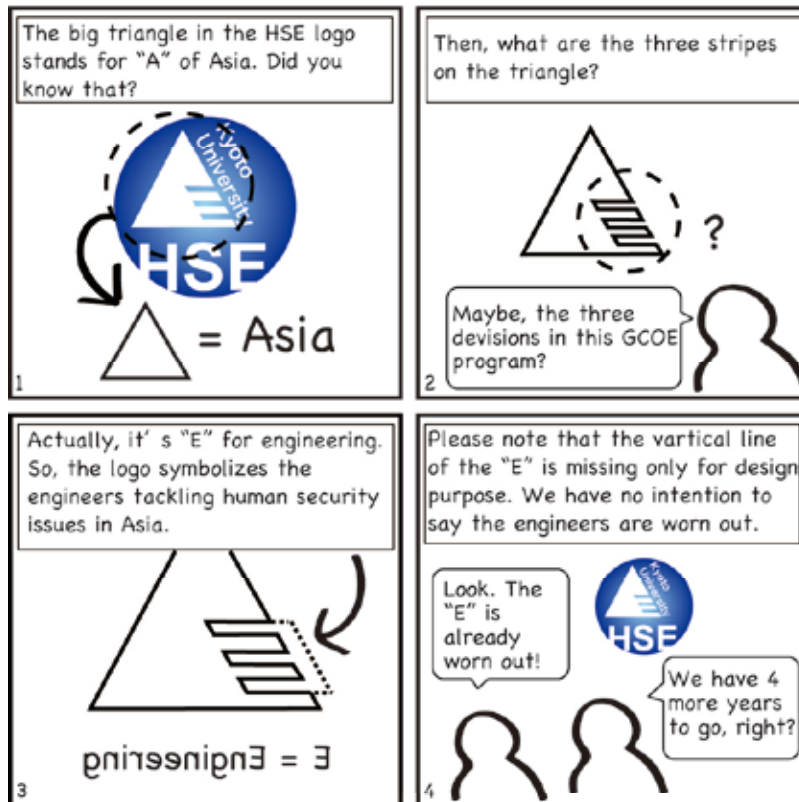


Humorous Stories about Engineers

No. 1



Kyoto University Global COE Program

**Global Center for Education and Research on
Human Security Engineering for Asian Megacities**

京都大学グローバルCOEプログラム

アジア・メガシティの人間安全保障工学拠点

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Graduate School of Engineering

大学院工学研究科

Urban and Environmental Engineering <http://www.uee.kyoto-u.ac.jp/english/index.html>
都市環境工学専攻

Civil and Earth Resources Engineering http://www.ce.t.kyoto-u.ac.jp/en/index_html
社会基盤工学専攻

Urban Management <http://www.um.t.kyoto-u.ac.jp/en>
都市社会工学専攻

Architecture and Architectural Engineering <http://www.ar.t.kyoto-u.ac.jp/en>
建築学専攻

Graduate School of Global Environmental Studies <http://www.ges.kyoto-u.ac.jp/english/index.html>
地球環境学堂・学舎

Disaster Prevention Research Institute http://www.dpri.kyoto-u.ac.jp/web_e/index_e.html
防災研究所

Human Security Engineering

Newsletter

Kyoto University Global COE Program
Global Center for Education and Research on
Human Security Engineering for Asian Megacities

ニュースレター

Human Security Engineering

2009.3.

No. 1



Invited guests and Program members at the Opening Symposium (December 19, 2008)



The Staff of the GCOE HSE Center

For establishing the discipline of "Urban Human Security Engineering"

CONTENTS

- 1 Activity Report
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- 6 Join Our GCOE Program!
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Opening Symposium of the Global COE Program "Global Center for Education and Research on Human Security Engineering for Asian Megacities" at Kyoto University

京都大学グローバルCOEプログラム「アジア・メガシティの人間安全保障工学拠点」オープニングシンポジウム報告

Date : December 19th, 2008

Place : Funai Auditorium/Katsura Hall, Kyoto University at Katsura, Japan

Organized by the Global COE program "Global Center for Education and Research on Human Security Engineering for Asian Megacities"

Co-organized by Support Program for Improving Graduate School Education "Int'tech Fusion Graduate School Engineering Education Program"

The opening symposium of the Global COE program "Global Center for Education and Research on Human Security Engineering for Asian Megacities" was held at Funai Auditorium on December 19th, 2008.

