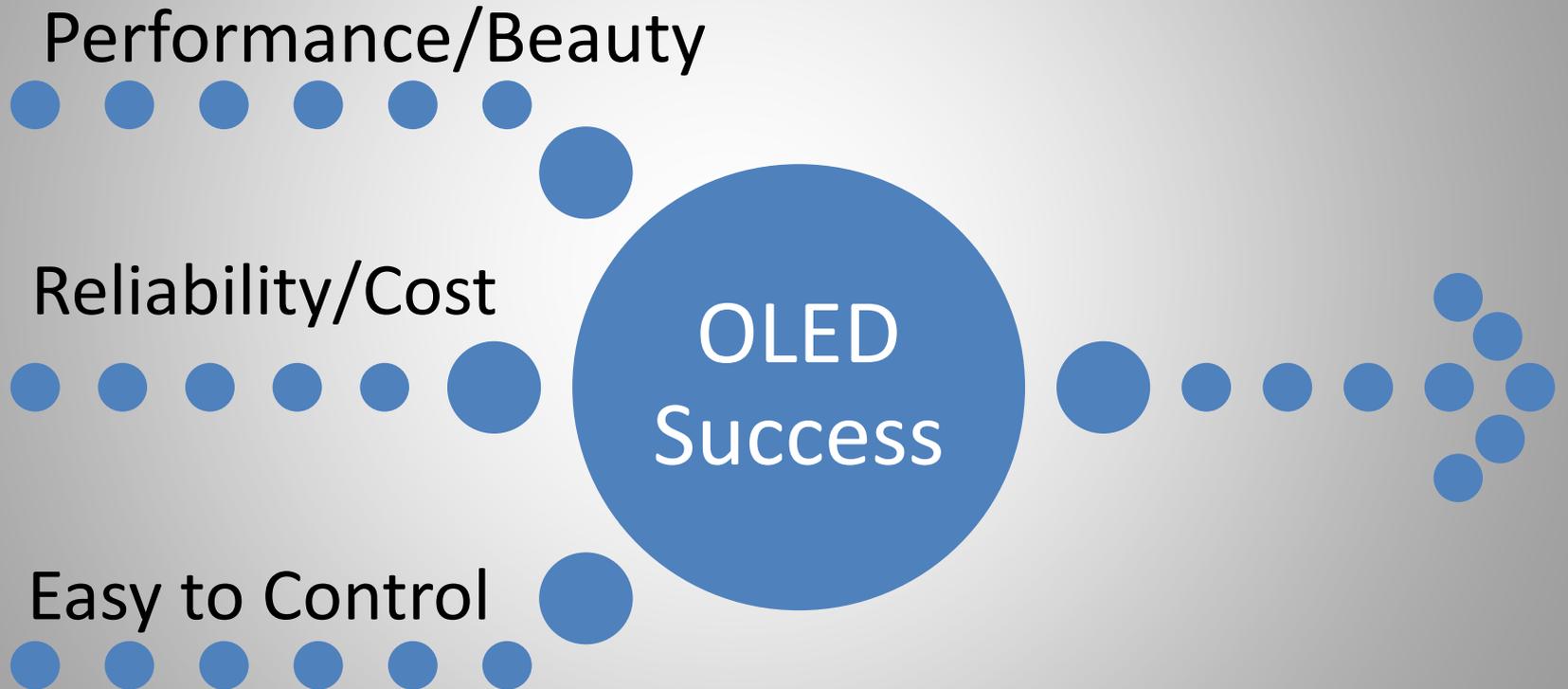


# *Designing with OLED*

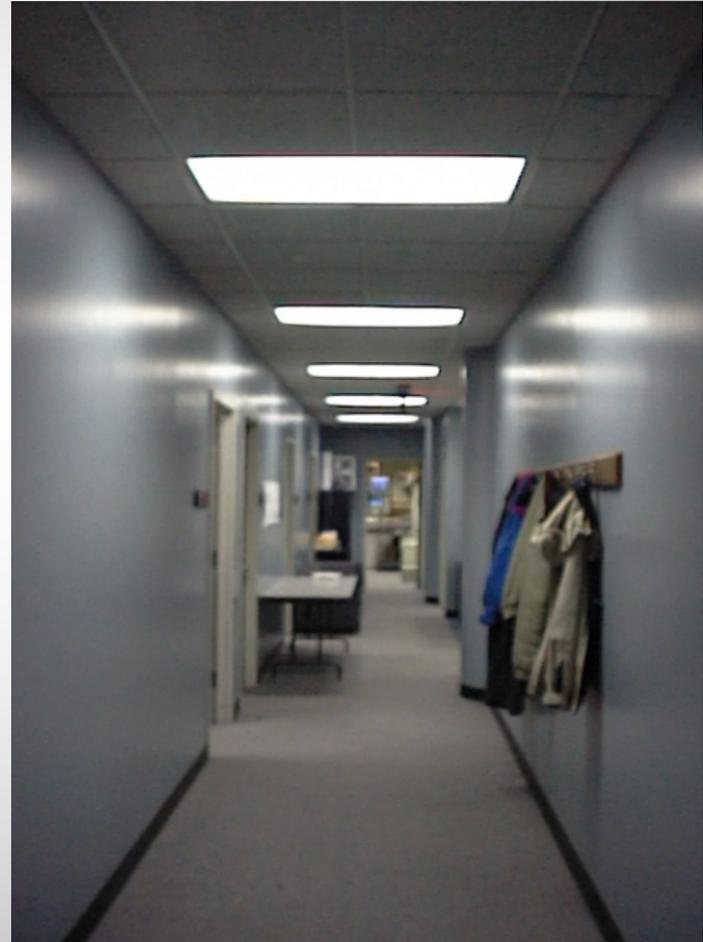


**Nancy Clanton, PE, FIES, IALD, LC  
LEED Fellow  
Clanton & Associates, Inc.  
[www.clantonassociates.com](http://www.clantonassociates.com)**

