BIHARIKA 2017

Bihar Association of North America

Fostering Cultural and Academic Excellence

Arts Culture Tradition History

Cover Page Description

The cover page is dedicated to the people of Bihar and many tenets of its society encompassing Arts, Culture, Tradition and History. The representation is a fusion of the spiritual, cultural, traditional and historical richness of the Bihari society and the broader goals of Bihar Association of North America.

Arts: Madhubani Painting has become famous around the world for its vibrant color, use of organic dyes, and beautifully depiction of religion and nature. Paintings are made on clothes or canvases using twigs, brushes, fingers or fine nib pens. Color pastes used are made of rice powder. Madhubani painting's uniqueness lies in the fact that artists are villagers with few resources; however, their need to express themselves surpasses such obstacles.

Culture: Bihar is easily recognized as one of the leading state in the richness of its diverse cultural heritage. Be its arts, crafts, folk dances, folk songs, dramas, or any of its family, social or religious rituals Bihari culture shows up in every walk of its daily lives. Folk-music is an integral part of daily life all over Bihar, so needless to say that there are folk songs for every occasion in life from birth to death.

Tradition: The Bihari tradions which dominate every part of a Bihari family is greatly influenced by the many important pilgrimage centers of all religions in different parts of Bihar. It can be easily seen through the celebration of many festivals throughout the year. The most important being the festival of Chhath which is a dedication to Sun God. It is a four day celebration and considered to be the most holy among Biharis. It is a family as well as a community celebration where all make an effort to become part of the festivity. Many other traditional festivals such as Deepawali, Shravani Mela, Teej, Makar Sankranti, Holy, Eid, Ram Navami, Raksha Bandhan, Maha Shivaratri, Durga Puja, Christmas, Mahavir Jayanti, Buddh Purnima, Guru Purab, etc. are also celebrated with great enthusiasm.

History: Bihar has one of the most dominant history among all Indian states. Mauryan dynasty, one of India's major dynasties originated in Bihar. The ancient empire ruled by Ashoka the great and the Mauryan dynasty encompassed the largest empire in the Indian subcontinent covering regions of modern day India, Pakistan and Afghanistan. The origin of Buddhism religion took place in Bihar. Wisdom of Buddha, with his down to earth teaching of the Middle Way, avoiding extremes, is still as relevant as it was in ancient times. His teachings for the need of right understanding, right thought, right speech, right action, right livelihood, right effort, right mindfulness, and right concentration in an individual's life is very relevant till today. The pragmatism exemplified in his teachings are an important part of Bihari heritage.

Fostering Cultural and Academic Excellence: BANA has been diligently working to foster a belief in cultural and academic excellence. We have been doing it through our Cultural events, Academic fests, festivals celebration, community events, charitable efforts and promoting the harmonious and cooperative well being of the community we serve.

Biharika 2017 Team	
Chief Editor:	Vijay Singh
Editorial Board:	Madhusudan Choudhary, Chandeshwar Sharma, Santosh Jha, Ravi Choudhary, Pankaj Singh
Cover Page By:	Vijay Singh

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From the Editor's Desk

Dear Readers,

The Biharika editorial team is proud to present you with the 15th issue of Biharika published by **Bihar Association of North America** on the occasion of the Annual Night 2017. We are grateful to all the present and past editors as well as executive committee and board members for their support and inspiration without which the continued publication of Biharika since 1992 would not have been possible.

BANA is known for its strong tradition - a tradition of spirit and family. This issue's coverpage is an attempt to underscore the very spirit represented by Bihar's strong contribution towards Arts, Culture, Tradition and History. Along with publishing important information about BANA we have continued with the tradition of publishing the BANA member's directory, which will help the BANA families to keep in touch with each other.

The editorial committee sincerely hopes that BANA members, their family and guests would find the content informative as well as engaging and take all pleasure in reading the articles. With your help we are sure that we will continue bringing to you all the quality articles in the years to come.

The electronic version of Biharika 2017 will also be made available online at BANA website www.biharassociation.net

***Important note**: - "Although we have put great effort in reviewing all the articles, we can't authenticate the originality of the contents of each and every article published in this issue. The views expressed by the various authors in this issue of Biharika are their own. BANA does not necessarily subscribe to these views. Writers have full responsibility of the originality of the contents of their articles."*

Vijay Singh - Chief Editor
Madhusudan Choudhary
Chandeshwar Sharma
Santosh Jha
Ravi Choudhary
Pankaj Singh

From the President's Desk

On behalf of the executive committee of Bihar Association of North America (BANA), it gives me immense pleasure to present you the Biharika-2017.

Bihar Association of North America is a social and cultural organization founded in 1992. BANA grew 25 years old this year. We plan to celebrate the silver jubilee in 2018. For the last 25 years, BANA has successfully organized many social, cultural, academic, and charity projects. Any success must be connected to its root and also the route through which it travels. I must congratulate all the past presidents, all the members of previous executive committees, and all the dedicated members who together planted and nurtured BANA in such caring ways that bear plenty of fruits today.

BANA has successfully accelerated in its achievements over the years. Our primary focus has continued to be fostering education and culture in the Greater Houston Area. Over the past years we have held many successful Academic Fests and more and more children continue to register and participate in the Academic Fests. We have standardized the Math and Science Tests by having Texas Math and Science Coaches Association (TMSCA) to prepare the tests for us from Grades 4 to 8. Testmasters of Sugar Land has sponsored the SAT tests for the high school section for the last five years. Our Spelling Bee has been enunciated by students who have appeared in Scripts National Spelling Bee. The standardization process combined with scanned grading of the tests has helped us with error free grading and tabulation. This year the picnic at Duhascek Park in Sugar Land was a resounding success with plenty of fun, food and games. Kite flying was loved by the children and Parents alike. This year we held an offsite camping event at Camp Allen, Texas. This was a great team building event with nearly a hundred people registering for the day/night camp. The enthusiasm shown by young and old alike in volunteering for the cook-out was incredible. Our children have shown remarkable enthusiasm for these events, which is reflected in an increasing number of participants every year. BANA now has more than 200 family life members, and more than 50 volunteers dedicated their times and resources in

planning and conducting these events. The primary goal is to provide a platform for our future generation to enrich and display their multidimensional talents. We are proud to be one of the South Asian organizations hosting these types of events. Organizing such events requires support from the whole community. We need your help in motivating children and fostering an environment to make each event a great success.

The last couple of year also brought us face to face with several adversities of life. We are extremely unfortunate and sad to lose from our presence some very young members. Their absence will be sadly felt by all of us. Hurricane Harvey battered Houston with record rainfall resulting in a flood that made several members homeless. Several BANA members lend the helping hand to the affected BANA members and other Houstonians in the rebuilding effort. This effort is very laudable and I personally want to congratulate the BANA members who tirelessly volunteered their time. In addition, BANA has contributed funds to SEWA for the Harvey Relief. Funds were raised for this purpose by several BANA members. BANA always needs people who can volunteer their time and provide financial support for our projects. Several BANA members through their volunteering at the BANA Academic Fest were able to match their donations by their employers. Several individuals have generously sponsored these educational and charity projects. It is an investment in our children's future. We salute everyone for their support and inspiration.

On behalf of the executive team 2017-2018, I thank each one you who gladly assisted BANA in many ways. We are looking forward for this kind of support to build our community and physical structure, like BANA BHAVAN in future. Our doors are open to anyone who adheres to our ideals: Fostering Cultural and Academic Excellence. I wish you all a happy and prosperous New Year 2018.

Santosh Kumar Verma
President, Bihar Association of North America

BANA Executive Committee

Executive Committee 2017 – 2018

President	Santosh Verma
Vice President	Atul Sinha
Secretary	Pankaj Singh
Treasurer	Nazish Hoda
Member	Poonam Kumari
Member	Arvind Maharana
Member	Rohit Thakur

Event Coordinators

Picnic	Pankaj Singh
Academic Fest	Nazish Hoda
Camping	Ravi Ranjan
Cultural Evening	Atul Sinha
Annual Night	Sanjay Kumar

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BANA Board of Directors

Board of Directors 2017 – 2022

Vijay Singh - Chair
Madhusudan Choudhary
Ram Mohan Mallik
Chandeshwar Sharma
Santosh Jha

Past Presidents of BANA

2015 - 2016	Santosh Jha
2013 - 2014	Chandeshwar Sharma
2011 - 2012	Bijay Singh
2009 - 2010	Ravi Choudhary
2007 - 2008	Madhusudan Choudhary
2005 - 2006	Vijay Singh
2003 - 2004	Ram Mohan Mallik
2001 - 2002	Yusuf Sultan
2000	Anshumali
1999	Prafull Kumar
1997 - 1998	Jitendra Prasad
1995 - 1996	Gopal Sahu
1992 - 1994	Rajendra Prasad

BANA Lifetime Achievement Award Recipients

2016	Arun Sharma
2015	-
2014	Raghunath Prasad
2013	Jitendra Prasad
2012	Vishnu Deo Singh
2011	Yusuf Sultan
2010	Ram Mohan Mallik
2009	Madhusudan Choudhary
2008	Vijay Singh
2007	Prafull Kumar
2006	Rajendra Prasad
2005	Anil Sinha