In the symposium, Nobutaka Fujii, executive vice president of Kyoto University, Koichiro Oshima, dean of the Graduate School of Engineering, Shintaro Kobayashi, dean of the Graduate School of Global Environmental Studies, and Masahiro Chigira, vice dean of the Disaster Prevention Research Institute expressed their expectations and ambitions regarding this program, and Yuzuru Matsuoka, the leader of this GCOE program, introduced the concept of human security engineering. In addition, the invited representatives of the overseas bases in Bandung, Bangkok, Hanoi, Mumbai, Shenzhen, and Singapore introduced their respective overseas bases and the future research collaboration with Kyoto University. The leaders of the four research areas, Urban Governance, Urban Infrastructure Management, Health Risk Management and Disaster Risk Management, also presented their visions for future research in each respective area. More than 350 participants attended the symposium, bringing together not only professors, but also a large number of students, reflecting a growing interest in Human Security Engineering.

A banquet closed the symposium offering the Kyoto University professors a chance to strengthen the ties with the representatives of the overseas bases. The exchange of opinions was fruitful amongst the representatives of the overseas bases, sharing their perceptions and future visions of this program. For detailed information on this program access <http://hse.gcoe.kyoto-u.ac.jp>.



日時 : 2008年12月18日

場所 : 京都大学桂キャンパス
船井哲良記念講堂

2008年12月18日に、京都大学桂キャンパス・船井哲良記念講堂において、文部科学省グローバルCOEプログラム「アジア・メガシティの人間安全保障工学拠点」に関するオープニングシンポジウムが開催された。

本シンポジウムでは、藤井信孝・京都大学副学長／理事、大島幸一郎・工学研究科長、小林慎太郎・地球環境学学長、千木良雅弘・防災研究所副所長より本プログラムに対する期待と抱負が述べられると共に、GCOE拠点リーダーである松岡譲教授より本プログラムの紹介が行われた。また、海外6拠点（シンセン、ハノイ、バンコク、バンドン、シンガポール、ムンバイ）から代表者が招かれ、各拠点の状況や今後の研究協力へ展望が紹介され、4研究領域（都市ガバナンス、都市基盤マネジメント、健康リスク管理、災害リスク管理）の代表者からは、各領域の今後の研究展望が紹介された。約350名以上の参加者があり、教員関係者のみならず、数多くの学生の参加が確認され、その関心の高さが示された。

本シンポジウム後に開かれた懇親会では、京都大学関係者と海外拠点関係者の交流がはからただけでなく、海外拠点関係者間での有意義な意見交換がなされ、今後の本プログラムのビジョンを共有する有意義な場となった。詳しくはウェブサイト(<http://hse.gcoe.kyoto-u.ac.jp>)をご覧ください。



Program leader
Yuzuru Matsuoka

Professor
Department of Urban and
Environmental Engineering,
Graduate School of Engineering,
Kyoto University

