

## Student Sustainability Council Meeting

**8, December 2015**

**Attendance:** Hannah Penn, Jerrod Penn, Karina Fuentes, Aaron Stromberg, Richard Grewelle, Johnathan Elliot, Ellen Green, Danielle Empson, Sam Stromberg, Lauren Thomas, Shane Tedder, Gabe Smith, Alex Miller, Noah Abercrombie, Michaela Rogers, Preston French

**Guests:** Stephen Zumdick, Joshua Morgan,

**Absent:** Sadie Meyers (School related)

17:05 – meeting begins with the reading of the preamble

17:08 – Introductions, and announcements

-Spring retreat is January 16<sup>th</sup>

17:11- Outreach Committee update begins

- Logo update

17:16 – Development Committee Update

- Mainly covering the attendance piece
- Development committee meeting minutes are attached

17:18 – Solar Car team begins their presentation, presented by Joshua Morgan

17:26 – Presentation ends, Q&A Begins

17:31 – Q&A for Solar Care Presentation ends

17:32 – Dr. Kidders distinguished speakers series presentation begins, Presented by Celine

Lamb

Updated 11/10/2015

17:34 – Presentation ends, Q&A Begins

17:38 – Q&A ends

17:39 – Monarch group presentation begins, presented by Stephen Zumdick

17:50 – Monarch presentation ends

17:50 - Monarch presentation Q&A begins

17:54 – Q&A ends

17:57 – Discussion on Solar Car Proposal Begins

18:01 – Motion to vote on solar car proposal (Aaron, Danielle 2<sup>nd</sup>)

**Vote: yes- 12 no- 0 (Approved)**

18:04 – Discussion on Kidder distinguished speaker series proposal begins

**Amendment:** Dependent on further sponsorships, the SSC will fund the full amount requested, with a corresponding decrease in funds allocated by the SSC by extra funds received by the other sponsoring entities. Meaning, if you receive a hundred dollars extra (in total) from your other sponsors, the SSC will fund one hundred dollars under less than the proposed amount

18:13 – Motion to extend discussion (Hannah, Danielle 2<sup>nd</sup>)

18:14 - Motion to vote on amendment (Will, Ellen 2<sup>nd</sup>)

**Vote – Yes: 12 no: 0 (approved)**

18:15 – Motion to vote on proposal as revised (Aaron, Ellen 2<sup>nd</sup>)

**Vote - yes: 12 no: 0 (approved)**

18:16 – Discussion on Monarch proposal begins

18:26 – Motion to extend discussion (Will, Ellen 2<sup>nd</sup>)

18:29 – Motion to extend discussion by two minutes (Johnathan, Ellen 2<sup>nd</sup>)

18:31 – motion to extend discussion by three minutes (Danielle, Johnathan 2<sup>nd</sup>)

18:33 – Motion to amend proposal (Daneille, Ellen 2<sup>nd</sup>)

**Amendment** – In Addition to the final report, a midterm report will also be expected by sometime in April. The due date will be finalized by the development committee whose decision will be referred through the point person for your project

18:34 – Motion to vote on amendment

**Vote - yes: 10 no: 0 (Hannah and Jerrod abstain) (approved)**

18:35 - Motion to vote on proposal as amended (Aaron, Ellen 2<sup>nd</sup>)

**Vote - yes: 10 no: 0 (Hannah and Jerrod abstain) (approved)**

18:36 – discussion on attendance revisions begins

18:41 – Motion to vote on attendance reform (Aaron, Ellen 2<sup>nd</sup>)

**Vote - yes: 12 no: 0 (approved)**

18:43 – update on ravens run meeting in January

18:52 – Motion to vote on last meetings minutes (Johnathan, Danielle 2<sup>nd</sup>)

18:52 – Meeting adjourned

## **Monday, December 7th, 2015**

10:15-11:15am

Present: Jonathan, Ricky, Hannah, Jerrod

Absent: Tina (email-ill), Will, Caroline (Out of country)

### **Minutes**

- Decide spring meeting time at January retreat at Raven Run
- Today: develop the pointperson/follow-up process, seen at [https://drive.google.com/open?id=0B\\_PZ\\_z8Yny3abGdySTJPR3pYcEU](https://drive.google.com/open?id=0B_PZ_z8Yny3abGdySTJPR3pYcEU)
- Need for more apparent history of applicant with SSC
- Need for more well defined timelines for the recipient and the SSC
- Distribute pointperson/follow-up process
- Committee members prepare comments for January meeting

### **Other points based on the pointperson/follow-up discussion (not being submitted to general council's meeting minutes)**

- Add a new column to the project list titled 'follow-up'
- Add "have received SSC funding previously? Yes or No"
- Director of Dev. is responsible for including past SSC history of applicant as a separate document in the meeting's proposal folder
- Compile all projects into one document for the sake of an easy Control +F
- Talk to Ellen about making the 'pointperson' a Council-wide project.
- Develop a hard cutoff for a project's window. Non-communication and/or length of time.
- Including a timeline is extremely important

