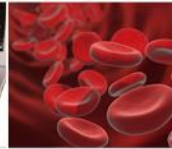




WHERE DISCOVERIES BEGIN



# **Faculty Early Career Development (CAREER) Program**

## **Proposal Writing Webinar**

**Wednesday, April 27, 2016**

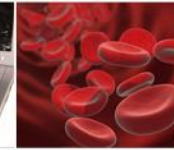
**Division of Chemical, Bioengineering,  
Environmental, and Transport Systems (CBET)**

**Directorate for Engineering**

<http://www.nsf.gov/career>



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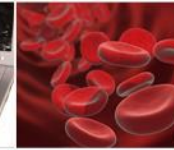
# Why a CAREER Webinar?

- To present a consistent message for potential CBET PIs
- To level the playing field
- To reach a wider audience

<http://www.nsf.gov/career>



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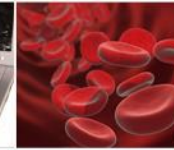


# Goal of CAREER Webinar

- This will not be a “how-to” guide
- Style and Content of proposal sections often vary by program - **Contact Program Director!**
- Intent of the webinar is to provide guidance and direction outlining CAREER proposal commonalities between CBET and, in some cases, ENG programs



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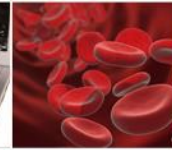


# Guidelines and Ground Rules

- Everyone will remain in “Listen Only” mode
- There will be no oral questions
- Time for questions will be allotted following each session
- Type all questions in the Chat window - they will be collected and answered at the end of each session



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# **Agenda**

## **Wednesday, April 27, 2016**

<b>12:00pm to 12:05pm</b>	<b>Welcome and Introduction</b>
<b>12:05pm to 12:20pm</b>	<b>CAREER Overview: NSF and CBET</b>
<b>12:20pm to 12:45pm</b>	<b>CAREER Awards: Guidelines and Eligibility</b>
<b>12:45pm to 1:15pm</b>	<b>CAREER Proposals: Common Mistakes and Practices</b>
<b>1:15pm to 1:45pm</b>	<b>CAREER Prep: Proposal Set-Up and Integration of Research, Education, and Outreach</b>
<b>1:45pm to 2:15pm</b>	<b>Break</b>
<b>2:15pm to 2:45pm</b>	<b>CAREER Insights: Inside a Proposal Review (Video)</b>
<b>2:45pm to 3:30pm</b>	<b>CAREER Perspectives: Feedback from Awardees</b>
<b>3:30pm to 4:30pm</b>	<b>CAREER and Careers: Planning Strategies for Success</b>
<b>4:30pm to 5:00pm</b>	<b>CAREER Q&amp;A: ENG CAREER Coordinating Committee</b>



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# **CAREER Awards: Overview, Guidelines and Eligibility**

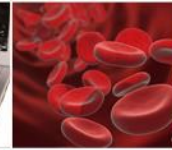
**Division of Chemical, Bioengineering,  
Environmental, and Transport Systems (CBET)  
Directorate for Engineering**

Presented by: Alex Leonessa

Program Director, General Age-Related  
Disabilities Engineering (GARDE) Program



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# CAREER @ NSF

<http://www.nsf.gov/career>





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# The CAREER Program

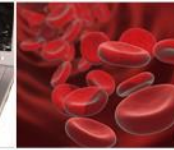
The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations.

<http://www.nsf.gov/career>





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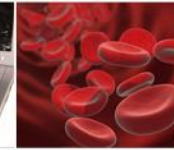
# Goals of the CAREER Program

- Provide stable support for five years ( $\geq 400K$  in most Directorates – BIO, GEO/PLR, ENG are  $\geq 500K$ ) to allow the career development of outstanding new teacher-scholars in the context of the mission of their organization.
- Build a foundation for a lifetime of integrated contributions to research and education.
- Provide incentives to universities to value the integration of research and education.
- Increase participation of those traditionally underrepresented in science and engineering.

