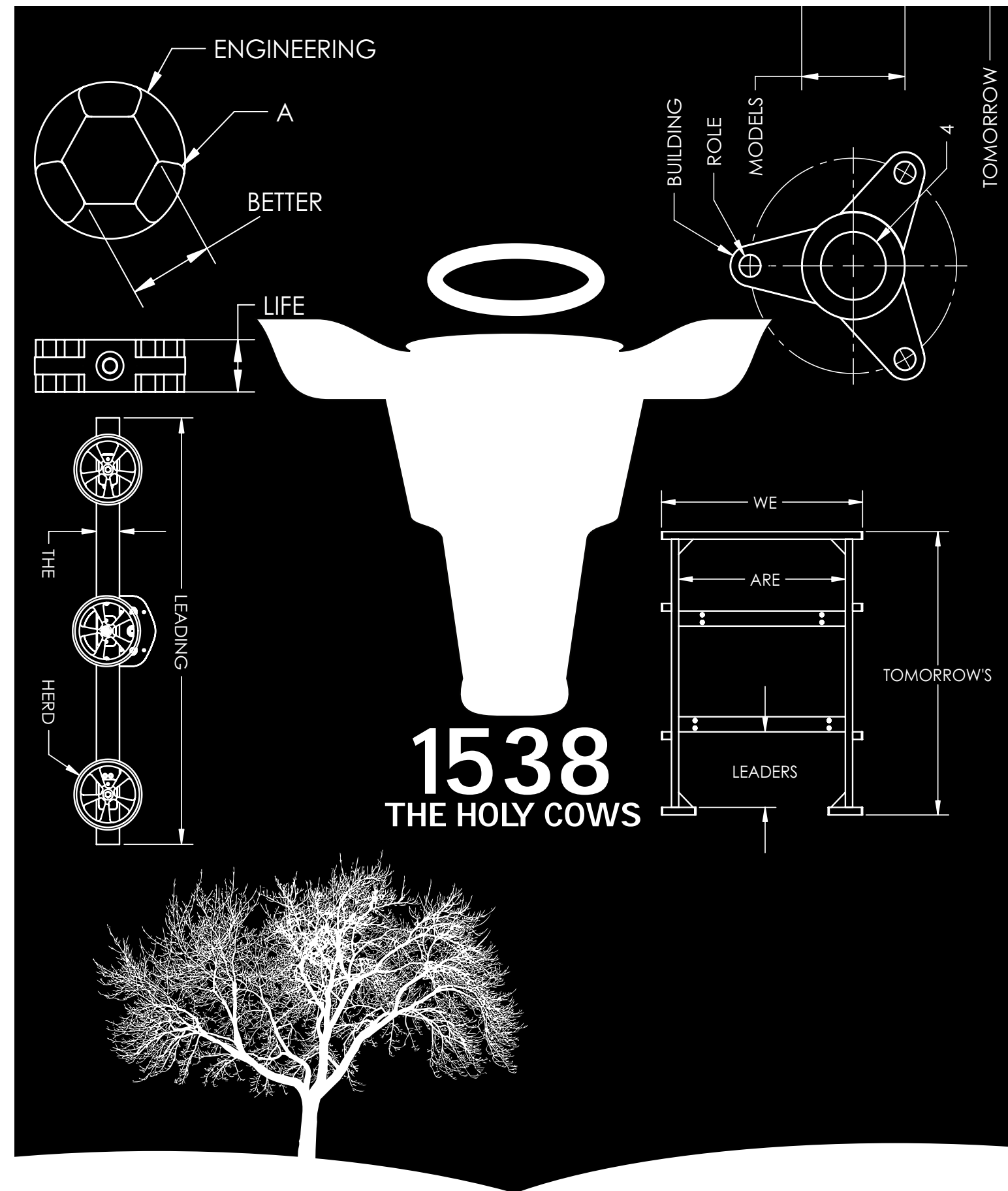


**Team 1538**  
**The Holy Cows**  
**High Tech High School**  
**San Diego, California**  
**[www.Team1538.com](http://www.Team1538.com)**





# STATISTICS

Team Members (2009): **30 Members**

New Team Members (2009): **19 Members**

Male-Female Ratio (2009): **2 to 1**

Number of Mentors (2009): **11 Mentors**

Community Service Hours Per Person (2009): **100 Hours**

Total Community Service Hours: **4,500 Hours**

Members Going on to College: **20 Members | 100%**

Total People Presented To: **55,000 People**

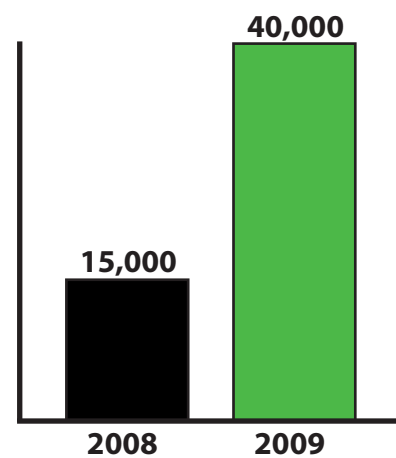
Total Children Presented to: **20,000 Children**

Teams Mentored: **12 Teams**

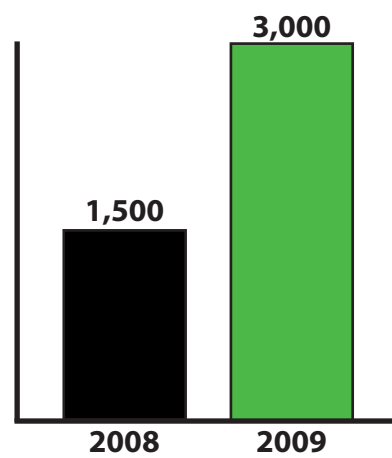
Media Appearances: **35 Appearances**

Hours Dedicated to FIRST per Student: **2740 Hours**

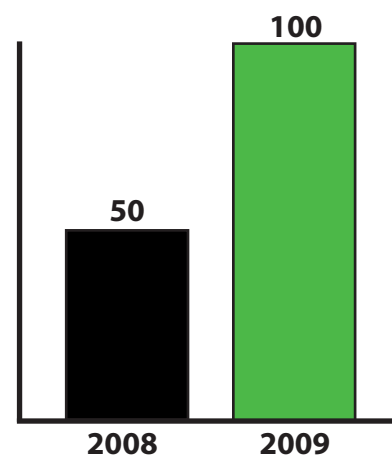
People Presented To



Community Service Hours



Community Service Hours Per Person



# MANUFACTURING TOMORROWS SOLUTIONS

## Center for Maritime System & Security

Our team has a group of students with unique interests and aspirations including: electrical engineering, mechanical engineering, materials engineering, computer science, medical, writing, graphic design and even politics. On January 23, 2009 members of The Holy Cows explored a new area of interest, Maritime Engineering, by attending a conference for CFMSS, Center for Maritime Systems and Security. At this conference students mingled with industry professionals at a mixer and attended three presentations about new advances in research

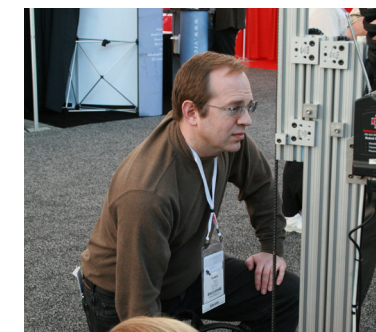
and development of new Maritime Technologies. As a public-private partnership composed of academia, government, and industry the CFMSS's mission is to develop and enhance capabilities to secure the maritime industry. The Holy Cows are proud to now be part of the academic branch.



