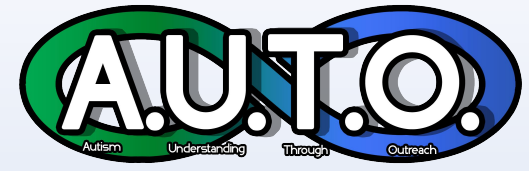


**The ability to include begins  
with the power of understanding**

# Autism Understanding Through Outreach (A.U.T.O.)



According to the National Autism Association, autism affects 1 in 36 children, and with early intervention, they can developmentally progress. Past research indicates that many of these children gravitate toward science, technology, engineering, and mathematics (STEM) once exposed to the disciplines. One such study found that over a third of young adults with an autism spectrum disorder (34.1 percent) chose a STEM major in college. Despite their passion, however, many children with ASD are often excluded from STEM activities due to misconceptions about their abilities.

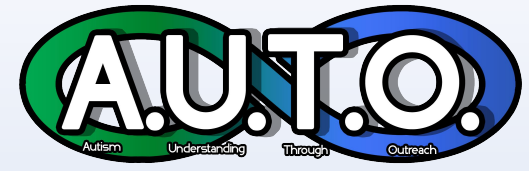
In school, public, and at robotics events, we encounter people on all levels of the spectrum and we believe that to better interact you must first seek to understand. Identifying someone on the spectrum and knowing how to engage with them is the first step in doing so.

## **OUR MISSION**

To increase awareness and understanding of autism (ASD) in the STEM community to build a bridge to those on the spectrum.

The AUTO Foundation was created to sustain, promote and ensure the AUTO program would survive into the future. We would like to thank the FTC 5386, FRC 5166, Freeland Community Schools, Spectrum Autism Center, and Central Michigan University for their assistance with the development of this module.

# Models of Disability



## Medical Model

- The viewpoint of most people outside of the disability community.
- Someone with a disability is thought to have an “impairment” that should be “fixed” so they can be as “normal” as possible.
- Casts disability in a negative manner/light

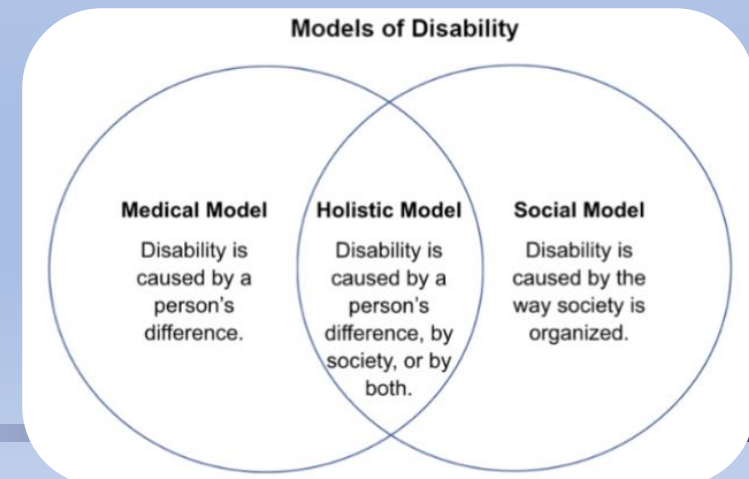
## Social Model

- Disability is caused by how society is designed and organized, not by a person’s body or diagnosis
- Places no judgement on the person, recognizes that societal barriers are the problem to be fixed.
- Shift in attitude creates an environment where people with disabilities are accepted as an equal and valued member of society
- Designed to describe the experiences of people with mobility and sensory disabilities, not fully inclusive of other types of disability.

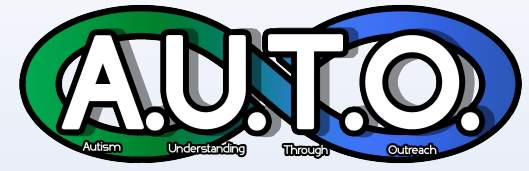
## Holistic Model

- Intended to capture the full complexity of the disability experience
- Proposes that disability may be caused only by a person’s difference, only by their interaction with society, or a combination.
- People with disabilities can freely choose therapies and medical treatments to support their needs and goals

To shift society’s perspective of disability awareness to acceptance of people with disabilities begins with understanding



# Identity vs. Person First Language



The language used to refer to individuals who have disabilities is very important, as is the case with the language use to refer to any person. There are two main approaches to this language.

