LaSPACE Final Report Guidance

# Final Report Introduction

Final Reports are due 30 days after your project’s official end date. Failure to submit a timely and complete Final Report can result in a loss of eligibility for future funding. Incorrect or incomplete answers will require you to resubmit the entire Final Report. You may prepare your responses in advance using this guidance document. This guidance is structured to parallel the online form.

1. **Who should be completing this form**
   * **LaSSO & LURA** Final Reports are co-written by the Project Lead/PI faculty mentor & funded student.
   * **GSRA** Final Reports are typically written by the funded student with input from the Project Lead/PI faculty mentor.
   * **GIRAF, GPS, & Intern** Final Reports are written by the funded student.
   * **All other programs** require Final Reports to be written by the Project Lead/PI unless otherwise stated in program guidelines. Ultimately any project with a subaward & named PI is the responsibility of that PI. Any funding issued directly to a student without a PI is the responsibility of the student.
2. **Save and Resume Later**
   * This Final Report platform allows you to “Save and Resume Later.” Click this button at any point will prompt you to create a password to save your progress and access your report draft later via a unique link generated by Formstack. We recommend you 1) immediately write down your password and 2) provide your email address and click “Send save and resume link” so that the link is sent to your email account. It will come from Colleen Fava (LaSPACE/LSU) via Formstack. If you have questions about the Final Report, please do not reply to this email but contact [LaSPACE@lsu.edu](mailto:LaSPACE@lsu.edu).
   * Once you submit your completed Final Report, you will receive an automatic confirmation email containing a PDF with your Final Report answers. Keep that email and PDF for your records.
3. **LA NASA EPSCoR Projects**
   * LA NASA EPSCoR projects directly funded by the Board of Regents must forward the Final Report confirmation email WITH the PDF attachment to [jessica.patton@laregents.edu](mailto:jessica.patton@laregents.edu).
4. **Useful links**
   * Link to [Online LA NASA Space Grant and LA NASA EPSCoR Final Report platform](https://lsu.formstack.com/forms/laspace_final_report2)
   * Link to Online LA NASA Space Grant and LA NASA EPSCoR Progress Report platform (link forthcoming)
   * Link to [LaSPACE Student Participant Information Form](https://lsu.formstack.com/forms/laspace_student_participant_form) (same link for ALL students)
   * Link to [LaSPACE NASA Media Release Form](https://lsu.formstack.com/forms/laspace_media_release_form) (for both adults and minors)

# Project Lead/PI and Direct-Funded Student Info

The next section collects basic information about the Project Lead/PI and direct-funded student (if applicable). Please have ready: first & last names, phone numbers, and email addresses.

* **Project Lead/PI**
  + **Interns:** This is you! You will also enter your information into the direct-funded student info fields.
  + **GPS:** This is the LaSPACE Assistant Director.
    - You will provide their first name, last name, phone number, and email address.
  + **All other projects:** This is the faculty or staff member identified as the Project Lead/PI in your proposal.
    - You will provide their first name, last name, phone number, and email address.
* **Direct-Funded Student**
  + After confirming your project is under the GIRAF, GPS, GSRA, Intern, LaSSO, or LURA programs in the online platform, you will be directed to input the direct-funded student’s information.
    - HIS projects will submit a list of all students later in the report.
  + You will provide the direct-funded student’s first name, last name, phone number, and email address.

# Project Information

The next section covers the identifying details about your project. Please have ready: the name of the program this project is funded under, the awarded period of performance, and the PO or GR numbers.

