Kate Baldwin, Computer Science Club Member
Gary Lewandowski, Computer Science Club Advisor
Janice Walker, Dean of Students

Computer Science Club Officers:
Nick Amendola, Senior
Brian Bailey, Junior
Kate Baldwin, Senior
Brendan Polak, Senior
Carl Mai, Freshman

Engaging Middle School Girls in Computer Science
Proposal for Women of Excellent Grant
Engaging Middle School Girls in Computer Science

Amount Requested: $1150

Proposal Abstract: Developing technology consistently comes first on career rankings in terms of areas with the most job potential, even during a tough economy. Computer Science is a diverse field that contains career opportunities in academia, industry, and business. Despite this success, it has been a traditionally male-dominated field, with the percentage of females in IT and Computer Science majors decreasing over the past 30 years. Funds are requested for an outreach event to middle school girls to pique their interest in Computer Science so that in the future they will find it more accessible and consider studying it during High School and at the University level. By bringing students to Xavier to engage in fun, critical thinking activities, they will be able to explore an area of study that would likely never be introduced to them in their normal middle school curriculum.
Budget:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>T-Shirts</td>
<td>$250</td>
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<tr>
<td>Snacks &amp; beverages</td>
<td>$300</td>
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<tr>
<td>Publicity</td>
<td>$150</td>
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<tr>
<td>“Kiss My Math” book</td>
<td>$500</td>
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<td><strong>Total Amount Requested</strong></td>
<td><strong>$1150</strong></td>
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- T-Shirts will be given to all the students, as well as the volunteers (students, faculty & alums) who participate as a takeaway from the event. The design will incorporate the WoX logo, to recognize the support of the WoX GC. *25 student t-shirts + 10 volunteer t-shirts at approximately $8 each.*
- Light breakfast of juice, bagels, etc. to begin event. Also water, juice & candy for during the event. *Approximately $300*
- Publicity costs will include postage and copying costs for flyers and handouts for local middle school teachers. We will also plan on publicizing through email, school websites and Facebook.
- Copy of “Kiss My Math: Showing Pre-Algebra Who’s Boss” for each student. Math is the basis of Computer Science & Technology. Often girls shy away from CS because of the Math requirements, but the lessons taught in this book make math accessible. The approachable style of the book teaches girls that it’s okay to be smart and that they are capable of taking on a field that is predominantly male. *25 copies at $20 each*
Narrative:

The Computer Science Club requests funding for an outreach event to educate middle-school girls about the basic ideas of computer science, its applicability to their day-to-day life, and encourage their further participation in Computer Science in the future. The Women of Excellence Giving Circle provides support for programs that “seek to incorporate new ways of introducing gender issues in traditional subjects,” as well as “programming related to the development of women.” This outreach event aligns perfectly with these ideals, as it seeks to bring more females into a field where they are woefully underrepresented. Studies on US technology patenting have shown that mixed gender groups create more useful and innovative patents (National Center for Women & Information Technology). In other words, incorporating more females in the field will be beneficial to both men and women, and an outreach event to girls will help develop women in a field where their absence has hindered progress.

Xavier University’s Jesuit heritage centers of the model of “men and women for others.” The University Mission Statement also begins with the basic idea that “Xavier’s mission is to educate.” By supporting the Computer Science Club in efforts, the WoX GC will be helping to further Xavier’s mission through the education of middle school girls on a topic that they would have had little exposure to otherwise. Although the prevalence of technology in our society has only increased over the past forty years, the number of women in Computer Science has continued to fall. In 2007, females only represented a dismal 17% of AP Computer Science test-takers. The trend is consistent at the University level as well: according to the National Science Foundation, the number of Computer Science and Information Science degrees awarded to females has decreased from 38.7% to 22.7% since 1991. Xavier’s own Computer Science department is not immune to this trend, with only 6% of current majors female. How many girls does that translate to? 2 out of 34 students.

This outreach event is planned as a way to engage girls and interest them in Computer Science from a young age, so that they will actively seek out courses in the future or at the very least view them as a positive option. There is a gender stereotype associated with technology as a “boys’ club.” By showing girls that they already use technology in new and innovative ways, we hope that they will see that they have already broken barriers. Further, by showing that they could be the ones who actually creates the new and innovative technology that is in widespread use, we hope they will be interested in becoming active participants in the “boys’ club” of Computer Science.

Since Xavier has the benefit of a beautiful campus and incredible new buildings, we plan to bring 25 middle-school girls to XU for our event in the fall of 2011. Making connections with bright young students, even at a young age, benefits both the University and the students. In the ⅝ day that they are with us, we’ll dispel stereotypes about computer science and help girls realize that not only do they use technology all the time, but they can also be the creators of their favorite innovations. Other organizations, such as DotDiva (www.dotdiva.org) have found that girls want to see computer science in action. To that end, we’ll show visuals of women working in the community and highlight some of the vast and wide-ranging technology opportunities. Our aim is to help these girls discover that computer science can be fun, so we will also integrate a fun interactive computer science activity from the popular CSUnplugged series. Nearly every middle-school girl in the US relies heavily on texting as a means of communication. For most, this means they utilize the T9 predictive texting feature of their phones. The activity that we would engage in would allow the girls to experience machine
learning first hand and see how the machine’s knowledge develops through user feedback, something they would have noticed in using their phones to text.

In addition to Xavier student, faculty, and alumni volunteers, we would welcome any WoX members who are either involved in technology or are interested in furthering the cause to attend the event. Additionally, we would, of course, be more than willing to present on the event to the WoX GC after its culmination. The Xavier CS Club hopes to make this an annual event within the community. Therefore, we will measure success as the ability to attract 25 students to the event this year, with growth in participation in the future.