# What Lighting Designers Want



Get rid of the downlights!  
Not another troffer ☹️



# New Form Factors ... PLEASE!



# What are we lighting?



USGBC Headquarters

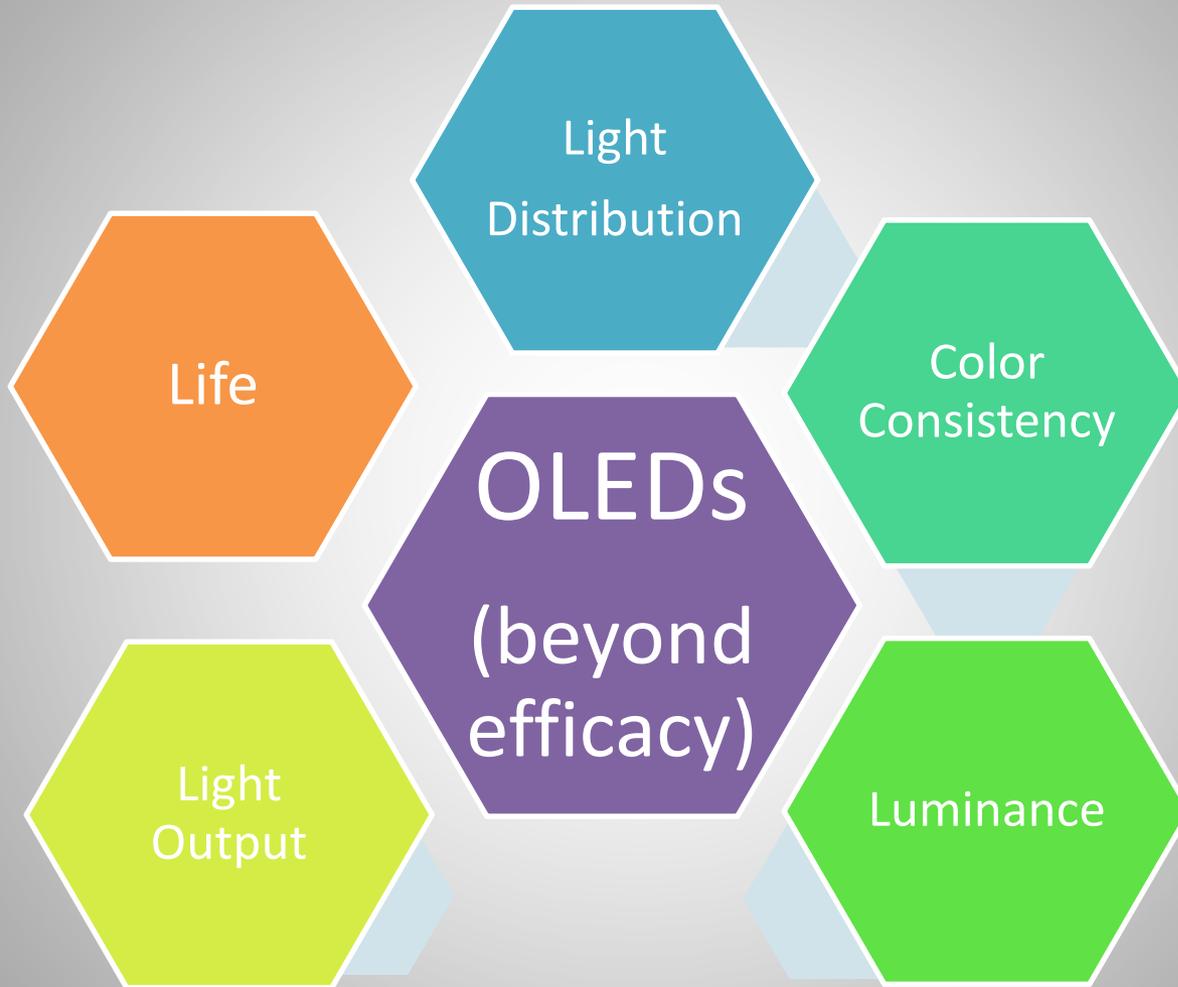


USGBC Headquarters



USGBC Headquarters

# Must Have Data



# Worried about the color shift



US Embassy - Helsinki



Yellowstone National Park

