U.S. DEPARTMENT OF ENERGY | Office of Science

2013 SUMMER TERM CCI PROGRAM STUDENT OBLIGATIONS

The 2013 Community College Internship (CCI) program required deliverables are an important element of your internship experience, and are designed to help develop skills important for STEM career professionals.

Required Deliverables

There are two required deliverables:

1) **Poster Presentation**:
   All participants are required to deliver a poster presentation before an appropriate peer group. The subject matter for the presentation is to be based upon the participant's internship project activities. Prior to the poster presentation, submission of a short (150 word) abstract summarizing the presentation content, as well as all final content used in the presentation, is required.

2) **Project Report Paper:**
   All CCI participants are required to submit a project report for their internship activities. This report should be a summary of the project's technical goals; progress made to achieve these goals, and specific accomplishments made by the intern including their impact. The report should include any project relevant technical writing, drawings, schematics, designs, or diagrams, contributed to by the intern. Submission must be made prior to the end of your appointment and as directed by your host laboratory.

Development of the materials required to fulfill the deliverables may be performed using word processing and/or graphics design/presentation software of your choice, but all final copies must be made available in an Adobe Acrobat (.pdf) file format, and submitted using the online system. Instructions for preparing and submitting (uploading in the online system) Acrobat file formatted copies of deliverables will be available from your internship host institution. Guidelines, Requirements, and Instructions for preparing the program deliverables follow directly below.

Guidelines, Requirements, and Instructions

1. POSTER PRESENTATION

CCI participants are required to present a poster presentation before an appropriate peer group, determined by the host institution. The subject matter for the presentation is to be based upon the participant's internship technical project activities. Prior to the presentation, submission, via the online system, of a short (150 word) abstract summarizing the poster's content, as well as all final content used in the presentation, is required. The abstract and poster content should be submitted in a combined

single Adobe Acrobat (.pdf) file, and host institutions will provide detailed instructions regarding the file submission on the online system. The abstract may be used as part of the poster materials.

Poster presentations offer a free-form, topically focused, intimate discussion and exchange, sometimes leading to new insight and enhanced subject matter understanding.

Posters should be readable by viewers standing at a distance of about five feet away. The primary message and content should be clear and understandable without oral explanation. Please carefully consider the following general guidelines when preparing a poster:

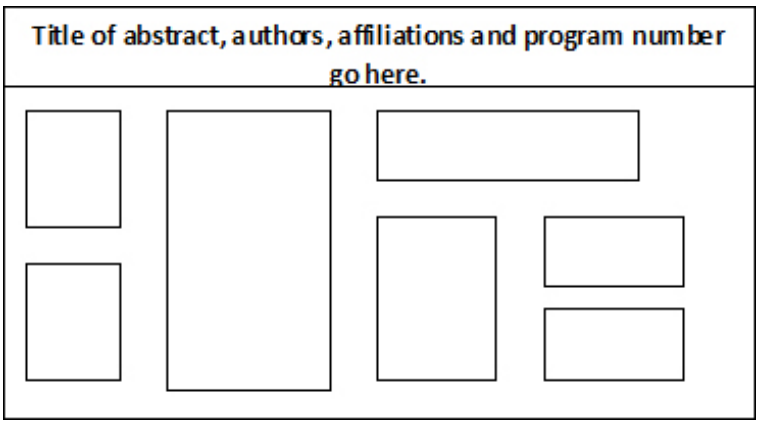
1) *Initial Sketch*: Plan your poster early. Focus your attention on a few key points. Try various styles of data presentation to achieve clarity and simplicity. Does the use of color help? What needs to be expressed in words? Suggest headlines and text topics.
2) *Rough Layout:* Enlarge your best initial sketch, keeping the dimensions in proportion to the final poster (see diagram below). Ideally, the rough layout should be full size. A blackboard/whiteboard is a convenient place to work. Print the title and headlines. Indicate text by horizontal lines. Draw rough graphs and tables. This will give you a good idea of proportions and balance. If you are working with an artist, show him/her the poster layout. Ask associates for comments. This is still an experimental stage.
3) *Final Layout:* The artwork is complete, the text and tables are typed but not necessarily enlarged to full size. Now ask, is the message clear? Do the important points stand out? Is there a balance between words and illustrations? Is there spatial balance? Is the pathway through the poster clear?
4) *Balance:* The figures and tables should cover slightly more than 50% of the poster area. If you have only a few illustrations, make them large. Do not omit the text, but keep it brief. The poster should be understandable without oral explanation.
5) *Typography:* Avoid abbreviations, acronyms and jargon. Use a consistent type style throughout. Use a large, clear font type, making the text readable from five feet.
6) *Eye Movement:* The movement (pathway) of the eye over the poster should be natural and down the columns or along the rows. Size attracts attention. Arrows, pointing hands, numbers and letters can help clarify the sequence.
7) *Simplicity:* The temptation to overload the poster should be resisted. More material may mean less communication.

