



STEMBoost Newsletter

Issue IX

Apr 2021

2021 NorCal State Championship

Joseph Lee

We would like to congratulate the Kennedy Middle School Gold team for winning the Science Olympiad NorCal State Championship on April 17! This marks the 3rd time in a row they will be competing in the National Competition (not counting last year's season, which was cancelled due to the pandemic). The members of the team that won the State Competition are Aaron Chan, Allen Li, Alyssa Yang, Andrew Zhou, Anish Bayyapu, Ashish Kashyap, Chinmay Raghvendran, Irene Tian, Ishanvi Kommula, Joanna Abraham, Joel Lee, Khedaar Kashyap, Michael Smith, Pragya Rama, and Sunny Yao. Everyone in the team won at least one medal, and the team performed exceptionally overall, placing 1st in 16 out of 23 events.

The team will be moving on to compete virtually in the 37th National Science Olympiad competition from May 17-22. Although the competition was originally planned to be held at Arizona State University, it will be held virtually this year due to COVID-19. The national competitors have a chance to listen to science lectures from famous speakers, and winners of certain events may even win scholarship money in addition to medals.

In an email, team coach Queen Lee announced, "On behalf of all Kennedy Science Olympiad students and parents, I would like to thank our Principal Mr. Nuño, our Faculty Advisor Mr. Aochi, our Superintendent Mrs. Stacy Yao, our Board members Mr. Jerry Liu, Mr. Sateesh Madhathil, Mrs. Lori Cunningham, our Vice Mayor Liang Chao, Ms. Marie Crawford, our STEMBoost student organization STEMBoost.org led by alumni David Smith, Dylan Yang, Grace Kuo, Flora Huang, Saarang Kashyap, and all parent volunteers and Kennedy faculty and staff for supporting Kennedy Science Olympiad in various shapes or forms over the past years."

We also thank Queen Lee for her enormous contribution to the team! This great accomplishment would not have been possible without the coach's hard work and strong leadership bringing out the best in the team. Last but not least, we would like to thank everyone who has supported the team for their persistence and effort. Go Cougars!

Editor in Chief: David Smith

Editor in Charge: Ryan Li

Editor: Joseph Lee

Editor: Angela Zhang



Fun Fact

How long does it take for a sloth to fully digest a meal?

(See answer in the back)

Editorial – The Ethical Debate Surrounding Designer Babies

Angela Zhang

Biotechnology has always been a rapidly advancing field, and with its advancement comes great potential for improved therapies, use in agriculture, and environmental applications. However, with this potential comes

debate over serious ethical issues raised, especially with the potential and applications of human genetic modification.

In 2018, a Chinese researcher named He Jiankui modified a gene in multiple human embryos that is believed to play an important role in HIV resistance; all babies were born healthy. However, he was charged by the Chinese government for conducting “illegal medical practices” and sentenced to 3 years behind bars, as well as a hefty fine. This case highlights the issue surrounding the subject of designer babies, or babies that have been genetically modified in the womb. All children had one parent with HIV, and He claimed that he didn’t want the children to potentially suffer with the crippling disease like their parents. Despite this noble motive, embryonic genetic modification doesn’t come without risks and potentially unforeseen consequences, and it becomes more difficult to draw the line of what is and isn’t allowed when considering other applications of designer babies.

Designer babies hold the potential to turn a child into exactly what their parents desire. Seeing that genes can be modified to bring about HIV resistance and cure genetic diseases, it’s clearly also possible to modify genes to change more benign traits of an embryo, like its physical appearance or intelligence. However, such a complicated process would undoubtedly be costly, bringing up the argument of wealth-based social division. If only wealthy individuals were able to afford such a procedure, it would only exacerbate the already stark contrast between those at the top and bottom of society, with genetically modified children likely having more desirable traits and thus having even more opportunities than children from lower-income backgrounds. On the other hand, supporters argue that parents have a right to prenatal autonomy, regardless of social impact.

Designer babies are just one popular subject of discussion when it comes to ethics in biotechnology. As of now, it’s not fully viable, but it will undoubtedly become a very real possibility in the future with the rate at which CRISPR and other gene-editing technologies are advancing. Even with the negatives of legalizing procedures to create designer babies, it’s exciting to imagine the potential that genetic modification could bring, with its potential to eradicate problematic genetic diseases like sickle cell anemia that causes so much misery for its sufferers.

Works Cited:

1. Ly, Sarah, "Ethics of Designer Babies". Embryo Project Encyclopedia (2011-03-31). ISSN: 1940-5030 <http://embryo.asu.edu/handle/10776/2088>.
2. Normile, Dennis. “Chinese Scientist Who Produced Genetically Altered Babies Sentenced to 3 Years in Jail.” *Science*, 30 Dec. 2019, www.sciencemag.org/news/2019/12/chinese-scientist-who-produced-genetically-altered-babies-sentenced-3-years-jail.

Answer: It takes a sloth two weeks to fully digest a meal; they have the slowest digestion time among mammals.