I believe in the Golden Rule.

Do unto others as you would have others do unto you.

Kindness, empathy, hope, compassion. These Golden Rule principles guided the amazing teachers who inspired each of us over the years on our paths to becoming adults.

But you know what? Sometimes when we grow up, we forget those important lessons and forget the Golden Rule.

In the next few minutes, I want to share with you some of our plans for inspiring the next generation of science with maps, apps and drones.
But first I want to help each one of us remember those amazing teachers who inspired us with the Golden Rule.

Here’s your chance to go back in time.

I want you to think back to an impactful moment with a K-12 teacher.

Maybe it’s a teacher that pushed you, when you didn’t even know you needed a push.

Maybe it’s a teacher who encouraged you, who built your confidence in long division.

Maybe it’s a teacher that helped you learn how to treat others with respect through the Golden Rule.

Let’s all close our eyes for the next 30 seconds to think of one specific teacher who inspired you. Think of that 1 person and what he or she meant to your development.

I’ll keep the time….30 seconds.
Open your eyes. I may not be with you in the room right now, but I bet a lot of you are smiling.

Wow, that brought back some great memories. Didn’t it?
Hello again, friends, you might remember me from a couple semesters back. I’m Tim Hawthorne and I am an associate professor of geographic information systems at UCF. The kids I work with in Belize and the U.S. call me Dr. Drone. Because of these kids, I am hopeful. They make me believe we can put the Golden Rule back into all the work we do as a community.

I am the founder of Citizen Science GIS at University of Central Florida. We’re an international research organization. We use maps, apps and drones in our work.
We study coastal restoration and sense of place along the coasts of Florida.
We drone map eelgrass sites along the entire Pacific Coast of the U.S with the Smithsonian.
And we use drones and spatial storytelling to understand threats to the coastal communities of Belize down in Central America.
But I’m most proud of the work we do to get everyday citizens, academics and youth to work together.

Like many of you in this room, we at Citizen Science GIS believe in the power of science to tell stories and to improve our society.

We also believe in mapping technology’s ability to solve problems collaboratively across stakeholder groups to support science.
So that brings me to a big question:

*What unites each of us in the Central Florida community?*
We believe that education can aide humanity and we believe in the Golden Rule.

Friends, whether we recognize it or not, as a community who believes in education as a force to enhance and improve society, we also believe in the Golden Rule.
The Golden Rule drives everything we do at Citizen Science GIS at University of Central Florida.

When we begin work in a new environment we go in believing that the folks living in these communities will know more than we do.

That’s right, we believe researchers don’t have all the answers.
Take for example one of our projects in Belize this past June. We had the pleasure of working with Monkey River Village residents to map their changing shoreline.

Monkey River is a small coastal village of less than 200 people. It’s lost meters and meters of shoreline over the past few years.

Homes have disappeared and community members want to stop the damages.

They’ve taken to creative uses of technology, working with partners like us, to drone map their community and to share the story of their changing landscape.

And they’ve installed new community-based measures called geo-tubes to save their shoreline.
Here’s an example of the power of people and geospatial tech in Monkey River. We flew drone imagery together with the village and then held interviews with community leaders to re-create the lost landscape as community members re-drew their lost coastline in our mapping software.
This is the power of people in science, the power of geospatial technologies, the power of the Golden Rule.

But you know what? When we work with communities like Monkey River and communities here in Central Florida, we ask them how our collaborations can have the most impact in their communities.

The answers might surprise you. Overwhelmingly, it doesn’t come back to the fancy technology like our drones… our imagery… or our mapping applications.

Certainly those are priorities of the communities in which we work, but the number one answer we receive in every single community in which we work?

That answer to what can have the greatest impact?
The answer: Invest in our children because they are the future of our community.

Our partners in Belize and Florida want their children learning new science and new approaches to save their communities.

In response to the communities we work with and by applying the Golden Rule, our work contains a huge youth educational component.
Since 2016, we’ve hosted the Maps, Apps and Drones Tour in Central Florida and in Belize. These free school and library visits have provided over 9000 children with hands-on experiences in geospatial technology.

On the tour, students and teachers get to fly mini drones and use mapping apps to understand challenges in Central Florida.

Like in these images where they fly over a model they built of a coastal community, where they use mapping apps to understand sustainability, and they learn about basic mapping principles.
Kids matter, they are the future of the geospatial technology community. And they are excited about our technologies.

Here in Central Florida, we’ve had the pleasure of working with kids like Kira. She is a fifth grader who became passionate about drones at one of our tour stops. She flew mini-drones, and hung out with our mascot DroneCat. During our time together she asked if we had a 3D-printed model of DroneCat.

I said we didn’t and she asked me if she could design one for us.

She then spent the next several weeks designing plans for it, and testing the prints in her school’s 3D printers. She made us a DroneCat 3D printed prototype. She wanted other students to get inspired by DroneCat and our drones.
In Belize our work examining debris on beaches is guided by the knowledge of 13 year old Karim. Karim wakes up at 5 am during his summer break to map beach debris and sargassum on the coast with our student team. Karim’s passion has led to him being featured in a documentary on protecting the world’s oceans. And it has over 2 million views on Youtube.
I’ve witnessed firsthand the confidence and growth in kids when you provide them with an extended learning opportunity with geospatial technologies.

Take 17 year old Isani from Hopkins Village, Belize. Isani came to one of our maps apps and drones tour stops in the village library way back in 2016. He hung around with us for the past four summers in our fieldwork in Belize.