## **Monday, November 2, 2015**

10:15-11:15am in Room 211 of the Ninety

In attendance: Hannah Penn, Tina West, Jonathan Elliott, Jerrod Penn, Ricky Grewelle

Absent: Caroline Engle (Class), Will Varney (Exempt-Director of T&A; last second email), Danielle Empson (Exempt-Director of Operations)

- Intend to submit development committee meeting minutes as part of council meeting minutes.
- Discussion of attendance policies, reflected in "Attendance Revisions 11-2" [https://drive.google.com/open?id=0B\\_YyeTtxq4z-cEhMQldZdmVWU1U](https://drive.google.com/open?id=0B_YyeTtxq4z-cEhMQldZdmVWU1U)
- Discussion of mid-term elections in tandem with attendance policies.
- Tina and Hannah: Update attendance based on today's discussion, distribute the morning of November 16<sup>th</sup>, comments due by Friday November 20<sup>th</sup>.
- Final review of attendance policies by development committee the week of November 30<sup>th</sup>-December 4<sup>th</sup>.
- Plan on presenting and voting on attendance policy for December 8<sup>th</sup> meeting and ideally going into effect for the spring semester.

Updated 11/10/2015

- Ricky has updated the constitutional amendments documents as they relate to the organizational additions and expulsions
- Brief discussion on meetings preferably taking place on 1st and 3rd week of fall; Thanksgiving/AASHE.
- Next meeting December 7th

### **Monday, October 19, 2015**

10:15-11:15am in Room 211 of the Ninety

In Attendance: Hannah Penn, Jonathan Elliott, Jerrod Penn, Tina West

Absent: Caroline Engle (Class), Ricky Grewelle, Danielle Empson, Will Varney

- Move forward on submitting changes to proposal application. Email out changes to development committee, request any changes or comments by noon Friday, October 23rd
- Submit the amendments to the Constitution for group addition and expulsions from the SSC. Email out changes to development committee, request any changes or comments by noon Friday, October 23rd
- Propose that a January election process take place. To be discussed at the next SSC meeting.
- Will delay Statement of Principles until at least November
- Attendance- will not move forward to SSC meeting. Edits and points of discussion to be sent out on Wednesday, October 28th. Comments and edits are tentatively due by Nov 2nd.
- Will not meet until December 7th at 10:15am.

### **Monday, October 12**

10:15-11:15am in Room 211 of the Ninety

In attendance: Will Varney, Danielle Empson, Ricky Grewelle, Tina West, Hannah Penn,

Jonathan Elliott, Jerrod Penn

Absent: Caroline Engle (class)

#### **Timeline:**

- Ricky reviewed current process for adding and expelling student organizations. Group provided feedback.
- Jonathan reviewed Statement of Principles, with a focus on grammatical and layout changes.
- Will discussed issues with project assignment and management. Group discussion on necessary components, and multi-year projects.
- Jerrod reviewed potential changes to application proposal.

#### **Action Items**

- Jonathan and Danielle: Edits to Statement of Principles for the second October meeting
- Jerrod: Fix proposal application
- Hannah & Tina: attendance policy
- Will: Continue to explore the assignment and follow-up documentation, assignments, processes etc.

Updated 11/10/2015

- Ricky: Constitutional changes as it relates to organizational representation.

Development's 15 minute slot for Oct 13th meeting

- Extensive time constitutional changes
- Mention statement of principles, but not a focus

## **Saturday, September 19th**

### **Development Committee Priorities and Meeting Minutes**

**9/19/2015, 5PM-6PM**

In Attendance: Ricky Grewelle, Jerrod Penn, Jonathan Hamilton, Tina West, Danielle Empson, Will Varney, and Hannah Penn

Collection of potential improvements to consider for the Constitution/SSC processes and coordination of meeting completed by Jerrod Penn. Notes taken by Hannah Penn.

#### **Meeting Schedule: 2<sup>nd</sup> Monday of every month, 10:15-11:15AM**

Next meeting: The Ninety at 10:15am on Monday, October 12<sup>th</sup> (Shane is reserving a space)

Committee met to determine goals for the year as outlined below.

#### **1. Follow-up with current proposals**

a. Assign each funded project a committee member for follow-up (members assigned on rotating basis). Below is a list of members assigned to Fall 2015 funded projects.

