NSF GRADUATE RESEARCH FELLOWSHIP GRFP

Presented by Caltech Fellowship Advising and Study Abroad Office

Caltech

Key Elements & Eligibility

- **Citizenship**: U.S. citizens or permanent residents
- **Early-career:** undergraduate seniors & 1st and 2nd year graduate students — **ONE APPLICATION ONLY AS A GRAD STUDENT**
- **Portable:** Any accredited U.S. institution MS or PhD program.
  - Pursuing research-based MS or PhD. No taught programs.
  - Science and Engineering Approved Fields.
  - Can put on reserve only for a special educational opportunity
- **Prestigious** – indicates recipients have great potential.
- **Very competitive:** Fellowships increased to 2500 from 2000 last year.

  Last year there were over 13,000 applicants and about 2000 awards.

  3 yrs of support during a 5 yr fellowship period. For each of the 3 yrs, a $34,000 stipend and $12,000 cost of education allowance are provided.

Preparation

- Thoroughly understand the application process elements & the deadline dates
- Line up your reference writers now – those who have taught you or supervised your research are best (min 3, max 5)
- Know the goals of the NSF in relation to the GRFP – read the program solicitation

Solicitation Current Year

- Solicitation found at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf21602&org=NSF. Read this carefully as you must abide by the directions exactly!
- Application module to submit your applications, research.gov : https://www.research.gov/grfp/Login.do
- **Reference letters due by 5 pm Eastern Time, October 29th**
- **Applications due by 5:00 pm local time of applicants mailing address by subject deadline date.**
- In FY2022, NSF will continue to fund outstanding Graduate Research Fellowships in all areas of science and engineering supported by NSF and continue to emphasize high priority research areas in alignment with NSF goals and priorities. Applications are encouraged in all disciplines supported by NSF

GRFP Program Goals

- To select, recognize, and financially support individuals early in their careers with the ***demonstrated potential to be high achieving scientists and engineers***
- To ***broaden participation in science and engineering*** of underrepresented groups, including women, minorities, person with disabilities, and veterans.
- GRFP is a critical program in NSF's overall strategy to ***develop the globally-engaged workforce*** necessary to ensure the Nation's leadership in advancing science and engineering research and innovation.

Resources

- Essays from prior GRFP winners are available for review in the FASA Office, Room 319 Center for Student Services on Holliston
- FASA advising & essay review by appointment.
- Send essay draft at least 5 working days before your appointment. Please note we do not proofread

Also consult with:

- Your research advisor & group
- Review the GRFP website & Solicitation
- **Bi165 Microbiology Research: Practice and Proposal Course**
  - Contact **Julie Hoy or Elena Perry** for further information and clarification: **hoyj@caltech.edu OR eperry@caltech.edu**