BANA Avtivity Awards

2016

Activity Award	Vanita Ranjan
Youth Activity Award	Shreetika Singh
Youth Activity Award	Kritika Soni

2014

Activity Award	Santosh Jha
Youth Activity Award	Shomik Verma
Youth Idol Award	Aman Sharma

Migrations during Mauryan Period in Ancient Bihar

Ram Mohan Mallik

Chandragupta Maurya was the founder of the Maurya Empire in ancient India. He was born in a humble family, orphaned and abandoned, raised as a son by another pastoral family, then according to Buddhist texts, was picked up, taught and counseled by Chanakya, the author of the Arthasastra. Chandragupta thereafter built one of the largest empires ever in the subcontinent. He overthrew the Nanda Empire and founded the Maurya Empire in Magadha (present day Bihar in India) with its capital in Pataliputra (modern Patna). He rapidly expanded his power west wards across central and western India taking advantage of the disruptions caused by the withdrawal westward of Alexander the Great's armies. He fully occupied Northwestern India by 317 BCE conquering the satraps left by Alexander. Then he defeated the invading army of Seleucus I a Macedonian general from Alexander's army gaining additional territory west of the Indus River. Chandragupta and his son Bindusar extended the empire into central and southern regions of India. This excluded a small portion of area near Kaling (present day Odisha). Bindusar's son Emperor Ashoka the Great conquered this area and extended the empire further. The Maurya Empire was one of the largest empires of the world in its time. The empire stretched during Ashoka to the north along the natural boundaries o the Himalayas, to the east into Assam, to the west into Baluchistan and the Hindu Kush mountains of what is now Afghanistan. "*Amidst the tens of thousands of names of monarchs that crowds the columns of history the name of Ashoka shines, and shines almost alone, a star." - H.G. Wells*.

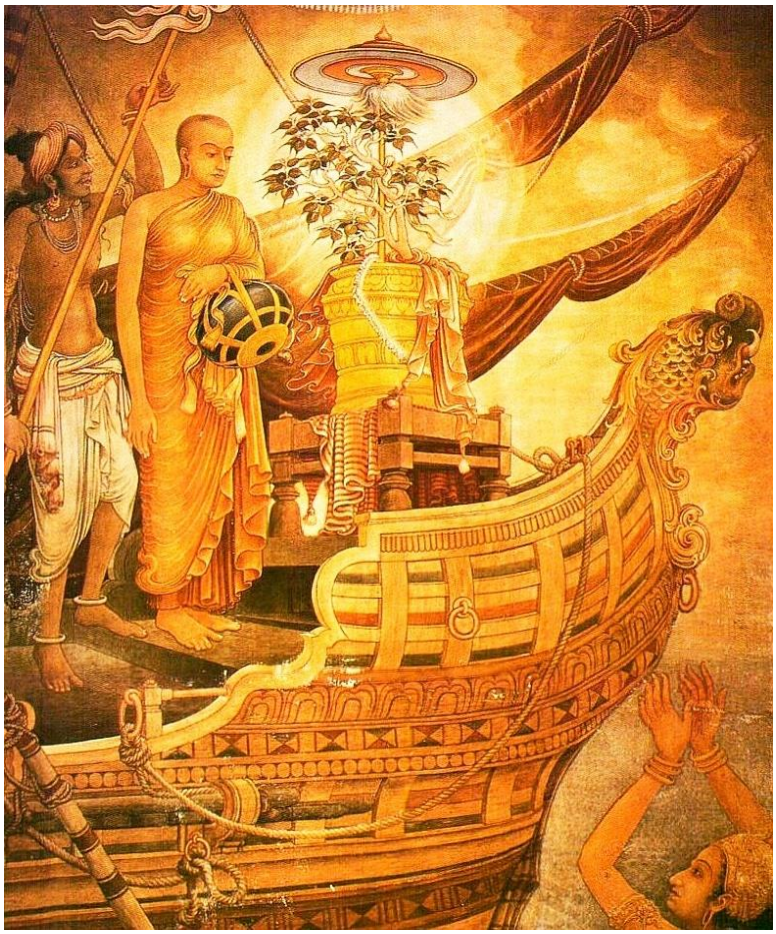
Under Chandragupta Maurya and his successors the internal and external trade flourished. This resulted in interaction and exchange of people across the empire. Later Ashoka embraced Buddhism and sponsored the spreading of Buddhist Missionaries in Sri Lanka, Southeast Asia, West Asia, North Africa and Mediterranean Europe. The expansion of empire and Buddhist missionaries also resulted in migrations to and from Bihar. Chandragupta married the daughter of Greek General Seleucus and Ashoka married the daughter of Sinhala king. These princesses migrated to Magadha and spent their life in Pataliputra. Ashoka sent his eldest son and daughter with a missionary to Sri Lanka for propagation of Buddhism. These two spent their life there working for the mission. These high-profile migrations have been chronicled in the ancient history and Buddhist literature. These are described below.

Helena, Chandragupta's wife was a Greek and the daughter of Seleucus Nicator Alexander the Great's General whom Chandragupta Maurya had defeated. It is said that the marriage of the two was a strategic alliance between the two states. However, there are tales that hint a love story between the two-a love at first sight. Chandragupta secretly saw Helena near River Jhelum and was mesmerized by her beauty. He started sending messages her which she reciprocated. Helena's father was not agreeable to the marriage as Chandragupta was Heathen, a person who does not follow the Greek religion nor acknowledge the same. But Helena convinced her father. After marriage, she came to Pataliputra, learnt Sanskrit and classical Indian music and became quite an Indian. However, their happy life did not last forever because Chandragupta converted into Jainism, took sanyas handing over the kingdom to his son Bindusar. Later he renounced his life following the Jain ritual.

Tishyarakshita was the fourth and last wife of Ashoka. He married her at age of about sixty. Perhaps she was the daughter of Sinhalese King Devanamapriya Tissa who converted to

Buddhism when Mahendra and Sanghmitra, the son and daughter of Ashoka came to Sri Lanka to propagate the message of Buddha. At that time, the king would have given his daughter to Emperor Ashoka. After the death of other queens, she became chief queen. She gave birth to a son named Teeval. Tishyarakshita fell in love with Kunal the eldest son of Ashoka but was spurned. She hatched a conspiracy to eliminate Kunal. Once when Ashoka fell sick Tishyarakshita issued orders under the royal seal to gorge out the eyes and execute Kunal who was posted as governor in Gandhar. Kunal was blinded but escaped execution. He with his wife Kanchanmala came to Pataliputra and deliberately went near the royal palace playing on his veena and singing. Ashoka saw him and on enquiry found out about the conspiracy. On his orders, she was arrested and burnt alive-a very sad end of a young princess. Ramabriksha Benipuri the great poet and writer in Hindi from Bihar has written a famous drama “Netra Daan” (The Gift of Eyes) on this theme. The story has also been narrated in the Buddhist Legends by Eugene Burnoff.

Mahendra (Mahinda) was the eldest son of Emperor Ashoka from his first wife Devi. He with a group of fellow monks was sent to Sri Lanka following the Third Buddhist Council, upon the recommendation of Mogaliputta-Tissa. Though Ashoka wanted his prodigal son to succeed him Mahendra had no enthusiasm to take over an empire. The party reached Sri Lanka and met the Sinhalese king Devanampriya Tissa during hunting expedition at Mihitale Hills. The king was taken aback by the appearance of the shaven-headed monks and enquired who they were. After exchanging greetings, Mahendra preached the ‘Chulahatthipadopama Sutta’ and the royal party converted to Buddhism. The party was invited to Anuradhapura the seat of throne for royal reception and to give further dharma talks. Mahendra subsequently gave two public talks in the royal park leading to the start of the public embrace of Buddhism in Sri Lanka. The royal park was then set aside as the residence for Mahendra’s party and in later times it became the Mahavihar. Mahendra organized for a stupa to be constructed and a part of the relics of Gautama Buddha was transferred from Mauryan Empire to Sri Lanka. He also arranged for a sapling from the original Bodhi Tree in Bodh Gaya to be sent to Sri Lanka where it was planted in the Mahavihar near Anuradhapuram and is still surviving today.



