



December 2023

Volume 46



Dangers of Microplastics
by Eugene Kwon page 2



Melting Glaciers
by Neil Hwang page 3



Juvenile innocence
by Kevin Choi page 4



Endangered species
by Portia Nee page 5



Anti-aging medication
by Benjamin page 6



**Environmental impact
of an electric car:**
by Tay Kim page 8

CULTURAL EXCHANGE PROGRAMS

by Dawon Shin, Northwood HS



Extracurricular activities are crucial for earning bonus points on college applications. Every year, thousands of students apply to competitive summer programs – mostly academic – to emphasize their dedication to certain interests. Sometimes these efforts can be extremely helpful, other times they are fruitless. Furthermore, many of these summer programs are expensive and out of budget for many students around the U.S. This summer, instead of applying to insignificant programs outside of your fields of interest, how about applying for cultural exchange programs?

Current teachings about foreign countries fail to provide students with a complete understanding of the world. Students study other countries through secondary sources: they view edited videos

posted online, scroll through social media posts, read books on other cultures, and study in social studies classes at school. Unfortunately, many of these options are created for profit and are abounding with bias. Understanding certain perspectives of history, statistics of populations, and analyzing sources at school also does not provide students with information about the actual people living in the country. One way to open the door for these students to encounter these opportunities is through foreign exchange programs.

Through hands-on experiences such as sports, crafts, dances, karaoke, and excursions, students can develop unique narratives and insights by acquiring new perspectives and cultural nuances. Leaving the limited “circle” of their environment, these programs supply global exposure, creating

future leaders for our society. Not only can they learn about a new society, they can also learn more about themselves by handling new situations and adapting to new surroundings. Furthermore, living in a new environment could serve as preparation for college and build independence. Cultural exchange programs serve as an environment that fosters growth in a myriad of ways.

I recently participated in one of these cultural exchange programs called High School Diplomats. This 10-day program provided an immersive experience between American and Japanese students. As a high school student living in Irvine, I explored new places outside of my monotonous neighborhood. Through this program, I created ever-lasting friends, including one I keep to this day.

Even during our busy junior and senior years, we kept in touch and connected through our shared memories from camp. The camp's daily themes ranged from Independence Day, Field Day, and even Halloween. Each day, we would play various games and activities with other members and our roommates. My strict focus on academics during high school barred me from taking part in these truly fun social activities—which is why High School Diplomats remains one of my fond memories.

I've also learned to become more independent and evolve as a person to respect others for who they are. I would confidently say this experience was the best 10 days of my life and will stay with me throughout my changes in personality and friends. High School Diplomats will always hold a special

place in my heart, leaving me with a true sense of community.

I would like to encourage all of you to apply for this program—it's even covered with a full scholarship! Check out the flier and my film below on this special experience for your 2024 summer to take part in a special experience that will change your life forever.

Not only did I create ever-lasting friends, but the one and only, whom we connect through the same memories from the camp, and still call from time to time even during our busy junior and senior years.

From high school, I wasn't able to enjoy or play these truly fun social activities due to my focus on academics, which allowed High School Diplomats to stay in my heart as a utopian memory.



DANGERS OF MICROPLASTICS

by Eugene Kwon, Samuelli Academy

THE DARK ENVIRONMENTAL TRUTH OF MICROPLASTIC THAT NO ONE WANTS TO TALK ABOUT



A shocking 2019 study revealed that an average person ingests the amount of plastic equivalent to a credit card every week.

Plastic is everywhere in our daily lives. Starting from our phone, clothes, car, desks, and pretty much everything contains plastic. Since the 1960s, plastic production has continuously increased 8.7% annually. It is now an industry worth billions of dollars and it harms the environment by pouring in eight million metric tons of plastics into the ocean annually. However, within the category of plastic, there is something called microplastic which is an “extremely small piece of plastic debris in the environment resulting from the disposal and breakdown of consumer products and industrial waste (Oxford University).” Microplastic is extremely dangerous because it causes threat to many parts of the ecosystem.

Although it poses great danger to the environment and animals, what’s even scarier is that humans are consuming it without even noticing.

