



Realizing the Future – Research to Application

Dear Colleague,

Within recent memory, there has not been a time more fortuitous for those passionate about light to come together. Seattle, Washington, is the perfect lighting and sustainability venue for “Realizing the Future - Research to Application.” While it is true that our present time is one of significant economic concern, it is also one of extraordinary opportunity, and the 2009 IES Annual Conference will provide a multi-faceted approach to investigating areas of research and design application that demonstrate these opportunities.

From a celebration of award winning lighting design through thought-provoking seminars and research papers, to building tours that demonstrate excellence in lighting and energy conservation, to our annual dinner with a presentation that, be assured, will open new doors as a means of looking to the future of technology, the 2009 IES Annual Conference will provide incredible value on both a personal and professional level.

So let’s immerse ourselves in light as we have not seen it before and explore these opportunities of the future with fellow participants both old and new. Be assured that this experience will provide fresh insight that will prove valuable in the months following the conference.

We look forward to the common sharing of this unique experience and welcoming you in the fascinating city of Seattle!



Fred Oberkircher, FIES

Retired–Texas Christian University
President 2009-2010



Nick Bleeker, MIES

Philips Day-Brite
Conference Committee Chair

CONFERENCE SCHEDULE

Friday – November 13

9:00am-5:00pm Progress Theme
Sub-Committee Meeting

Saturday – November 14

8:00am-1:00pm Board of Nomination
Meeting

9:00am-5:00pm Progress Committee
Meeting

1:00pm-5:00pm Regional Membership
Council Meeting

8:00am-5:00pm Committee Meetings

Sunday – November 15

8:00am-12Noon Board of Directors
Meeting

9:00am-3:00pm Leadership Forum

9:00am-5:00pm Progress Committee
Meeting

8:00am-4:00pm Committee Meetings



5:00pm-8:30pm Welcome and
Opening Session

This event will be held at the hotel

Keynote Address

Ken Alston, CEO, MBDC

Cradle to CradleSM Design as a Positive
Environmental Agenda for Products

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LITECONTROL
employee owned | customer driven

Presentation of the 2009
IES Illumination Awards

Welcome Reception

A cocktail reception will follow the program.

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AcuityBrands
Lighting
and
OSRAM SYLVANIA

Monday – November 16

7:30am Networking Continental Breakfast

8:15am-9:15am General Session I
DOE CALiPER Testing – Latest LED Findings

James Brodrick, Project Manager, US DOE
Building Technologies Program

As new LED lighting products rapidly emerge on the market, it becomes increasingly difficult to distinguish quality products. Exaggerated performance claims, poorly understood specifications, and apples to oranges comparisons cloud the picture and prompt considerable confusion. The U.S. Department of Energy's CALiPER testing program helps to separate myth from fact by sharing the results of independent testing of commercially available LED products. The latest round of CALiPER reports – covering downlights, outdoor lighting, and replacement lamps – provide snapshots of the technology status, revealing more and more LED products that are approaching, matching, or sometimes even exceeding the performance of their conventional lighting counterparts, as well as products that do not perform as claimed. Learn how you can use CALiPER test reports to track technology progress and trends.

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9:30am-10:30am Seminar
**Lighting a Residence with LED's –
What This Experience is Teaching Us**

A client comes to you and wants a 100% LED illuminated residence. What do you do? Is it achievable? Let's go through a real project and see what happened and what the reality was of achieving this goal.

Andy Lang, President, Lang Lighting Design, Inc.

9:30am -10:30am Paper Session
Empirical Light Loss Factors for Sports Lighting
K Houser, M Royer, R Mistrick; Penn State
University

Luminance Metrics for Roadway Lighting
R Gibbons, J Meyer, C Edwards; Virginia Tech
Transportation Institute

9:30am -10:30am Paper Session
Amalgam Technology in TL Fluorescent Lamps
B Carter; Philips Lighting
**Energy Saving Ceramic Metal Halide Lamps
Suitable for Probe-Start and Pulse-Start Systems**
T Steere, R Gibson, J Tu; Philips Lighting

10:45am-11:45am Seminar
**Light + Design: What is this "Lighting
Quality" stuff all about, anyway?**

Naomi Miller, FIES, FIALD, LC, Naomi Miller
Lighting Design, LLC

Introducing Light + Design, the IES's Quality of the

Visual Environment Committee's Design Guide! This publication describes and illustrates the lighting quality issues (task visibility, glare, patterns of light, flicker, facial modeling, etc.). gives guidance on how to avoid the pitfalls, and offers practical application examples. Cartoons and photos accompany technical descriptions to explain concepts in a clear and palatable way. This talk will step you through the document and show how it can be an essential design tool and handy reference to collect project data, consider design issues, choose products and layouts, and find supporting research references.