1. Select the primary institution hosting your project. Examples below.
   1. If you are a high school student, select the institution where your project is taking place.
      1. If you are a high school student at LSMSA and your project is at Northwestern State University of Louisiana, select NSULA.
      2. If you are participating in the FFP + SURF project and you are originally based at SUBR but perform research at LSU during the summer, select SUBR.
2. Is this a LA NASA Space Grant project or LA NASA EPSCoR project?
   1. **If you select LA NASA Space Grant,** confirm which program you are submitting the report for from the following options:
      1. GIRAF, GPS Scholarship, GSRA, HIS, Internship, K-12 / Outreach, LaACES, LaSSO, LURA, REA, RockOn, SAFOS, Senior Design, or Other.
      2. If you select “other”, you must explain why. This is a rare selection for one-off projects that do not fall under an existing program. Double check your award letter & communications with laspace@lsu.edu before selecting this option.
   2. **If you select LA NASA EPSCoR,** confirm which program you are submitted the report for from the following options:
      1. FFP + SURF, RAP, or TAP.
3. What is the start date (MM/DD/YYYY) of your award?
   1. This is the start date listed in your award letter.
   2. **Interns**: This is the start date of your internship.
4. What is the end date (MM/DD/YYYY) of your award?
   1. This is the end date listed in your award letter; if you received an NCE, put the modified end date here.
   2. **Interns:** This is the end date of your internship.
5. What is the PO # or GR # assigned to your project?
   1. For **GPS, Interns, & RockOn**: Write n/a.
   2. For **non-LSU subaward projects**:
      1. List the PO # assigned to your project. It starts with PO-0000.
      2. This is the "Subaward No." on the 1st page of your subaward contract.
      3. Do NOT provide us your institution's internal project numbers.
   3. For **LSU projects**:
      1. List the grant number assigned to your project. It starts with GR-000.
      2. If you don't know this number, check with the grant manager in your department.

# Project Report Narrative

The next section covers the project narrative questions for your project, including:

* General Narrative
* Student Reflection
* Project Lead/PI Reflection

## General Narrative

The next 3 questions are specifically for the General Narrative.

1. Describe the funded project for a general audience (150 words or less).
   1. **Example from a LaACES project:** *University physics and engineering technology students, under the guidance of faculty, completed a year-long Louisiana Aerospace Catalyst Experiences for Students (LaACES) project that was funded by the Louisiana Space Grant Consortium. This project culminated in the launch of their instruments by a weather balloon to an altitude of 100,000 ft and subsequent recovery by parachute. In this project, the students learned electronics, programming, project management, and atmospheric sciences. Their experiments to measure the atmospheric pressure, temperature, humidity, and the effect of the atmosphere on the solar spectrum were successful.*
2. List the funded goals & objectives (500 words or less).
   1. **Example from a LURA project:** *#1: Learn basic organic synthesis and purification, coordination chemistry and characterization. During this project I prepared terpyridine ligands, prepared beta-diketonate lanthanide complexes and characterized using IR, NMR and XRD (powder). I was also able to assist with some UV-Vis data collection. Also, I was paid (separate funding) for running DSC analysis on polymer samples for a mechanical engineering professor based on my experience running DSC for compounds and polymer samples for this project. #2 Learn more polymer chemistry. I was able to dope my compounds into polymers and cure them into optically clear materials. I found an efficient methodology for sample preparation that requires minimal time but allows for reproducible fabrication of clear plastics. #3 Work on an interdisciplinary project. For this project, I was able to interact and work alongside physicists. I had the opportunity to assist in some preliminary data collection. #4: Improve my communication skills. For this project, I was able to present posters at a conference and I presented lectures on Zoom to graduate students and faculty.*
3. Share major accomplishments from this project (300 words or less).
   1. Share a list of any awards, conferences, invited presentations, co-authors, patents, etc.
   2. **Example from a GSRA project:** *Conferences: Louisiana Academy of Sciences; College of Applied and Natural Sciences Research Symposium. Other accomplishments include student earning postbac spot with the NIH (included hyperlink to LaTech press release).*

## Student Reflection

The next 4 questions are specifically for the Student Reflection. Collect responses from all students supported on this activity.

