

2019 PROVOST'S LEARNING INNOVATIONS GRANTS CALL FOR PROPOSALS

The **Provost's Learning Innovations Grants (PLIG)** program was developed to broaden and enrich the learning experience of RIT students by funding faculty-initiated projects that enhance student learning. Managed by the Innovative Learning Institute (ILI), this program has been designed to:

- Better support dissemination of individual faculty learning to the wider faculty population
- Integrate funding with Institute priorities
- Support the scholarship of teaching and learning

I. ELIGIBILITY

All full-time RIT faculty (tenured, tenure-track, visiting, lecturers, etc.) are eligible to apply.

II. GRANT TYPES

There are two types of grants—Exploration and Focus—for PLIG 2019. Full details are available on the [Grants Types](http://www.rit.edu/plig) page of the PLIG website (www.rit.edu/plig).

III. USE OF GRANT FUNDS

Provost's Learning Innovations Grants for 2019 may range from \$1,000-\$5,000.

Examples of the use of PLIG funds include:

- Course release (reasonable, actual replacement costs for faculty members removed from teaching)
- Development of new technology-based learning tools and/or environments
- Technologies or equipment required that are not normally provided by the department/college
- Resources for research design and consultation, data collection and aggregation, instrument development and/or purchase, secure data storage, data analysis, and report generation
- Travel to support research activity and/or meet with potential funding sources

IV. PLIG TIMELINE AND TASKS

The grant timeline assumes that most recipients will use the Spring 2019 and/or Summer 2019 term(s) to plan and develop their PLIG-funded project for delivery or implementation during the Fall 2019, Spring 2020, and/or Summer 2020 term(s). The full [timeline](#), including grantee tasks, is available on the PLIG website.

V. SELECTION COMMITTEE AND EVALUATION CRITERIA

Applications for PLIG funds are evaluated by the [PLIG selection committee](#) according to the following criteria:

- *Utility* (solves a defined problem; has potential to benefit many courses/faculty)
- *Creativity* (is a novel approach or application; represents a new paradigm)
- *Efficacy* (uses an evidence-based approach; impact to student learning and/or the student experience can be demonstrated)

The criteria are further defined, illustrated, and explained in the [Proposal Evaluation](#) section of the PLIG website.

VI. QUESTIONS

Please email plig@rit.edu with any questions about the PLIG process.

(Examples of previously funded projects are available in the [Previous Awards](#) section of the PLIG website).

2019 PROVOST'S LEARNING INNOVATIONS GRANTS

APPLICATION

INSTRUCTIONS

1. Complete this Application Form and save as "Lastname_Firstname_APP" (*using your name*).
2. Ask your Department Head to complete the Department Head Certification, scan and save as, "Lastname_Firstname_SIG" (*using your name*).
3. Email all documents to plig@rit.edu, **no later than 11:59pm ET, January 21, 2019.**

If you have any questions about completing this application, please contact Michael Starenko at 585-475-5035 or mssetc@rit.edu.

APPLICANT INFORMATION

This application is for a (please select *one* type of grant):

Exploration Grant

Focus Grant – Active Learning Across All Course Modes

Principal Applicant Name: Keli DiRisio

Faculty Title: Assistant Professor Email: kmdfaa@rit.edu Phone: 585-202-0655
(Full-time only)

College: CAD Department: Graphic Design

Department Head Name: Peter Byrne Email: pjbfaa@rit.edu

Others involved in the project (if any): Marla Schweppe, Nancy Bernardo

Project Name: Enhancing Interactive Learning Through the Introduction to Projection Mapping

Total Funds Requested (*as calculated on the budget worksheet on the next page*): \$4680.00
(requests of \$1,000 to \$5,000 will be considered)

BUDGET

Complete the table below to calculate your budget

- The total shown on this worksheet must match the “Total funds requested” in the Applicant Information section on page 1 of this application form.
- If awarded, additional funds will be provided to cover any benefits and ITS expenses associated with the salary budget requested.
- Note that any equipment or other materials purchased with grant funds are the property of your department and revert to the department after your project is completed