10:45am -11:45am Paper Session
Predictive Control of Dynamic Daylit Spaces
D Macumber, N Long, P Torcellini; National
Renewable Energy Laboratory (NREL)
**Improved Daylighting Controls Through Dual
Loop Sensing**
B Koyle, K Papamichael; California Lighting
Technology Center

12 noon – 1:30pm Membership Luncheon
The luncheon program will include the Annual Meeting of the Society, presentation of the Presidential Award, and a membership town hall. Fred Oberkircher, IES President, will preside.

1:45pm-2:45pm General Session II
**Lighting Energy Usage – Raising the Bar
A Case Study at the The New York Times**

This session will detail the Total Light Management at The New York Times. Your speaker will share an in-depth examination of the multiple layers of lighting control to performance results over the past year taken from the databases for the automated shades and digital addressable dimmable lighting control systems. The results are stunning. Glenn Hughes, President, Glenn D. Hughes Consulting Associates

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LUTRON

3:00pm-4:00pm Panel Session
**The Third Photoreceptor – Some Implications
for Human Vision and Lighting**

The discovery of a third photoreceptor in the human eye has stimulated a flurry of both research and speculation concerning its implications. As speculation is more expedient and less expensive than research, the attributes of the third photoreceptor as related to vision and lighting have expanded to almost miracle status - simultaneously significantly improving vision, lowering energy requirements, and improving human health. To help separate fact from fiction, two leading researchers in this area will hold a facilitated conversation aimed at providing third photoreceptor information that will be divided into three areas: that which is agreed upon, that which tends to point in a certain direction, and that which is proving to be incorrect. Moderator: Fred Oberkircher, Retired-TCU Panelists: Sam Berman, Lawrence Berkeley Labs and Kevin Houser, Penn State University

CONFERENCE SCHEDULE

Monday – November 16 *continued*

3:00pm-4:00pm Paper Session

The Future of Residential Lighting: Shift from Incandescent to CFL to LED Light Sources
S Djokic, A Collin, C Cresswell; University of Edinburgh

Comparison of Electrical Characteristics of Low Power and High Power CFL and LED Light Sources

S Djokic, A Collin, C Cresswell; University of Edinburgh

4:15pm-5:30pm IES Progress Report

New products, services, trends and publications presented by the IES Progress Committee

5:30pm-7:30pm Product Showcase and Reception

Tabletop reception featuring new products and services offered by lighting manufacturers

Tuesday – November 17

7:30am Networking Continental Breakfast

8:15am-9:15am General Session III The Future of Sustainability: Restorative Design

Dr. Stephen R. Kellert, Yale University, School of Forestry and Environmental Studies

Restorative Environmental Design is an approach to sustainable design of the built environment that combines both low environmental impact design that minimizes adverse environmental and human health impacts, with positive environmental impact or biophilic design that enhances human health, productivity, and physical and mental well being through fostering beneficial contact with the natural environment. The theory, science, and practice of restorative environmental design will be the focus of this presentation. The presentation will include a discussion of human evolutionary biology and the need for ongoing contact with the natural environment; scientific evidence documenting the health and productivity impacts of human contact with natural systems and processes; and ways to implement the practice of restorative environmental design, particularly relating to lighting strategies.

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Day-Brite

OFF-SITE LIGHTING TOURS

9:15 am-11:30 am

Five off-site building tours will be conducted concurrently from 9:15 am-11:30am. Buses will depart from the Sheraton. Separate registration is required. Registration fee is \$25. Space is limited and based on a first-come, first-served basis. One tour per person.

T1- Integrated Design Lab



The Integrated Design Lab is an extension of the University of Washington's College of Built Environments, Department of Architecture.

Its mission is to provide design teams in the Pacific Northwest access to the best knowledge available with project-by-project support on how to design, construct and operate the healthiest, most productive and most energy-efficient buildings in North America.

Visitors touring the lab will learn about current strategies emphasizing daylighting and electric lighting integration. Displays are located throughout the space describing the various integrated lighting strategies being implemented. Case studies and current research will also be presented.

T2- Lighting Design Lab



There's nothing like seeing the real thing before you actually specify and install it. Lamps, luminaires, ballasts, louvers and controls are all on display

in the Lighting Design Lab's demonstration area. Here, lighting professionals can make side-by-side comparisons of features, effects, light quality, distribution and power usage. Visitors can view the effects of different lamp types on color using the lab's color boxes and try out the manual, programmable and motion sensor lighting controls that can save even more energy.