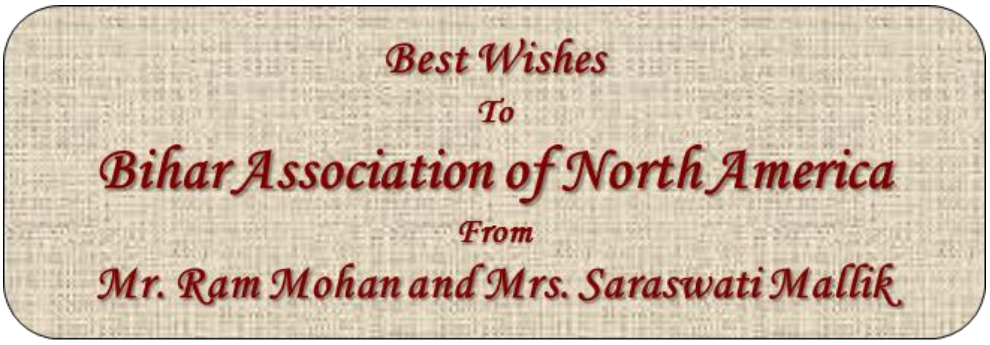
Mahendra made a great contribution in the development of Sinhalese literature and Buddhist scriptures. He died in his Mahavihar in Sri Lanka at the age of 80. His last rites were conducted with royal honour and a stupa was built in commemoration. The 20th century Sri Lankan monk and Buddhist scholar Walpola Rahula described Mahinda as "the father of Sinhalese literature"

as he had translated and written commentary for the Tripitaka in Sinhalese, turning it into a literary language. He was also credited with introducing the culture of the Mauryan Empire to the island, along with its architecture. More recently, Suwanda H J Sugunasiri, a Canadian scholar, has identified him as the Redactor of the oldest Buddhapuja in the world (247 BCE).

Sanghamitra was the eldest daughter of Emperor Ashoka the Great. She entered the order of Buddhist monks at the age of 18. She joined her brother in Sri Lanka to spread the teachings of Buddha at the request of Sinhalese King Devanampiya Tissa. She went to Sri Lanka by sea along with a group of Buddhist nuns and also carried with her the sapling of holy Bodhi Tree in a golden vessel. This was planted in the Mahavihar. She ordained queen Anula and other women of king's court and started nun-lineage of Bhkkhunis, (a fully ordained female Buddhist monastic). Her name became synonymous with 'Buddhist Female Monastic Order of Theravada Buddhism" that was established not only in Sri Lanka but also in Burma, China and Thailand. Sanghamitra died at age of 79 at her residence near Anuradhapuram.

Above royal migrants have left an imprint on the ancient Indian history. The two royal siblings migrated from Magadha (Bihar), dedicated their lives to change the lives of people abroad and taking Buddha's teachings to the global platform. (Picture below-Sanghamitra carrying the Bodhi Tree to Sri Lanka)

** Mr. Ram Mohan Mallik is a senior member of BANA. He is a past president and current member of BANA Board of Directors.*



Quotation

Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning.

Albert Einstein

The Evolution of American Multiculturalism

Surmayee Thakur

The Oxford Dictionary defines culture as the ideas, customs, and social behaviors of a particular group of people or society. Culture is a way of life, and it is comprised of language, religion, food, music, art, dance, festivals, and patterns of social interactions that people practice from their native country. America has been a multicultural nation since the Native Americans began their lives here. Over time, many different people traveled to America bringing their culture with them, thus creating a cultural mosaic.

Multiculturalism is visible in many aspects of American history including the very roots of our country and present-day society. It stems back 12,000 years ago when descendants of Northeast Asians crossed a land bridge between Siberia and Alaska and found themselves on the shores of America. These immigrants settled in this new land and became what are presently known as the Native Americans. The different tribes belonging to Native Americans lived in isolation from one another and carried out their diversified practices freely. While they were all classified as Native Americans, still they had sharp contrasts in culture. Their dances were different, for example, the Shoshone did a Sun Dance and the Cherokee did a Stomp dance, their clothes were decorated differently, as some tribes regarded some animals as sacred and could not kill them, and their food was different. However, there were various beliefs they shared such as preserving nature. This portrays that American Multiculturalism prevailed from thousands of years back. Native Americans did fight at times over the resources and land and after war made the losing tribe slaves, but they lived harmoniously as well proving these fights weren't because of contrast in culture. Currently, there are 566 federally recognized Native American tribes today such as Cherokee, Shoshone, Sioux, Cheyenne, Taino, and Navajo. As it is visible, Native Americans had lot of different characters and widely dispersed but no different than our current society.

The cultural diversity kept deepening as time passed by leading to gradual increase of multiculturalism. Native Americans were followed by a new group of people who walked the lands of America in 1492 led by Spanish explorer Christopher Columbus. These new set of immigrants then met the Taino Native Americans, which made them believe that they had found India. This was a moment of achievement for Christopher Columbus and his group as they were looking for India to bring back jewels and resources to the monarchs of Spain. Columbus inspected the land and deemed it appropriate for colonies; very soon various European countries were claiming bits and pieces of America. Colonies were soon being built by Spain, Portugal, England, France, the Netherlands, and Ireland. After the completion of these colonies, many Europeans began pouring into this "New World" to escape religious oppression from their monarchs.

Multiculturalism in America spurred and started prevailing more when the first religious immigrants to America were Roman Catholic. They were followed by more religions such as the Anglicans, Puritans, and English Catholics and the cultural diversity kept growing this way. They, like the Native Americans, all practiced a unified religion but had sharp contrasts in culture. They all spoke a variety of languages such as French, Portuguese, English, French, Dutch, and Irish and settled in their former countries' colony. However, England owned most of these colonies and was unfair to the colonists by making them pay high taxes and imposing limitations on their freedom. The colonists were outraged that they had escaped an old monarchy only to be subjected to a new

one. They decided to rebel and eventually fought the seven-year war with England known as the Revolutionary War. After this struggle, the colonists began to see themselves not as individual colonies, but as a united country. A group of colonists met to discuss their new nation, and soon a Constitution and Bill of Rights were written. These documents ensured freedom, liberty, and justice for all Americans. English became the dominant language and Christianity the dominant religion throughout the country. However, African Americans were still not free, and women were treated as second-class citizens. Soon, the Bill of Rights was modified to ensure freedom and voting for everyone regardless of race or gender. This was a step to bring equality and fairness, keeping cultural diversity intact.

Today, America is playing an essential role in world globalization at home and abroad being an abode for millions of immigrants at a time. Millions come or have come in the past to escape religious, racial, and political persecution, war, poverty, and environmental damage. People have also come here to aspire for a better and safe future for themselves and their next generation families. People residing in America enjoy the individual freedom as the Bill of Rights guarantees right to bear a weapon for protection, search and seizure permitted only with a warrant, and the right to vote to elect their government leaders. Now there are 2.23 million Hindus, 3.3 million Muslims, 3.8 million Chinese, and 5.3 million Jews. There are churches, synagogues, temples, and mosques in most cities and towns standing side by side one another. There are so many religious and social celebrations where people gather to express their different traditions and social events, such as Christmas, Thanksgiving, Hanukah, Holi, Diwali, and Eid, etc. All Americans embrace diversity and work alongside each other to celebrate the unity in diversity of the American society. The cultural diversity becomes the cornerstone of the mosaic of multiculturalism of the modern American society. Because each culture is a tributary flowing into to the main river of America, without these tributaries, the river would dry up, and if one tributary were larger than the other, too much water would overflow the river. Each tributary is decently sized and properly maintained. This teaches us that it is a high time that we learn to understand and appreciate our common strength of civility of this global society and learn to live a harmonious life respecting each other distinct cultural heritage.

** Surmayee Thakur is an 8th grade student at Honor Roll in Sugar Land.*

Quotation

Someone is sitting in the shade today because someone planted a tree a long time ago.

Warren Buffett

To New Immigrants

Anushka Choudhary

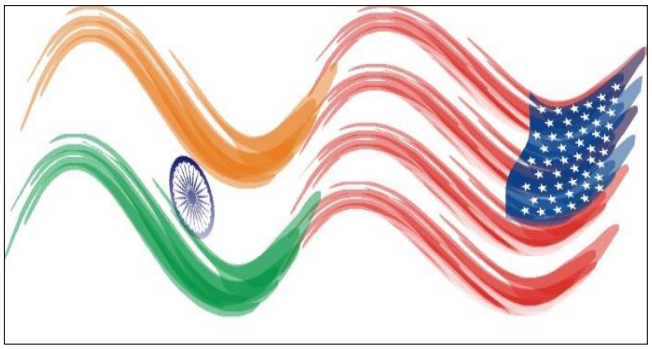
There are many in this country who are acquaintances with struggle, have bouts with failure, and who bear the burden of success, yet there are only few who have endured such liabilities in a country completely foreign to them. It is this that makes the story of immigrants so powerful.

As the United States continues to receive an onslaught of immigrants every single year, we as new citizens/ permanent residents welcome them into a beautiful mess comparable to that seen by pilgrims upon their arrival to a land that provided just as much opportunity and liberation as it did regret and confusion.

Statue of Liberty - Welcome to the land of freedom
Contributor: Everett Collection Inc / Alamy Stock Photo

To new immigrants, if you are anything like me, a foreigner who has been raised on the ideals, culture, and standards of this country then your journey will be relatively complex. Through tumultuous paths of self discovery and awareness you will eventually find the balance between your roots and your surroundings. Given the current situation of the United State's social and cultural climate, the connotation of the word "diversity" in our educated society has become a beautiful link between the past and present. I am thankful that for the most part I can lead a life where I can embrace both the values associated with my heritage along with those of my current surroundings, without feeling smothered by the guilt of picking one over the other. I am thankful that the two cultures I associate myself with can coexist harmoniously.

