




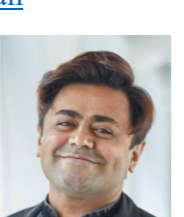
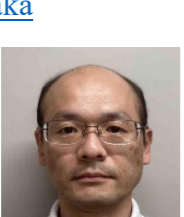




Appendix: Kyoto University Short-Term Academic Research (KU-STAR) Program Lab List

2024/12/18

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No	Field	Name	Affiliation	Research Topic	Keywords	Who can apply		Requirements (degree/knowledge/skill)	Webpages	Meet KU Researchers
						UG	Master			
1	20th Century American History, History of Cultural/Science Diplomacy	Prof. Moriguchi, Yuka 	GS of Human and Environmental Studies	Science, technology and cultural Cold War in Asia	#Cold War #US #Asia	●	●	Basic knowledge of American history	https://www.h.kyoto-u.ac.jp/en/f/faculty/moriguchi_yuka_925d/	
2	Agricultural Biology	Prof. Nasuda, Shuhei 	GS of Agriculture	1. Plant breeding 2. Plant reproduction science 3. Plant genetics and genomics	#Gametogenesis #Genetic Resources #Wheat		●	A strong background in genetics is required.	https://www.ikushu.kais.kyoto-u.ac.jp/index.html	
3	Architectural/Structural Engineering	Snr. Lec. /Jr. Assoc. Prof. Inamasu, Hiroyuki 	GS of Engineering	Resilient steel structures	#Design/Assessment/Enhancement of seismic-resistant steel structures #Structural collapse simulations		●	Bachelor's degree in civil/architectural engineering (Focusing on structural engineering) Basic knowledge of structural mechanics, structural dynamics, structural materials, and basic math/physics (calculus, linear algebra, fundamental physics, etc.)	http://www.steel.archi.kyoto-u.ac.jp/index.html	
4	Architecture	Snr. Lec. /Jr. Assoc. Prof. Komiyama, Yosuke 	GS of Engineering	Timber construction and design	#Timber #Construction #Design	●		Good design skill and strong interest in timber construction design	https://press.archi.kyoto-u.ac.jp/laboratory/plan/	
5	Bioengineering	Assoc. Prof. Hotta, Akitsu 	Center for iPS Cell Research and Application (CiRA)	1. Genome editing therapy for muscular dystrophies 2. Delivery technology with virus-like particle 3. iPSC-based cell therapy	# CRISPR-Cas Genome Editing # Lentiviral Vector # Extracellular Vesicle Vector # Patient-derived iPS Cells	●	●	Highly enthusiastic for a Ph.D. degree at CiRA in the interdisciplinary area of stem cells and genetic engineering. Strong knowledge of iPS cells, genome editing, and/or gene delivery technologies	https://hotta-lab.cira.kyoto-u.ac.jp/en/index.html	
6	Bioengineering	Snr. Lec. /Jr. Assoc. Prof. Namasivayam, Ganesh-Pandian 	Institute for Integrated Cell-Material Sciences (iCeMS) /GS of Engineering	1. Epigenetics 2. Nucleic acid therapeutics 3. Stem cell control 4. Personalized medicine	#Skin Cell Aging #Mitochondria #Chemical Biology	●	●	Bachelor's degree / Master's students Basic knowledge of biology or chemistry	https://www.namasivayam.icems.kyoto-u.ac.jp/	
7	Biology	Assoc. Prof. Oyama, Tokitaka 	GS of Science	1. Circadian systems of photosynthetic organisms 2. Bioluminescence reporter systems 3. Plant-microbe interaction 4. Applications of duckweed plants	#Circadian Rhythm #Photoperiodism #Bioluminescence	●	●	Background of plant physiology and molecular biology Completing a laboratory course (class) for molecular biology experiments	http://www.biol.sci.kyoto-u.ac.jp/en/laboratory/292/	
8	Biomedical Engineering	Prof. Yokokawa, Ryuji 	GS of Engineering	Developing vascularized microphysiological systems (MPS) to 1) explore organ development mechanisms by replicating vascularized tissue environments 2) recapitulate disease conditions for drug discovery 3) model and analyze angiogenesis and vasculogenesis processes integrating machine learning	#Microphysiological Systems (MPS) #Machine Learning #Nano/micro Fabrications	●	●	Bachelor's degree in biomedical engineering Master's students with basic knowledge and high motivation in interdisciplinary research based on biomedical engineering, mechanical engineering, cell and molecular biology	https://www.mbsvs.me.kyoto-u.ac.jp/en/	
9	Biostudies	Prof. Aoki, Kazuhiro 	GS of Biostudies	1. Cell fate decision making 2. Whole cell modeling	# Live cell imaging #Optogenetics #Quantitative biology #Computer simulation	●	●	Bachelor's degree / Master's students Basic knowledge of cell biology	https://sites.google.com/kyoto-u.ac.jp/celleycle/	