Our team trained him little by little in how to use drones in his village.

First, he scoped out the mapping plans and spotted for us as we flew the village.

Then he put the drone together and did safety checks with us.
This summer, he became a confident drone pilot in Belize flying the entire village with our DJI Phantom 4 helping us create a high resolution mosaic for his community.
My friends. Amazing kids like Kira, Karim and Isani...they are the future.

Their drive and passion for geospatial technologies and serving their communities embody the power of the Golden Rule.

I share these stories of these amazing kids to remind all of us that we have a huge opportunity as community to provide children with technology experiences at a young age.
In our final few minutes together, I’d like to spend some time discussing our plans to expand youth opportunities and support excitement in science.

It’s a big idea and a dream our Citizen Science GIS team brought to the LIFE group a few semesters ago: the nation’s 1st GeoBus at UCF.
This year, I am here to share a progress update on GeoBus. We think GeoBus can create deeply impactful and memorable moments like the ones you thought of earlier from your own childhoods and the ones I just shared from the amazing kids we work with through Citizen Science GIS.

This massive project is housed at UCF and with the help of our incredible partners, we’re building the nation’s first GeoBus.
We’re taking a reclaimed city bus donated to us by Lynx and turning it into a mobile lab.

The bus doesn’t look like much right here. But imagine what GeoBus look like if we allow the Golden Rule to drive it, and we all work together to support the next generation?
Play this 1 min 30 second clip to see the GeoBus transformation

https://www.youtube.com/watch?v=h5tFHCj1XwA&t=2s

My friends...here’s what happens when partners who live the Golden Rule come together to benefit our children.

Roll the clip... play the clip at:
https://www.youtube.com/watch?v=h5tFHCj1XwA&t=2s
The exterior is ready, the new tires are on, the solar panels are on the roof to power the interior learning lab!

Our final step this fall is to build out the interior with our partners.

Starting in the 2020-2021 school year, GeoBus will visit schools around Florida to cultivate a geospatial mindset in over 10,000 children each year.
What types of geospatial experiences will GeoBus bring to schools?

A drone cage on the exterior where kids can fly over Lego City models of coastal communities using mini-drones donated by our friends at Parrot Education.
An outdoor mapping world where students can take a stroll across giant maps from our friends at National Geographic. And that’s just outside the bus.
When we step inside it really gets fun, we’re hoping to transport children into a new world of immersive technologies.
In the front 4 seats of the bus, students will experience virtual reality goggles where they will explore new landscapes with 3D models and drone imagery in GIS.
In the front left: students will explore the idea of sustainability around Central Florida and on the bus, with interactive touch screens showing solar datasets provided by our City of Orlando partners and showing the live look of solar power on the bus from our new solar partner from Longwood, 15lightyears, led by Lisa Pearcy, a UCF alumnus.

Along the left middle section of the bus: a 75 inch, touch screen and interactive geovisualization wall supported by our friends at IBM, GeoTel and Esri where students will use donated software to explore geospatial datasets.
Along the right middle section of the bus: students will experience a set of basic coding activities with our Sphero robot and coding map.
And the back of the bus is our favorite part: a focus on topography and elevation with a wall-to-wall Augmented Reality Sandbox, printed USGS topographic maps, and 3D relief map models.
We’re empowering Florida kids with GeoBus for the same reasons you do what you do in your daily life:

We believe in the power of education to aide humanity and we believe in the Golden Rule.

As we build the interior over the next few months, we know that GeoBus will grow with support of the Central Florida community.

We’re often asked how to get involved with GeoBus. There are three specific ways:

First, you can have an immediate impact right now. Send me an email at timothy.hawthorne@ucf.edu with your ideas. Tell us what we need to have on GeoBus.

Second, you can help financially, through cash or in-kind donations, big and small, to our UCF Foundation account will help build out the bus and support stops to schools around the state. You can donate to our GeoBus through UCF Foundation directly at: https://tinyurl.com/yb3pypx2
Third, you can help with your time and talents. GeoBus is meant to inspire kids in the same way you were inspired by the k-12 teachers we all thought about earlier. We welcome volunteers to join us for bus stops (and we’re always looking for retired CDL or bus drivers to assist with driving). Kids needs to see passionate people like each of you in LIFE that believe in them. What better way to do that than by bringing volunteers from LIFE along with our education team to them at their schools?
My friends, as I close out our time together, I want you to remember those amazing teachers who inspired you.

Just like those teachers, each of you following along with this presentation at home: you, me, you neighbor, your family across town, all of us. We are the Central Florida community that can inspire the next generation just like those teachers who inspired us so many years ago.

As we get back to our everyday routines once social distancing endings in a few more weeks, I hope we are all re-energized to serve humanity and our youth in particular.

Once we’re all back to normal day-to-day after this terrible virus dissipates, I encourage you to find ways to share the belief you have in education with the children in your communities and in your own families.

Whether that’s with us at GeoBus or some other cause passionate to each of you, I encourage you to find a way to continue to connect with the next generation.
One last thing, remember that teacher you thought of earlier? Think of how proud she or he would be of the person you became today.

Thank you for your time, thank you for what you do, and thank you for always keeping the Golden Rule at the core of your daily life and the work you do in our Central Florida community.

You can donate to our GeoBus through UCF Foundation directly at: https://tinyurl.com/yb3pypx2