During the site tour, LDL staff plans to create side-by-side school classroom mock-ups (e.g., pendant direct/indirect lighting vs. an all direct lighted classroom) to allow conference attendees to compare illumination, watts per sq ft and ceiling height, along with qualitative feelings about each space.

T3 and T4 are identical tours of both buildings in reverse order.

T3- The Terry Thomas/Alley 24



The Terry Thomas is a highly sustainable, commercial building located in Seattle's South Lake Union neighborhood. Wrapped in windows, the building is designed with a modern aesthetic in combination with time-tested strategies from the pre-HVAC era. In fact, it's Seattle's first commercial office structure in decades developed without central air conditioning.

Led by a team from Seattle architecture and design firm Weber Thompson, the tour will explain how the project reduces its carbon footprint; the workings of the passive cooling system; strategies employed to reduce water usage by 50 percent and

energy usage by 30 percent; and how the building has met its original vision of thoughtful sustainable design and a workplace that contributes to the occupant's well-being, satisfaction and productivity. The Terry Thomas is LEED Gold-certified for Core and Shell. Weber Thompson's offices in the building are LEED Platinum-certified for Commercial Interiors.

T4- Alley 24/The Terry Thomas



Global architecture firm NBBJ designed this mixed-used building known as Alley 24 and now occupies three floors within it. The goal was to create office space that

would make work more visible and portable, while facilitating dialogue between disciplines and studios. Employee amenities include locker rooms and showers to encourage a healthy lifestyle, and bike storage for the popular commuting program.

Large floor plates and the exterior building skin maximize sunlight and views. Studios are located along the outer perimeter close to natural light and ventilation; every employee is within 45 ft of a window. To encourage connectivity between studios, they're arranged horizontally around service/meeting area hubs. On the ground floor, a set of "giant steps," made of locally manufactured Douglas fir, serves a dual role as a town hall-type forum and as the primary staircase connecting the ground and studio floors. Along the perimeter of the building, a three-story light wall, clad with translucent panels, houses a series of daily changing colors from LED fixtures. The light captures the mood of the day and shares it with passersby.

T5- Seattle Public Library-Ballard Branch



Visitors to the Ballard Branch of the Seattle Public Library can feast on a veritable smorgasbord of sustainable design. . .and

it's not limited to lighting. Designed by Bohlin Cywin-ski Jackson, the building features more than 18,000 low water-use plants on its green roof; "notch and tab" tables and chairs (no screws or nails) cut from a single sheet of laminated wood to reduce waste; 17 solar panels on the roof and solar film in the windows of the adjacent Neighborhood Service Center; rooftop devices that measure wind speed and direction, sunlight and the sound of rain; abundant natural daylight, including seven skylights; occupancy sensors that control lights in offices and enclosed spaces; recycled carpet, glass, ceramic and ceiling tiles; environmentally friendly adhesives, sealants and paints; and light wells in the parking garage that provide pools of natural light to help with way-finding and security.

CONFERENCE SCHEDULE

Tuesday – November 17 *continued*

11:45am-1:15pm **Lighting Topics Networking Luncheon**

Lunch and informal discussion groups on relevant topics in the field of lighting

1:30pm – 2:30pm **General Session IV Architectural Implications of Circadian Daylighting in Rooms**

Marilyne Andersen, Associate Professor, Department of Architecture, Massachusetts Institute of Technology (MIT)

This presentation will discuss how recent findings in photobiology about the correlation between lighting and the human circadian system can prospectively be applied to architectural design, with a focus on healthcare and housing environments. Outcomes of photobiology research were used to define threshold values for illumination in terms of spectrum, intensity, and timing of light at the human eye, and were translated into goals for simulation – and ultimately for building design. While no actual recommendations can - or should - yet be made because of our limited understanding of the effects of exposure to light on human health and circadian organization, especially during daytime, we can still discuss the relevance of some critical design parameters to electric lighting or – to a greater extent – to daylighting.

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2:30pm – 3:30pm **Seminar Mining the Infrastructure to Improve Lighting That Pays for Itself**

Willard L. Warren, PE, LC, FIES, Principal, Willard L. Warren Associates, Lighting and Energy Consultants

The existing amount of lighting installations in the US is almost 100 times larger than the new light-

ing equipment installed each year. The existing infrastructure represents a relighting opportunity to conserve energy equal to a virtual power plant. The energy saved by retrofitting and installing controls will defer construction of new generating plants and provide a cushion to buy time to develop new, renewable sources of power, and reduce transmission congestion. Much of the existing lighting is out of date and should be replaced with new equipment that provides lighting systems that are more user friendly allowing improved productivity.