Personnel	Purpose/Justification	Amount
<i>Full-time Faculty/Staff</i>		
<i>Adjuncts, Part-time Faculty/Staff, Summer Salary</i>		
<i>Student Workers, Graduate Assistants</i>		
Personnel Total		\$ 0.00
Equipment	Purpose/Justification	Amount
Projector		\$2,300.00
Resolume Software (2 licenses, edu discount)	Software to create projections	\$805.00
Lightform sensor and software	Computer vision hardware and software	\$700.00
Building Supplies	To create structures to project onto	\$500.00
Equipment Total		\$ 4305.00
Travel	Purpose/Justification	Amount
Hotel at LUMA Festival	Attend projection festival in Binghamton, NY in September 2019	\$375
Travel Total		\$ 375.00
Other (Specify)	Purpose/Justification	Amount
Other Total		\$ 0.00
Total Award Requested		\$4680.00

STATEMENT OF UTILITY (two pages maximum)

Using the evaluation criteria outlined in the [Proposal Evaluation](#) section of the PLIG website, please provide an overview of the project you are proposing, including:

- Project objectives
- An explanation of the teaching/learning problem(s) it is designed to address
- An explanation of the significance of the project to student outcomes and/or the student experience.
- A brief description of how the project integrates with activity already underway at RIT in a priority area and/or how this approach has been successfully used at RIT already.

INTRODUCTION:

Projection is being used to map images onto buildings and objects, for signage, in museum displays, and as spatial augmented reality. Using specialized software this technology is being used to turn objects and structures, often irregularly shaped, into a display surface. Any surface can become a canvas, with graphics being projected onto it, playing off of the surface's shape and textures to create an immersive experience of light, color, motion, sound and illusion. These techniques are rapidly becoming an important component of a graphic designers' toolkit.

This technology is being used for everything, from artistic displays to interactive immersions to instructional installations. Projection mapping can provide a more engaging experience for students and viewers, through rich and powerful visual stimulation. By turning visual exhibitions into interactive, 3D displays, we can create a layer of involvement and immersion that doesn't exist with 2D presentations.

Industries are starting to realize the impact of projection mapping. Business News Daily and Paul Whitney of *bluemedias* states, "Projection mapping immerses consumers into an experience. . . And research has shown that millennials, in particular, would rather invest in an experience than a product." (Furlong). Market research suggests that by 2024 [the mixed-media] market could be worth as much as \$6.9 billion. (Uzialko).

PROJECT OBJECTIVES:

- To have Marla Schweppe share expertise in projection mapping with faculty in Graphic Design
- To teach students the experiential capabilities of projection mapping in Graphic Design courses
- To create the opportunity for class projects that can be incorporated into multi-disciplinary collaborations (e.g. graphic design, 3D, industrial design, interior design, animation, film and video, engineering, packaging science)
- To encourage collaboration with the city of Rochester through the Holiday Village and potentially the Roc the River campaign, employing the use of student-created projection mapping for a summer promotional program
- Providing the ability to create projection maps opens up opportunities for faculty and students to work on city, regional and community projects
- To showcase RIT student work, showing their design thinking, critical analysis and problem solving in regards to creating large-scale projects
- To have students involved in problem solving using new technology and processes
- To create fulfilling experiences in which the audience can become fully involved

TEACHING/LEARNING PROBLEM BEING ADDRESSED

Pedagogically, participating faculty will expand their teaching and research base by discovering new opportunities and ways to incorporate these tools into their curriculum; the opportunity to collaborate across disciplines is something that needs to be focused on in our existing curriculum. Through this type of collaboration, students will not only be exposed to the process of projection mapping, but it will give them another ability to supplement their existing design knowledge. In addition, working collaboratively on mapping projects will further their skillsets as a team member, as they will work with team participants and clients as they learn the different aspects of large-scale project management.

The goal of this endeavor is to learn the software and hardware requirements during the spring, and be ready to implement the integration of projection mapping into classes in the fall. This PLIG grant will allow the Marla Scheweppe, Director of 3D Digital Design to share her expertise in projection mapping with faculty from the Graphic Design department (Keli DiRisio and Nancy Bernardo) so that they can integrate projection mapping into their curriculum. The grant will provide the necessary software, hardware, and materials for a variety of applications of projection mapping.

