Undergraduate Summer Research Academy

Project Details

Project 1	
Research Project Title:	From Practice to Profession: Preserving RMU's Media Technology Legacy for Experiential Learning Today
Research Professor:	**Dr. Tim Jones**, English and Media Arts, School of Communication and Media
Project 2	
Research Project Title:	Studying American Presidential Smart Power Use from the Clinton Administration to the Trump Administration
Research Professor:	**Dr. Judit Trunkos,** Social Sciences Department, School of Education and Social Sciences
Project 3	
Research Project Title:	Laser Welding of Plastics
Research Professor:	**Dr. Benjamin Campbell,** Engineering Department, School of Engineering and Science
Project 4	
Research Project Title:	Teaching Operations Planning and Control through a Campus Custodial Operations Project
Research Professor:	**Dr. Albena Ivanova,** Management, Rockwell School of Business
Project 5	
Research Project Title:	Analysis of Expectations vs. Perceptions of NACE Competencies among Students, Faculty, and Employers
Research Professor:	**Dr. Daria Crawley,** Management, Rockwell School of Business

Application Deadline—**April 3, 2026**

Project 1 of 5

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Research Project Title: "From Practice to Profession: Preserving RMU's Media Technology Legacy for Experiential Learning Today"

Research Project Summary: This project will catalogue, research, and curate a small but significant collection of media production artifacts that document the evolution of professional media practice on campus. This includes tools, production materials, documentation, and ephemera that illustrate how media professionals have created, distributed, and adapted content across changing technological eras. Rather than presenting these artifacts as isolated objects, the project emphasizes their applied use in professional workflows—highlighting their role in broadcast, digital production, institutional media, and community storytelling. A central component of the project is documenting the historical relationship between RMU's professionally focused, experiential learning model and the regional media landscape. For decades, RMU students have engaged directly with industry through hands-on coursework, internships, campus media, and community partnerships. This project situates the artifacts within that tradition, demonstrating how professional tools and practices have shaped student learning and career pathways. The curated collection will be organized for active use by RMU students, faculty, staff, alumni, and community partners. Deliverables will include a digital catalogue, interpretive labels, contextual essays, and a proposed exhibition or display plan that connects past practices to contemporary media production. By bridging institutional history with community industry practice, the project will create a living teaching resource—supporting instruction, inspiring innovation, and reinforcing RMU's longstanding commitment to career-ready, experiential education in media and communication.

Student Research Objectives:
Upon completion of this project, the student will:

1. Conduct object-based research, documenting provenance, technical specifications, and professional use contexts of media production artifacts.
2. Analyze the relationship between evolving media technologies and regional professional practice.
3. Articulate the historical role of experiential learning in shaping RMU's media programs and industry partnerships.
4. Apply archival standards and digital cataloguing practices to create accessible, accurate metadata records.
5. Develop interpretive materials—including labels, summaries, and digital content—that translate specialized media history into accessible language for diverse audiences.
6. Collaborate with faculty, staff, and community stakeholders to ensure the collection reflects both institutional heritage and contemporary relevance.
7. Reflect on the professional skills gained, including research design, project management, documentation, and public-facing communication.

Skills Required:

1. Coursework: CSEN 1010 or 1020. Strong Written Communication
2. Ability to write clearly and concisely for multiple audiences, including academic, professional, and public-facing contexts. Attention to Detail and Organizational Skills
3. Capacity to manage records, maintain accurate metadata, and follow cataloguing protocols consistently. Research and Analytical Thinking
4. Ability to synthesize historical, technical, and professional information into coherent summaries. Some Familiarity with Media Production Workflows
5. Practical understanding of how equipment and production tools function within professional environments. Digital Literacy
6. Comfort working with spreadsheets, databases, digital asset management systems, and shared cloud platforms. Professional Communication and Collaboration
7. Ability to interact respectfully and effectively with faculty, staff, alumni, and community media professionals.

Project 1 of 5 (contd.)