**"The Center for Maritime Systems & Security is a public-private partnership composed of academia, government, and industry whose missions are to develop and enhance capabilities to secure the maritime domain in support of the strategic objectives of the National Strategy for Maritime Security, and to identify and promote innovative maritime technologies, services and educational programs to further the responsible and sustainable use of oceans."**



Dean Kamen came to visit The Holy Cows at Solidworks World last year.



A spectator from the Conference analyzes our robot.



A Holy Cow member working on machining parts for the robot.





**MANUFACTURING TOMORROWS SOLUTIONS**

**Senator Barbara Boxer**



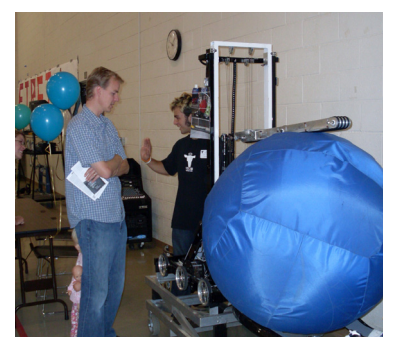
Inspiring female interest in science and technology has been an ongoing goal for The Holy Cows. Shortly after our team finished the 2007 robot, we were visited by a woman who is a strong role model for young women, California Senator Barbara Boxer. Our three female directors were ecstatic by opportunity to speak with such an influential female leader.

Senator Boxer was thrilled to see so many high school students enthralled in such a unique and clearly academic competition. We were able to share our

plans to spread the popularity and influence of FIRST robotics, while she shared her desires to improve education and get more programs like robotics at schools statewide.



The Holy Cows staying late to work on the latest robot.



One of The Holy Cows explaining the message of FIRST to a child and her parent.



The Holy Cows have spoken with many industry professionals at various conferences.



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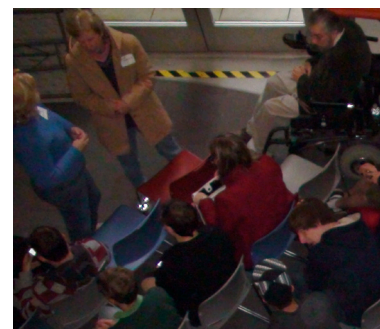
## DESIGNING A BETTER FUTURE

### San Diego Kick-Off



Since January of 2005 The Holy Cows have organized and run the San Diego Kick-Off event. Each year our team members has helped set up over 300 hundred chairs, put out balloons, make signs, and organize the standard issue FIRST Robotics Challenge (FRC) kits in preparation to host the 27 teams and 300 parents, professionals, and media who attend the kick-off. Then with the school transformed into a FIRST hotspot, we arrived early on the day of the event to complete check-in, organize electronics. Our team coordinator David Berggren was

the Master of Ceremonies for the event. Once we watched the FIRST kick-off broadcast we proceeded to pass out kits to all the FRC teams in attendance. The event is always filled of energy and anticipation and this year was no different. The Kick-off is a great opportunity for the Holy Cows to work with fellow TSD members and aid rookie teams.



**The Team San Diego** Kickoff starts off the season for over 27 teams, and 300 people.



**The Holy Cow** mascot makes an appearance on the field to share the Holy Cow spirit.



**Each team** finds out the objective of this year's game and receives their kit of parts.



## MANUFACTURING TOMORROWS SOLUTIONS

### Southern California Orthotics and Prosthetics

In embracing our theme "Engineering a Better Life" many of our students have proceeded with internships that embrace the use of engineering in our daily lives. One such internship was with SCOPE, Southern California Orthotics and Prosthetics. SCOPE builds prosthetics for people with spinal, foot, or amputation disabilities. Our interns there helped assist the practitioners with the projects they are working on. One such notable case was that of a child who suffers from Cerebral Palsy and a disorder where his right side has nerves that are constantly firing. He needed a back brace that would straighten his back while he slept. Our students had to help devise a brace that would not only accomplish this task but would also be comfort-

able for the child to wear. Having a hands on experience with prosthetics were they were involved in all the steps; the brace is vacuum formed at a lab using various metals and plastics, such as aluminum, titanium, polypropylene, and carbon fiber. These materials are designed to be strong, but light. This way the patient can still maintain mobility while wearing the brace. Once that brace is vacuum formed to the cast and sent back to the office, we make changes are made to the brace so it can fit more comfortably on the patient. The same process goes on until the piece fits perfectly. After this experience everyone on our team, not just those who worked with SCOPE, had a true understanding of how exactly engineering can make life better.



**The Brace** Created By The Holy Cow Intern at SCOPE.



**The Plaster Casts** SCOPE Produces Before Creating the Prosthetic.



**A Holy Cow** interning at SCOPE.



## MANUFACTURING TOMORROWS SOLUTIONS

### San Diego State University **Mentors**



**T**he Holy Cows have many mentors providing advice and help to our team for all aspects of our work from Public Relations to Electronics. We have three mentors from San Diego State University (SDSU). One of our mentors works with students on programming for the Holy Cows. He has helped our team with the new control system, and has also been a large help programming the camera tracking programming. During the autonomous mode, it is key to be able to distinguish between the two colors, hot pink and neon green, and be able

to track them. He also worked with our programmers on the traction control system for the robot. Our other two mentors have worked with the Holy Cows on team management. They have helped us streamline our team meetings, offered a more organized file structure for data, and assisted us with project management software.



## DESIGNING A BETTER FUTURE

### Pre-Ship **Expo**

**F**or the past 3 years, The Holy Cows have assisted in the field management at the San Diego Pre-Ship Expo. Walking into Madison High School's gym a few days before ship, hearing the excitement of teams all over San Diego County, and being able to view the brainchildren of various future engineers' 6-week is an amazing experience.

