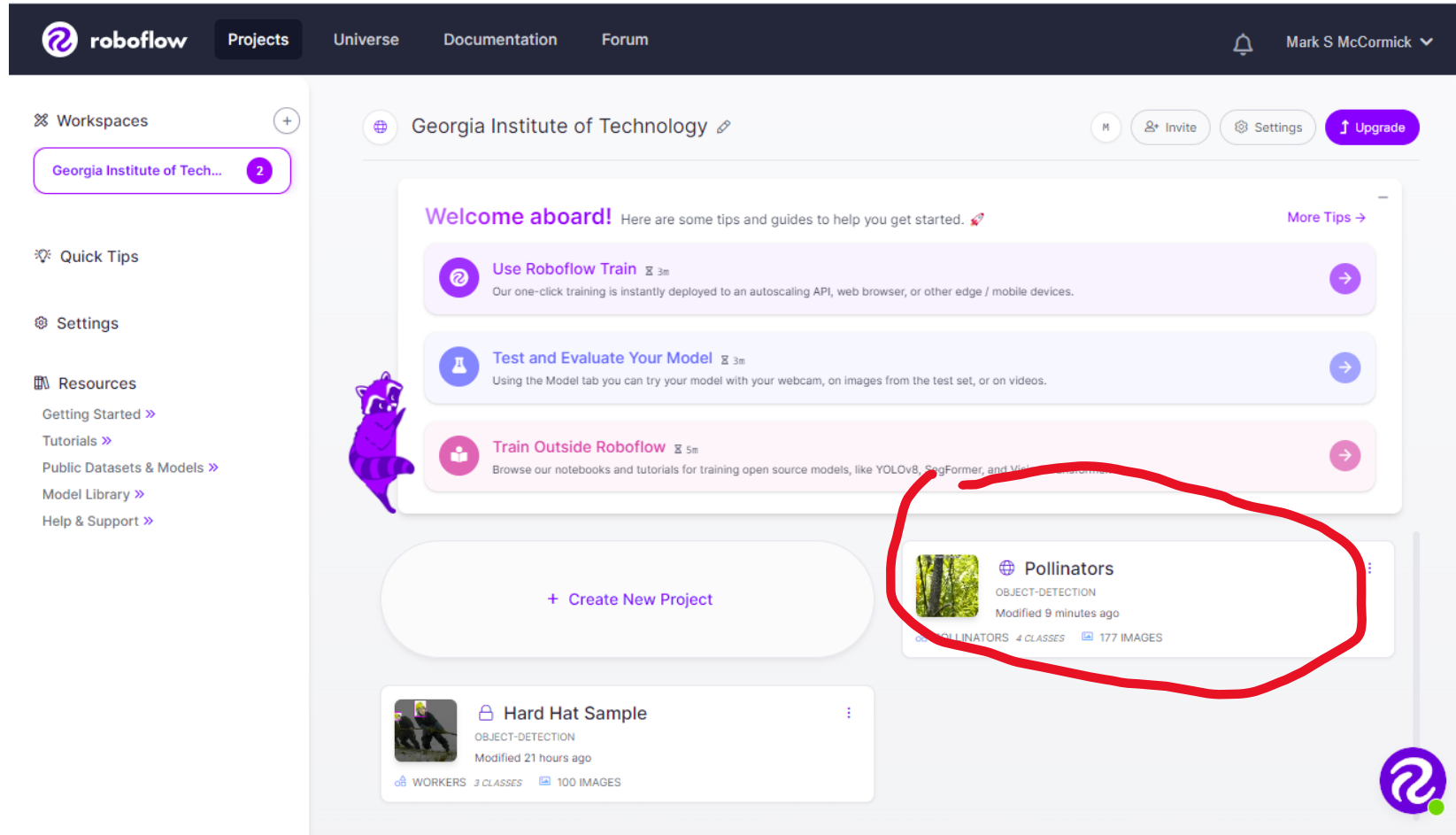


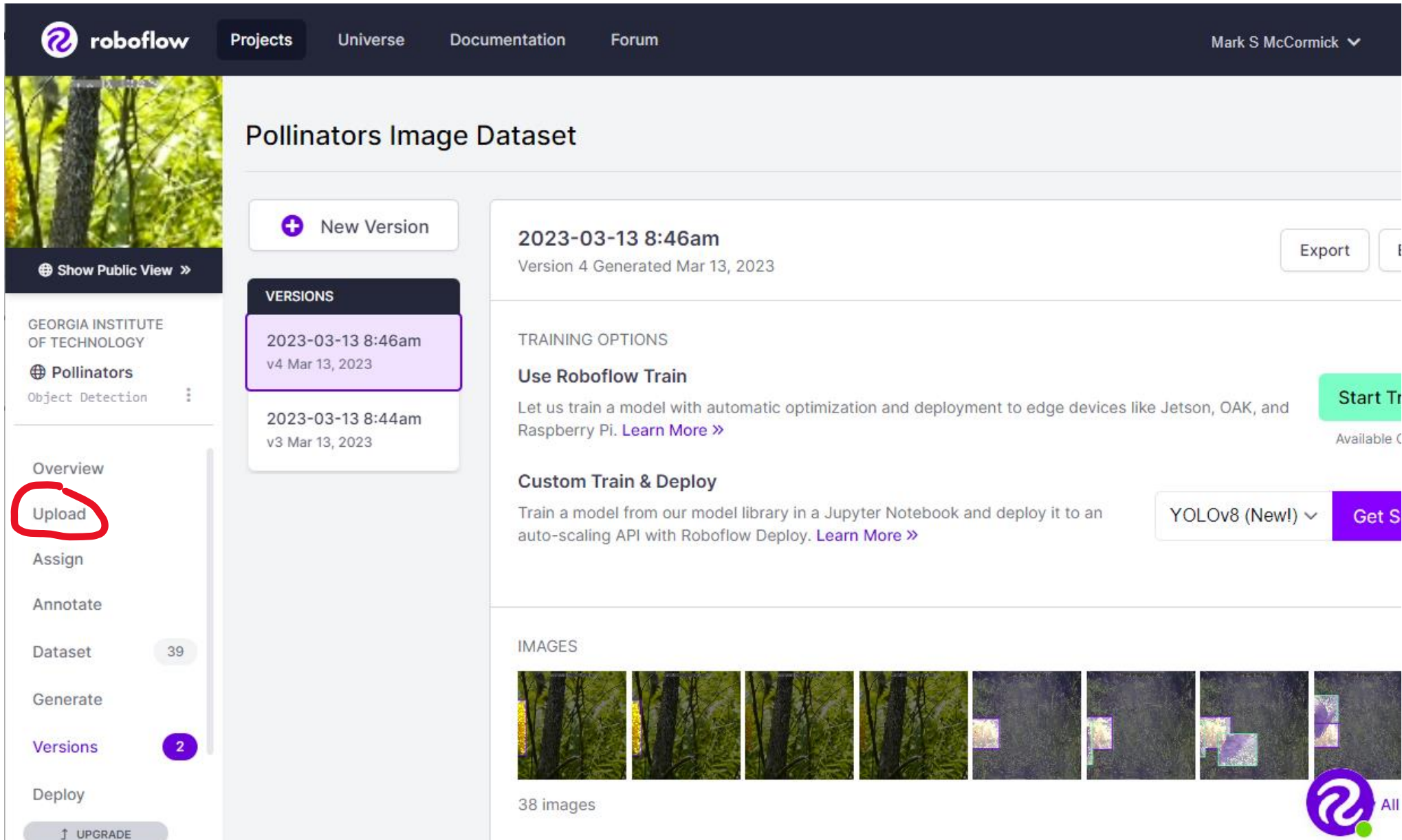


Pollinator Image Annotation Directions

- If you've received an email invitation, create a free account at <https://roboflow.com/>.
- Log in and click the Pollinators project.



- Click on Upload on the left.



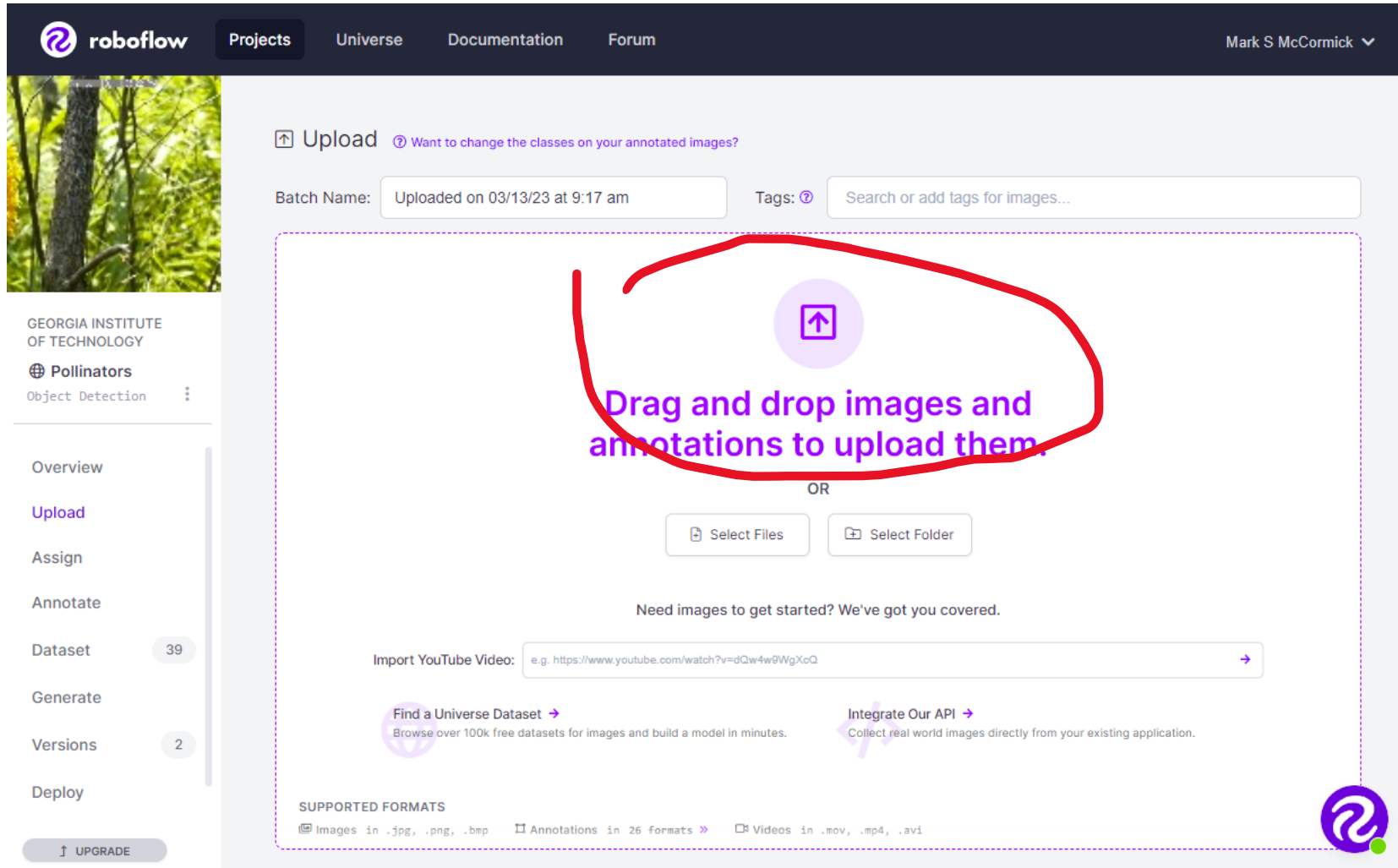
The screenshot displays the Roboflow interface for the 'Pollinators Image Dataset'. The top navigation bar includes the Roboflow logo, 'Projects', 'Universe', 'Documentation', 'Forum', and a user profile 'Mark S McCormick'. The left sidebar contains a list of actions: 'Overview', 'Upload' (highlighted with a red circle), 'Assign', 'Annotate', 'Dataset' (with a count of 39), 'Generate', 'Versions' (with a count of 2), and 'Deploy'. At the bottom of the sidebar is an 'UPGRADE' button.

The main content area is titled 'Pollinators Image Dataset'. It features a 'New Version' button and a 'VERSIONS' list with two entries: '2023-03-13 8:46am v4 Mar 13, 2023' (highlighted) and '2023-03-13 8:44am v3 Mar 13, 2023'. To the right, the '2023-03-13 8:46am' version details are shown, including 'Version 4 Generated Mar 13, 2023' and an 'Export' button.

