

# SPIE.

The International Society for Optics and Photonics

## Photonics Industry Update



NYPhotonics Annual Meeting 2014

Stephen G. Anderson

SPIE – The international society for optics and photonics

**SPIE.**

© 2014 SPIE

## Photonics Industry Update



✓ National Photonics Initiative



✓ Measuring the market



✓ International Year of Light

**SPIE.**

RRPC Annual Meeting | Confidential | 09/04/2014

3

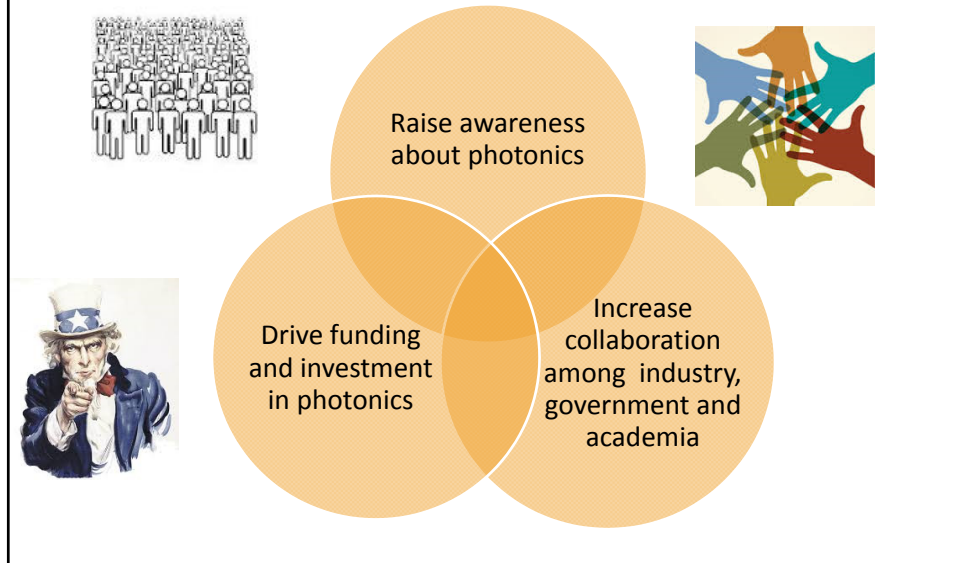
© 2014 SPIE

## *National Photonics Initiative Update*

**SPIE.**



## NPI Goals



## National Photonics Initiative

The National Photonics Initiative (NPI) is a collaborative alliance seeking to unite industry, academia and government to identify and advance areas of photonics critical to maintaining US competitiveness and national security

### Focus on 5 areas of highest economic impact

- 
**Information Technology & Telecom**

- 
**Energy & Environment**

- 
**Advanced Manufacturing**

- 
**Defense & Homeland Security**

- 
**Biomedicine**


## National Photonics Initiative Milestones



- Aug 2012 National Academies study
- Sep 2012 task forces established
- Feb 2013 DC kick off meeting
- Apr 2014 OSTP report released
- Jun 2014 DOD RFI includes photonics
- Jul 2014 Photonics in authorization bills

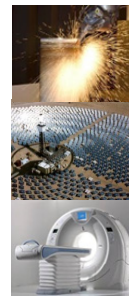


## Recent Accomplishments

- Testimony before House Science, Space & Technology subcommittee
- OSTP Committee report on optics & photonics
- Photonics included in DOD RFI
  - 300 registered for our webinar
  - 50% of respondents were from photonics community
- NSF dear colleague on optics and photonics
- Photonics language proposed in 3 authorization bills
- OSTP interest in collaboration on biophotonics and the BRAIN Initiative

## Next Steps

- Develop strong community response if there is a call for a photonics manufacturing institute
- Finalize task force white papers and look for 2016 budget opportunities
  - Sensors for energy and environment (DOE)
  - Biophotonics (OSTP & NIH)
  - High power lasers (DOD)
  - STEM education (Congress)
- August in-district visits campaign
- Fall manufacturing caucus event
- Multi-society fall DC fly-in