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10	Biostudies	Prof. Harada, Hiroshi 	GS of Biostudies	1. Tumor hypoxia 2. Cancer radioresistance 3. Cancer malignancy	#Hypoxia Response #Gene Network	●	●	Bachelor's degree / Master's students Basic knowledge of biology or life science	https://www.lif.kyoto-u.ac.jp/e/research/lab/6923/	
11	Biostudies	Prof. Kohchi, Takayuki 	GS of Biostudies	1. Plant sex determination and differentiation 2. Molecular mechanisms of environmental responses in plants 3. Molecular basis of land plant evolution	#Sex Chromosome Evolution #Light Sensing and Signaling #Genetic and Epigenetic Regulation	●	●	Basic knowledge of molecular genetics and biochemistry	https://www.lif.kyoto-u.ac.jp/e/research/lab/152/	
12	Biostudies	Prof. Oda, Yukako 	GS of Biostudies	1. Induction and regulation of epithelial cell-cell adhesion 2. Control of invasive and metastatic cancers 3. Understanding of aging from intestinal barrier function	#Cancer #Cell-cell Adhesion #Physiologically Active Peptide	●	●	Bachelor's degree / Master's students Basic knowledge of cell biology	https://www.lif.kyoto-u.ac.jp/e/research/lab/194/	
13	Biostudies	Prof. Suzuki, Jun 	Institute for Integrated Cell-Material Sciences (iCeMS) /GS of Biostudies	1. Lipid scrambling 2. Cellular and tissue renovation 3. Elimination of unwanted cells	#Unbiased Screening #Establishment of Assay System #Diseases Treatment	●	●	Bachelor's degree / Master's students Basic knowledge of biology or chemistry	https://www.suzuki.ics.kyoto-u.ac.jp/en/	https://global.kyoto-u.ac.jp/cat-bio/medical-and-biochemical-cell-dynamics/
14	Biostudies	Prof. Toju, Hirokazu 	GS of Biostudies / Center for Living Systems Information Science (CeLiSIS)	1. Ecosystem structure and dynamics 2. Plant-associated microbiomes 3. Fish-associated microbiomes 4. Metagenomics	#Theoretical Ecology #Biodiversity #DNA Sequencing		●	Basic knowledge of biology and computer programming	https://sites.google.com/view/toju/lab	
15	Biostudies	Prof. Watanabe, Naoki 	GS of Biostudies	1. Single-molecule imaging 2. Mechanotransduction 3. Drug paradox 4. Multiple disease marker detector	#Multiplexed Super-Resolution Microscopy #Tissue & Neural Remodeling #Cancer Drugs	●	●	Basic knowledge in biology and biotechnology	http://www.pharm2.med.kyoto-u.ac.jp/2_index.html	https://global.kyoto-u.ac.jp/cat-bio/single-molecule-analysis-of-molecular-biophysics-in-living-organisms/
16	Biostudies	Assoc. Prof. Yamano, Takashi 	GS of Biostudies	Molecular biology of phase-separated organelles in aquatic photosynthesis	#Live-cell Imaging #Organelle #Phase Separation #Machine Learning	●	●	Basic knowledge of molecular biology and biochemistry Data science experience is a plus	https://www.lif.kyoto-u.ac.jp/e/research/lab/158/	
17	Biostudies	Prof. Yasuhara, Takaaki 	GS of Biostudies	1. The molecular mechanisms of cellular stress response 2. Genomic instability induced by abnormal transcription-associated stresses 3. The stress responses mediated by phase separation of RNA-binding proteins 4. Disease-related genome abnormalities caused by aging 5. The fundamental mechanism of diseases, such as cancer and chromosomal anomaly	#Cellular Stress Response #Genomic Instability #Disease Mechanism	●	●	Basic knowledge of biology or bioinformatics	https://www.rbc.kyoto-u.ac.jp/genome_stress/en/	
18	Biostudies	Assoc. Prof. Yoshimura, Shigehiro 	GS of Biostudies	1. Structure and function of membrane-less organelles 2. Cell-cycle-dependent regulation of liquid-liquid phase separation 3. Molecular mechanism of host-virus interaction 4. Developing live-cell imaging techniques	#Live-cell Imaging #Cancer #Liquid-liquid Phase Separation	●	●	Basic knowledge of molecular biology, biochemistry, or biophysics	http://www.chrom.lif.kyoto-u.ac.jp/english/index.html	https://global.kyoto-u.ac.jp/cat-bio/proteins-in-a-living-cell-structured-or-non-structured/

