

**3D Printing for Christmas Light Enthusiasts****S73**

Ready to make the jump into the 3D printing world? This class will help you choose your printer, discuss upgrade options, import, modify and print models utilizing open source software. Once you have the basics down you will be ready to use your 3D printer for your Christmas display!

**Catherine Baer**

*Catherine Baer has a small Grinchy display in the panhandle of FL. She has been running animated displays for 9 years.*

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**A Mobile Pixel Tree****S69**

Many displays have pixel trees. But what if yours moved? I will show how I built one and discuss alternative methods. We will discuss various uses for it, the costs involved and how you may be able to recover those costs.

**Don Ekema**

*Don has been synchronizing lights to music since 2007. He is retired from the landscaping industry.*

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**All Things Wireframes****S80**

Wireframes are one of the most versatile display elements a decorator can use. This class will take you through the gamut of options that you have from buying off-the-shelf versions to working with vendors to customize wireframes specifically for you. We will cover the different materials, lighting and attachment options. We'll also deep dive on the ultimate DIY option; the ins and outs of welding your own frames. This class is filled with tons of information, plus tips and tricks to make your wireframes one of the highlights of your display.

**Mark Zembruski**

*Husband, Step Father, weekend warrior, techie, and gadget geek. Mark works in the Electronic Design Automation industry, basically, software to design electronics. PCB Design is his background. Like everyone, he's loved Christmas since a young age and his mom gave him a love for Christmas Carols. He has been decorating inside since the age of 19 and started decorating outside when he bought his first home in 1989. In 2003, everything he loved to do collided and Woodinville Wonderland started to become a reality. Mark is most un-famous for coining the term "I have the C.L.A.P. do you? Christmas Light Addiction Problem." He wishes he had copyrighted it! <http://www.woodinvillewonderland.com>*

**Animators Guide to Electricity - The Basics****F43**

Watts, Volts and Amps - Oh my! Ever wonder what all those electrical terms we hear about actually mean? Or the difference is between Half-Wave and Full-Wave LED lights, or why you should care? This introductory course will explain the basics of electricity and some of the simple electronic components we encounter in our hobby, in easy to digest non-technical double talk. No engineering degree required.

**Jeff Oberst**

*Jeff 'Obewan' Oberst is an electrical engineer from San Jose, CA. He began lighting animation in 2006 with 96 channels and continues to expand every year. He loves being part of something that brings joy and happiness to children, young and old, and reminding them what Christmas is all about.*

<http://www.obewanproductions.com>

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**Back to the Future****T30**

Everybody is looking for the next big idea that will set their display apart from the rest. If you look at the history of Christmas lighting and displays, that has been the goal from the very inception of outdoor Christmas Lighting. This presentation is part history, part brainstorming. We'll walk through the evolution of Christmas lighting displays and delve into vintage Christmas lighting guides to discover lighting techniques that work with any technology. We'll also show examples of how vintage Christmas lighting ideas can be upgraded with current lighting technology.

**Jeff Carter**

*Jeff's is a Christmas lighting historian as well as a Christmas lighting designer and consultant specializing in retro and mid-century Christmas displays. His fascination with Christmas Lighting goes back as far as he can remember. It didn't hurt that his Dad's birthday was December 25th so he had parental encouragement early on. He's the administrator of the flickr group General Electric Christmas Lights and is known on YouTube as the Christmas Craftsman. Jeff contributed to the Lighting chapter of the book Midcentury Christmas and the November 2016 Planet Christmas Magazine. This will be Jeff's sixth year presenting at the Christmas Expo. <https://www.ChristmasCraftsman.com>*

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**Business of Christmas Decoration Full Day Workshop****F35-F40-F45-F50-F55**

**Estimating:** Learn how to estimate from start to finish to make a profit. Learn how to casually upsell products for more profit.

**Installation and Maintenance:** In this class, you'll learn proper installation techniques to ensure less maintenance. We'll cover the factors to help you decide specifically what maintenance means to your company.

**Materials and Products:** This class will help you understand the differences between commercial grade lights vs. big box store, LED vs. incandescent and why you need to choose carefully before ever talking to your first customer.

**How to Make It a Year-Round Business:** The business of hanging Christmas lights is lucrative for a few months out of the year, but what do you do with your employees the other 9 months? We'll discuss options and ideas to diversify your business and keep your employees busy all year long.

**Open Discussion:** A true open discussion session, you can pick a Pro's brain with all your questions, and also share your ideas and what works for you with other attendees. Student participation in the question/answer session is encouraged.

**This is a full-day workshop and a reservation is required to attend.**

<https://www.christmasexpo.com/business-track-reservation/>



**Carrie Hazelop, Mistletoe and Ivy**

*Carrie Hazelop is the co-owner of Mistletoe and Ivy. She is a mother of three and a full time business woman. In 2008, Carrie left a lucrative position to join her husband's lawn mowing business, Emerald City. With the help and business expertise of Carrie, Emerald City grew into a thriving landscape company and spawned Mistletoe and Ivy, a year round lighting and decorating company.*

[www.emeraldcitylawn.com](http://www.emeraldcitylawn.com)



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**Christmas Lighting History**

**T15**

Explore the history of Christmas lighting from its beginnings in 1882 through the modern era. Learn the origins of the Christmas lights we grew up with and take an inside look at the major players in the industry through the years. We'll look back at the trends in decorating with Christmas lights to see how they've changed and how much they've remained the same. You might just find your next big idea in an idea from the past. In this class, Jeff will have on display several of the vintage Christmas lights from his collection.

**Jeff Carter**

*Jeff's is a Christmas lighting historian as well as a Christmas lighting designer and consultant specializing in retro and mid-century Christmas displays. His fascination with Christmas Lighting goes back as far as he can remember. It didn't hurt that his Dad's birthday was December 25th so he had parental encouragement early on. He's the administrator of the flickr group General Electric Christmas Lights and is known on YouTube as the Christmas Craftsman. Jeff contributed to the Lighting chapter of the book Midcentury Christmas and the November 2016 Planet Christmas Magazine. This will be Jeff's sixth year presenting at the Christmas Expo. <http://www.christmascraftsman.com/>*

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**Custom Cables, Cords and Connectors**

**T8**

In this class, Kevin will teach you how to create your own custom cables, cords and connectors.

