Research Promotion Projects of Eikei University of Hiroshima
Research proposals for which the research project period has ended

Proposals Adopted in FY2024

Principal Investigator	Professor UESUGI Yuko
Research Theme	A Study of Comparative Literature on the Works of Sylvia Plath and Virginia Woof: Exploring Gender Issues Seen from the Viewpoints of the Two Writers Who Lived in Different Cultures
Research Results	This study undertakes a close textual analysis of the poetry and prose of American poet Sylvia Plath (1932–1963) and British author Virginia Woolf (1882–1941), aiming to elucidate the intersection of Anglo-American cultural paradigms and gender ideology through a comparative lens. By exploring the structural and affective dimensions embedded within their works, it critically engages with the multifaceted identities each author inhabits—"mother," "wife," "poet," and "writer"—and investigates the ways in which their respective social positions inform their gendered discourses. Anchored in a comparative cultural methodology, the research foregrounds the historical and socio-cultural frameworks of the United States and the United Kingdom to examine how gender-related factors shaped the authors' literary production. This contextual inquiry reveals insights whose relevance transcends historical specificity, inviting contemporary readers to reinterrogate conceptions of selfhood and existential agency in light of enduring human concerns. The single-author monograph of literary criticism currently in preparation aspires to further disseminate the universal humanistic values articulated by Plath and Woolf, underscoring their lasting significance in the broader terrain of literary and gender studies. The outcomes of this research are as follows: **＜Conference Presentations＞** August 5, 2024: Poster presentation at Eikei University's IEP program (collaborative session with students) July 27, 2024: Presentation at the Chugoku-Shikoku Branch Meeting of the Japan Association of Comparative Culture (online) October 12, 2024: Presentation at the National Conference of the American Literature Society of Japan (held at Chukyo University) **＜Peer-Reviewed Paper＞** January 2025: *Studies in Comparative Culture* Vol. 158 pp.19-32 Title: "Comparison of the Works by Sylvia Plath and Virginia Woolf: Gender Viewpoints of the Two Writers in Different Cultures"

Principal Investigator	Associate Professor YASUTOMI Atsushi
Research Theme	Studies of Armed Groups Persisting after Peace Accord: The Case of Post-Civil War Colombia
Research Results	In 2016, the Colombian government signed a peace agreement with the Revolutionary Armed Forces of Colombia (FARC), and is implementing measures to achieve sustainable peace by disarming and reintegrating former FARC members into society. However, the presence of numerous other armed groups engaged in violent acts and human rights abuses poses a substantial threat to regional security and reconstruction efforts in all sectors, including democratisation, economic development, environmental protection, education and health in post-civil war Colombia. This research aims to shed light on how the actions and attitudes of these armed groups regarding violence and peace change over time and whether the organisations transform depending on the external environment and internal conditions. The research focused on the four such major armed groups and examined how various internal and external factors of today — the 'work' consciousness of young members ('Gen Z'), the use of social media and AI, political and economic influence from Venezuela and China, and transactions using e-money — are affecting their attitudes towards violence.

Proposals Adopted in FY2023

Principal Investigator	Professor SAGEHASHI Masaki
Research Theme	Elucidation of the relationship between the number of microplastics including smaller ones and the status of domestic non-fecal wastewater treatment in the Kurose River.
Research Results	In this study, we measured microplastics of a size too small (SMPs) to be detected by standard MP monitoring methods, and also with low treatment efficiency in wastewater treatment in the Kurose River, which flows from Higashi-Hiroshima City through Kure City into the Seto Inland Sea. For river water sampling, continuous sampling was conducted using a submersible water pump equipped with a float. On-site pretreatment involved vacuum filtration using a stainless steel (SUS) filter. Those samples were treated at 70°C with potassium persulfate and sodium hydroxide to decompose non-plastic components coexisting with the MPs in the laboratory. After decomposition, the samples were filtered through a polytetrafluoroethylene (PTFE) filter, dried, and analyzed using micro-FT-IR spectroscopy. As a result, samples filtered with a 25 μm SUS filter at the site detected polypropylene (PP), polyethylene (PE), polystyrene (PS), and PET, which were detected in the Kurose River by Hiroshima Prefecture in its microplastic (0.3–5 mm) survey observed in Hiroshima Bay and the Akitsu-Yasuura area. Additionally, the Geographic Information System was used to organize sewerage coverage and population distribution in the watershed. While no clear relationship was observed between population distribution, sewerage coverage rates, and SMPs obtained in this study, the data collected provides a foundation for analyzing such relationships in the future as more measurement results accumulate.

