

# Graduate Education at the LRC



# Learning. Leading. Lighting.

## Mission

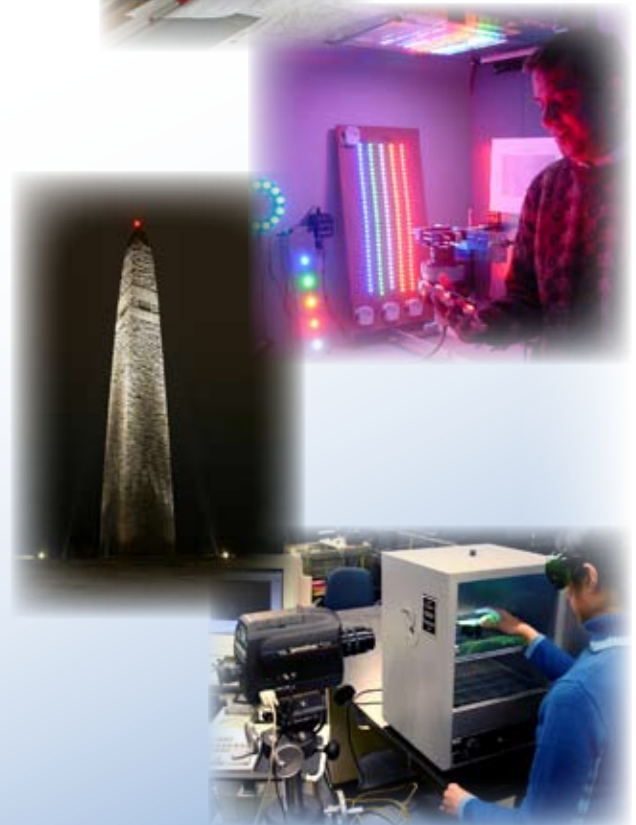
*To advance the effective use of lighting, thereby creating a positive legacy for society and the environment*

## Role

We view the LRC as the nucleus for independent lighting research and education. We are the preeminent source of objective, timely information about lighting technologies and applications and about human response to light.

## Values

We are committed to influencing lighting practice through multidisciplinary research and demonstrations; educating the future leaders in lighting; encouraging a view of lighting wherein economic gains are balanced with environmental sustainability; delivering high quality products in a timely manner; and providing a collaborative working environment for faculty, staff, and students.



Lighting  
Research Center

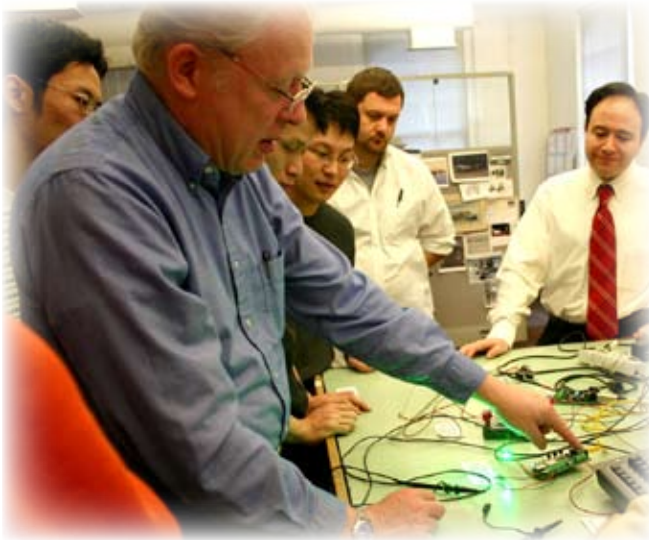
## About the LRC

The Lighting Research Center (LRC) administers the lighting graduate degree programs within the School of Architecture at Rensselaer Polytechnic Institute.

The LRC has offered the MS in Lighting, the premier graduate degree in the field of lighting, since 1990. Building on this strong foundation, the LRC has expanded the options for advanced study to include a wider range of degree options for those wishing to pursue graduate education in lighting.

The mission of the LRC's graduate education program is "to educate the future leaders in lighting."

LRC graduates become lighting leaders, working in all sections of the lighting practice and industry as well as other energy-related fields.



## Who should pursue a graduate degree in lighting at the LRC?

LRC students are drawn from many disciplines and backgrounds including physics, psychology, engineering, design, architecture, art, theater, science, and related areas of study.

Students enter the programs directly from undergraduate study or after pursuing careers in related fields.

LRC students strive for excellence, want to become leaders in the lighting field, and have a passion to advance the effective use of light.

The LRC provides in-depth exposure to the many disciplines that make up lighting including research, technology, design, and human factors.

The LRC has a multidisciplinary, full-time faculty, including internationally recognized experts.

The LRC's close ties to the lighting industry allow students to work with innovative companies on the cutting edge of lighting and key lighting researchers and designers from around the world.

LRC graduates are in demand by the foremost names in the lighting business and by the most prestigious design firms.

LRC graduates have a 100% job placement rate.

## Admissions

If interested in enrolling in a graduate education program offered by the LRC, contact Dan Frering, our manager of education, who will explain the application process in detail and answer questions you may have. The LRC also encourages people considering applying to visit the LRC for an interview with program faculty.

Requirements to be admitted to graduate study at the LRC:

- Bachelor's degree in a field related to lighting
- One year of college-level mathematics

Completed application packages must include:

- Two letters of recommendation
- Personal statement outlining your interests, relevant background, and professional aspirations
- Graduate Record Exam (GRE) report
- Sample of your creative work in the form of a project report, an essay, or a portfolio of graphic work
- Transcripts from previous undergraduate and graduate study

If your primary language is not English, we also require a Test of English as a Foreign Language (TOEFL) report.