**Kevin Thomas**

*Kevin has been doing large displays for years and began using DMX fixtures back in 2008. His display includes a 36' & 26' mega tree, over 90 mini trees, six pixel arches, five RGB singing Christmas trees, a 24' pixel tree, a 8' X 16' pixel grid and then there's the stuff on the house. Visit his website for many how-to's and other resources.*

<http://www.christmasinkent.com>



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**Copyrights - Staying off the naughty list**

**T29**

So you got a nastygram about copyright infringement on the music sequence video you posted online. Why? Did you do something wrong? What can you do about it? What must I do differently? We will look into the reasons for copyright law, how it applies to you and the procedures for complying. Class members will be asked to report their experiences and solutions.

**Don Ekema**

*Don has been synchronizing lights to music since 2007. He is retired from the landscaping industry.*

**DIY Building with plastics in and for your display using PVC, Coro, Acrylics, and Strips** **F44**

This class will present many DIY uses and techniques for using PVC, HDPE, PEX, and ABS pipe, corrugated plastics (Coro), acrylic sheets, domes, and tubes, pixel strips along with 3D printed tools and props. This class will have multiple examples of the materials used and include resources for further learning and resourcing. It will provide tips and tools for working with the plastics along with how-to's for many of the popular display elements in use today. Learn about signage, singing/talking trees and bulbs, stars, snowflakes, candy canes, leaping arches, and different styles of pixel strips and much more. We will finish the class with some fun door prizes

**Don McGillivray**

*Don has been working on a large scale display since 2012 as the primary prop builder with extensive use of PVC and Coro for Evergreen Church Christmas lights. The display consists of a mix RGB smart pixel animation from Mega trees, a 50 foot animated tunnel, a full pixel matrix across the building and Video projection. It has become a favorite family tradition for his community. Videos can be seen on Youtube searching for Evergreen Lights.*



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**DIY wireless DMX over E1.31** **T5**

Build you own wireless adapter for DMX for over E1.31 with two circuit boards a esp-01 radio and Mr Bill Porter's code. This is an easy project that lets you control DMX and LOR wireless for just a couple bucks.

**This class has a kit fee that will be announced as soon as pricing is calculated. Class size is limited and a reservation and kit fee purchase is required. Reservations will be available at <https://www.christmasexpo.com/product/kit-fees/>**

**Jay Danielson**

*Jay has been involved in animated lighting for 4 years.*

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**Drone Flight School 101, How to safely and legally video your display!** **F52**

My goal will be to teach the class and demo how to record your display both legally and safely. I will bring several drones to demo some basics and help attendees make a choice on which drone might be the best choice for doing it themselves or the guidelines about legally hiring someone to video it for them.

**Carl Fuqua**

*Carl own several insurance agencies in Tallahassee FL and is a commercial licensed 107 UAV pilot as well as an adjunct professor at the local Community College teaching Drone flight school. He has hundreds of hours of flight time, including night flying.*

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**Drones Flight School 201: Advanced Flight and Filming** **S72**

An introduction to using drones for recording your Christmas display. This class will go over the latest FAA regulations pertaining to drone operation and an overview of popular drones on the market. Configuring some more advanced aircraft settings for smoother flight will be discussed using the popular DJI Phantom 4 as an example. Having a drone is only part of the equation, we will go over

camera settings and recording tips for capturing your display at its best. Lastly we will cover some editing basics using Adobe Premier Pro as an example.

***Doug Reel***

*Doug has been flying remote controlled gliders for 27 years and has competed in racing them both domestically and internationally. As soon as drones were introduced to the market he began flying them and has followed the rapid evolution of the drone industry. In 2016, once the FAA began certifying remote pilots, he obtained his Part 107 remote pilot certificate. When Doug is not busy with drones, remote controlled gliders and, of course, Christmas lights, he can be found flying 737's for a major U.S. airline.*

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**Electrical 101****T18**

This class will cover the basics of electricity and how to best setup your show along with best practices.

***Tim Griffith***

Tim joined Illuminating Design in 2015 as a Project Manager and spends his time researching products and coming up with ways to achieve the unique displays they install while working closely with their clients to understand their vision and find ways to bring it to life. Tim began his career as a HVAC and Fluid Power technician, then moved in to facilities management roles. In 2010, he joined the Atlanta Botanical Garden and became involved in installation of their holiday light exhibit and lighting for their art exhibitions. Tim also has also been trained at Disney for large light shows. As a teen, Tim designed and installed stage lighting and sound systems. We think lighting has always been in his DNA.

<https://www.illuminating-design.com/>

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**Falcon Player – Beginner****S57**

This class is designed for new comers in holiday lighting. Now that you have sequenced your show, it's time to show your family, friends and neighbors what you have been working on. In this beginner class we'll introduce you to the Falcon player and talk about what you can do with it to take your show over the top. We'll look at setting up the player for outputting to your controllers, your audio output, either PA system or FM transmitter. We'll talk about the plugins that are available as well.

***Patrick Delaney***

*Pat Delaney is a co-author, along with Ben Shaver, of some of the many plugins that are available to use with the Falcon Player. <https://www.facebook.com/lightsoncolony/>*

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**How to Make Your Light Display Have an Impact****S60**

Would you like to take your light show to a new level? The Family will show you how and will walk you through how they've turned their display into a unique experience for families in the Detroit area. Their display is complete with exciting voiceovers, memorable characters that get the kids talking, unique props & moving music that tells the Christmas story. They will also show you how to get news reporters & families talking about your show online and how to use your display to raise money for a local charity, spread the reason for the season or tell a moving story. Make it personal!

