**CALS DISTINGUISHED UNDERGRADUATE RESEARCH GUIDELINES**

*Approved by CALS*

**Criteria for Granting Distinguished Undergraduate Research Awards**

This award recognizes students who have demonstrated superior achievement in original research, and as such is one of the highest honors conveyed by the College of Agriculture and Life Sciences (CALS). Under the supervision of a faculty mentor, these students have conducted significant, independent and scholarly research. Distinguished Undergraduate Research (DUR) awards are granted to students who have had their project-related work, written submissions, and oral presentations evaluated and endorsed by both departmental faculty and the Academic Awards Committee. The title of the student's research project will be included in the UVM Commencement booklet.

*It is important that students and faculty project advisors contemplating submission of projects to the Academic Awards Committee become familiar with the procedures and requirements described below.* ***Careful planning and attention to deadlines are essential. Failure to meet these deadlines will result in disqualification of the student from the DUR process.*** *Questions should be directed to the Academic Awards Committee Chairperson. For additional questions, contact the CALS Dean's Office at (802) 656-2980.*

**The DUR Process**

Step 1a: Identify a willing faculty mentor/advisor. The faculty mentor is not required to be appointed within CALS. However, if the faculty mentor directly supervising the project work is neither CALS faculty nor CALS adjunct faculty, the student must also identify a CALS faculty mentor.

Step 1b: Outline an appropriate project with guidance from the identified faculty mentor. The project should be significant and challenging, yet doable within the allotted timeframe. The student must take ownership of the project and demonstrate a significant level of independence.

Step 2: Draft a proposal. The proposal is to be no more than 6 pages (excluding references and figures or tables), double-spaced, 12-point Times New Roman font, with 1-inch margins on all sides. Please include page numbers. Submit as a Word document. A formal project proposal must describe the research or creative/design project being considered for DUR honors. Research project proposals will include:

* A title,
* A short (no more than 2-page) background section with key literature references (at least 8),
* A hypothesis or central research question,
* A succinct statement or list of objectives,
* A detailed description of the methods to be used for data collection (i.e., laboratory methods, interviews, focus groups, participant observations, etc., as appropriate) and analysis (including statistical and bioinformatics methods),
* A statement outlining expected results or outcomes,
* A statement outlining some potential pitfalls or weaknesses of the proposed methods or approaches, and
* The anticipated timeline for completion.

Step 3: Complete the DUR Application document. The application form, available on the CALS DUR webpage, requests the student’s contact information, mentor’s contact information, project title, evidence that the project is active, the target journal or outlet for the work, and signatures of the student and mentor(s). If IRB review or exemption is required prior to conducting the work, this should be noted as well. The journal or outlet selected as the target for publication should reflect the scope and aims of the work. The mentor or mentors must sign the application.

Step 4: Submit the DUR Application document (outlined in Step 3) and the DUR proposal (outlined in Step 2) to the CALS Dean’s Office (Hollee.Kennison@uvm.edu). Proposals should be submitted as 1 PDF file including both documents. Please name your file as YOURNAME\_DURproposal (replace YOURNAME with your last name).

Step 5: Contact CALS faculty mentor to request that the mentor submit a letter of support via email directly to the CALS Dean’s Office (Hollee.Kennison@uvm.edu). This letter must be submitted before the proposal submission deadline (submission deadline for applications is listed on the CALS website by semester). The mentor’s letter must indicate that the proposal has been reviewed and is ready for submission, and explain (1) the level of independence the student will have conducting the project, (2) the contribution of the proposed project to the field of study, (3) why the project has the potential to earn DUR honors, and (4) the probability the project will result in (or contribute to) a peer-reviewed publication.

Step 6: Defend the proposal orally. Students will be contacted within 1 month of their DUR proposal submission to set up a time to talk with members of the CALS Academic Awards Committee for 15 minutes. Students should be prepared to give an overview of their project and answer questions about their objectives, methods or approaches, timeline for completion and any problems encountered or anticipated. It is strongly recommended that IRB approval has been received (or is pending) at the time of the proposal defense. The Committee determines whether the proposed project should continue to be considered for DUR honors and may ask for clarifications to be submitted. Students will be notified of the Committee’s decision within 2 weeks of the student’s oral proposal defense.