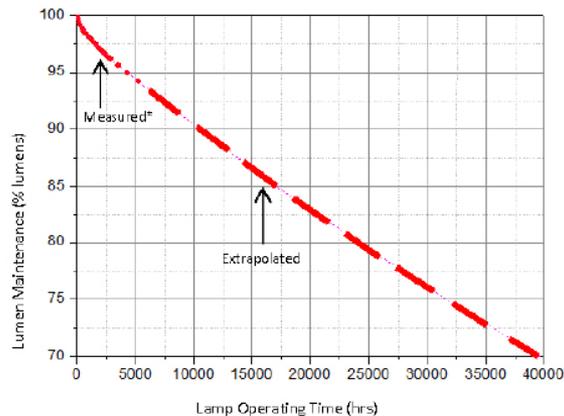
# Develop standards ... quickly

- LM-79
- What about L70 and color life?

## LUMEN MAINTENANCE GRAPHS

### 3000K OLED Panel

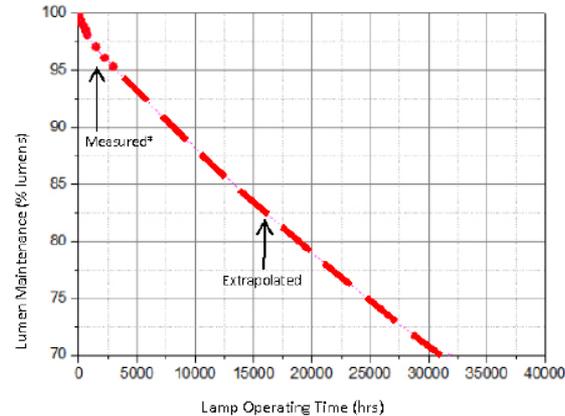
(3000 cd/m<sup>2</sup> Nominal Initial Luminance)



\* Measured Data at 25°C Ambient Operating Temperature

### 3500K/4000K OLED Panel

(3000 cd/m<sup>2</sup> Nominal Initial Luminance)



