Individual Evaluation Form
Science to Achieve Results (STAR) Fellowships 2012

NOTE TO REVIEWER: Provide your typed evaluation on this form. Read (1) the RFA thoroughly, especially Section I (Funding Opportunity Description), Section V.A (External Peer Review), and (2) the Guidance for Writing Evaluations. Your comments (but not your name) may be provided to the applicant.

Application Number: F12E31143
Institution: [redacted]
Applicant Name (Last Name, First Name): [redacted]
Education Level (EM, ED, DS, or CD): ED
RFA Topic Title and FON: Hydrogeology and Surface Water, EPA-F2012-STAR-E3
Applicant's Project Title: Informing the regulation of sediment in streams: determining natural rates of sediment generation in economically important landscapes
Environmental Discipline (List the major discipline for the applicant's graduate studies): Environment and natural Resources

OVERALL SCORE (CHECK ONLY ONE):

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
			X	

External Peer Review Criteria (1-3 below) are of equal importance.

Consider the entirety of the application – including the Personal Statement, Education & Experiences, Publications & Presentations, Course Work Information, and Letters of Recommendation – with respect to the criteria below.

Criterion I: Comment on the Applicant's Potential for Success in the Proposed Area of Inquiry.

For this criterion, consider the following elements (a-d) to be weighted equally:

a) The candidate's organizational, analytical, and written skills;
b) The candidate's demonstrated potential for success in a research environment;
c) The candidate's scientific curiosity, creativity, acumen, and potential for success in research appropriate to his/her educational level as indicated in their planned course of study (which may include a thesis project/dissertation topic description and listing relevant research literature based on educational level); and,
d) The planned course of study and/or proposed project, as appropriate to the candidate's educational level (*i.e.* EM, ED, DS, CD according to the educational level guidelines specified in Section IV. Item 5), for its technical merit, social application, potential for success, and expected environmental benefits.

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.

The proposal is reasonably well written although some references appear a bit outdated and some of the wording not as concise as it could be. For example, development and increased impervious surfaces are listed as a separate categories and deforestation could mean logging or forest fires. Proposed project will link GIS land use maps of four study areas in the US and Brazil (2 each) to cosmogenic isotope estimates of soil erosion using ^{10}Be (Beryllium). This is now a 15-20 year old technology and the innovative portion of this project was not well documented. Moreover, while the study areas represent diverse (i.e., fisheries, development, forestry) concerns, there is not a compelling reason for how this information is used to develop larger picture concepts. One study area appears to be along coastal Oregon – the sampling and analysis plan here are too vague to know if this is even feasible.

Application # F12E31143:

Criterion II: Comment on the Applicant's Demonstrated Commitment to an Environmental Career.

For this criterion, consider the following elements (a-d) to be weighted equally:

a) The degree to which the candidate possesses a strong potential for pursuing an environmental career,
b) The candidate's demonstrated commitment to the environment and/or potential for leadership in the environmental arena,
c) The candidate's demonstrated potential for success in attaining an advanced degree in an environmentally-related field, and
d) The candidate's demonstrated potential for maturity, responsibility, and integrity.

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.

The applicant received glowing letters of support from her advisor and others regarding her dedication to the environmental field. She has done very well in her classes thus far and there is every reason to believe that she will continue in the future and thus be successful in attaining her degree and career. Personal statement provides sufficient documentation of these goals as well.

Criterion III: Comment on the Potential for Broader Societal Impacts. "Broader societal impacts" refers to how the proposed activities have the potential to expand the capacity of society and the research enterprise to protect human health and the environment.

For this criterion, consider the following elements (a-c) to be weighted equally:

a) The applicant's demonstrated potential, by virtue of his/her environmental interests, for broadening public awareness, understanding, and engagement of all citizens—including those citizens from communities that have been historically under-represented in the environmental decision making process or in environmentally-related investigation/problem solving (e.g, tribes, women, communities of color, communities in economically distressed cities and towns, young people, persons with disabilities, linguistically isolated communities, etc.);
b) How the applicant addresses possibilities for disseminating environmental research results and information; and,
c) How the applicant proposes to collaborate in a trans-disciplinary setting, and with other [non-federal] sectors and users, to advance the quality of environmental inquiry as well as environmental decision-making.

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.

While the personal statement indicates interdisciplinary research, it is unclear in the proposal itself as to how this is going to happen. Furthermore, there is no section on broader impacts. The diverse geographic nature of the proposed project makes establishing meaningful stakeholder collaborations difficult and the project doesn't go far enough to recommend remediation strategies. The project doesn't even mention traditional conference/journal submissions as a means of disseminating information.

Individual Evaluation Form
Science to Achieve Results (STAR) Fellowships 2012

NOTE TO REVIEWER: Provide your typed evaluation on this form. Read (1) the RFA thoroughly, especially Section I (Funding Opportunity Description), Section V.A (External Peer Review), and (2) the Guidance for Writing Evaluations. Your comments (but not your name) may be provided to the applicant.

