

**Unconventional
Paths in STEM:
“I thought the
future would be
cooler...”**

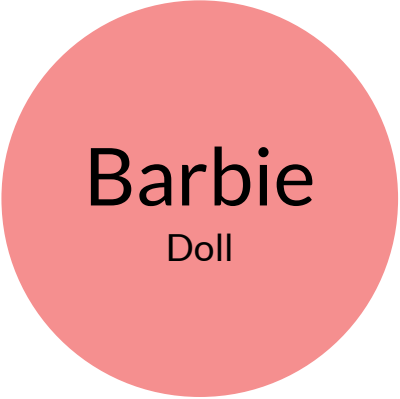
Ana Maria Tarano

My high school perspective



My current perspective

What do these characters have in common?



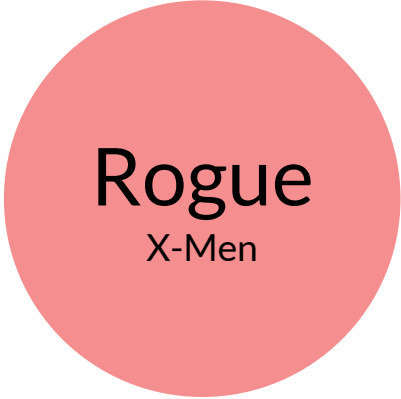
Barbie

Doll



Ditto

Pokemon



Rogue

X-Men



MIGRATION

the best education

Born in Havana, Cuba

Raised in Montreal, Canada

Relocated to Miami, USA

Miami

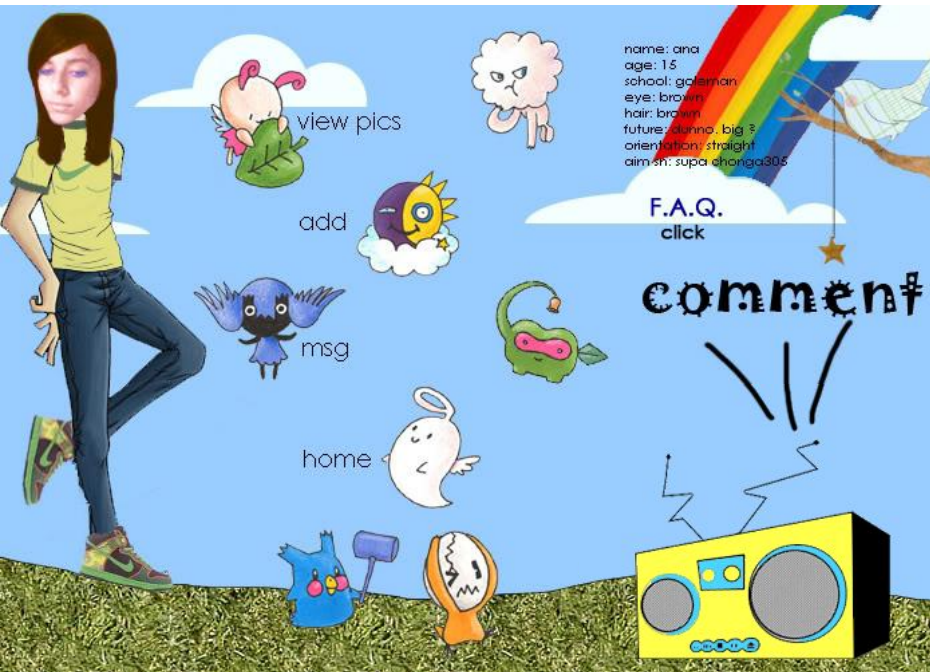
High School (2005-2009)

Took AP art history, psychology, environmental science, calculus, etc. but no physics or computer science.

Focus on individuality, self-expression, independence, celebration

Lessons learned: Learning isn't restricted to the classroom or a textbook. Creativity can be amplified by technology.