***Timothy Howse***

Timothy is the original brainchild behind the Howse Family Display & started hanging lights at age 10. He designs creative displays, organizes Christmas decorating parties for armies of volunteers & gets the display on the news, with thousands talking about it on social media. The Howse Family has created a faith-based display with nearly 70,000 lights celebrating the reason for the season - the birth of Christ. It was named one of the top Christmas displays in the State of Michigan by OnlyInYourState.com and was featured on the front page of Michigan's largest newspaper.



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## How to repair or shorten you LED strings

S74

This class will show you how easy it is to repair or shorten your LED light strings to get the perfect lights for your display.

### **Pete Peters**

Pete is an instructor for IBEW Electrical Apprentices, a PLC programmer, NALCTP lighting certified Instructor, CREE LED certified Instructor, Christmas Lighting decorator for 18 years, LOR and Madrix programmer.

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## How to use Pixels and Still have a Traditional Looking Display

T14

With all the advancements in Christmas lighting and the use of Pixels, many new displays are starting to look more like a rock concert than a Christmas Display. In this class, you will learn how to integrate pixels into your display and still have a display that appears very traditional, yet has all the benefits that Pixels can bring. You'll receive practical design ideas as well as real world examples for how to sequence with pixels and what to focus on to get the WOW factor of pixels while still maintaining a Christmas look and feel.



### **Darren Huffty**

Darren Huffty has been decorating homes for Christmas for over 20 years and has had an animated light display for the past 12 years. Darren was a winner of the Great Christmas Light Fight in season 2 and has since worked on 3 commercial displays as well as his own award winning display. <http://www.ChristmasOnCrystalSprings.com>

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## I Love it When a Plan Comes Together: Display's the A-Team Way

T13

What's the A-Team got to do with a Christmas display? Actually, more than you think. Everyone knows that when Hannibal reveled in that statement, smiles happened, and all turned out well. Newbies and tenured decorators, get glassy eyed looking at ALL the cool things that can be done for a Holiday display. Inevitably most try to run first, stumble, then crawl to recover. There are key aspects to executing a display that are often forgotten. A display can be a detailed coordination of many elements. This class will provide a fun and entertaining overview, providing some insight that will help prepare you, so that you can Light Up! your display on time and without stress.

### **Mark Zembruski**

Husband, Step Father, weekend warrior, techie, and gadget geek. Mark works in the Electronic Design Automation industry, basically, software to design electronics. PCB Design is his background. Like everyone, he's loved Christmas since a young age and his mom gave him a love for Christmas Carols. He has been

decorating inside since the age of 19 and started decorating outside when he bought his first home in 1989. In 2003, everything he loved to do collided and Woodinville Wonderland started to become a reality. Mark is most un-famous for coining the term "I have the C.L.A.P. do you? Christmas Light Addiction Problem." He wishes he had copyrighted it! <http://www.woodinvillewonderland.com>

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## **I want to Start a Christmas Display - Now What?**

**T28**

If you are looking to start a Christmas Display, you have come to the right place! In this seminar, we will discuss how to begin creating your very own display and look at everything from the different styles of lights, hardware, software, vendors and much more. We will also look at building a schedule, determining a budget and where to actually begin. This seminar is for newer Christmas enthusiasts that may be new to the Christmas Expo or new to the hobby.

### ***Greg Konzal***

Greg has been decorating for Christmas for 17 years and has been using pixel lights for the past 3 years. His display raises money for Make-A-Wish Wisconsin. He enjoys sharing his knowledge with others and has been teaching classes at Christmas Expo for two years.

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## **Illumination of Lights**

**T3**

No redundancy in this class name. With Holiday decorating, there is a wealth of lighting products to choose, and use. Incandescent/LED, flood/strobe, RGB/node, strip/chip, etc. Newbies to the hobby can be inundated with choices and decisions. What to use, where to use it, where to find it, what to spend. This class will brighten your perspective, and shed some light to help you with your decisions.

### ***Mark Zembruski***

Husband, Step Father, weekend warrior, techie, and gadget geek. Mark works in the Electronic Design Automation industry, basically, software to design electronics. PCB Design is his background. Like everyone, he's loved Christmas since a young age and his mom gave him a love for Christmas Carols. He has been decorating inside since the age of 19 and started decorating outside when he bought his first home in 1989. In 2003, everything he loved to do collided and Woodinville Wonderland started to become a reality. Mark is most un-famous for coining the term "I have the C.L.A.P. do you? Christmas Light Addiction Problem." He wishes he had copyrighted it! <http://www.woodinvillewonderland.com>

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## **Indoor Decorating**

**F49-F54**

Class Description coming soon

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## **Internet Controlled Christmas Lights**

**T20**

Learn how to make your Christmas lights controllable by passer's by on their smartphones or literally by anyone around the world! In this class, an overview is provided on using a Raspberry Pi, streaming webcam, xLights, and Falcon Player to take your show to the next level: true interactivity via the Internet. This method is proven and has garnered national recognition on public television for the past two years. New this year: How to live-stream your music sequences (streaming synchronized video and audio) and an improved website interface to handle heavier audience interaction.



**Tom Hammond**

Tom Hammond has built computerized Christmas lights for four years, store-bought and generic pixel technology. He builds light controllers from Arduino, Raspberry Pi, and Beagle Bone Black. His shows are viewable and controllable from the Internet and have garnered worldwide attention and news coverage. <http://www.itwinkle.org>

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**Intro to DMX****F53**

Are you tired of using plug and play Christmas lights? Are you ready to dive into the universe of using theatrical fixtures like moving heads, mega strobes, RGB floods and the myriad others available? Then you need an understanding of the basics of DMX. DMX is the stepping stone to using theatrical fixtures, RGB and smart pixels. We'll discuss the DMX standards for signal, wiring and termination. We'll show many examples of DMX controllers, fixtures and demonstrate with some live products. We'll also have a few devices available for testing your DMX devices and network. We'll finish with some free drawings including a DMX tester.