Developing Your Essays

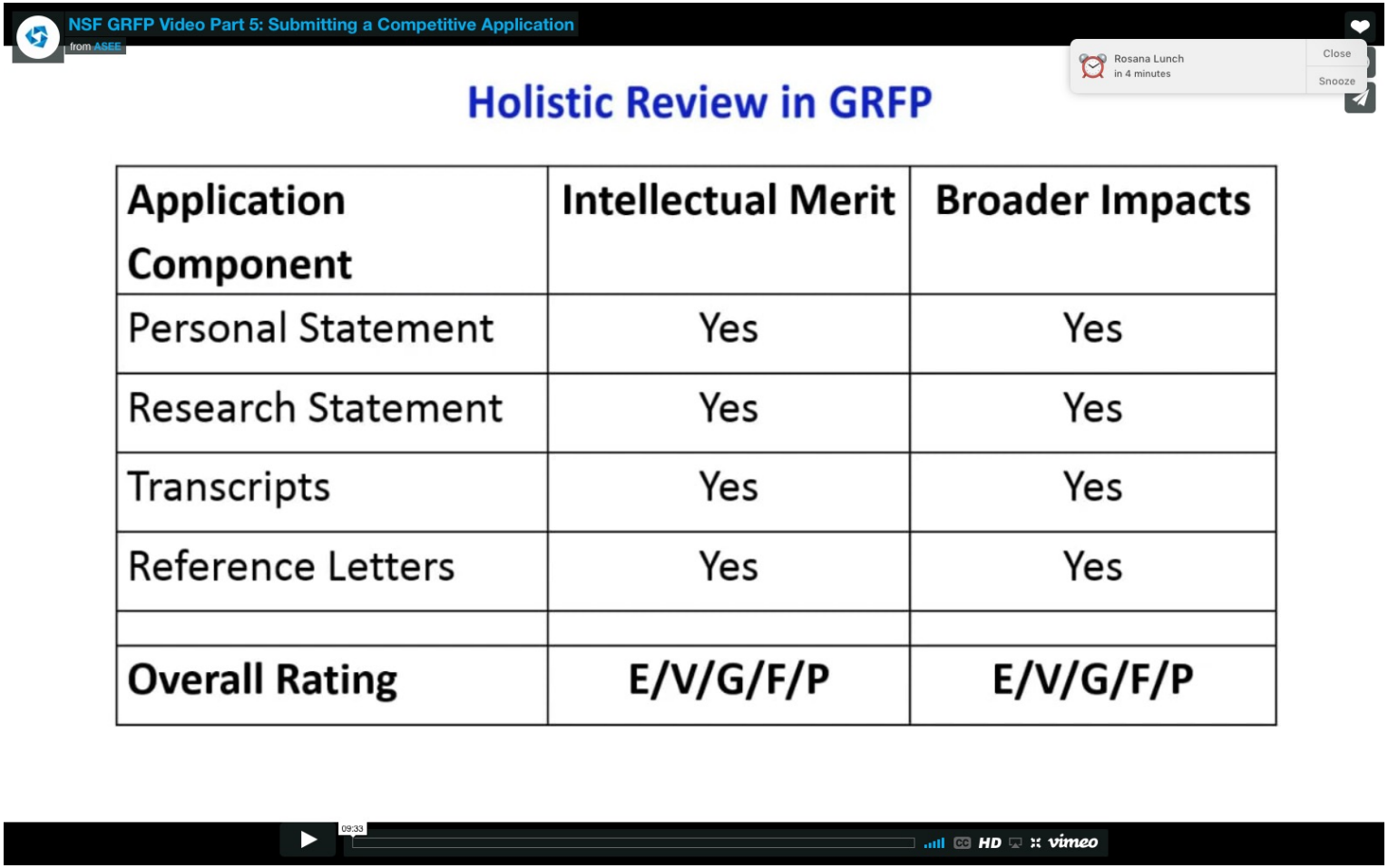
- Read GRFP solicitation & UNDERSTAND IT!
- Begin drafts ASAP!
- Make list of how you could meet Broader Impacts and Intellectual Merit
- Start with **content** – research experience, outreach experience, etc. – *then* write intro & conclusion

The Bedrock of the Evaluation

- **Broader Impacts**
- **Intellectual Merit**

GRFP Scoring

All Areas Need Both: IM & BI



Application Component	Intellectual Merit	Broader Impacts
Personal Statement	Yes	Yes
Research Statement	Yes	Yes
Transcripts	Yes	Yes
Reference Letters	Yes	Yes
Overall Rating	**E/V/G/F/P**	**E/V/G/F/P**

Essays

- Not a word count – page count
- 3 page **personal statement**
- 2 page graduate **research statement**
- STRESS BROADER IMPACTS & Intellectual Merit . You need to address them in separate headings, and in each essay.

Broader Impacts Used to Assess Essay

How does your application demonstrate that you:

- 1. Advance scientific discovery and understanding, while promoting teaching, training, and learning?
- 2. Broaden the participation of underrepresented groups, e.g., gender, ethnicity, disability, geographic.

Broader Impacts Cont.

- 3. Enhance the infrastructure for research and education, such as instrumentation, research networks, and collaborations?
- 4. Broadly disseminate results to enhance scientific and technological understanding?
- 5. Benefit society?

Broader Impacts- 50% of Score

- International experience
- Publications and presentations
- Mentor, TA, volunteer tutor, etc.
- Science outreach
- ANY volunteer work regardless of field
- Leadership activities
- Interdisciplinary collaboration
- Broad dissemination of scientific understanding
- Showing that you know how to apply your knowledge and skills to the bigger picture.

Intellectual Merit- 50% of score

- Evidence of intellectual ability and ***potential to advance knowledge***
- GPA
- Rigor of research plan, and potential for scientific leadership in field
- Technical knowledge and skills
- Ability to work collaboratively and independently
- References

Essay #1: Personal, Relevant Background and Future Goals

- Keep review criteria in mind – **Intellectual Merit and Broader Impacts**
- This is your chance to show your drive, curiosity, skills, and ability to communicate
- Show evidence of potential
- Seniors can mention top choice(s) of grad school. If grad student, why you selected Caltech.