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						UG	Master			
19	Biotechnology	Prof. Shintaku, Hirofumi 	Institute for Life and Medical Sciences (LiMe)	1. Nanoelectrokinetics 2. Cell mechanics 3. Cancer biology	#Single Cell #RNA-seq #Microfluidics	●	●	Basic knowledge in biology, biophysics and biotechnology https://www.infroint.kyoto-u.ac.jp/en/laboratory/lab44/		
20	Chemical Biology	Prof. Uesugi, Motonari 	Institute for Chemical Research (ICR) /Institute for Integrated Cell-Material Sciences (iCeMS)	1. Small molecule discovery 2. Chemical immunology 3. Chemoproteomics	#Chemical Biology #Chemoproteomics		●	Bachelor's degree in chemistry or biochemistry https://www.scl.kyoto-u.ac.jp/~uesugi/index.php	https://global.kyoto-u.ac.jp/chemistry/chemistry%ef%bc%86biostudies-chemical-biology-chemistry-initiated-biology/	
21	Chemistry	Prof. Kageyama, Hiroshi 	GS of Engineering	Synthesis of mixed-anion compounds for functional properties (superconductivity, catalysis, battery, etc.)	#Materials Chemistry #New Materials Synthesis #Mixed Anion	●	●	Undergraduate students are welcome too. http://www.chech.kyoto-u.ac.jp/eh10/		
22	Chemistry	Prof. Kitagawa, Hiroshi 	GS of Science	1) Low-dimensional electron systems 2) Solid-state protonics 3) High-entropy alloys 4) Molecular conductors and conducting MOFs	#Electronic Materials #HEA/HEO #MOFs #Molecular Conductor	●	●	Bachelor's degree / Master's students Basic knowledge of chemistry or materials science http://kuchem.kyoto-u.ac.jp/oss/		
23	Chemistry	Prof. Mizuochi, Norikazu 	Institute for Chemical Research (ICR)	1. Quantum sensing and quantum information science by utilizing diamond and related materials 2. Material science including diamond synthesis and its characterization	#Diamond #NV Center #Quantum Sensor #Quantum Science	●	●	Basic knowledge of physical chemistry http://mizuochilab.kuicr.kyoto-u.ac.jp/indexE.html	https://global.kyoto-u.ac.jp/chemistry/diamond-for-quantum-science-and-technology/	
24	Chemistry	Prof. Nakamura, Masaharu 	Institute for Chemical Research (ICR)	1. Synthetic molecular transformation 2. Organic reaction chemistry 3. Synthetic methodology toward exploitation of chemical resources 4. Supramolecular metal catalyst	# Biomass Molecular Transformation # Green Chemistry # Forest Chemical Industry	●	●	Interest in sustainable chemical synthesis and basic knowledge of organic chemistry https://www.scl.kyoto-u.ac.jp/~elements/en/	https://global.kyoto-u.ac.jp/chemistry/dream-driven-chemistry-pursue-your-academic-career-to-make-dreams-come-true/	
25	Chemistry	Prof. Ohki, Yasuhiro 	Institute for Chemical Research / GS of Engineering	1. Synthetic organometallic / coordination chemistry of transition elements 2. Bio-inorganic chemistry of metal-sulfur enzymes 3. Catalytic conversion of N ₂ , CO ₂ , and other small molecules	#Transition Metal Complex #Nitrogen Fixation #Fuel Regeneration from CO ₂	●	●	Interest in chemical synthesis and basic knowledge of coordination chemistry https://www.om.kuicr.kyoto-u.ac.jp/	https://global.kyoto-u.ac.jp/chemistry/organometallic-molecules-exploring-the-atomic-nano-frontier/	
26	Chemistry	Prof. Saito, Kei 	GS of Advanced Integrated Studies in Human Survivability (GSAIS)	1. Green chemistry, 2. Sustainable polymeric materials synthesis, 3. Life cycle assessments	#Green Chemistry #Polymer Chemistry #Circular Economy		●	https://www1.saitolab.gsaiss.kyoto-u.ac.jp/	https://global.kyoto-u.ac.jp/chemistry/green-and-sustainable-materials-for-circular-economy/	
27	Chemistry	Prof. Wakamiya, Atsushi 	Institute for Chemical Research (ICR)	1. Materials Chemistry 2. Physical Organic Chemistry 3. Photovoltaics	#Pi-conjugation Systems #Perovskite Solar Cells #Optoelectronics		●	Bachelor's degree in Chemistry, basic knowledge and experience on chemistry or materials science https://www.scl.kyoto-u.ac.jp/~wakamiya/english/index.html	https://global.kyoto-u.ac.jp/chemistry/energy-for-the-future-from-materials-science-to-perovskite-solar-cells/	
28	Chemistry	Prof. Yamada, Hiroko 	Institute for Chemical Research / GS of Science	Organic functional materials	#Aromatic Compounds #Organic Semiconductors #Self Assembly		●	Bachelor's degree in chemistry / Master's students Basic knowledge of organic chemistry Prior experience of organic synthesis https://www.scl.kyoto-u.ac.jp/~soec/en/index.html		