<http://www.nsf.gov/career>



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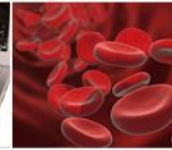
# CAREER is NSF-Wide

- The program started in 1996
- All Directorates/Offices participate in the program
- Proposals are submitted to program of interest
- Thousands of CAREER awards have been made over the years
- **NSF Presidential Early-Career Award for Scientists and Engineers (PECASE)** are selected out of the pool of recent CAREER awardees

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



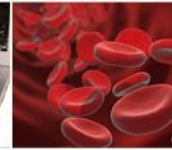
# PECASE

- Each year NSF selects nominees for the **Presidential Early Career Award for Scientists and Engineers (PECASE)** from among the most meritorious recent CAREER awardees. Selection for this award is based on two important criteria:
  1. **Innovative research at the frontiers of science and technology that is relevant to the mission of the sponsoring organization or agency; and**
  2. **Community service demonstrated through scientific leadership, education or community outreach.**

<http://www.nsf.gov/career>



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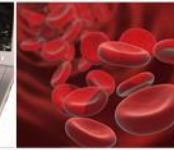


# PECASE Eligibility

- Be a US Citizen or US Permanent Resident at time of nomination to the White House's Office of Science and Technology Policy
- 20 Nominees for NSF PECASE every year, selected from the pool of recent CAREER awardees
- Number of nominees per Directorate is a function of the number of proposals submitted to the program for each Directorate



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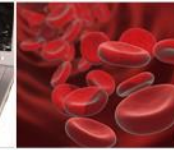
# PECASE Awards

- Foster innovative developments in science and technology;
- Increase awareness of careers in science and engineering;
- Give recognition to the scientific missions of the participating agencies;
- Enhance connections between fundamental research and national goals, and;
- Highlight the importance of science and technology for the Nation's future.

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# PECASE Awards

- Individuals cannot apply for PECASE. Awards are initiated by the participating federal agencies.
- At NSF, up to twenty nominees for this award are selected each year from among the PECASE-eligible CAREER awardees who are most likely to become the leaders of academic research and education in the 21<sup>st</sup> century.
- The White House Office of Science and Technology Policy (OSTP) makes the final selection and announcement of awardees.

<http://www.nsf.gov/career>





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# CAREER varies across NSF

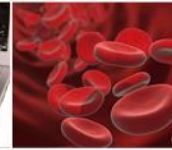
- Number of submitted CAREER proposals vary widely across NSF
- Review and Funding methods vary according to Directorate and Division practices
- Many CAREER proposals compete with other research proposals in the most appropriate research program
- NSF's CAREER Coordinating Committee (CCC) is made up of members from the different Directorates/Offices – We are the liaison between the programs and the senior management at NSF. Each Directorate also has a CCC.

<http://www.nsf.gov/career>





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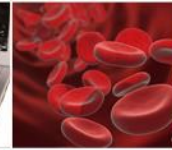


# Which NSF Directorate Receives the Most CAREER Proposals?

- CISE
- ENG
- GEO
- MPS
- SBE
- EHR



WHERE DISCOVERIES BEGIN



# Answer

- CISE
- **ENG**
- GEO
- MPS
- SBE
- EHR



WHERE DISCOVERIES BEGIN

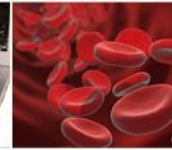


# **Name one of the three NSF Directorates that makes the Most CAREER Awards?**

- CISE
- ENG
- GEO
- MPS
- SBE
- EHR



WHERE DISCOVERIES BEGIN



# Answer

- **CISE**

- **ENG**

- GEO

- **MPS**

- SBE

- EHR



WHERE DISCOVERIES BEGIN



# Merit Review of CAREERs

- Ad hoc + Panel (with other proposals in the Program) – most of GEO (AGS uses ad hoc only), BIO, and SBE
- CISE, EHR, MPS varies by Division
- ENG primarily reviews CAREER proposals on dedicated CAREER panels



WHERE DISCOVERIES BEGIN



# Merit Review Process

- To learn more about the Merit Review Process at NSF, go to the following link:

[http://www.nsf.gov/news/mmg/mmg\\_disp.jsp?med\\_id=76467](http://www.nsf.gov/news/mmg/mmg_disp.jsp?med_id=76467)

<http://www.nsf.gov/career>



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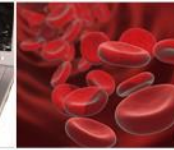
# Success Rates and Expectations