## What is “Identity-First” Language

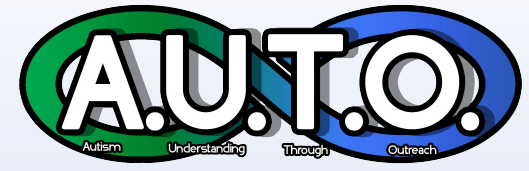
- A linguistic form that links the disability with the person by highlighting their condition or disability first as it is an important part of their identity. For example:
- An autistic person.
- They are autistic.

**Not everyone feels the same about the language being used and it is important that people around the individual make sure the language used is what the individual is comfortable with. The easiest way to do this is to simply ask.**

## What is “Person-First” Language

- A linguistic form that puts the person before their disability, for example:
- A person with a disability.
- A person with autism.
- A person with epilepsy.
- Person-first language is preferred or used by parents/carers of disabled children and professionals. It is also a commonly used linguistic form in academic settings such as university or research.

# What is Autism (ASD)?



Autism (Autism Spectrum Disorder) is the term applied to a social, behavioral, and neurological disorder that affects children and adults. Autism is a spectrum disorder, there is no single trait that is always present in every individual with autism. No two people with autism are alike. Currently, there is no known cause of autism and no singular cure for autism.

- ❖ Social
  - ❖ Difficulty establishing or maintaining back-and forth conversations and interactions
  - ❖ Inability to initiate interactions
  - ❖ Difficulty understanding other perspectives/opinions
- ❖ Behavioral
  - ❖ Difficulty with shared attention or sharing of emotions and interests with others
  - ❖ Lack of interest in other people
- ❖ Neurological
  - ❖ Stereotyped or repetitive speech, motor movements or use of objects
  - ❖ Excessive adherence to routines



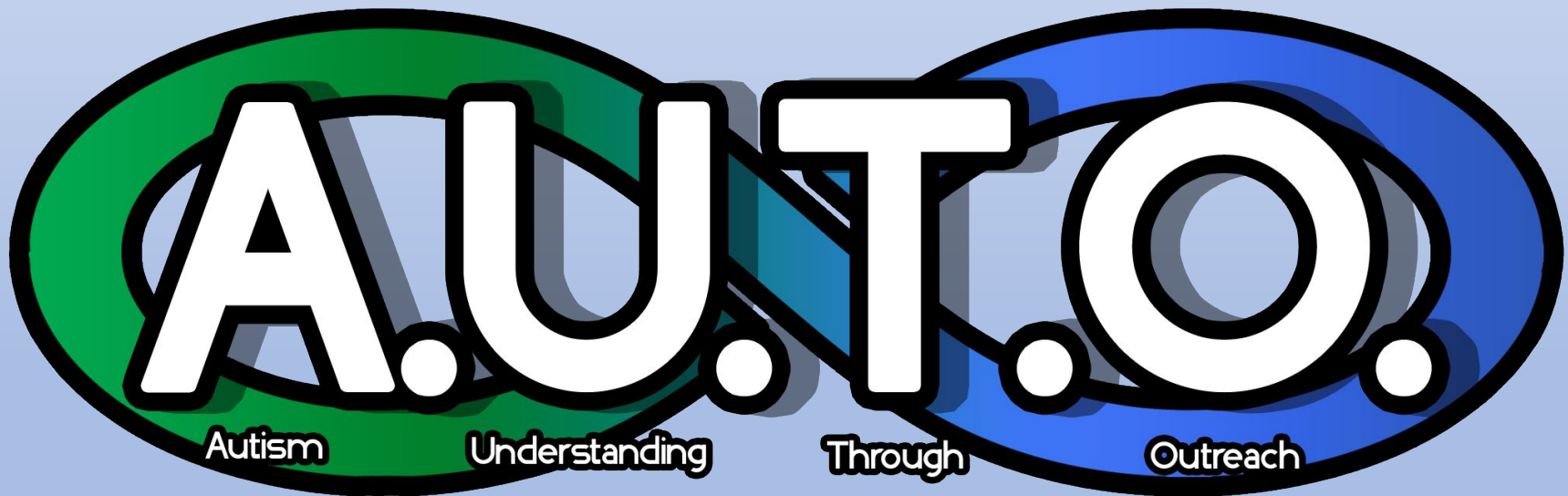
# How to Identify Autism?