拠点リーダー
松岡 譲

教授
京都大学大学院工学研究科
都市環境工学専攻

Kyoto University has launched a new Global Center Of Excellence (GCOE) Program entitled "Global Center for Education and Research on Human Security Engineering for Asian Megacities" in the Graduate School of Engineering (the departments of Urban and Environmental Engineering, Civil and Earth Resources Engineering, Urban Management, and Architecture and Architectural Engineering), the Graduate School of Global Environmental Studies, and Disaster Prevention Research Institute since 2008 fiscal year. This GCOE Program is funded by the Japanese Ministry of Education, Culture, Sports, Science and Technology, in order to "strengthen and enhance the education and research functions of graduate schools, to foster highly creative young researchers who will go on to become world leaders in their respective fields through experiencing and practicing research of the highest world standard." Fulfilling basic human needs and assuring the self-sustainable recovery from environmental pollution and disasters in Asian Megacities have been the major challenges for several decades, and the situation still needs more improvement. One main reason for this unsuccessful situation was the unsystematic management of the technologies and systems for dealing with those risks rather than the rapid growth of cities. Furthermore, past attempts to solve human security issues overlooked the importance of the development of human resources and communities for systematically applying those technologies and systems to their specific problems. From the above awareness, in this program, we will attempt the complementary co-evolution among technologies, urban management, and policy design by putting greater emphasis on local orientation while fully utilizing our rich academic traditions of civil engineering, architecture, environmental engineering and disaster prevention research. With this approach, we will develop the existing individual disciplines into a more comprehensive discipline that encompasses fields such as urban management strategies, urban policy in order to establish human security in Asian megacities, and promote research and education in this new discipline. More specifically, we will work together with universities, research institutions, and private enterprises in Asia through the network of six overseas bases, and foster 20 doctoral students per academic year.

We are looking forward to your response on this new GCOE program.

京都大学工学研究科の地球工学科系及び建築学のグループ、地球環境学大学院（地球環境学学舎・学舎）及び防災研究所は、2008年度から「アジア・メガシティの人間安全保障工学拠点」のテーマでグローバル・センター・オブ・エクセレンス・プログラム（GCOE）を実施しております。GCOEとは、日本の文部科学省が行っている事業であり、「大学院の教育研究機能を一層充実・強化し、世界最高水準の研究基盤の下で世界をリードする創造的な人材育成を図るため、国際的に卓越した教育研究拠点の形成をめざすものです。アジアのメガシティでは、ベシク・ヒューマン・ニーズ、環境汚染、災害とそれらに対する自立的な対応能力をいかに確保するかが大問題となっております。しかし、過去数十年間は失敗の歴史でした。都市の膨張が急激に起こってきたこともありますが、さらに重要なことは、そうしたリスクに対応する技術、制度の整備がバラバラに行われてきたこと、さらに技術や制度を取り入れても、それをマネージするコミュニティや人材の整備に関心が払われてこなかったためです。このような認識に立ち、このプログラムでは、土木工学・建築学・環境工学・防災学をベースとしながらも、徹底した現場主義に基づき、工学技術と都市経営管理と制度づくりの相補的な共進の促進に力を注ぐことによって、これまで築いてきた要素的な学問を、人間安全保障の確保に向け、都市の管理戦略や政策策定を含む総合的な学問に脱皮させ、それに基づいた教育・研究を行います。具体的には、京都に置く本部拠点に加え、アジア地域の6都市に展開した海外拠点をベースに、各国大学・研究機関・民間企業などと共同研究を行い、年間20名の博士課程学生を養成するなど、様々な活動を実施しております。