- CAREER proposals are submitted to a disciplinary unit or program
- They are reviewed according to the relevant Program guidelines - Talk to Program Officer or Division Contact for more information  
(<http://www.nsf.gov/crssprgm/career/contacts.jsp>)
- Make sure to check on typical award sizes in your program
- Ask about expectations for scope of research and education plans





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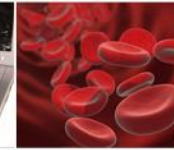


# ENG CAREER Committee

- Dominique Dagenais, ECCS
- Elliott Douglas, EEC
- Mary Toney, CMMI,
- Alex Leonessa, CBET and  
ENG Rep CCC



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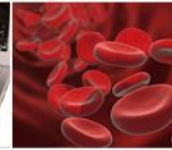


# Which ENG Division receives the largest number of CAREER proposals?

- CBET
- CMMI
- ECCS
- EEC
- IIP

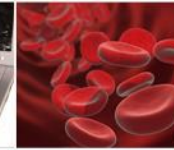


WHERE DISCOVERIES BEGIN



# Answer

- **CBET**
- CMMI
- ECCS
- EEC
- IIP



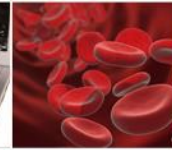
## **FY16 ENG CAREER PROPOSAL TOTALS**

CBET	463
CMMI	364
ECCS	141
EEC	20
<b>TOTAL</b>	<b>988</b>

**ENG received total of 988 CAREER  
proposals in fiscal year 2016**



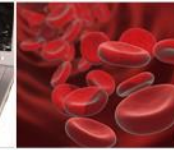
WHERE DISCOVERIES BEGIN



# **CAREER Guidelines and Eligibility**



WHERE DISCOVERIES BEGIN



# Is CAREER for You?

- Can you think of a proposal that is appropriate for NSF with research and education activities that are innovative and ambitious?
- Is your Department/Organization supportive?
- Are you seriously committed to the goals of CAREER?
- Are you at the right stage in your career?
- Would like to be considered for the Presidential Early Career Awards for Scientists and Engineers (PECASE), if eligible?
- Have you discussed your ideas with mentors, fellows, program officers?

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# Investigator Eligibility Criteria

- Hold a doctoral degree in a field supported by NSF by proposal deadline
- Be untenured by Oct 1<sup>st</sup> following proposal deadline
- Be employed in a tenure-track (or equivalent) position at an eligible institution as an Assistant Professor, by Oct 1<sup>st</sup> following deadline
- Have not previously received a CAREER award
- Have not had more than two CAREER proposals reviewed
- Untenured Associate Professors are NOT eligible





WHERE DISCOVERIES BEGIN



# What Do You Think?

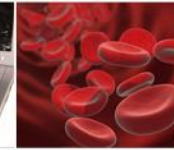
The CAREER Solicitation requires a PI to hold a doctorate degree in a field supported by NSF by the proposal submission deadline. The PI successfully defended his thesis, but will not have the actual diploma until after the submission deadline.

**Question: Is this PI eligible to submit a CAREER proposal?**

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# Answer

**No!** The PI is not eligible unless the official, dated diploma, is received by the proposal deadline.



WHERE DISCOVERIES BEGIN



# Institutional Eligibility Criteria

- Academic institutions in the U.S., its territories or possessions, and the Commonwealth of Puerto Rico that award degrees in fields supported by NSF.
- Non-profit, non-degree-granting organizations such as museums, observatories or research labs may also be eligible to submit proposals, if the eligibility requirements of the PI's position are satisfied
- NSF encourages proposals from two- and four-year institutions, including Minority Serving and Primarily Undergraduate Institutions



WHERE DISCOVERIES BEGIN



# What Do You Think?

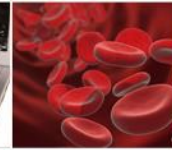
There is no longer a CAREER eligibility certification form that comes up when I prepare my CAREER coversheet.

**Question: Should I attach an eligibility statement to my proposal, just to make sure NSF knows I'm eligible?**

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# Answer

**No!** By officially submitting your CAREER proposal through FastLane or Grants.gov, you and your institution are indicating that you have read the CAREER eligibility requirements in the Solicitation and that you meet those eligibility requirements. In addition, the Departmental Letter from your Chair must include a statement to the effect that you are eligible for CAREER.