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29	Chemistry	Prof. Uchimoto, Yoshiharu 	GS of Human and Environmental Studies	1. Electrochemical energy storage and conversion devices 2. Lithium ion batteries and post lithium-ion batteries 3. Proton exchange membrane fuel cells and water electrolysis 4. Advanced analysis technology using synchrotron radiation 3 Indian postdoctoral students are in this lab! Dr. Neha Thakur, Dr. Mukesh Kumar, Dr. Dipali Patil	#Electrochemistry #Energy Devices and Systems #Advanced Analysis Technologies	●	●	Bachelor's degree / Master's students Basic knowledge of chemistry or materials science or analytical science	https://www.uchimoto.jinkan.kyoto-u.ac.jp/?lang=en	
30	Civil Engineering	Prof. Fujihara, Masayuki 	GS of Agriculture	1. Water resources engineering 2. Rural environmental engineering	#Computational Fluid Dynamics #Hydraulics #Fishway	●	●	Possibly, basic knowledge of hydraulics and/ or computer programming	https://www.wre.kais.kyoto-u.ac.jp/index.html	
31	Civil Engineering	Prof. Fujisawa, Kazunori 	GS of Agriculture	1. Geotechnical engineering 2. Dam engineering 3. Applied mechanics	#Soil-water Coupled Problems #Inverse Analysis	●	●	Bachelor's/Master's program students in engineering-related fields Basic knowledge of soil mechanics, hydraulics and computer programming	https://www.agricity.kais.kyoto-u.ac.jp/english/index.html	
32	Civil Engineering	Prof. Higo, Yosuke 	GS of Management (GSM-KU)	1. Computational geomechanics 2. Geomechanics from micro to macro	#Numerical simulation #X-ray micro-CT #Soil-water coupled problems	●	●	Bachelor's/Master's program students in any fields Basic knowledge of soil mechanics and computer programming	http://geomechanics.kuciv.kyoto-u.ac.jp/index_en.html	
33	Civil Engineering	Prof. Katsumi, Takeshi 	GS of Global Environmental Studies (GSGES)	Geotechnical & geoenvironmental engineering	#Sustainable Construction #Waste Geotechnics #Disaster Recovery	●	●		https://geotech.kyoto-u.ac.jp/index_e.html	https://global.kyoto-u.ac.jp/global-environmental-studies/sustainable-geoenvironmental-engineering/
34	Civil Engineering	Prof. Kim, Chul-Woo 	GS of Engineering	1. Data assimilation 2. Stochastic system identification 3. Structural health monitoring of bridges	#Bayes #Bridge #Monitoring #Sensing #Uncertainty Quantification	●	●	Advance linear algebra; statistics; structural mechanics; structural dynamics	http://infra.kuciv.kyoto-u.ac.jp/index.html	
35	Civil Engineering	Prof. Onishi, Masamitsu 	GS of Engineering	1. Governance of infrastructure industry 2. Disaster risk management	#Public Private Partnerships #Project Management #Decision-makings in Emergency	●	●	Basic knowledge of statistics, optimization theory	https://psa2.kuciv.kyoto-u.ac.jp/lab/en/	
36	Civil Engineering	Prof. Uzuoka, Ryosuke 	Disaster Prevention Research Institute (DPRI) /GS of Engineering	Geo-disaster prediction and mitigation	#Landslide #Soil liquefaction #Multiphase computational geomechanics		●	Bachelor's/Master's degree Basic knowledge of geotechnical engineering	https://sites.google.com/site/geodpri/	
37	Disaster Risk Reduction	Assoc. Prof. Samaddar, Subhajyoti 	Disaster Prevention Research Institute (DPRI)	Disaster risk communication	#Risk Communication #Risk Perception #Early Warning #Implementation Science #Participatory Risk Governance	●	●	Undergraduate / Master's program students in any field of social science, or urban planning or policy science Some research experience or working exposure in disaster risk reduction is preferable.	http://imdr.dpri.kyoto-u.ac.jp/	

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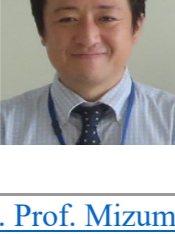

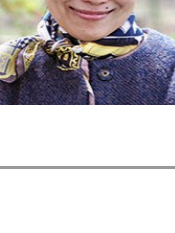
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38	Energy Science	Prof. Katahira, Masato 	Institute of Advanced Energy (IAE)	1. Utilization of woody biomass toward energy and value-added materials 2. Disease-related protein and RNA study 3. Elucidation of structure-function correlation of biomolecules	#Woody Biomass #Diseases #Carbon Neutral		●	Bachelor's or master's degree	http://www.iae.kyoto-u.ac.jp/bio/	https://global.kyoto-u.ac.jp/cat-ene/two-front-operation-on-biomass-and-disease-related-researches/
39	Energy Science	Assoc. Prof. Kawayama, Iwao 	GS of Energy Science	1. Design and fabrication of advanced thin film batteries 2. Develop terahertz technology for energy materials and devices	#Thin Film #Battery #Terahertz	●	●	Basic knowledge of physics and chemistry, and interest in material and device engineering	https://dpe.energy.kyoto-u.ac.jp/en/	https://global.kyoto-u.ac.jp/cat-ene/advanced-fabrication-and-evaluation-technologies-for-energy-materials-and-devices/
40	Energy Science	Prof. McLellan, Benjamin-craig 	GS of Energy Science	1. Just resource and energy transitions to carbon neutrality 2. Resource supply security and requirements for future energy scenarios 3. Sustainability assessment of energy policy and technology	#Just transitions #Resources #Sustainable Energy Systems	●	●	For most of our research, it is preferred that students have undertaken courses in mathematics, statistics, or programming at university level. Typical degrees: engineering; economics; sociology; political science; (not exclusive)	https://econ.energy.kyoto-u.ac.jp/en/	https://global.kyoto-u.ac.jp/cat-ene/designing-sustainable-and-just-future-energy-systems/
41	Energy Science	Prof. Nagasaki, Kazunobu 	Institute of Advanced Energy (IAE)	1. Plasma physics 2. Fusion science 3. Plasma heating and diagnostics	#Physics #Plasma #Nuclear Fusion	●	●	Basic knowledge in electromagnetism, and electrical and electric engineering	http://www.iae.kyoto-u.ac.jp/plasma/en/index_E.html	https://global.kyoto-u.ac.jp/cat-ene/heliotron-j-looking-up-the-future-with-fusion-energy-a-sun-on-earth/
42	Energy Science	Assoc. Prof. Ogata, Seiichi 	GS of Energy Science	1. Energy engineering 2. Energy and environmental economics 3. Corporate sustainability	#Renewable Energy System Design #Agrivoltac Systems #Smart Energy Management,	●	●	Basic knowledge of economics and energy engineering	https://researchmap.jp/7000009554?lang=en	
43	Energy Science	Prof. Sagawa, Takashi 	GS of Energy Science	1. Materials designed of nanosized structures made of organic and inorganic composites 2. Electronic structural analyses of materials and characterization of their optical properties 3. Applications for photovoltaics (solar cells, photocatalysts, and so on), light-emitting devices, and/or others	#Photochemistry #Solid State Physics #Polymer Science	●	●	Basic knowledge of materials science, industrial chemistry, and electrical engineering and electronics	http://www.quanteneopro.energy.kyoto-u.ac.jp/index.html	https://global.kyoto-u.ac.jp/cat-ene/materials-design-based-on-light-matter-interaction-for-applications-to-energy-science/
44	Engineering	Prof. Abe, Takeshi 	GS of Engineering	1. Lithium-ion batteries 2. Novel battery systems 3. Carbonaceous materials	#Electrochemistry #Material Chemistry	●	●	Physical chemistry	http://elech.kuic.kyoto-u.ac.jp/	
45	Engineering	Snr. Lec./Jr. Assoc. Prof. Banerjee, Amit 	GS of Engineering	Fabrication and application of micro / nano-scale machines	#Micro/ Nano Electromechanical Systems (MEMS/NEMS) #Nanoresonators		●	Enrolled in a Master's program in physics / mechanical engineering/ electrical engineering / computer science / information technology / nanoscience / nanotechnology / materials science	https://www.nms.me.kyoto-u.ac.jp/	
46	Engineering	Prof. Kurose, Ryoichi 	GS of Engineering	1. Momentum/mass/heat transfer and reaction/combustion in turbulent flows 2. Particles/bubbles/droplets motions in turbulent flows 3. Turbulent structure and scalar (heat and mass) transfer across the gas-liquid interface 4. Analysis of complex turbulent flow fields generated by the motion of object	#Combustion #Turbulence #Multiphase Flows	●	● *	Bachelor's or master's degree in mechanical engineering Basic knowledge of fluid dynamics and thermodynamics Strong intention to advance to Ph.D. course *Undergrad candidates can also apply provided they are strongly motivated to proceed to a doctoral program and to learn Japanese language as well.	http://www.tse.me.kyoto-u.ac.jp/index_e.php	