Microplastics can be found everywhere. It can be found in the water we drink and the air we breathe. In today’s world it is almost impossible to fully avoid microplastic. For instance, plastic water bottles, sealed food packages, curtains, and carpets all include microplastic. Researchers found that “of the 259 total bottles analyzed, 93% showed signs of microplastics” and there were “5.5 plastic particles per liter of tap water.” The plastic fragments on such items enter our body and spread

throughout the body system. An individual consumes 5.5 plastic particles per liter of tap water which is equivalent to 5 grams a week. Although nothing is certain, it is clear that microplastics cause a negative impact on our body. Scientists claim that when plastic chemicals are released in our bodies, it can potentially lead to cancer, chronic inflammation, oxidative stress, cytotoxicity, neurotoxicity, and immune system disruption. In fact, when scientists analyzed 22 blood donor’s bloods they found plastic particles in 17. Luckily, there are things people can do in their daily lives that may

decrease the consumption of microplastics.

- Take out cups such as paper cups release microplastics when exposed to hot substances. The inner coating of such cups are composed of HDPE grade plastic which releases estrogenic chemicals and other toxic chemicals. Therefore, people should use glass or other reusable containers.
- Try using plastic free and natural cosmetics products as microplastics are present in a lot of lotion, creams, shampoos, and toothpastes. When buying items, make sure to not buy items that contain plastic such as “acrylate copolymer” but look for items that say “fragrance free” or “phthalate free”.
- When microwaving food, make sure to remove the food from a plastic container as BPA and phthalates added to plastic leaks more easily when heat is added. Instead, move the food to another glass or ceramic container.



Melting Glaciers: Climate Change's Impact on Polar Regions

by Neil Hwang, Fairmont School North Tustin Campus

The movie Ice Age features a goofy squirrel unwittingly changing the face of its planet in pursuit of its acorn. Though this film is geared towards children, a deeper meaning can be found. All because of a crack in a glacier, the entire environment shifted in a disastrous way—a story that may be taking place in the world today. These gigantic masses of ice have been around for thousands of years, shaping the landscapes and supporting unique ecosystems. However, in recent times, the polar regions have been experiencing the effects of climate change, leading to the accelerated melting of glaciers.

Causes of Melting Glaciers: Climate change, which refers to long-term shifts in weather patterns, is primarily responsible for the melting of glaciers. Human activities, such as the burning of fossil fuels and deforestation, release greenhouse gasses into the atmosphere. Gasses like carbon dioxide and methane trap heat and contribute to the warming of the Earth's surface. The polar regions are particularly vulnerable to climate change due to a phenomenon known as polar amplification: when there is a change in the earth's atmosphere that leads to a change in overall temperature. The Arctic and Antarctic regions experience more significant temperature increases compared to other parts of the world, leading to the rapid melting of glaciers.

Consequences for the Polar Regions: The melting of glaciers in the polar regions has profound consequences for both the environment and the inhabitants of these areas. Firstly, the loss of glaciers directly affects the availability of freshwater. Glaciers store vast amounts of freshwater in the form of ice. As the ice melts, the stored water flows into the surrounding oceans, contributing to rising sea levels. This increased influx of freshwater can also disrupt the delicate balance of marine ecosystems, affecting various species of plants and animals that rely on stable salinity levels. Furthermore, the melting of glaciers alters the physical landscape of the polar regions. As glaciers retreat, they leave behind bare rock – a new habitat that may be unsuitable for species adapted to icy environments. This can lead to the displacement or endangerment of iconic polar creatures like polar bears, penguins, seals, and walruses, who all rely on the presence of ice for hunting, breeding, and resting. Not only does this impact animals, but it also impacts us in significant ways: glacier retreats can cause catastrophic floods that would take the lives of many.

The melting of glaciers in the polar regions has implications far beyond the immediate environment. One significant concern

is the rise in global sea levels.

