On behalf of Vision Expo,	we sincerely thank
you for being with us this	year.

Vision Expo Has Gone Green!

We have eliminated all paper session evaluation forms. Please be sure to complete your electronic session evaluations online when you login to request your CE Letter for each course you attended! Your feedback is important to us as our Education Planning Committee considers content and speakers for future meetings to provide you with the best education possible.



1

-Financial Disclosure-

Michael Gatti is an employee of HOYA Vision Care.

All relevant relationship have been mitigated.

□ 2

2



Course Objectives

- Create a clear understanding of light
- Explain the complete visual system
- Utilize optical illusions to demonstrate how we see

1

Light is energy

Photons
Smallest piece of light
Discrete packet of energy
Energy is proportion to the frequency

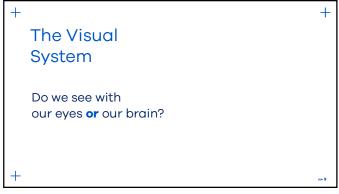
5

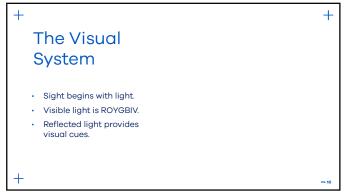
+ Light is extremely complex • Is it a wave? • Is it a particle?

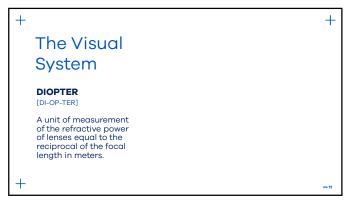
+	Light	
	Particle or wave?	
	Photons	
	Fixed energy	
	Fixed momentum	
	Fixed location in space	
	Particle > Wave	
	• Wave > Particle	
+		7

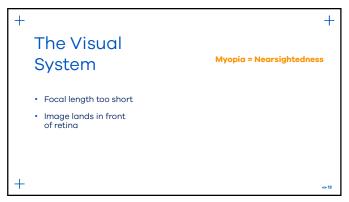


8



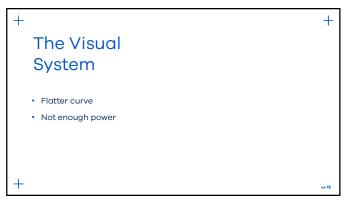


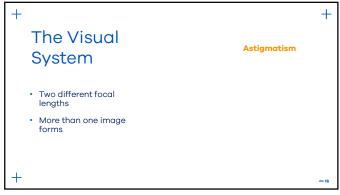


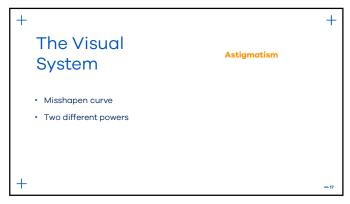


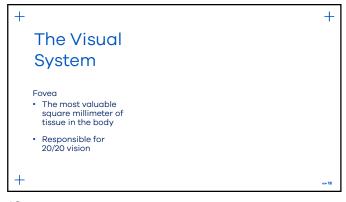
+		+
	The Visual	
	System	
	Steeper curve	
	Too much power	
+		⇒13











+ The Visual System

Optic Nerve
• The information highway.

19

The Visual System Color is Light How we see color Ishihara Test Colorblind

20

The Visual System

Farnsworth Test

Photoreceptors

100 unique shades

1 out of 12 men

1 out of 255 women

The Visual
System

Poor Little Kitty Cat

• Vertical & Horizontal blinders

• Strobe light's create motion blindness

22

We create what we see Literal optical illusion Physiological optical illusion Cognitive optical illusion Binocualarity

23

Hillusions Vision & Memory What do you see? Black & white animal Lives on a farm Renshaw Cow

+	Illusions	
	We Create What We See Brain conditioning Which is darker?	
+		25

Hillusions The black and blue dress What color do you see? Inside or outside?

26

+ Summary We Visualize Our Reality Light acts as both a wave and a particle Light gets focused to the back of the eye We see with our brain, not with our eyes