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47	Engineering	Prof. Seki, Shu 	GS of Engineering	Electronic/spintronic materials and nanomaterials	#Conductivity #Nano-optoelectronic Materials #Functional Molecules	●	●	Math (Undergraduate level) Motivation for experimental physical chemistry	http://www.moleng.kyoto-u.ac.jp/~moleng_06/index.php?lang=en	https://global.kyoto-u.ac.jp/cat-eng/physical-chemistry-for-materials-science/
48	Engineering	Prof. Suzuki, Motofumi 	GS of Engineering	Nanostructured thin films and their applications	#Oblique (or glancing) Angle Deposition #Surface Enhanced Raman Scattering #Marangoni Force	●	●	A foundational understanding of electromagnetism and condensed matter physics Some introductory familiarity with operating vacuum equipment	http://www.mpe.me.kyoto-u.ac.jp/en/	
49	Engineering	Assoc. Prof. Teramoto, Yoshikuni 	GS of Agriculture	1. Bio-based sustainable materials 2. Functional materials design 3. Advanced wood utilization	# Cellulose and Other Structural Polysaccharides # Composite Materials # Materials Informatics	●	●	Bachelor's/Master's program students in engineering-related fields Basic knowledge of polymer science Basic knowledge of physical chemistry Basic knowledge of organic chemistry	https://www.chembiomater.kais.kyoto-u.ac.jp/?lang=en	
50	Environmental History, History of Technology, Climate Change and Sustainable Development	Prof. D'Souza, Rohan-Ignatius 	GS of Asian and African Area Studies (ASAFAS)	1. Digital transformation 2. Climate change 3. Environmental history of South Asia	#Environmental History #Digital Technology #Sustainability and Environmental Politics	●	●	Bachelor's or Master degree in History, Political Science, sociology and environmental studies	https://www.globaLasafas.kyoto-u.ac.jp/staff/rohan/	
51	Geophysics	Assoc. Prof. Ito, Yoshihiro 	Disaster Prevention Research Institute (DPRI)	1. Earthquake seismology 2. Marine seismology 3. Marine geodesy	#Subduction Zone #Megathrust Earthquake #Slow Earthquake #Disaster Mitigation	●	●	Bachelor's or master's degree in geoscience, physics, or related field Programming experience with Python or MATLAB is desirable.	https://www.rcp.dpri.kyoto-u.ac.jp/vito/index-e.html	https://global.kyoto-u.ac.jp/cat-sci/slow-earthquake-science-from-ocean-bottom-observations/
52	Geophysics, Geohazards, Geotechnic, Engineering Geology, Geology, Geomorphology, Geo-mechanics	Prof. Wang, Gonghui 	Disaster Prevention Research Institute (DPRI)	1. Initiation and movement mechanisms of landslides 2. Landslide risk assessment under abnormal weather condition and/or earthquake 3. Risk assessment of Landslide hazard chains	#Landslide #Geohazard Chains #Landslide Dam	●	●	Basic knowledge of soil mechanics, geology, and geophysics	https://landslide.dpri.kyoto-u.ac.jp/outline/	
53	Geoscience	Prof. Koike, Katsuaki 	GS of Engineering	1. Characterization and generation mechanism of mineral, geothermal, and water resources 2. Resource exploration and assessment	#Resource Geology #Spatial Modeling #Remote Sensing	●	●	Strong interest in natural resources Basic knowledge of geology	https://www.geoenv.kumsl.kyoto-u.ac.jp/index_en.html	https://global.kyoto-u.ac.jp/cat-eng/earth-science-and-engineering-of-natural-resources-for-sustainable-future-world/
54	Global Environmental Studies	Prof. Saizen, Izuru 	GS of Global Environmental Studies (GSGES)	1. Regional planning 2. GIS application 3. Field science	#Regional Resources #GIS and Remote Sensing #Field Survey	●	●	Basic knowledge of urban, rural, or regional planning	http://rp.ges.kyoto-u.ac.jp/	
55	Health Science	Assoc. Prof. Mizumoto, Kenji 	GS of Advanced Integrated Studies in Human Survivability (GSAIS)	Health risk estimation	#Infectious Disease #Vulnerable Population	●*	●	Bachelor's/Master's degree in any field and a strong desire to solve social problems. *Undergrad candidates must be in their last year at the time of the internship.	https://www.gsaiss.kyoto-u.ac.jp/en-top/wp-content/uploads/2023/07/MIZUMOTO_Kenji_sensei_202307E.pdf	
56	Humanities & Social Science	Prof. Ikegame, Aya 	GS of Asian and African Area Studies (ASAFAS)	1. Political anthropology 2. History and anthropology 3. South Asian studies	#India #Democracy and Religion #Power and Sovereignty #Discrimination #Tribal Arts and Museums	●	●		https://www.globaLasafas.kyoto-u.ac.jp/staff/ikegame/	