As glaciers melt and contribute water to the oceans, sea levels increase, posing a threat to coastal areas worldwide. Low-lying islands and densely populated coastal cities are particularly vulnerable to the consequences of rising sea levels. Possible effects include increased coastal erosion, more frequent and severe storm surges, and the potential displacement of millions of people. Additionally, the melting of glaciers in the polar regions contributes to the feedback loop of climate change. As glaciers melt, they expose darker surfaces, such as rock and soil, which absorb more sunlight and heat. This leads to further warming and accelerates the melting process, creating a self-perpetuating cycle.

The melting of glaciers in the polar regions is a clear indication of the impact of climate change on our planet. The causes of melting glaciers, primarily driven by human activities, have far-reaching consequences for the polar regions and beyond. It is essential for individuals, communities, and governments to take urgent action to mitigate climate change and reduce greenhouse gas emissions. Protecting the polar regions and their magnificent glaciers is not only crucial for the unique ecosystems they support, but also for the overall health and sustainability of our planet.

JUVENILE INNOCENCE: IMPLEMENTATION OF YOUTH COURTS

by Kevin Choi, University High School

The juvenile justice system in the United States has long been a subject of debate and reform, aiming to strike a balance between accountability and rehabilitation for young offenders. In this context, youth courts have emerged as an innovative approach to address the unique needs of juvenile offenders while promoting their rehabilitation and reintegration into society. The implementation of additional youth courts in California is a necessary step for juveniles in order to clean their criminal records and transition back into society as an adult.

Youth courts, also known as teen courts or peer courts, are a form of restorative justice that focuses on young offenders in the legal process. In California, these specialized courts have been established to address cases involving juvenile offenders, offering an alternative to traditional juvenile court proceedings.

The fundamental principle of youth courts is to empower young offenders by giving them a voice in the resolution of their own cases and encouraging them to take responsibility for their actions.

Youth courts in California typically consist of panels of peers, often high school students, who serve as jurors, with a legal advisor overseeing the proceedings. These youth jurors evaluate cases, suggest appropriate punishment, and work towards a resolution that emphasizes rehabilitation, restitution, and community service.

The process often involves restorative justice practices, which aim to repair the harm caused by the offense and reintegrate the young offender into the community.

My experience as a beginner juror in a youth court in Riverside was a



valuable experience that shed light on the complexities of the juvenile justice system and the potential of youth courts to foster change. The case I participated in involved a teenager who had committed a non-violent offense related to theft. As part of the jury, I was responsible for listening to the case, assessing the evidence, and working with the other jurors to determine an appropriate outcome.

My experience as a beginner juror in a youth court in Riverside was a valuable experience that shed light on the complexities of the juvenile justice system and the potential of youth courts to foster change. The case I participated in involved a teenager who had committed a non-violent offense related to theft.

As part of the jury, I was responsible for listening to the case, assessing the evidence, and working with the other jurors to determine an appropriate outcome. One aspect that struck me during the trial was the focus on rehabilitation and community involvement, rather than punitive measures. It became evident that the youth court system aimed to address the root causes of the young offender's behavior and provide them with an opportunity to make amends. The offender in our case was encouraged to understand the consequences of their actions, take responsibility, and participate in community service to pay for the stolen goods. This approach aimed to ensure that the young offender learned from their mistake and had the chance to positively reintegrate into society.

Implementation of youth courts in California represent a progressive step in the juvenile justice system, emphasizing rehabilitation and community involvement for young offenders. My personal experience as a beginner juror in a youth court in Riverside highlighted the effectiveness of this approach, focusing on restorative justice rather than punitive measures. By providing young offenders with a voice in their cases and involving them in the process of resolution, youth courts aim to create a system that helps juveniles understand the consequences of their actions, take responsibility, and contribute positively to their communities.

ENDANGERED SPECIES

by Portia Nee, Beckman High school

Endangered species are organisms that are in the risk of extinction—but what causes this condition? Most often, it is due to loss of habitat or the decrease of genetic variation.