I feel such an immense comfort in this balance that often when I read angry outbursts in media against such immigrants I do not fully understand the underlying motives which surely do not take into account the immigrant as a person. But as these accounts continue, it is likely we slowly grow suspicious of the concealed bias in both the implied and explicit rules and regulations of our society.



It is then that as immigrants we begin to grow mistrustful in our system despite the passion to stay true to both our cultures. It is my hope that as new immigrants you do not have to face such trials, however, if you do find yourself through difficult experience, then it is my hope that you find the people here who will stand by you and will provide you just as much opportunity and liberation as

they will security to your regrets and confusions. I hope this country will give you just as much success as it did to the Pilgrims and the many immigrants before you. And above all I hope you will find a community that will help you build something beautiful and successful out of the mess you first stumbled on upon your arrival. It is my wish that you find such communities, for the power that comes from the story of immigrants is not singular, it is collective; every immigrant's story is linked and bound by mutual experience, and it is through this unity that I hope you will find the strength and power to succeed as an immigrant.

** Anushka Choudhary is a junior at Vanderbilt University, Nashville, TN.*

Quotation

India is the cradle of the human race, the birthplace of human speech, the mother of history, the grandmother of legend, and the great grand mother of tradition. Our most valuable and most instructive materials in the history of man are treasured up in India only.

Mark Twain, American Author

Reservation and Migration in Democracy

Bidhu Prakash

One of the most important but unnoticed aspects of migration in a democracy is that any immigrant group can subvert or guide the rules to its benefit by increasing their number within the population. The process works very slowly, unnoticed - like the hour hand of a clock. It takes time building up, accumulating tension with time. It remains stealthy, always under the radar, until it reaches a critical mass and then suddenly erupts in the society. Once this insidious process unleashes itself, it hits like a subterranean tsunami or an exploding volcano. The end result is a major social upheaval that forever changes the fabric of a society.

In medieval and ancient times, if there was a section of population that was more prosperous than you, and if they turned out to be militarily weak, you attacked them and looted whatever they had. In a single battle you could take off with years of accumulated wealth of another population. Unfortunately, this resulted in bloodshed and misery. Modern democracy, however, has provided a non-violent approach to this process. The group doesn't have to fight or go to war to usurp the resources of others. The strategy is to infiltrate the population whether deliberately or as a process of natural migration and/or by increasing birth rate while being within the population. Once a critical mass is reached, the group can then demand concessions based on any criteria that may work in the group's favor - race, religion, gender, caste or ethnicity.

The process is very simple and here is how it works. Once the group has sufficient number to make or break a candidate's fortune during election the group can block-vote to affect the outcome of the election. Or if the group has substantial strength in number it can directly get their representatives elected. Having amassed a substantial chunk of the vote bank, the group can, then, claim victimhood under any real or perceived criteria and then modify the law to grab as much power and resources for itself at the expense of other groups. The battle is won without firing a single bullet and with total non-violence! As long as the group has the strength of number, these rules would be an open-ended (no time limit) commitment from the State. With the rule in place, there is no way these rules can ever be revoked or revisited or nullified as long as the benefitting group has the strength in number. No politician in her right mind would ever dream of even considering or reviewing that rule - the proverbial, would not even dream of touching it even by an infinite size pole. Doing so would result in immediate political death. Which politician in her right mind would ever want to commit political suicide! I will illustrate my argument with the example of Reservation in India.

My understanding of Reservation Policy for Scheduled Castes (SC) and Scheduled Tribes (ST) in India was that these people have been historically exploited for centuries due to the inherent social structure/system of the society. The consensus was that they needed to be provided with incentive and legal protection so that they could overcome these inherent social forces that have been working against them for centuries. Therefore, constitutional provisions were adopted to help SCs and STs climbing up the social, political and economic hierarchy. If we accept this idea behind Reservation in India, the guiding principal for implementing Reservation in India would be: historical exploitation of a section of the population based on caste. Let's call it the 'Historical Exploitation' criteria. Lack of ability of an individual was not an issue. The population of the group was not an issue. The understanding was that even if SCs and STs had the ability, they would

never be able to come up the social hierarchy because of the head wind of social forces acting against them. Fair enough and India accepted that.

Now let us take the case of Mandal Commission which is related to the Reservation for socially and educationally backward population of India. The report of the commission was submitted in December of 1980. Caste was used as criteria to identify groups as socially or economically backward. The castes that got Reservation under Mandal Commission were not SCs/STs. They were not historically exploited by other castes. On the contrary, if we take, for example, the Yadavas of Bihar - why were they considered exploited? The Yadavas consider themselves as the descendants of Krishna Bhagwan - which means they were once a part of the ruling class. How ironic that once a ruling caste blamed caste discrimination as the basis of their social and economic backwardness!

Was caste discrimination the real cause of backwardness of certain section of Indian population? If caste was the basis of their backwardness then why was the Reservation not granted to them when it was adopted for SCs and STs? Or did the caste discrimination against the Other Backward Caste (OBC) came about only after India got independence? There is no denying that large a number of people were left stranded socially and educationally in India for various reasons. But that is true of any country. It just so happened that in case of India they happened to belong to certain castes. But was that due to deliberate and organized caste exploitation since the adoption of Constitution or due to some other factor? If caste was the reason for social and economic backwardness in India, then how come we see social and economic disparity in other countries of the world that don't have caste system? Correlation does not imply causation. Perception need not be reality - Quantum Theory has proven it time and time again. Mandal Commission was constituted in pursuance of a nefarious agenda; its conclusions were pre-determined. It is indeed strange that Mandal Commission, constituted to redress caste discrimination, looked and analyzed all social and economic phenomena from a biased caste tinted glass!

While promoting "Social Justice" in the name of caste discrimination, Mandal Commission hijacked the meaning of "Social Justice". "Social Justice" means equal opportunity for all. "Social Justice" does not mean snatching opportunity from one and giving it to the other. Snatching opportunity from one group or individual and giving it to other is called "Social Banditry". The primary goal of Mandal Commission was to institutionalize "Social Banditry" as a State Policy all the while calling it "Social Justice". The name "Social Justice" given to this movement was a façade to soft pedal the "Social Banditry" that was to take place in India with the implementation of Mandal Commission. Caste discrimination was used as a ploy of victimhood to claim Reservation and thereby snatch resources from one group and give it to other groups in the name of "Social Justice". All this was made possible for no other reason but the strength in number of a group within a population. OBC's had the advantage of number which is what matters in a democracy. It gave them the ability to affect the electoral dynamics and thereby modify the rule (Amendment of Article 15 with addition of Clause 4 of the Indian Constitution) and snatch resources for the benefit of OBC's at the expense of other groups. The conquest was complete and, that too, without bloodshed and violence!

Was it ever discussed by the framers of the Indian constitution that, for all practical purpose, Reservation is going to be an open-ended commitment? Did they discuss under what condition Reservation to any group would be revoked? Was it ever discussed that once Reservation is instituted for a group, why would that group as long as they have the number, unless they are brain dead, ever consider relinquishing the benefits that flows from Reservation? The genie is out of the bottle and is there to stay forever! Good luck to any leader or political party that thinks that they would be able to revoke Reservation of any caste. On the contrary, Reservation will be used

by vested interest to demand even more resources for their group as long as they have the strength in number. Human greed has no limits.

Migration has consequences similar to the growth of population internally within a country. It has extreme ramifications to the society of the targeted country. Migration in the western world, especially in the United States, has historically been in spurts followed by long periods of lull. The lull between these periods of migration gave breathing room to assimilate the immigrant population into the mainstream of the host society. The current pace of migration in the United States and in other western countries, however, is unprecedented in their history for various reasons. These processes are bound to have severe unforeseen implications for these countries - socially, politically and economically. History is replete with examples of how native population have been overwhelmed and subsequently overrun and then displaced from their native land or reduced to a minority in their own land because of unchecked migration. George Santanyana oncehad famously said, “Those who cannot remember the past are condemned to repeat it”. It is, therefore, critical that western countries pay extremely close attention to migration if they want to survive the onslaught of this migratory invasion. The changes that are taking place in these countries are bound to have immense societal implications that will affect the social, political and economic landscape of these countries forever. No section of the population is going to be left untouched from it.

It cannot be overstated that migration has to be dealt with extreme caution and fore-thought, if for no other reason than, just for of its permanent effect. Unlike any other law or policy it cannot be undone. Any law of the land can be tweaked, modified, overturned. Any tax laws, for example, or any other contentious laws can be revisited, tweaked and even over tuned if the majority of the population is against it. But once the immigration process has gone through its course there is no going back and undoing it. Because of its permanent, far reaching and long lasting effect, it is critical that any migration policy is dealt with extreme caution and after very careful consideration about how it will affect the nativehost population. The repercussions of migration will be lasting and the host society will have to learn to cope with the good, the bad and the ugly outcome.