* + - 1. Student Reflection (500 words or less) written for a public audience. Guiding questions below.
         1. Start with a short description of the research project appropriate for a general audience (3-5 sentences).
         2. If you are an intern, answer the questions below from an internship perspective and remove the research aspect if it is not applicable to your experience.
         3. What additional activities did you participate in (outside of the research) during the course of the project, such as conference attendance, paper/poster presentations, networking events, etc.? What technical and/or non-technical skills did you learn or hone? What wins did you experience (not just with research)? What growth opportunities or challenges did you overcome? How will this experience influence your professional and academic trajectory? What are your future plans? How will you use your experience moving forward?
         4. **Example:** *Before meeting my mentor and joining his lab, I had no idea that I could pursue a career in medical research. I thought there were only two paths: medical school to become a practicing physician or graduate school to do research. While I’m still planning to apply to med school, I’m very interested in the possibility of a joint MD/PhD with a focus on space medicine. It would be really cool to work to keep astronauts healthy and safe. I also am very excited about how space medicine could actually improve health care on earth for regular people. I would not have fully understood this career path without the opportunity to get paid and work in this lab all year.*
      2. Unique Benefits to Student(s)
         1. Tell us what, if anything, this project provided to you that you would not have received without participating in this project. This could be a specific skill development, experiences, training, financial or personal support, and/or other resources of importance to you. If you do not believe this project made a **unique** contribution, please enter n/a.
         2. **Example:** *Few engineering sophomores in my school are able to work on a complete project lifecycle. I feel very fortunate to know early on that I can work on a team with people from different backgrounds and fields to produce a fully developed payload ready for flight. I loved troubleshooting with my peers and being challenged, but also encouraged by our instructors. I feel like I will have an edge later when I’m working on my senior design project, regardless of what the topic is.*
      3. DEIA Student(s) Experience
         1. Share your perception of the commitment to DEIA (Diversity, Equity, Inclusion, and Accessibility) during your engagement with this project. Share both positive experiences and areas for improvement. Speak directly to your own feelings of belonging.
         2. **Example:** *Although the majority of the other student researchers in the lab were white, I felt like I belonged because my PI was also a woman. She made sure to keep all of us involved in discussions and activities. She spoke at the Society of Women Engineers club meeting to encourage other female students to pursue researcher opportunities on campus. I hope in the future she is able to recruit more people of color to her lab.*

1. Direct Impact on Student(s)
   1. What, if any, impact did participation in this funded project influence your career / educational path? Specifically, have you changed course due to this experience? Been reassured in your choice? Been scared away from your choice? Identified new options? etc.
   2. **Example:** *Before getting to work in this lab with a team of supportive mentors I was concerned that I was not suited to a life in research. I learned that scientists are often well-rounded individuals and that making mistakes is part of the scientific process. I also experienced moments when my creative instincts were put to good use, like when I was asked to create a new lab safety poster. I feel more confident in my career path.*

## Project Lead / Principal Investigator Reflection

The next 4 questions are specifically for the Project Lead/PI Reflection. **This is required from the Project Lead/PI.** We strongly encourage you to share additional comments from other faculty or staff working on this project.