Individuals with ASD may:

- ❖ Interact with others differently
  - Not speak as well as others
  - Have poor eye contact
  - Act like they are in their own world
- ❖ Appear to have difficulty understanding and expressing emotion
- ❖ Not have effective spoken language and rely upon other forms of communication
  - Such as pointing to pictures or using a tablet computer with special language applications
  - Seem unable to tell you what they want, preferring to lead you by the hand
- ❖ Have echolalia- the repeating of words or phrases over and over by someone with ASD
- ❖ Have difficulty with nonverbal aspects of language like social cues, body language, and vocal qualities
- ❖ May become fixated on specific objects
- ❖ Have a different reactions to sensory stimuli by seeing, hearing, feeling, or tasting things with more-or-less intensity than others

# Questions Before We Continue?



# Examples in Robotics

- Robotics events may be too loud, so they may cover their ears



- They may seem distant during an event, as they may be distracted or overstimulated

- They may have a hard time talking to you, team members, or staff

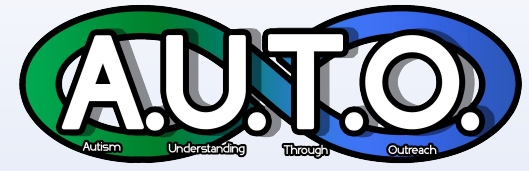


- They may act like they are in their own world or not present during competition





# Examples Outside of Robotics



- Getting very loud/vocal



- Stimming



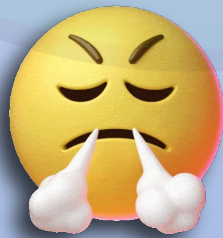
- Hyperfixation (noticing small details like flickering lights, repetitive noises, etc.)



- Toe stepping (walking on their toes/bumping up and down while walking, etc.)



- Fidgets (has to have something in hand to do. (fidgets, cubes, pencils, something to hold, etc.))



- Gets frustrated at little things

- Creative thinker (better at things outside of the school structure)



# How to Engage Autism?

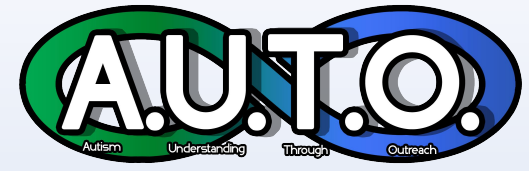
If you find that you are interacting with someone on the spectrum, using these tactics can make the experience better for both participants!



- ❖ Be patient
- ❖ Include them
- ❖ Accept them for who they are
- ❖ Treat them the same as any other individual
- ❖ Accommodate, don't isolate



# Do's and Don'ts For Interactions On The Spectrum



## DO'S

- ❖ You should use if needed
- ❖ Use first/then language
- ❖ Use simple instructions
- ❖ Use model or gesture prompts
- ❖ Use a calm voice
- ❖ Use echoics/fill in the blank

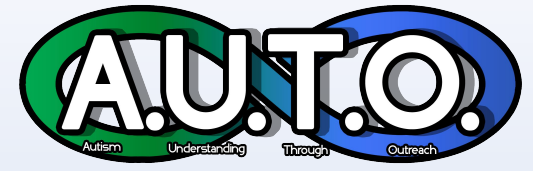


## DON'TS

- ❖ You should **NEVER**:
  - ❖ Increase your volume
  - ❖ Change your sentences continuously
  - ❖ Attempt to interrupt repetitive behaviors
    - ❖ Force eye contact
    - ❖ Use physical restraint



# How Can I Make an Impact?



- ❖ Be aware
  - ❖ All people act different, be mindful of the signs
- ❖ Be inclusive
  - ❖ Acceptance for who they are
  - ❖ Treat individuals with autism the same as you would treat anyone else
  - ❖ Understand that their actions/reactions may be different than expected
- ❖ Be an advocate
  - ❖ Promote Autism Understanding Through Outreach (A.U.T.O.)
    - ❖ Reach out to the community
      - ❖ Schools
      - ❖ STEM Events
      - ❖ Sponsors
      - ❖ Fundraisers



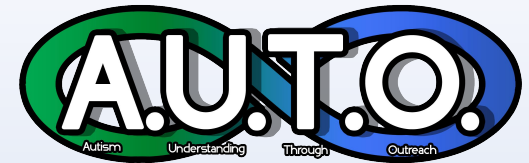


# Thank You! Questions?

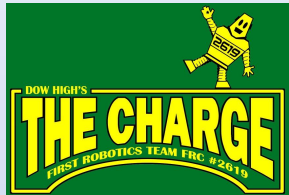


[A.U.T.O. Certification Exam](#)

# A.U.T.O. Partners



The following have been certified to participate in the A.U.T.O. program by the Freeland Robotics Club.