** Mr. Bidhu Prakash is an active member of BANA.*

Quotation

Live as if you were to die tomorrow. Learn as if you were to live forever.

Mahatma Gandhi

ASPIRE: Academy for Scientific and Professional Inspiration in Research and Education

Madhusudan Choudhary

Charity is a benevolent act to the human society and its environment. It is designed to help people and raise social consciousness for the betterment of the human society. Charity can be conducted through individual, public or private organization to promote and facilitate opportunities to provide food, shelter, health, education, and/or employment. While it is realized that food, shelter, and health are the basic necessities, the formal education immensely transforms peoples' lives and makes a greater impact on human society and its environment. A large part of the world lacks formal school education. In many parts of the developing countries, people suffer from primary, elementary and secondary school education, which have recently been affected severely. Over the years, the local and state governments in those countries formulated a number of public policies that resulted in a shortage of resources, infrastructure, qualified teachers, and cutting edge of digital technology.

ASPIRE founder Dr. Madhusudan Choudhary lighting the ceremonial lamp at ASPIRE inauguration along with the District Magistrate, Superintendent of Police and other dignitaries.

We have recently initiated a public foundation, **Academy for Scientific and Professional Inspiration in Research and Education (ASPIRE)** in order to impart modern educational opportunities to students of the state of Bihar in India. ASPIRE brought together local educationists and administration, social workers, and business leaders to promote scientific

education in local schools in Madhubani. Mr. R. S. Pandey (Director) and Mr. Manoj Jha (Principal) took keen interest in promoting this program at their host institution, Regional Secondary School. Dr. S. Sultania, Dr. Gopal Krishna Thakur, Mr. Manoj Kumar Choudhary, Mr. Sameer Mahaseth, and many others participated in the inaugural event of ASPIRE. A month-long Science & Math Camp was directed by Dr. Madhusudan Choudhary and Mr. Mahesh Singh. Sixteen high school students were selected based on their motivation and academic preparation, and they were fully exposed to scientific learning skills for various science subjects. ASPIRE invited expert Professors and Scientists from USA and India to engage the classes. Dr. Madhusudan Choudhary (Professor, Sam Houston State University, USA), Mr. Santosh Jha (Texas Instruments, USA), Dr. Pashupati Nath Jha (Professor, R. K. College, Madhubani) and Mr. Harendra Dhakrey (Sr. Engineer, Engineering India Limited, Delhi) taught different subjects. In addition, Gaur Hari Choudhary and Shivam Kashyap helped students organize their daily class and homework activities. Students also conducted collaborative research projects and made their presentations at the closing ceremony. This year the program engaged participants in active learning, critical thinking and problem-solving sessions employing innovative teaching methods. We anticipate that the summer program will be conducted every year. We invite college students and professionals from both USA and India to offer help to build the next generation of students at our home towns and villages of India.

ASPIRE founder Dr. Madhusudan Choudhary and BANA board member Mr. Santosh Jha with the students of first batch of academy.

** Dr. Madhusudan Choudhary is the founder of ASPIRE. He is a past president of BANA and a current member of BANA Board of Directors.*

What does Bihar mean to me?

Harsh Kumar

Bihar. I, along with many others have heard this about this place so often, it's like a second home. However, I was fortunate enough to actually experience it as my first. Though I was born in Gujarat, my entire family (including my uncles, aunties, cousins, and grandparents) was born in Bihar, and as a result, it was the place that I grew up to consider home and where I made memories that I can remember clearly even now. My experiences there planted the seeds of who I was to become.

For example, I remember this one time before Holi, there was a "band" that came to play on our doorstep. I noticed that they had drums (dholak) and even crash cymbals (jhaal) (they had more instruments but these were the ones I paid special attention to). After watching the two instruments for some time, my brilliant 6-year old mind got the idea of trying to learn to play both, but with I twist. I challenged myself to try to be able to play both, not separately, but at once. Of course, this lead to the instant dismissal of all instruments I knew at the time, but instead of giving up, I kept searching for others. Two years later, I discovered the drum set! Now drumming is one of the biggest things in my life and has lead me to make great friends and almost a giant family among my high school's marching band.

Another example would be when I went with my mom to watch my sister swim in the lake of our village. I was very curious about how people could float on the water, as I naturally assumed that they would walk on the bottom. To my two-year-old mind, floating on the top of the water was the equivalent of walking on air! I always wanted to jump in the water to feel what it would be like, but my vigilant mom refused to let me get too close as I was known for doing reckless things at that age. After some time, when I was old enough, I too started taking swimming lessons. At the beginning of this school year, I made my high school's swim team and have enjoyed the experience immensely. In fact, I now really enjoy swimming and marching band a lot.

I loved Bihar. It was my home. In fact, I loved it so much that coming to the USA was exciting, but also one of the most traumatic experiences of my life. After we landed in the USA I was very excited to see this new country. However, as soon as my adrenaline settled down, I just realized what had happened. All my friends, gone. My culture, gone. All my favorite foods, (or so I though) gone. My main two languages were almost useless as well now. And to top it all off, most of my extended family was almost halfway across the globe. I felt like I had lost almost everything. That is until we joined BANA. I was excited to see that my culture lived on in this strange new world and made many new friends. In fact, I met some of my closest friends in BANA! It was nice to see that others understood Hindi and some Maithili as well, there for making the two languages useful once again. Oh, and I was really, extremely, happy to see that fish cooked with Indian masala existed in the country as well. BANA served as a crutch for me when I landed here and I actually believe that I would have been a completely different person had I not joined it.

I will cherish the experiences that I had in Bihar. It will always influence me throughout my life.

** Harsh Kumar is a sophomore at Seven Lakes High School, Katy.*

One Caring Hand Will Change The World

Ravi Kant Choudhary

The Indian community always feels proud upon seeing their dear ones from back home doing well and leading a good life. Yet we become so busy in our day to day lives that we inevitably forget to look back. It's a harsh reality; however, it's a pervasive truth that we often forget to cater to and provide for those people who need the most support and love in life. As immigrants, there has always been a natural desire to give back to the people who struggle and suffer the most in life.

The stark contrast in the lifestyle between the privileged and unprivileged is prevalent. This awareness fueled the desire to help better the lives of those who are not as privileged. It was this passion for social service that led to the creation of a non-profit organization called Triveni Care. The name Triveni was given to pay homage to the late Triveni Prasad Choudhary, a dear family member that exemplified selflessness and altruism throughout his life. Triveni means the 'Confluence of three rivers - the Ganga, Yamuna and Saraswati' and in the same way, Triveni Care aims to develop a solution that satisfies the need of three prominent areas of issues prevalent in India – education, health, and sanitation. The logo, a symbol of humanity and compassion, along with our slogan "One caring hand will change the world", aims to represent Triveni Care as not only an organization with the aim to give back to underprivileged communities, but also to empower them.

www.trivenicare.com

An overlooked, yet persistent problem in India is the lack of electricity. Millions of people suffer from this issue. This deficit not only affects the day to day lives of the millions of affected people but also hinders the development and progression of the nation. This problem extends to the children in India who suffer largely without electricity. Without the availability of light, a child's day ends at sunset, limiting his time to learn and interact to a mere few hours per day. It is the goal of Triveni Care to provide this light to those who need it. The goal of Triveni Care was always more than just satisfying the immediate needs and concerns of the underprivileged in India, the aim has always been to provide a solution that was sustainable and empowering, and would ultimately help the progression and development of India.

Triveni Care took the initiative to address the lack of electricity problem by donating and promoting the use of solar powered products like lamps, panels, light bulbs and more. This sustainable and energy efficient resource is environmentally friendly and convenient as opposed to the kerosene lamps that are currently used, which are hazardous and emit pollution.

The first round of Solar Lamp distribution happened on February 8, 2015 in Sherghati, Gaya District in Bihar, India. Triveni Care was able to successfully distribute more than 200 solar powered lamps to children.

The effect these lamps had on the children were amazing. Their faces were illuminated with happiness and inquisitiveness. They were very curious and eager to learn about the technology behind solar, and as an organization we felt so proud teaching and explaining to them the power of solar.

For the second project, Triveni Care partnered with “Mahila Jagran Kendra, Patna” to distribute solar lamps to the kids of “Rainbow Home”, a home for urban deprived female children in Patna on 15th July 2015. “Mahila Jagran Kendra” provides education and residential care to these kids and Triveni Care extended their support. Before “Rainbow” these kids lived on the streets and would collect garbage and empty bottles as a source of income. However, the distribution event exemplified a different side of these children as they performed a very famous play “Alibaba and Chalis Chor” for us, and the potential and talent in these kids, separate from their past, was highlighted.

On Jan 2016, Triveni Care sponsored Nishu Kumari’s, a 6-year-old underprivileged girl living in Patna, India, education covering her schooling fees, including uniform, books, and basic tuition, up until high school [12th grade]. She is going “Budha Central School” located in Khemnichak, Patna, Bihar - 800007.