**L70 LIFETIME:**

**40k hours (3000 cd/m<sup>2</sup>)**

**72k hours (2000 cd/m<sup>2</sup>)**

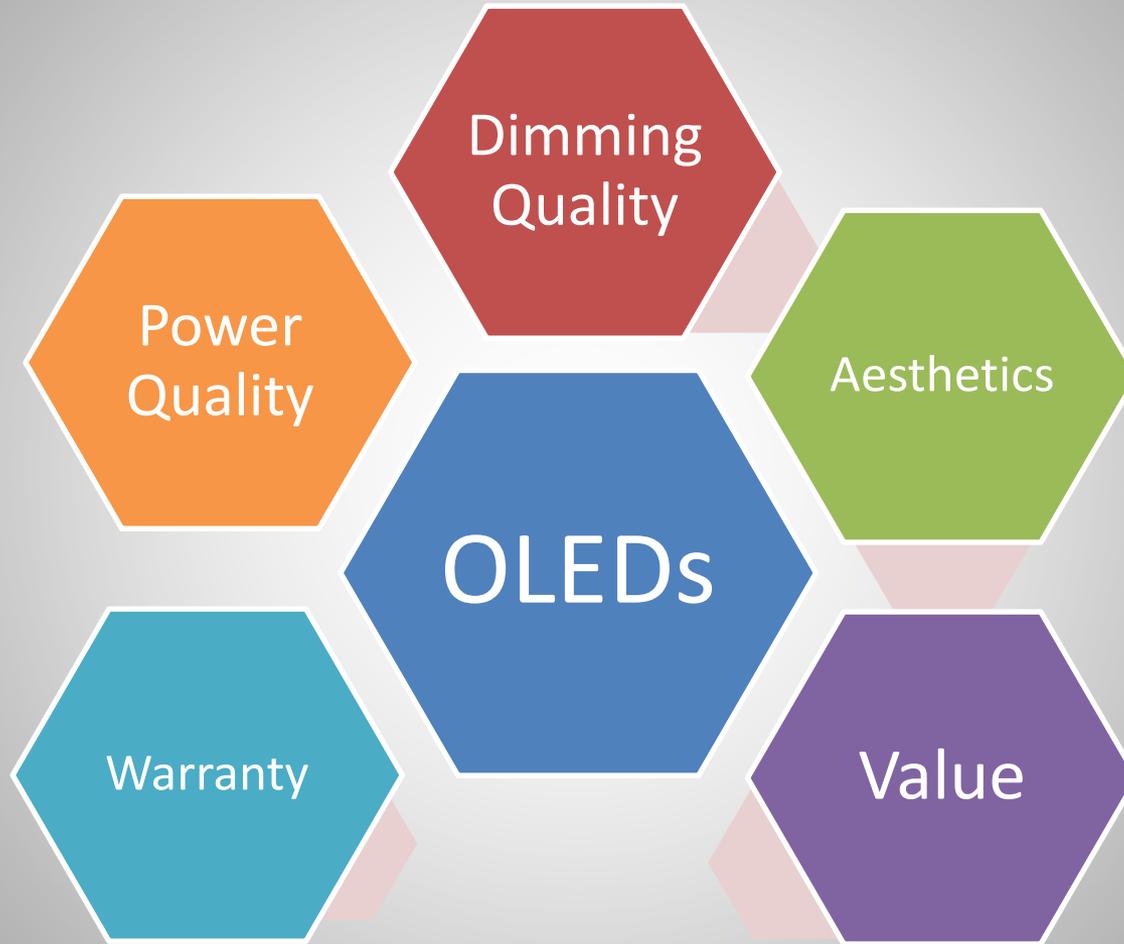
Acuity Brands

**L70 LIFETIME:**

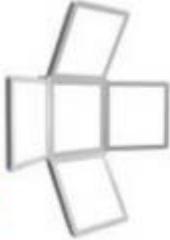
**30k hours (3000 cd/m<sup>2</sup>)**

**54k hours (2000 cd/m<sup>2</sup>)**

# Other important stuff



# Value

  <b>\$299.00</b> / each Was <del>\$399.00</del> <b>Save 25%</b>	  <b>\$299.00</b> / each Was <del>\$399.00</del> <b>Save 25%</b>	  <b>\$199.00</b> / each Was <del>\$249.00</del> <b>Save 20%</b>	  <b>\$199.00</b> / each Was <del>\$249.00</del> <b>Save 20%</b>
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# Dimming and Power Quality Issues