## Get Involved

[www.LightOurFuture.Org](http://www.LightOurFuture.Org)



- Link to the NPI website and post the websticker
- Ask your organization to become a supporter
- Invite legislators to tour your company/lab
- Visit your local congressional offices
- Join us for congressional visits in DC
- Mention the NPI in your newsletters & on Facebook
- Submit a letter to the editor/op-ed to your newspaper
  - Economy, jobs, technology developments

## NPI Inspired Op Ed Pieces

*Informing the General Public*



Representative John L. Mica  
Florida, 7<sup>th</sup> district

**"Let's be laser-focused on  
photonics for the future"**

*The Orlando Sentinel*



Representative Louise M. Slaughter  
New York, 25<sup>th</sup> district

**"Advancing American competitiveness  
by harnessing the power of light"**

*The Hill*



Representative Ron Barber  
Arizona, 2<sup>nd</sup> district

**"Let there be light: Photonics  
holds big promise"**

*Inside Tucson Business*



## SPIE's Photonics Market Analysis

**from components to consumers**



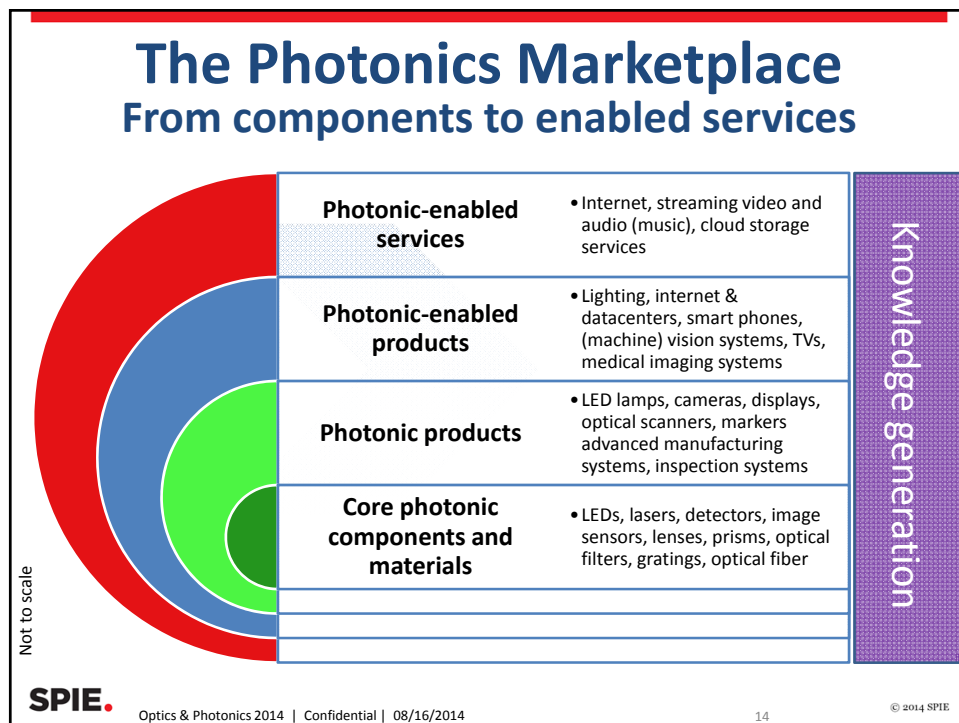
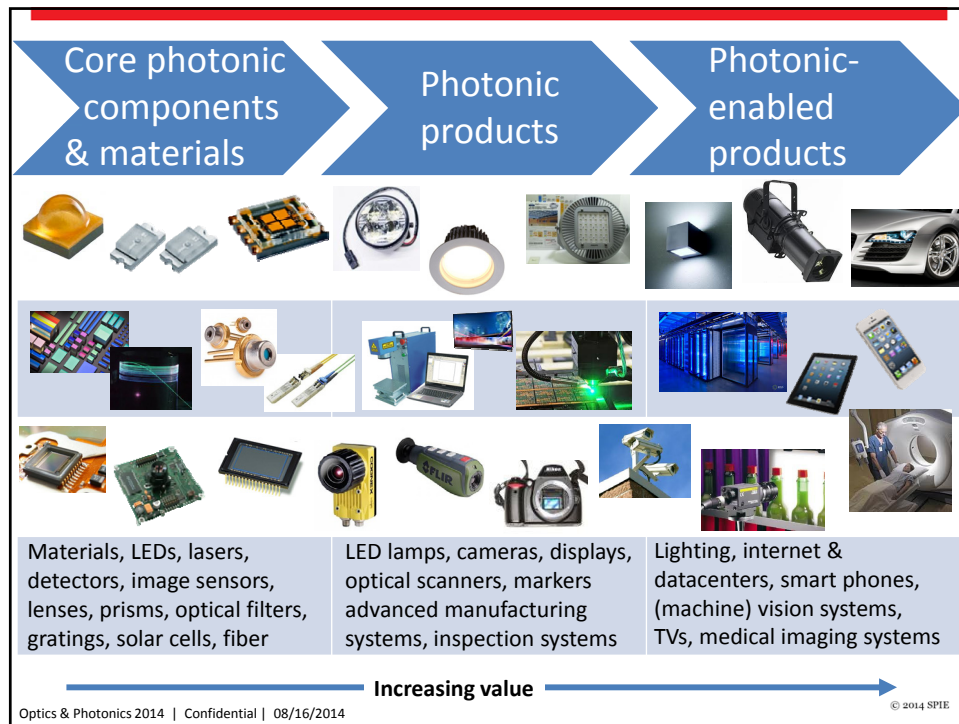
## Measuring the Market using Company Information

