



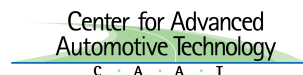
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# Video Capture Workshop

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Technical Issues? Contact Zach Bladow  
(218) 683-8851 | [zach.bladow@northlandcollege.edu](mailto:zach.bladow@northlandcollege.edu)

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## Presenters

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**Andrew Dahlen**  
Northland Community & Technical College

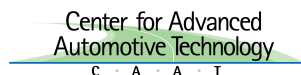


**Matthew Gardner**  
MATE II



**Dennis Courtney**  
Streamworks

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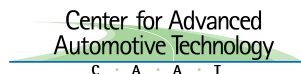


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## Purpose

- Assemble an easy to use video production package
- Designed for demonstrations, instruction, and livestreaming events
- Save time in producing video content
- Reduce or eliminate post-production time
- Budget smart - under \$3,000
- Single person provides instruction and controls multiple cameras

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**SONY ALPHA a5100**

USE AC ADAPTER INSTEAD OF BATTERY  
NO SD CARD NEEDED



**Canon VIXIA HF R800**

PLUG IN CHARGER  
NO SD CARD NEEDED



**Canon VIXIA HF R800**

PLUG IN CHARGER  
NO SD CARD NEEDED



**LAPTOP**

SETUP DUPLICATE DISPLAY



**Blue Yeti USB Microphone**

USB PLUGGED INTO AC  
CHARGER



**Blackmagic Design Video Assist**

HDMI/6G-SDI  
Recorder and 5" Monitor



**Blackmagic Design ATEM Mini Pro**  
HDMI Live Stream Switcher

OPTIONAL PC FOR  
LIVESTREAM



HDMI MICRO

HDMI MINI

HDMI MINI

HDMI

MIC 1

HDMI 1

HDMI 2

HDMI 3

HDMI 4

HDMI OUT

USB C WEBCAM OUT

HDMI IN



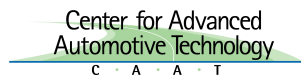


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## Equipment

- All equipment showcased available at B & H Audio
- Wishlist: Basic Video Package

<https://www.bnh.com/wish/22c74b35c9c6afb5ebff9ae49ace5b71/>



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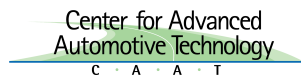


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## General Camera Setup

- Camera in standby mode with HDMI output to video switch
- SD Cards not needed in cameras
- Clean HDMI: Free of onscreen data typically in a camera's viewfinder/ screen
- Long battery life or power from AC source
- Turn off demo mode
- Disable automatic power shutdown

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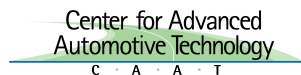
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## Sony a5100

- Mirrorless camera for \$450
- Popular choice for livestream and vloggers
- Clean HDMI output
- Power save automatic shut down disabled when using AC adapter instead of battery



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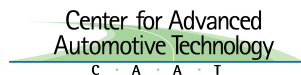
## Sony a5100 Setup

### Clean HDMI setup:

- Press Menu Button
- Select Setup
- Navigate to tab 2
- HDMI Settings
- HDMI Info Display
- Turn Off

### Manual Focus Setup:

- Camera Settings
- Navigate to Tab 3
- Change Focus Mode to Manual



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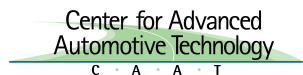
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## Cannon VIXIA HF R800

- \$249
- CLEAN HDMI OUTPUT
- 57X zoom
- Solid general-purpose camcorder



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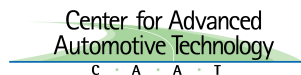




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## Cannon VIXIA HF R800 Setup

- Plug-in charger
- Change these settings:
  - Turn off - Output onscreen display
  - Turn off - Demo mode
  - Turn off - Auto power off



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## Blackmagic Design ATEM Mini Pro HDMI Live Stream Switcher

- Primary Component of Video Capture System
- Faster way to produce videos
- Easily switch between HDMI Inputs
- USB Webcam output for livestream



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## ATEM Mini Setup Notes

- Connect presenter camera to HDMI 1 for picture-in-picture
- Additional options available with ATEM Control Software:
  - Still photos
  - Green screen
  - Audio mixer