- i. R.S. Hatfield, Mural: Jerrod Penn
- ii. S. Walling, Traveling Student Design Exhibition: Danielle Empson
- iii. S. Tedder, AASHE: Hannah Penn

b. Officer of Development will CC a congratulatory email to the selected member and the fund recipients

c. That member will then need to send the recipient an email explaining that they will be responsible for walking that recipient through the SSC system and ensure that all project stipulations were met (i.e. attending events, requesting images and post-survey)

d. As needed, the assigned member must also coordinate with the general council and Shane Tedder for assembling a selection sub-committee for the further dissemination of project funds (i.e. when projects require a further application process for recipients to access funding)

*\*\*The specifics required for the follow-up in addition to the post-project survey are being outlined by Will Varney*

#### **2. Attendance (Constitutional Reform)**

a. Add a clause about excusing SSC members who are "knocked out" from attending regular SSC meetings (i.e. when the council knowingly votes on a meeting time no compatible with a member's schedule that member should not be penalized).

b. Ensure that members of the SSC experience consequences for non-attendance

#### **3. Expunge/Add organizations(Constitutional Reform)**

a. Determine the exact criteria to be used for dismissing a group

b. Determine the mechanism for expunging and re-instating the dismissed group

c. Add in formal mechanism for fairly adding new organizations to the council

#### **4. Statement of Principles Reform**

a. Change to reflect the updated constitution

b. Change current, unclear wording unsuited to current goals of the SSC  
*\*\*The general change ideas are being formulated by Jonathan Hamilton and Danielle Empson*

**5. Update SSC funding application**

- a. "Demonstrate how the SSC will be advertised"
- b. Are you willing to accept a general reduction in your budget?
- c. Are you willing to accept line item changes in your budget?
- d. Other presentation, financial or non-financial conditions.



## University of Kentucky Student Sustainability Council 2015-2016 Grant Application

1. Name: **Andrew Thomas**
2. Email: **drew.thomas0209@gmail.com**
3. UK Affiliation: **University of Kentucky's Solar Car Team** (solarcar@enr.uky.edu)
4. Proposed Project Title: **University of Kentucky's Solar Car Project - Gato Del Sol**
5. If applicable, please provide the sponsoring or overseeing organization. (e.g. the Office of Sustainability, Wildcat Wheels, the Dept. of Ag. Economics, etc.): **University of Kentucky College of Engineering**
6. Total Amount Requested from the Council: **\$8,000**
7. Would you like to make a presentation to the Council before your proposal is reviewed? **Yes.**
  
8. What is the focus area(s) of your project? **Transportation, Energy Conservation and Renewable Energy**
  - Renewable Energy**
  - Transportation**
  - Energy Conservation**
  - Climate Change**
  - Local Environment**
  - Behavioral Change**
  - Recycling
  - Agriculture/gardening
  - Water
  - Other (Please Describe): \_\_\_\_\_
  
9. Please name any other project leaders:

Name	Joshua Morgan
Title & department	University of Kentucky Solar Car Team Manager
Project Role	Oversees and manages the team and the logistics necessary to maintaining a competitive club.
Email	<a href="mailto:joshuamorganusa@gmail.com">joshuamorganusa@gmail.com</a>

Name	Chris Heintz
Title & department	University of Kentucky Solar Car Engineering Lead
Project Role	Heads the design, and manufacturing process for newer generation vehicles, while contributing leadership to every facet of the club.
Email	<a href="mailto:c.heintz.357@gmail.com">c.heintz.357@gmail.com</a>

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10. Please describe the project, its goals, and how it contributes to UK student knowledge, attitudes & culture, or practices of the 3 pillars of sustainability (i.e. economic, environmental and social).

**Our mission as the University of Kentucky Solar Car Team is to design, manufacture, and race competitive solar vehicles while providing our engineers and multi-disciplinary members with much needed hands on experience outside of their demanding course load, while contributing to STEM outreach in the local Bluegrass region. In relation to the three pillars of sustainability, our economic goals have everything to do with advancing the club into the ranks of some of the most competitive solar teams in the nation. Environmentally we wish to help train our engineers and members to the best of their abilities so that they might make a positive impact with renewable energy initiatives moving forwards in their careers. In a social and communal sense, our team wishes promote our love of STEM while inspiring and training some of the University's and nation's future leaders.**

11. Name any anticipated project affiliates and describe their support, including any financial, matching or in-kind support.

**Our team anticipates heavy involvement with corporate entities and local Bluegrass businesses in an attempt to gain funding. In a sense, it is our job to approach businesses in order to maintain mutual relations for both public exposure and to offer promotional incentive for any contributions made. We offer corporate incentives by showing our appreciation for donations (ranging from cash to parts) through our media channels, encompassing everything from shout outs on social networking to offering real estate on the supporter page of our team's website, vehicle and trailer. In addition to big business, individuals who make donations to our organization have the opportunity to have their name and hyperlink placed on our supporter page of the website.**

12. Who is the primary target population of your project? **UK (general), Undergraduates, Community**

- UK (general)**
- Undergraduates**
- Community**
- Graduates**
- Faculty
- Other (Please Describe): \_\_\_\_\_

**In 250 words or less, please answer the following questions.**

13. Describe the intended University of Kentucky audiences and potential number of people impacted including any potential diverse segments such as student or community organizations and supporting evidence (e.g. expected or historical event/speaker attendance).

