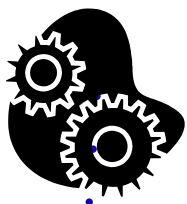


Robot Chicks Union Newsletter



RCU Championship Meeting 2005

Volume 1
September 2005



Robot Chicks Union



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Welcome!

Hello. Welcome to the inaugural edition of the Robot Chicks Union newsletter. This newsletter, established to spread the creed of the RCU to female and male FIRSTers alike, demonstrates what the RCU has accomplished and what it plans to do in the future. It teaches new principles encountered in robotics, all while including humor and heartwarming stories.

Through this newsletter, the RCU hopes to reach **you**.

Thank you for reading,

~The Newsletter Staff

Check out the
Bulletin for
scholarship
information.



What is the Robot Chicks Union?

The Robot Chicks Union (RCU) advocates the involvement of females in FIRST and, in general, to inspire women of all ages to value science, math, and engineering. Its mission is to help members build a strong community, to become mentors for future generations, and to develop into successful, perseverant women.



Dear RCU members,

I asked the RCU Newsletter team to save space for me so I could write to you all, welcome you and share my enthusiasm and joy in the re-birth of this group.

I am the adult Advisor to the RCU leadership team - I have a degree in Mechanical Engineering and currently work in High Tech - I work with the student leadership team: Kristen Kelso (founder of RCU), Tiffany Lee (College mentor, co-founder of S. Florida chapter) and Julia Metzler (NH Chapter lead and National HS lead). And two lovely ladies, Nancy Kelso and Patricia Chen who are co-advisors for the leadership team. We are collectively working hard to ensure that RCU is an empowering and enabling experience for all of you.

What are we all about? - about establishing ways you can help each other be successful in your current FIRST teams, about establishing ways you can help girls younger than you understand that they have the ability to do technical projects, and about helping you to formulate and achieve your career goals (in science and technology).

I'm thrilled to see the membership in our Yahoo group grow, and to see the great events we've already had presence in in the last few months: Family Fun day in NH, The Girls Camp in South Florida, IRI off-season championship, Girls Connect in NH. If you want to learn more about any of these events, feel free to drop by the Yahoo group or the website - or just send mail to one of the leadership team. More exciting news is the terrific work going on in Michigan and Maryland around forming new chapters in those areas and around providing guidance to the leadership team as to what local chapters really need to get going. And building a knowledge base for girls to share knowledge and empower one another.

There's so much more in the works - online chats with Women Engineers and Scientists, Creation and sharing of experiences across multiple chapters, and the chance to just exchange ideas and challenges with one another. But it needs to start with you - with what you want, with what you need and with what you are willing to share with others. So, I'd like to invite you to use your voice to help yourself and help others. Tell us what you want or need from the RCU - or, if you are so inclined, what you might like to offer to the RCU! The best way to do that is to join the RCU Yahoo group and tell us what you think.

I hope to get the opportunity to meet many of you - but more than that, I hope we get the opportunity to have RCU make a difference for you.

With appreciation for all of you,

Marie Schulmann



What's New in the Union?



Since its establishment in July 2000 and rebirth in April 2005 during the Championship event, the RCU has broken into chapters in New Hampshire, Southern Florida and Michigan (the newest chapter yet – welcome!). The RCU plans on forming many more chapters over the next few years.

The International Leadership Team welcomes all new members and thanks all continuing members for their interest in the family that comprises the RCU.

Please remember that the leadership team always welcomes questions, comments, and concerns (through the newly established Yahoo web chats or other means of communication). Again, thank you for your participation and support.

~ RCU International Leadership Team

Chapters Update:

Michigan:

The most recent chapter, Michigan RCU, is well on its way to making an impact on the Midwest community. Established in May 2005 by Lisa Perez and Beth Sweet, it has created its own set of goals for the year. Goals include, but are not limited to, setting up table displays at Kettering Kickoff and the OCCRA All-Women's Tournament and attempting the creation of a workshop for the Northville FIRST Kickoff, at which girls may speak with women in the college and science/technology field and become further aware of scholarship/work opportunities applicable to them.

New Hampshire:

One of the most prominent innovations of the NH RCU chapter is hosting is our younger chapter. These are girls in the Lego League and Vex age groups who work both individually and with the NH RCU chapter to accomplish the goals of the chapter. It is our hope to be able to expand a successful RCU chapter for FLL and Vex girls to other RCU chapters, once we "work out the kinks."

