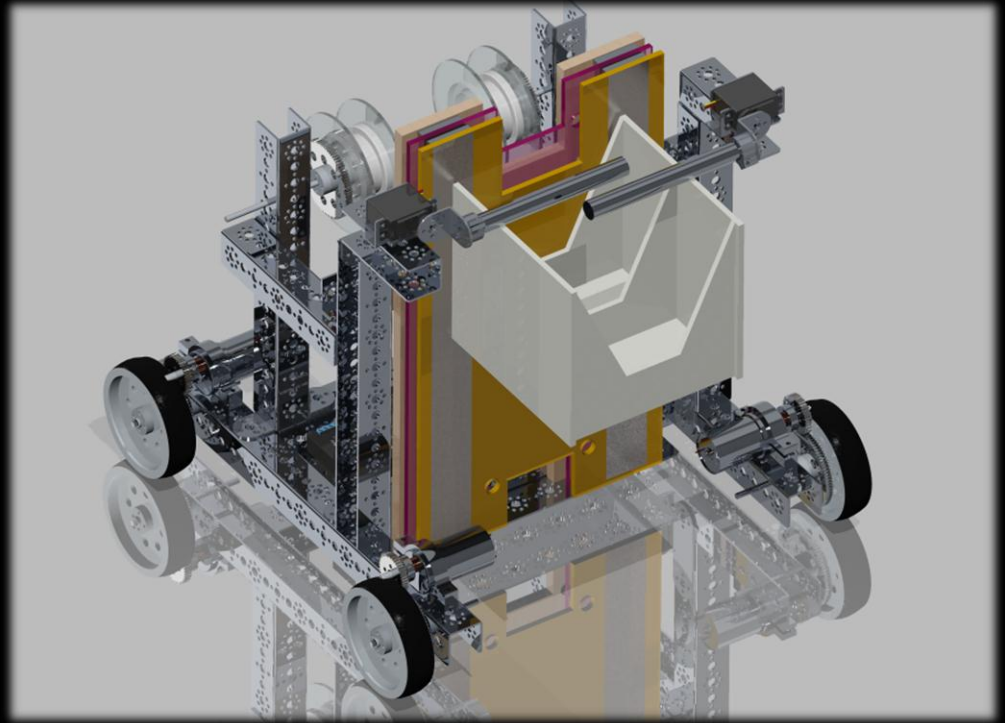
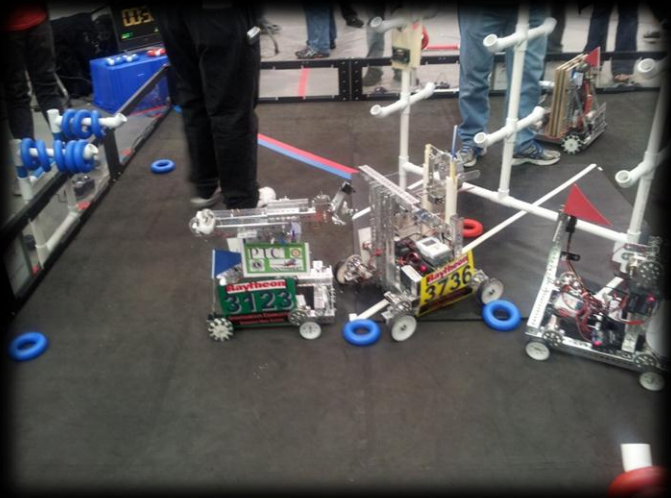


# PTC Creo Parametric

## Seminole High School Robotics



FTC Teams:  
Spontaneous Combustion (3123)  
and Serious Business (3736)



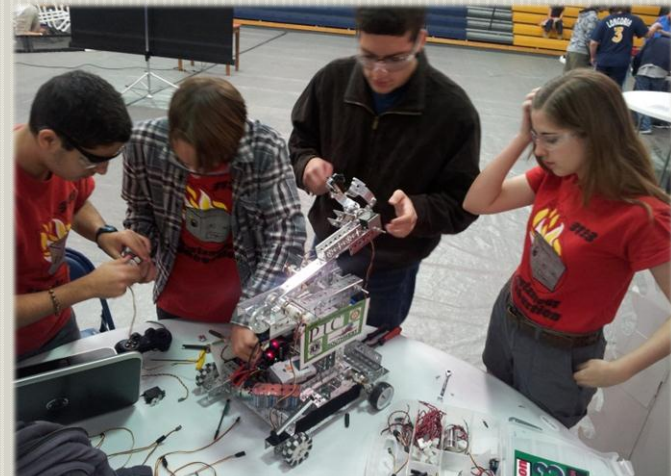
**FTC**

FIRST Tech Challenge

# 2012-2013 FIRST SHS Robotics Season

# What did we accomplish this season?

Our final state rankings for Serious Business and Spontaneous Combustion were 28<sup>th</sup> and 37<sup>th</sup> place respectively, and we were able to collect a 2 judges awards (1 each team) as we progressed through the season this year.