Step 7: Submit a response or clarifications as requested. In the decision email sent by the Committee (outlined in Step 6), any revisions required by the Committee will be outlined, as well as the deadline for DUR proposal resubmission (this resubmission deadline is also posted on the CALS website). Students who were asked to submit a revised DUR proposal must submit the revised DUR proposal (the application form and mentor letter do not need to be included in the resubmission). Revised proposals should be submitted as a PDF document. Please name this file as YOURNAME\_DURresubmission (replace YOURNAME with your last name). If the revised DUR proposal is deemed acceptable by the Committee, the student may continue with the DUR process. If additional clarifications are needed, the student must submit these by a date specified by the Committee or the student will be disqualified from consideration for DUR honors.

Step 8: Conduct or complete the proposed work. Students should be assured that the research/creative process is not without unexpected bumps, twists and turns. What is important is how these challenges are handled. The student should take the lead on finding or suggesting possible solutions to problems. Sometimes a new approach will succeed. Sometimes success will continue to be elusive within the available time frame. See “What if I don’t complete the research I proposed” for further discussion of how unforeseen situations may be handled.

Step 9: Provide an update of research progress the next semester. The deadline for the research update is listed on the CALS website by semester. This update is to be submitted as a 1-2 paragraph email to the CALS Dean’s Office (Hollee.Kennison@uvm.edu). In the update, indicate progress in meeting objectives and if any problems have been encountered. Steps being taken to resolve any problems should be included.

Step 10: Draft a thesis or complete the creative work. Students are required to adhere to the “guidelines for authors” of the target journal for submission format, including length limits and inclusion of tables and figures. For a creative work, it should be appropriate for the target outlet. Completion of this thesis should be done in accordance with the timeline that the student and mentor have agreed on, and any deviations from the timeline should be done in consultation with the faculty mentor.

Step 11: Identify and approach 2 faculty members to serve as reviewers. Reviewers should be identified and confirmed at least 1 month before the submission deadline. With guidance from the mentor, the student must identify 2 faculty members that could serve as reviewers for the DUR thesis. Once potential reviewers are approved by the faculty mentor, the student is responsible for contacting these potential reviewers and requesting their participation as reviewers. If identified faculty are unable to review then alternate faculty must be approached, 2 reviewers are required. Reviewers must review both the written DUR thesis (outlined below) and the oral presentation by the student (outlined below). Students should confirm with reviewers the expectations for timeline 1) of submission of the written document to the individual reviewers as well as 2) that reviewers will submit comments back to students (see Step 13). Please note that if a student has 2 mentors (example, the student has a research mentor outside of CALS as well as a CALS mentor), then the student must identify at least 1 external reviewer (thus a total of 3 faculty members are still reviewing the work). The mentor who did not directly oversee thesis development will serve as the second reviewer and is expected to provide constructive critical feedback to the student in lieu of a second non-associated reviewer.

Step 12: Schedule a day & time to complete an oral presentation. Students must work with their faculty mentors to set up a day/time to present their DUR work to a public audience. This presentation should be scheduled to be completed at least 1 week before the DUR final submission deadline (final submission deadline is posted on the CALS website by semester). The student presentation should be at least a 12-minute presentation with time for questions after the presentation. Note that many departments already have a system in place to schedule a department-wide “DUR presentation” session, while some do not have a department-wide system in place and students/mentors must organize a presentation.

Step 13: Submit a final draft of the DUR thesis to reviewers. Reviewers should receive a copy of the student’s DUR thesis at least 1 week before the scheduled presentation, and reviewers may request additional time (this should be agreed upon when confirming reviewers in Step 11). Reviewers may choose to provide their review of the student’s written work to the student before his/her oral presentation, or may choose to submit their review at the time of the oral presentation (see Step 11 regarding setting up timelines).

Step 14: Present a departmental seminar. This presentation should be completed at least 1 week before the DUR final submission deadline. Timing of this presentation relative to the final deadline should be agreed upon at the department-level or student/mentor-level. The faculty mentor, as well as the 2 confirmed reviewers, will judge the presentation for quality and professionalism. Students must video-tape the oral presentation (can be done via smart device or by video recording software available in the department) and email this presentation to any mentors/reviewers that are unable to attend the seminar. Content, organization, delivery, and handling of questions and answers will factor into their evaluation. Students are encouraged, but not required, to present their work at the campus-wide Student Research Conference in April.

Step 15: Revise the written DUR thesis and have it approved by the faculty mentor(s) and reviewers. Students must discuss revisions that the reviewers suggest with their faculty mentor, and make any required changes to their written DUR thesis. Once the edited thesis is approved by the mentor and reviewers, the mentor and reviewers must sign the DUR Thesis Cover page (available on the CALS website). Reviewers and non-CALS mentors must also provide a statement of endorsement to the CALS mentor (can be verbally or via email).