**Interns & GPS Students:** Enter N/A for each of these 4 questions.

**GSRA Students:** Make sure you get this content from your Faculty PI.

* + - 1. Project Lead/PI Reflection (500 words or less) written for a public audience. Guiding questions below.
         1. Start with a short description of the research project appropriate for a general audience (3-5 sentences).
         2. Explain how this award directly impacted your work life: pay particular attention to 1) how you grew and/or employed your mentorship skills and 2) how this award supported your own professional development goals. Did you make progress toward a research goal? Perfect a new technique?
         3. Share as appropriate how this award impacted you beyond the two categories listed above.
         4. Will you continue to propose to LaSPACE / LA NASA EPSCoR funded programs? If yes, which ones and why. If no, please tell us why.
      2. Project Lead/PI Mentorship Achievements
         1. What additional activities did your students experience outside of the project like conference/competition attendance, paper/poster presentations, networking events, etc.? What technical and/or non-technical skills did your students learn or hone? What growth opportunities or challenges did your students overcome? How do you expect this experience to influence your students’ professional and academic trajectories?
         2. **Example:** *Students working for me are required to attend weekly lab meetings. After about 2 months, they are expected to contribute by providing short reports on their activities. Advanced undergraduates are invited to work as co-authors on publications of research that they actively contributed to, and all students are expected to participate in at least one professional development activity outside the lab, such as presenting at research symposium on campus and/or presenting at the annual meeting. Julie Smith, a student funded under this award, presented a poster at the prestigious AGU conference held in New Orleans this year; I encourage all students who are ready to begin submitting to national and international conferences.*
      3. Project Leads/PIs reflect on the DEIA practices you proposed, discovered, and implemented in the execution of this project and your team overall. Share specific details as to how this funded project contributed to DEIA goals (at least 150 words).
         1. **Example from a Faculty Research project:** *As part of my strategy for recruiting undergraduate students to work on this project, I gave a brief talk about my lab and the research opportunities to student organizations on campus that support students in STEM from underrepresented backgrounds. Specifically, I spoke to student chapters of the Society of Women Engineers (SWE) and the National Society of Black Engineers (NSBE). I encouraged students in the meeting to reach out to me with questions and explained how to apply for my available positions. I ultimately hired a student who was at both meetings and was able to provide partial support for her to attend the annual NSBE meeting held in Kansas this year. Working with student organizations and listening to the needs of my students made me better able to create an atmosphere of belonging and to provide an excellent thinker and worker with an environment where she can thrive.*
      4. Direct Impact on Project Lead/PI
         1. Did this funding make a **unique** contribution to your professional success? If yes, please share details. If no, enter N/A.
         2. **Example**: *As an early career faculty member, I have limited funding available to support activities in my lab. Without this LaSSO award, I would not have been able to hire an undergraduate student researcher to work 15 hours a week in my lab for the academic year. My student was able to learn valuable skills for her future career, while I secured much needed support for basic experimental tasks.*

# Project Results and Dissemination

The next section collects details regarding your project results and dissemination.

* For each question, you will click or slide the scales to answer each question as it relates to this funded project. If your response is “0” results, you must still click/slide the scale to that number.
* If you note any results, please provide all details in the Zip File Folder Upload section at the end of the report and in any narrative category sections in this online form.

You will enter total counts for products produced as a result of this funding in the following categories:

* Peer-Reviewed Publications and Author Types
* Other Publications and Author Types
* Paper Presentations and Author Types
* Oral Presentations and Author Types
* Poster Presentations and Author Types
* Awards, honors, certificates, or recognitions received
* Patents and Technology Transfers

## Peer-Reviewed Publications and Author Types

1. Number of Peer-Reviewed Publications
   1. Number of Submitted
   2. Number of Pending
   3. Number of Published
2. Author Types for Peer-Reviewed Publications (submitted, pending, or published)
   1. Number of faculty who authored or co-authored a peer-reviewed publication
   2. Number of post-docs who authored or co-authored a peer-reviewed publication
   3. Number of staff who authored or co-authored a peer-reviewed publication
   4. Number of graduate students who authored or co-authored a peer-reviewed publication
   5. Number of undergraduate students who authored or co-authored a peer-reviewed publication

## Other Publications and Author Types

1. Number of Other Publications
   1. Number of Submitted
   2. Number of Pending
   3. Number of Published
2. Author Types for Other Publications (submitted, pending, or published)
   1. Number of faculty who authored or co-authored a publication
   2. Number of post-docs who authored or co-authored a publication
   3. Number of staff who authored or co-authored a publication
   4. Number of graduate students who authored or co-authored a publication
   5. Number of undergraduate students who authored or co-authored a publication

## Paper Presentations and Author Types

1. Number of Paper Presentations
   1. Number of invited paper presentations
   2. Number of self-submitted paper presentations
2. Author Types for Paper Presentations
   1. Number of faculty presenters
   2. Number of post-doc presenters
   3. Number of staff presenters
   4. Number of graduate student presenters
   5. Number of undergraduate student presenters

## Oral Presentations and Author Types

1. Number of Paper Presentations
   1. Number of oral presentations
2. Author Types for Oral Presentations
   1. Number of faculty presenters
   2. Number of post-doc presenters
   3. Number of staff presenters
   4. Number of graduate student presenters
   5. Number of undergraduate student presenters

## Poster Presentations and Author Types

1. Number of Poster Presentations
   1. Number of posters presented
2. Author Types for Oral Presentations
   1. Number of faculty presenters
   2. Number of post-doc presenters
   3. Number of staff presenters
   4. Number of graduate student presenters
   5. Number of undergraduate student presenters