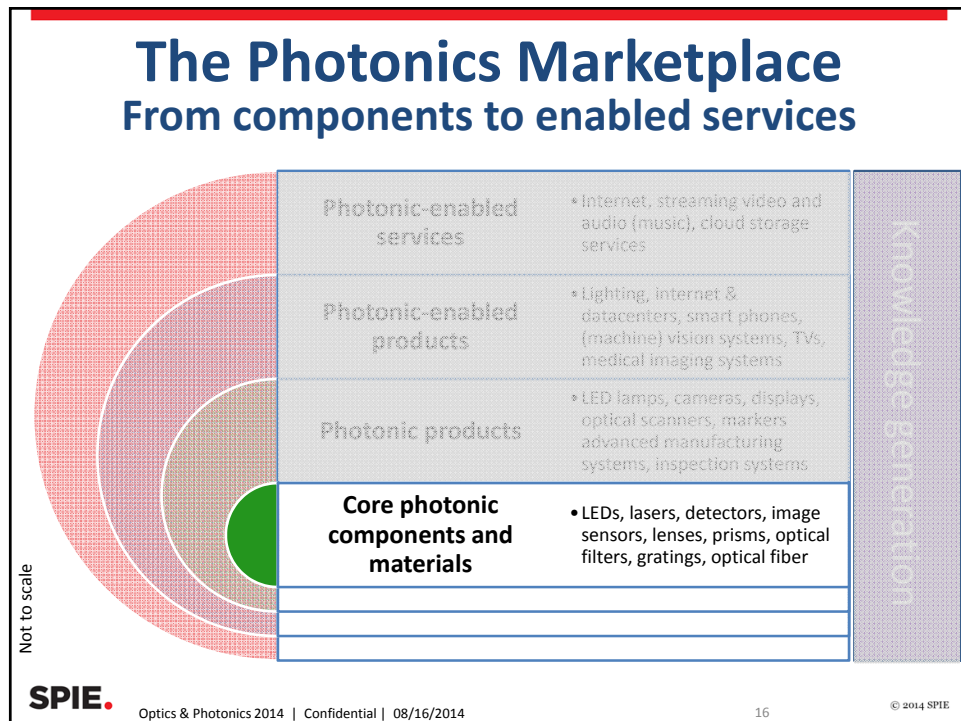
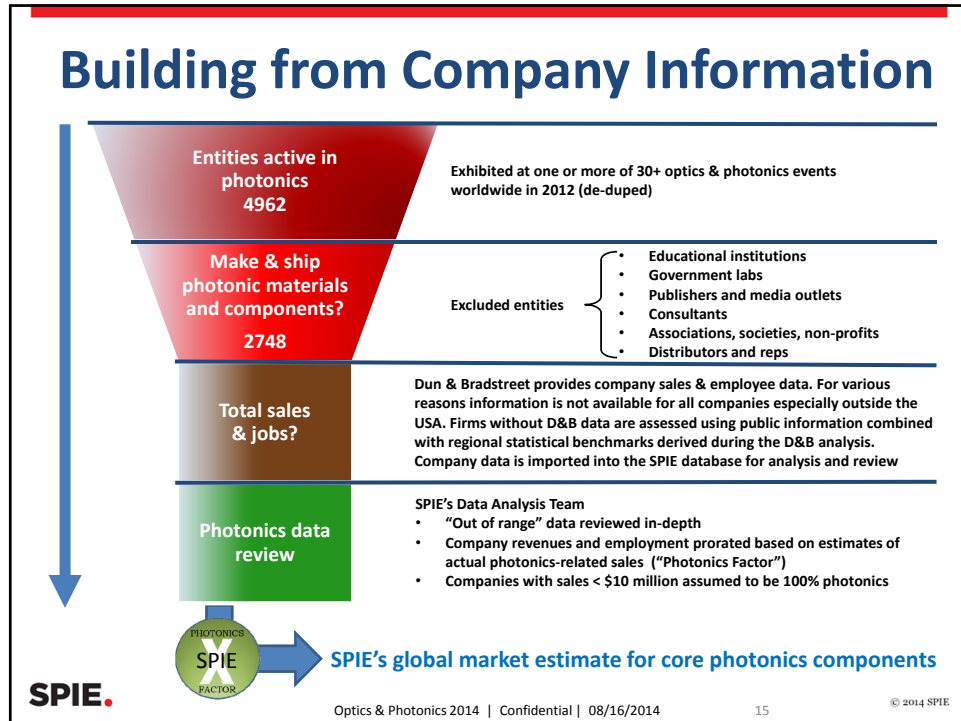
**SPIE.**