**In terms of affairs with the university, we work hard to maintain relationships with our advisors and the affiliates within the college of engineering. Our target audience for recruitment will forever remain the student body. As a growing organization on campus, it would be unwise to turn away any willing and sincerely interested potential members. In order to become a well-rounded organization it is essential that we encompass any and all perspectives in order to accomplish our team's goals. This year we took on upwards of 20 new committed recruits.**

14. Are there any students involved in the proposed project? If so, do they benefit from professional or technical skills, outputs, or experiences such as presentations, posters, or reports?

**Generally speaking, most members of UKSC are undergraduate students, however we have two graduate students on the team, one of whom is doing battery modeling research on our car. Everyone involved gains much hands on experience within their field of study. Depending on the projects, new and established members learn skills from soldering and welding, to team-work and communication. Business team members gain**

**experience with presentations, outreach, photography and especially fundraising. The experience gained far exceeds the practical experience gained through the curriculum, with JB Straubel, CTO of Tesla Motors saying "Solar Car matters more than most classes you take... At Tesla we place it higher than GPA".**

15. Please describe any previous history and to what extent you, other project leaders, or the sponsoring organization may have with the UK Student Sustainability Council.

**In the recent years we have asked the Student Sustainability Council for financial assistance. From missing the deadline last year, we lost our shot at some much needed funding, and thus it is our mission this year to reach out and engage the Council for assistance.**

16. Please outline a timeline and milestones to ensure project efficacy prior to and after project implementation.

**This year we begin the arduous three year design cycle for our newest vehicle Gato Del Sol VI. With your help, we will be able to acquire the many parts, tools and materials needed for the manufacturing process. As soon as funding is granted, we will be buying new motor controllers, battery packs and carbon fiber. Our new car will be able to compete in FSGP 2017.**

17. Does the success of your project require prior approval of other UK or non-UK entities (e.g. IRB or venue approval, etc.)?

**Our success stems directly from the guidance that we are given through the college of engineering. Our faculty advisors approve many of the actions that we take, from business to engineering.**

18. If applicable, what is the potential for long term self-sustainment or long term effects?

**With the assistance of the SSC, our members have the opportunity to gain experience in their respective fields and can advance into their job market with the tools necessary to build a sustainable future. Looking even further forwards, the work done at the garage helps to promote publicity for the CoE and fosters an environment where STEM education is stimulated, advancing the accumulation of human knowledge for generations to come.**

~~19-~~

~~29-19.~~ Using the following format, please provide a line item budget for the total amount request and what percent of the project is being sponsored by SSC funding. Provide information sources or reasoning for the budget estimates.

Expense	Description	\$ amount
Silicon Solar Cells	6m <sup>2</sup> , Sunpower C60 Bin J, >22% efficient	\$20,000
Battery Pack	18650 Lithium Ion, 5kWH	\$6,000
Carbon Fiber Fabric	TexTreme, 100m <sup>2</sup>	\$6,000
Epoxy Resin	9 Gallons	\$1,200
Structural Epoxy	3M DP-460	\$600
Carbon Fiber Wheels	GH Craft	\$6,000
Composites consumables	Breather, release film, vacuum film, gasket tape	\$1,200
Fiberglass & Resin for Mold	50 Gallons,	\$2,000
Mold Gel Coat	1.5 Gallons	\$500
Bearings (Kingpin and Motor)		\$300
Particleboard for mold plug	To Fabricate 2 3'x16'x6' mold plugs	\$2,000
Replacement Motor	NGM SCM150	\$16,500
Fasteners		\$600
Suspension Materials		\$1,500
Suspension Components	Shocks, brakes, etc	\$1,500
Misc. Control Electronics	Telemetry, driver display	\$1,000
FSPG/ASC2016 Race Fees		\$7000
FSGP/ASC 2016 tires	28 Michelin Solar Car Radial	\$3000
FSGP/ASC 2016 Vehicles, lodging, food		\$8000
ASC 2017 Race Fees		\$4000
FSGP 2017 Tires	10 Michelin Solar Car Radial	\$1500
ASC 2017 Vehicles, lodging, food		\$4000
<b>Total Budget</b>		<b>\$94,000</b>

Updated 11/10/2015

Amount requested from SSC		\$8,000
Percentage requested from SSC		8.5%

24-20. You may include additional attachments to supplement the application such as promotional material, resumes, letters of collaborative funding, etc.

Submit completed project proposals and/or questions about proposal process to Shane Tedder at [shane.tedder@uky.edu](mailto:shane.tedder@uky.edu).