Step 16: Submit the final DUR thesis, signed DUR Thesis Cover Page, and Student Reflection to the CALS Dean’s Office (Holle.Kennison@uvm.edu). The final DUR thesis must be submitted in the format selected with the project application. Students must also include a reflection letter (1-2 pages double-spaced, 12-point Times New Roman font, with 1-inch margins on all sides). The student’s letter should describe the degree of independence in designing and carrying out the project and in preparing the final paper or product. If challenges were encountered, how were these addressed? The student should also indicate what was personally gained from the project – in terms of knowledge, skills, self-awareness, personal development, or future goals. Please submit all documents as 1 PDF file, and name the file as YOURNAME\_DURfinal (replace YOURNAME with your last name).

Step 17: The CALS mentor must submit a letter of endorsement via email directly to the CALS Dean’s Office (Hollee.Kennison@uvm.edu). The CALS mentor must write a letter describing the overall performance of the student, the degree of independence exercised by the student and the nature of the supervision provided during the course of the project and in preparing the final paper or product. The CALS mentor must also include in their letter a statement outlining the endorsement of the DUR submission by the specific reviewers. If the student’s primary research mentor was a faculty member from outside of CALS, this mentor should also provide feedback to the CALS mentor or aid in crafting of the final endorsement letter.

**Frequently Asked Questions**

1. “What is the timeline for the DUR process?”

Refer to online schedules based on semester when final project will be submitted.

<https://www.uvm.edu/cals/scholarships_and_awards>

1. “Who is the Chair of the Academic Awards Committee?”

Refer to contact information online.

<https://www.uvm.edu/cals/committees>

1. “Where do I submit my proposal, update, paper and letters of endorsement?”

To the CALS Dean’s Office (Hollee.Kennison@uvm.edu) by 4 PM of the deadline date. All communications should go through CALS Dean’s Office.

1. “How independent is independent?”

Research is never done in a vacuum. A student research project will rely on the work of past researchers and collaboration with current researchers. The idea for your project does not have to be original (although it could be). The project idea could come from your faculty mentor, and be a project she or he has had in mind for some time. You should develop the ideas for your project by working with your faculty mentor and other faculty and interested persons. Use these people as resources for figuring out how you will approach your project (how to hone hypotheses, develop experimental or qualitative tests, decide on data to collect and statistical procedures to use). This project is your project, not your faculty mentor's, so you do need to demonstrate how you did most of the data collection or data organization and analysis. Questions about the appropriateness of a project or the degree of independence may be directed to the Academic Awards Committee Chairperson.

1. “What if I don’t complete the research I proposed?”

Quite often progress on a research project does not occur as quickly as one thought it would. This is the very nature of research; new questions are being asked, novel techniques or protocols are being developed and unforeseen problems occur. What is important is how you approach and deal with these difficulties. Since this is your research project, you should be suggesting or providing possible solutions to your mentor to surmount these problems. The Committee will be looking at how your mentor and department faculty felt about your progress and the handling of any problems in their letters of endorsement. In your final paper and oral presentation you may propose solutions to the encountered problems and explain the importance of the future experiments and results in advancing your area of study.

1. “Can I get an extension if I was planning to defend in the fall, but my project isn’t as far along as I expected?”

Yes, such an extension can be requested when submitting the early semester update to the Chair of the Academic Awards Committee. If the extension is granted, all deadlines for the following semester must be met. Please note that DUR submissions are typically done in a student’s senior year.

1. “What are the criteria for receiving Distinguished Undergraduate Research awards?”

Refer to “Criteria for Granting Distinguished Undergraduate Research Awards” page 1.

1. “What is the role of the faculty endorsing final papers?”

Faculty members not directly involved with the project, but capable of evaluating its quality critically, should be selected to review and endorse the final paper or product. Faculty reviewers may recommend revisions. When the paper or product is judged to be of outstanding quality, each faculty member will sign off on the thesis cover page and submit their endorsement to the CALS mentor prior to the final paper submission deadline.

1. “What if my project is not granted DUR honors by the CALS Academic Awards Committee?”

If a student wishes to appeal the decision of the Academic Awards Committee, it is their right to do so through a formal letter of appeal to the Associate Dean. The Associate Dean will evaluate input from the student and the Academic Awards Committee. It is not appropriate for faculty to appeal this process or advocate for their students, unless requested by the Associate Dean. The decision by the Associate Dean may be appealed to the Dean of the College of Agriculture and Life Sciences. For information, contact the College of Agriculture and Life Sciences Dean's Office at (802) 656-2980.