

Ryan Dognaux – This Is How I Work



This month we're featuring the life of Ryan Dognaux, a mentor from FRC team 4329 who was previously on FRC teams 234 and 1646. Ryan Dognaux joined an FLL team when he was in middle school and went on to FRC from there. He then set off to improve his team's scouting system. He is also an amazing MC and MC's at many events including VEX worlds. Ryan Dognaux is a hard working mentor who strives to do the best for his team and spends most of his time helping his students to CAD and fabricate parts for the robot. If you want a more in depth look at his stories and advice, keep reading to see how amazing our FRC mentors are!

[Responses from May 28, 2015]

Name: Ryan Dognaux

CD Username: [Ryan Dognaux](#)

Current Gig/Job: Process Engineer at The Boeing Company

Alma Mater/Degree: Purdue University – B.S. Computer Graphics Technology – Virtual Product Integration

Current Team(s): [4329 – The Lutheran Roboteers](#) – St. Charles, Missouri

Former Team(s):

High School – [234 Cyber Blue](#)

College – [1646 Precision Guessworks](#) / Purdue FIRST Programs

Post-College – [357 Royal Assault](#)

Location: St. Charles, Missouri

Hobbies / Interests: Robotics, Homebrewing, Woodworking, Indianapolis Colts Football



What inspired you to do what you do? Tell us a story.

I've been involved with competitive robotics now for about 15 years in one way or another. My initial involvement is probably a little different than most. I got hooked by joining my middle school's FLL team with a few of my friends and met some of my future mentors and teammates that way. I knew coming into high school that I wanted to join the robotics team.

When I got there though, the actual building of the robot didn't interest me all that much. The thing that actually kept me around for my first build season was FIRST's animation competition – yes, FIRST used to have an entirely separate competition for 3D animation. After my first 'build season', I was asked if I wanted to help lead the team's scouting efforts. That first scouting effort consisted mostly of myself and a mentor

watching every match and recording data. We ended up being in a picking position and I distinctly remember choosing a rookie team over one of the better robots that year. We lost in the quarter finals and suddenly scouting meant something to me and to the team.

From that moment on I made a decision to never put our team in that spot again and really worked to improve our scouting. We actually started using our scouting data to influence drive team strategy and developed a culture on the team that made scouting viewed not only as necessary, but important and actually fun. Having the ability to completely lead this effort as a student really inspired me; mentors honestly listened to me as an equal on how to play to win and it's something I've tried to do as a mentor today.

I went on to Purdue University and mentored team 1646 through Purdue FIRST Programs – making a lot of friends along the way. After getting my first job at Boeing in Philadelphia, I joined team 357 and again had a chance to meet more great mentors and students (see a pattern here?) If it's one thing I've learned, there are some of the smartest, most inspiring people involved in the FIRST & VEX robotics competitions and I'm just happy to be able to be in the same room as these people.

What is your day job, and how'd you get there?

I work for The Boeing Company. My job title is Process Engineer but it really doesn't describe what I get to do on a daily basis – which can be all over the place. The group I work for is called Immersive Development and we are charged with evaluating new and emerging technology to see if it's ready for use on production programs. This means I get to try out and develop uses cases for things like 3D Printing, motion capture, immersive head mounted displays, mobile devices, 3D visualization technologies and more.

I got the job by originally being hired to do process and tools work. I had always wanted to work for Boeing and once I got my foot in the door I made it my mission to search out the job I really wanted. Back in 2009 the job market wasn't too great and I felt very lucky to have the opportunity to work at my dream company. I actually learned a great deal from my first position and became recognized as a subject matter expert in visualization technologies which helped me transition to my current job in St. Louis.

What is your favorite story to tell about robotics?

It's hard to pick just one. I'll go back to high school on Cyber Blue 234 though. It was 2005 during the Triple Play game at the very first Boilermaker Regional at Purdue University. This was also the first year we had 3 vs. 3 matches – a HUGE improvement that made FIRST's games all the more exciting. Triple Play was basically a giant game of tic-tac-toe using tetrahedron shapes. Whoever had the highest tetra on or inside a goal claimed ownership of that goal.

234 picked legendary team (even for back then) 16 – Bomb Squad – and team 393. 393 no longer exists, but they were actually ran by our lead mentor’s wife. It’s one of the only times I’ve ever heard of a husband and wife running separate FRC teams (Shout out to Scott and Libby Ritchie!)