Tom



"-:)"

Male
32 years old
Santa Monica,
CALIFORNIA
United States

Last Login:
12/11/2007

Mood: busy 😊

View My: [Pics](#) | [Videos](#)

Contacting Tom

- | | |
|-----------------|-------------------|
| Send Message | Forward to Friend |
| Add to Friends | Add to Favorites |
| Instant Message | Block User |
| Add to Group | Rank User |

MySpace URL:

<http://www.myspace.com/tom>



Tom's Interests

General	Internet, Movies, Reading, Karaoke, Language, Culture, History of Communism, Philosophy, Singing/Writing Music, Running, Finding New Food, Hiking, Travel, Building alternate communities
Music	Bands: Beatles, Superdrag, Jackson 5, Weezer, Sex Pistols, The Carpenters, Vain, Radiohead, Teenage Fanclub,

Tom testing out the new status

Tom's Latest Blog Entry [[Subscribe to this Blog](#)]

myspace updates! ([view more](#))

new homepage look ([view more](#))

what's going on with friend counts? ([view more](#))

extended network ([view more](#))

am i online? ([view more](#))

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Tom's Blurbs

About me:

I'm Tom and I'm here to help you. Send me a message if you're confused by anything. **Before asking me a question, please check the FAQ to see if your question has already been answered.**

I may have been on your friend list when you signed up. If you don't want me to be, click "Edit Friends" and remove me!

Also, feel free to tell me what features you want to see on MySpace and if I think it's cool, we'll do it!

Who I'd like to meet:

I'd like to meet people who educate, inspire or entertain me... I have a few close friends I've known all my life. I'd like to make more.

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Stanford

Undergrad (2009-2013)

Applied in the hopes of studying
Psychology, Art History, or
Environmental Engineering

Decided to major in Aerospace
engineering, take the intro. classes and
could decide within 2 years

It was unconventional because most
people had taken physics in high school.
Also, I knew no one who was in the field.





EARTH

Our spaceship

With human space exploration, we are indirectly tackling the world's most challenging sustainability issues.

Stanford

Grad school (2013-Present)

Committed to STEM.

Desire to see my vision of the future realized using STEM.

Took project-based classes that would expand my knowledge and my potential impact.

Chose a thesis that would have a positive impact not only on space exploration but humans on Earth.





SATELLITE

Collaboration

Curiosity

Flexibility

NASA

(2014-Present)

Used image processing to automatically detect meteoroids in radar data.

Studied effects of space radiation in space exploration.

Now, I work in the Asteroid Threat Assessment Project to characterize potential asteroid threats.