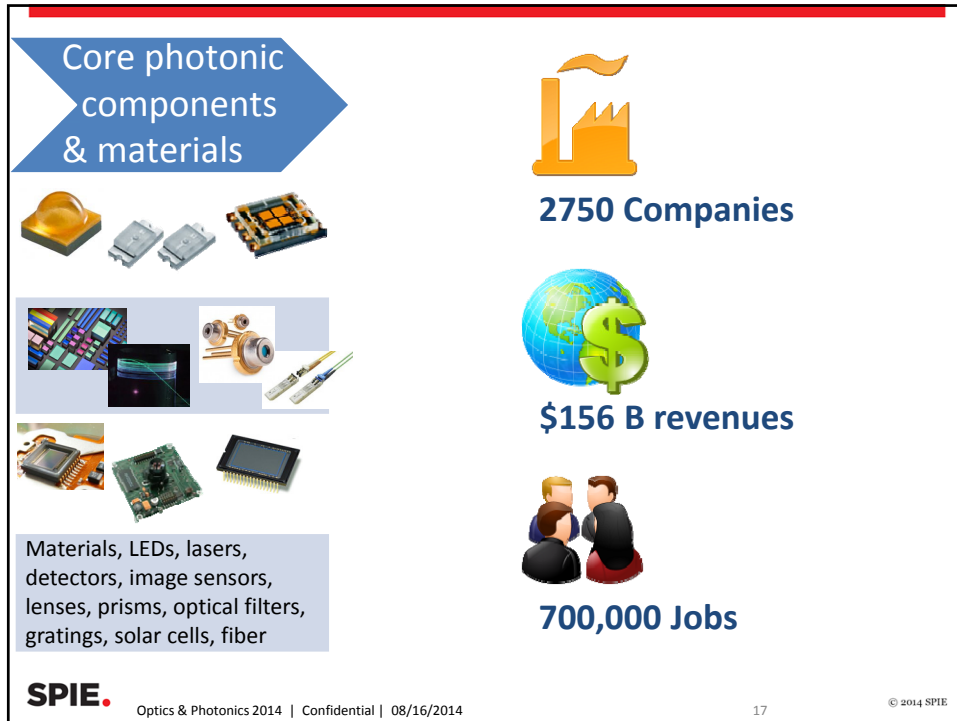
RRPC Annual Meeting | Confidential | 09/04/2014