2:30pm – 3:30pm **Paper Session *The Impact of Translucent Shade and Integrated Lighting Control on Lighting Energy and Visual Quality***

P Wankanapon, R Mistrick; Penn State University

National Energy Code Lighting Power Limits: The Need for an Updated Calculation Process

E Richman, T Meyer; Pacific Northwest National Laboratory (PNNL)

2:30pm – 3:30pm **Paper Session *Threshold Visibility Levels Required for Nighttime Pedestrian Detection in a Modified Adrian/CIE Visibility Model***

K Ising; MEA Forensic Engineers & Scientists

Evaluation of Disability and Discomfort Glare in Roadway Environments

R Gibbons, B Williams; Virginia Tech Transportation Institute

3:30pm-4:30pm **Poster Session** Papers or research topics presented in a poster format on various lighting topics.

4:30pm-5:30pm **Panel Session Lighting Advocacy—Approaches and Opportunities**

“Ban the Bulb! Outlaw Lighting Designers in Texas!” Recent events having the potential to drastically affect our profession raise the question

of whether lighting professionals, themselves, have had a strong enough voice in creating public policy. How can the IES best serve the public through advocacy activities related to improving the quality of the lighted environment? A freewheeling roundtable panel featuring leaders of four prestigious associations will discuss strategies. Learn how lighting professionals can make things happen in the public policy arena. . .before things happen to them. Moderator: Paul Tarricone, Editor, LD+A Panelists: John Martin, IALD; Kyle Pitsor, NEMA; Richard Upton, ALA and an ASHRAE representative.

4:30pm-5:30pm **Paper Session *Cognitive factors in lighted architectural environments: Re-evaluating Flynn’s Lighting Modes***

R. Davis; Litecontrol

Cognitive factors in lighted architectural environments: Context-specific preferences for lighting

R. Davis; Litecontrol

6:30pm-9:30pm **IES Gala Dinner**

Dinner program will include presentation of the IES Medal Award to Terry K. McGowan

Guest Speaker

Dayna Baumeister, Co-founder of the Biomimicry Guild

Imagine...packaging that uses no environmentally compromising adhesives...buildings without the need for electrically generated HVAC and our technological future based on our planet’s best designs - designs based upon biomimicry.

COOPER Lighting

and



GE Consumer & Industrial
Lighting Systems

Note: IES reserves the right to change session topics and speakers.

Conference Hotel

Sheraton Seattle Hotel

1400 Sixth Avenue
Seattle, WA 98101

Hotel Direct Phone: 206-621-9000

Hotel Toll Free: 1- 888-627-7056

IES Conference Room Rate: \$185.00 (Single/Double) plus tax.

IES Room Rate Cut-off Date: October 13, 2009

Online Reservations at www.ies.org



STEP 1 - Personal Information (One registration form per registrant)

IES Member # _____

First Name _____ Last Name _____ Nickname for Badge _____

Job Title _____ Company _____

Address _____ City/State/Zip Code _____

Telephone: () _____ Fax: () _____

Email: _____

- Industry Sector:** Architect Academic/Researcher Electrical Contractor Electrical Distributor Electrical Utility
 Government Agency Interior Design Lighting Designer Manufacturer Manufacturer's Rep.

STEP 2 - IES Membership

Not a member? - Join now! ADD \$170 membership dues.
 Receive 10% discount on a full conference registration.

New Member Dues Subtotal \$ 170

STEP 3 - Registration

FULL CONFERENCE: Includes all sessions, Sunday reception, lunches, exhibit reception, and Gala Dinner. Tours not included.

	Through 11/10/09	On-site	
IES Member	\$575	\$600	\$ _____
Nonmember	\$675	\$700	\$ _____
IES Student/Retired/Emeritus Member	\$100	\$125	\$ _____

DAILY CONFERENCE:

Monday: Includes all sessions, breaks, lunch, tabletop reception.
 Tuesday: Includes all sessions, breaks, lunch. Gala Dinner and Tours ARE NOT INCLUDED

IES Member	\$300	\$325	\$ _____
Nonmember	\$350	\$375	\$ _____

DAY: ___MONDAY ___TUESDAY

Registration Subtotal \$ _____

TICKETED EVENTS:

Ticketed events are included in the FULL CONFERENCE REGISTRATION except the Lighting Tours which are limited and available on a first-come, first-served basis.