**Kevin Thomas**

Kevin has been doing large displays for years and learned to solder when he was just 9. His display includes a 36' & 26' mega tree, over 90 mini trees, six pixel arches, five RGB singing Christmas trees, a 24' pixel tree, a 8' X 16' pixel grid, plus what he puts on his house. Visit his website at [christmasinkent.com](http://www.christmasinkent.com) for many how-to's and other resources. <http://www.christmasinkent.com>

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**Intro to Soldering Hands-On Workshop****S65-S70**

This is one of those skills that just about every decorator needs. You may not ever want to solder surface mount electronics but soldering those occasional parts and wires together is a must. We'll start you off right with a new soldering iron and a basic kit. Together we'll learn the soldering basics and build a functioning electronic kit. This is a 2-hour class.

**This class has a kit fee of \$25. Class size is limited and a reservation and kit fee purchase is required. Reserve now at <https://www.christmasexpo.com/product/kit-fees/>**

**Kevin Thomas**

Kevin has been doing large displays for years and learned to solder when he was just 9. His display includes a 36' & 26' mega tree, over 90 mini trees, six pixel arches, five RGB singing Christmas trees, a 24' pixel tree, a 8' X 16' pixel grid, plus what he puts on his house. Visit his website at [christmasinkent.com](http://www.christmasinkent.com) for many how-to's and other resources. <http://www.christmasinkent.com>

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**Introduction to Audacity****S63**

Ever find that perfect song but didn't like the way it ended, or you wanted to stitch songs together to have a seamless flow of music? If so, this is the class for you. This introductory class will demonstrate the use of the free Audacity audio editing software and will cover Basic Controls, Mixing, Blending, Cutting and saving Christmas music files.

**Jeff Oberst**

*Jeff 'Obewan' Oberst is an electrical engineer from San Jose, CA. He began lighting animation in 2006 with 96 channels and continues to expand every year. He loves being part of something that brings joy and happiness to children, young and old, and reminding them what Christmas is all about.*

<http://www.obewanproductions.com>

**Keep the Grinches Away - Secure Your Home and Display****S59**

We invest thousands of dollars in lighting to bring smiles to our community. This class will focus on how to better protect these assets physically and keep the vandals at bay.

**Russell McFarland**

Russell is a Senior Cyber Security Analyst with a diverse background in both cyber and physical security. He has had a unique career addressing challenges in the critical infrastructure sector and has *spoken nationally on security awareness. At home he enjoys spending time with his wife and 4 children and planning the next big thing for his pixel light display.*

**Laser: Fundamentals of laser display for holiday décor****T9**

This returning seminar focuses on the fundamentals of laser display for holiday lighting. We will focus on safety, laws and regulations regarding laser usage, what laser projectors can and cannot do well and how to get the greatest dynamic laser effects for holiday display use.

**Laser Light Show Design Session****F34**

This project session demonstrates the creation of a Christmas themed laser light show from scratch using Pangolin's Quickshow software. In this session we'll cover creating a timeline show from existing cues, text, and new static and dynamic animations.

**Adam Raugh**

*Adam Raugh has over 20 years of experience with stage lighting and production and is the President and Owner of X-Laser. X-Laser was built on helping those new to laser light shows get involved safely and effectively and now X-Laser is the partner for more than half of all new laser users in the US every year. <http://x-laser.us/>*

**Light-O-Rama: Adapting Shared Sequences in S5****S56**

There are hundreds of shared sequences available but how do you adapt them to work with your setup? Where are some of the sources for these sequences? Where do you get your music? How do

you incorporate elements of your display that are not in the shared sequence? How do you decide what parts of a 96 channel sequence to use with your 48 channel set-up? This class is especially good for the new LOR user who feels a bit overwhelmed and wants to put together a show that he/she helped create. The presentation will utilize S5 but much of the information will also apply to S4

**Stephan Sherrick**

*Stephan Sherrick is a Retired Navy officer who has taught at the secondary school level, university level and in private industry. He decorates almost two acres using a large static display, regular LOR AC, singing characters and pixels.*

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**Light-O-Rama S5: Adding Your First Smart Pixel Display Element** **T26**

After using traditional light strings for years, taking the first step into RGB pixels (aka: smart pixels) can be intimidating. In this class we show how Light-O-Rama hardware and the ShowTime Designer S5 software can make that transition easier! We'll spend most of the class focused on adding a pixel element to an existing sequence and make it light up in step with the other lights. You'll leave the class confident smart pixels can be added to your current display.

**Matt Brown**

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**Light-O-Rama: Getting Started with Animation with Light-O-Rama** **T4**

This is a back to basics class to help anyone that is wanting to take the next step in their display. I will cover hardware, software and how it all comes together to put on a animated lighting show. If you are looking for answers on how these great displays are created this is the class to get you going.

**John Scooter Paschall, Holiday Technologies**

*Scooter has been in the hobby for 15 years. Starting small in his hometown of Hazel, KY in 2004, his personal display has grown with a combination of computerized and static displays in his yard. In 2010 he started working with Holiday Technologies and is now a Lead Programmer for the company. He has done several large projects around the country and a few have been showcased on TV.*

<https://www.paschallsmagicalchristmas.com/>

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**Light-O-Rama: SuperStar Sequencer - New Features and General Q&A** **F51**

Love Light-O-Rama's SuperStar? New features are constantly being added but you might have missed the latest. In this class we'll cover the newest auto-sequence capabilities as well as latest automatic face animation. We'll include a general question/answer period as time permits. Leave the class with a new understanding of the magic you can do with the powerful SuperStar tool.

**Brian Bruderer**

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**Light-O-Rama: SuperStar and LOR S5 Sequencer Integration** **S76**

Did you know Light-O-Rama's SuperStar fits hand-in-glove with the latest ShowTime Designer S5 Sequencer? This class includes creation of Previews in the S5 Sequencer, orientation of individual props, use of the pre-built SuperStar props, and sequencing the props separately or as a group. We'll

also cover mixing and matching SuperStar effects with S5's built-in motions effects, the difference between horizontal and vertical prop orientation and when to use the wrap-around mode. At the end you'll have a thorough knowledge of how to combine the best features of SuperStar and the S5 Sequencer effects to create over-the-top shows.