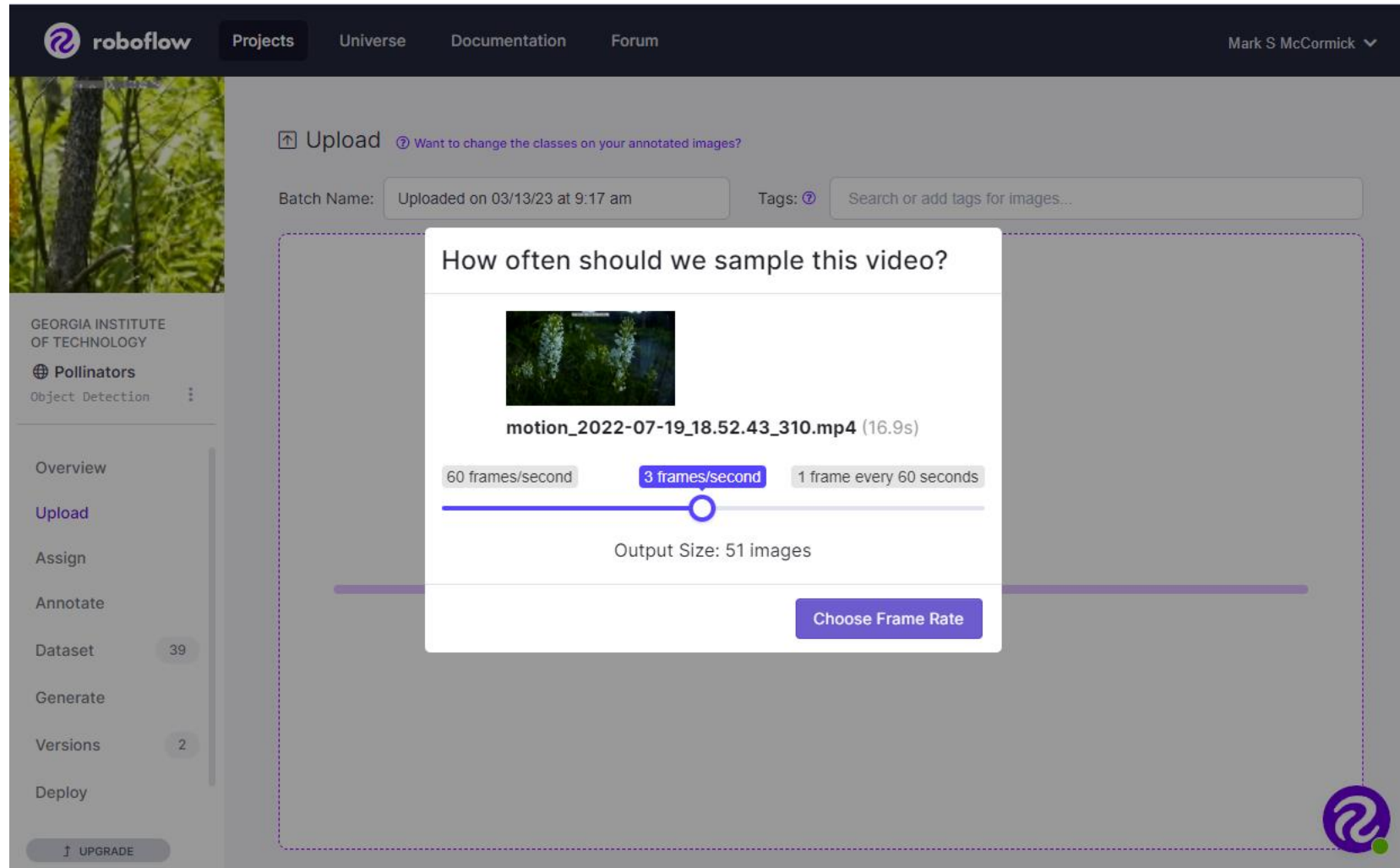
Below the version details, there are two training options: 'Use Roboflow Train' and 'Custom Train & Deploy'. The 'Use Roboflow Train' section includes a description and a 'Start Train' button. The 'Custom Train & Deploy' section includes a description, a 'YOLOv8 (New!)' dropdown, and a 'Get Started' button.

At the bottom, the 'IMAGES' section shows a gallery of 38 images, with the first three visible. A Roboflow logo and the text 'All' are in the bottom right corner.

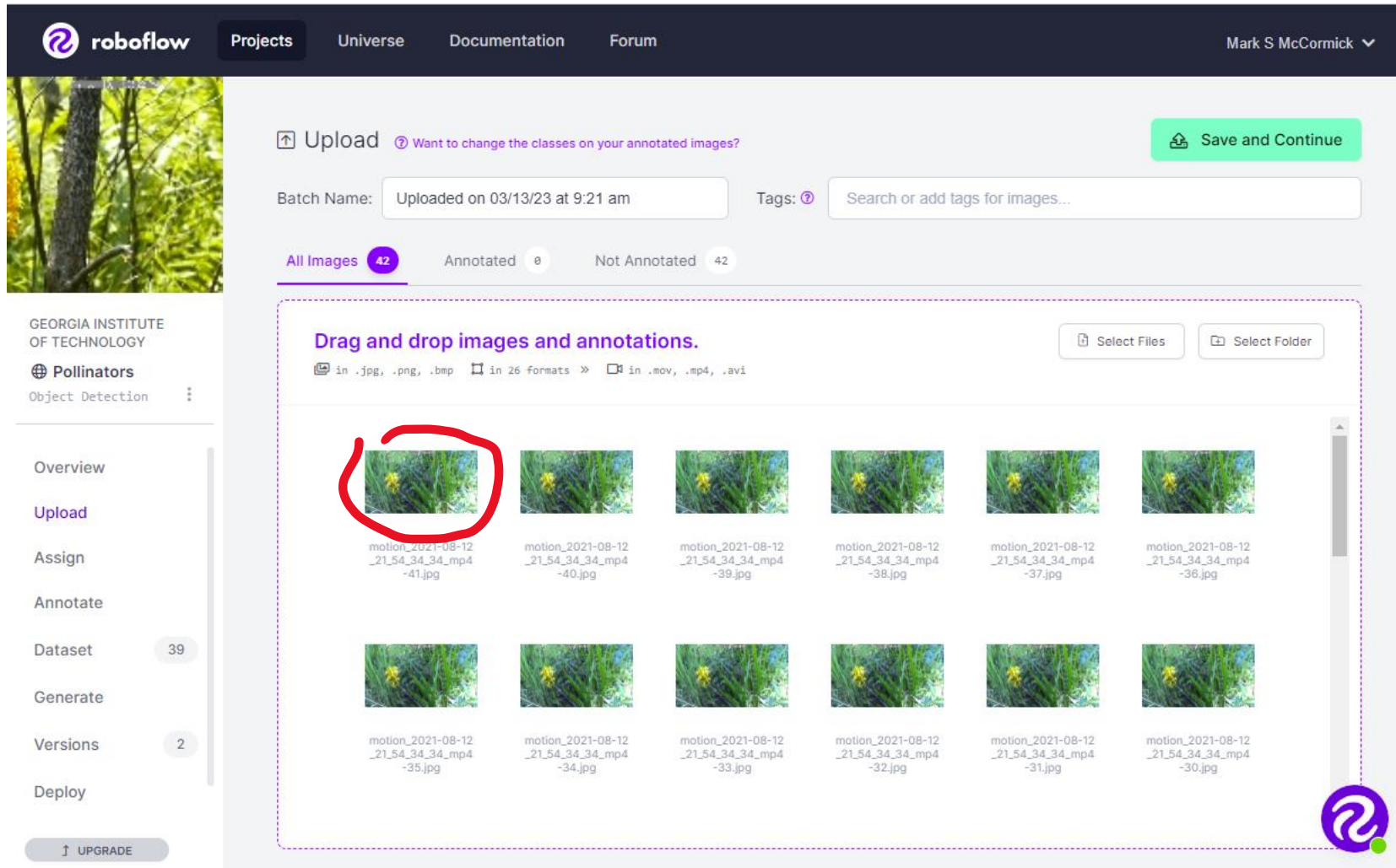
- Drag a video file onto the “Drag and drop images” area.