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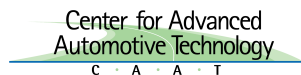


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## ATEM Mini Control Notes

- DVE – Digital Video Effects
- AFV – Audio Follows Video
- Up and down arrows adjust volume
- FTB – Fade To Black
- Still – Displays a static image
- KEY – Chromakey – Green Screen – Lower Third Graphics

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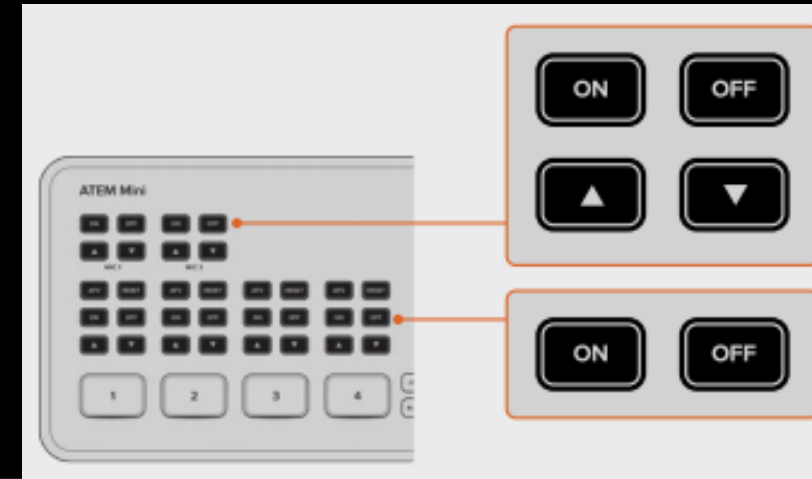




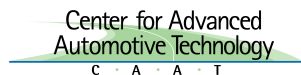
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## Mini ATEM – Audio Setup and Controls

- Instructional videos use Yeti Mic
- Consistent audio levels
  - Place mic in fixed location relative to presenter
- AFV = Audio Follows Video
- Turn off audio from all cameras



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## Video Assist HDMI/6G-SDI Recorder and 5" Monitor

- Record video on SD Card
- Monitor video output
- Audio Metering:
  - **Red Zone** - Clipped – avoid
  - **Yellow Zone** - Speech should always stay in the yellow
  - **Green Zone** - Everything else



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## Blue Yeti Sound Patterns

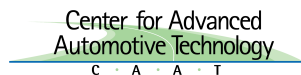
- Single Presenter - Set to CARDIOID MODE
- <https://www.bluedesigns.com/products/yeti/>

### CARDIOID MODE

Perfect for podcasting, Twitch streaming, music recording, voice overs and instruments. Cardioid mode records sound sources that are directly in front of the microphone, delivering rich, full-bodied sound.



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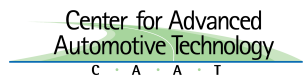
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## Yeti Blue Mic

- Side addressable Microphone



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## Lighting

- GVM 560AS Bi-Color LED 3-Panel Kit
- Watch videos on 3-point lighting:
  - <https://www.youtube.com/watch?v=pBt8qdO03-k>
  - [https://www.youtube.com/watch?v=j\\_Sov3xmgwg](https://www.youtube.com/watch?v=j_Sov3xmgwg)



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## Cables

- 2x HDMI A to HDMI Mini – 15 Foot - for Cannon Camcorders
- 1x HDMI A to HDMI Micro for Sony Camera
- 2x HDMI A-A – Video Assist and Laptop
- 1x USB TYPE A to USB TYPE C – ATEM Mini to Laptop
- 3.5 mm Audio Cable – Microphone



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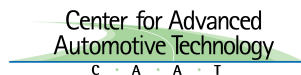




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## Other Gear

- Glide Gear OH50 Boom Pole
- 2x Magnus VT-4000 Tripod
- Mini Table-Top Tripod for Video Assist
- 16 Outlet Power Strip
- Cutting Mat (24 x 36", Black) – with grid
- Zip ties for cable management and strain relief



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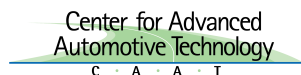