Relevant Background

- Experience can be chronological or in order of importance.
- Include any personal, professional, or educational experiences relevant to GRFP goals.
- What skills have you developed?
- Examples of creative problem solving.
- OK to mention failures as long as you use these to illustrate growth.
- Examples of independent work, as well as a good team player.
- How did you share your research?
- No high school stuff.

Essay #2: Research Statement

- Not required to stick to the proposed research plan
- Propose research that shows you have ***potential for significant achievement and vision***
- Work with your advisor & research group
- OK to use graphics or formulae to articulate something more succinctly/effectively than text can
- Put ideas/facts in perspective for those not in your exact field
- OK to name professors, university
- STICK TO FORMAT REQUIREMENTS

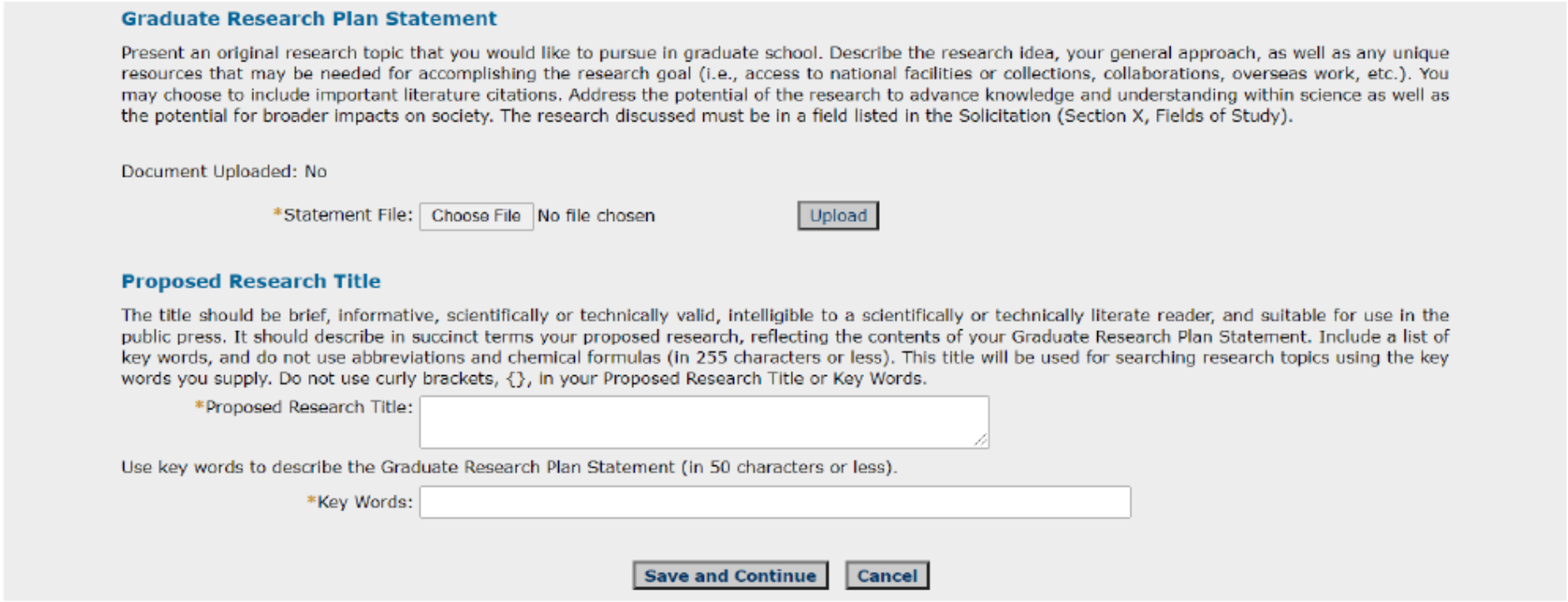
Broader Impacts in Research Statement

Must also include Broader Impacts in Research Statement!

- How will this research effect the world?
- How will you present it to a wider audience?
- Is there any interdisciplinary collaboration?
- Is there any international collaboration?
- How will you continue to reach out to non-scientists through your research?

Regarding Evaluators for Your Research Proposal

Where you submit your proposed research, you include a title and key words that pertain to your research to help select evaluators.