- Drag the slider to select 3 frames a second and click “Choose Frame Rate”

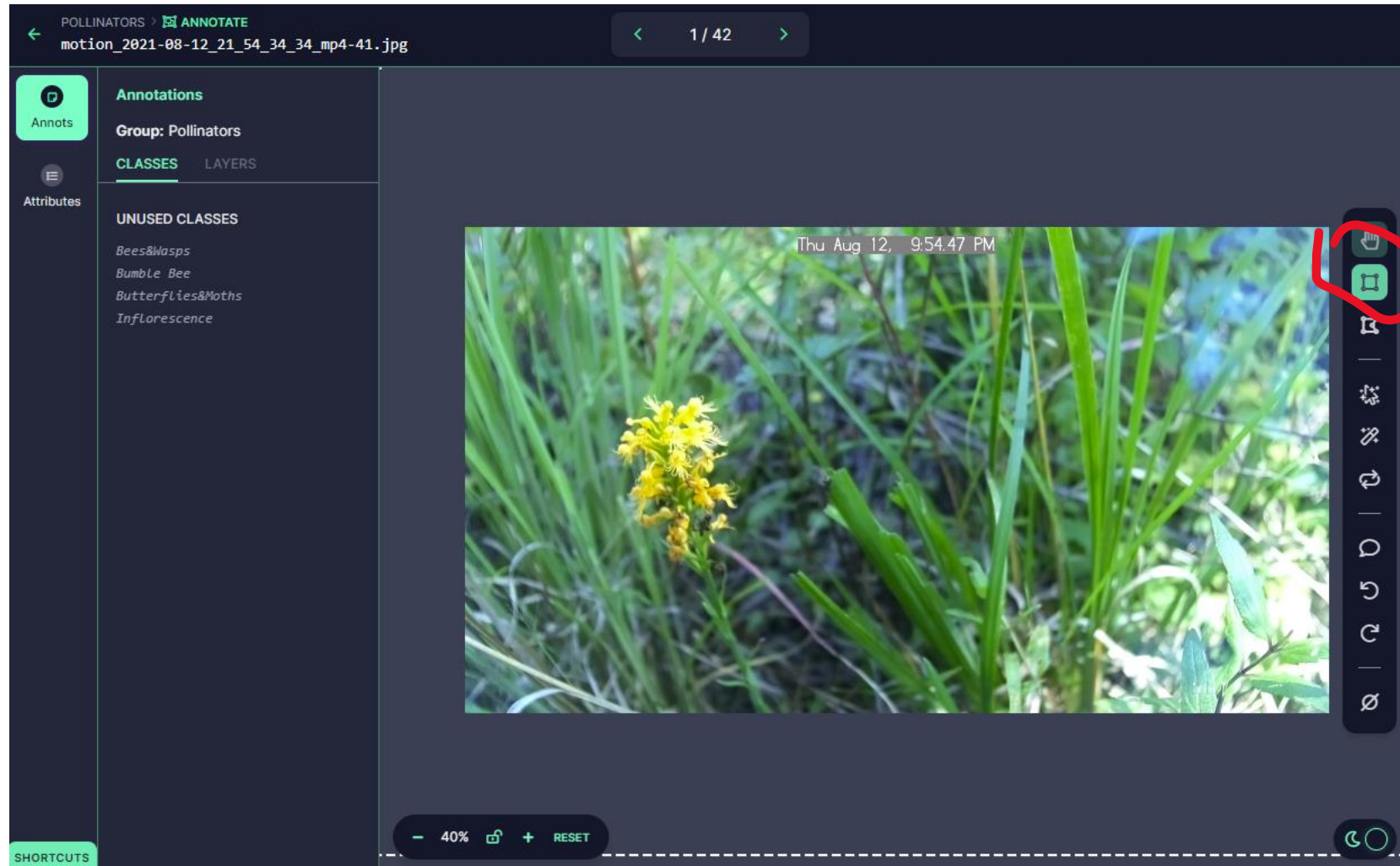


- Click on the first frame to begin annotating.