Animals lose their habitats naturally or to humans. When we build houses, factories, and agriculture areas, we need to clear land. For example, people have destroyed trees and plants in the Amazon rainforest to create farms and places to live. Consequently, the many animals who utilize these plants as habitats or as a source of food will suffer. Habitat loss will increase the chances of human contact, which can be detrimental for both animals and humans. Animals face the risk of poaching; humans face the risk of possible injury by wild animals.

Animals can also be negatively affected by a loss of genetic variation. Genetic variation is why there is diversity. It comprises the variation in our DNA sequences and is what makes us unique in features such as our eye color or hair color. The benefit of genetic variation to animals is that it helps them adapt to change. However, small populations lead to inbreeding when other mates can not be found. By inbreeding, animals will reproduce with family members. This causes less genetic variation and more disease. Humans cause the loss of genetic variation when they overhunt, leading to a decrease in the animal population. Animals on the Red List, a list of all threatened species, is categorized into three categories: vulnerable, endangered, and critically endangered.

1. Vulnerable: species are considered vulnerable if their population has declined at least 50% (if reason is known) and 30% (if reason is unknown), occupy less than 7772 square miles, a population size less than 10,000 mature individuals, and if their probability of extinction is 10% in 10 years.

2. Endangered: species are considered endangered if they have a population reduction rate is 50% to 70%, an occupancy of less than 1,930 square miles, population size less than 2500, fewer than 250 mature individuals, and a 20% probability of extinction in 20 years.

3. Critically endangered: species are considered critically endangered if they have a population reduction rate of 80% to 90%, an occupancy of less than 39 square miles, fewer than 50 mature individuals, and a 50% probability of extinction in 10 years.

An example of a vulnerable species would be the galapagos kelp. This kelp is found near the Galapagos

Island and is considered vulnerable since it has declined 10% in over 10 years. An endangered species would be the red panda. It is found in the eastern Himalayas and is facing habitat loss and poaching. An example of a critically endangered species would be the black rhino. It is found in the savannah, woodlands, forests and is considered critically endangered due to poaching. In Asia, rhino horns are used for medicine and are considered a status symbol.

The loss of these endangered species upsets the delicate balance of an ecosystem. For example, the shortnose sturgeon, if it becomes extinct other animals who depend on it will suffer. Furthermore, the decline of biodiversity is a loss that will be felt by all. Fewer food resources will be available, natural scientific discoveries will be hindered, and species will be lost for eternity. It is imperative that we take up the fight to save endangered organisms, especially considering the role we played in putting them in this precarious situation.



ANTI-AGING MEDICATION AND ITS RISKS

by Benjamin

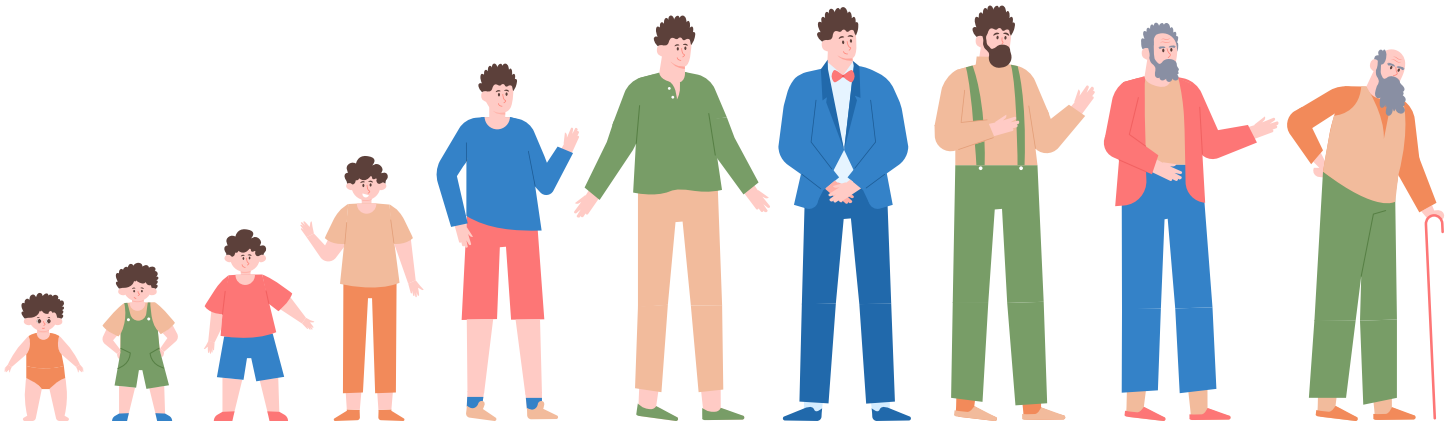
The current beauty standards have been skyrocketing, largely due to the influence of social media. In the pursuit of staying young and vibrant, people have turned to various methods to counter the effects of aging. The number of people 85 years or older has increased by 118% due to modern health institutions. From superstitions to advanced medical procedures, the market for anti-aging products and treatments is booming, with \$17.92 billion in the market. However, beneath the surface of these appealing solutions lies a world of potential risks.