On 2nd July 2016, Triveni Care illuminated the streets of a village called “Azadbigha” in Gaya District by installing Solar Street Lights. This project was supported by the “Rotary Club - Gaya”. This effort has given long bright evenings to its villagers, and extended their evening lives beyond sunset and has helped villagers connect with each other and lead a better social life.

On 21st July 2017 Triveni Care, with the help of “Rotary Club – Gaya” distributed solar home kits to underrepresented communities in Bihar, India. The Solar Home kit consists of a solar panel, charger, 3 bulbs, 1 table fan and can run for 6-8 hours every day.

As an organization, our aim is to continue to provide sustainable solutions to address ongoing health, education, and sanitation issues in India. It only takes “one caring hand to change the world”, so we urge everyone to extend their hands to contribute in creating a better society for those in need. It is our responsibility and goal to give back to the underprivileged as everyone deserves a chance and an opportunity for a better life. Swami Vivekananda said it best when he exclaimed that we “Arise, awake, and stop not till the goal is reached”

** Mr. Ravi Choudhary is a past president and an active member of BANA.*

Bhagwana Shree Krishna and Bihar

Saraswati Mallik

Bhagwana Shree Krishna is the most popular deity of Hinduism. He is worshiped as the eighth avatar of the god Vishnu and also the supreme God in his own right. This is embodied in the famous Bhagavata Purana dictum “Krishnamastu Bhagvan Svayam” - ‘Krishna is the real Bhagvan Himself’. He is the god of compassion, tenderness, and love in Hinduism. The Supreme Lord descended in the form of Krishna for the pleasure of his devotes through His enchanting divine pastimes teaching them how to love Him. The other reason proclaimed by the Lord in Bhavadgita is “Whenever there is decline in righteousness and an increase in unrighteousness at that time I manifest myself on earth to protect the righteous, to annihilate the wicked and to reestablish the principles of dharma. Shree Krishna had a close family relationship with the ancient Bihar and several of his cosmic leelas relate to Bihar.

Kansa was the tyrant ruler of the Vrishni kingdom with its capital at Mathura. He was the brother of Devaki, the mother of the Shree Krishna. Kansa very much loved his sister but when she was going after marriage with her husband Vasudeva there was a heavenly broadcast that her sister’s e eighth child will kill him. Kansa sent a host of demons to kill the child Krishna, all of whom Krishna killed. Finally, Krishna arrived in Mathura and killed his maternal uncle Kansa. The young Kansa was a very brilliant and promising warrior. Jarasandha, the emperor of Magadha (in Ancient Bihar), was very impressed and married his two daughters Asti and Prapti to Kansa. Jarasandha was a great senapati and a Maharathi (commander in chief and super charioteer), but he is generally held in a negative light owing to his enmity with the Yadava clan in the Mahabharata. As per Bhagavata Purana extremely sad and angry at his son-in law’s death Jarasandha besieged Mathura with an army of twenty-three akshowhinis with a resolve to wipe off the yadavas. Shree Krishna being Bhagavana called from heaven two chariots with cosmic brilliance and equipped with all military equipment and driven by charioteer. Shree Krishna and Balarama ascended these chariots and fought a fierce battle with Jarasandha and his army. Jarasandha’s army was destroyed and he was captured and bound with a rope by Balarama. However, Shree Krishna let him go free. This happened seventeen times. Jarasandha attacked time and at the same time Kalayavana a Yavana also attacked. Fearing that all Yadavas will be killed they decided to flee the city and settle at a safe place in an impregnable fortress. Shree Krishna using his godly powers made a wonderfully attractive city through the heavenly architect Vishwakarma. Shree Krishna also transferred by his yogic powers all the people

Bhima and Jarasandha Wrestling

of Mathura to the new city on the west coast of India named Dwaraka. Yadavas lived happily here without any external threat.

Yudhishtira became the King of Indraprastha and resolved to perform a Rajasuya Yajna. His brothers augmented by the divine energy of Shree Krishna subdued the kingdoms in all the four quarters except Magadha of Jarasandha. They all concluded that Jarasandha cannot be defeated in a war. Shree Krishna then came up with a strategy and tactics to destroy Jarasandha taking advantage of his weakness otherwise noble qualities. Jarasandha was devoted to Brahmins. He was especially considerate to students (Snataks) and ready to meet them any time in day or night and grant their request. Secondly, he was a great devotee of Shiva and observing elaborate religious austerities and fasting. So, Krishna with Bhima and Arjuna disguised as Brahmin snataks go to the Magadha capital and seek audience with Jarasandha at midnight during the fasting period. Krishna and party received immediate audience and Jarasandha said, “O Brahmanas! Tell me what you want. I shall give even my head to you”. Krishna’s team requested to have a duel with him. Jarasandha granted their wish and Bhima engaged in a wrestling game with him. The game went on for twenty-seven days and reached a state of stalemate. Krishna prompted Bhima with a trick to kill Jarasandha. Bhima took the hint and killed him.

Banasura was a ferocious demon who had one thousand arms. His daughter was extremely charming. She chanced to see Anirudh, the grandson of Krishna, and fell in love with him. So, she sent Chitralekha, one of her close friends to bring Anirudh to her by dint of her miraculous power. Chitralekha did the job for her friend. When Banasura came to know of it, he entrapped Anirudh in a snake-trap as he was against his marriage with her daughter. Saint Narada informed Krishna of the mishap. Krishna marched on Banasura with a huge army. Banasura was a devotee of Lord Shiva and so the Lord came to help the demon along with his pupils. Banasura felt quite fearless now. Krishna killed all the soldiers of the demon and also the pupils of Lord Shiva. As for Shiva, he used a sleep-prevailing weapon, on him and he was lost in deep slumber. Now Krishna began to cut off the arms of Banasura and he raised a hue and cry, which aroused Lord Shiva from slumber. On Shiva's request, Krishna spared the last four arms of the demon who now gladly gave his daughter to Anirudh in marriage. Also, he became a devotee of Bhagwan Shree Krishna. Banasura’s capital was Sonpur, Madhya Pradesh.

There was a Brahmana named Shrutadeva in Mithila (in Ancient Bihar). He was a great devotee of Shree Krishna. In spite of being a householder, he didn't work for his living. Whatever he got, he was satisfied with that. Fortunately, he normally got according to his need, not more. The King of Mithila named Bahulaashwa was also like him. Once pleased with them, Shree Krishna asked Daaruk to bring His chariot and started towards Mithila from Dwaraka. Narada, Vamdeva, Atri, Ved Vyasa, Parashurama, Asit, Aruni, Shuk Dev, Brihaspati, Kanva, Maitreya, Chyavan etc Rishi were also with Him. Both Bahulaashwa and Shrutdeva greeted Him together by bowing their heads on His feet and invited Him with all Muni to their houses. Bhagavaan fulfilled their requests and went to their houses simultaneously. And both of them did not know that He was going somewhere else.

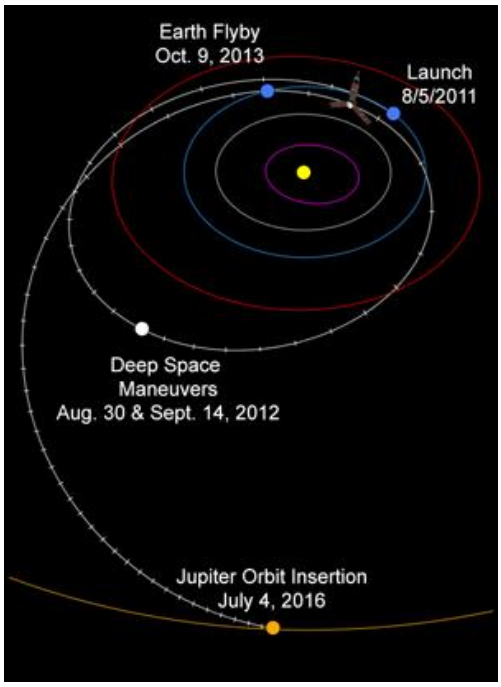
The divine pastimes of Bhagawana Shree Krishna are countless. Only some examples are presented above

** Mrs. Saraswati Mallik is a senior member of BANA.*

The Juno Spacecraft

Utkarsh Singh

Since NASA was founded in 1958, it has sent over 200 exploration missions including the Apollo missions and the International Space Station, but the Juno mission is one of the unique missions because of it being the 2nd ever mission to the planet of Jupiter. The unique purpose of the spacecraft was to collect scientific data from the Jupiter. The name Juno is based on the Roman goddess Juno peering through her husband Jupiter's veils of clouds, to see his true nature, shown in ancient Roman mythology. The full name of the mission is the JUpiter Near-polar Orbiter. The probe was launched from the Cape Canaveral Air Force Station in Florida on August 5th, 2011 as a part of the New Frontiers Program. Using information taken from this craft, we can also learn more about the creation of the Earth. Juno may also be able to help scientists explain how the planets formed around other stars.