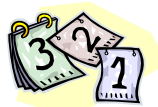
Recently, the NH chapter helped with 4 "Girls Connect: A Day in the Shop" workshops, where girls were introduced to basics of Lego Mindstorms. From Early May to late June, we helped over 200 girls connect throughout the state.

Southern Florida:

Currently, the Chapter is working on increasing its membership amongst the local teams. Also in the works, establishing contact with the local Girl Scouts, with hopes of opportunity for members to mentor the young scouts to inspire them to explore math, science and technology as potential career choices.

Once again, Team 180, S.P.A.M. held Girls Camp in June. It was a success! The ladies learned about the gears' in robots as well as in real life. They machined a spur gear out of stock aluminum. The ladies also had the opportunity to tour a local manufacturer, TurboCombustor Technology. It was an 'awe-struck' experience to see how parts are manufactured. Girls Camp gives the ladies an opportunity to learn how to use the lathe, Bridgeport as well as other tools during off season. It also gives others a chance to become hone their skills at a leisurely pace. Last year, they machined a nut and bolt.

Calendar of Events:



September: Hold women's panel with industry leader. Work with NH Techno Girls Association to create a tournament plan for FLL local tournaments. Two web chats

October: Hold two group chats. Develop brochure for FLL tournaments.

November: Hold two group chats. Implement TGA plan for tournaments. Update newsletter

December: Hold one group chat. Host a table at OCCRA All-Women's Tournament.

November 4, 2005:

Women in Science & Technology Forum at FIRST Place

GIRLS CONNECT: IMPACTING THE CULTURE OF FIRST LEGO LEAGUE

It is a well known fact that fewer women than men are represented in science and technological fields. Unfortunately, this trend is reflected in the FIRST community, as only about 27% of FIRST Robotics Competition, participants about 33% of FIRST Lego League participants are female.

Girls Connect, founded in 2003, sought to introduce middle school girls to Lego League and to help them build valuable skills to enable them to be strong Lego League participants. Before the foundation of Girls Connect, New Hampshire's statistics were below the international level, with only 19.2% of the state's Lego League participants being girls. These facts proved that an initiative, such as Girls Connect, was needed in New Hampshire.

The inaugural Girls Connect workshop took place over the course of two days at the Christa McAuliffe Planetarium and served 25 girls from across New Hampshire. Participants came from local Girls Incorporated centers, Girl Scout Troops, 4-H clubs, schools and home school organizations. One participant wrote on her evaluation, "One of the reasons it was so fun was because we were able to explore with the computers, the robots, and the scientific field of trial and error. Excellent!" As a result of the workshop, New Hampshire birthed two all-girl Lego League teams.



The following year, New Hampshire statistics demonstrated that about 30% of Lego League participants were girls. The Second Annual Girls Connect took place at FIRST Place in Manchester, serving almost 60 girls and launching three additional all-girl Lego League Teams, and the former Girls Connect workshop became "Girls Connect: A Day in the Shop". Girls Connect created a one-week camp, similarly called "Girls Connect".

For 2005, four "Girls Connect: A Day in the Shop" workshops served about 200 girls and launched 10 rookie all-girl Lego League teams. While the success of Girls Connect continues to grow in New Hampshire, Karen Sullivan, Education Coordinator at FIRST Place, is developing a "tool kit" to replicate these workshops in other states.

Make sure you check out the next RCU Newsletter to read about the FIRST Place Women in Science and Technology Forum. [from usfirst.org] On November 4, 2005, FIRST Place and the University of New Hampshire, Manchester, will host a one-day science and technology event for over 300 senior high school students, educators, and science and technology professionals. Participants will explore the role of women in science and technology, review college and career choices, and connect with a network of science and technology professionals specifically chosen to inspire and mentor young women. But don't wait! Check out www.usfirst.org/place/confrn.htm to learn more!