Graduate Research Plan Statement

Present an original research topic that you would like to pursue in graduate school. Describe the research idea, your general approach, as well as any unique resources that may be needed for accomplishing the research goal (i.e., access to national facilities or collections, collaborations, overseas work, etc.). You may choose to include important literature citations. Address the potential of the research to advance knowledge and understanding within science as well as the potential for broader impacts on society. The research discussed must be in a field listed in the Solicitation (Section X, Fields of Study).

Document Uploaded: No

*Statement File: Choose File No file chosen Upload

Proposed Research Title

The title should be brief, informative, scientifically or technically valid, intelligible to a scientifically or technically literate reader, and suitable for use in the public press. It should describe in succinct terms your proposed research, reflecting the contents of your Graduate Research Plan Statement. Include a list of key words, and do not use abbreviations and chemical formulas (in 255 characters or less). This title will be used for searching research topics using the key words you supply. Do not use curly brackets, {}, in your Proposed Research Title or Key Words.

*Proposed Research Title:

Use key words to describe the Graduate Research Plan Statement (in 50 characters or less).

*Key Words:

Save and Continue Cancel

https://www.nsfgrfp.org/applicants/application_components/screenshots

Formatting

FOR APPLICANTS

- Times New Roman font for all text, Cambria Math font for equations, Symbol font for non-alphabetic characters (it is recommended that equations and symbols be inserted as an image), no smaller than 11-point, except text that is part of an image
- 1” margins
- Single spaced to double space (approx. 6 lines per inch) or greater line spacing. Do not use line spacing options such as “exactly 11 point,” that are less than single spaced.
- Standard 8.5x11 page
- OK to use headings, bold, italics, columns, etc. **Must have IM & BI sections**.

FOR REFERENCE WRITERS

(min 2, prefer 3, max 5)

- Institutional (or professional) letterhead, if available
- Two (2) page limit
- 11-point Times New Roman in the body of the letter
- Name and title of reference writer
- Department and institution or organization
- They are provided a new login to submit a reference letter

General Advice

- Avoid grand statements – give specifics instead
- Do not use contractions
- Essays are read by 3 academics in your general field, not subfield – ***THEY*** are your audience
- Avoid repetition in your essays
- Good essays take many drafts!
- Do not wait until the last minute to start essays
- Line up reference writers now & communicate with them about your BI & IM background

References

- Required to have 2 letters of reference, ***3 HIGHLY RECOMMENDED***, max 5. Note that the reviewers ONLY read a max of 3 refs
- Make sure NSF references are aware of deadline – 5pm Eastern Time, October 29th
- Contact refs now and OK to coach them & provide info on how you meet Broader Impacts & Intellectual Merit in your research plan & personal statement
- FACULTY in your field are preferred – don't ask coaches, grad students, humanities professors, deans. Employers or postdocs OK if they supervised your research. SSci only if your grad field, e.g., Econ.
- Letters are instrumental to scoring in the review. Tell refs to include both Intellectual Merit and Broader Impacts material about you!

Applying Senior Year or 1st Year vs. 2nd Year

Applicants can apply senior year and prior to enrolling in graduate school, e.g., a gap year or job prior to graduate school. Once enrolled in gradudate school, the limit is in the fall of the first year of a graduate school **OR** in the fall of the second year of graduate school. Students are evaluated with the understanding of the additional experience that a 2nd year has versus a 1st year. If you applied as a senior and did not win, applying during your first year is attractive if you have stronger references, more research experience/publications, more broader impacts, etc. If you feel your experience and reference relationships are approximately equal to fall of senior year, then it might be best to wait until your 2nd year of grad school to reapply. However, this is up to the individual to decide and there is no right or wrong decision.

Check the Number of Times an Individual May Apply section of the Solicitation for rules for those who have been in joint master'/bachelor's programs.

Deadlines

Only one deadline for you. Submitted by specific fields – not your choice of day

- **October 18, 2021** Life Sciences
- **October 19, 2021** Computer and information Science and Engineering, Materials Research, Psychology, Social Sciences, STEM Education and Learning
- **October 21, 2021** Engineering
- **October 22, 2021** Chemistry, Geosciences, Mathematical Sciences, Physics and Astronomy
- Applications must be received by 5:00 p.m. local time, as determined by the applicant's mailing address provided in the application. **Applications received after the Field of Study deadline will be returned without review**.

(references due by Oct. 29, 5 pm ET, can submitted earlier*)

Withdrawal Deadline: Applications withdrawn by November 15 of the application year do not count toward the one-time graduate application limit. Applications withdrawn after November 15 count toward this limit.

caltech.edu