The spacecraft was sent to Jupiter with a technology called gravity assist, to provide help to the speeds of the probe to escape the gravity of the sun, which was stopping the craft from moving further. Juno was launched in 2011 and was sent in a loop around the Sun, carrying it into deep space maneuvers during the year of 2012. As shown by NASA, Juno then received a tremendous boost from Earth's gravity. Thus, the increase in speed from the Earth flyby is almost as powerful as a second rocket launch. After this extra fuel, the journey for the probe takes three years to reach the planet of Jupiter. As seen in Science Vibe, Juno is the second spacecraft to orbit Jupiter and the first solar-powered craft to do so. On July 4th, 2016, the Juno Spacecraft entered the orbit of Jupiter.

Juno's elliptical orbit of Jupiter took it very close to the planet, within four thousand three hundred miles of the surface. A reducing burn then dropped the probe closer to the surface, within two thousand miles, to initiate the data gathering phase. This event occurred on October 19th, 2016, and the probe stayed at that height in orbit for around 14 days, to gather information. The probe has already sent the first close-up of the planet and its four largest moons, Europa, Ganymede, Io, and Callisto, in orbit around it. The special thing about the spacecraft is that it is not powered by nuclear methods, like all the other NASA spacecrafts, but is powered primarily by solar energy. For Juno, three solar array wings play an integral role in stabilizing the spacecraft as well as generating power. These wings give the probe approximately four hundred watts of energy, charging the two 55- ampere hour lithium batteries which then provide electricity to the craft.

The mission involved many costs to supply the equipment to build the high-tech craft. Juno was initially proposed at the expense of approximately $700 million for a launch in June 2009. However, NASA budgetary restrictions then resulted in a postponement until August 2011. This

significant amount of money, included many different types of equipment, all with different and unique purposes to help make the Juno mission successful. As seen on Astronomy.com, the tools included a Microwave Radiator (MWR), Jovian Infrared Auroral Mapper (JIRAM), Magnetometer (MAG), Gravity Science (GS), Jovian Auroral Distributions Experiment (JADE), Jovian Energetic Particle Detector Instrument (JEDI), Radio and Plasma Wave Sensor (WAVES), Ultraviolet Imaging Spectrograph (UVS), and a Juno Cam (JC). Other costs also include the telecommunication servers on the probe to provide images and information back to NASA.

The purpose of the mission was to study Jupiter's composition, gravity field, magnetic field, and its polar magnetosphere. Juno also searched for clues about how the planet formed, the amount of water present in the atmosphere, and the planet's mass distribution. Other objectives included determining the ratios of the gases in its atmosphere, measuring the abundance of water, obtaining a better estimate of the core's mass, understanding the atmosphere, and measuring relativity effects on Jupiter.

The probe is eventually destined to die out due to Jupiter's deadly radiation levels. It is scheduled to reach the end of the mission on its 37th orbit and disintegrate into Jupiter's atmosphere. The entire process will take about five days to complete, ending all communication with the Earth. This event is scheduled to occur during February 2018.

In conclusion, the Juno spacecraft unique for its technology and its purpose of collecting data in order to find other habitable planets. Due to its high-level engineering, Juno is one of the most significant breakthroughs in NASA's history to this day.

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** Utkarsh is a sophomore at Seven Lakes High School, Katy.*

Cryptocurrency – The Digital Mining

Varnika Singh

Cryptocurrency is defined as “a digital or virtual currency that uses cryptography for security.” The most popular cryptocurrency that many have heard of is Bitcoin. Since The inception of Bitcoin in 2009, other cryptocurrencies have emerged such as Ethereum and Monero. The main attraction towards cryptocurrency stems from the fact that there is no third party. In society, the bank and government are our intermediaries and we must follow their rules and regulations set in place while making purchases. With a cryptocurrency, there is no such third party. By using a technology called Blockchain, Bitcoin has developed an anonymous network that stores and transfers all bitcoin transactions with a distributed ledger. This essentially means every user of Bitcoin makes up the “bank” of Bitcoin. Since this is the case, all network users must agree on the validity of a transaction before it can be recorded. This process is called “mining.” Miners are rewarded a certain amount of bitcoins per transaction they validate. There is also a newly developed “pooled mining” which allows users to solve the algorithms more efficiently while evenly splitting the compensation. The next question posed is: How are Bitcoins stored? This is where digital wallets or “crypto” wallets come into play. A crypto wallet contains a master key which is a long combination of characters. This master key is comparable to a key one may have to a safe that contains many valuable items. This key is used to make transactions and it is essential that each user keeps this key very confidential. These are the highlights of the basic concepts of cryptocurrency, especially Bitcoin. Since this is a relatively new technology, it is important to delve deeper into what are the negative effects of cryptocurrency.

One of the major positives of cryptocurrency is the fact that it is cost-effective. The elimination of a third party reduces time and cost delay. This also means the risk of collapse of such a currency is very low since it is decentralized. The most important benefit of course is the monetary return. According to The New York Times, the value of one Bitcoin at the beginning of this year was around $1000 which now has grown to $18,000 on some exchanges. With this being said, this also makes it quite a risky investment. Since Bitcoin's inception, individual investors have controlled its value. This puts a great deal of weight on their sentiment regarding the value of Bitcoin. Another limitation of Bitcoin is the lack of security. There is essentially no way to protect your Bitcoins from technical glitches, fraud, or human error. This means if a transaction goes wrong, there is no going back to correct it. In October 2013, there were a series of illegal activities done under Bitcoin transactions which sized up to a value of $48 million. The lack of traceability of funds can make Bitcoin be considered a “black money.”

The future of Bitcoin and other popular cryptocurrencies is still relatively new to the world. People are still quite untrusting and unsure as to why Bitcoin is better than the current ongoing system. With time, the Blockchain technology can revolutionize the business world with its transparency and securitization.

* Varnika is a senior in the business school at University of Houston, Houston, TX

A Diwali 'First' at Duke University

Aziz Haniffa

North Carolina campus chapel fills with sounds of bhajan

For the first time in the history of Duke University — which boasts a significant number of Indian and Indian-American students — a rollicking Diwali celebration was held in the campus chapel attended by more than 100 students, faculty, parents and well-wishers from the community.

The Durham, North Carolina campus' first Hindu chaplain Madhu Sharma emceed the celebration, which opened with devotional music by Duke Sangeet, a student organization.

"Duke values religious faiths flourishing amongst academic studies," said associate dean of religious life, Christy Lohr Sapp in her welcoming remarks. There was also a short prayer service conducted by Ganga Dhar Sharma, a senior religious leader. Ravi Bellamkonda, dean of the Pratt School of Engineering, shared reflections on the meaning of Diwali.
"Diwali being celebrated at the Duke Chapel is a historic first," said Bellamkonda. "Everyone at the event will remember this evening for a long time, I am sure."

Duke Sangeet performing devotional Diwali music

Ken Powell, retired vice president of Duke Medical Center, said the celebration demonstrated Duke's commitment to embracing all cultures. He called the experience "poignant and meaningful." He said Duke has always believed a diverse society was a strong one "and it is fitting that such an important Hindu service be celebrated in the storied Duke Chapel."

Community leader Lalita Bandukwala, who said she was raised in Christian tradition in India, called the gathering “a peaceful and uplifting moment.” She said she was especially moved “to hear not a hymn, but the sounds of Bolo Ram, Bolo Shyam, the first ever bhajan, resonating through the hallowed halls of this iconic Duke Chapel.”

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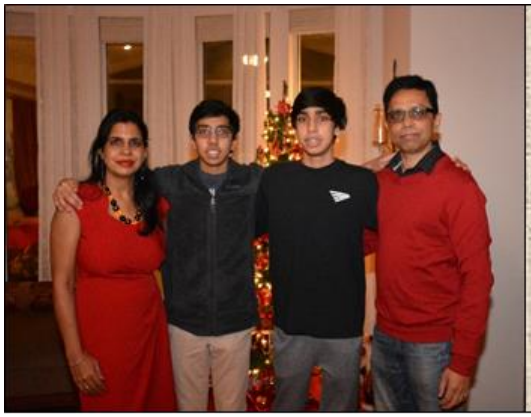


Quotation

When you talk, you are only repeating what you already know. But if you listen, you may learn something new.

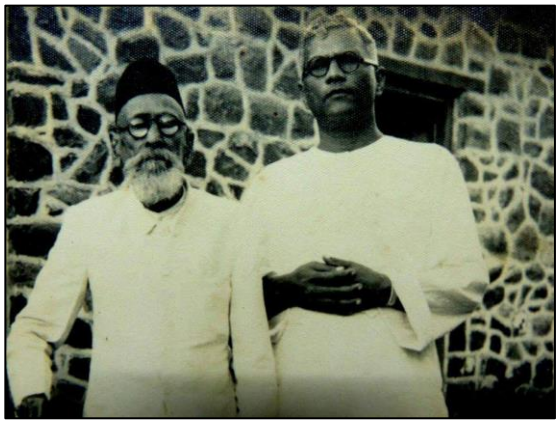
Dalai Lama

Balika Vidyapith - A Monument of India's Freedom Struggle

Aparajita Singh

We owe a moral responsibility to the mission initiated by late Sri Vrajnandan Sharma ji - a pioneer in the field of women's empowerment and education in Bihar where state of women's education remains one of the most backward in the country.