Appendix: Kyoto University Short-Term Academic Research (KU-STAR) Program Lab List

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No	Field	Name	Affiliation	Research Topic	Keywords	Who can apply		Requirements (degree/knowledge/skill)	Webpages	Meet KU Researchers
						UG	Master			
57	Informatics	Assoc. Prof. Fukuda, Ellen Hidemi 	GS of Informatics	1. Operations research 2. Continuous optimization	#Nonlinear Optimization, #Conic Optimization, #Multiobjective Optimization		●	Bachelor's or Master's degree in computer science, mathematics or related fields; basic knowledge of continuous optimization and programming experience	http://www-optima.amp.i.kyoto-u.ac.jp/eng/index.html	
58	Informatics	Prof. Igarashi, Atsushi 	GS of Informatics	Theoretical computer science (and its application to computer programs)	#Program Verification #Type Systems #Mathematical Logic	●	●	Functional programming, programming language implementation (compilers/interpreters), automata theory	https://www.fos.kuis.kyoto-u.ac.jp/index.html	
59	Informatics	Prof. Ito, Takayuki 	GS of Informatics	1. AI-empowered collective intelligence 2. Consensus informatics, 3. Hyperdemocracy: Next generation democracy system, 4. Computational mechanism design and social choice	#Artificial Intelligence #Multiagent Systems #LLM Agents	●	●	Fundamental knowledge on AI, multiagent systems, and Game Theory Programming skill	https://sites.google.com/view/takayuki-ito-laboratory-en/home	
60	Informatics	Prof. Kano, Manabu 	GS of Informatics	1. Process informatics & control 2. Data-based medical/healthcare service development 3. Development of AI for automatic first-principle model building	#Process Systems Engineering (PSE) #Medical Engineering #Machine Learning	●	●	Undergraduate-level mathematics, especially linear algebra and calculus Programming experience; familiarity with Python or MATLAB is desirable.	http://human.sys.i.kyoto-u.ac.jp/index-e.html	
61	Informatics	Assoc. Prof. Murawaki, Yugo 	GS of Informatics	Computational linguistics & natural language processing	#Large Language Models #Explainability		●	Bachelor's or master's degree in computer science or related fields; programming experience; interest in linguistics, if not expertise, is appreciated.	https://nlp.ist.i.kyoto-u.ac.jp/EN/	
62	Informatics	Prof. Sato, Takashi 	GS of Informatics	Integrated circuit/system design and optimization	#Electronic Design Automation #Physical Design #Manufacturability #Hardware Accelerators		●	Bachelor's or master's degree in computer science, electrical/electric engineering, or related fields	https://vlsi.cce.i.kyoto-u.ac.jp/	
63	Informatics	Prof. Shimodaira, Hidetoshi 	GS of Informatics	1. Machine Learning 2. Mathematical Statistics 3. Natural Language Processing	#Neural Networks #Large Language Models #Word Embedding	●	●	Basic knowledge of machine learning or statistics Programming experience in Python or R	https://stat.svs.i.kyoto-u.ac.jp/shimolab/	
64	Informatics	Prof. Yamashita, Nobuo 	GS of Informatics	Mathematical optimization	#Nonlinear Optimization #First Order Methods #Duality	●	●	Undergraduate-level mathematics, especially linear algebra and calculus Basic knowledge of mathematical optimization, especially optimality conditions and duality	http://www-optima.amp.i.kyoto-u.ac.jp/eng/index.html	
65	Informatics	Prof. Zhao, Liang 	GS of Advanced Integrated Studies in Human Survivability (GSAIS)	Algorithms and machine learning methods, especially for graphs and networks	#Graph/Network Algorithm, #Graph Learning, #Entropy	●	●	Experience in algorithm design and/or graph/network study with a strong wish to join our lab (master or doctoral course) in the near future	https://aw.gsaais.kyoto-u.ac.jp/en	
66	Management	Prof. Colpan, Asli M 	GS of Management (GSM-KU)	Corporate strategy, corporate governance	#Emerging Economies #Business Groups #Female Directors		●	Basic knowledge of Management or Economics	https://www.gsm.kyoto-u.ac.jp/en/faculty/166/	