*Brian Bruderer and Matt Brown*

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### **Light-O-Rama: ShowTime Designer S5 - Upgrading from S4** **T11**

Are you ready to take your show to the next level? Light-O-Rama's latest ShowTime Designer (also known as S5) combines Sequence Editor, Visualizer and Pixel Editor into the same application (now called Sequencer). S5 shifts from channel-centric to prop-centric sequencing where a prop is a predefined group of channels. It can be a mind bender at first but once the basics are quickly understood your imagination becomes the only limitation for incredible sequences. We'll walk through the process of getting your existing sequences and Visualizer files into S5 and where to go from there. This class is strongly recommended for anyone moving to the latest version of LOR's ShowTime Designer software.

*Matt Brown*

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### **Light-O-Rama: S5 Modeling Your Display** **T16-T21**

Light-O-Rama's latest ShowTime Designer S5 is centered around the display model concept where you stop thinking about channels and start thinking about props or groups of channels. This class will show how to create and edit a "preview" in S5, move items around, modify display elements, assign channels, and create groups. We'll also show the best way to model common elements such as strobes, megatrees, icicle lights, flood lights, roof lines, and snowfall tubes. After the class you'll have an appreciation of the display model design and how it can help you bring the latest eye candy to your layout. This is a 2-hour class.

*Matt Brown*

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### **Light-O-Rama S5: Sequencing Traditional Lights** **F31-F36**

Light-O-Rama's ShowTime Designer S5 keeps most of the same commands and shortcuts used in previous versions however, some things have changed to make way for the future. This class will show how to take full advantage of the existing tools as well as many of the new features. To understand the scope of LOR's ShowTime Designer S5, it is recommended that you also take "Modeling Your Display." You'll leave this class with a clear understanding of how S5 opens so many new possibilities of what you can do with your display. This is a 2-hour class

*Matt Brown*

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**Light-O-Rama S5: Sequencer and Smart Pixels****F41-F46**

LOR ShowTime Designer S5 Sequencer has all the smart pixel sequencing capabilities of the earlier generation standalone Pixel Editor plus so much more! In this class, we'll cover the basics of creating motion effects and how easy they are to add to your sequence. Then we'll explore S5 Sequencer's new capabilities, such as viewing effect favorites, subdividing your prop into sections, new mixer modes, transparency support, and changing effect parameters in step with the music. After this class you'll be able to easily add incredible effects to your smart pixel props. This is a 2-hour class.

**Matt Brown**

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**Light-O-Rama: LORhub: The New Way to Build Shows and Update Sequences****S61**

Overwhelmed by all the different ways Light-O-Rama offers to build and schedule shows? The recently introduced Light-O-Rama Hub eliminates confusion and makes building shows for your computer or ShowTime Player easy. Hub also has features to install and enhance off-the-shelf sequences with our latest generation MotionPaks. Leave the class ready to build and schedule shows to dazzle your audience.

**Mike DeMaria**

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**Light-O-Rama: The Art of Sequence Creation****T6**

You've picked a great tune but how do you make it part of a great show? In this class we'll discuss different approaches that can be used creating sequences with traditional lights and pixels. Once the basic concepts are understood we'll spend the rest of the class choosing a song, discussing the imagery the song implies, the moods we want to convey, the color pallet to use, etc. You'll leave the class with an understanding of the difference between a mediocre sequence and a great one.

**Brian Bruderer, SuperStar Lights**

*Brian Bruderer is the creator and programmer for the SuperStar Sequencer. He is also the creator of SuperStar Display which as 12 or 16 CCRs with a star at the top; CCP Tree with Globe; 4 circle display; and the 200 CCP Spider Web display for Halloween. Brian also makes giant Halloween spider webs, see [www.spiderwebman.net](http://www.spiderwebman.net). Brian and his wife Vickie reside in Allen, Texas (near Dallas) and are the proud parents of 5 children and 11 grandchildren. <http://www.superstarlights.com>*

**Matt Brown, Light-O-Rama**

*With degrees in Electrical Engineering and Computer Science, Matt started animating Halloween many years ago using custom circuits and software. His first animated Christmas display debuted in 2007 with one song and 16 channels – using LOR controllers and software. By 2015, the display had grown to over 15,000 channels of lights covering 2 yards. For the past year, Matt has been working on the next generation of the Light-O-Rama Software Suite: S5.*

**Michael DeMaria, Light-O-Rama**

For 20 years, Michael has worked in the entertainment industry as a product manager, producer, and computer programmer for such companies as AOL/Time Warner, Turner Networks and the Walt Disney Companies. For the past 8 years he has been an employee of LOR, first as the lead programmer of the S3/S4 Visualizer and now as a Customer Experience developer.

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## Mastering Special Effects

**T1**

In this fun class Tater will take you thru how to properly use Fog, Snow, Haze, Bubble, Fobble (UGH THAT NAME) and Scents in your display. Tater will also teach you what each machines pro and cons are. Tater has now run out of things to say, but trust me this is a class you won't want to miss.

### **Scott Tater Lynd, Froggy's Fog**

*Genuis, Good Looking, Charming, Idiot. These words have all been used to describe Tater (The first three by his mother). Doing Haunted Houses and other seasonal events has taught Scott Tater Lynd a lot of things, mainly things like don't stick a screwdriver in an outlet and how to fall off a roof. But this Fluid Master (I need a new title, I swear) knows the ins and outs of making your event special. <https://froggysfog.com/>*



## Music's DNA

**T19-T24**

There are a million ways to design a show. Some people focus on color and musical emotion, others on creating chases and patterns for light fixtures loops, and some go for the wow factor through the latest equipment and technology. But what if you could take your design method to the next level? Musicality is the key to taking a good show and turning it into one people won't forget. In this class, we'll explore how the building blocks of music go hand in hand with programming as we look at designing a show from a musician's perspective. The second hour will go deeper into the intricacy of music: focusing on how to use your display to highlight different instruments, subtle tricks to enhance musical patterns using direction, intensity, and effects, and ways to group fixtures in your display to work with the various patterns in music. Although Light-O-Rama will be used for this demonstration, a knowledge of music can apply to any software, and no prior musical experience is required to attend this class. Go for the emotion, the patterns and wow factor, but add the ability to sequence the lights perfectly in time with the music? That's what will set your show apart. This class is 2 sessions.