- Smooth dimming (1 – 100%)
- Compatible with majority of controls
- Low THD (<20%, ideally <10%)
- High Power Factor (>0.9)
- **CONTROL COMPATIBILITY**

# Aesthetics



Acuity Brands



US Embassy Innovation Center in Helsinki

# Warranty (?)

- OLED failure
- L70
- Drastic color shift
- Warranty both OLEDs and drivers!
- Match same as LED (for now)



# Control System Compatibility



Encana, Denver, CO

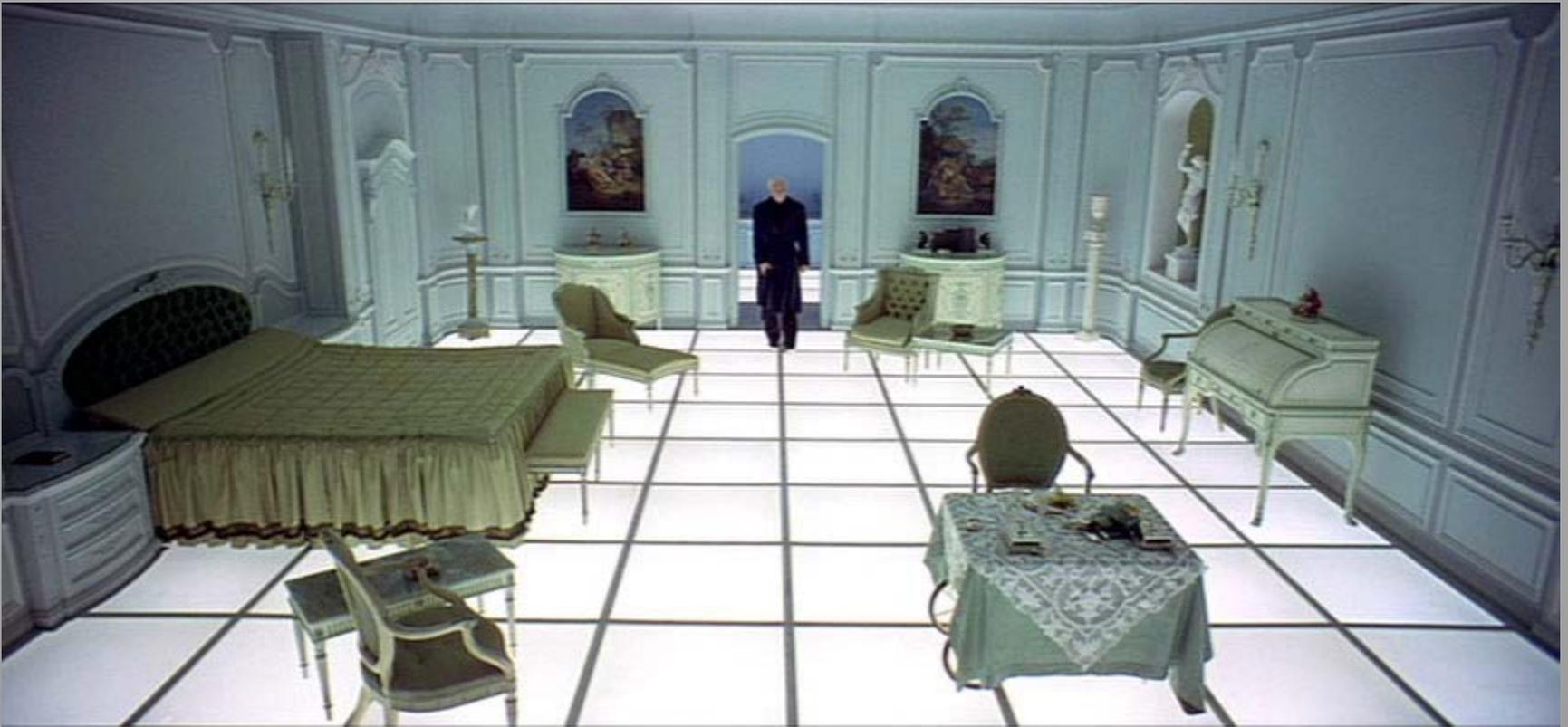
# Lessons Learned – Early Adopter

- Original tiles – high tile failure
- All tiles replaced with new generation design