Application Number: F12E31143
Institution: [redacted]
Applicant Name (Last Name, First Name): [redacted]
Education Level (EM, ED, DS, or CD): ED
RFA Topic Title and FON: EPA-F2012-STAR-E3: Safe and Sustainable Water Resources: Water Quality—Hydrogeology and Surface Water (E3)
Applicant's Project Title: Informing the regulation of sediment in streams: determining natural rates of sediment generation in economically important landscapes
Environmental Discipline (List the major discipline for the applicant's graduate studies): Environment and Natural Resources

OVERALL SCORE (CHECK ONLY ONE):

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
		X		

External Peer Review Criteria (1-3 below) are of equal importance.

Consider the entirety of the application – including the Personal Statement, Education & Experiences, Publications & Presentations, Course Work Information, and Letters of Recommendation – with respect to the criteria below.

Criterion I: Comment on the Applicant's Potential for Success in the Proposed Area of Inquiry.

For this criterion, consider the following elements (a-d) to be weighted equally:

a) The candidate's organizational, analytical, and written skills;
b) The candidate's demonstrated potential for success in a research environment;
c) The candidate's scientific curiosity, creativity, acumen, and potential for success in research appropriate to his/her educational level as indicated in their planned course of study (which may include a thesis project/dissertation topic description and listing relevant research literature based on educational level); and,
d) The planned course of study and/or proposed project, as appropriate to the candidate's educational level (*i.e.* EM, ED, DS, CD according to the educational level guidelines specified in Section IV. Item 5), for its technical merit, social application, potential for success, and expected environmental benefits.

Application #: F12E31143

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.

The proposal was organized and written well. The candidate is proposing to help watershed management regulation by estimating natural background erosion rates using cosmic nuclides an isotopic signature of erosion. The candidate has completed a Masters degree in natural resources, served as a teaching assistant and interned in Guaynabo all showing environmental curiosity, and a potential for a successful environmental career. The proposal is at a level appropriate for a Doctorate program of study.

The primary weakness of the proposal is the vague goals with no real testable hypotheses stated. I would have expected a better use of the primary literature to show how the stable isotopes were used to help with watershed management decisions and then followed by specific hypotheses for the listed area of study. Another small concern is that there is no title listed for the candidate's Masters work which at this level I would expect to be published in the primary literature.

Criterion II: Comment on the Applicant's Demonstrated Commitment to an Environmental Career.

For this criterion, consider the following elements (a-d) to be weighted equally:

a) The degree to which the candidate possesses a strong potential for pursuing an environmental career,
b) The candidate's demonstrated commitment to the environment and/or potential for leadership in the environmental arena,
c) The candidate's demonstrated potential for success in attaining an advanced degree in an environmentally-related field, and
d) The candidate's demonstrated potential for maturity, responsibility, and integrity.

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.

The candidates working and volunteering activities in an environmental field show her true commitment to an environmental career. It is clear that the candidate wants to make a significant contribution to society by helping manage a serious worldwide problem like erosion and stream sedimentation. The proposal in not really clear on how the finding can achieve the goals she has set for herself.

Criterion III: Comment on the Potential for Broader Societal Impacts. "Broader societal impacts" refers to how the proposed activities have the potential to expand the capacity of society and the research enterprise to protect human health and the environment.

For this criterion, consider the following elements (a-c) to be weighted equally:

a) The applicant's demonstrated potential, by virtue of his/her environmental interests, for broadening public awareness, understanding, and engagement of all citizens—including those citizens from communities that have been historically under-represented in the environmental decision making process or in environmentally-related investigation/problem solving (e.g, tribes, women, communities of color, communities in economically distressed cities and towns, young people, persons with disabilities, linguistically isolated communities, etc.);
b) How the applicant addresses possibilities for disseminating environmental research results and information; and,
c) How the applicant proposes to collaborate in a trans-disciplinary setting, and with other [non-federal] sectors and users, to advance the quality of environmental inquiry as well as environmental decision-making.

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.

By conducting research in multiple locations around the world the candidate clearly understand that erosion and

sediment are a worldwide concern. It was not clear to me from the proposal how this research was going to be disseminated to scientific and management entities.

Individual Evaluation Form
Science to Achieve Results (STAR) Fellowships 2012

***NOTE TO REVIEWER:** Provide your typed evaluation on this form. Read (1) the RFA thoroughly, especially Section I (Funding Opportunity Description), Section V.A (External Peer Review), and (2) the Guidance for Writing Evaluations. Your comments (but not your name) may be provided to the applicant.*

Application Number: F12E31143
Institution: [redacted]
Applicant Name (Last Name, First Name): [redacted]
Education Level (EM, ED, DS, or CD): ED
RFA Topic Title and FON: EPA-F2012-STAR-E3, Safe and Sustainable Water Resources: Water Quality--Hydrogeology and Surface Water (E3)
Applicant's Project Title: Informing the regulation of sediment in streams: determining natural rates of sediment generation in economically important landscapes
Environmental Discipline (List the major discipline for the applicant's graduate studies): Watershed science

OVERALL SCORE (CHECK ONLY ONE):

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
		X		

External Peer Review Criteria (1-3 below) are of equal importance.