The Pre-Ship Expo is held the weekend before ship, where a full-size field is set up and teams are invited to come and test their robots for the first time. Not only is this good practice for

the team drivers, but this event is an opportunity to get or give help to any teams who may be in need of it. Some teams at this event are able to fully maneuver the ball, while others are barely able to move. Every year our team has been able to assist many other San Diego teams in preparing their robot for shipping the next day.



**A student** working on a robot during a Robotics class called X-Block.



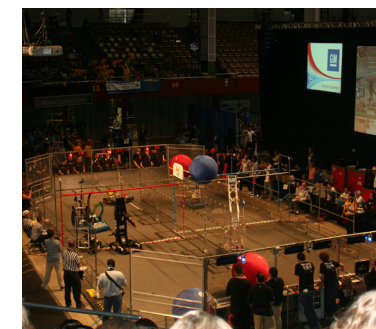
**A Holy Cow** Working with Mentors at the Machine Shop.



**Dean Kamen** meets with The Holy Cows at the San Diego Regional.



**Members** of FRC teams analyze the game elements at the San Diego Kickoff.



**The Holy Cows** playing in the quarterfinals at the San Diego Regional in 2006.



**Our Lead Mentor, David,** offering suggestions for the Chairman's Award Video.



## DESIGNING A BETTER FUTURE

### Host Families: **RoboDogs**



Last year The Holy Cows have created partnerships in both San Diego and beyond. One way we met this goal was by a hosting a team the RoboDogs (Team 1998), a second year team from Detroit, Michigan. The RoboDogs suffered two terrible losses this season, one of their major sponsors ended their support and their lead mentor left for family reasons. Because of these losses the team had barely enough money to build their robot, let alone travel. Additionally the team would have lost their NASA grant if they did not attend the San Diego regional.

The Holy Cows came to the aid of the floundering RoboDogs when they contacted us via our website. After learning about their situation it was determined by the team we would house, feed and transport them while they were in San Diego. This made it possible for The RoboDogs to come to San Diego and compete. At the competition they made it up to and through the quarterfinal round.



A photo of Team 1998, The Robodogs.



A RoboDog team member wiring an electrical board for their robot.



Team 1998, The Robodogs, testing their robot.

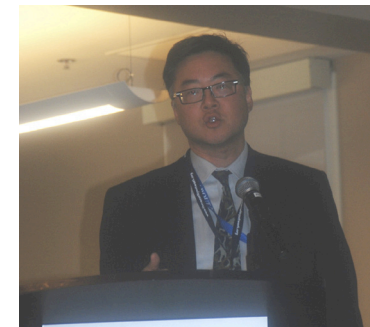
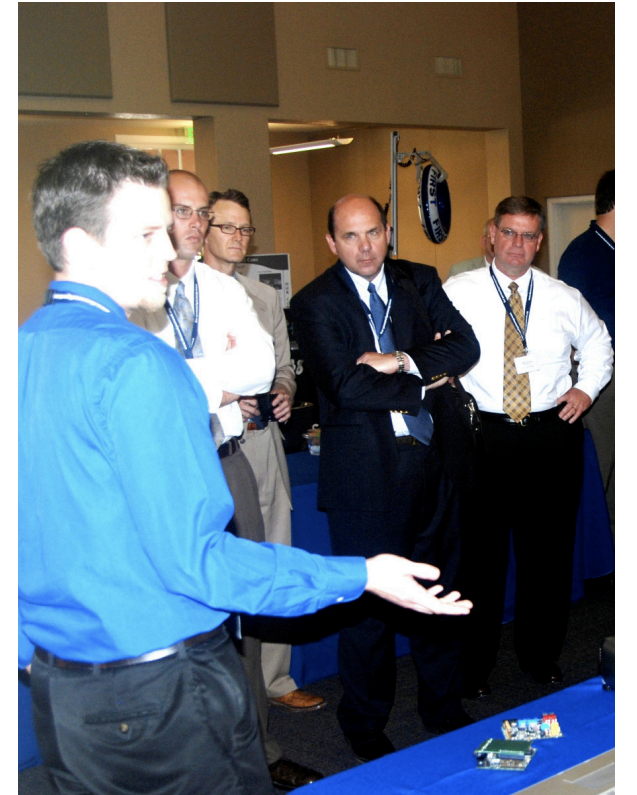


## MANUFACTURING TOMORROWS SOLUTIONS

### C4ISR **Defense Conference**

Throughout our years in FIRST, The Holy Cows have presented at all kinds of technology conferences. On September 24th & 25th, 2008, we presented with a group of professionals at a conference put on by The Security Network. At the conference, we set up a booth displaying information about our team and our awards. At the booth we conversed with the various professionals who passed by, informing them about FIRST and The Holy Cows. At the conference we attended panels where we learned about what defense industry does and the different companies that work in the in-

dustry. Afterwards we toured the different booths, where a few things caught our eyes, one of which was a small robot equipped with a tube containing a camera. The robot had the ability to withstand being shot out of a cannon, so it could be used to explore houses unsafe for soldiers to enter. All the professionals we talked to did not even realize that The Holy Cows was a group of high school students who build robots. When they discovered this they were very impressed due to the fact that their companies could never have built a robot under such a time constraint.



Gary Wang, CTO Team SPAWAR.



The conference offered many opportunities for panels and speakers.



Defense Industry professionals had the opportunity to meet with inventors.



# MANUFACTURING TOMORROWS SOLUTIONS STEM Initiative Conference



In October of Two Thousand and Eight, the Holy Cows were asked to present on FIRST and our team to over thirty architects, educators, and school board members as a part of a STEM conference. This conference was aimed to promote science, technology, engineering, and math in schools by showing various projects completed at High Tech High. To do this, our team discussed the purpose of FIRST, the logistics of our team, the importance of science and technology within school, and how FIRST has impacted each of us as individuals, as a team, and

as a school. The team also demonstrated the Overdrive Robot and presented a short film on last year's matches. In doing so we were able to promote not only science and technology, but FIRST to other schools and educators.



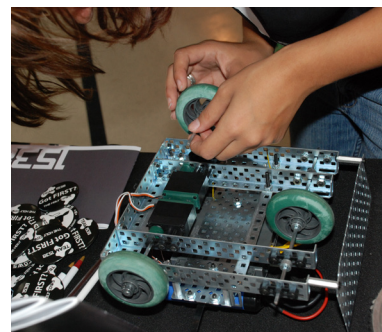
# DESIGNING A BETTER FUTURE Teams Mentored

The Holy Cows have always found mentoring to be one of the best way to spread FIRST. Over the past 3 years, our team has started or mentored 1 Junior FIRST Lego League, 2 FIRST Tech Challenge, and 5 FIRST Robotics Competition teams. Mentoring each of these teams has assisted in bringing these teams to the top. For example, two of the past FTC teams have gone to World Championship, twice. This past year, the UC Rowbots managed to received a design award for their innovative programming and robot design,

as well as placed in the top 10 teams in robot performance. This year we are also helping mentor a team from Coronado High School, which we will be competing with at the San Diego Regional. Overall, The Holy Cows have helped mentor these teams on multiple levels. In the past, we have assisted in programming and design, edited award submissions, and even taught how teams should organize their build season. Whatever assistance a team may need, The Holy Cows are here to help.



