

First Ever IEEE Antenna Design Challenge: Antennas on a Budget 2010

Travel to the 2010 IEEE Antennas and Propagation Symposium
Win \$1500, \$750, \$250

Join the first ever IEEE Antenna Design Challenge! Build an Antenna Demonstration System that can be used to teach the magic of antennas. The top three teams (or individuals) will receive up to \$2,500 in travel funds to attend the IEEE Antennas and Propagation Symposium in Toronto, Ontario, July 10-17, 2010 to demonstrate their working systems. From these top teams, First (\$1,500), Second (\$750), and Third (\$250) Place will be announced at the 2010 IEEE AP Awards Banquet.

Design Goals:

- Design an Antenna Demonstration System that can be used to teach how antennas work. Such a system might be used in college undergraduate or graduate courses, and in pre-college ('High School') physics courses.
- The system must be safe and durable, easily reproducible by others, inexpensive, and portable so that it can be demonstrated at the symposium.
- The total cost for reproduction of the system must be less than \$1,500.

The Application and Review Process:

1. The applicants will be required to submit a preliminary design by October 1, 2009.
2. The Student Contest Committee will assess each design based on creativity, educational value, and quality of written materials, and choose the top six teams, each of which will receive \$1,500 to build and test their design. The six contestants will be selected by December 1, 2009.
3. The six contestants will then submit their final design by May 1, 2010.
4. The Student Contest Committee will assess each contestant's design and choose the top three finalists by June 1, 2010.
5. The finalists will receive stipends up to \$2,500 (per team) to travel to and attend the IEEE AP-S conference.
6. The finalists will be expected to demonstrate their working system during the conference. The Student Contest Committee will judge the designs and select the first, second, and third prize winners. A detailed list of equipment that will be made available at the symposium for the demonstrations will be provided to the six contestants.
7. The finalists will be awarded \$1,500, \$750 and \$250 for first, second, and third place, respectively, at the AP Awards Banquet.

What to Submit -

Preliminary Design Review: **Deadline: October 1, 2009**

- A letter indicating agreement to oversee the project from a professional mentor (professor or engineer in industry) who is an IEEE AP-S member. The mentor should also indicate that the members of the team are all graduate or undergraduate students at a university, college, or technical school.
- A proposal limited to two pages that includes
 - The objective; i.e., description of what will be demonstrated and its educational value.
 - An 'on-paper' preliminary design that describes the system to be built.
 - A bill of materials (up to \$1,500)
- Merge the letter and the two-page proposal into a single pdf file named TeamName.pdf. The proposal should precede the letter. Use 12 pt Times New Roman font.

Final Design: **Deadline: May 1, 2010**

- Submit a 10-page final report that includes:
 - Detailed design description of system (schematics, diagrams, etc.).
 - List of parts and materials including where to obtain them and cost.
 - Photos of final system (including a scale to show how large it is).
 - Assembly and operating instructions for the system.
 - List of topics, concepts, or phenomena that can be demonstrated with the system.
 - Biography (100 words or less) and photo of each member of the design team.
- The report should be in pdf format in accordance with a template that will be made available to the contestants.
- Photos of team members should be in JPEG format and sent as separate files named LastName.jpg.
- The contestants should be prepared to give a live internet video demonstration of their working system to the judges within three weeks after submission of the final report.
- The selection of the first, second, and third place winners will be based on the creativity and educational value of the system and on the quality of the final report.

How to Submit:

Send all information to designcontest@ieeeaps.org with the subject line "2010 IEEE AP-S Design Contest Submission." Name your attached file TeamName.pdf. All deadlines will be strictly observed.

All participants will have free access to the FEKO software package to aid in the design and simulation process. Please contact aps_student_competition@emss.co.za for information on obtaining the software.