experience changes in skin elasticity, muscle tone, metabolism, and hormone levels. These natural transformations have led to the development of a vast array of anti-aging products and procedures. Common interventions include topical creams, injectables like Botox, hormone therapies, and surgical procedures such as facelifts and liposuction. However, these solutions often come with consequences, and it is debatable whether they are healthy or safe methods.

Understanding the Risks

As simple as facial products, and as complex as medical surgeries,

Furthermore, side effects in many anti-aging products and treatments can cause adverse reactions. Skin creams might lead to rashes or allergic reactions, while injectables can result in bruising, swelling, and infection. Some fragrances are found in various products, and improper storage or usage may be rather hazardous—potentially even leading to the development of cancer or health defects. Moreover, there are economic implications: pursuing anti-aging treatments can be financially draining, especially when considering the need for repeated sessions or surgeries. Some treatments might not deliver



It is a necessity to conduct further investigations into anti-aging, exploring the methods people commonly use to stay young and the hidden dangers that come with them. Understanding these risks is essential in making critical choices regarding our livelihoods.

Current views in Anti-aging

The aging process we encounter is complex—influenced by genetics, lifestyle, and environmental factors. As people age, they often

anti-aging procedures today have drastically changed people's lives. With each method of fighting the process of aging, several risk factors are incurred. Many methods are rife with health risks, as some anti-aging treatments involve hormones and other substances that can disrupt the body's natural balance. Hormone replacement therapies, for instance, may increase the risk of heart disease, stroke, and certain cancers.

the expected results, leading to disappointment and wasted resources. The pressure to maintain a youthful appearance can also take a toll on mental health. Body dysmorphia and excessive preoccupation with physical flaws can result in anxiety and depression. Overall, such side effects must be heavily considered prior to the usage of anti-aging products and methods.

Balancing the Desire for Youth and Safety

Considering all such issues, it is important to be aware of any health concerns that may rise with the influx of beauty products and methods in today's society. Especially for teens and growing adolescents, anti-aging products must be clearly understood and taken with caution. There are some actions to be taken before using any anti-aging methods:

Prioritize Health: Before undergoing any anti-aging intervention, it is essential to consult a healthcare professional. They can provide personalized advice, consider individual health factors, and inform of potential risks.

Embrace Healthy Habits: Regular exercise, a balanced diet, adequate sleep, and stress management are natural, safe, and effective ways to promote overall well-being and potentially slow down the aging process.

Informed Decision-Making: Individuals considering anti-aging treatments should research thoroughly, understand the potential risks, and weigh them against the benefits. They should also seek reputable providers with a history of safe practices.

Body Positivity: Embracing the natural aging process and promoting body positivity can help in cultivating a healthy self-image.

Accepting oneself, flaws and all, can significantly impact overall happiness and confidence.

Conclusion

The desire to preserve youth is a universal aspiration, but it is vital to approach interventions to aging with caution and awareness.

By understanding the risks associated with these treatments and making informed decisions, individuals can build a balance between the pursuit of youthful vitality and their overall well-being. Ultimately, aging is a natural part of life, and embracing it with grace and acceptance can lead to a more fulfilling and contented existence.