12

© 2014 SPIE







## WW Sales of Core Components

Global Photonics Sales of Core Optics & Photonics Suppliers in 2012	
Photonics firms WW	<b>2748<sup>1</sup></b>
Annual photonics sales	<b>\$156 B<sup>2</sup></b>
Photonics employees (jobs)	<b>698,266<sup>2</sup></b>
Global average sales/employee	<b>\$223,414</b>

<sup>1</sup> Photonics firms that make and that ship photonics core components and that exhibited at a major photonics tradeshow somewhere in the world in 2012

<sup>2</sup> Company revenues and employment are prorated based on estimates of photonics-related sales ("Photonics Factor"). Companies with sales of less than \$10 M are assumed to be 100% photonics; all data are for 2012.

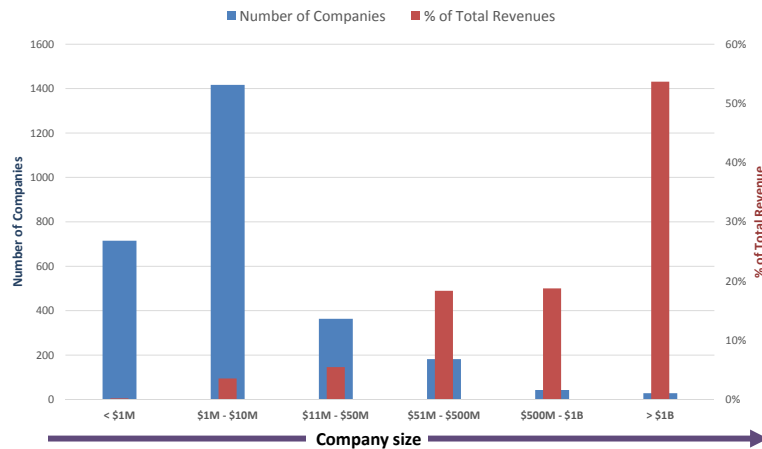
**SPIE.**

Optics & Photonics 2014 | Confidential | 08/16/2014

18

© 2014 SPIE

## Companies Grouped by Size (\$) for Core Photonics Suppliers, WW



- ✓ 69 firms with photonics revenues > \$500 M account for >72% of total sales
- ✓ 2132 firms with photonics revenues < \$10 M account for only ~3.7% of total sales
- ✓ <10% of photonics firms employ ~77% of the workforce

**SPIE.**

Optics & Photonics 2014 | Confidential | 08/16/2014

19

© 2014 SPIE

## Companies Grouped by Sales/Employee for Core Photonics Suppliers, WW



- ✓ <5% of companies have revenue/employee of >\$500K (26% of total sales)
- ✓ ~16% of companies have revenue/employee between \$251K-\$500K (43% of total)
- ✓ ~48% of companies have revenue/employee between \$101K - \$250K (23% of total)
- ✓ ~31% of companies have revenue/employee <\$100K (8% of total)