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67	Mathematics	Assoc. Prof. Kawamura, Akitoshi 	Research Institute for Mathematical Sciences (RIMS) / GS of Science	1. Computation theory 2. Algorithm design 3. Discrete mathematics	#Automata Theory #Experimental Algorithms #Analysis of Algorithms		●	Bachelor's or Master's degree in Mathematics, Computer Science or related fields Basic knowledge of algorithm theory Excellent skills in mathematical reasoning	https://www.kurims.kyoto-u.ac.jp/~kawamura/index_e.html	
68	Mathematics	Assoc. Prof. Croydon, David 	Research Institute for Mathematical Sciences (RIMS) / GS of Science	Probability theory	#Random Walks #Random Graphs #Fractals		●	Bachelor's/Master's degree in mathematics, including courses in probability theory	https://www.kurims.kyoto-u.ac.jp/~croydon/	
69	Mathematics	Prof. Sakajo, Takashi 	GS of Science	1. Topological and geometric fluid mechanics 2. Mathematics of turbulence 3. Mathematical modeling of flow phenomena 4. Uncertainty quantification	#Vortex Dynamics #Topological Flow Data Analysis #Singular Formation in Solutions of Fluid Equations		●	Bachelor's or Master's degree in mathematics (geometry, functional analysis, probability theory, numerical analysis) Basic knowledge of fluid mechanics Excellent skills in numerical simulation	https://www.math.kyoto-u.ac.jp/~sakajo/	
70	Mechanical Engineering	Prof. Hirayama, Tomoko 	GS of Engineering	Improvement of friction and wear properties of machine elements	#Mechanical Engineering #Machine Elements #Tribology #Friction and Wear	●	●		http://www.elem.kyoto-u.ac.jp/index-j.html	
71	Medicine	Visiting Assoc. Prof. Hayashi, Makoto 	IFOM-KU Joint-Research Laboratory / GS of Medicine	1. Chromosome instabilities and cellular responses induced by chromosome fusions 2. Telomere function in mitosis of the cell cycle 3. Innate immune response against self nucleic acids	#Chromosome Fusion #Telomere #cGAS-STING	●	●	Basic knowledge of molecular and cell biology	https://www.mthayashilab.com/	
72	Medicine	Assoc. Prof. Kim, Minsoo 	Graduate School of Medicine	1. Bacterial infection and host immune response 2. Targeted protein degradation for drug discovery 3. Post-translational modifications of proteins 4. Cell adhesion and cancer progression	#Ubiquitin Proteasome System #Anti-Cancer Therapy and Antibiotics Development #Immune Response		●	Basic knowledge of molecular biology, biochemistry, microbiology	https://ubiquitinlink.jp/research/	
73	Metamorphic and Igneous Petrology	Prof. Kawakami, Tetsuo 	GS of Science	1. Formation of HT to UHT metamorphic belts, partial melting of the crust and granite petrogenesis at convergent plate boundaries 2. Roles of fluids in crustal processes 3. Linking P-T-D path of metamorphic/igneous rocks with geochronology using zircon and monazite (Petrochronology)	#Metamorphism #Partial Melting #Petrochronology		●	Master's student in petrology (metamorphic, igneous)/geology/geochemistry Experience in thin section observation using polarizing microscopy	https://pet.kueps.kyoto-u.ac.jp/index.htm	
74	Microbiology	Prof. Kurihara, Tatsuo 	Institute for Chemical Research (ICR)	1. Bacterial cell surface 2. Extracellular membrane vesicles	#Microbial Biochemistry #Applied Microbiology		●	Basic knowledge of biochemistry and microbiology	https://molmicro.kuicr.kyoto-u.ac.jp/en/	
75	Molecular and Cell Biology (including bio-engineering, biotechnology etc.)	Assoc. Prof. Carlton, Petermark 	GS of Biostudies	Understanding molecular mechanisms regulating chromosome dynamics in meiosis using <i>C. elegans</i> germ cells as a model system	#Chromosome Dynamics, Meiosis, High/super Resolution Microscopy, Live imaging #Quantitative Image Analysis, Genetics, CRISPR-Cas9 Genome Editing, <i>C. Elegans</i> #Genomic Sequences	●	●	Basic knowledge in molecular/cell biology Some experience of working in molecular/cell biology labs is good but is not necessary.	https://www.carltonlab.org/	https://global.kyoto-u.ac.jp/catsbio/understanding-how-chromosomes-are-accurately-passed-on-to-the-next-generation/
76	Physics	Collaboration Center Prof. Maeno, Yoshiteru 	Toyota-Riken Kyoto University Research Center (TRiKUC)	1. Superconductivity 2. Magnetism http://trikuc.jp/	#Crystal growth #Sample Characterization, #Low-Temperature Measurements	●	●	Both undergraduate and graduate students Basic knowledge of physics or material science High motivation to perform experiments	http://trikuc.jp/	