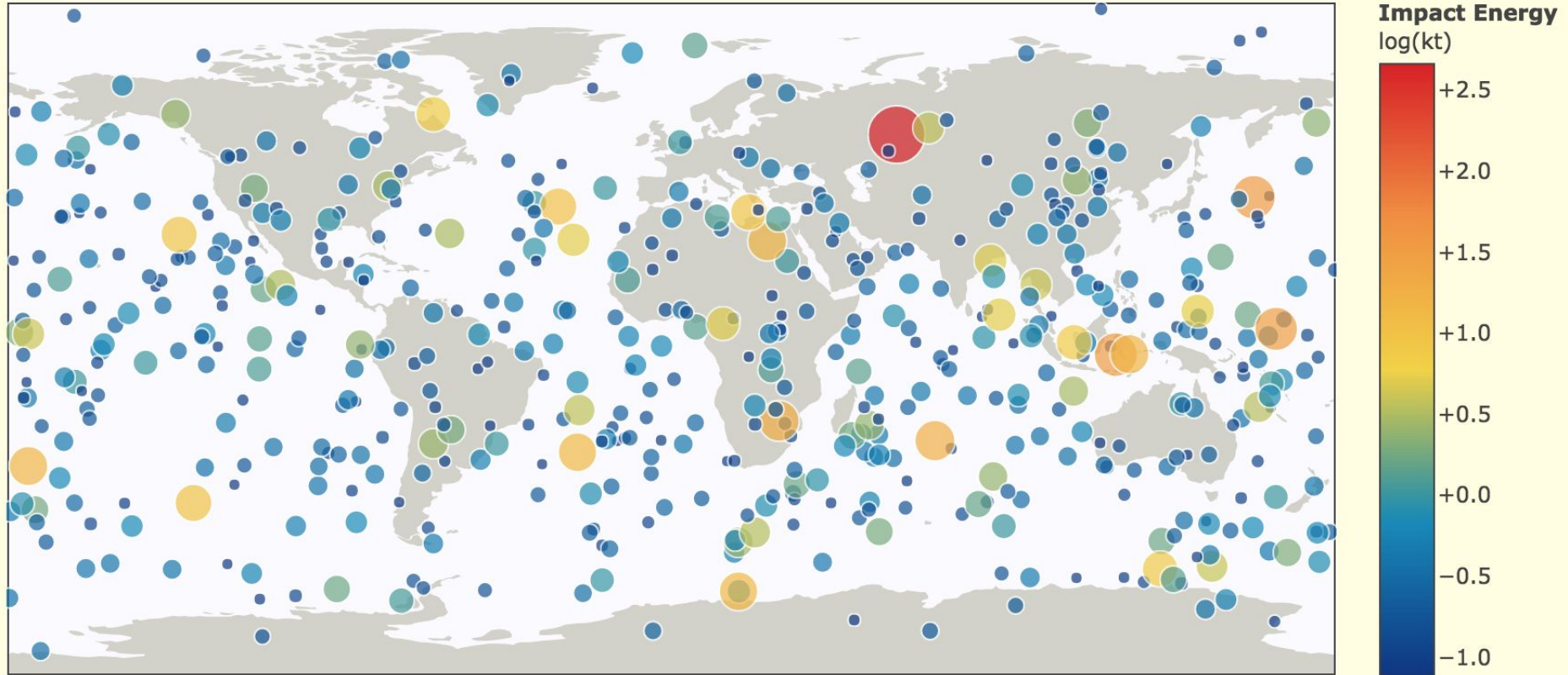
ASTEROIDS

<https://www.youtube.com/watch?v=F2un9i4Vfi0>

The only thing we know... is how little we know.

Fireballs Reported by US Government Sensors

(1988-Apr-15 to 2017-Oct-23)