Project proposals will be considered on a rolling basis and must be received 1 week prior a scheduled meeting in order to be considered for the agenda. If SSC and applicant are able to confirm that project, if funded, would be in compliance with University Business Procedures. The Fall 2015 meeting schedule is listed below:

<u>Meeting date</u>	<u>Proposal due date</u>
Friday, September 18	Friday, September 11
October TBD	TBD
November TBD	TBD
December TBD	TBD

**Solar Car Proposal Clarification**

Updated 11/10/2015

Hello Monon,

Just following up on your proposal to the SSC. The student directors will meet tomorrow to discuss the proposals that will be reviewed at the 12/8 meeting. As Hannah requested, please provide additional information on which budget items would be covered by the \$8,000 from the SSC. It would also be helpful to know where the sources and amounts of the remaining funding. Please let us know if you have any questions.

Shane Tedder

Hi,

The funding would go mainly to purchasing and sustaining new solar cells for the car. The remaining funding can go to batteries or other miscellaneous items, such as race fees. If there are more technical questions about specific funding, we can address them during the meeting next week. Also, for the meeting, do we show up anytime between 5-7 pm or will we get a specific time slot?

I apologize for the late response. Sorry for any inconveniences.

Sincerely,  
Monon Rahman

Updated 11/10/2015

## University of Kentucky Student Sustainability Council 2015-2016 Grant Application

1. Name: Stephen Zumdick
2. Email: [s.zumdick@uky.edu](mailto:s.zumdick@uky.edu)
3. UK Affiliation: Biology Graduate Student
4. Proposed Project Title: Supporting Monarchs and Pollinators through Citizen Science and Public Engagement
5. If applicable, please provide the sponsoring or overseeing organization. (e.g. the Office of Sustainability, Wildcat Wheels, the Dept. of Ag. Economics, etc.): Biology/Agricultural Economics
6. Total Amount Requested from the Council: \$18844
7. Would you like to make a presentation to the Council before your proposal is reviewed? Yes

8. Please mark the primary and secondary focus areas of your project with a **1** and **2**, respectively.

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Recycling:</li> <li>• Transportation:</li> <li>• Agriculture/Gardening:</li> <li>• Water:</li> <li>• Renewable Energy/<br/>Energy Conservation:</li> </ul> | <ul style="list-style-type: none"> <li>• Climate Change:</li> <li>• Local Environment: <b>2</b></li> <li>• Behavioral Change:</li> <li>• Species Diversity/Conservation: <b>1</b></li> <li>• Other (Please Describe):</li> </ul> |
|---|--|

9. Please name any other project leaders:

<b>Name</b>	Phil Crowley
<b>Title &amp; Department</b>	Professor, Biology
<b>Project Role</b>	Graduate Student Advisor; Ecology/Citizen Science
<b>Email</b>	<a href="mailto:pcrowley@uky.edu">pcrowley@uky.edu</a>
<b>Name</b>	Jerrold Penn
<b>Title &amp; Department</b>	Graduate Student, Ag Economics
<b>Project Role</b>	Survey Manager
<b>Email</b>	<a href="mailto:Jerrold.penn@uky.edu">Jerrold.penn@uky.edu</a>
<b>Name</b>	Wuyang Hu
<b>Title &amp; Department</b>	Professor, Ag Economics
<b>Project Role</b>	Graduate Student Advisor; Nonmarket Valuation/Survey Design
<b>Email</b>	<a href="mailto:wuyang.hu@uky.edu">wuyang.hu@uky.edu</a>

*Please note that any project leaders listed will be excused for closed discussion of their project proposal.*

10. Please describe the project, its goals, and how it contributes to UK student knowledge, attitudes & culture, or practices of the 3 pillars of sustainability (i.e. economic, environmental and social), including potential long term effects.

In May 2015, the Obama administration released the [National Strategy to Promote the Health of Honey Bees and Other Pollinators](#), with the goals of understanding and supporting honey bees, monarchs, and other pollinators through federal action and public/private partnerships to engage all segments of society to reverse recent declines. An open question though is how a national initiative translate into local support and action? This project aims to assess multiple methods to increase the population of the iconic monarch butterflies and other pollinator species in Kentucky through economically-viable and community-based mechanisms.

The first mechanism entails implementing a citizen science study. Local data on the biological processes or economic valuation of pollinators and monarchs does not exist. To address both, we will conduct a "Paired Pot" citizen science project in two neighborhoods, the relatively economically disadvantaged neighborhood of the Ecological Research and Education Center (EREC) in northern Lexington and the Greg Page/Shawneetown campus apartments. The primary goal is to determine the contribution by monarchs and other large butterflies to seed production by milkweed plants; a secondary goal is to quantify visits by major groups of pollinators including bees to flowering milkweed. In early June, approximately 40 families in each of the neighborhoods outlined above will receive two 8" diameter plastic pots containing flowering milkweed plants, set side by side and watered twice weekly. One pot of each pair is surrounded by chicken wire to screen out monarchs and other large butterflies. Neighbors receive a pictorial key for identifying pollinators and agree to spend a half hour multiple times per week counting the visits by pollinator type, and recording the data by pot type (screened or not). When flowering stops in August, plants will be retrieved and seeds produced will be counted to assess the contribution by monarchs and other large butterflies to seed production by comparing the two pots.