Sunday - November 15

Welcome Reception \$100 \$110 \$ _____

Monday - November 16

Membership Luncheon \$45 \$50 \$ _____

Tabletop Reception \$60 \$65 \$ _____

Tuesday - November 17

Networking Luncheon \$45 \$50 \$ _____

Gala Dinner \$85 \$90 \$ _____

Tuesday - November 17 *Space is limited. One tour per person.*

Not included in any registration. Requires separate registration and additional fee (9:15am-11:30am).

Lighting Tour - T1 - Integrated Design Lab (IDL)	\$ _____
Lighting Tour - T2 - Lighting Design Lab	\$ _____
Lighting Tour - T3 - Terry Thomas and Alley 24 NBBJ	\$ _____
Lighting Tour - T4 - Alley 24 NBBJ and Terry Thomas	\$ _____
Lighting Tour - T5 - Seattle Public Library - Ballard Branch	\$ _____

Add \$25
for each
Tour per
person

Guest Name _____ **Guest Subtotal** \$ _____

First Name, Last Name

NEW MEMBER DISCOUNT

(From STEP 2) Deduct 10% from full registration only (-\$57.50)

COMMITTEE CHAIR/VICE CHAIR DISCOUNT

Deduct \$50 from FULL REGISTRATION ONLY (-\$50)

Current Chair/Vice Chair/Committee: _____

SECTION OFFICER DISCOUNT

Deduct \$50 from FULL REGISTRATION ONLY (-\$50)

Current Section Office/Section: _____

Leadership Forum: Sunday Nov. 15 (9am-3pm NO CHARGE) I will attend I will not attend

Grand Total Enclosed \$ _____

STEP 4 - Payment Information

Check (Payable to IES) American Express MasterCard Visa

Card# _____ Exp. Date _____ CVC _____

Signature _____

STEP 5 - Send Completed Registration with Payment to: IES, 120 Wall Street, 17th Floor, New York, NY 10005 or **Fax:** 212-248-5017

TABLETOP REGISTRATION FORM 2009 IES ANNUAL CONFERENCE

Seattle, Washington November 15-17, 2009

Tabletop Exhibit Policies:

FORMAT: Cloth-covered tables (6 x 2ft) upon which equipment and literature are displayed.

IES policy strictly limits the amount of material brought to the Tabletop Exhibit to fit on a six-foot table: No stand-alone backdrops, no floor displays or oversized products will be permitted.

SCHEDULE: Monday, November 16th - 5:30pm-7:30pm

IES WILL PROVIDE: One six-foot cloth covered table. Electrical power outlet 500 watts (5 amp) if needed. Company sign; conference attendee list and exhibitor badge credentials for two people.

HOLD HARMLESS: The exhibitor assumes the entire responsibility and liability of losses, damages, and claims arising out of exhibitor's activities on the Hotel premises and will indemnify, defend and hold harmless the IES, Hotel, its agents, servants and employees from any and all such losses, damages and claims.

NOTE: Tabletop registration only allows entrance into this session. If you wish to attend other conference

events please complete the individual conference registration form.

INSTRUCTIONS: Will be sent upon receipt of this agreement to the IES office and will include confirmation of payment, set-up and break-down times, conference information and exhibitor shipping instructions.

FEE: \$1,000 for each table. No table reservations after October 30, 2009. Checks made payable to IES. Please include the Tabletop Registration Form with your payment.

PLACE: Sheraton Seattle Hotel
Grand Ballroom C – Second Floor
1400 Sixth Avenue
Seattle, WA 98101
Hotel Phone: 206-621-9000

CANCELLATION: An administrative fee of 50% of the contract fee will be charged for any cancellation occurring within 30 days of the conference start date of November 15, 2009.

We wish to reserve ____ table(s).

Check (Payable to IES) American Express MasterCard Visa

Card# _____ Exp. Date _____ CVC _____

Signature _____

Please check: We will Will not need an electric outlet

PLEASE PRINT OR TYPE:

Company Name (For Table Tent Sign): _____

Street Address: _____ City/State/Zip Code: _____

Telephone: () _____ Fax: () _____

Website: _____

Name(s) of Exhibit Personnel (For Badge) (maximum of two):

First Name _____ Last Name _____

First Name _____ Last Name _____

Company Description (Will be listed in the directory. No more than ten words): _____

We have read and agree to abide by the IES Tabletop Exhibit Policies as stated above.

Signature _____ Date: _____

MAIL PAYMENT TO: IES, 120 Wall Street, 17th Floor, New York, NY 10005-4001 **QUESTIONS:** Contact Phyllis Werts: pwerts@ies.org