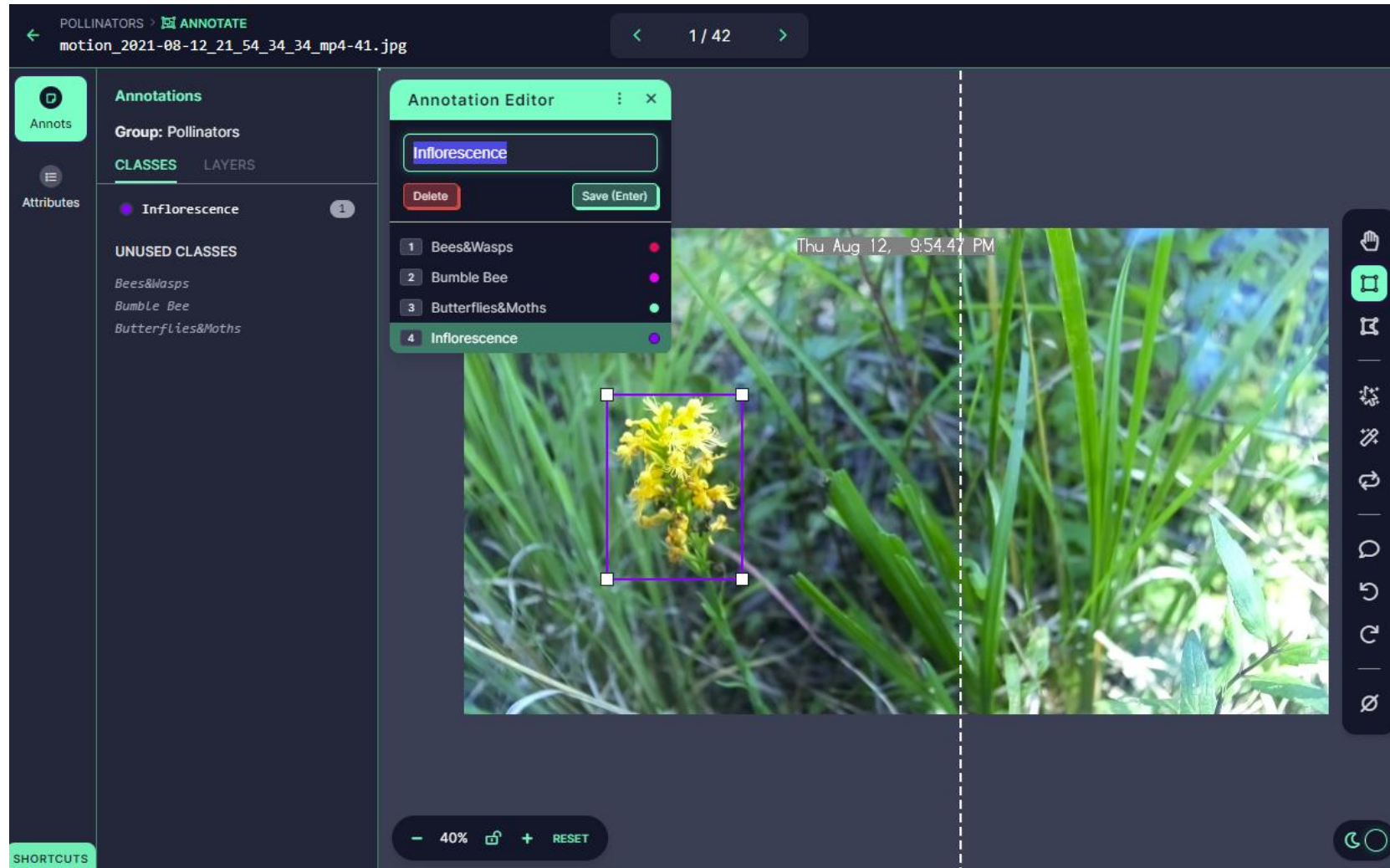


The screenshot displays the Roboflow web interface. At the top, the navigation bar includes the Roboflow logo, 'Projects', 'Universe', 'Documentation', and 'Forum'. The user 'Mark S McCormick' is logged in. On the left sidebar, the project 'GEORGIA INSTITUTE OF TECHNOLOGY Pollinators' is selected, with 'Object Detection' as the task. The main area is the 'Upload' page, showing a batch named 'Uploaded on 03/13/23 at 9:21 am' with 42 images. A red circle highlights the first image in the grid, which is a frame from a video showing a yellow flower. The interface also includes a 'Save and Continue' button, a 'Batch Name' field, a 'Tags' field, and a 'Drag and drop images and annotations' section with 'Select Files' and 'Select Folder' buttons. The bottom right corner features the Roboflow logo.

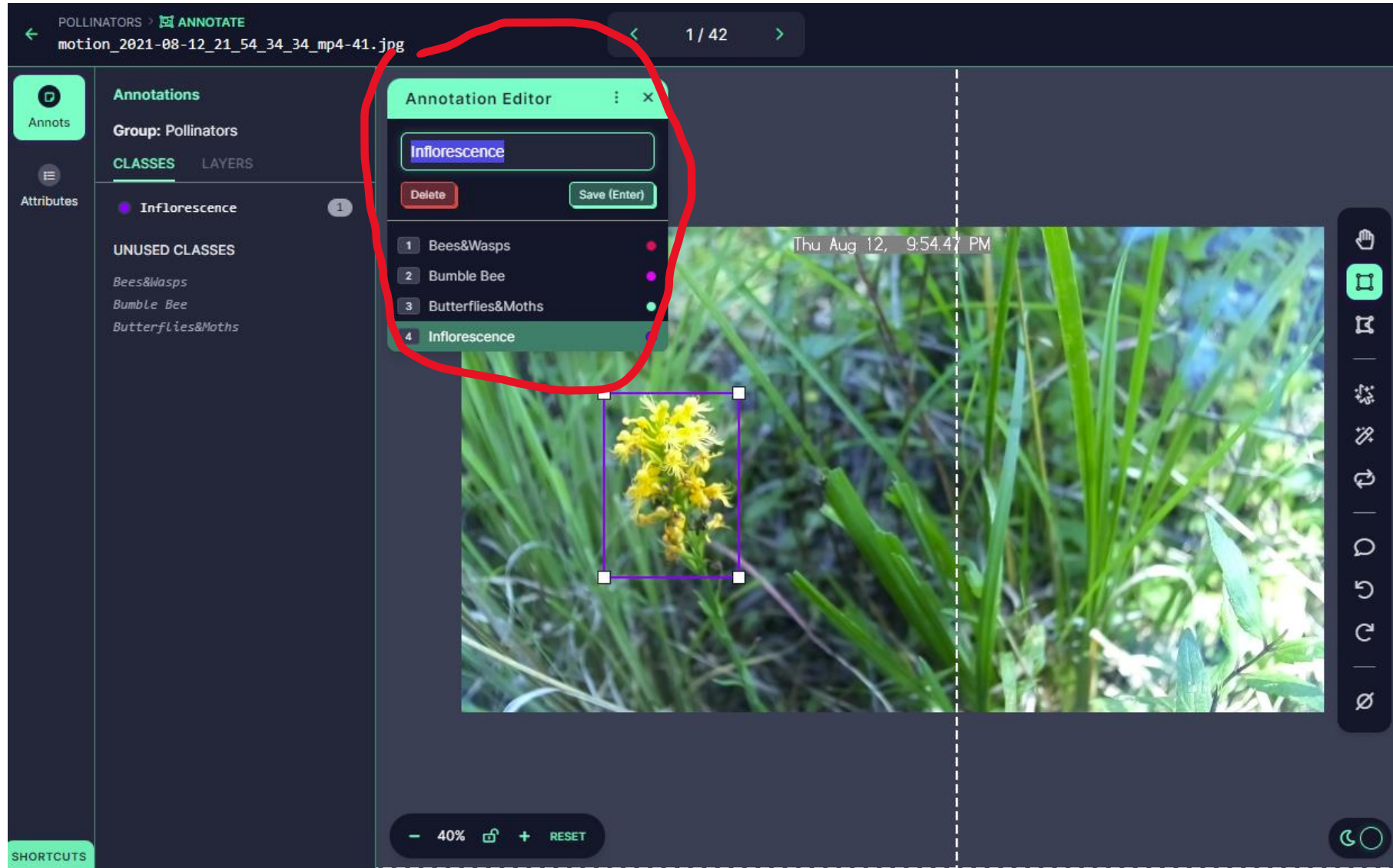
- Check that the bounding box icon is highlighted in the toolbar at right.