The SSC will support the initial purchase of materials to set up and maintain this citizen science project through the summer of 2016. By using citizen science, we can measure how much monarch butterflies and other pollinators benefit from the implementation of small, citizen science milkweed plots. The project generates clear benefits to the monarchs as an additional food source and also generates valuable information for other communities who may be weighing the benefit of small, individual efforts rather than more expensive, multi-acre projects. Communities that could especially benefit from our approach are agriculturally dominated areas since cultivated land greatly reduces viable habitat for monarchs and other pollinators.

While the citizen science approach is useful, an economic study will also be conducted to assess how the broader UK-Lexington-Bluegrass community is willing to support the effort led by UK to increase the population of monarchs and pollinators. This involves a survey of students, faculty/staff, and Lexington/KY residents, including responses collected along the Legacy Trail, elucidating differences in the UK community versus Lexington residents. About 900 surveys will be completed; approximately half of these will involve the participant having the opportunity to make an actual donation to support monarchs via milkweed purchases and planting on the North Farm and at EREC. To incentivize their participation and to complete the survey, respondents will be told that one milkweed will be planted and offered a small financial \$5 reward, and will also be given an opportunity to give this \$5 reward back to support the purchase of additional milkweed plants.

Economically, we will be able to measure the value various types of participants place on monarchs and other pollinators. This helps address the broader question of how much public support can be garnered for a national initiative on sustainability. By engaging survey participants on their support in Lexington versus Western Kentucky, we can measure differences in support for an environmental initiative that benefits the local community versus a geographic location that has greater environmental benefits, but smaller direct benefits on the participants.

Finally, the third facet of the requested funds will be used to purchase and install a minimum of 800 milkweed plugs at the North Farm along the Legacy Trail and at the Ecological Research and Education Center. Planting will be conducted by UK student organizations. After planting the milkweeds, aluminum signs will be installed to advertise the purpose of the milkweeds, and their relationship to monarchs and other pollinators. Additional funds generated from the economic survey (those who choose to return the \$5 reward or those who make actual donations) will fund the purchase and planting of additional milkweed plugs and/or future iterations of citizen science. The synthesis of the ecological and economic components enriches the viability of the project in long-run efforts and to the various participants involved.

11. Name any anticipated project affiliates and describe the extent of their support, including any financial, matching or in-kind support. Specific details are encouraged.



- To alleviate the extensive time commitment of planting milkweed plots at North Farm and EREC, we will enlist the help of student organizations. We are willing to consider giving preference to SSC-related organizations. This connects students to their ability to improve conditions for pollinators/monarchs and humans. Four different student groups, with additional plants based on donation rates.
- This project involves residents near the Ecological Research and Education Center (EREC) as well as student residents at Greg Page/Shawneetown. If necessary, recruitment may involve undergraduate and graduate students from biology and entomology (H. Garman Entomology Club) as citizen scientists. While citizen scientists will receive some small compensation, much of their effort still represents volunteering on behalf of the research. Letters of support from various entities are attached.
- The department of Agricultural Economics will provide in-kind support by administering and overseeing funds potentially provided by the SSC to apply to undergraduate research and extension activities related to the project.
- AEC-580, a class used to create applied research opportunities for undergraduate students, will be putting its full effort into the economic survey's progress.
- UK North Farm and EREC both will provide space for the milkweed planting/restoration. With respect to the UK North Farm, Dr. Ric Bessin is responsible for how entomology space is allocated at the North Farm and is serving as liaison for space allocation to plant milkweed plugs. Dr. Crowley is responsible for how space is allocated at EREC.

12. Please mark the primary target population of your project with a **1**.

- UK (general):
- Undergraduates:
- Graduates:
- Community: **1**
- Faculty:
- Other (Please Describe):

**In 250 words or less, please answer the following questions.**

13. Describe the intended University of Kentucky audiences and potential number of people impacted including any potential diverse segments such as student or community organizations and supporting evidence (e.g. expected or historical event/speaker attendance).

Currently the citizen science project intends to include the student residents who live in Greg Page/Shawneetown as well as residents near EREC, which will continue to enhance EREC's relationship among the corresponding neighborhoods. In the event that too few citizen scientists are recruited among these students, the leadership of the Biology Graduate Student Association and H. Garman Entomology Club have agreed to advertise and recruit additional students as citizen scientists.

Based on undergraduate and graduate student participation in multiple facets (biological research, application citizen science), undergraduate workers involved, UK undergraduates involved in designing and implementing the economic survey, and student groups involved in planting milkweed, these provide opportunities of sustainability education to many UK students. With respect to the economic survey, the potential student impact among those who will eventually convert this applied work into personal achievement is illustrated by the numerous previous awards, presentations, publications, and outcomes of previous students involved.