ANNOUNCEMENT



insight
speaker series

Theme: Public Responsibility
What individual responsibilities are you committed to in order to better your community?

Inviting student speakers and event staff for Insight 2024!
Orientation Meeting :
Saturday, November 25th

Tentative Event Date:
January 13, 2024

Instructor:
Chris Park

ENVIRONMENTAL IMPACT OF AN ELECTRIC CAR:

by Tay Kim, Sage Hill High School



The growing concern over climate change and air pollution has prompted a significant shift towards more sustainable modes of transportation. Electric cars have emerged as a promising alternative to traditional internal combustion engine vehicles, offering the potential to reduce greenhouse gas emissions and improve air quality. However, the environmental impact of electric cars is a multifaceted issue that requires a comprehensive examination. The various aspects of the environmental impact of electric cars, including their production, usage, and positive and negative considerations, must be thoroughly explored before the transition to electric cars occurs.

Electric cars, like traditional vehicles, have an environmental footprint associated with their manufacturing process. The production of lithium-ion batteries, electric motors, and other components

requires the extraction of raw materials such as lithium, cobalt, and nickel. Mining activities and the processing of these materials can have negative environmental consequences, including habitat disruption, water pollution, and energy-intensive processes.

One of the primary reasons for the adoption of electric cars is their potential to reduce greenhouse gas emissions. Unlike internal combustion engine vehicles, which emit carbon dioxide and other pollutants during operation, electric cars produce zero tailpipe emissions. This transition from fossil fuels to electricity—when sourced from renewable energy—can significantly reduce carbon emissions, thereby helping combat climate change.

It is essential to consider that the environmental benefits of electric cars depend on the electricity source. In regions where electricity is primarily generated from coal,

the reduction in greenhouse gas emissions may be less significant compared to areas with a higher share of renewables. Therefore, the continued decarbonization of the electricity grid is essential to maximizing the environmental benefits of electric cars.

The environmental impact of electric cars doesn't end with their use; considerations for the end of their life cycle are also important. Lithium-ion batteries, the heart of electric vehicles, have a finite lifespan and will eventually need to be recycled or disposed of. Proper recycling and disposal methods are required to avoid the environmental harm associated with the mismanagement of battery waste.

Electric cars hold great promise in reducing the environmental impact of transportation. They offer the potential to decrease greenhouse gas emissions, improve air quality, and reduce our reliance on finite fossil fuel resources. However, it is necessary to address the environmental concerns associated with electric car production, raw material sourcing, and end-of-life considerations. To fully realize the environmental benefits of electric cars, a holistic approach is necessary. This includes transitioning to cleaner energy sources, responsible raw material extraction, and developing effective recycling and disposal methods for batteries. By focusing on these aspects, we can ensure that electric cars become a genuinely sustainable and environmentally friendly mode of transportation, contributing to a greener and healthier future.

RESOURCE DEPLETION

by Kayla Park, Irvine High School



“Resource depletion is a critical global challenge that poses a serious threat to our environment and future well-being. This issue is primarily driven by the unsustainable consumption of finite natural resources, such as fossil fuels, minerals, and freshwater, which are being depleted at an alarming rate. The consequences of resource depletion are far-reaching and can lead to environmental degradation, economic instability, and social unrest.

To mitigate resource depletion, it is crucial that we adopt comprehensive solutions. This includes implementing responsible resource management practices, such as sustainable extraction limits and waste reduction measures. Governments and industries should work together to ensure that resources are used efficiently and effectively.

Another important solution is the shift towards renewable energy sources, such as solar, wind, and hydroelectric power, which can help to reduce resource consumption and mitigate climate change. Additionally, a circular economy, where products and materials are designed for reuse and recycling, can significantly reduce the demand for new resources.

Sustainable agricultural practices, such as organic farming and crop rotation, can also help to improve soil health and decrease the need

for excessive resource consumption. Raising public awareness and educating people about the consequences of resource depletion is also essential. Encouraging sustainable behaviors and responsible consumption can lead to more conscientious choices.