### **Aubrey Kall, Luminous Harmony**

*Aubrey has worked with Light O Rama software for her family's display for 11 seasons and programmed seven years' worth of client shows through her business, Luminous Harmony. She's sequenced over 100 shows using music as the driving force of creativity and somehow manages to find more complicated songs to code every year. She graduated with her MBA in May of 2017 and is currently based in Davenport, Iowa, where she runs her business full time.*

<http://www.luminousharmony.com>



## Oh Christmas Tree

**T23**

Trees are a huge part of Christmas. It makes sense that they migrated outside to our outdoor Displays. In some cases they are subtle additions and, in most, they are a Majestic marvel that becomes the centerpiece of our Displays. This class gives you a historic look at Tree's, at what has been used

traditionally in Displays, to what has become highly technical marvels, and a little of everything in between. The gamut of which will yield, some fun and un-expected twists that will surprise everyone.

**Mark Zembruski**

*Husband, Step Father, weekend warrior, techie, and gadget geek. Mark works in the Electronic Design Automation industry, basically, software to design electronics. PCB Design is his background. Like everyone, he's loved Christmas since a young age and his mom gave him a love for Christmas Carols. He has been decorating inside since the age of 19 and started decorating outside when he bought his first home in 1989. In 2003, everything he loved to do collided and Woodinville Wonderland started to become a reality. Mark is most un-famous for coining the term "I have the C.L.A.P. do you? Christmas Light Addiction Problem." He wishes he had copyrighted it! <http://www.woodinvillewonderland.com>*

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**P10, P5 RGB Panels****S58**

P10/P5 Panels add a whole new level of complexity to the lighting game. There are many different options, resolutions, controllers, and layouts that can be used. Just about anything can be done more than one way. Hopefully, this class will provide some information so you can make an educated decision before designing your panels.

**Scott Hanson**

Scott is a software developer and electrical technician by trade and has been doing animated Christmas lights for 3 years. He also has been contributing to the XLights project for two years.

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**Pixel Props Hands-On Workshop****S75**

This class is for beginners into the RGB world of pixels. Class instruction will inform the student on how to differentiate between smart pixels and RGB dumb pixels, and how each type functions. Class instruction will show myriad of available Pixel Controllers and how to attach the Pixel strings onto the controller boards. Class instruction will also show how to install pixels into a Coroplastic Prop then map out the installation of pixels into their preferred software. Students will then be able to assemble and take home their own functioning pixel prop.

**This class has a kit fee of \$25. Class size is limited and a reservation and kit fee purchase is required. Reserve now at <https://www.christmasexpo.com/product/kit-fees/>**

**Don McGillivray**

*Don has been working on a large scale display since 2012 as the primary prop builder with extensive use of PVC and Coro for Evergreen Church Christmas lights. The display consists of a mix RGB smart pixel animation from Mega trees, a 50 foot animated tunnel, and a full pixel matrix across the building. and Video projection. This display has become a favorite family tradition for his community. Videos can be seen on Youtube; search for Evergreen Lights*

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**Taking the mystery out of power injection****S64**

Let's take the mystery out of power injection. Why is it that a controller can run so many pixels but with the caveat with power injection. In this class we will explain clearly what is meant by power injection. Also why it is necessary and how to determine for yourself when it is necessary. There are some basic power equations and simple rules of thumb that will help you navigate through this mystery.

**Les Willis**

*Electrical Engineer for low voltage circuit design. Also have many years of experience with Information Technology and networking background.*

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**The Art & Presentation of a Christmas Display: The Holy Grail****F33**

It is said, "If you build it, they will come." Well, that is not always reality. They may come, but is your Display a "one visit wonder"? This class will expose the foundations of how to create a truly successful Christmas display, one for all ages. This class was created with the intent to get the attendee to objectively think about his, or her, motivation and approach. The subject matter will give you insight into key concepts and techniques, without telling you how to do anything! We'll help you to expose the single key that can transform your display from just another neighborhood house with lights, into a Christmas Card. The intent is to provide you with understanding into how to become the destination display for your community, a Display that will keep your visitors coming back year after year.

**Mark Zembruski**

*Husband, Step Father, weekend warrior, techie, and gadget geek. Mark works in the Electronic Design Automation industry, basically, software to design electronics. PCB Design is his background. Like everyone, he's loved Christmas since a young age and his mom gave him a love for Christmas Carols. He has been decorating inside since the age of 19 and started decorating outside when he bought his first home in 1989. In 2003, everything he loved to do collided and Woodinville Wonderland started to become a reality. Mark is most un-famous for coining the term "I have the C.L.A.P. do you? Christmas Light Addiction Problem." He wishes he had copyrighted it! <http://www.woodinvillewonderland.com>*

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**The Great Christmas Light Fight Discussion Panel**

Listen in on the panel discussion as participants of ABC's The Great Christmas Light Fight reality TV show talk about their experiences on the show. Learn about the casting process from the show's Casting Director and find out from participants what it takes to set up a display for tv and hear about the bloopers that you didn't see.

*Moderated by Chuck Smith, [www.PlanetChristmas.com](http://www.PlanetChristmas.com)*

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**To Pixel or not to Pixel****F39**

In a copycat hobby, we all seem to try and keep up with the Jones's from time to time. Pixels have become the newest fad in a constantly changing hobby. Let's explore through design if you need pixels, or just want pixels in your display.

**John 'Scooter' Paschall, Holiday Technologies**

Scooter has been in the hobby for 15 years. Starting small in his hometown of Hazel, KY in 2004, his personal display has grown with a combination of computerized and static displays in his yard. In 2010 he started working with Holiday Technologies and is now a Lead Programmer for the company. He has done several large projects around the country and a few have been showcased on TV.