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## Post-Production Software

- Camtasia
- Movie Maker
- Davinci Resolve – Included with Video Assist

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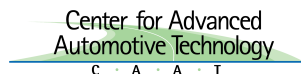


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## MATE | Background

- MATE Professional Development Workshops: In-person instructor-led professional development
  - Google slides
  - Organized materials and disseminated via CANVAS
- COVID: Move the entire experience to an online delivery
  - Addition of audio files embedded into Google Slides
    - [Online Voice Recorder](#)
  - Addition of instructional and assessment videos linked into presentations
  - CANVAS: Presentations, discussions, assignments

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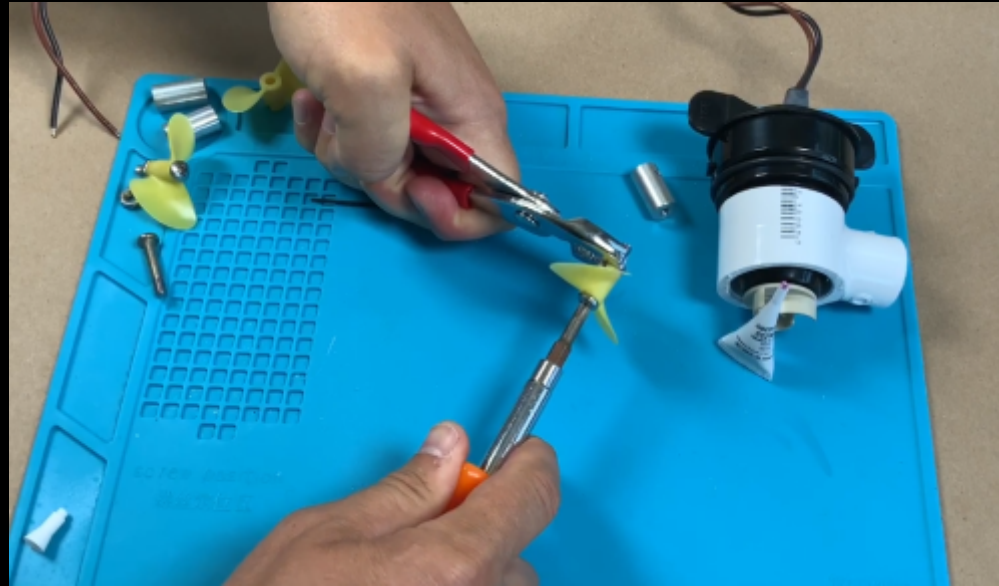


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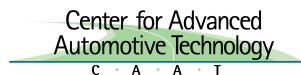
## Equipment – Pre-workshop

- Video production: Creation of instructional and assessment videos for asynchronous delivery
  - Lighting / Tripod
  - iPad
  - ATEM mini

[Assessment Video Link:](#)  
[The finished backplane board](#)



How to attach propellers to your motors instructional video.



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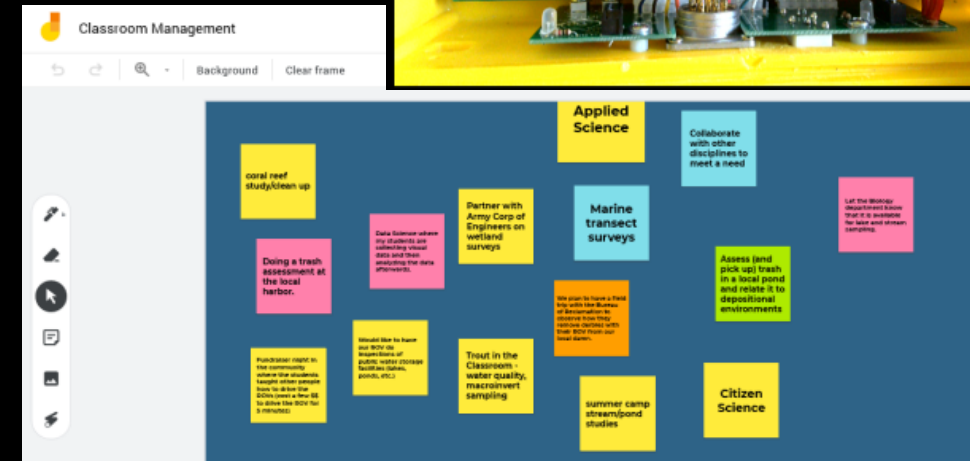
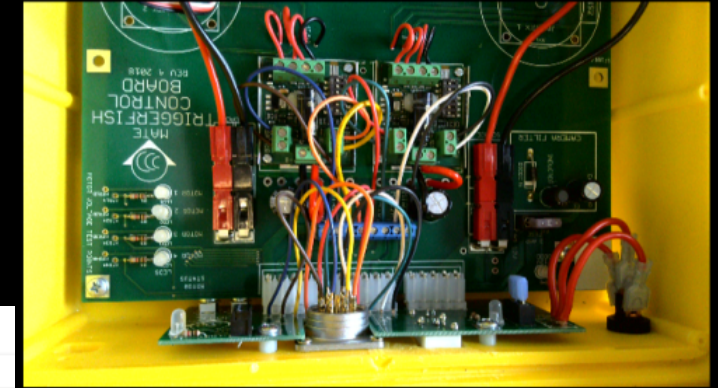