## Awards, honors, certificates, or recognitions received

1. Number of faculty who received awards, honors, certificates, or recognitions
2. Number of post-docs who received awards, honors, certificates, or recognitions
3. Number of staff who received awards, honors, certificates, or recognitions
4. Number of graduate students who received awards, honors, certificates, or recognitions
5. Number of undergraduate students who received awards, honors, certificates, or recognitions

## Patents and Technology Transfers

1. Number of patents, based on research/activities associated with this engagement, that have been granted
2. Number of technology transfer activities that have resulted from research/activities associated with this activity

# Project Participants

The next section collects basic information about project participants, including:

* Supported student participants (plus confirmation of LaSPACE Student Participant Form submission)
* Collaborators
* K-12 and General Public Outreach Participants

We recommend you prepare responses in advance to copy & paste as you complete this section.

## Supported Student Participants

1. Student Participant List (see Appendix B for examples)
   1. For each supported student participant, include their:
      1. Full name
      2. Classification (high school, undergraduate, or graduate)
      3. Amount of funding received from the LaSPACE award
         * + The amount of funding received is important for LaSPACE to know if the student was “significantly funded” for our NASA reporting.
      4. Number of direct contact hours
         * + The amount of contact hours is important for LaSPACE to know if the student was “significantly funded” for our NASA reporting.
   2. For projects with an extensive number of students (potentially HIS, LaACES, REA, Senior Design), if you would prefer to upload a file with a table including the required information, please write "Providing table in file upload section" in your answer to this question. Ensure you upload your file in the Zip File Folder Upload section.
   3. If you had no student participants, write N/A. This is a rare response as most projects have student participants.
2. Confirm that you have verified that all student participants have completed the LaSPACE Student Participant Information Form.
   1. All student participants must submit a LaSPACE Student Participant Information Report. We do NOT want copies their personal information sent via email. We will crosscheck your list with the online submissions and follow up as needed.
      1. Link to the [LaSPACE Student Participant Information Form](https://lsu.formstack.com/forms/laspace_student_participant_form) (same link for ALL students).
      2. Note: Students should have received an email confirmation after completing their form and they were instructed to forward the confirmation email to PIs. Check your email and/or check with your students for such confirmation.
   2. If you had no student participants, select “N/A.”

## Collaborators

1. List faculty, post doctorates, other agencies or institutions and the reason or purpose of collaboration (see Appendix B for examples).
   1. Include participant name, title, institution/agency/corporation, and project role/contribution.
2. For projects with an extensive number of collaborators (potentially REA & RAP), if you would prefer to upload a file with a table including the required information, please write "Providing table in file upload section" in your answer to this question. Ensure you upload your file in the Zip File Folder Upload section.
3. Examples of collaborations:
   1. Research institution/organization
   2. NASA Center
   3. Industry
   4. Other Federal agency
   5. Other Jurisdiction agency
   6. Other academic institution
4. Write N/A if this doesn’t apply to your project.

## K-12 and General Public Outreach Participants

After confirming your project **DID** include an outreach component to either a K-12 audience and/or the general public, you will be directed to provide a breakdown of participation numbers.

If you confirm your project did **NOT** include an outreach component to either a K-12 audience and/or the general public, you will automatically bypass the entire K-12 and General Public Outreach Participants section.

Participation numbers should be broken down in the following categories:

* Student Learners (elementary, middle, high school, undergraduate, graduate, post doc)
* Educator Learners (elementary, middle, high school teachers; higher ed. faculty, administrators, informal educators, pre-service educators, homeschool educators)
* General Public/Other Participants

For projects reporting participant numbers in any of the above categories, include the relevant K-12/General Public Outreach event information (event name, date, location, etc.) in the Word doc required in the Zip File Folder Upload section.

### Student Learners

* Only provide this breakdown for school/classroom-based events OR events limiting participation to a specific grade level.
* If it was a general public event, you will count school-aged children attendees as “general public/other participants.”
* Click or slide the scales to answer each question as it relates to this funded project. If your response is “0” results, you must still click/slide the scale to that number.