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Expected Student Research Outcomes:
Expected research outcomes for this project include:
1. Short research paper for a peer reviewed undergraduate journal

Research Professor: Dr. Tim Jones, English and Media Arts, School of Communication and Media

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Project 2 of 5

Research Project Title: Studying American Presidential Smart Power Use from the Clinton Administration to the Trump Administration.

Research Project Summary: Smart power is the ability to use both soft power and hard power based on what is needed in foreign policy (Nossel 2004). All American presidents have relied on a mixture of soft and hard power. This research will evaluate which U.S. Presidents after the Cold War relied on the most amount of smart power in the form of a mix of soft power and hard power actions during their tenure. This study will also reveal deviation towards favouring more hard power (coercions) or soft power (attraction).

This project will focus on five American presidents' (from Clinton to Trump) foreign policy actions after the Cold War using a new dataset, which will recode GDELT (Global Database of Events, Language and Tone) events data into soft power and hard power actions to reveal how U.S. Presidents used them and to what degree. The analysis also reveals what types of soft or hard power actions each President preferred and will also look at the effectiveness of each based on the outcome of these events. This is one of the first projects in political science measuring a leaders' smart power use. This is a mixed-research design combining data analysis and case studies of U.S. Presidents for the time-frame of 1993-2026.

Student Research Objectives:
1. Learn to create a literature review on the US Presidents' smart power use.
2. Learn to download large datasets (GDELT).
3. Learn to collect case studies to evaluate the effectiveness of each president.
4. Learn to adjust research design during the project.
5. Learn to clear a poster summarizing the findings of this research.

Skills Required:
1. Be able to create a draft literature review section for a journal article.
2. Be able to use Excel.
3. Have some knowledge about US Presidents' foreign policies since the Cold War ended.
4. POLS 3040, POLS 1040 recommended.

Expected Student Research Outcomes:
1. Students will learn to design mixed-methods research.
2. Student will improve their literature review writing skills.
3. Students will learn to download and shape a large dataset.
4. Students will learn to find and analyze specific policies for effectiveness.
5. Students will learn to create figures visualizing data and results.
6. Students will learn to summarize a long research paper and create a poster.
7. Students will learn to present a research poster.

Research Professor: **Dr. Judit Trunkos,** Social Sciences Department, School of Education and Social Sciences

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Project 3 of 5

Research Project Title: Laser Welding of Plastics

Research Project Summary: The student will be trained on the process of laser welding plastics. They will participate in the development of a test plan. The student will prepare materials for 3D printing and injection molding and run the devices to produce parts for laser welding following a test plan. The parts will be welded off site and it is optional for the student to travel to Cranberry for laser testing. The parts will return and the student will conduct strength tests and analysis of the welded samples. The student will also learn how to use the laser systems at RMU and produce laser marked items. Note: this will bridge a gap in funding this summer between a current research program and couple proposals which may be funded later this year.

Student Research Objectives:
1. Learn principles of Laser Welding of Plastics and develop a test plan
2. Produce test samples with a 3D printer and injection molder
3. Send samples to get welded or travel off-site to weld them following the test plan.
4. Test samples for weld strength and conduct other analysis
5. Record data, analyze it and write up results.

Skills Required:
1. Must be an engineering student.
2. Willing to learn how to use 3D printer, injection molder, tensile testing machine and laser systems. Training will be made available.

Expected Student Research Outcomes:
1. Student will understand the process of laser welding plastics.
2. Student will learn to use 3D printers, injection molders, laser systems, materials testing equip.
3. Student will learn how to analyze test data and write up research results.