By planting large patches of milkweed at North Farm, this project will provide habitat for many wildlife species. These patches provide an ecological benefit and an aesthetic improvement for Legacy Trail users and EREC visitors, which includes current and future UK students. Further, given the issue's national importance, it is an opportunity for UK to be a leader in this initiative by generating applied knowledge for other interested communities to use in supporting pollinators.

14. Are there any students involved in the proposed project? If so, do they benefit from professional or technical skills, outputs, or experiences such as presentations, posters, or reports?
- The undergraduate workers and student organizations involved for the citizen science and milkweed restoration components stand will gain valuable understanding of practices to improve sustainability.
  - The undergraduate students involved in creating the economic survey and conducting data analysis will learn how to implement applied social science research and improve their communication skills, in both verbal and written form, with various stakeholders.
  - The undergraduate and graduate student residents who are involved as potential citizen scientists will gain knowledge on the importance and recent decline in pollinators and monarchs. Due to the citizen science nature of this project, these students will be able to apply what they learned in their own real life practices.
  - A number of academic presentations and publications will result from the projects. A group of undergraduate will present the main findings of this project to in various forums at UK and submit to AASHE 2016. Undergraduate students will also have the opportunity to fulfill their UK credit requirement for graduation by enrolling in a special learning course alongside this project. It will also contribute to the theses of several graduate students.
15. Please describe any previous history and to what extent you, other project leaders, or the sponsoring organization may have with the UK Student Sustainability Council.

- Dr. Phil Crowley was associated with the Hitnes mural project submitted earlier this year.
- Jerrod Penn and Dr. Wuyang Hu have worked with the SSC in multiple ways over the past several years including projects on The UK-LFUCG Arboretum (multiple student presentations and awards; currently in submission to a peer-reviewed journal), the Johnson Center/energy generation in workout facilities (multiple student presentations and awards; published in "Sustainability: The Journal of Record"), a faculty/staff sustainability survey, and a student sustainability survey.

16. Please outline a timeline and milestones to ensure project efficacy prior to and after project implementation.

December (2015)

- Tentative starting date is December 14<sup>th</sup>
- Begin initial survey development

January 2016

- Mid: AEC-580 begins
- Purchase light cart, seeds, and soil for paired pots; start milkweed plants in flats

February

- Early: Conduct focus groups of survey
- Mid: Survey completed, submitted to IRB
- Transfer milkweed plants into small square pots

March

- Early: IRB comments and feedback, resubmit
- Late: Begin collecting survey responses/collect pilot responses
- Late: Establish contract with Dropseed Nursery (located in Goshen, KY) for milkweeds

April

- Continue collecting survey responses
- Transfer milkweed plants into large pots

May

- Early: AEC-580 concludes, initial summary of work posted.
- Early: Collection of survey responses completed
- Construct chickenwire cylinders for pot experiment

June

- Initial distribution of paired pots
- Instruction/orientation of citizen science participants

August

- Late August/Early September: Student groups plant milkweeds at North Farm

September

- Retrieve milkweed plants from participants
- Count seeds from paired pots
- Signs installed at North Farm

October

- Analyze paired pot data from citizen science
- Economic data analysis

17. Does the success of your project require prior approval of other UK or non-UK entities (e.g. IRB or venue approval, etc.)? If so, please provide supporting documentation.

Paula Dunn, Housing Manager for Graduate and Family Housing, has agreed to involve the residents of Greg Page/Shawneetown in the citizen science project. A letter is attached.

Mr. Lewis Brown, president of the Green Acres-Hollow Creek-Breckinridge Neighborhood association near EREC collaborates with Dr. Crowley frequently, most recently on establishing a community garden. While not formally written, Mr. Brown was supportive and believed there would be willing participants in the neighborhoods. He can be reached at Brown0005@twc.com.

If too few citizen scientists are recruited from the EREC neighborhoods or Greg Page/Shawneetown, the H. Garman Entomology Club is willing to include their members as potential participants. They can be reached via Kelly.Jackson2@uky.edu or 859-257-7450. A letter is attached.

If too few citizen scientists are recruited from neighborhoods near EREC or Greg Page/Shawneetown, the Biology Graduate Student Association is willing to include their members as potential participants. They can be reached via Luc.Dunoyer@uky.edu or 859-257-1996. A letter is attached.

The economics component of the proposal will require IRB review and the citizen science project may require IRB review. In both cases, the appropriate IRB review-type is known as an "IRB exemption" because it involves minimal risk and meets criteria specified by federal regulations to qualify for exemption. IRB exemption requires less time for approval.

Dr. Crowley is the director of the Ecological Research Facility (ERF) and Ecological Research and Educational Center (EREC). He will be able to provide any necessary resources needed for this project; potential resources necessary from ERF will be land area, tools, and a training space for the citizen scientists.