Consider the entirety of the application – including the Personal Statement, Education & Experiences, Publications & Presentations, Course Work Information, and Letters of Recommendation – with respect to the criteria below.

Criterion I: Comment on the Applicant's Potential for Success in the Proposed Area of Inquiry.

For this criterion, consider the following elements (a-d) to be weighted equally:

a) The candidate's organizational, analytical, and written skills;
b) The candidate's demonstrated potential for success in a research environment;
c) The candidate's scientific curiosity, creativity, acumen, and potential for success in research appropriate to his/her educational level as indicated in their planned course of study (which may include a thesis project/dissertation topic description and listing relevant research literature based on educational level); and,
d) The planned course of study and/or proposed project, as appropriate to the candidate's educational level (*i.e.* EM, ED, DS, CD according to the educational level guidelines specified in Section IV. Item 5), for its technical merit, social application, potential for success, and expected environmental benefits.

Application #: F12E1143

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.
The proposed project will take soil samples in three areas to determine long-term erosion rates using cosmogenic isotopes. The proposed study areas include the Pacific Northwest, agricultural Midwest, and the Atlantic Highlands in Brazil. The proposal does not provide any specific information about which areas will be sampled in each area or how these will be selected. There are no specific objectives or hypotheses other than the broad goal of characterizing erosion rates in three regions. The lack of specificity is particularly important for a place like the Pacific Northwest, as she talks about the economic importance of agriculture, but uses the threats to salmonid fisheries to justify the need for such data. The problem is that most of the salmon occur in forested watersheds, but these are not as economically valuable as agricultural watersheds, and there already are some long-term cosmogenic data from a number of sites in the Pacific Northwest (research watersheds in Idaho: Oregon Coast Range; etc.).

The candidate also suggests relating the long-term erosion rate to watershed physiography using GIS, but other factors, such as the amount and type of precipitation, soil type, and vegetative cover, are known to be primary controls on erosion. Hence it is not clear to what extent she can extrapolate to other areas.

The candidate has worked as an intern with the USGS in Puerto Rico, and is currently working on her M.S. degree at the University of Vermont. Her thesis project is determining long-term erosion rates in Panama. The proposed project is closely related, and would allow her to continue on to a Ph.D. She does not specify her longer-term career goals.

Criterion II: Comment on the Applicant's Demonstrated Commitment to an Environmental Career.

For this criterion, consider the following elements (a-d) to be weighted equally:
a) The degree to which the candidate possesses a strong potential for pursuing an environmental career,
b) The candidate's demonstrated commitment to the environment and/or potential for leadership in the environmental arena,
c) The candidate's demonstrated potential for success in attaining an advanced degree in an environmentally-related field, and
d) The candidate's demonstrated potential for maturity, responsibility, and integrity.

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.
The candidate shows solid evidence of being committed to a career in an environmentally-related field. She shows particular emphasis and aptitude for teaching and mentoring, as she has mentored two undergraduate students at the University of Vermont, was an instructor for a week-long residential learning program for high school students, and has worked as a teaching assistant. Her native language is Spanish, but her written English is excellent. In her undergraduate program at the University of Puerto Rico she had a 3.4 GPA, and she is currently carrying a 3.84 GPA for her M.S. coursework at the University of Vermont.

Her letters of recommendation show a high maturity. She has presented one poster at a national meeting and one poster at a local conference. This is a typical but not exceptional record for someone at this stage of their career.

Application #: F12E1143

Criterion III: Comment on the Potential for Broader Societal Impacts. "Broader societal impacts" refers to how the proposed activities have the potential to expand the capacity of society and the research enterprise to protect human health and the environment.

For this criterion, consider the following elements (a-c) to be weighted equally:

a) The applicant's demonstrated potential, by virtue of his/her environmental interests, for broadening public awareness, understanding, and engagement of all citizens—including those citizens from communities that have been historically under-represented in the environmental decision making process or in environmentally-related investigation/problem solving (e.g, tribes, women, communities of color, communities in economically distressed cities and towns, young people, persons with disabilities, linguistically isolated communities, etc.);
b) How the applicant addresses possibilities for disseminating environmental research results and information; and,
c) How the applicant proposes to collaborate in a trans-disciplinary setting, and with other [non-federal] sectors and users, to advance the quality of environmental inquiry as well as environmental decision-making.

Comments: Please provide 1 to 2 paragraphs of comments on this criterion based on the above elements; you can expand the space provided as required.

The letters of recommendation indicate that the candidate has leadership potential and a high degree of integrity. The proposal does not specify how she plans to disseminate the results of her research. As a native Spanish speaker she should have a high potential to serve as an example for Hispanics, and helping to link science with this historically under-represented segment of the population. Her work at the USGS and the University of Vermont indicate that she is very good at working in a trans-disciplinary setting, and she has the personal characteristics to be a very good collaborator. There is not much evidence as to how she would endeavor to use her work to advance environmental decision making.