Research Professor: **Dr. Benjamin Campbell,** Engineering Department, School of Engineering and Science

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Project 4 of 5

Research Project Title: Teaching Operations Planning and Control through a Campus Custodial Operations Project

Research Project Summary: This project examines a project-based learning initiative implemented in an Operations Planning and Control course at Robert Morris University in Fall 2025. The course, consisting of 36 senior undergraduate management students, partnered with RMU Facilities to address a real operational problem: determining the optimal number of custodial staff required to maintain campus facilities based on cleanable space.Students conducted a structured analysis of campus facilities by identifying and categorizing cleanable spaces, applying standard workload assumptions, and estimating staffing requirements. The project integrated core operations management concepts such as capacity planning, labor standards, and process analysis within a real-world context.The student involved in this proposal has been actively engaged in the project since February 2026 through weekly meetings and assigned tasks, including literature review and data preparation. The project will be presented at the RMU Expo on April 8, 2026. During the summer, the student will continue working on data analysis, manuscript preparation, and submission for publication. In addition, the student will prepare a report summarizing findings and recommendations for RMU Facilities custodial staff.This project contributes to teaching practice by providing a replicable model for integrating project-based learning into operations management courses.

Student Research Objectives:
1. Clean and organize student survey data
2. Conduct descriptive analysis of learning outcomes
3. Develop tables and visualizations for results
4. Assist with preparation of figures for publication
5. Support drafting of manuscript sections (results and supporting materials)
6. Assist with preparation of research poster and presentation materials
7. Gain experience in applied research and academic writing

Skills Required:
1. Coursework in Operations Management or related field
2. Basic Excel skills (data organization and analysis)
3. Attention to detail
4. Ability to work independently
5. Strong written communication skills
6. Interest in research and data analysis

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Project 4 of 5 (contd.)

Expected Student Research Outcomes:

1. Ability to clean and analyze real-world data
2. Development of data visualization skills
3. Experience contributing to an academic research project
4. Improved understanding of operations management concepts
5. Exposure to academic writing and publication process
6. Completion of a research poster

Research Professor: **Dr. Albena Ivanova,** Management, Rockwell School of Business

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Project 5 of 5

Research Project Title: An Analysis of Expectations vs. Perceptions of NACE Competencies among Students, Faculty, and Employers

Research Project Summary: Career readiness encompasses the essential knowledge, skills, and professional behaviors required for workforce success. To standardize these attributes, the National Association of Colleges and Employers (NACE) launched its Career Readiness Initiative, identifying eight core competencies, including communication, critical thinking, leadership, and teamwork—as vital for professional transitions (NACE, 2021).Existing research highlights a persistent "readiness gap" between employer expectations and student self-perceptions (Casner-Lotto & Silvert, 2008). While universities are instrumental in preparing students for evolving markets, graduates often possess theoretical knowledge but lack the practical fluency in high-priority areas like leadership and technology (Kaminski et al., 2009; Pandya et al., 2021).A significant limitation in current literature is the exclusion of faculty perspectives. There is little data regarding how faculty value these competencies or the extent to which they are integrated into academic curricula. This study employs a Mixed Methods approach to bridge this gap, collecting data through surveys, interviews, and observations. By triangulating perspectives from students, faculty, and employers, the research evaluates the perceived importance and actual mastery of NACE competencies. Including faculty provides critical insight into the alignment between classroom instruction and industry needs, ultimately identifying strategies to better prepare students for the professional landscape.

Student Research Objectives:
1. Identify relevant research articles focused on career readiness, college student professional competency, employer expectations
2. Create an annotated bibliography
3. Conduct Descriptive Data Analysis on employer survey results
4. Create Tables based on Employer Survey Results
5. Design and Pilot student survey

Skills Required:
1. Basic statistical analysis skills
2. Attention to detail
3. Familiarity with Library Research Databases
4. Interest in learning survey methodological tools (i.e. Survey Monkey)

Expected Student Research Outcomes:
1. Demonstrate the ability to design and develop a survey instrument to collect research data
2. Apply critical thinking skills to evaluate and interpret readiness gap literature
3. Demonstrate statistical analysis skills through the application and interpretation of appropriate quantitative methods to analyze research data

Research Professor: **Dr. Daria Crawley,** Management, Rockwell School of Business

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