The Holy Cows in the Pit Area, ready for competition.



A Holy Cow Fixing a VEX Robot for a Community Event.



The Holy Cows Being Filmed For a Special on FIRST by Wealth TV.



One of the teams we mentored at the World Championship.



One of the many children who drove robots at our mini robot playing field.



A robot designed by one of the teams we mentored at the World Championship.



## DESIGNING A BETTER FUTURE Team San Diego Leaders



This year, The Holy Cows became the leader of Team San Diego, a coalition consisting of twenty other FIRST teams. The purpose of Team San Diego is to bring the knowledge of local FIRST teams to one location in San Diego. As the new leaders, The Holy Cows hosted all of Team San Diego's monthly meetings at High Tech High School. Team San Diego is a huge asset to first year teams in the region because the coalition offers a variety of help and advice. First year teams also have the ability to gain mentors from Team San Diego. The Holy Cows have also

offered four workshops for Team San Diego. These workshops are: "The Rookie Crash Course", "Drivetrain and Transmission", "FIRST Control System", and "Pit Set Up". The Holy Cows have all of these tutorials on their website, which can be accessed by all FIRST teams.



The Holy Cows sharing the message of FIRST with children and parents at Legoland.



One of the Holy Cows running a booth for the Lantern Festival.



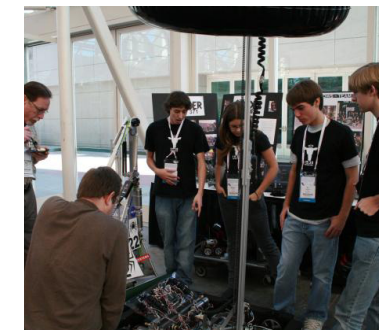
Team members meeting for a Team San Diego meeting.



## MANUFACTURING TOMORROWS SOLUTIONS Fifth Annual Security Summit

During this past June, The Holy Cows attended the 5th Annual Security Summit. The Security Summit is hosted by The Security Network, a non-profit organization designed to create collaborations between defense industry professionals. The Security Summit allows smaller inventors and thinkers to come and present their findings or ideas to larger defense contractors. Not only is there a large amount of exhibitors, but panels of professionals and inventors also ensue. The Holy Cows were invited to the Security Summit and were given a booth to share

the message of FIRST with other professionals. We not only had a working robot to demonstrate to these professionals, but also various materials for people to learn more information about the team and FIRST. This was a great opportunity for us to get the message of FIRST to a very large industry. Many of the contacts The Holy Cows established over the conference are still in contact with us today.



Solidworks World allowed many industry leaders to learn about FIRST.



Just some of the attendees of the 5th Annual Security Summit.



The Security Summit encompassed not only a large exhibition, but many speakers as well.



INSPIRING TODAY

## MDA Sports Auction



The Holy Cows were invited to the San Diego Firemen Chili Cookoff and MDA Muscular Dystrophy Association Sports Auction over the summer. While there, the Cows helped the MDA association with tagging sports items. The sports items varied from signed footballs and baseballs to posters and pendants of various teams. After tagging these items for the auction, the Cows ran items to and from the stage as the announcer asked for bids. Once the auction was over, the Cows helped give the sports items to the bidders. All profits from the auction were

given to the MDA. The Holy Cows were glad to be a part of helping those with disabilities, and making their lives better.



The children were able to drive and operate the VEX robots, showing them the next step in FIRST.



Younger kids enjoying the opportunity to test drive robots.



Our Holy Cow mascot appears at every competition.

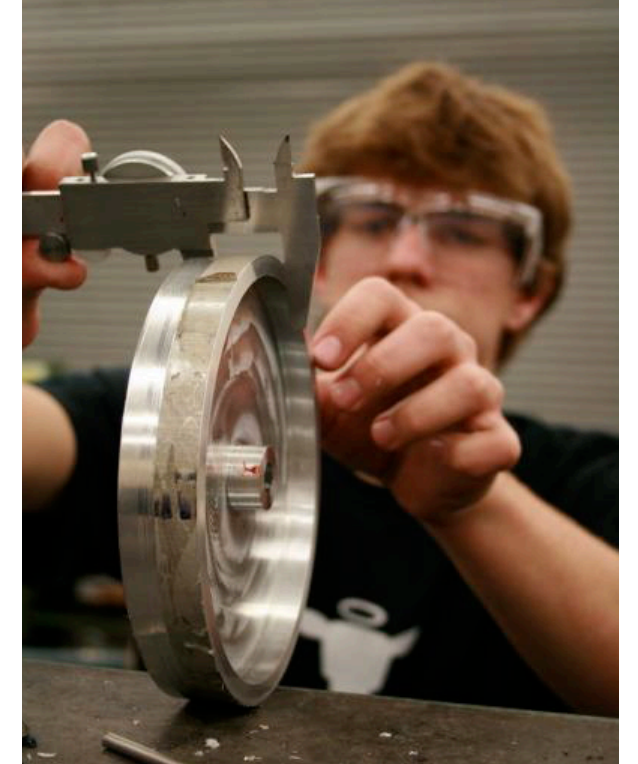


DESIGNING A BETTER FUTURE

## Keeping Alumni Involved

Over the past 4 years, our team has amassed over 30 alumni, and each is still in contact with the team. The Holy Cows have created an Alumni email network, allowing the team to email alumni about how the team is doing during the build and competition season. Ontop of getting email updates, Alumni are constantly invited back to mentor the team. This past year, we had almost all of the team members that had graduated come back to visit the team during Build Season. This past Kick-off, our team had four alumni come to volunteer during the

event. The alumni hold a special place on the team, as they have experienced the excitement, the stress, and the payoff of being a part of FIRST. They are able to constantly encourage new team members, and offer suggestions on their specialty of the team. Our Alumni continue to be part of the FIRST experience, even as they go on to pursue their degrees and careers.



A Holy Cow describing the functions of our robot to spectators at the San Diego Kickoff.



Alumni of The Holy Cows assisting with programming our robot.



Past Alumni from 2006 Helping Build the Kit Robot.