Categories for Student Learners:

1. Elementary Students (grades K – 5)
2. Middle School Students (grades 6 – 8)
3. High School Students (grades 9 – 12)
4. Undergraduate Students (Freshmen – Seniors)
5. Graduate Students (Master’s – Doctoral)
6. Post Docs

### Educator Learners

* If it was a general public event, you will count educator attendees as “general public/other participants.”
* Click or slide the scales to answer each question as it relates to this funded project. If your response is “0” results, you must still click/slide the scale to that number.

Categories for Educator Learners:

1. Elementary School Educators (grades K – 5)
2. Middle School Educators (grades 6 – 8)
3. High School Educators (grades 9 – 12)
4. Higher Ed. Faculty
5. Administrators (formal education administrative staff)
6. Informal Educators (staff from museums, science centers, planetariums, libraries, youth-serving organizations, government, industry, other non-profit organizations)
7. Pre-Service Educators
8. Homeschool Educators (homeschool K-12)

### General Public/Other Participants

* Ideally the number you provide will be confirmed by your event organizers.
* Click or slide the scales to answer each question as it relates to this funded project. If your response is “0” results, you must still click/slide the scale to that number.

Categories for General Public/Other Participants:

* + - * General Public/Other Participants

# LaSPACE NASA Media Release Form Submissions and Zip File Folder Uploads

This section is for confirmation of LaSPACE NASA Media Release Form submissions followed by a zip file folder upload containing photos/media, files, and other materials relevant to this project. Total zip file folder(s) upload limit is 25MB.

Providing LaSPACE with photos is vital to show our state representatives and NASA leadership visual evidence of the benefits brought to Louisiana via the LA NASA Space Grant and LA NASA EPSCoR Programs. It allows LaSPACE Management to highlight funded work on our social media platforms, write local press releases, and compile information for NASA reports.

The basic requirements for this section are listed below followed by more detailed instructions in each section.

1. Confirmation of LaSPACE NASA Media Release Form submissions
   1. NASA Media Release Forms are required for all identifiable individuals in submitted materials. The NASA Media Release Form is available in an online submission format ([click here for link](https://lsu.formstack.com/forms/laspace_media_release_form)).
2. Zip file folder upload(s)
   1. One zip file folder upload is required for all Final Reports. Each folder must contain at least 2 photos and a Word document with comprehensive captions, details for any results shared in the Project Results and Dissemination section, and a Student Participant List if not previously provided.
   2. We encourage the submission of additional photos, especially for projects with numerous students. Figures may also be uploaded.
3. You are welcome to upload additional zip file folders with supplemental photos, video clips, poster files, and other related materials in zip files in the two "Additional Zip File Folder Upload (optional)" fields if needed.

## Confirmation of LaSPACE NASA Media Release Form Submissions

For this question, you must confirm that all identifiable individuals in your uploaded photos have submitted NASA Media Release Forms.

**Notes:**

1. NASA Media Release Forms are required for all identifiable individuals in submitted materials.
2. The Project Lead/PI is required to confirm that all identifiable individuals, both adults and minors, have completed a form.
3. The LaSPACE NASA Media Release Form is available in an online submission format ([click here for link](https://lsu.formstack.com/forms/laspace_media_release_form)).