<https://www.paschallsmagicalchristmas.com/>

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**Traditional Elements for a Modern Display****S78**

Retro is a hot trend in Christmas decorating and there are several ways you can give your modern display a retro feel to really makes it pop! Would you like to add some traditional elements to your display? Then this is the class for you! I'll show you how easy it is to turn PVC pipe into outdoor Christmas candles. I'll also go over the basics of how to make a Popular Mechanics Christmas display project like your dad or granddad made when you were a kid. You'll also learn how to personalize plywood cutouts to give all those viewing your display a one of a kind Christmas greeting.

**Jeff Carter**

*Jeff's is a Christmas lighting historian as well as a Christmas lighting designer and consultant specializing in retro and mid-century Christmas displays. His fascination with Christmas Lighting goes back as far as he can remember. It didn't hurt that his Dad's birthday was December 25th so he had parental encouragement early on. He's the administrator of the flickr group General Electric Christmas Lights and is known on YouTube as the Christmas Craftsman. Jeff contributed to the Lighting chapter of the book Midcentury Christmas and the November 2016 Planet Christmas Magazine. This will be Jeff's sixth year presenting at the Christmas Expo.*

<http://www.christmascraftsman.com/>



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**Using Moving Heads and DMX Fixtures in Your Display****S68**

Want to add moving heads or DMX fixtures to your display and but don't know where to begin? In this class we will go over DMX technology, what to buy, how to hook it up, and how to control it all. The lessons learned will apply to both Light-O-Rama and xLights. I will also show a demonstration using xLights at the end of the class.

**Tom BetGeorge**

*Tom BetGeorge is the founder of Magical Light Shows and has been doing commercial displays for five years including theme parks, buildings, and drive thru's. His videos have received over 100 million views to date. <http://magicallightshows.com>*



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**Using Wifi networking effectively in your display****S79**

Interested in cutting the cord? Don't want to be tied down? Try WiFi in your Christmas display! This class will go over the basics of using WiFi in your pixel and/or AC display, how to deploy it effectively and how to avoid the pitfalls that lead to the pixel lag blues. Great for moving or portable props! Taught by a Navy Engineer who's designed WiFi infrastructures for Unmanned Vehicles.

**Bill Porter**

*Bill is a Navy Engineer with a passion for blinky things. <http://www.billporter.info/>*



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**Utilizing Blow Molds into a Coordinated Light Show****F38**

This class is about using Blow Molds in your computer controlled Light Show to enhance your story telling utilizing these great props. Whether you are already using blow molds in your display or are interested in adding them, this class is for you. By lighting up specific molds at the right time in a sequence, you can tell a story, create a mood or simply accentuate a particular song or genre of music.

Whether you decorate for Christmas, Halloween or other holidays, the methods of lighting you'll learn in this class will add a nostalgic and exciting element to your display.

**Jeff Bartsch**

*Jeff is a former teacher and Marine Officer and is now a self-employed business man in Warren, PA. He has been decorating for 43 years and is a highly motivated and energized advocate for holiday home decorating. Jeff started with traditional statics displays that evolved into early LED color changing, and on to whole house projection video. He began using computer controlled lighting in 2009 and his light show now includes lighting six properties on his street. Blow Molds are a large part of his prop inventory as he value their contribution to telling a story for each and every song in the show. He uses Superstar to create animated sequences for a 16 channel CCR tree and added a Pixie16 to control lighting on his home.*

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**What makes a great Christmas display? Interactive class.****F48**

It's one thing to build a Christmas display but it's quite another to make people enjoy what you think is a masterpiece. It can get depressing spending hours building a prop only to have it go unnoticed. We're going to watch videos of other's work and discuss the good and bad. As a group, we'll quickly figure out what grabs viewers' attention and what's a waste of time/money. Want some critical feedback on your work? If there's time we'll take a look at your video. Just make sure it's already on a thumb drive in a .wmv or .mp4 format.

**Chuck Smith**

*The New York Times called him the granddaddy of computerized Christmas light displays. He's not too excited about the granddaddy word but he is quite proud so many are getting into decorating with ever more sophisticated shows. Chuck has been part of major displays across the country and will be sharing his insights with everyone. Did we mention he's the quiet guy behind PlanetChristmas and [www.PlanetChristmas.com](http://www.PlanetChristmas.com)? <http://www.planetchristmas.com>*

**What You Need to Know to Organize a Holiday Drive-Thru Event****T10**

This seminar will focus on building your drive-thru event. We will cover questions such as "How does the event work?" "How is a show set up?" "What about the power?" All of these questions and more will be addressed while still having plenty of time for questions and answers.

**Tammy Peters**

*Ms. Peters has produced numerous Holiday Drive Thru Light Shows and Santa's Villages from the Midwest and along the East Coast. Her shows have been recognized by Google Travel and USA TODAY. Today, Ms. Peters works closely with the Branson, MO Christmas Coalition in developing the City of Branson as the Christmas Tree Capital of the World and produces her own show, "The Wonderland of Lights and Santa's Village" in the Tampa Bay, FL area. <http://www.nppshows.com>*

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**xLights: 2020 and Beyond****S67**

Our annual fireside chat with the xLights development team where we will share the sorts of things we are looking to develop in 2020 and beyond and invite you to share your ideas/requirements and get some insight into why some enhancements make it into xLights ... or don't.

*Keith Westley, Sean Meighan, Scott Hanson*

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**xLights: Building Interactive Shows****F47**

Learn how to use xSchedule and xLights to build interactivity into your Halloween and Christmas shows.

**Thomas Stallings**

*During the day, Thomas is a Networking and IT engineer who owns and operated two IT companies. At night, he works on his lights, sequences, controllers and, more importantly, helping out others when and where I can. He is officially in his second year in the lighting community and has quickly become known as the Solutions Architect in the xLights community. <http://lightsofpalmetto.com>*

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**xLights: Development 101****T25**

Interested in doing some xLights development or just getting early access to features. This session will spend some time on how these development team works and how to build and test xLights. With the recent release of the Shader effect it has also become practical to add unique effects to xLights without having to be a hardcore C++ developer. We will also cover in this session some of the basics of either adapting shaders from websites other than interactiveshaderformat.com or building your own.