Finally, investing in research and development for resource-efficient technologies and materials is vital. Innovations can reduce resource consumption, for example, through lightweight and durable materials for transportation.

By collectively implementing these solutions, we can work towards a sustainable future for our planet and mitigate the impacts of resource depletion.



NUTRITION FOR GROWTH

by Peter Kim, Crean Lutheran High School

Nutrition is the foundation of human growth and development, especially in early stages of life. A healthy diet is essential to achieving and sustaining optimal growth on all fronts—mental, physical, and emotional. This paper explores the role that nutrition plays in growth, concentrating on three important areas: physical growth, cerebral development, and emotional well-being.

Physical growth is a basic aspect of human development and is largely dependent on eating a healthy diet. The components of growth, or macronutrients, which include carbs, proteins, and lipids, are essential to fostering this growth. The energy needed for tissue growth and to support physical activity is found in carbohydrates. Proteins are essential to the formation and repair of muscles, whereas lipids support brain function and help absorb fat-soluble vitamins. Furthermore, micronutrients like iron and calcium are just as important for strong bones, teeth, and blood circulation. Therefore, the necessary nutrients must be consumed in order to promote physical growth.

Nutrition has a big impact on cognitive development, especially in the critical years of young adulthood. Omega-3 fatty acids are essential for brain development: they improve memory, protect brain tissue, and maybe even lower the risk of cognitive decline in old age. They can be found in walnuts, flaxseeds, and seafood.



Insufficient consumption of iron can actually hinder the development of intelligence since iron is necessary for the synthesis of myelin, a material that coats nerve fibers and promotes efficient brain communication. Children who are iron deficient may have trouble remembering and learning new things. Intaking the correct amount of nutrients has a clear impact on the brain's development.

The gut-brain connection and the significance of micronutrients demonstrate the wide-ranging effects of nutrition on emotional well-being. The gut-brain axis emphasizes how the digestive system affects mood and behavior. Probiotics, prebiotics, and fiber-rich diets have all been shown to improve mental and emotional stability.

Micronutrients like zinc and vitamin B6 are important for the synthesis of neurotransmitters, which affects emotional regulation. Anxiety and depression are two

mood disorders that may be worsened by nutritional deficiencies. When attempting to facilitate emotional well-being, mindfulness of nutrition is often overlooked—though it has a profound effect on the emotions.

Fundamentally, nutrition is the basis of all growth, including mental, emotional, and physical development. Sufficient intake of both micro and macro nutrients is necessary for the growth and development of muscles and tissues, the enhancement of cognitive abilities, and the enhancement of emotional health. Understanding the significant influence of nutrition on development and promoting a variety of nutrient-dense meals and healthful eating practices are essential. Making nutrition a top priority helps to ensure that the next generation reaches its full potential and, in turn, creates a healthier and more enlightened society.

**AD SPACE
AVAILABLE!**

Email
monarchnewspaper@gmail.com
for more information

**Accepting article
submissions!**

Email
monarchnewspaper@gmail.com
for more information

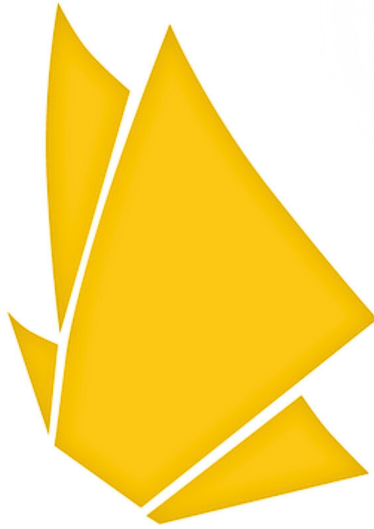
Thank you to our
SPONSORS



**Academy &
Consulting**



Calix
Creative



monarchnewspaper.com

Masthead

Editor—In—Chief

Kayleen Kim

Dawon Shin

Chief Designer

Eugene Kwon

Staff Writers

Kevin Choi

Neil Hwang

Benjamin Kim

Tay Kim

Portia Nee

Kayla Park

Spring Park

Peter Kim

Terry Bang

Advisor

Chris Park