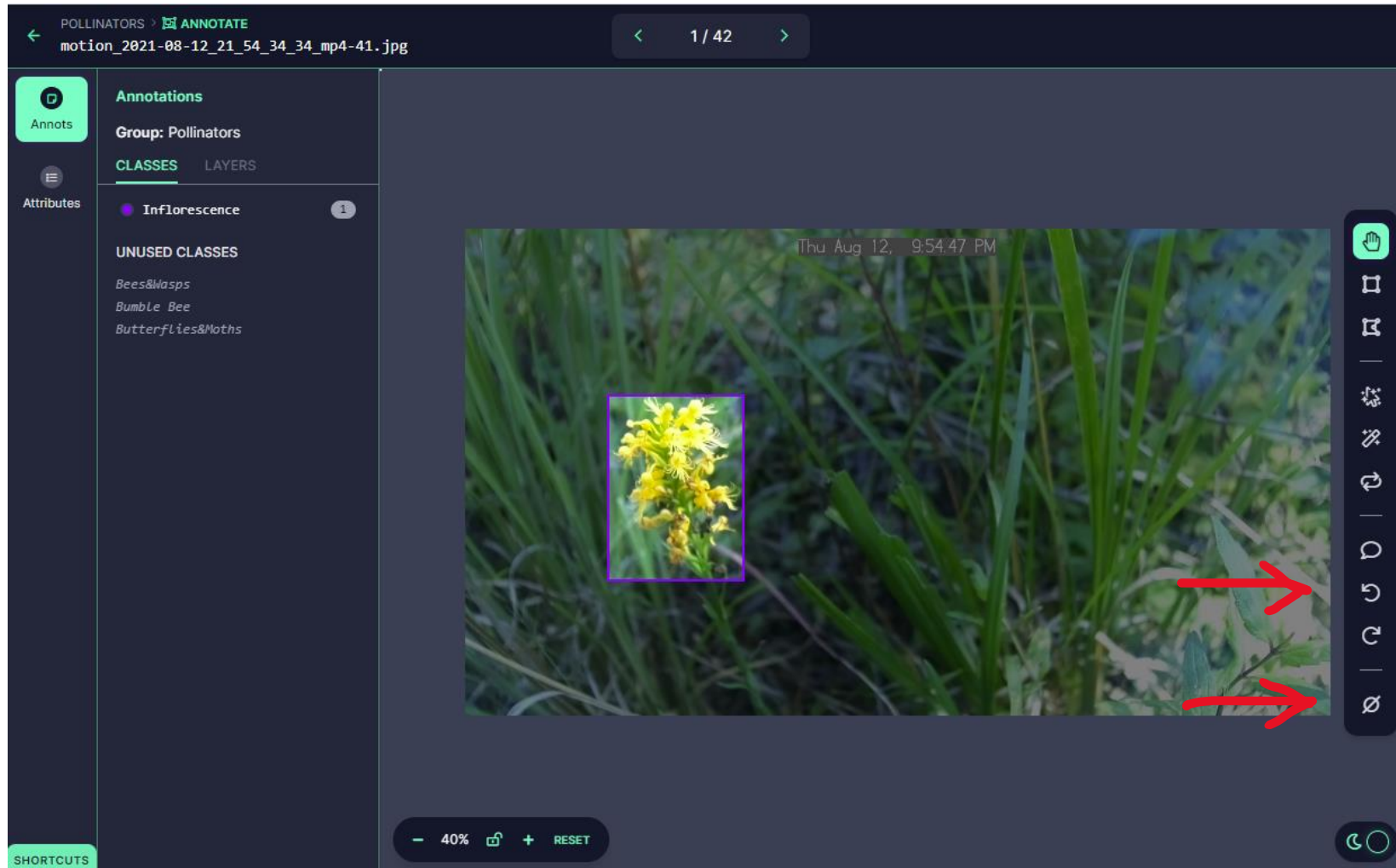
- In the first frame we want to draw a bounding box(es) around the inflorescence(s), ideally without any pollinators. Click and drag the mouse from the upper left corner to the lower right to form a box around the inflorescence.



- The Annotation Editor Window appears. Check that the right class is highlighted and click save.



- If you mess up a bounding box, you can undo it using the undo button on the right. That sometimes doesn't work. You can undo all bounding boxes in the image using the Null button at bottom right.