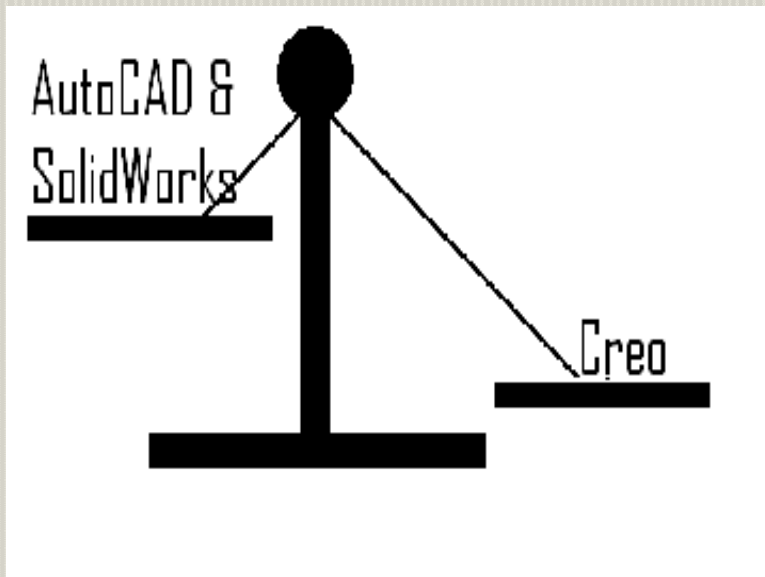


# Why did we start using Creo?

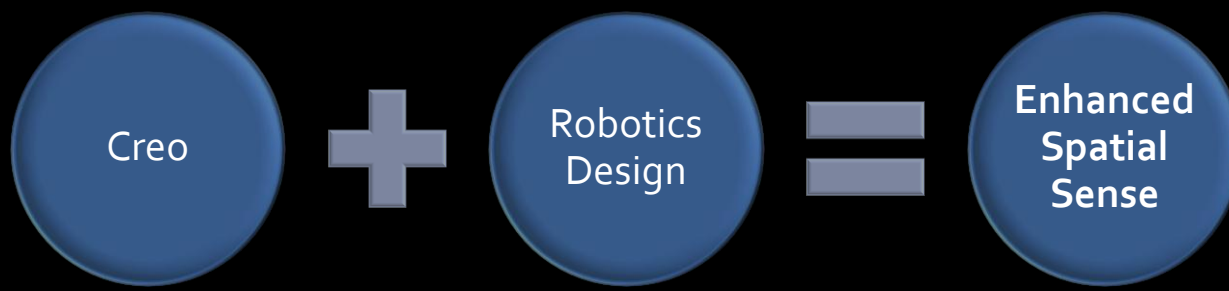
- Our teams desired a new CAD software which incorporates both conceptual sketching and a full 3D preview proficiencies to design concepts of our bot.
- Our teams received availability to use the PTC Creo Parametric 2.0 Academic Edition as a great resource in expanding our skill base.
- Creo was highly recommended by the Raytheon Advisor who works with us.
- A ready to use Kit of Parts was available for the FTC Tetrix and Lego kits, making conceptual design a breeze to start

# What did we use in years prior?

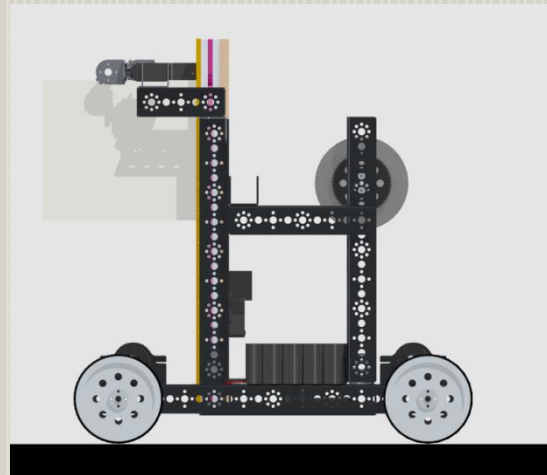
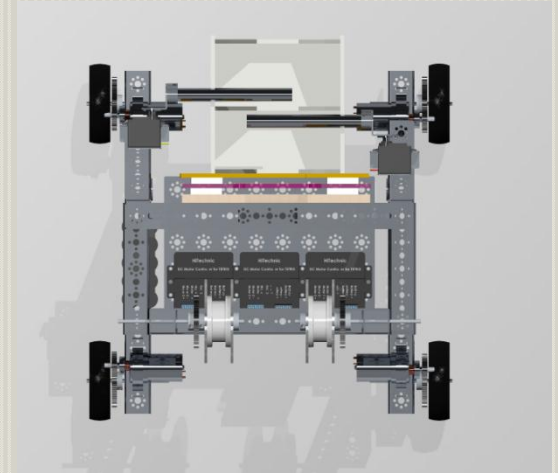
- Initially we used Autodesk's AutoCAD LT, a basic 2D CAD Software and Solidworks, an application for 3D models and representations.