This knowledge base can push the students past traditional design skills and allow them to explore this newer technology. Specific classes that projection mapping would be incorporated into would be GRDE 422 Advanced Interactive Media this spring, and in the fall GRDE 302 Web and UI. These classes would be the springboard for collaboration with other classes such as Professor Bernardo's GRDE 205 History of Design. Exploration and experimentation of concepts will open up the possibilities of collaborations across campus and in the greater Rochester community and beyond.

By offering projection mapping within the curriculum, students will be better prepared to enter the job market, having a unique set of skills that not many other schools' curriculums offer. Major corporations are using mapping as a way to showcase product launches, and to create interactive sales meetings and exhibits. Having fundamental knowledge of the software and process will not only better prepare our students to enter the workforce, but will give them working knowledge of this fast-growing subset of our industry. In addition, all students can use what they have already learned in classes such as motion graphics, animation, and structural manufacturing, and apply that to their new knowledge of projection mapping.

The scope of projects to use with projection mapping are innumerable and can be incorporated into a number of classes and community projects, with examples of deliverables being:

On campus:

- Creating an interactive immersion for Imagine RIT
- Projecting student work at graduation
- Projecting student work at hockey games and other sporting events
- Using the buildings on campus for projections during open houses and recruiting events

In the community:

- Working with the city of Rochester on the Holiday Village and potentially Roc the River
- Collaborating with corporations for events
- Working with non-profits to help promote fundraisers

INTEGRATION WITH RIT INITIATIVES

Introducing projection mapping in the classroom would further the goals and the mission of RIT through activities that expand our reputation as a multidisciplinary research university and a valued part of the Rochester landscape. Specifically, projection mapping as part of our curriculum would align with the following RIT priority initiatives:

- Student-centric: Promote the capabilities and creativity of the RIT student population, creating an awareness throughout the community of the work that our students are capable of producing.
- Scholarship and research: An opportunity for faculty to incorporate projection mapping and collaboration into their coursework and curriculum along with learning new technology, thus expanding upon their scholarship.

- Experiential collaboration: The ability to work with various organizations and businesses in the area to incorporate projection mapping into their promotional events, creating opportunities for the students to work on large-scale projects.

Furlong, Joanna. "Projection Mapping: What Is It and Why Businesses Love It." *Business News Daily*, 17 Jan. 2018, www.businessnewsdaily.com/10527-projection-mapping-what-is-it.html.

Uzialko, Adam C. "Mixed Reality Finds Its Niche in Industry and Business Applications." *Business News Daily*, 28 July 2017, www.businessnewsdaily.com/9704-ar-vr-mixed-reality-platforms.html.

STATEMENT OF CREATIVITY (three paragraphs maximum)

Provide a brief description of how this is a novel approach, or a new application of an existing mode or model of teaching and learning, and/or research about how teaching and learning represents a new paradigm.

This grant will allow graphic design faculty to apply the use of projection mapping software and hardware required to assist in the integration of projection mapping in their curriculum. This would allow exploration and experimentation of various disciplines to move from a 2-dimensional space to a large-scale 3D format. Projection mapping has been taught on campus for several years by a single faculty member. As an important tool for graphic designers, it is important to begin integrating the knowledge and skills into additional courses. With support from this PLIG grant, we would be able to introduce this quickly-growing technology to a wide range of students in graphic design.

Students in the design program are learning motion graphics, animation, graphic design fundamentals, UX/UI, interactivity, and 2D design. Being able to introduce ways for them to take their current design solutions and modify them to work on a 3-dimensional space would create a better understanding for spatial relationships and how to go beyond 2D into 3D.

In order to develop these skills, the faculty in graphic design will need copies of projection mapping software, a projector, and materials to build a three-dimensional projection surface for indoor experimentation. Professor Schweppe is willing to share her 20+ years of experience in designing with projections.

STATEMENT OF EFFICACY (two pages maximum)

Provide a brief description of the experiment/research design, methodology, and methods of data collection and analysis you will use to gauge efficacy.

An increase in the number of students interested in projection mapping could easily be tracked by enrollment. The class(es) would be advertised and promoted with the description of the projection mapping component. There is also the opportunity for students to do a projection mapping project as an independent study.

