2011 Murphy Society Student Funded Projects:

Northwestern ASCE Concrete Canoe Competition

$5,000

Galen Reed, NU ASCE Competition Director, Civil Eng. 2012

Each year, the American Society of Civil Engineers sponsors a national concrete canoe design competition that provides students with a practical application of the engineering principles that they learn in the classroom. The competition also provides an opportunity for interdisciplinary collaboration of students from civil engineering, materials science, mechanical engineering and project management backgrounds and challenges the students’ technical competency, creativity and stamina in designing and constructing a concrete canoe that not only floats, but competes successfully in multiple racing events. In addition to providing students with an amazing educational opportunity, the competition provides the Civil and Environmental Engineering Department with additional visibility to sponsors and other professionals throughout the Midwest. The concrete canoe team seeks funding from the Murphy Society to bring this opportunity back to Northwestern students for the first time since 1997 when NU last had a group of students participate in the competition.

Northwestern University Summit on Sustainability 2012 – Public Health and the Environment

$4,000

Paige Humecki (2013) - Engineers for a Sustainable World

The Northwestern University Summit on Sustainability is an annual conference organized and hosted by Northwestern’s chapter of Engineers for a Sustainable World (ESW). This conference is intended to educate the Northwestern, Evanston, and Chicago communities about important environmental issues, with a particular emphasis on the humanitarian, social, and political ramifications of such issues. This year’s theme, Public Health and the Environment, bears both relevance and appeal to a wide range of participants outside the typical engineering and even environmental community. Through inspiring keynote speakers, several break-out sessions, and an atmosphere that encourages conversation, dialogue, and networking, this summit will build thoughtful connections amongst a diverse group of university, community, non-profit and business leaders whose knowledge and passion for these topics will inspire action and change.
Global Architecture Brigades - Santa Rosa

$5,000

Jessica Chen, 2012

The Global Architecture Brigades chapter at Northwestern is only two years old but has already helped the small community of Zurzular, Honduras, build a secondary school during the winter break of 2010. Applying for our first Murphy Grant this year, we'd like to continue our efforts helping developing countries and continue gaining experience in architectural design and construction. This 2011 winter brigade fulfills our group's primary objective of expanding upon the architectural curriculum in McCormick by gaining hands-on, real-world experience working with clients in developing countries to best serve their infrastructure needs through architectural design and construction and helping to increase awareness of needs abroad. Within the greater Global Architecture Brigade program, there is currently a project in Santa Rosa that our group would like to contribute to. This project will involve helping in the construction of a secondary school in Honduras. We would be involved with fundraising for material costs and then traveling to Santa Rosa to meet the community and help construct the school to design specifications developed by previous student groups.

2012 Brigade to Honduras

$5,000

Kelly Tausk, SESP 2013, Fundraising Chair of Global Water Brigades

The Northwestern University chapter of Global Water Brigades (GWB) is a student-led group focusing on water development in Honduras. On its annual brigade, the group sends 15 students to Honduras for a week to work on part of a project in a community that lacks water access or sanitation. Each year's project is different, and during the months leading up to the brigade, the 15 students learn about the community, its needs, and the planned solutions. This trip brings together a diverse group of Northwestern students under the unified purpose of gaining experience in international water issues, development, and engineering.
McCormick Student Advisory Board

$5,000

Andrew Kessler, 2012

The McCormick Student Advisory Board endeavors to foster a stronger student community by designing an Engineering Week that puts a strong focus on encouraging McCormick students to become active within their home department. By engaging the students of McCormick in interactive engineering-based activities and competitions, as well as distributing branded merchandise, the 2012 Engineering Week is a unique opportunity to involve and connect students in ways that enhance their academic and communal experience as McCormick engineers. The week will consist of activities intended to: 1. Encourage pride and a sense of identity within McCormick departments. 2. Stimulate interaction, collaboration, and education of all engineering fields within the Northwestern community a whole.

Co-Op and Internship Peer Advising and Mentoring Program

$1,000

Paul Foryt (2012), Marketing and Finance Chair, Kappa Theta Epsilon

The Co-Op and Internship Peer Advising and Mentoring Program will pair up potential and current co-op freshmen and sophomores with co-op juniors and seniors. Students will initially meet at a general networking event in the fall quarter to get to know potential mentors. A one-on-one meeting between students and mentors will be over lunch, provided by Kappa Theta Epsilon. Further meetings will be at the students’ discretion.

Northwestern Baja SAE Drivetrain Proposal

$5,000

John Heintz, Project Manager, ME 2011 Northwestern Baja SAE

Northwestern Baja SAE is an off-road racing team that is designing and fabricating a single-seat car that will compete internationally against hundreds of universities across the globe. Our team needs funding for the fabrication of our custom designed drivetrain including an ultra-compact and lightweight gearbox and an innovative locked differential system with operable interference clutches on both sides. Our drivetrain technology has never before been seen in the SAE competition and will give our team an enormous advantage in both design and racing events. The team is made completely of McCormick undergraduates and the drivetrain they have designed has taught them engineering experiences that cannot be completed and ready to show the world.
McCormick’s prowess in engineering and design in three international competitions. A completed car with intriguing features like the drivetrain can be used in recruiting for both Northwestern and the Baja team. McCormick can show physical proof and standings of our latest car to boost engineering extracurricular groups and impress prospective students. McCormick will further rise up the US News and other college rankings because of the quality engineering and publicity Northwestern Baja has to show. Northwestern has the potential to become a top ten engineering school in the country, and our team is focused on helping.

**The 2012 American Solar Challenge**

$5,000

*Jonathan Cook, Mechanical Engineering, 2012, Sponsorship Chair, NUsolar, The Northwestern University Solar Car Team*

NUsolar - The Northwestern University Solar Car Team is an undergraduate student group dedicated to gaining hands-on engineering experience through designing, building, and racing a solar powered car. The education gained by our team members is an unparalleled extension of the McCormick curriculum, teaching the difficulties of design, engineering, project management and all the challenges found in industry every day. The year-long design process for our 6th-generation solar powered car is nearing completion and with dramatic aerodynamic and electrical improvements it has taken a tremendous leap in efficiency over our current vehicle and we are confident it will be our fastest car ever. With construction of the car beginning in the fall, it will compete in the 2012 American Solar Challenge - an intercollegiate, cross-country solar car race where teams drive across thousands of miles of US Highways fueled only by the power of the sun. We are requesting $5,000 in funds to go towards the $11,000 in race entry fees required from each team to participate in the race, so we may take 15 team members to represent Northwestern University in this competition.

**Formula SAE Engine Dynamometer Data Acquisition and Upgrades**

$5,000

*Joshua Jund 2012 Co-Project Manager, Northwestern Formula Racing*

Northwestern Formula Racing was a Murphy Grant recipient in 2009, receiving funds to build an engine dynamometer to tune a Suzuki Sport ATV engine that the team used to power their student-built racecar. Since that time, the FSAE team has attended their second ever competition last May in Michigan and placed 65th overall, beating over 30 teams with more experience and bigger budgets. To be an increasingly competitive presence in Formula SAE, we plan to invest in more data acquisition equipment and increase the effectiveness of our dynamometer setup, and thus our engine. Grant money to our team will support a group of over 40 undergraduates, allowing them to gain strong hands-on knowledge while carrying a large-scale design and manufacturing project through its lifecycle, a challenge which is unmatched in any curriculum class. The grant would be spent over the course of a year as we build NFR12, Northwestern's third Formula SAE vehicle, which will compete at two competitions in the spring of 2012.