このプログラムに関心ある方々の積極的なコンタクトを期待します。





Kyoto



Shenzhen



Hanoi



Bangkok



Singapore



Bandung



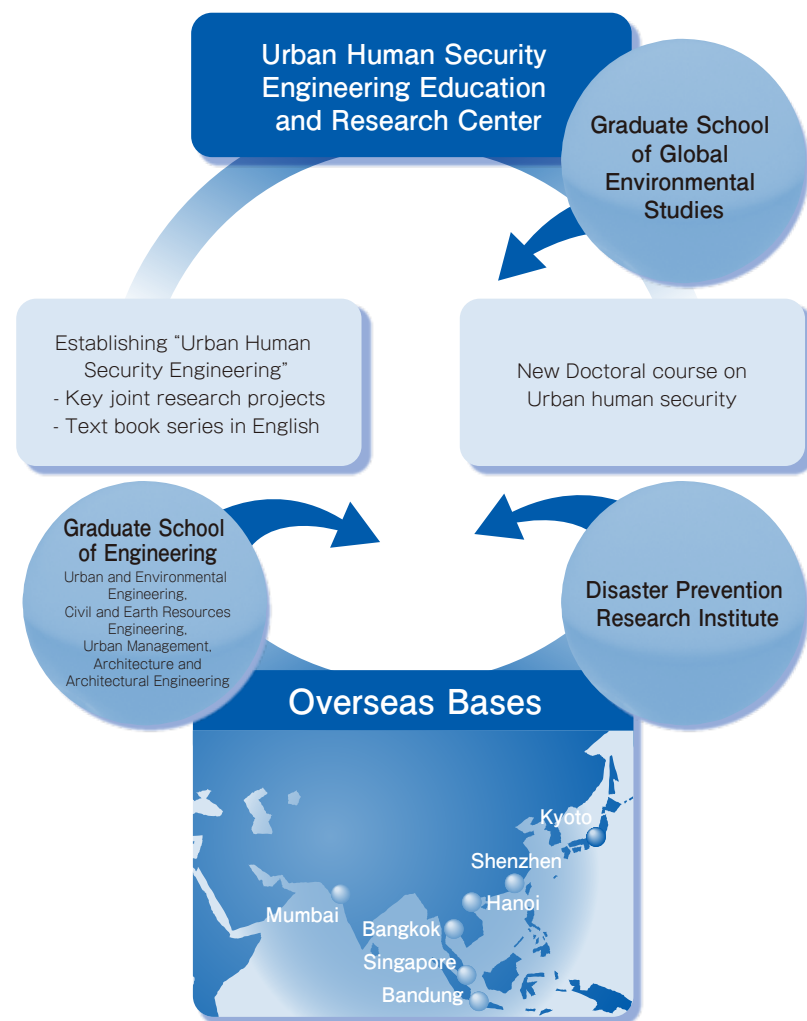
Mumbai

"Urban Human Security Engineering Education and Research Center" in Kyoto (Katsura Campus) serves as the hub for all activity and cooperation for overseas bases. Also, the center is the hub for the graduate schools in Kyoto University associated with human security engineering, *i.e.* the Graduate School of Engineering (Urban and Environmental Engineering, Civil and Earth Resources Engineering, Urban Management, and Architecture and Architectural Engineering), the Graduate School of Global Environmental Studies, and the Disaster Prevention Research Institute.

The network of overseas bases will be expanded for closer international education and research activities.

京都大学内に設置する「都市の人間安全保障工学研究・教育センター」と海外拠点群を中心に、工学研究科(都市環境工学専攻、社会基盤工学専攻、都市社会工学専攻、建築学専攻)、地球環境学学舎、防災研究所といった人間安全保障工学に関連する部局が総力をあげて研究・教育活動を展開します。

海外拠点は現在、中国、ベトナム、タイ、シンガポール、インドネシア、インドの6ヶ国に設置されていますが、今後も新たに整備される予定であり、より緊密な国際研究・教育ネットワークの構築を目指します。



In this five-year program, Kyoto University will establish a new discipline "urban human security engineering" and create a network of overseas bases for research and education on an Asian-wide scale to foster next generation researchers and high-level practitioners. Through this program, we will contribute greatly to solving human security issues in Asian megacities.

本プログラム(2008年度より5年間)では、都市の人間安全保障工学を構築し、それを教育・研究する拠点群の整備を行うことによって、次世代研究者及び高度な実務者の育成をアジア規模で行います。このプログラムを通じてアジアの人間安全保障問題の解決に大きく貢献します。

Establishing the discipline of "Urban Human Security Engineering"

「都市の人間安全保障工学」の構築

We define "Urban Human Security Engineering" as a system of technologies (techniques) for designing and managing cities that enable their inhabitants to live under better public health conditions, and also live free from potential threats of large-scale disasters and environmental destruction, as listed in the Millennium Development Goals. For establishing this discipline, four existing fields, *i.e.* urban governance, urban infrastructure management, health risk management, and disaster risk management, are integrated into one discipline. Also, we will disseminate this new discipline globally through the publication of a textbook series in the English language.