Poster Board Size:

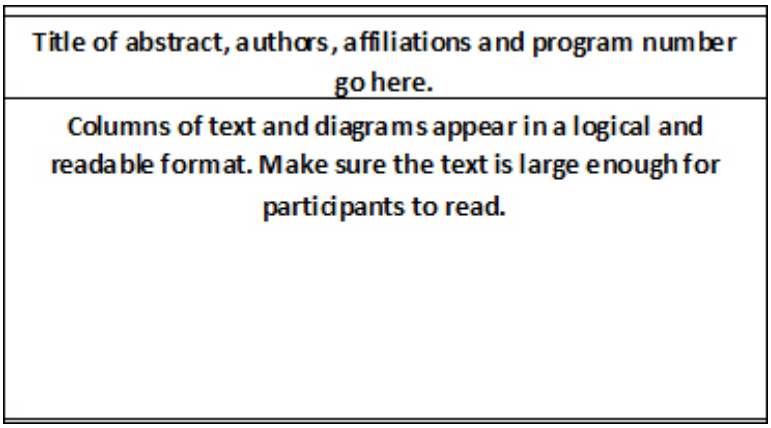
Ask for the poster board surface area in advance. Prepare an appropriately sized headline that runs the full width of the poster. Include the title, authors, affiliations, and program/project on the title line (or directly below). Post a large typed copy of your abstract.

Examples of Styles of Poster Preparation:

Individual sheets placed on the poster board in a logical sequence:



One large sheet that includes all the information for the abstract:



Your host institution may also provide additional related resources and guidance.

2. PROJECT REPORT

This required report should communicate the outcomes and success of your project activities to the Office of Workforce Development for Teachers and Scientists (WDTS). It is not intended to be a scientific publication, and should be a narrative on meaningful outcomes and accomplishments made during your internship. The content of your report should be written at a level for readers who are not necessarily subject matter experts, but do have general scientific or technical knowledge and research experience.

Writing this paper is not a trivial task and will require significant time and effort to complete. Be sure to allow plenty of time to complete and polish your paper. If writing does not come easily to you, do not hesitate to seek help early in the process. Nearly every person who has read scholarly technical project reports emphasize that clear, uncomplicated exposition of outcomes and impacts is the single most important factor which separates good reports from bad. The following suggestions are widely

recommended by knowledgeable and successful writers, but they assume that you can write clear expository English. If you use the passive tense, write long sentences, and use jargon, you should also seek to improve your overall writing skills. General advice:

1) *Allow sufficient time* - Allow enough time to do a good job. All successful writers say that it takes time to generate high quality reports.
2) *Be organized* - Write logically and clearly. Make an outline of the points you want to make before you start, and then join them together in a coherent fashion.
3) *Give the broad picture* - Explain what you are doing and why it is important. Provide a background which places your project in context.
4) *Write for your audience* - Guide the reader to the key points. Don't assume the reader will know your particular field of science or engineering. Some readers will be from outside your topical field. Try to put yourself into the mind of the reader. Answer any questions you would have if you were reading the report.
5) *Highlight your activity* - Explain why your approach to the problem is appropriate and what resources you used. Demonstrate what you completed as an intern working on the project.
6) *Include your qualifications* - Establish what you have learned or now know from what you were doing. Include relevant references, but make the gist of the reference clear. A person reading the report will not necessarily want to have to obtain the reference and read it in order to really understand your report.
7) *Get an outside opinion* - Finally, show your paper to one or more colleagues, or your advisor, for comments. Ask them for an honest assessment of strengths and weaknesses. Listen to their comments and revise the paper accordingly.

