

***“Working with experts in bioinformatics opened my eyes to a whole other world...”***



***“They taught me that there is always more to see, to learn, to understand, and to explore...”***

***“Science is always connected, and its up to us to learn it to help better the future.” Sara R., NJ***



[www.socresearch.org](http://www.socresearch.org)

## **One Health: Unlocking Human Microbiome Genetics with Comparative Bioinformatics**

**Brought to life for high school students by expert scientists**



**Empowering students for success in all career paths  
- creativity, problem solving & collaboration -**



# One Health & Bioinformatics: Exploring New Frontiers

The **One Health** approach recognizes human well-being is tightly linked to animals and the environment. Issues like disease, food safety, and climate change cross these boundaries every day.

**Our DNA tells the story!**

**Bioinformatics**, leverages global databases and contemporary research to interpret DNA.

Together, One Health and bioinformatics open new career doors for students, while allowing them to explore the genetics of the **human microbiome**.



By comparing microbial abundance and diversity among their chosen microbiome datasets, students begin to ask why commonalities and differences occur.

This approach empowers students to investigate complex, real-world questions while cultivating the analytical mindset essential for tomorrow’s problem-solvers - whether they are science, lifestyle, cultural or business-related.

SOC aims to foster an inclusive environment that empowers youth through:

- educational enrichment
- creating job opportunities
- nurturing social-emotional growth

**Together, these efforts prepare youth to lead.**



## Here’s How it Works!

**This program is for any high school student ready to grow** — whether your path leads to science, medicine, business, law, or the arts. This program arms you with analytical skills and cultural experiences to help address critical issues in life.

**You’ll strengthen creativity, teamwork, and problem-solving skills that will set you apart in any field** — while experiencing how dynamic science can be.

Curious about how DNA shapes health, disease, and the environment? Here, you’ll work with real genetic data, uncover microbial relationships, and see how nature and medicine intersect.

**No experience required — just bring your curiosity, and we’ll guide you step by step.**

**Forget the textbooks** — this is immersive, experiential learning. You’ll collaborate with supportive instructors, use powerful bioinformatics tools, and apply the same thought approaches scientists use to make sense of complex questions.

Working with a partner, you’ll will design your own project, analyze authentic data, and share what you uncover. Along the way, you’ll sharpen skills in:

- Comparative bioinformatics
- Microbiome analysis
- Cloud-based supercomputing tools
- Scientific communication
- Creative problem solving
- Working as part of a team

**This is college-level science, taught in the heart of Costa Rica’s tropical biodiversity** — in an unforgettable setting designed to spark imagination and inspire discovery.

The experience is designed to balance learning, fun and adventure — you’ll also recharge with healthy meals, good rest, and unforgettable activities — many former students say that every day leaves one challenged and inspired.



**Learning balanced with Adventure**  
**Leverage technology to personalize learning**