

CNAS Undergraduate Research Symposium (UGRS)

Presenter Instructions

Dear 2022 CNAS UGRS presenters,

We are excited to have you participate in our hybrid conference. This document contains comprehensive information on how to prepare and play a part as a presenter in this conference.

April 27, 5:00 PM is the deadline for abstract, poster and video submission (April 15 is first day of submission).

Things to do before the conference.

A. Submit your abstract

First, please contact your research advisor to ask the general format of an abstract in your research field. After completing your abstract, ask your advisor to check the science and format of your abstract.

- ❖ Abstracts may not be longer than 200 words

B. Submit your poster

Then, your abstract should be submitted to: <https://symposium.foragerone.com/cnas-undergraduate-research-symposium-spring-2022/submission>

Upload a PDF of your poster. PDF must be no more than 10MB in size. If your file exceeds this limit, you can compress the file to reduce its size. We recommend Smallpdf.com or another online tool to compress your file if necessary. Posters should include a good combination of words, pictures, and graphics. They should include introduction, methods, results, and conclusions of the research.

C. Submit a short pre-recorded video, 4 MINUTES OR LESS IN LENGTH

- ❖ Be sure to practice your message/video prior to filming.
- ❖ Please be mindful that your face is well lit, and your background is not disturbing.
- ❖ Recording a video: We recommend recording your video using Zoom meeting software (or with a smartphone, tablet, or web cam).
 - The video should convey why you chose your project and the take home message of your findings. Your audience may be a non-scientist and so be mindful to explain your subject knowledge in an easy-understanding manner.
 - The quality of the video production will not be judged, but the message on your research should be clear to viewers.
- ❖ Upload your video to YouTube. For this, you will need a YouTube channel. If you do not have one, you can create one for free at [YouTube](https://www.youtube.com). We also recommend adding subtitles. Then paste the YouTube link into the area provided on our conference website (only YouTube links will be supported). Please make the YouTube video settings as UNLISTED.

D. You will also need an In-Person version of your Poster. For the In-Person poster session:

- ❖ Abstracts may not be longer than 200 words. (WORD document - see format on next page) – Times New Roman 12 pt font
- ❖ Please see the subsequent page of example abstracts and follow the formatting exactly

All displays must be set up by 1:45 pm on May 5. They will remain posted until 3:25 PM

- ❖ Wooden display boards will be provided; therefore, **you must limit the size of your poster to 4 feet tall x 6 feet wide.**
- ❖ Presenters will bring their own presentation materials which will be secured to the display board with push pins. Only materials that are attachable to the display board are allowed. Push pins will be provided to secure poster materials

Speaker and the awards ceremony will begin at 3:30 pm.

E. EXAMPLE ABSTRACTS FORMAT FOR IN-PERSON POSTERS:

NEOTROPICAL BIRD POPULATION ASSESSMENT AT BULL SHOALS FIELD STATION. Baillie Shebesta, Biology. Faculty Advisor: Dr. Janice Greene.

Neotropical migratory bird species spend their winters in Central and South America. They then migrate to North America in the spring and summer to breed and raise their offspring. Neotropical birds are sensitive to ecological and environmental disturbances and changes. Monitoring their populations allows biologists to assess the overall health of the environment. Birds were caught in mist nests at the Bull Shoals Field Station. Researchers recorded data for individual birds including species, age, sex, wing length, weight, date, time of capture, and each bird was given a leg band. This study analyzed data from May through August 2010-2015. Analysis of the data revealed some basic patterns such as the Eastern Tufted Titmouse is the most common species caught; birds were most active during the morning; and most birds were caught in June and July. There was a fair amount of recaptures, which means that birds are returning to the area, and their preference for this habitat is an indication that it is strong and healthy.

AUTOMATED LICENSE PLATE DETECTION WITH OPENCV AND OPENALPR ON A RASPBERRY PI CLUSTER. Jade Stobbe, Daniel Fennessey, Kaylen Bates, Aaron Rielly, and Sarah Gabbard. Computer Science. Faculty Advisor: Dr. Razib Iqbal.

Computer vision is a field that includes methods for acquiring, processing, analyzing, and understanding images from the natural world in order to produce numerical or symbolic information. Using the libraries, openCV and openALPR, our system is able to receive an image or video and detect license plates present in them. These images or videos are analyzed and processed on a Raspberry Pi cluster, which is a distributed system running Hadoop Map Reduce. If the cluster detects a license plate, then it will upload the license plate number, location, timestamp, and a snapshot of the vehicle to an online database. Our project was designed to help decreasing the response time of law enforcement officials in crime investigations involving vehicles. For example, if police were using our system, information gathered with our software can be cross referenced against a different database of active arrest warrants, stolen vehicles, amber alerts, or other crimes and our software will alert officials of seen vehicles of interest. In the future, we plan to enhance our our system so that officials could also generate maps of vehicle locations and predict possible routes of transit. However, application of our software is not limited to law enforcement agencies only. It could be repurposed for campus security, automated parking enforcements, or automatic gate operations.