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## Equipment – During the Workshop

- Technology & equipment used for synchronous delivery
  - Zoom
    - Capability to switch camera views – webcam to document camera.
    - Windows camera app with Zoom screen share allows annotation on the screen share.
  - Zoom white board
  - Jamboard (Google add-on)
  - Two computers / two Zoom accounts



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## MATE – Streamworks Site

### Professional Development and Summer STEM Camps

- Supported MATE professional development workshops with asynchronous content (video) creation and synchronous (Zoom) content delivery
- Delivered content and instruction synchronously during online Summer STEM Camps
- Captured videos during in-person Summer Underwater Robotics Camp



**STREAMWORKS**  
Powered by Eastman in Education



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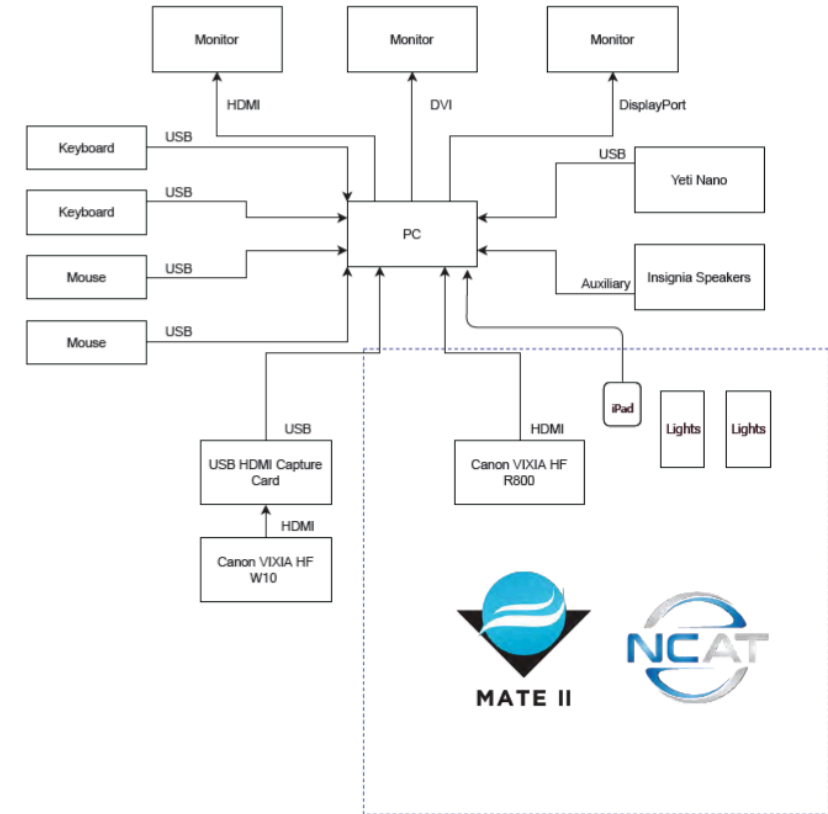




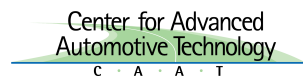
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## STREAMWORKS STUDIOS



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# Questions?

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