## DESIGNING A BETTER FUTURE

### Inter-Session Class



The Holy Cows have contributed a great deal to the High Tech High community and have changed the way students learn here. One of the ways this has been done is through the creation and development of intersession. Intersession is a two week period that occurs between first and second semester in which students work all day for two weeks. In fact, this period was created at the urging of Holy Cow's lead mentor, David Berggren, specifically to give our team more work time during build season. Intersession has grown a great deal more, ex-

panding into a key aspect of our school year. It's open to all students regardless of their affinity with The Holy Cows, and many other scientific, technology, and sport related intercessions have risen up.



A Holy Cow member drafting robot designs.



Working late into the night on the robot during Intersession.



Holy Cow mentors discussing the robot design.



## INSPIRING TODAY

### Teen Magazine

In order to spread FIRST to students outside of San Diego, The Holy Cows wrote an article for a National magazine called Teen Impact. Teen Impact is distributed to 125,000 High School Students across the Nation to help students express their interests by publishing original writings and artwork. Our article was posted in the January 2009 issue of the magazine, and provided a look into what FIRST Robotics is and how it works. The article was titled "FIRST Robotics: More Than Just Metal" and consisted of topics such as the message of FIRST, teamwork,

gracious professionalism, and how it has affected the lives of our team members. This article allowed us to give a more personal approach to spreading FIRST, because it was written by teens for teens. It is a constant goal of The Holy Cows to spread FIRST to other students and other schools throughout the country.



Teams Continue to Discuss Robot Design at The Holy Cows Kickoff Event.



Children at the Lantern Festival driving robots for the first time!



The Holy Cows brought their robot to every community event.



**INSPIRING TODAY**  
**Curie Craft Fair**



**T**he Holy Cows have a history of community outreach. We as a team find it a personal imperative to introduce engineering and science to kids and encourage them to pursue a career in either field. We continued our community outreach program through our participation in the Curie Craft Fair on November 1, 2008. At the fair our team set up a booth with pamphlets and information about The Holy Cows and FIRST, and a pair of Vex robots for kids to drive and play with. In addition we displayed our robot from the previous year. Our team members manned the

booth and Vex demo area. Half way through the day our team demonstrated how our robot from last year worked, raising up a ball and dropping it over and imaginary hurdle. After the demonstration our booth was swamped by intrigued kids and parents. We encountered numerous parents looking to start a team and we were glad to offer advice and mentorship.



**The Holy Cows** running a face-painting booth at the Lantern Festival.



**A Holy Cow** referees at the San Diego FLL Qualifier.



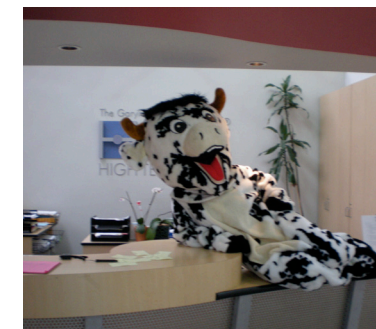
**A Holy Cow** member assisting kids run their mini robots.



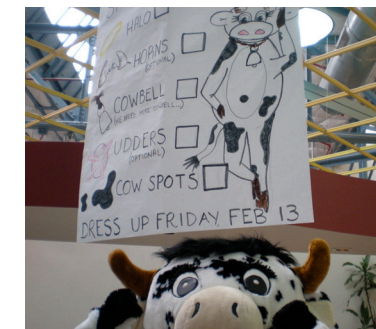
**DESIGNING A BETTER FUTURE**  
**Holy Cow Spirit Day**

**T**his season the team began an annual tradition; The Holy Cow Spirit Day. The team created posters, made announcements, hung flyers, and made sure everyone knew when and how to dress up to show team spirit. High Tech High was decked out in black and white to support The Holy Cows and it was amazing to see just how much support there was. Beyond team memorabilia, we had students and teachers dress up in halos, cow ears, bells, horns, hooves, and spots! Students also stopped by the engineering classroom to see how Daisy

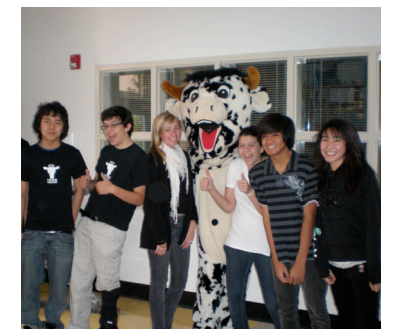
May was coming along in her final days before ship. The team mascot ran around all day, in and out of classrooms, hugging students, and spreading team spirit to everyone. By the end of the day we even had the school director shouting, "Go Holy Cows!" This event was amazing in that one could really see just how much of an effect The Holy Cows have on High Tech High and how much the students, teachers, and directors value the team.



**The Holy Cow** mascot lounging at the front desk.



**The spirit list** for Holy Cow spirit day.

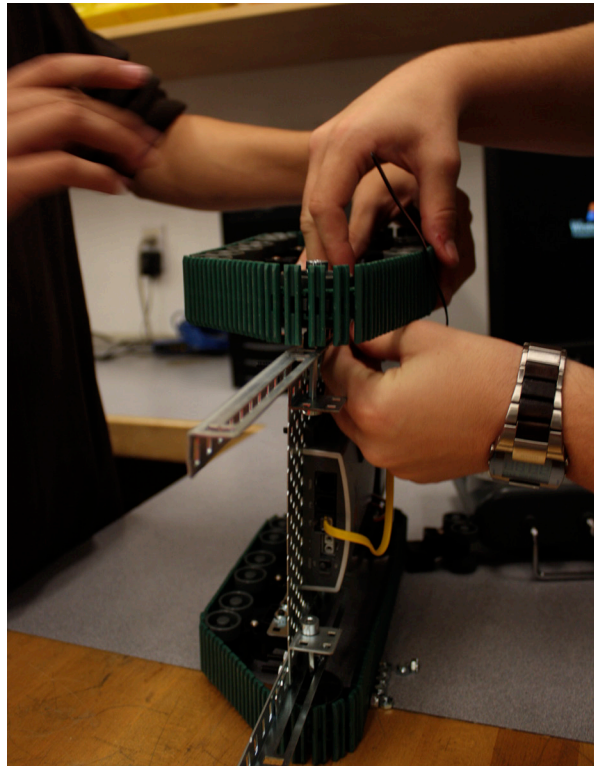


**The mascot** showing spirit with fellow school members.



## DESIGNING A BETTER FUTURE

### X-Block Class



One way our team helps to prepare for and organize during the offseason and build season is X-Block. X-Block is an elective course offered at High Tech High where students are able to choose a club and add it to their schedule. This improves the efficiency of our team since the senior members can teach much of the skills needed during the off-season in school, cutting down our late hours and allowing a more efficient build season.