18. Please demonstrate how the Student Sustainability Council will be credited or advertised in your project (this can include promotional material). Would a project leader be available for a radio interview?

The SSC will be mentioned via:

Its logo on signs posted at the UK North Farm/EREC.

In the orientation and any promotional material for the citizen scientists.

At the conclusion of the survey to participating respondents.

Any presentations and publications.

Yes, we are available to participate in a radio interview.

19. Using the following format, please provide a line item budget for the total amount request and what percent of the project is being sponsored by SSC funding. Provide information sources or reasoning for the budget estimates.

Expense	Description	\$ amount
	<i>Please see attachment for line item budget</i>	
	<i>Note, <b>no</b> graduate student salaries are being requested, only materials, volunteer compensation, and undergraduate help.</i>	

20. Are you willing to accept a general reduction in your budget? Yes

21. Are you willing to accept line item changes in your budget? Yes

22. You may include additional attachments to supplement the application such as promotional material, resumes, letters of collaborative funding, etc.

Submit project proposals and/or questions on proposal processes to [ukstudentsustainabilitycouncil@gmail.com](mailto:ukstudentsustainabilitycouncil@gmail.com) with 'SSC Proposal' as the subject line.

If successfully funded, a councilmember will be assigned to your project. Failure to communicate with this person can result in a total or partial loss of funding. **Any changes in the use of approved funding must be resubmitted and re-approved by the Council. Unused funds are automatically returned to the SSC.**

Project proposals will be considered on a rolling basis and must be received 1 week prior a scheduled meeting in order to be considered for the agenda. If SSC and applicant are able to confirm that project, if funded, would be in compliance with University Business Procedures. The Fall 2015 meeting schedule is listed below:

<u>Meeting date</u>	<u>Proposal due date</u>
October 13, 2015 -	Proposals due by October 6, 2015
October 27, 2015 -	Proposals due by October 20, 2015
November 10, 2015 -	Proposals due by November 3, 2015
December 8, 2015 -	Proposals due by December 1, 2015

**Supporting Monarchs and Pollinators through Citizen Science and Public Engagement**

**GRAND TOTAL**

**\$1884**

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**Citizen Science Budget**

- Seedling light cart (HPS 52970; four 36" x 24" shelves with grow lights) \$669
- Shipping for light cart \$60
- Flats and small square pots \$60
- Pots (8" diameter, 2/participant x 2neighborhoods x 40 participants/neighborhood) \$160
- Soil (2 cu yard of potting mix) \$120
- Seeds (*Asclepias curassavica*, Blood flower; \$2.80/packet x 20 packets) \$56
- Chicken wire (rolls of 36" x 1" hex mesh x 50' x 6 rolls at \$24/roll) \$144
- Twist ties for attaching cylinder tops \$20
- Undergraduate Worker (120 hrs @ \$10/hr) \$1200
  - Help make cylinders, separate seeds, and water milkweeds plugs at EREC
- Compensation for Citizen Scientists
  - \$20 per observer at milkweed orientation/distribution in June (80 observers) \$1600
  - \$40 per observer upon returning the milkweed plants in August (70 observers) \$2800  
(expect at least 10 observers to drop out for the August return)

**TOTAL**

**\$6889**

**Economic Survey Budget**

- 3 Focus Groups \$1000  
(food for 8-12 individuals per group and small compensation per participant)<sup>1</sup>
- \$5 participation reward for pilot responses (50) \$250
- \$5 survey participation reward *or donation*  
\$4500 (900 responses requested; a number of responses will not be useable)
- Undergraduate Worker (75 hrs @ \$10/hr) \$750  
Help with survey printing/logistics
- Survey printing costs \$50

**TOTAL**

**\$6550**



### **Milkweed Restoration & Public Outreach Budget**

- 800 milkweed plugs (\$3/plug)  
\$2400\*\*  
(Common milkweed (*Asclepias syriaca*), a species native to Kentucky purchased from Dropseed Nursery in Goshen, KY)
- 3 Signs at North Farm along Legacy Trail for outreach  
\$405 (\$135 each; composed of a custom 24"x36" sign and two posts)
- Undergraduate Coordinator (100 hrs @ \$10/hr)  
\$1000  
Oversee student group involvement; coordinate with North Farm and EREC
- Student Organization Participation for North Farm Planting  
\$1600 (4 groups, \$400 each)  
*Note: the survey will generate additional funds that will be used to purchase more milkweed and increase the number of plants installed by each student group*

\*\*We will also pursue free milkweed plugs of the same species made available through monarchwatch.org. They are willing to provide 200-1500 plugs towards restoration projects. If successful, this would reduce, but *not* eliminate milkweed plug expenses because we are still responsible for 2-day shipping costs of transporting milkweed.

**TOTAL**

**\$5405**