We had a tough matchup going up against an alliance of 71, 269 and 1024 during the elimination rounds. Back then, team 71 was *the* team to beat and struck fear into the hearts of every FRC team on the other side of the glass. We won our 1st elimination match by having 393 play some incredible defense on 71, but lost our 2nd match. In the end, it came down to a game piece being propped up partially by the field, dropped by 71’s robot, that gave 71’s alliance ownership of a goal – and the match. It was a brutal way to lose but it’s also strangely one of my favorite memories – the time we nearly beat 71 and lost by an inch.

My close second would have to be being asked to be the MC for the St. Louis regional in 2007 when the actual MC had to back out. This would set me down a path of game announcing and MC’ing for years to come and I’ve been incredibly honored to be asked to continue to do it over the years.

What's your favorite robot that you didn't help build?

There are so many cool robots that get built every year. Here are just a few of my favorites, I’ll try to pick a few that don’t always get mentioned –

- Team 71’s 2002 [file-card drive robot](#) – I know everyone says this, but I actually got to see it in action! And it was incredible! The only chance you had at beating it was getting to the goal first and that almost never happened. It’s not every year that your robot causes a rule change the following year.
- Team 68’s 2003 [mega wall robot](#) – Okay, it’s also very rare to have a rule clarification by FIRST **during the season** because of your robot. 68 managed to make that happen in 2003. I’m always a fan of teams that make the ‘shutdown machine’ – a robot that breaks the game i.e. 469 in 2010.
- Team 190’s 2004 [hanging bar-blocking ball-blocking robot](#) – This thing was nuts. Not only would it hang from the bar but it also had wings that prevented other robots from hanging. Then they would block you from capping your goal with their giant arm.
- The alliance of 190, 177 and 987 in 2007. Really just the [Einstein Finals 3](#) match. Tubes were pretty useless during this game but they found the real best use for them – denying a team entry to their alliance’s ramp.

What apps/software/tools can't you live without? (Work/Robotics/Home)

For robotics: Autodesk Inventor, a 3D spaceball mouse and a laptop - being able to take CAD wherever I need to go helps during the build season. An air compressor with a rivet gun for fabrication – makes assembling a robot a breeze.

What's your workspace setup like? (Work/Robotics/Home)

We have a pretty small shop on 4329. It used to be an old weight room but we've tried to make the most of it. Last year we made 2 robots for the first time on this team and we did it with a band saw, a drill press, a pneumatic rivet gun and some smart design decisions.

The attached photo is a little outdated but shows the facility that we work in.



What do you listen to while you work?

All kinds of music – almost anything except country music. If I had to pick a favorite band, it would be MuteMath.

What's your schedule like during build season?

We meet 6 days a week and take Sundays off for family, church and school. This year we probably met almost as much after the build season for programming development and driver practice in-between bag & tag and our week 2 regional. I've overseen most of the CAD work during the past 2 years with 4329 and have been involved heavily in the shop while parts are being fabricated and assembled.

What's the best advice you've ever received?

Be humble, work hard and show enthusiasm in everything you do.

Also you are your own biggest advocate, so don't sell yourself short!

What is your favorite guilty pleasure?

Sweet Tea.

Fill in the blank. I'd love to see Chris Fultz from 234 answer these same questions.

Anything else you want people to know about you?

If you get the chance to volunteer for an event, do it. I was lucky enough to be an MC at the St. Louis regional in 2007 and that set me down a path of MC'ing and game announcing for many other events including VEX Worlds. It's a blast and I've been able to meet a lot of great people by doing it.



I wasn't on a team that won a regional until my 10th year in FRC. It takes a lot of right choices during the build season and a little luck on the playing field to come away with a blue banner, which is always one of my goals each season.



I've started an off-season event in St. Louis - the Gateway Robotics Challenge. St. Louis has a long history of veteran FRC teams but was one of the few cities that still didn't have an off-season event for teams. Some teams in this area only play at the St. Louis regional and are 'one and done'; With this in mind, I saw an opportunity to provide those teams another chance to play in the Fall that would let brand new team members get some FRC exposure prior to the build season.

We went from the idea to actually holding this event last year in about 3 months - which was pretty crazy. Everything was rushed but with the support of some amazing volunteers and the Hazelwood School District we were able to pull it off. 25 teams attended including 4 pre-rookie teams. Many teams here haven't been exposed to the district event style of play and I think it helped open some eyes on what an FRC event can be.



This year we hope to make it even better - www.gatewayroboticschallenge.com

"Far better it is to dare might things, to win glorious triumphs even though checkered by failure, than to rank with those timid spirits who neither enjoy nor suffer much because they live in the gray twilight that knows neither victory nor defeat." -Theodore Roosevelt