This year, our team took X-Block to the next level, offering an en-

gineering course for new members of the team. This allowed them to use smaller robots to understand how to assess a game, locate the best design, and then implement it on their own robots. Our class had 4 robot teams, and each produced a fully functioning robot by the end of the class.



Working on Chairman's Award Video during X-Block.



Students working in the conference room.



Members of The Holy Cows watching the game animation for this years game, Lunacy.

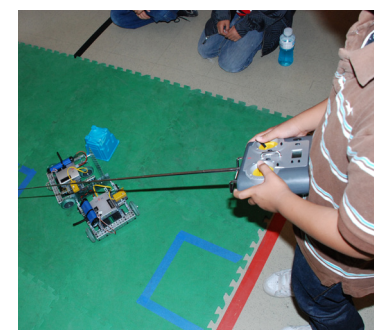


## INSPIRING TODAY

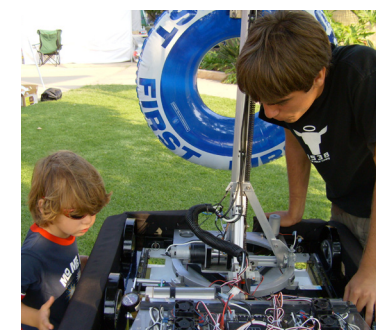
### University City Celebration

On July 4th, 2008, The Holy Cows were exhibitors at the UC, University City, Celebration. The UC Celebration is a community event that takes place annually, and attracts people of all ages. The Celebration consists of a 5k run, a pancake breakfast, multiple vendors and exhibitors, a live band, and presenters such as dance and karate groups. Overall, over 500 people attended the UC Celebration. The Holy Cows had a booth to share information about FIRST to the community. Not only did our team have a booth, but we were also invited to do a pre-

sentation in front of the entire festival. While we talked about the program our robot, Daisy 2, drove around the entire festival. The Holy Cows found this to be a great opportunity to talk about FIRST, to so many people. "I thought it was really cool that so many kids wanted to check out the robot as it drove by," said Holy Cow RJ Sheperd. The Holy Cows were very excited to be a part of this event, and can't wait to participate next year.



Mini robots battled it out at the University City Celebration.



One of The Holy Cows explaining how a past robot works to an interested youth.



FIRST Lego League Participants at the FLL Qualifier.



INSPIRING TODAY

## Clairemont Family Days



On August 2nd, the Holy Cows went to the annual Clairemont Family Days, with the help of their robot Betsy, to help spread understanding of FIRST and the usefulness of engineering in our daily lives. The team showed how Betsy worked while also explaining some basic engineering principles like mechanical advantage. The Holy Cows also signed up interested parents onto an e-mail list to provide them information on how to start their own FIRST team. The event lasted all day, and in addition to just presenting at their booth, the Holy

Cows also demonstrated their robot at the main stage of the fairgrounds. Overall, there were over 70 booths at the event, and several hundred people attended the fair. The team met a group of kids who wanted to restart a FIRST team at their own school, Clairemont High. They also met up with a few parents who thought that FLL or JFLL might suit their kids. "My kids will love this, they're always playing with Lego's and Lincoln Logs" one parent said.



FIRST Lego League teams all wanted to check out the later levels of FIRST.



Parents had many questions about FIRST and how to get teams started.



Team members helping run a booth at the Lantern Festival.

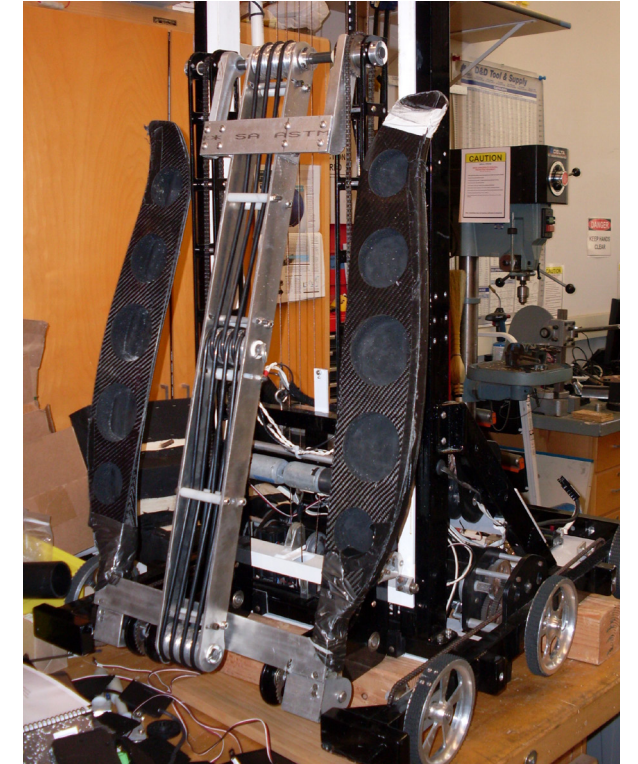


DESIGNING A BETTER FUTURE

## FIRST Engineering Class

When visiting High Tech High one would see students, teachers, classrooms, art projects, and robots. Every robot our team has created resides in the main hallway of our school as a giant work of art. Seeing these robots everyday has made robotics part of the culture of our school. Ask any student at High Tech High who Team 1538 is and they will gladly tell you that Team 1538 is The Holy Cows, the school's robotics team. As the season has been slowly closing toward competitions, our "Game Days" have been repeatedly requested by students and

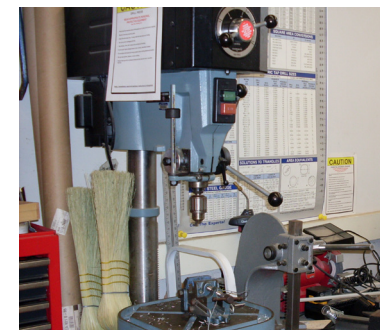
teachers. Last year over half the junior class alone made it to our San Diego regional to cheer for the Cows. All in all our school has replaced the common High School Football Team with a FIRST team.



Students help build the field components.



Students begin work on modeling the robot in CAD.