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# What should be in a CAREER Proposal?

- A compelling research plan
- Innovative but doable education plan
- A plan for the effective integration of both sets of activities (evaluation plan is a big plus)
- **Education activities** – curriculum, pedagogy, outreach, mentoring at any level, majors and non-majors, teacher preparation or enhancement, K-12 students, and/or the general public

<http://www.nsf.gov/career>





WHERE DISCOVERIES BEGIN



# CAREER Education Plan

- Activities should go beyond what is expected from any Assistant Professor in your field
- Workload should not be unreasonable
- Should be informed by what has been successful in the past - intellectual merit of the education component
- Should have a plan for assessing the success of the education program
- Check with your Program Officer or search the abstracts on the web





WHERE DISCOVERIES BEGIN



# Integration of Research and Education

**How will your research impact your education goals and how will your education activities feed back into your research?**

- Involving others (graduate, undergraduates, K-12, high school teachers, public) in your research using new tools, laboratory methods, field components, web outreach, cyber networks, etc...
- Partnering with those in other communities, especially those traditionally underrepresented in Sciences and Engineering

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# Integration of Research and Education

**How will your research impact your education goals and how will your education activities feed back into your research?**

- Bringing the excitement of your research topics to help in the education of others
- Searching for new methods to deliver your research results to a broader audience than those in the immediate research community
- Using the broader community to gather data for your scientific pursuits (“citizen science”)

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# CAREER Personnel and Budgets

- No co-principal investigators or other senior staff are allowed; however, collaborations are encouraged
- Consultants, sub-awards are allowed (no senior personnel costs in sub-awards)
- Some programs will support buy out of academic year time for teaching intensive institutions (check with your Program Officer)
- International activities are encouraged and may be supported by the Division of International Science and Engineering (ISE)
- Average award size may vary depending on the Division or program.

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# Departmental Letter (2 pages)

- Support for the PIs proposed CAREER research and education activities
- Description of how the PIs career goals and responsibilities mesh with that of the organization and department
- Commitment to the professional development of the PI with mentoring and whatever is needed to forward the PIs efforts to integrate research and education
- Statement that indicates the PI is eligible for the CAREER program

<http://www.nsf.gov/career>



WHERE DISCOVERIES BEGIN



# Traits of Successful CAREER Proposals

- CAREER proposals should match the expectations in the disciplinary programs in terms of research and education - This is a highly competitive program!
- Written with peer reviewers (Ad Hoc and/or Panel) in mind - **Ask your Program Officer** who will be assessing your proposal



WHERE DISCOVERIES BEGIN



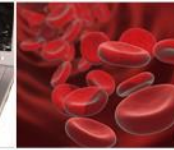
# Traits of Successful CAREER Proposals

- Appropriate scope of education and research activities. It is a 5-year plan, but should reflect foundation for your career
- Goes outside the education box of regular research proposals in your field
- Strikes a balance between doable research activities and more risky pursuits





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# CAREER Myths

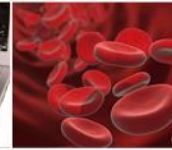
- ☐ “You cannot apply because you have another award”
- ☐ “It is an entry program, so apply to CAREER first”
- ☐ “I need to see a successful proposal to write a successful proposal”
- ☐ “ I read on the web that to succeed, I have to....”
- ☐ “CAREER proposals are more portable”
- ☐ “The education component does not matter”
- ☐ “You have no chance, if you are not from a research-intensive institution”

<http://www.nsf.gov/career>





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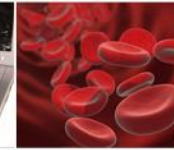


# CAREER Truths

- ☐ Most successful applicants receive a CAREER award two to four years after their initial appointment
- ☐ Most successful CBET CAREER awardees receive a grant on the first or second attempt
- ☐ Most new CBET CAREER awardees had previous experience (generally as postdocs) prior to an initial faculty appointment.



WHERE DISCOVERIES BEGIN



# The CAREER website – [www.nsf.gov/career](http://www.nsf.gov/career)

- Latest CAREER Solicitation - NSF 15-555
- Frequently Asked Questions - NSF 15-057
- CAREER Directorate/Division Contacts
- Link to recent awards
- Link to PECASE awards
- Directorate deadlines