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						UG	Master			
77	Physics	Program-Specific Asst. Prof. Mattoni, Giordano 	Toyota-Riken Kyoto University Research Center (TRiKUC)	1. Superconductivity of materials 2. Effects of strain 3. Low-temperature measurements http://trikuc.jp/	#Material Science #Data Analysis Using Python #Piezoelectric Devices	●	●	Both undergraduate and graduate students Basic knowledge of physics or material science High motivation to perform experiments	http://trikuc.jp/	
78	Physics	Prof. Tokita, Shigeki 	Institute for Chemical Research (ICR)	1. Ultrafast high-power mid-infrared laser sources 2. Coherent X-ray generation 3. Femtosecond lasers for industrial applications 4. The search for neutrinoless double beta decay 5. The search for dark matter	#Laser optics #Plasma physics #Experimental particle physics	●	●	Bachelor's degree / Master's students Basic knowledge of physics	https://en.laser.kuic.kyoto-u.ac.jp/	https://global.kyoto-u.ac.jp/chemistry/experimental-research-in-physics-based-on-cutting-edge-intense-lasers/
79	Science	Prof. Motokawa, Masaharu 	The Kyoto University Museum	1. Species diversity of terrestrial vertebrates in Asia 2. Formation history of Japanese islands' animal fauna 3. Variation and variability in morphology of mammals	#Taxonomy and Phylogeny #Zoogeography #Functional Morphology	●	●	Bachelor's or master's degree in zoology, animal science, biodiversity or related fields Basic knowledge of biodiversity, taxonomy, phylogeny, biogeography, or evolutionary science Interest in museum specimens	https://zoo.zool.kyoto-u.ac.jp/index_en.html	https://global.kyoto-u.ac.jp/catsci/species-diversity-of-asian-terrestrial-vertebrates/
80	Sedimentology and Morphodynamics	Prof. Naruse, Hajime 	GS of Science	1. Turbidity current 2. Tsunamis 3. River Morphodynamics	#Numerical Modeling #Facies Analysis #Machine learning		●	Bachelor's degree in geology or machine learning	http://turbidite.secnet.jp/?English%2FTop	https://global.kyoto-u.ac.jp/catsci/uncovering-earths-hidden-past-quantitative-sedimentology-and-morphodynamics/
81	Social Science	Assoc. Prof. Asato, Wako 	GS of Letters in Transcultural Studies	1. Migration 2. Welfare regime	#Migration #Social integration #Welfare	●		Background of sociology, social work, or other major/experience related to my research topic	https://www.cats.bun.kyoto-u.ac.jp/jdts/team/academic-staff/asato-wako/	
82	Social Science	Prof. Ialnazov, Dimitersavov 	GS of Advanced Integrated Studies in Human Survivability (GSAIS)	1. Transition from fossil fuels to renewable energy in emerging economies and developing countries 2. The impact of recent geopolitical conflicts on the globalization of international trade and foreign direct investment 3. Challenges to achieve the sustainable development goals	#Japan, EU, BRICS #Energy Policy #International Trade and Foreign Direct Investment #Sustainable Development	●	●	Students who already have a Bachelor degree or are currently enrolled in a Master program are preferred. Both undergraduate and Master's program students in any field of social science are welcome to apply.	https://www.gsaiss.kyoto-u.ac.jp/staff/inalnazov/en_index.html	
83	Social Science	Prof. Sakade, Takeshi 	GS of Economics	International political economy	#International Political Economy #International Economic Security #International Relations		●		https://www.econ.kyoto-u.ac.jp/en/faculty-members/professor/sakadetakeshi/	
84	Social Science	Prof. Sekiyama, Takashi 	GS of Advanced Integrated Studies in Human Survivability (GSAIS)	1. International relations 2. Indo-Pacific regional studies 3. Global environmental politics	#Japan, US, China, India #Politics & Economics #Climate Security	●	●	Bachelor's/Master's degree in any field	https://kdb.iime.kyoto-u.ac.jp/profile/en/6831daedbcd5105d.html	https://global.kyoto-u.ac.jp/catsci/global-environmental-politics-climate-security/
85	Social Science	Prof. Usami, Makoto 	GS of Global Environmental Studies (GSGES)	1. Climate change mitigation/adaptation 2. Environmental awareness 3. Disaster management	#Environmental Economics #Environmental Politics #Social Psychology		●	Interest in social science study on policy and citizen responses to environmental challenges	https://www.envpolicy.ges.kyoto-u.ac.jp/en	https://global.kyoto-u.ac.jp/global-environmental-studies/social-science-research-into-policy-and-citizen-responses-to-environmental-challenges/

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						UG	Master			
86	Social/Cultural Psychology	Snr. Lec. /Jr. Assoc. Prof. Igor de Almeida 	Institute for the Future of Human Society	1. Cultural differences in psychology 2. Emotion 3. Diversity in psychological research	#Culture #Emotion #Diversity	●	●	Basic knowledge and interest in psychology and social sciences Knowledge of statistics and R/Python programming is highly appreciated.	https://culture-wellbeing.ifo.h.kyoto-u.ac.jp/lab/	https://global.kyoto-u.ac.jp/psychology/introduction-to-the-cultural-psychology-lab/
87	Transportation Planning	Assoc. Prof. Schmoecker, Jan-dirk 	GS of Engineering	1. Simulation of bus operation in Kyoto 2. Crowding prediction	#Network Modelling #Analysis of Trajectory Data #Transport Policy	●	●	Basic knowledge in programming, database management and statistics	https://trans.kuciv.kyoto-u.ac.jp/its/english/index.html	https://global.kyoto-u.ac.jp/cat-eng/creating-intelligent-transportation-systems/

You can find video clips of laboratories on Meet KU Researchers. Please visit the site!



<https://global.kyoto-u.ac.jp/>