## Zip File Folder Upload Instructions (25MB limit)

* **Step 1: Naming your zip file folder**
  1. Name the folder as follows: Institution-Program Name-Project Lead Last Name-Student Last Name (if applicable)-Final Report Upload Materials
     1. Only include the student last name if it is a GIRAF, GPS, GSRA, Intern, LaSSO, or LURA project
     2. Examples:
        1. *Dillard-REA-Smith-Final Report Upload Materials*
        2. *LaTech-LURA-Jones-Williams-Final Report Upload Materials*
* **Step 2: Adding your photos, figures, and other media**
  1. Include at least two photos featuring supported participants (including students, faculty, and outreach attendees) performing funded activities. We encourage the submission of additional photos, especially for projects with numerous students.
  2. Name photos as follows: Image 1, Image 2, Image 3, and so forth
     1. JPG and PNG file types are preferred
  3. Name figures as follows: Figure 1, Figure 2, Figure 3, and so forth
     1. JPG, PNG, PDF, and PowerPoint file types are preferred
  4. Each file name must correspond to the list of comprehensive captions in the Word document in Step 3.
  5. See Appendix A for file naming examples.
* **Step 3: Formatting your Word document**
  1. This file will contain comprehensive image/figure captions, details related to project results and dissemination, and a Student Participant List of you did not provide that information in the Project Participants section.
  2. Name the Word document the same as your zip file folder
  3. Comprehensive captions list for uploaded images and figures:
     1. List out the file names based on how you named them (e.g. Image 1, Image 2) followed by a colon (:)
     2. After the colon (:) include a comprehensive caption answering the following questions:
        1. Who is in the photo? (full names)
        2. What is happening? What information is the figure imparting?
        3. Where are the photographed people? Where was the figure shared if it’s a poster that was presented? (city, state, conference name, etc.)
        4. When was the photo taken? (month, date, & year is preferred)
  4. If including details related to project results and dissemination, provide a list of any products, publications, or recognitions that you noted earlier in this report. Include the following details:
     1. Manuscript title
     2. Journal name
     3. DOI (if available)
     4. Conference name, date, location
     5. Links to publications
     6. Other available and relevant details
  5. If including details related to projects with K-12 and/or General Public Outreach events, include the following details for each event:
     1. Event name
     2. Event date
     3. Event location
     4. Number of participants reported in the K-12 and General Public Outreach section
     5. Participant quotes, if available
     6. Links to any media publications (television, newspaper, social media, etc.)
* **Step 4: Submitting additional documentation (optional)**
  1. Additional documentation may be uploaded in a separate zip file folder
  2. Follow the naming conventions for the folder, photos, figures, and other media detailed in Steps 1 and 2
  3. Include a Word document containing comprehensive image/figure captions and other details following the instructions in Step 3

## Upload Required Zip File Folder

Zip is the only accepted file format. You will receive an error message after attempting to submit a Final Report containing non-zip file type uploads.

Follow the Zip File Folder Upload Instructions above before uploading your materials. Note that there is a combined 25MB upload limit.

## Additional Zip File Folder Upload (optional)

Zip is the only accepted file format. You will receive an error message after attempting to submit a Final Report containing non-zip file type uploads.

Follow the Zip File Folder Upload Instructions above before uploading your materials. Note that there is a combined 25MB upload limit.

## Additional Zip File Folder Upload (optional)

Zip is the only accepted file format. You will receive an error message after attempting to submit a Final Report containing non-zip file type uploads.

Follow the Zip File Folder Upload Instructions above before uploading your materials. Note that there is a combined 25MB upload limit.

# Final Notes

After clicking the final submit button, it may take a moment for your Final Report submission to process if your zip file folder upload is large. **DO NOT refresh the page, click the back button, or close your browser!**

Once your submission is processed, a new screen will appear thanking you for submitting your Final Report. You will also receive a confirmation email (sent to the Project Lead/PI email address provided) which includes a PDF copy of your full report. After you receive the confirmation email, it will be safe to close your browser.

# Appendices

**Appendix A**

Screenshot of file naming convention for figures, images, and Word document.

A screenshot of a computer

Description automatically generated with medium confidence

**Appendix B**

Sample Word document containing Project Participants information (students, collaborators, and K-12 and general public outreach participants), captions of images and figures, and project results and dissemination details.