Principal Investigator	Associate Professor YASUTOMI Atsushi
Research Theme	Does Community Policing with the participation of former guerilla members promote their social reintegration in post-conflict communities?
Research Results	This study examined the process of reconciliation between demobilised former members of the *Fuerzas Armadas Revolucionarias de Colombia* (FARC) and the community members who have hosted their social reintegration in the context of post-civil war Colombia. In particular, the study shed light on the collaborative participation of ex-combatants in community policing initiatives. To this end, the author conducted interviews with subject matter experts based in Bogotá, including researchers, practitioners and journalists. While the government and private sectors continue to provide economic and social reintegration support at various levels, some former members join new armed groups in search of quick cash, while others choose to hide themselves in larger cities due to fear of reprisals and threats from former enemy armed group members, as well as retaliation from residents who were victimised during the civil war. Notwithstanding the aforementioned difficulties, certain instances have emerged in which former FARC members and local residents have collaborated on community policing initiatives in some cities. These instances include joint town safety monitoring and the sharing of local safety information.

Proposals Adopted in FY2022

Principal Investigator	Professor LASSALLE Michael W.
Research Theme	Biodiversity, SDGs, and Eikei University
Research Results	The Sustainable Development Goals (SDGs) emphasise the importance of clean air for achieving such key objectives as Good Health and Well-Being (SDG 3) and improving urban environmental impact through enhanced air quality (SDG 11.6). While well-equipped weather stations are concentrated in larger urban areas, the deployment of low-cost sensors remains limited, making air quality prediction a significant challenge, particularly in rural areas. Moreover, although calibration models for low-cost sensors are continually evolving, a calibration model tailored specifically for Japan – accounting for its unique climate, with high summer humidity and temperature – is lacking. Our study in Japan compared three types of sensors: low-cost pre-assembled and pre-calibrated sensors; self-assembled low-cost sensors; and highly accurate weather stations at five specific locations, using PM2.5 values for analysis. The comprehensive analysis highlights the potential effectiveness of both linear models and generalised linear mixed models for the calibration of low-cost sensors which will allow us to measure the effect of greenery on air quality. Reference uRADMonitor (n.d.). Global Environmental Monitoring Network. Received from: https://www.uradmonitor.com/ IQAir (n.d.). Air quality near LassalleEikei1, Hiroshima. Received from: https://www.iqair.com/japan/hiroshima/lassalleeikei1 Lassalle, M. W. (2024). The present state of low-cost air quality sensors in Japan and their accuracy. *International Journal of Environmental Studies*, 81(4),1665-1683. https://doi.org/10.1080/00207233.2024.2358716

Principal Investigator	Professor SAGEHASHI Masaki
Research Theme	Numerical Simulations for the Analysis of the Transportation of Nano Plastics from the Kurose River Watershed to the Seto Inland Sea
Research Results	In this study, fundamental mathematical simulations of the behaviour of water in the Kurose River watershed and its mouth area (Hiro bay), which were useful to elucidate the behaviour of nano plastics and its parent substance, microplastics (MPs), were conducted. For the Kurose River watershed, a hydrological simulation using the Soil and Water Assessment Tool (Texas A&T University, US Department of Agriculture) was performed based on data from the Geospatial Information Authority of Japan (GSI) on elevation and land use, data from the National Agriculture and Food Research Organization (NARO) on soil, meteorological data from the Japan Meteorological Agency (JMA), and river flow data from Hiroshima Prefecture. The flow analysis of the bay using ocean current data provided by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC). In addition, the observations of MPs of surface water at the bay, plastic waste on the bank of the Kurose river, and MPs-like substances in the riverbed sand were implemented.