



Ubiquitous Communication by Light Center (UC-Light)

Kickoff meeting, January 26, 2010

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Outline

■ Introduction

- UC MRPI Program
- UC-Light Center

■ Center's Mission and Vision

■ Investigators and Research Thrusts

■ Center Management

- Administration
- Advisory Structure
- Communication and Outreach
- Evaluation of Successes

Introduction

■ UC Multicampus Research Programs and Initiatives (MRPI) at \$12 million/year

- **Competition:** open to all MRUs and new ones
- **Goals:** advance a field, impact the state, increase UC's competitiveness, inform public policy and support innovative research
- **1 of 6 categories:** emerging sci. & technology, especially physical sciences and engineering

■ UC-Light Center

- **Process:** January/April/June/August/January
- **1 of 139 proposals and 37 awards, at \$0.7 million/year for 5 years**

UC-Light

■ Website: <http://www.uclight.ucr.edu>

■ Name and Logo



➤ Characters in the name

- ◆ "UC": Ubiquitous Communication, University of California, "you see", etc.; "-" : "by"
- ◆ "Light": light spectrum (visible and possibly invisible), letter "i": eye to spot a lighting LED on top

➤ Color system: visible red, blue, yellow

➤ Pattern: LED for lighting and communication

■ Mission

- Enable wireless communication by embedding signals into the light emitted by next-generation lighting LEDs in different systems

UC-Light

■ Vision

- **Ubiquitous: you are connected as “you see” light**

■ Participating Organizations



■ Goals

- **Lighting and light control**
- **Communication and networking**
- **Navigation and geolocation**
- **ASIC and system-on-chip**
- **Integration into architectural features**

UC-Light Investigators



Director: Daniel Xu



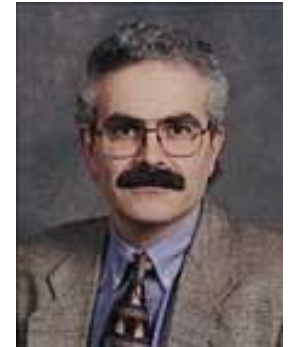
Jay Farrell



Albert Wang



Srikanth V. Krishnamurthy



Francis Rubinstein



Yehuda E. Kalay



Michael Siminovitch

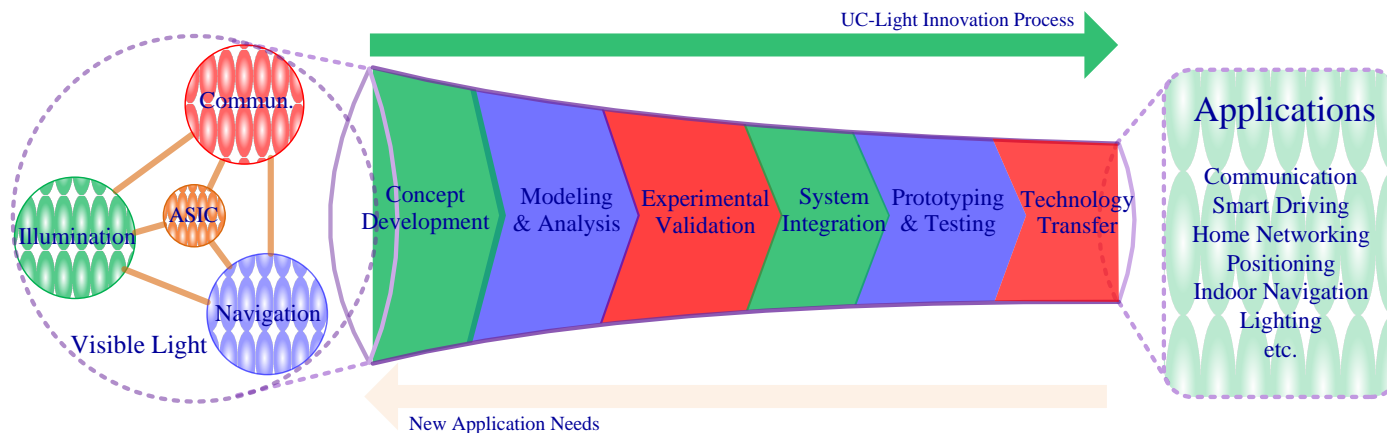


Konstantinos Papamichael



Roland Winston

UC-Light Research Thrusts



➤ Three sub-teams on

- ◆ **Communication:** beam expansion/focusing, communication techniques, transceiver integration, system optimization, networking, and interfacing
- ◆ **Illumination:** LED array configuration and powering, light distribution and control
- ◆ **Indoor and outdoor navigation:** associate architecture features with signaling and novel algorithms

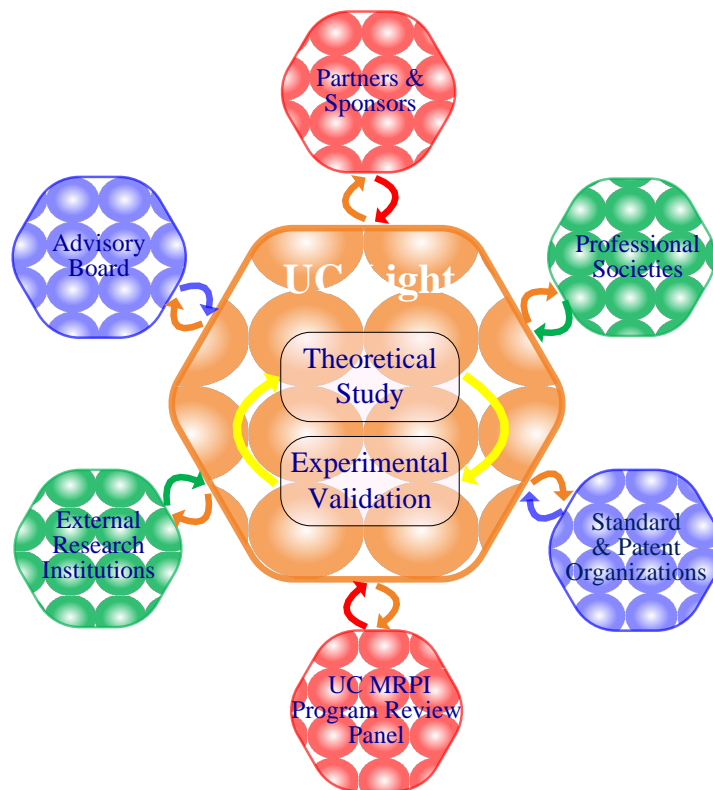
➤ Cross populated

UC-Light Management

■ Administrative Team

- External relations, fund management, web improvement, center assistance, etc.

■ Advisory Structure



UC-Light Evaluation

■ Approaches

- Active internal and external interactions
- Annual review and industry day
- Technical reports

■ Referees

- Advisory board, colleagues, potential sponsors

■ Criteria

- Technical achievements (publications, patents, new concepts, transferrable technologies)
- Trained graduate students and engineers
- Involvements in standardization, professions
- Extramural financial support



SHINE THE FUTURE

Thank you!