Bulletin:



Scholarships:

- Colle-Computers.net (www.college-computers.net/scholarship/): College-Computers.net offers 2 scholarships every year in the amount of \$1000. **DEADLINE: December 31st**

- Horatio Algers (www.horatioalger.com/scholarships/)

[index.cfm](#)): The Horatio Alger Association Scholarship Program is open to high school seniors who are planning to pursue a bachelor's degree at an accredited college/university in the U.S. **DEADLINE: October 1st, 2005**

- College Matters (www.collegematters.org/html/)

Check It Out!



pages/cmscholar.htm): The College Matters Scholarship is available to high school graduates or students in their last year of high school who plan to enroll full time in a four-year college or university in the fol-

Continues on Page 8...

Story Time:



This summer, our team began to work with the local Bona Vista (a place for handicapped children to learn) to create a playground for the kids.

We are still in the design phase, but have already started with a CAD program called Inventor to make basic sketches of some of the playground pieces so that Bona Vista may receive grants to build. We hope to assemble the pieces so that possible donors may see the finished product and realize how serious we are about this effort.

Six students were involved in this project. We met up at my house and worked on these designs, sometimes staying later than usual to get a certain part just right. The three guys knew exactly what to do because they were pros with Inventor; we three girls, on the other hand, struggled because we were less familiar with it. Nonetheless, we completed just as many parts and figured everything out on our own. As of now, we have

finished all of the necessary parts and have sent them to many potential donors in hopes that we will start building the Bona Vista playground earlier. This has made us realize just how much this was going to help children in need, and has definitely brought a smile to all of our faces.

By: Kristina Bender,

Team 45 TechnoKats:

"I love to volunteer and help out in my community, so when the idea for this project was proposed I made sure my name was on the list to help out."

Others involved: Nick Bailey, Lisa Beckwith, Tymi Driver, Andrew Gibson, Taylor Metcalf

— Team 45, TechnoKats



The RCU applauds these students and Team 45, TechnoKats for effort. Keep up the good work!

Know someone who made an impact on females in robotics?

The Robot Chicks Union has established the RCU Illuminaries. It is designed to recognize special individuals who have made an impact in the RCU and/or female participation in FIRST. Many great people have been nominated over the years for their great efforts.

Nominations can be sent to:

g.magoolia@gmail.com

Robot Chicks Union

**Together
Collaborating,
Inspiring,
Mentoring,
To Change
The Lives
Of Future
Generation
Girls**



Story Submission:

The story for the next issue is:

Topic: Back To School
Theme: Adjustments or Responsibility

Please send your story to:

homs7c@yahoo.com



Guidelines:

- Word Count Maximum 350 Words
- Must Be Sent By November 12th
- Please write in email subject: Story

Thanks and have fun writing!



The victims of Hurricane Katrina are in our prayers and thoughts. If you can lend a helping hand or donate supplies, contact your local Red Cross.

Technical Corner:



Welcome to the technical section of the RCU's newsletter! Since this is the first issue, and the RCU has many readers newer to the FIRST experience, the staff has dedicated this month's section to a simple discussion of some of the different types of drive trains available to build on one's robot.

Two-wheel (2WD) This drive is the simplest option. A direct current (DC) motor powers one wheel on each side of the robot – these wheels are most often oriented directly across each other. The powered wheels may or may not be different from the two that are powered. Here, numerous teams use castors.

Four-wheel (4WD) Each of the four wheels is powered by a motor in this configuration. One may accomplish a 4WD using two common set-ups. The first set-up gears each wheel with one motor. The second, on the other hand, utilizes a system where on each side, the two wheels are chained around a sprocket driven by a single motor or set of motors.

Six-wheel (6WD) Similar to the 4WD, this drive utilizes either six motors or a sprocket system which allows the use of only two or four motors. It maximizes contact with the floor surface.

Tread This configuration takes a belt and spans it between the front and back, where a system of rollers is set up. Each side is powered by a motor or a set of motors, and everything is essentially set up like the components of a military tank's drive. Like the 6WD, a tread drive maximizes contact with the floor surface.

Omni Omni drives are composed of three or more omni wheels (wheels that have a series of rollers on them so that they may not only roll forward and backward, but also side to side with the greatest of ease, providing plenty of maneuverability). Like its wheels, this drive as a whole allows for side-to-side movement.

Crab Most crab drives have three or more wheels. Unlike robots with other drives, a robot with a crab drive turns because its wheels have turned independently of each other – like those of an automobile – by means of other motors. This configuration minimizes scrub because, for the most part, each of the wheels faces in the direction of the turn.