Report Format

The report can only be submitted as a normal Adobe Acrobat PDF document (with a name of the form "yourfilename.pdf") via an upload to the online system. The required page format comprises margins of one inch around the text (top, bottom, left, right) with the text being in a 12-point, single-spaced (12 point), Times, Times Roman, or appropriate symbol font (for math script).

Report Required Elements

Abstract. An approximately 300-word summary is required that should be a concise summary of the significant items in the report. In combination with the title it should be an adequate indicator of the content of the report. Prepare it as a single paragraph. The abstract should be a clear, concise summary of the principal facts and conclusions, organized to reflect its pattern of emphasis.

Body. <u>No more than a total of six pages, comprising the report's *Body*, can be used to appropriately address each of the following required six sections</u>:

1) ***Introduction*** - *Background and Project Objectives*. Provide the context of past and competing technical work that motivated the project; how the present activity goes beyond that work; the proposed technical objectives of this work, and how well they were met, including any additional objectives that developed in the course of your activity.

2) ***Progress -*** *Technical Approach, Impacts, and Accomplishments.* Describe the technical approach taken by the project; results, stressing the most significant accomplishments and impacts.
3) ***Future Work –*** Briefly state future activities anticipated or planned, with estimates of required scope to achieve or extend the project deliverables.
4) ***Impact on Laboratory or National Missions****.* Briefly describe project connection and relevance to DOE and Laboratory missions; actual impact on projects including both (a) changes to direction of existing projects and/or (b) new work or new capabilities resulting from the project. Please include a statement regarding the source of funding for the primary research project.
5) ***Conclusions***
6) ***References***

Appendix. Please provide the additional information requested below. The *Appendix* is in addition to the report *Body* above, and this content is not counted towards the six-page report limitation.

Following the *References* section, please address the following, as appropriate:

Participants- In a table, list the names, institutions, and roles of each person who participated in the project, including host lab personnel, CCI or SULI students, or other students, as appropriate. Include a brief statement of each participant's project team role.

Scientific Facilities - Briefly state if any scientific user facilities were part of your project activities, including identification of the facility.

Notable Outcomes - *Publications, Reports, Manuals, Drawings/Schematics, Patents, or Presentations*. List any articles, patent disclosures, laboratory technical reports, invited/contributed conference/workshop presentations, technical documents, and/or internal presentations resulting from activities performed under this appointment. Please include full bibliographical citations, co-authors, affiliations, titles, and/or venues, as appropriate.

Additional Guidelines

Abstract
The *Abstract* should be on a separate page preceding the report's *Body*.
Body
The entire section may not exceed 6 pages.
References
Publications listed in the *References* section of your report should be cited in the report body in brackets by number. Example: As illustrated in Figure 3, we used a newly reported optical measurement for the ultrafast dynamic response of shocked photonic crystals [1].
Appendix
The *Appendix* should follow the report's *Body*.
Figures
The *Body* of your report may not include more than three figures, and extensive technical drawings or materials should appear in the *Appendix*. Please ensure that your figures are high resolution and that all text included in the figures is legible. It is helpful to include figures that illustrate concepts and

approaches as well as scientific and technical results. Each figure must have a caption. When referencing figures in your report, please spell out and capitalize the word *Figure* and follow it with the number of the figure to which you are referring.

Examples:

> An example of our work is shown in Figure 1.
>
> Schematic diagrams of ultrafast electrical current and terahertz-harmonic generation in (a) centrosymmetric media with four-wave mixing, (b) symmetry broken boundaries, and (c) centrosymmetric media in a biased DC electric field. (Figure 2).

Equations

Equations should not be included in your report unless they are absolutely necessary to communicate an important concept. Equations must be embedded such that no special characters or symbols are lost when converting and uploading files.

Acronyms

Spell out all acronyms the first time they are used. Do not assume the reader knows your terminology.