- Now, no failures in 6 months



US Embassy Innovation Center in Helsinki – Clanton & Associates

# OLED Dreams ...



# Foldable OLED



- Flexible metallic foil or plastic substrate
- Lightweight and durable
- Reduce display breaking
- Clothing OLED

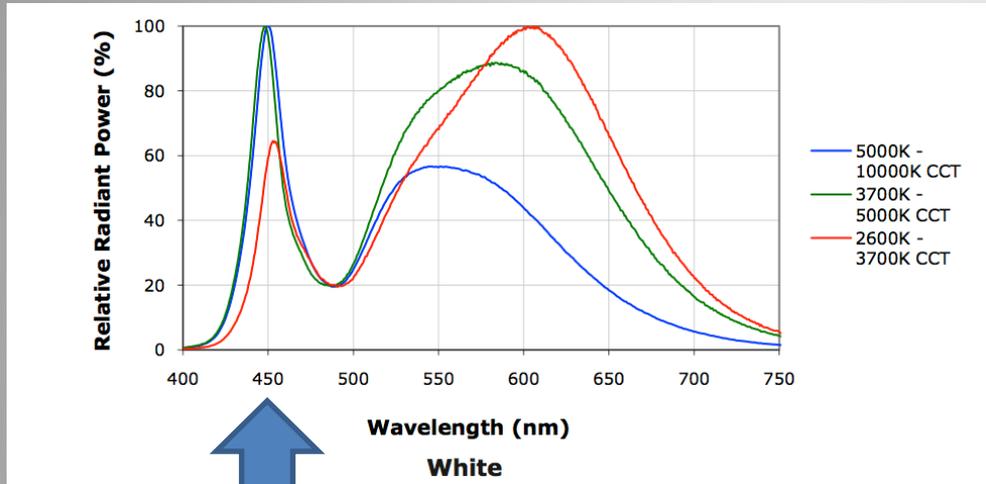


# Wishlist

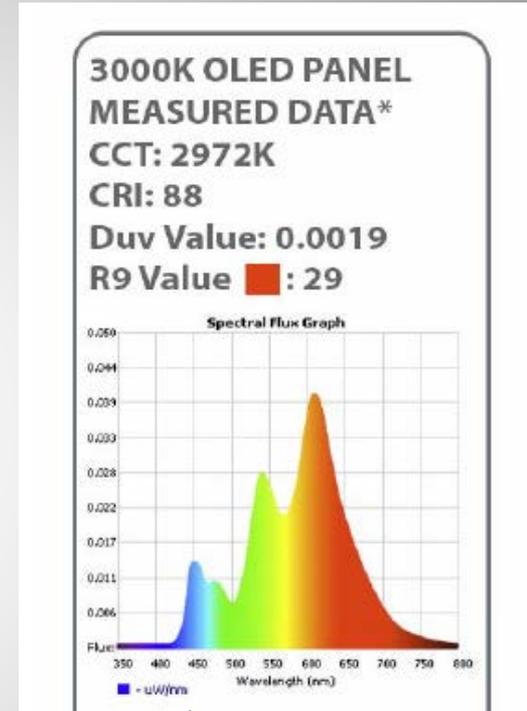
- Transparent
- **New form factors**
- Feedback systems –  
life, light output
- Very long life
- Spectral tuning
- Affordable!



# OLED – more spectral control



LED



OLED



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# Questions?