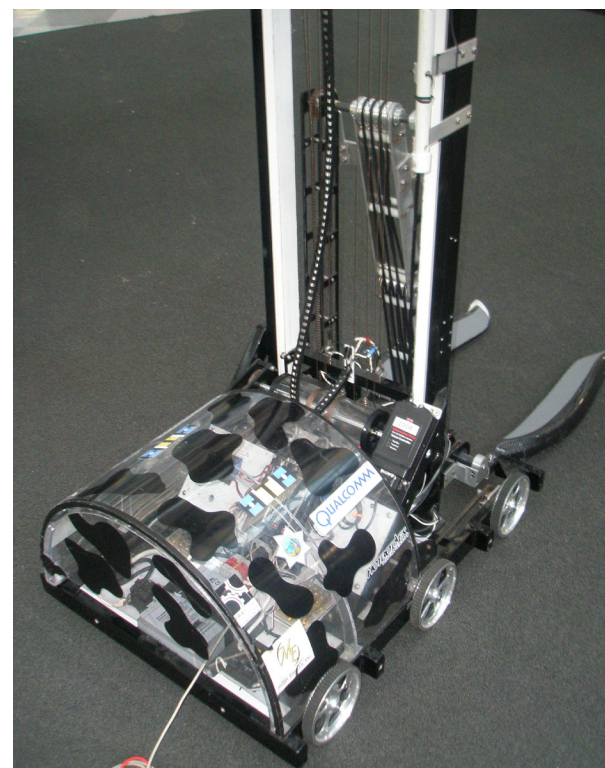


Ready to machine on the drill-press.



## DESIGNING A BETTER FUTURE

### Robotics in School



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## INSPIRING TODAY

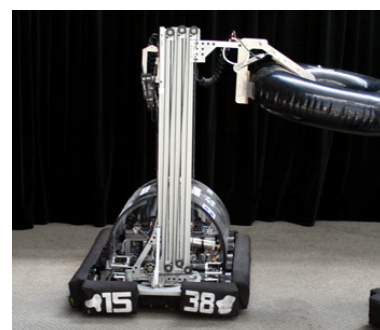
### Pacific Beach-Fest

The Pacific Beach Festival was the first of many community service projects that the Holy Cows volunteered at this year. The Pacific Beach Festival is an annual event where the Pacific Beach community holds a significant community gathering for all ages, featuring music, food, art, and family fun. The Holy Cows started work at a very early 5:30 am. Before the event started, there was a 5K run that the Holy Cows helped setup and manage. Members did everything from hold the finish line to hand the runners their times on slips of paper. After assisting with the run, the Holy Cows set off to help

construct the two concert areas that would host bands throughout the day, as well as setting up multiple other booths, the Holy Cows ran their own. At the Holy Cows booth, there was a miniature robot competition set up where kids and volunteers from the audience could participate in driving VEX robots. The game was based on soccer with a PVC pipe instead of a ball. After the kids drove the robots, we talked to them and their parents about FIRST, its mission. The team also had its robot from last year on display. During this event, members of the Holy Cows introduced many children to science and technology through robotics.



The Holy Cows 2006 Robot, Bessy, for Aim High.



The Holy Cows 2007 Robot, Daisy, for Rack n Roll.



The Holy Cows 2008 Robot, Daisy II, for Overdrive.



One of the Holy Cow Members distributing T-Shirts to 5k runners.



The Holy Cows assisted kids in driving robots at our booth.

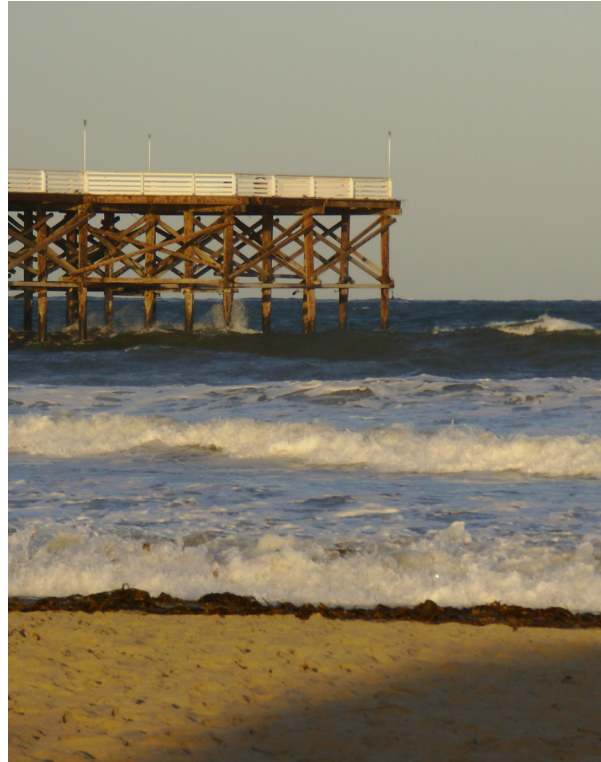


Many kids were very excited about driving robots at our booth.



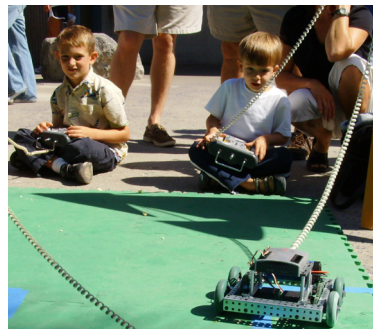
INSPIRING TODAY

## Ocean Foundation Trash Cleanup



The Holy Cows participated in the San Diego Ocean Foundation's Trash Bash 2007, which took place on November 17. The Holy Cows cleaned up Mission Beach as well as nearby parks and bays with 20 of the team's members. The Holy Cows participated in the beach clean up to become more involved in the community. By cleaning up the beaches and parks, the Holy Cows were able to help keep the environment clean, protect the ocean and wildlife. After cleaning up the beaches, the Holy Cows were pleased to know that they had helped their commu-

nity and helped the ocean life. Through this effort, The Holy Cows are literally Engineering a Better Life for people within our San Diego community, and the largest ecosystem in the world, the ocean. The Holy Cows were among those who together collected over 367 pounds of trash that could have ended up in the ocean.



Many kids came over to drive robots at our booth during the Pacific Beach-fest.



The Holy Cows had many materials to assist people in understanding the message of FIRST.



The Holy Cows volunteering with the 5k run at the Pacific Beach-fest.



INSPIRING TODAY

## National Parent Teacher Association

This past June, the National Parent and Teachers Association (PTA) convened to have their 112th annual National PTA conference in San Diego. The Holy Cows were invited to be one of the 200 exhibitors at the conference, including nonprofit organizations providing products and services to PTA's and schools. At the conference The Holy Cows presented to 2,500 people, 2,000 parents and 500 students. As usually our robot Daisy 2.0 was present and the bell of the ball. Not only were the parents interested in FIRST as a whole, but also the students

were both interested and excited about being part of FIRST, especially FRC, FIRST Robotics Challenge. The team was very excited to be interviewed by Bob Barboza from Kids Talk Radio, from PNN, about FIRST and our team.



The Holy Cows sharing a booth with FIRST at the National Parent Teachers Association Conference.



A shot of The Holy Cows being interviewed for PNN radio.



Team members posing in front of our 2006 robot for PNN radio.