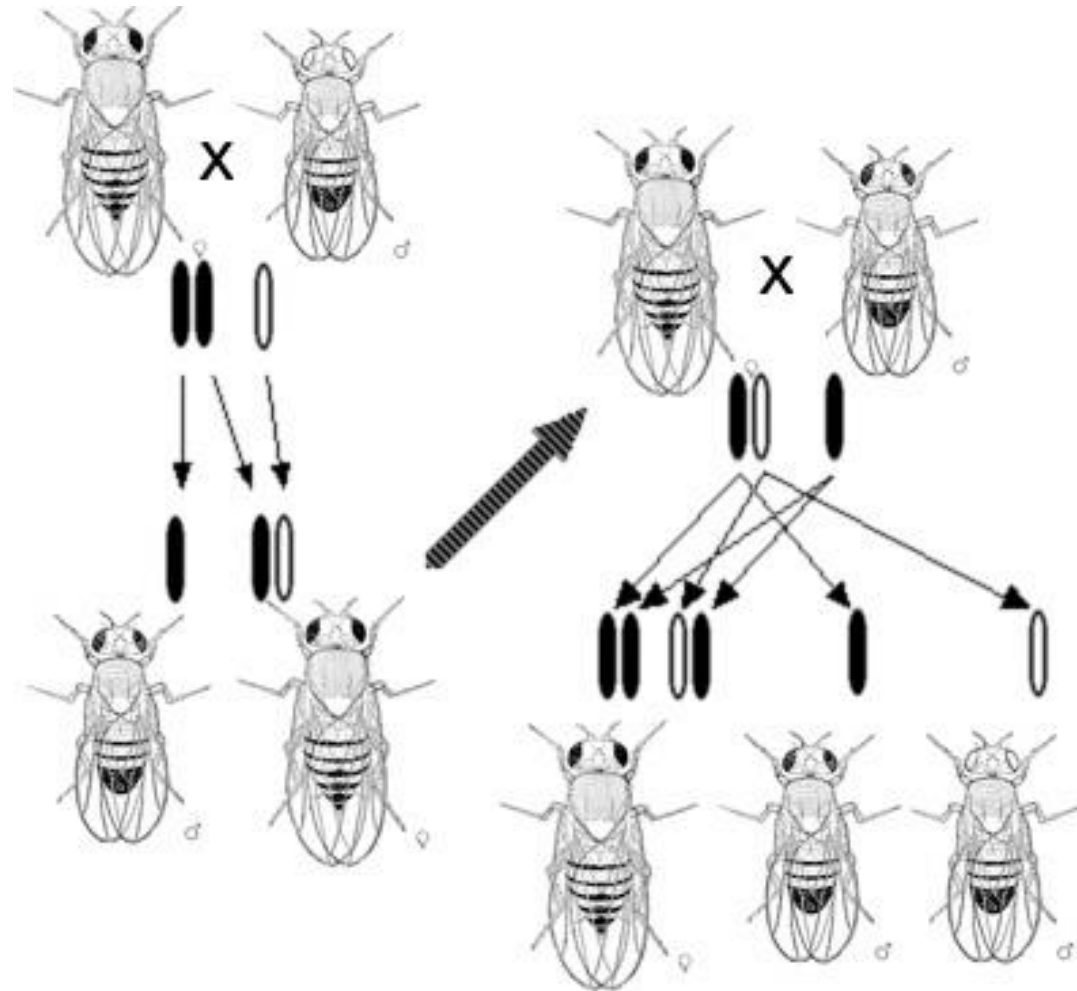


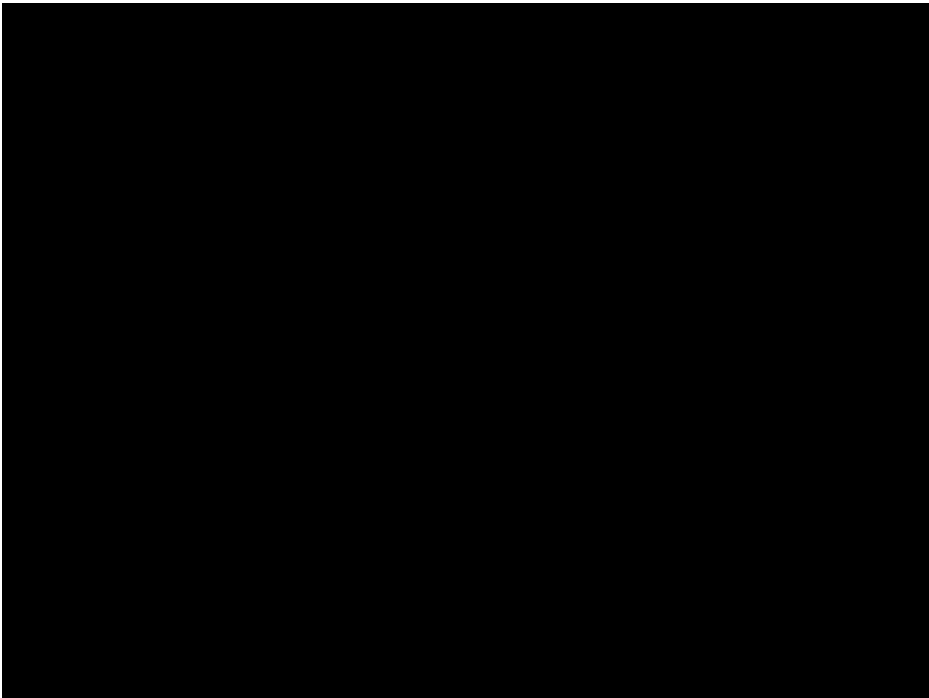
Genetic Algorithms

Used in variety of fields.

Integrates principles of math, computer science, and biology to optimize for a goal.

Knowing how things work in one field can elucidate how to improve in others.





Information about meteoroid:

https://fireballs.ndc.nasa.gov/evcorr/20171026/20171024_074054E/event.png

How to Make the Future Cooler?

Project	STEM Discipline	Other Discipline
● Holographic makeup	Material science, optics	Cosmetics
● Speeding up recovery in sports	Medicine, sensors, product design	Athletics
● What will riders do in autonomous cars?	Apps, mechanical engineering	?
● Bringing energy to developing countries	Electrical engineering, mechanical engineering	Social impact
● What do future instruments sound like?	Sensors, computer science	Music

So how will you use STEM to
realize your vision?