「都市の人間安全保障工学」,すなわち「市民の生活を、ミレニアム開発目標などに代表される日々の都市生活に埋め込まれた非衛生・不健康及び大規模災害・大規模環境破壊などの脅威から解放し、各人が尊厳ある生活を快適に全うすることができる都市と都市群をデザイン・管理する技術(技法)の体系」を構築します。これまで実施してきた都市ガバナンス、都市基盤マネジメント、健康リスク管理、災害リスク管理の4領域にわたる教育科目・研究等の相補的連携と統合を図ります。また、この成果を英文テキストとして刊行します。

Human Security Engineering

Urban infrastructure management

Health risk management

Disaster risk management

Urban governance

Research 研究内容

In this program, all the research projects are run on a proposal-basis. Currently, the following projects are in progress.

本プログラムでは、研究プロジェクト提案型の研究推進を行っています。現在、各研究領域で以下のプロジェクトが進行中です。

Disaster Risk Management

- Research/education project on reduction strategy of human casualties due to city disasters in Indonesia
- Development of river bank protection system in flood disaster mitigation and evaluation of its application
- Exposure of earthquake related risk potential in Indonesia and development of site-oriented disaster prevention educational materials
- Research and education project on active fault evaluation to mitigate earthquake/tsunami disasters at Indonesian megacities
- Research and education project on emergency crowd evacuation in Bangkok
- Strategy for disaster mitigation of buildings in Asian historic cities
- Research and education on flood risk governance in Asian megacities
- Research and education on earthquake and tsunami risk management in Asian megacities
- Implementation strategies of disaster risk management in Asian megacities: focusing on Indian megacities
- Implementation strategies of disaster risk management in Asian megacities: focusing on Vietnamese megacities
- Implementation strategies of disaster risk management in Asian megacities: focusing on Chinese megacities
- Implementation strategies of disaster risk management in Asian megacities: focusing on Malaysian megacities

Urban Governance

- Study on the consolidation of human security integrated with scenarios toward low carbon societies in Malaysia
- Waste management scenario to avoid open dumping
- Urban Governance in Asia
- A methodology for communication survey for the measurement of social capital
- Institutional structure and vulnerability of electric power and water resource provision in Asian megacities -comparative institutional analysis approach-
- Reallocation of urban space in Asian megacities based on safety, amenity and health
- Urban governance for conservation and regeneration of dwelling environments and townscape in Asian historic cities
- Climate and disaster resilience in Asian cities
- Study on urban impacts to living environment in old historic quarters of Vietnam
- Research on community-based environmental management methods for Asian megacities

Health Risk Management

- Evaluation and management of environmental risk in Asian megacities
- Epidemiological study on health effect due to traffic noise
- Study on dynamics of minor elements in Asian megacities
- Development of an integrated drinking water treatment process using membrane filtration in cities of southern China
- Controlling policy construction of greenhouse gas and risk management framework construction of hazardous component discharged from landfill site in Asia region
- Study on procedure establishment of human security programs for water environmental in Asian megacities
- Geo-engineering for waste reuse and management
- Policy studies on participatory environmental governance in east Asian megacities
- Development of bryophyte indicators for urban environments and monitoring based on public participation
- A study of environmentally sound water and sanitation system focusing on co-treatment and recycling of waste and wastewater