**SPIE.**

Optics & Photonics 2014 | Confidential | 08/16/2014

20

© 2014 SPIE

## The Geography of Photonics Components Production



**2748 firms span more than 46 countries**

Japan	234,622
United States	188,167
China	120,358
Germany	46,910
France	31,197
Taiwan	24,396
United Kingdom	9,328
Italy	7,483
Russian Federation	5,901
Switzerland	5,808
Netherlands	4,164
Israel	3,860
Sweden	3,342
Canada	2,451
Korea, Republic of	1,775
Czech Republic	1,764
Belarus	1,091
Denmark	836
Austria	714
Singapore	574
Thailand	502
Hong Kong, China	464
Bulgaria	363
Belgium	289
Ireland	272
Lithuania	270
India	225
Poland	182
Slovakia	166
Liechtenstein	165
Spain	137
Finland	100
Armenia	91
Egypt	70
Australia	57
Norway	40
Isle of Man	30
Luxembourg	25
Ukraine	23
Lebanon	20
Portugal	11
Turkey	10
Slovenia	9
New Zealand	3
Hungary	3
Romania	1

**SPIE.**

Optics & Photonics 2014 | Confidential | 08/16/2014

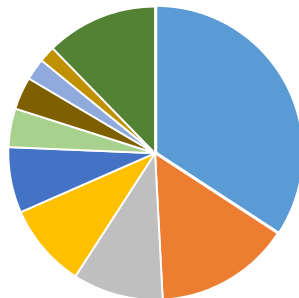
21

© 2014 SPIE

## The Geography of Photonics Components Production ... 2

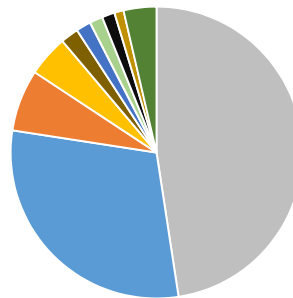
**Company count by country**  
2748 Firms

- USA
- Germany
- Japan
- China
- France
- UK
- Taiwan
- Canada
- Switzerland
- Other



**Revenues by country**  
\$156 B

- Japan
- USA
- Germany
- China
- Taiwan
- France
- UK
- Italy
- Switzerland
- Other



**SPIE.**

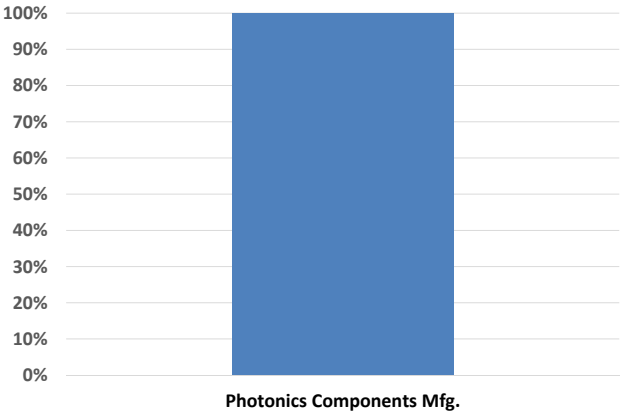
Optics & Photonics 2014 | Confidential | 08/16/2014