For Rensselaer Polytechnic Institute admissions information:

- Visit [www.rpi.edu/admission](http://www.rpi.edu/admission).

[www.lrc.rpi.edu/graduateEducation/](http://www.lrc.rpi.edu/graduateEducation/)

# Three graduate degrees = Plenty of options!

## MS in Lighting

The MS in Lighting is a two-year, 48-credit program that immerses students in lighting research and application, culminated by an original thesis project under the guidance of a faculty member.

This multidisciplinary degree allows students to work closely with LRC faculty to study the various disciplines involved in lighting research. It provides a comprehensive, “hands-on” study of lighting. Students in their second year study a particular area of interest directly with a faculty advisor.

With continually updated course content and curriculum, including the latest advances in lighting research, technology, students receive an education on the “cutting edge” of lighting.

Students receiving scholarships in the MS in Lighting program will work as research assistants at the LRC, allowing them to participate in a variety of research and design projects. Graduates can then consider continuing on to further study in the PhD in Lighting, or other PhD degree options.



## MS in Architectural Sciences with a Concentration in Lighting

Geared toward the needs of professionals either currently working or wishing to pursue careers in the lighting industry or design fields, this nine-month, 30-credit degree program exposes students to a wide range of topics within lighting, including solid-state-lighting, light and health, human factors, design, and application.

Students may concentrate their research or design work in a particular area of interest by pursuing a master's project while working closely with LRC researchers. Formal course work includes 24 credits taken over two semesters and a six-credit master's project. The degree can be completed in nine months, allowing professionals to take a short break from their careers and return with a graduate degree in lighting.

Students who become interested in research while completing the MS in Architectural Sciences with a Concentration in Lighting may consider continuing on in the PhD in Lighting and can apply their credits toward that degree.

## PhD in Lighting

The highest degree available in the field of lighting, this degree allows students from a wide range of backgrounds to undertake concentrated research in a select area of lighting study and is ideal for those who aspire to teach at the university level. This degree brings the many disciplines that make up the field of lighting, including physics, optics, psychology, physiology, photobiology, engineering, architecture, and design, together within the context of scientific inquiry, research, and discovery.

Students wishing to concentrate their doctoral studies in lighting will complete at least 30 credit hours of formal coursework covering the physics of light, human factors in lighting, lighting technology, design, and leadership. Following the formal courses, students will concentrate their studies and research in a particular area of scientific inquiry under the guidance of an LRC faculty dissertation advisor. Each student will formulate an individual plan of study in consultation with their advisor.

Areas of research concentration may include:

- Light and health
- Solid-state lighting
- Transportation lighting
- Human factors in lighting
- Energy efficiency and energy policy
- Daylighting and controls

Students may enter the PhD in Architectural Sciences with a Concentration in Lighting with an existing bachelor's or master's degree or may first enroll in one of the LRC's master's programs and continue on to their PhD degree. Students will be required to pass a qualifying exam within their first two years of study.

Telephone (518) 687-7149



## Graduate Courses in Lighting

- *Lighting Design* – explores the role of light in architecture and its application by design
- *Human Factors in Lighting* – examines the influence of lighting conditions on people's visual capabilities, perceptions, moods, and alertness
- *The Physics of Light* – an introduction to the physics of light and its applications for lighting; topics include geometric optics, physical optics, radiometry, and photometry
- *Lighting Technologies and Applications* – provides an in-depth understanding of the components of advanced lighting systems, enabling them to critically explore applications of those components
- *Lighting Research Design* – an introduction to the philosophy of research and different approaches to it
- *Light and Health* – explores the effects of light and lighting on people's physical and psychological health and well-being
- *Lighting Leadership Seminar* – a series of topics and case studies to prepare students for leadership roles in the lighting industry
- *Master's Thesis/Project* – an intensive student-initiated project using original research or design evaluations to test hypotheses, demonstrating the student's mastery of an area of lighting
- *Lighting Workshop* – a research and design studio integrating scholarship, technology, design, policy, and communication in an intensive, project-specific context

## Faculty

The faculty at the LRC includes some of the world's leading experts working in the field of lighting today. Graduate education at the LRC allows students to work and learn alongside these world-renowned lighting experts. In addition, over 20 full-time professional staff contribute unique expertise to project work.

### LRC faculty members are:

- Lighting designers, architects, and architectural engineers skilled in lighting design and application
- Physicists, engineers, and researchers investigating the latest technological innovations
- Photobiologists, psychologists, and human factors experts conducting relevant research

### Faculty members

Andrew Bierman, M.S.- Adjunct Assistant Professor  
 Jennifer Brons, M.S. - Adjunct Assistant Professor  
 John Bullough, Ph.D. - Adjunct Assistant Professor  
 Mariana Figueiro, Ph.D. - Assistant Professor  
 Jean Paul Freyssonier, M.S. - Research Assistant Professor  
 Russ Leslie, M.Arch. - Grad. Programs Chair, Professor  
 Peter Morante, B.S.- Adjunct Assistant Professor  
 Nadarajah Narendran, Ph.D. - Associate Professor  
 Mark Rea, Ph.D. - LRC Director, Professor  
 Patricia Rizzo, M.S. - Adjunct Assistant Professor  
 Abhay Wadhwa - Adjunct Assistant Professor

## Lighting Research Center

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