INSPIRING TODAY

## Albert Einstein Academy **Cake Walk**



**W**hat better way to raise money at an elementary school than to sell overly decorated and utterly scrumptious cakes? The Holy Cows have participated in the Albert Einstein Academy's Cake Walk for two years, in addition to the Lantern Festival and school presentations.

**“Team members help to set up the event, collect votes, present cakes, and we even submit our own cake.”**

Although our first submission, a hastily made ice cream cake, melted before it could be

sold, our second entry raised AMOUNT for the school! This event allows us a great opportunity to help a local school, in addition to spreading FIRST to many kids and parents who would otherwise not know of it.



INSPIRING TODAY

## The Holy Cows in **Media**

**T**he Holy Cows have discovered that one of the best ways to spread the message of FIRST is through media. By utilizing many different types of media we can spread our message to people who would not normally hear about FIRST. Our team has been in a feature on FIRST through Wealth TV. They followed us through build season and to our competitions. PNN Kids, an internet podcast for kids, has interviewed us about FIRST and our team. The Holy Cows have also been featured in the San Diego Union Tribune 5 times. We have been featured

in the Peninsula Beacon, and the UCCA Newsletter. The Pre-Ship Expo, a scrimmage held the weekend before ship, has been featured in TV news stories, and newspaper articles thanks to The Holy Cows. The Holy Cows have been featured on two live KUSI news broadcasts to spread awareness about FIRST and FIRST events.



**Students** work on their robots during an engineering class called X-Block.



**One** of our team members invites a child to drive a robot.



**Our booth** at the Einstein Academy with materials for parents and robots for kids.



**Wealth TV** filming the Holy Cows opening our Kit of Parts.



**Wealth TV** filming students draw designs for the robot.



**The team** describing to Wealth TV what the team has been up to during Build Season.



INSPIRING TODAY

FIRST Lego League Regional at Legoland



As a part of our goal to spread FIRST to kids, The Holy Cows have volunteered at many FIRST Tech Challenge and FIRST Lego League events. The FLL Southern California Championship Tournament happened was a major event for FLL teams and was exciting for The Holy Cows as well. At the event members of the Holy Cows volunteered as referees, judges, and field managers. The Holy Cows also set up a booth where they exhibited their 2008 robot which was, of course, very popular with the younger kids of FLL. Most popular, of course, were our VEX

robots we had out and running for visitors to drive around in a game we had constructed. The kids were having such a fun time with The Holy Cows that they had almost forgotten about their competition. It was great to hear the FLL kids talk about what it will be like when they are in FRC.



Team members talk to spectators at our booth at FIRST Lego League championship.



The FIRST Lego League Championship playing fields.



The Holy Cows volunteered at the FLL Championship by refereeing and judging.



INSPIRING TODAY

Albert Einstein Academy Lantern Festival

It is a chilly night in November when the streets around Albert Einstein Academy light up as students, teachers, parents and volunteers gather together and march with homemade lanterns. Before the parade, the school is converted into a makeshift fairgrounds, complete with games, food and rides. The Holy Cows have been involved in this fundraiser for two years now and could not wait to participate once again. Each year we volunteer for the entirety of the event to run a game booth, sell tickets, and help set up/break-down the event.

**“The Holy Cows also have our own booth at the event where we run our a mini-robotics competition, show off Daisy, and give out Holy Cow memorabilia.”**

With so many elementary-aged students at the event, we have a great opportunity to showcase FIRST and demonstrate how much fun science and technology can be.



The Holy Cows bring the VEX robots to events to draw kids in and get them interested in robotics



Each team member of the Holy Cows was in charge of a festival booth



A look at how many people attended the Lantern Festival.



INSPIRING TODAY

Sally Ride Science Festival



Early on Saturday, December 6th, the Holy Cows convened with the Midnight Mechanics (team 812) to spread FIRST at the annual Sally Ride Festival at UCSD. The Festival brings together over 700 of 5th-8th grade girls along with interested community members, organized by 120+ volunteers, and gets them excited about the science and technology. At the event we set up a booth and gave demonstrations of last season's robot, and VEX bots at our booth which were very popular and attracted many girls, after which at which point we assisted with the vari-

ous workshops demonstrating team building and engineering concepts that the girls attended.

The Festival incorporates our focus, Engineering a Better Life, so we were eager to participate in the event. It's important to incorporate everyone, especially women and minorities, in the re-engineering of our world. It's necessary to get girls excited about science when they are in grade school, so they'll be more open to exploring it as a career. With more women pursuing the technological fields, we are closer to our goal of promoting an interest of science and technology through FIRST.



INSPIRING TODAY

San Diego FIRST Lego League Qualifier

On November 22nd 2008, over twenty Holy Cow team members volunteered at the San Diego FIRST Lego League (FLL) qualifier tournament. In addition to setting up the event, judging, refereeing, and resetting the field, the Holy Cows manned a booth where we presented team videos and pamphlets to show parents that an involvement in FIRST promotes an interest in science and technology through outreach in the community as well as extra-curricular activities related to team building. Daisy II sat impressively on the side of our booth and was cause for excitement and interest for both adults and

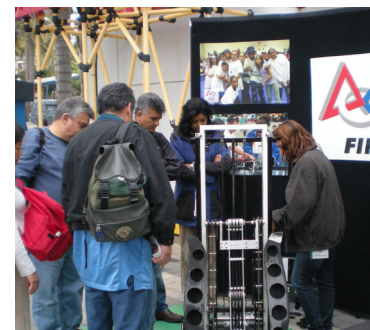
younger participants. At our booth we had constructed two vex bots, for kids to drive while we talked to their parents about FIRST. The Vex bots at our booth were very popular and attracted many kids. While at the event we aided another TSD team in the process of running an FLL regional competition. This event was very exciting as we were able to interact with FLL team members, who taught us all about their robots and team goals, and, in turn, we taught them about FRC and the big bots to come. We were impressed by the ability of the younger kids to build such intricate working robots and look forward to seeing them build FRC robots.



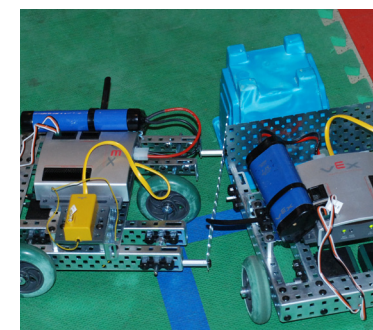
Members of the Holy Cows converse with event attendees.



Students meet up to talk about game strategy during the San Diego Kickoff.



Presenting to people at the FIRST Lego League Championship at Legoland.



The children were able to drive and operate the VEX robots, showing them the next step in FIRST.



A referee judging an FLL match at the San Diego Qualifier.



The FIRST Lego League playing field.