**Dow High's The Charge**  
FRC Team 2619  
Certified 8/21/23



**SASA Dragatrons**  
FTC Team 10653  
Certified 10/08/23



**The BC PegaCyborgs**  
FTC Team 16273  
Certified 11/03/23



**CBA Robokings**  
FRC Team 6753  
Certified 11/04/23



**STEAM Stingers**  
FTC Team 7255  
Certified 11/04/23



**Buzzin Bots**  
FTC Team 24368  
Certified 11/04/23



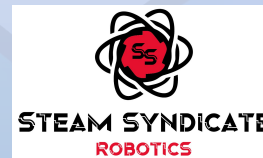
**The Ramageddon**  
FRC Team 4855  
Certified 11/30/23



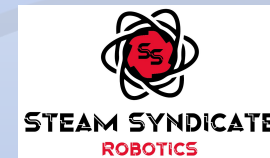
**Freeland Fabricators**  
FTC Team 5386  
Certified 12/3/23



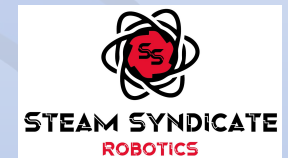
**Zenith Robotics**  
FTC Team 23307  
Certified 1/15/24



**STEAM Syndicate**  
FLL Team 60704  
Certified 1/19/24



**STEAM Syndicate**  
FTC Team 23856  
Certified 1/19/24



**STEAM Syndicate**  
FRC Team 9455  
Certified 1/19/24



**VLHS Chargers**  
FRC Team 9662  
Certified 01/26/24



**Taubateexas Robotics**  
FRC Team 7459  
Certified 01/27/24



**Team Spyder**  
FRC Team 1622  
Certified 01/31/24



**Team Tea Borks**  
FTC Team 19121  
Certified 02/05/24



**Team Cerbotics**  
FRC Team 4400  
Certified 02/05/24



**Team GreenBlitz**  
FRC Team 4590  
Certified 02/06/24

# A.U.T.O. Partners



The following have been certified to participate in the A.U.T.O. program by the Freeland Robotics Club.



**Team Cerbotics**  
FRC Team 4400  
Certified 02/05/24



**D-Bug**  
FRC Team 3316  
Certified 02/09/24



**Team GreenBlitz**  
FRC Team 4590  
Certified 02/06/24



**Casimir Tech**  
FTC Team 16382  
Certified 02/09/24



**Mariners**  
FRC Team 8223  
Certified 02/12/24



**Robogators**  
FTC Team 14649  
Certified 02/13/24



**Van-Gears**  
FTC Team 22373  
Certified 02/13/24



**Atomigators**  
FRC Team 4737  
Certified 02/13/24



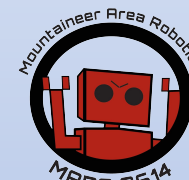
**LabRatz**  
FTC Team 22300  
Certified 02/13/24



**Merge Robotics**  
FRC Team 2706  
Certified 02/17/24



**Technados**  
FTC Team 7936  
Certified 02/26/24



**MARS**  
FRC Team 2614  
Certified 03/16/24



**MAGMA**  
FRC Team 3008  
Certified 03/16/24



**Robo Raiders**  
FTC Team 21386  
Certified 03/20/24

**Infinity Dragons**  
FLL Team 29005  
Certified 03/21/24

**Cyborg Dragons**  
FLL Team 29006  
Certified 03/21/24



**Boyne City Blaze**  
FRC Team 4337  
Certified 03/21/24



**Titanium Tigers**  
FRC Team 5114  
Certified 03/22/24

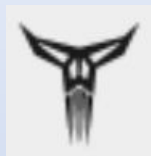
# A.U.T.O. Partners



The following have been certified to participate in the A.U.T.O. program by the Freeland Robotics Club.



**Gray Matter**  
FRC Team 5712  
Certified 03/22/24



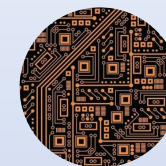
**Bounty Hunters**  
FRC Team 8517  
Certified 03/22/24



**The WarriorBots**  
FRC Team 5603  
Certified 03/22/24



**Lucky 7's**  
FRC Team 7772  
Certified 03/22/24



**Circuits of Destruction**  
FRC Team 5982  
Certified 03/23/24



**Engineers of Tomorrow**  
FRC Team 2783  
Certified 03/27/24



**Blitz Creek**  
FRC Team 3770  
Certified 04/02/24



**The Byting Irish**  
FRC Team 7660  
Certified 04/04/24



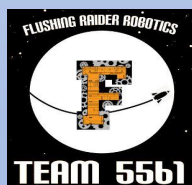
**The Raptors**  
FRC Team 1711  
Certified 04/04/24



**Robostangs**  
FRC Team 548  
Certified 04/05/24



**AstroBots**  
FRC Team 9568  
Certified 04/05/24



**Raider Robotics**  
FRC Team 5561  
Certified 04/05/24

**Junkyard Bots**  
FTC Team 7065  
Certified 05/17/24

**Avian Robotics**  
FRC Team 9005  
Certified 08/27/24

**Wired Wolves**  
FTC Team 12603  
Certified 09/07/24