Urban Infrastructure Management

- Asset management of urban infrastructure
- Introduction of self-sustaining technologies for small infrastructures using local materials
- Survey on maintenance strategy for urban infrastructures in Asian megacities
- Prediction, mitigation, and monitoring of the damages to earth structures and slopes caused by torrential rains and earthquakes in South East Asia
- Research and educational project for introduction of environmental accounting into improvement of infrastructure in urban area
- Project evaluation of waste management based on development of environmental accounting system
- Project evaluation on improvement of civil infrastructure based on environmental accounting system
- Research and education project on energy supply and demand at Asian megacities
- Research on energy supply by zero-emission coal power generation
- Time-series analysis of urban heat island effects and energy consumptions in Asian megacities with satellite data
- Urban food security system (integrated river basin management, water resource system and irrigation)
- Monitoring and forecast of food production and water use using satellite data and crop model
- Management of groundwater resources in Asian megacities based on the integration of soil science, groundwater environment and geotechnical engineering
- Water resources vulnerability analysis in Southeast Asia
- Urban transport systems and city logistics for safe, secure, and health life in Asian megacities
- Evaluation of the effect of overloaded vehicles on bridges in urban areas by BWIM (Bridge Weight-in-Motion)
- Sophistication of normal and emergency logistics in Asian megacities
- A study of traffic safety and control system for road network in Asian megacities
- Three-dimensional modeling of historical buildings in old quarters in Vietnam and Japan

Education of next-generation researchers and high-level practitioners for human security in Asia

次世代研究者及び高度な実務者の育成とメガシティにおける人間安全保障の確保

We will foster next-generation researchers and high-level practitioners through a network of international education and research bases. We will greatly contribute to the solving of human security issues by providing roadmaps to escape from the threats mentioned above, and concrete urban management strategies for several Megacities. More specifically, this GCOE program will

- 1 Establish a network of overseas bases
- 2 Establish a new doctoral program
- 3 Implement key joint research projects
- 4 Organize many international symposia and workshops
- 5 Establish "Urban Human Security Engineering Education and Research Center"

By posing specific challenges in human security, it is expected that civil engineering, architecture, environmental engineering, and disaster prevention research will realize their effectiveness and social usefulness, and then our program will create a new and worldwide academic trend as "human security engineering triggered by Asia" including urban management and governance, beyond the boundary of engineering.

これまでに構築・展開してきたアジア諸国での教育・研究拠点を組織化した国際的教育・研究拠点ネットワークにより次世代研究者及び高度な実務者を育成します。また、いくつかのメガシティにおいて、非衛生・不健康、大規模災害及び環境破壊などから脱出するロードマップと都市マネジメント戦略の具体的な処方箋を提案し、アジア・メガシティにおける人間安全保障問題の解決に大きく貢献します。具体的な活動内容は以下ようになります。

- 1 海外活動拠点、海外連携拠点の設置・展開
- 2 新しい博士課程教育プログラムの開設（年間20名）
- 3 重点共同研究プロジェクト等の推進
- 4 多数のシンポジウム・ワークショップの実施
- 5 「都市の人間安全保障工学教育・研究センター」の設置・運営

本プログラムにより、これまで独自に先鋭化しがちであった土木工学、建築学、環境工学、防災学といった既存の学問は、メガシティの人間安全保障といった具体的課題を課されることによって、本来的な意味での市民工学としての輝きと社会的有効性を取り戻し、広く工学技術を越え、都市政策学・ガバナンスなどをも包含した「アジア発の人間安全保障工学」として、世界的な学術潮流を巻き起こします。

Join Our GCOE Program! 本プログラムへの参加

As a doctoral student 博士課程学生として

In this program, we will provide you with a practical and unique education and research experience of the highest quality in human security engineering. This program will accept 20 students annually. You have to pass both the entrance exam to one of the four engineering departments (Urban and Environmental Engineering, Civil and Earth Resources Engineering, Urban Management, or Architecture and Architectural Engineering) or the Graduate School of the Global Environmental Studies organizing this program and this GCOE program's own exam. In the latter exam, your project proposal is evaluated. Each department/graduate school has an admission system for working students. Visit our website (<http://hes.gcoe.kyoto-u.ac.jp>) for more details.