- Using both of these programs, we were still greatly limited in the level of detail with which we could design and envision our robot.



- Using Creo's powerful design software, we were able to plan the layout and function of our robot down to a tee. We came up with this design layout using Creo in the hopes of including a bot lift off the back of our bot contained within the empty space. Sadly this idea was never implemented but knowing that we had the option was huge in the final design of our robot.

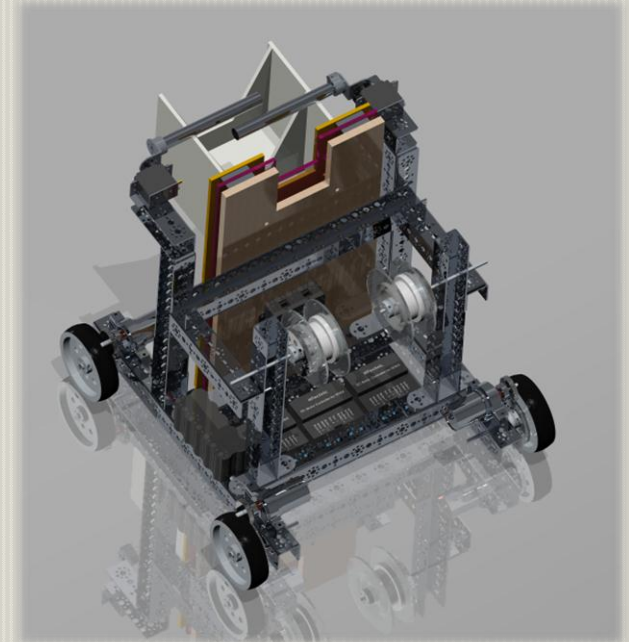


# What did we like about Creo?

- We were open to the challenge of Creo when we were introduced to it and saw its abilities in numerous videos on the PTC website.
- **What we liked about Creo;**
  - The Ribbon Bar UI simplicity, no unnecessary options, and everything is easy to find by category.
  - The inventory of parts used in the assembly process made it easy to make simple measurement adjustments, edit definitions, and quickly create a representation of any idea.
  - We liked the library of **FTC parts** included in the kit. With this library we could produce quick designs and share renderings with the team more efficiently with 3D representations.
- Unlike last year's version of Creo Elements, Creo Parametric 2.0 caused zero problems for us in terms of crashes. We were not constantly worried about losing our work due to an unexpected program error.

# What problems arose for us?

- Once enough parts were placed into the assembly file(somewhere maybe just upwards of 100) the program started to slow dramatically, causing movement about the view planes to become slow and tear. This became frustrating and caused for a lot of the time lost in that “quick concept creation” aspect that made Creo so enjoyable to use.
- Other problems we encountered involved:
  - Object and Model Orientation
  - Editing Part Definitions and Constraints
  - The lack of an easy, memory efficient save/save as function





# Our solution to those problems.

- We spent much of our time watching the tutorial videos on ptc.com to learn about the program, and it helped immensely. These videos were short, easy to understand, and allowed us to become extremely well-informed.
- Team collaboration: With 2 of us using Creo we were able to help each other learn the tricks and become more efficient in Creo.
- The biggest problem we overcame was simply our lack of experience with the software. After only just a few weeks of work with the software, many problems that seemed insurmountable at the start of the season became trivial and almost unnoticed once we knew how to use the program effectively.



# How do we feel about Creo?

- At the start, Creo most definitely is an uphill battle. The intricacies of the program are hard to figure out with no training or prior experience, but once you do figure out the program it is insanely beneficial to the design process of seemingly any object.
- We are thankful for PTC granting FIRST Robotics the chance to test run their new creation. Creo is ultimately fun, helpful, and in a class all it's own. In just the two short years since we started using it the program has made incredible strides in it's capabilities and polish. I cannot wait to see what's in store for next year.

# What we have learned from our experience with Creo:

- After using PTC's Creo Parametric we would recommend this to any student wishing to advance their CAD education. Detailed renderings can be generated very quickly and conceptual ideas are easy to create thanks to this software.
- Due to our success this year with Creo in our FTC robotics teams, our teacher is excited about the idea of implementing Creo into her regular school day curriculum, to teach this program to students outside of our robotics teams.

# Thank You PTC!

FROM YOUR LOYAL SUPPORTERS AT SEMINOLE  
HIGH SCHOOL FTC TEAMS:

SPONTANEOUS COMBUSTION (3123) AND SERIOUS BUSINESS (3736)