# Project Participants

1. **Student Participant List**
   1. Mike the Tiger, undergraduate, $3k, 160+ direct contact hours
   2. Tech XXII, undergraduate, $0, 200+ direct contact hours
   3. Lacumba, graduate student, $10k, 160+ direct contact hours
   4. Mike the Tiger, undergraduate, $6k, 250+ direct contact hours
   5. Tech XXII, undergraduate, $7,300, 300+ direct contact hours
   6. Lacumba, graduate student, $9,000,
   7. Mike the Tiger, undergraduate, $0, 100 direct contact hours
   8. Tech XXII, undergraduate, $300, 52 direct contact hours
   9. Lacumba, graduate student, $2k, 120 direct contact hours
   10. Mike the Tiger, undergraduate, $3k, 160+ direct contact hours
   11. Tech XXII, undergraduate, $0, 200+ direct contact hours
   12. Lacumba, graduate student, $10k, 160+ direct contact hours
   13. Mike the Tiger, undergraduate, $3k, 160+ direct contact hours
   14. Tech XXII, undergraduate, $0, 200+ direct contact hours
   15. Lacumba, graduate student, $10k, 160+ direct contact hours
2. **Collaborators List**
   1. Jane Doe – NASA Chief Science Data Officer & NASA Earth Science Data Systems (ESDS) Program manager – Consultant
   2. Dr. John Doe – NASA program scientist leading the Citizen Science program, Multi-Mission Algorithm and Analysis Platform (MAAP) – Consultant
   3. John Doe – AES Co-Lead for Development of Water Treatment Technologies at the Life Support Branch (Marshall Space Flight Center) – Collaborator in Technology
   4. Jane Doe – LSUHSC-S – Microscopy
   5. John Doe – Kennedy Space Center – Helped to run RPM 2.0
   6. LSU Health Shreveport – BioStart Program – provided high school student researchers
   7. LSU Health Shreveport – Hicks SMART Program – provided high school student researchers
   8. Dr. Jane Doe – Professor in the Department of Electrical and Computer Engineering & Bioengineering at the University of Puerto Rico – Helped in accessing initial R-codes for DEG analysis of microarray transcriptome of plants grown under microgravity conditions in the International Space Station
   9. Energy Institute of Louisiana (EIL) – University of Louisiana at Lafayette – Provided the research facility for the student to perform the coding tasks, the literature review tasks, writing tasks, and other project-related activities.
3. **K-12 and General Public Outreach Event(s)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Event Name** | **Event Date** | **Event Location** | **Audience Category**  (K-12 or General Public) | **Number of Participants & Type** |
| *STEAM Fair at Montegut Middle School* | *1/15/23* | *Montegut Middle School* | *K-12* | * *82 Middle School Students* * *5 Middle School Teachers* * *12 General Public Participants (parents)* |
| *LSU 6th Grade Day* | *4/18/23* | *LSU PMAC* | *K-12* | *600 6th Graders* |
| *Girl Scouts 2024 Total Eclipse Extravaganza* | *4/8/24* | *New Orleans* | *General Public* | *2250 General Public Participants* |

# Images and Figures Captions

Image 1: Mike the Tiger working with photovoltaic material in the Tiger Stripes Lab at LSU on March 5, 2023.

Image 2: Tech XXII, undergraduate mascot researcher, presenting his research results at the Fall 2022 LaSPACE Annual Meeting at LaTech University in Ruston, LA, in November 2022.

Image 3: Headshot of SUBR HIS participant Lacumba in the 2022-2023 academic year.

Figure 1: Results of using the trained MLDEG model when applied to the grey genes of MOLT-4 and DLD-1 with prediction rates at 100%.

Figure 2: Graphical illustration of the data analysis workflow implemented on the microarray transcriptome of the cancer cell lines DLD1 and MOLT4 using machine learning-based DEG (MLDEG) to enhance the detection of differentially expressed genes (DEGs). PPI – condition-specific protein-protein interaction; fcij = log2FC of gene “i" in method “j”; pij = p-value of gene “i" in method “j”.

# Project Results and Dissemination Details

1. **Peer-Reviewed Publications**
   1. Author, A.; Author, B. (2022). Publication Title.
   2. This paper is planned to be submitted to Genes MDPI journal before the end of the year.
2. **Poster Presentations**
   1. Author, A.; Author, B. (2021). Poster Title. Presented at the 2021 University Engineering & Technology Week. Location Name, March 22-April 8, 2021. Poster URL: https://LinkifAvailable.com
3. **Other Publications**
   1. The codes and data used in the work are curated online in the GitHub repo called “Name\_of\_Curation”. GitHub Repo URL: https://github.com/otherinfo.
   2. The repository is licensed under the MIT License, which permits commercial use, modification, distribution, patent use, and private use. The license may be changed any time if needed. The repository is being maintained by the project P.I. with the student as a repository collaborator.