このプログラムではアジア・メガシティの人間安全保障に関する世界最高水準の実践的かつユニークな教育・研究プロジェクトを通じて、次世代の研究者、高度実務者を育成します。年間20人（日本人学生とアジア諸国留学生の比=2:3）の学生を受け入れます。このプログラムに参加するためには、本プログラムを構成する部局・専攻（工学研究科都市環境工学専攻、社会基盤工学専攻、都市社会工学専攻、建築学専攻、または地球環境学舎）の博士後期課程入学試験を受験し、本教育プログラム委員会が実施する選考試験に合格する必要があります。選考試験では、入学後に実施する現場主義にもとづく人間安全保障工学に関する研究プロジェクトを提案していただきます。また、各部局・専攻には社会人向けの試験制度も用意されています。詳しくはウェブサイト（<http://hse.gcoe.kyoto-u.ac.jp>）をご覧ください。

As a partnership institution, organization, and company 連携機関・企業として

In this program, we will attempt to solve the problems in human security in Asian megacities. For this purpose, your participation is essential, especially for successful key joint research projects (financial aid available), which are intended to tackle locally-oriented issues. Your participation will create better access to the cutting-edge information on this new discipline and the human resource pool of this program, and more opportunities for future collaboration.

このプログラムでは、アジアの人間安全保障にかかわる問題に実践的にアプローチします。そのため、実際の問題に直面している関連機関・企業との緊密な連携が必要不可欠です。連携機関・企業としてご参加いただくと、プロジェクトの共同実施、本プログラム成果の利用、人的交流など、様々な面でアジアの人間安全保障問題に対する新しいアプローチが可能になります。

Name	Affiliated department	Specialized field
Yuzuru Matsuoka 松岡 譲	Professor, Graduate school of Eng. (Dept. of Urban and Environ. Eng.) 工学研究科(都市環境工学専攻)・教授	Environ Systems eng. 環境システム工学
Teruyuki Monnai 門内 輝行	Professor, Graduate school of Eng. (Dept. of Architecture and Architectural Eng.) 工学研究科(建築学専攻)・教授	Architecture and environ. eng. 建築・都市計画
Hiroyasu Ohtsu 大津 宏康	Professor, Graduate school of Eng. (Dept. of Urban Management) 工学研究科(都市社会工学専攻)・教授	Construction eng. systems 土木施工システム
Hiroaki Tanaka 田中 宏明	Professor, Graduate school of Eng. (Research Center for Environmental Quality Management) 工学研究科附属流域圏総合環境質研究センター・教授	Environ. quality evaluation 下水道工学
Hirokazu Tatano 多々納 裕一	Professor, Disaster Prevention Research Institute 防災研究所・教授	Disaster prevention economics 防災経済学
Eiichi Taniguchi 谷口 栄一	Professor, Graduate school of Eng. (Dept. of Urban Management) 工学研究科(都市社会工学専攻)・教授	Urban management systems 交通計画
Shigeo Fujii 藤井 滋穂	Professor, Graduate school of Global Environ. Studies (Dept. of Technology and Ecology) 地球環境学舎(地球親和技术学舎)・教授	Water environ. control 水環境管理学
Toshifumi Matsuoka 松岡 俊文	Professor, Graduate school of Eng. (Dept. of Civil and Earth Resources Eng.) 工学研究科(社会基盤工学専攻)・教授	Geological eng. 地質工学
Kiyoshi Kobayashi 小林 潔司	Professor, Graduate school of Eng. (Dept. of Urban Management) 工学研究科(都市社会工学専攻)・教授	Planning and management systems 計画マネジメント論
Rajib Shaw ショウ ラジブ	Associate Professor, Graduate school of Global Environ. Studies (Dept. of Technology and Ecology) 地球環境学舎(地球親和技术学舎)・准教授	Environ. disaster prevention management 環境防災マネジメント
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