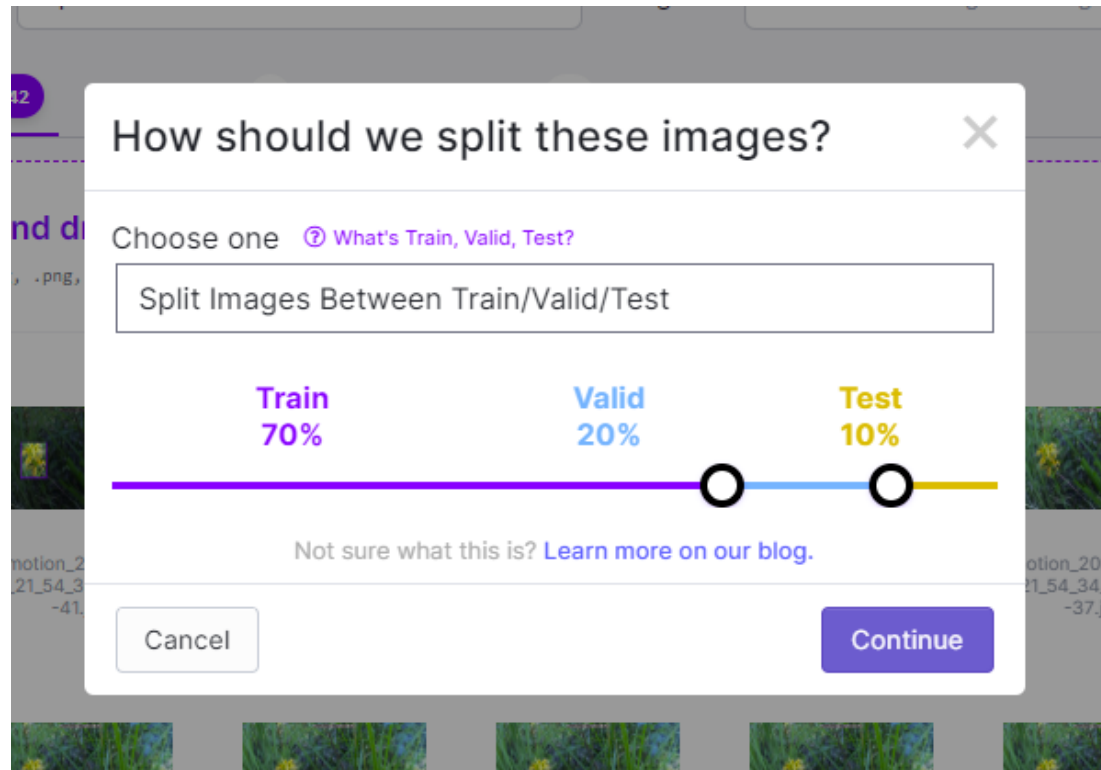
- Click the right arrow at top until you find the frames with the pollinators. We don't want to label every frame, just a select few that have the pollinator in a variety of poses, possibly both stationary and flying, both at and away from the inflorescence, and with different levels of occlusion from parts of the inflorescence. However, we don't want so much occlusion that the pollinator is not recognizable. It's best to just skip such frames. We want to draw separate boxes around both the inflorescence(s) and the pollinators. It is okay if these overlap.



- After you're done, click the green left arrow at top left to back out. Then click the Save and Continue button.

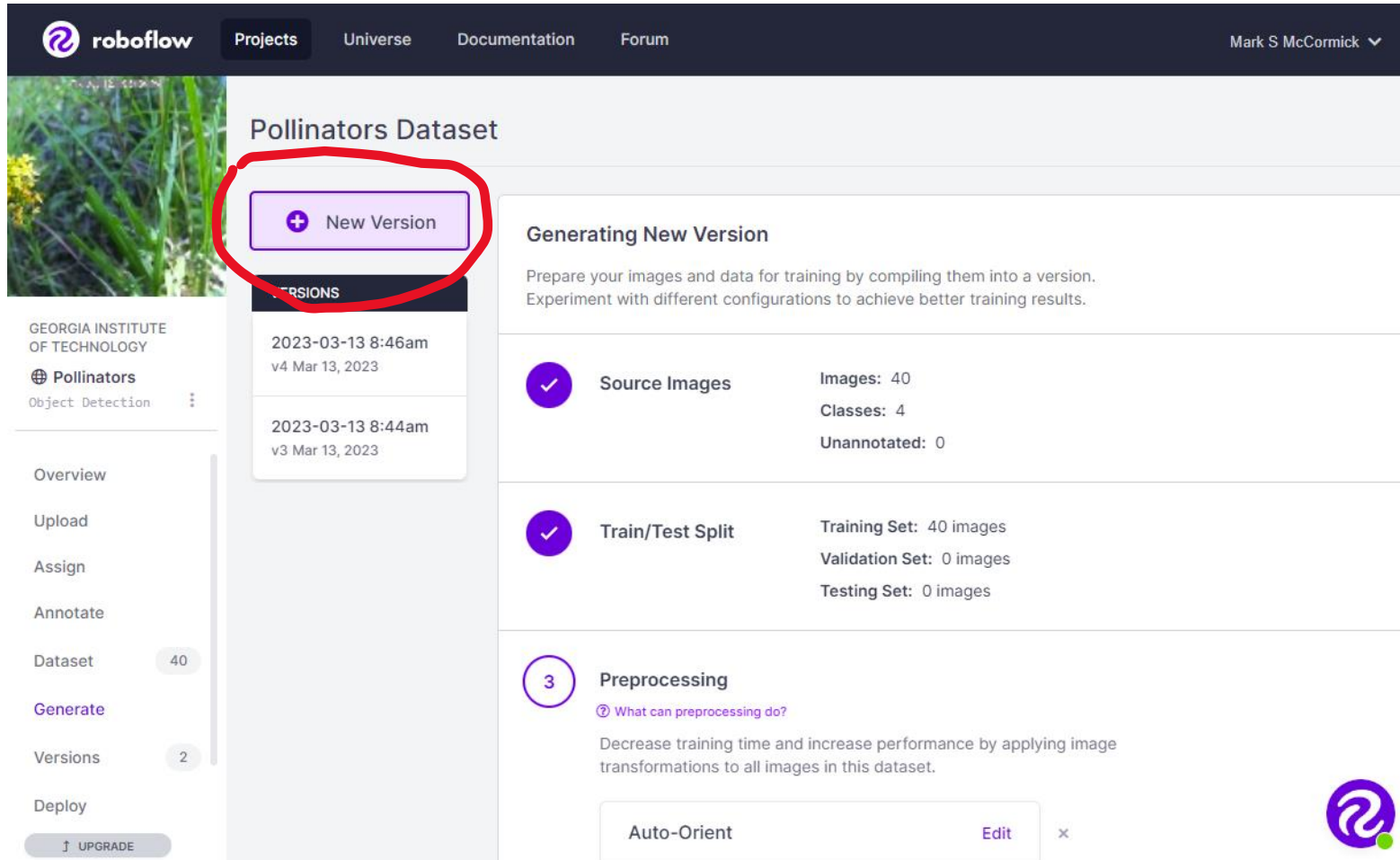
The screenshot displays the Roboflow web interface. At the top, a dark navigation bar contains the Roboflow logo, links for 'Projects', 'Universe', 'Documentation', and 'Forum', and a user profile 'Mark S McCormick'. Below this, a light gray header area features an 'Upload' button with an upward arrow icon and a link 'Want to change the classes on your annotated images?'. To the right of this header is a green 'Save and Continue' button, which is circled in red. Below the header, there's a 'Batch Name' field containing 'Uploaded on 03/13/23 at 9:44 am' and a 'Tags' field with a search icon and placeholder text 'Search or add tags for images...'. A tabbed interface shows 'All Images' (42), 'Annotated' (1), and 'Not Annotated' (41). The main content area is titled 'Drag and drop images and annotations.' and includes 'Select Files' and 'Select Folder' buttons. Below this, a grid of 12 image thumbnails is shown, each with a filename starting with 'motion_2021-08-12'. A sidebar on the left lists navigation options: 'Overview', 'Upload' (highlighted), 'Assign', 'Annotate', 'Dataset' (39), 'Generate', 'Versions' (2), and 'Deploy'. At the bottom of the sidebar is an 'UPGRADE' button. The Roboflow logo is also visible in the bottom right corner of the main area.