The introduction of this technology will provide a real-world production of design concepts. The completed projections will incorporate not only the aesthetic results but a fully-functional performance for the masses. Students would be able to use projection mapping on self-promotion projects and RIT promotions, such as graduation and special events. They will be able to enter their projections into festivals and competitions, such as the LUMA Festival, a celebration of projection mapping and Borealis, a Festival of Light, billed as the United States' first international video projection mapping competition, and the 1 Minute Projection Mapping Competition on an international level.

Existing projects to be integrated into the curriculum:

- Roc the River-Summer 2019 (contact of Marla Schweppe)
- On-campus events: Imagine RIT, graduation, open houses, hockey games

ADDITIONAL CONSIDERATIONS

Please address these questions, if needed.

Will your project require assistance for extensive or unusual media, multimedia, simulation, and/or software development? If so, please explain?

No, there will be no need for any assistance.

All courses offered by RIT must be accessible to students with disabilities, according to Section 504 of the Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act of 1990 (rit.edu/studentaffairs/disabilityservices/info). Is your proposed teaching approach accessible to all students, with reasonable accommodation? If not, please explain.

Students with severe visual impairment may have trouble as this is a visual media, but could be explained by an interpreter.

RIT abides by the Family Educational Rights and Privacy Act of 1974 (FERPA), which prohibits instructors from making students' identities, course work, and educational records public without their consent (rit.edu/xVzNE). Will any data gathering or sharing for your project raise any FERPA issues? If so, please explain.

No, there will be no FERPA issues.

DISSEMINATION AGREEMENT

By completing this grant application, I agree to provide the materials and services described here, in support of disseminating what is learned from this project to the RIT community.

I also agree to return all/a portion of the funds that I receive for this project to RIT if I fail to complete or provide the materials described here:

- Full Project Plan (*including roles and responsibilities, milestone dates, and pertinent project details*)
- Preliminary Findings report (*may include experiment/study design, lessons learned, initial data collection, and/or literature review summary*)
- Participation in an ILI/TLS Preliminary Findings Roundtable dissemination event (*share and discuss your preliminary findings with your PLIG cohort*)
- Final Summary of Findings (*including data collection, lessons learned, implications for further study, and which may be in the form of an article abstract, conference presentation outline, or short report*)
- Final budget accounting (*reconciliation of budget provided with your application and the actual project expenses*)
- Participation in an ILI/TLS PLIG Showcase dissemination event (*present a poster or other display at the annual Showcase*)

By submitting this application, I accept this agreement. KMD (*applicant, please initial here*)

TIMELINE AND TASKS

Please indicate any variances to the planned PLIG 2019 schedule as described in the above Dissemination Agreement and the reasons for this variance. *If you do not intend to deviate from the schedule, you may leave this section blank.*

Task	Date	Proposed Variance and Reason
Full Project Plan submitted to TLS	August 16, 2019	
Preliminary Findings report submitted to TLS	January 10, 2020	
Participation in an ILI/TLS Preliminary Findings Roundtable dissemination event	February, 2020	

Summary of Final Findings report submitted to TLS	August 21, 2020	
Final Budget Accounting report submitted to TLS	August 21, 2020	
Participation in an ILI/TLS PLIG Showcase dissemination event	November 2020	

DISSEMINATION PLAN (*optional*)

Provide details about the journals, conferences, shows, or other external vehicles with strong potential for dissemination of your results (in addition to the ILI/TLS Preliminary Findings Roundtable and PLIG Showcase dissemination events). Include supporting documentation, such as preliminary interest or acceptance, with your application, if available. *(Please note that special consideration will be given to proposals that have a defined opportunity for external dissemination, such as an academic journal or professional conference.)*

- Imagine RIT
- UDCA conference: panel presentation on using projection mapping in different disciplines and the experience from a pedagogical perspective: using existing experience of one faculty member and passing it along to newer faculty.
- LUMA Festival, a celebration of projection mapping and
- Borealis, a Festival of Light
- 1 Minute Projection Mapping Competition

DEPARTMENT HEAD CERTIFICATION

I support this PLIG application and verify that the principal applicant is a full-time faculty member in good standing in my department.

Principal Applicant Name: Keli DiRisio

Department Head Name (PRINT): Peter Byrne **Email:** pjbfaa@rit.edu

Department Head Signature:  _____ **Date:** 01/18/2019

NOTE: When signed, please scan and email with your Application Form to: plig@rit.edu