22

© 2014 SPIE

## “Ideal World”

All “photonics” companies would use a single primary NAICS code



NAICS = North American Industry Classification System

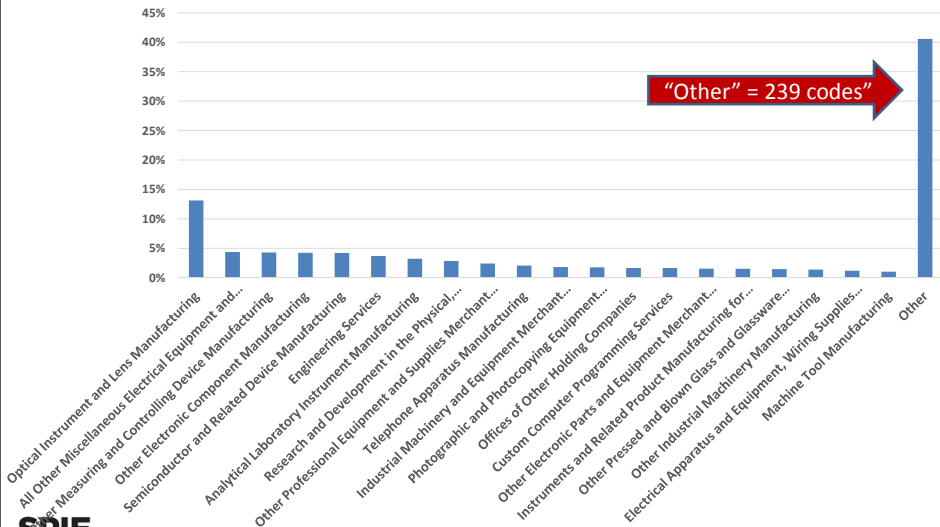
**SPIE.**

Optics & Photonics 2014 | Confidential | 08/16/2014

© 2014 SPIE 23

## “Real World”

2748 “photonics” firms use 259 different NAICS codes



**SPIE.**

Optics & Photonics 2014 | Confidential | 08/16/2014

© 2014 SPIE 24

# SPIE's Photonics Market Analysis

## Building from Company Information

*What's next?*



**SPIE.**

Optics & Photonics 2014 | Confidential | 08/16/2014

25

© 2014 SPIE

## PRISM20 AWARDS15

PRESENTED BY  
SPIE & PHOTONICS MEDIA

[HOME](#) [APPLY](#) [CATEGORIES](#) [JUDGING](#) [FINALISTS](#) [WINNERS](#) [CEREMONY](#) [RESOURCES](#)

The 2015 Call for Entries - Apply Today  
New Categories and Quad Chart application



Application  
Deadline  
Oct. 10, 2014

Apply Today

# The International Year of **Light** and Light-based Technologies 2015



INTERNATIONAL  
YEAR OF LIGHT  
2015

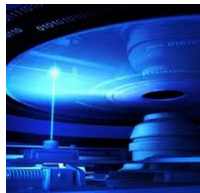
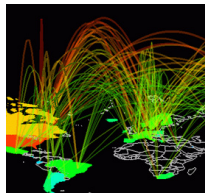
Health

Communication

Economy

Environment

Social



**This is a once in a lifetime opportunity to  
share with the world the impact the light  
has on life and the future**



## SPIE is a Founding Sponsor



## IYL Needs You: Get Involved

- Partner with local festivals, libraries, airports & museums to put up the IYL general public panel display (coming in Dec)
- Use the conference panel display at your event (coming in Dec)
- Take the IYL poster & diffraction glasses project to a school
- Send us your IYL news and events for the global website
- Host an open lab day
- Show the SPIE IYL video
- Use the Twitter hashtag #IYL2015
- Add IYL to your email signature block
- Sponsor a panel exhibit or Student Chapter IYL community activity
- Write for the blog

**SPIE.**



## Get Connected:

### 44 Regional Nodes



Find your regional node lead [www.Light2015.org](http://www.Light2015.org)

Get resources [www.spie.org/iyl](http://www.spie.org/iyl)

Contact SPIE [krisindap@spie.org](mailto:krisindap@spie.org)



IYL Chair  
John Dudley



IYL Secretariat  
Joe Niemela



SPIE Lead  
Krisinda Plenkovic

## Thank you!



**NYPhotonics Annual Meeting 2014**

Stephen G. Anderson [stevea@spie.org](mailto:stevea@spie.org)

SPIE – The international society for optics and photonics

**SPIE.**

© 2014 SPIE

The logo for SPIE, featuring the letters "SPIE" in a bold, white, sans-serif font. A solid red dot is positioned to the right of the letter "E".

The International Society for Optics and Photonics