- A train/test split dialog pops up. Drag both dots to the right to make everything Train and click Continue.



- Click Upload on the left to process another video.
- Ensure that all people processing videos deconflict so we don't get repeats, and keep track of which ones you've completed and which you haven't.

- To see what the entire, newly annotated dataset looks like, click Generate on the left and click New Version.



The screenshot shows the Roboflow interface for the 'Pollinators Dataset'. The 'New Version' button is highlighted with a red circle. The left sidebar contains navigation links: Overview, Upload, Assign, Annotate, Dataset (40), Generate, Versions (2), and Deploy. The main content area is titled 'Pollinators Dataset' and includes a 'Generating New Version' section with instructions. Below this, there are three steps: 'Source Images' (40 images, 4 classes, 0 unannotated), 'Train/Test Split' (40 training images, 0 validation images, 0 testing images), and 'Preprocessing' (3 steps, with a link to 'What can preprocessing do?'). A 'Preprocessing' panel at the bottom shows 'Auto-Orient' as an active step.

roboflow Projects Universe Documentation Forum Mark S McCormick ▼

Pollinators Dataset

[+ New Version](#)

VERSIONS

2023-03-13 8:46am v4 Mar 13, 2023
2023-03-13 8:44am v3 Mar 13, 2023

Generating New Version

Prepare your images and data for training by compiling them into a version. Experiment with different configurations to achieve better training results.

✓ Source Images	Images: 40 Classes: 4 Unannotated: 0
✓ Train/Test Split	Training Set: 40 images Validation Set: 0 images Testing Set: 0 images
3 Preprocessing	What can preprocessing do? Decrease training time and increase performance by applying image transformations to all images in this dataset.

Auto-Orient [Edit](#) ×

GEORGIA INSTITUTE OF TECHNOLOGY
Pollinators
Object Detection

Overview
Upload
Assign
Annotate
Dataset 40
Generate
Versions 2
Deploy

UPGRADE

- Click Continue for all the options it prompts for.

The screenshot displays the Roboflow web application interface. At the top, a dark navigation bar contains the Roboflow logo, links for Projects, Universe, Documentation, and Forum, and a user profile for Mark S McCormick. The left sidebar features a vertical menu with options: Overview, Upload, Assign, Annotate, Dataset (40), Generate, Versions (2), and Deploy. A red circle highlights the 'Continue' button in the 'Preprocessing' step of the dataset setup process. The main content area shows the 'Source Images' step (40 images, 4 classes, 0 unannotated), the 'Train/Test Split' step (40 training images, 0 validation images, 0 testing images), and the 'Preprocessing' step (3). The 'Preprocessing' step includes a description, a list of steps (Auto-Orient, Add Preprocessing Step), and a red circle around the 'Continue' button. The 'Augmentation' step (4) is partially visible at the bottom.

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GEORGIA INSTITUTE OF TECHNOLOGY Pollinators Object Detection

Overview Upload Assign Annotate Dataset 40 Generate Versions 2 Deploy

UPGRADE

Source Images Images: 40 Classes: 4 Unannotated: 0

Train/Test Split Training Set: 40 images Validation Set: 0 images Testing Set: 0 images

3 Preprocessing ? What can preprocessing do? Decrease training time and increase performance by applying image transformations to all images in this dataset.

Auto-Orient Edit x

+ Add Preprocessing Step

Continue

4 Augmentation

- This generates a new (processed) version of the dataset. You can click on the first image and arrow right to look at the different annotated images.

The screenshot displays the Roboflow web interface for the 'Pollinators Image Dataset'. The top navigation bar includes 'Projects', 'Universe', 'Documentation', and 'Forum'. The user 'Mark S McCormick' is logged in. The left sidebar shows the dataset's location: 'GEORGIA INSTITUTE OF TECHNOLOGY' > 'Pollinators' > 'Object Detection'. The main content area is titled 'Pollinators Image Dataset' and features a 'Show Public View' button. A red circle highlights the 'VERSIONS' tab, which lists three versions: '2023-03-13 9:55am v5 Mar 13, 2023' (highlighted in purple), '2023-03-13 8:46am v4 Mar 13, 2023', and '2023-03-13 8:44am v3 Mar 13, 2023'. A red arrow points from the bottom of the versions list to the 'IMAGES' section, which shows a row of eight image thumbnails with bounding boxes, labeled '40 images'. The right sidebar contains 'TRAINING OPTIONS' with buttons for 'Use Roboflow Train' and 'Custom Train & Deploy', and a 'Start Training' button. The bottom right corner features the Roboflow logo and a 'All' button.