**Keith Westley**

*Keith is one of the core developers of xLights and, more specifically, the developer of the new xLights xSchedule software. [www.xlights.org](http://www.xlights.org)*

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**xLights: Importing and Exporting Sequence Data****F32**

Before xLights became a fully-fledged sequencer, it was an effect generator and converter. Learn how to both bring sequence data into xLights from other sequencers as well as export out effect data for use in other sequencers

**Sean Meighan, xLights**

*Sean Meighan is the author of the Nutcracker software in 2012. He has led the xLights team since 2013. [www.xlights.org](http://www.xlights.org)*

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**xLights: Into the 3rd Dimension: xLights in 3D****T12**

Do you have a corner lot, drive-through display, multi-house display, or all of the above and more? Do you enjoy bad puns? Then come join one of the first classes on xLights 3D and 3D computer modeling! It's going to be a swell demonstration — and at no time will we be stooping to any cheap 3D tricks... or will we?

**Nick Rogers**

Nick is 24 years old and has been decorating for the holidays since he was 5. He created his first light show in 2013 and uses a combination of both LOR and xLights. He now decorates 4+ houses per year for Independence Day, Halloween, and Christmas.

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**xLights: Introduction****T2**

An introduction to xLights for Pixel and traditional lighting sequences. Let Sean, one of the original developers of xLights, take you on your first steps to using xLights for sequencing your traditional Christmas or Pixels.

**Sean Meighan, xLights**

Sean Meighan is the author of the Nutcracker software in 2012. He then has led the xLights team since 2013. [www.xlights.org](http://www.xlights.org)

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**xLights: Introduction To Singing Faces****T17**

Intro to singing faces in xLights. If you use a panel, projector or bulbs, singing faces adds a new dimension to your display. In xLights, learn how to easily define faces, break down lyrics, and take your show to a new level.

**Joel Dearing**

Joel has been in the hobby for over five years. With a background in radio, he bring those skills to develop content that is fun and entertaining.

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**xLights: Introduction to ZCPP****S77**

Get an overview of a new controller protocol for 2019 which offers the potential to take away a lot of the controller configuration complexity. New to xLights, ESPixelStick and Falcon in 2019.

**Keith Westley**

Keith is one of the core developers of xLights and, more specifically, the developer of the new xLights xSchedule software. [www.xlights.org](http://www.xlights.org)

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**xLights: Model Render Buffers and submodels in xLights****T22**

Model render buffers are the interface between your sequencing effects and your lights. Understanding the shape of render buffers for different models and how submodels allow you to create customized render buffer are fundamental in understanding how to get the effects to work the way you want to. In this class we will explore how effects are rendered in xLights. We will explain how the Render Buffer is created and what we can do to manipulate it using the subbuffer, submodels and more. Follow up attendance at this session with attendance at Clyde Lindsey's "xLights: Using Buffers and Layer blending to create jaw dropping effects" session will take you through how to apply these concepts when sequencing.

**Scott Hanson**

Scott is a software developer and electrical technician by trade and has been doing animated Christmas lights for 3 years. He also has been contributing to the xLights project for two years.

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**xLights: The Virtual Matrix in xLights****F42**

Creating a virtual matrix in xLights and making it work in xSchedule. Why buy build a P5 or P10 panel when you can go virtual and not expose your equipment to winter's elements?

**Joel Dearing**

*Joel has been in the hobby for over five years. With a background in radio, he bring those skills to develop content that is fun and entertaining.*

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**xLights: Using Buffers and Layer blending to create jaw dropping effects****T27**

Understand how buffers and layer blending are used in xLights to combine individual effects into complex jaw-dropping effects that take your sequences to the next level. We suggest you attend Scott Hanson's "xLights: Model Render Buffers and submodels in xLights" session before attending this session as it lays the groundwork for this presentation.

**Clyde Lindsey, Pixel Pro Displays**

*Clyde's fascination with electricity and lighting began with his 5th grade science project. This interest, combined with his love of computers and music, was the beginning of his first synchronized lighting display in 2007, Leechburg Lights. His static display grew from 7,000 lights the first year to over 50,000 by 2012. In 2013 he converted his entire AC display into RGB, all the while he documented his conversion via YouTube videos. In 2017, Clyde and his business partner, Robert Vanorsdale, founded Pixel Pro Displays. Together, they designed and programmed the layout for the two largest pixel-based drive-thru Christmas parks in the US. Other projects include venues such as EDC Vegas and EDC Mexico, Kunes Auto Group, and Bethlehem Hills. Since 2012, Clyde has shared his knowledge and experience with lighting enthusiasts around the world via his YouTube channel and Pixel Pro Displays website. It hosts more than 400 animated lighting tutorial videos.*

<https://www.pixelprodisplays.com/>



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**xLights: Using xLights Value Curves to Enhance Your Sequence****F37**

Value curves are available in xLights for many of the effect and sequence settings. Topics covered in this class will include the use of value curves in different areas of xLights to make your sequence pop. This class will cover the use of various value curve settings and also review the latest enhancements the developers have added in 2019.

**Barry William Wiles**

*Barry is an Electrical Engineer by training and has been doing holiday light shows for almost ten years. He started using LOR products and converted to xLights and pixels in 2016. A resident of Florida, his display has a tropical theme. He make all his own props and do his own sequencing.*

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**xLights: xTreme Sequencing****S62**

This class will explore tips and tricks to creating expressive and powerful xLights sequences. For the beginner or expert there will interesting concepts to learn from and hopefully inspire. We will begin at

the starting point of sequencing and not waste any time with setup and configuration beyond proper groups and group hierarchy for sequencing preparation. The goal of the course is to have attendees practice what they have seen and begin creating their own xtreme sequences.

***Ron Howard, xTreme Sequences***

*Ron's family began creating a light show to music in 2015 and were immediately hooked. He began sequencing in xLights in 2016 and developed a style that has led to a full time business. Having made a name for himself in the community, he also plays an advisory role to many new enthusiasts entering the hobby. <http://www.xtremesequences.com>*