To help understand concepts better, we also will be taking questions about any technical subject.

We want to provide the information so everyone will be better informed. Submit your questions by email: homs7c@yahoo.com. Please write in email subject: technical questions.

Thanks! ☺

Quote Corner:

Our Website:

www.robotchicksunion.org

Web Chats:

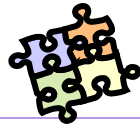
www.groups.yahoo.com/group/FIRSTRCU

(Click on Chat to join in)



FIRST is about learning, and that is exactly what we do. We learn by our mistakes, successes, failures, and most importantly, our fellow FIRSTers and mentors. Asimov hit the nail on the head with this quote:

“The true delight is in the finding out rather than in the knowing.” -- Isaac Asimov

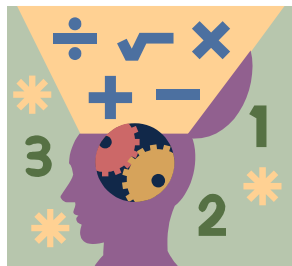


Fun and Games:



Secret Biographies

This woman was intimidated by her male peers in her early years so much so that she withdrew to writing famed children's books about talking animals and a peculiar rabbit with the name of a young boy. Her collection of detailed watercolors of fungi and theories about fungi went widely unnoticed because they were ignored by the Royal Society of England until just before her death in 1943. Sadly, many of her most important notes and papers were lost in the World War II bombings of London.



Contest:

We are having a naming contest for the newsletter.

If you have any ideas please submit them to:

homs7c@yahoo.com.

Please write in email subject: Contest

Word Scramble

Hint: Famous Names in FIRST

Nead Maenk si teh fredonu fo ITRSF Ctoisrob, adn Oweiod Lwosefr si het fnu nad em-seoaw oc-oufredn. Nday Krbae si eht bedovel rnmtoe fo Meat 45, nad Hnoj V-Nneu si a evyr ronohde oerntm rof Mtea 229 ni Ewn Yrok. Deav Yvrela, masufo ofr hsi yrev brhtgi adn rihoiyfngnraaahnw rtishs si cidseataos wiht Aemt 116 ni Onhnedr, Giivnari. Nbroadn Rastum si Efihc Ehlpdi's uflrewdon tmsrae mdareroto, adn ew lla sayoltl-bue oread imh. OG RFITS!



What would you like to see in the newsletter????

Please feel free to comment.

~ Newsletter Staff

Physics Fun:

An automobile travels east at a constant speed of 20 mile/hour, and immediately upon reaching a point a distance d away, returns at the constant speed of 40 miles/hour. What are the (a) the average velocity and (b) the average speed, both over the entire trip?

Do you know the answers???

Find out if you were right in the next issue. ☺



Continued From Page 5...

strate potential for academic success, leadership ability, public service, extracurricular activities and financial need. **DEADLINE: March 15, 2006.**

- SEE Education Foundation Scholarship(www.isee.org/): The SEE Education Foundation Scholarship is available to full-time students pursuing their first associate, undergraduate or graduate degree in the explosives engineering and related fields

- Girls Going Places (www.guardianlife.com/womens_channel/girls_going_places/)

(girls_going_places.html): The Girls Going Places Scholarship is open to girls between the ages of 12 and 18. Girls must be nominated by an original essay of 750-1000 words written by an adult.

- www.straightforwardmedia.com/scholarships/index.php: Offers many scholarships for many fields. Each scholarship is awarded 4 times a year and is \$500
- Society of Women Engineers

(www.swe.org): The SWE Scholarship

Program provides financial assistance to women admitted to accredited baccalaureate or graduate programs, in preparation for careers in engineering, engineering technology and computer science.

Good Luck!



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- Dorienne Plait

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Thank you for
your hard work
and support for
the RCU.

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Join The RCU Today!

Join By Signing Up At The Yahoo Group



Southern Florida Chapter



To contact the newsletter email:
homs7c@yahoo.com

For more information on the RCU,
please contact:
info@robotchickunion.org



You can write too! Everyone
is welcome to be a part
of our staff!

Contact us for more info.

****Deadlines****

**All submissions must
be submitted by
November 12th for the
December Issue.
Thank you for your
contributions.**

Submit to:
homs7c@yahoo.com