Vrajnandan ji and his wife Smt. Vidya Devi had remained devoted to Mahatma Gandhi's relentless struggle for freedom of India. His vision of preparing India by giving it a bonding of a language which was Hindi chosen with the common consent of representatives from all over the country. Vrajnandan ji was given the onus of spreading Hindi in non-Hindi speaking states of south India and 'Hindi Prachar Sabha' was founded in Chennai in1928.



Vrajnandan ji (R) with Bharat Ratna Maharshi Karve

Vrajnandan ji remained a devoted worker of the mission and he traveled extensively with his wife to the interiors of Andhra Pradesh, Tamil nadu and Karnataka. He and Vidya Devi learnt the languages of these states that is Telugu and Tamil fluently and trained men and women of all ages to pass the qualifying test for Hindi language.

Vrajnandan ji had a great literary flair and wrote historical and social plays as well as stories in Hindi for Hindi Prachar Sabha. He is remembered for his translation work of Telugu literary works in Hindi. Vidya ji had been contributing by teaching Hindi to women in the villages along with Vrajnandan ji.

Vrajnandan ji (L) with Padma Bhushan and Sahitya Akademi Award Winner Acharya Hazari Prasad Dwivedi (standing)

He saw the huge difference in women of south India from the women of Bihar. He consulted his mentor idol Mahatma Gandhi about it and decided to launch a residential ashram for girls in Bihar with the aim of this being developed later into preparing women for various professional streams. Mahatma Gandhi introduced him to Dr Rajendra Prasad, who remained associated with this missionary project till he breathed his last.

This project was launched with Mahatma Gandhi announcing it in his prarthana sabha at Sadakat Aashram, Patna in November 1947. The inauguration of Balika Vidyapith at Lakhisarai, Bihar was held on an auspicious Vasant Panchami of 1948. The school for girls was started with a humble beginning. There were four girl students

and equal no of teachers Vrajnandan ji and Vidya Devi being two of them. Most outstanding thing was the way resources for the institution were assimilated.

The couple went around nearby villages with the help of an eminent local leader Mr Karyanand Sharma on a campaign to seek help from the villagers. They briefed them about their mission of bringing about a radical change in upbringing of their girl child. They should not only be given academic education but also their other aspects of personality should be nurtured. For this they should stay in the residential campus of the Ashram and learn various skills living in ashram culture practicing "yog Jeevan shaily". They also asked them to donate their land for this purpose. They could convince people to the extent that they donated about 100 acres of land for this purpose.

Thus, the dream project had started. Once Dr Rajendra Prasad became the first president of the country he entrusted Mr Anugrah Narayan Singh, minister in the government of Bihar for nurturing this institution. Under the patronage of these political giants and selfless services of Vrajnandan and Vidya ji, Balika Vidyapith became one of the pillar institution in the field of girl's education in Bihar.

** Mrs. Aparajita Singh is an active member of BANA. She is grand-daughter of freedom fighter Mr. Vrajnandan ji and Smt. Vidya Devi.*

Quotation

All that we are is the result of what we have thought. The mind is everything. What we think we become.

Gautama Buddha

The Magnificent Ship

Nivedita Thakur

The Magnificent Ship

A magnificent ship has docked at the harbor.

It has been on many journeys from one part of the world to the other.

Each journey has made this mighty ship stronger yet time has taken a toll.

As it stands at the dock today, once mighty and now frail, please remember that I shall not forget the lessons taught through actions...

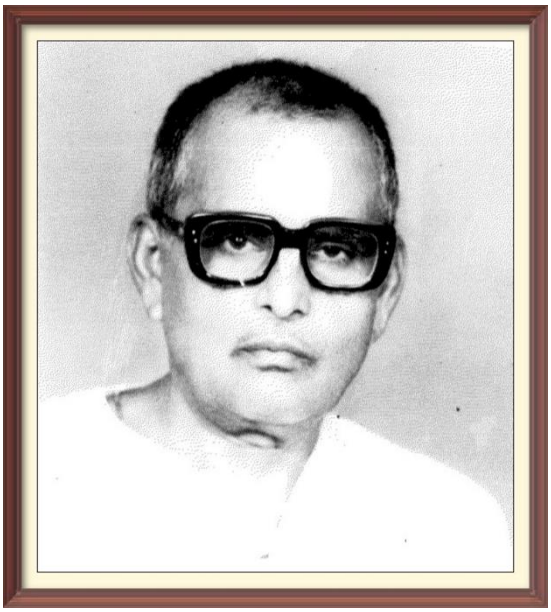
I take these lessons with me as I embark on new journeys near and far...

In the hustle and bustle of life today, though I cannot stand at the harbor because the waters call out to sea...I will never forget the magnificent sails and all the splendor and glory spread to all near and far...for you have taught that as one journey ends many new ones begin...

** Dr. Nivedita Thakur is a Pediatric Neurologist at Univ. of Texas Health Science Center, Houston. She is an active member of BANA.*

Baleshwar Choudhary

In His Loving Memory



(12th October 1922 - 6th August 2012)

न जायते म्रियते वा कदाचिन् नायं भूत्वाभवितावानभूयः।
अजो नित्यः शाश्वतोऽयं पुराणो न हन्यते हन्यमाने शरीरे ॥

The soul is neither born, nor does it ever die; nor having once existed, does it ever cease to be. The soul is without birth, eternal, immortal, and ageless.
Bhagavad Gita 2.20

Hurricane Harvey Unites Houstonians

Tony Jha

Natural disasters have struck the United States and the other coutries since the beginning of time. Disasters such as the Haitian earthquake or Cyclone Nargis have damaged the land and the society built on it. Hurricane Harvey was no different because it rapidly transformed into a Category 4, caused mass rainfall and flooding, and left a significant impact on the greater Houston area.

Hurricane Harvey started off as mild tropical depression when first spotted and labeled as a Category 1 hurricane not too long after its origin. However, after 8 short hours, Harvey inflated and became a Category 4 on August 23, 2017. According to the Scientific American, the reason that this hurricane grew so quickly was because of the abnormally warm temperatures of the Atlantic Ocean and Gulf of Mexico. In fact, the Verge finds this temperature approximately 2o C warmer than average temperatures. Hurricanes intensify due to warmer temperatures because warmer ocean currents contain more energy. Therefore, when a hurricane passes over an area of hot water, it grows with energy. Additionally, one other justification of the rapid intensification of Harvey is a type of body of water called an eddy, a whirlpool of warmer water. When a hurricane goes over an eddy, the whirlpool of warmer water releases more energy to the hurricane, thus intensifying it further. The eddy combined with the warmer ocean currents only resulted in a stronger and more resilient Hurricane Harvey.

Hurricane Harvey left chaos in Houston. Some of the most severe causes of destruction from any hurricane are flooding and precipitation. One aspect of Harvey, however, stood out above all the others: the incessant rainfall. In normal situations, moisture from the ocean is absorbed by the hurricane and released when it is over land. However, Harvey held so much moisture that even after releasing all of it on Texas, the rain continued. The hurricane re-absorbed all the rainfall it released because it was such a large amount of warm water, which as we established strengthens hurricanes. This caused an overwhelming amount of rainfall, which harmed the infrastructure of Houston and other Texas cities. One aspect of Harvey that was mild was the storm surge. Compared to the 20-30 feet storm surges of Katrina and Ike, the 6.78 feet of Harvey was relatively calm.

Now after all the damage was done, the city of Houston along with other cities in Texas needs to rebuild. According to Five ThirtyEight, the cost required to rebuild the damage caused by Harvey sums to 190 billion dollars. This is roughly 30 billion dollars more than Katrina. Harvey has caused roughly 47 deaths due to floods and high wind speeds. However, one positive outcome of Harvey was unity among citizens. The Houston Chronicle reports several incidents during the 2-week aftermath of the hurricane that shows people of different races, religion, creed, etc. helping each other rebuild their houses and fix the damage. For example, after witnessing the impacts of Harvey firsthand, a group of friends and I decided to try to assist those in need. So, we created a GoFundMe to help raise money for the ‘Greater Houston Community Foundation’. We managed to raise $687 dollars, which may not have been a huge amount but it did contribute to the funds. This demonstration of unity in society is a tremendous impact of Harvey that will benefit us for years to come. The Houston Chronicle furthers that Houston, the most diverse area in the United States, had moments of unity that broke down any barriers segregating us in the first place.

Hurricane Harvey ended up being one of the most devastating natural disasters in United States history. It went through a massive intensification due to the presence of eddies and warmer ocean currents. Furthermore, the colossal amount of rainfall led to increased flooding and wind gusts. However, despite all the damage and destruction, the Houston community pulled together as one. People went out to help each other fix their property and protect each other from dangerous chemicals in the water. While Harvey may have destroyed material objects, it also brought us all together like never before thus making it one of the most impactful natural disasters of all-time.

** Tony Jha is a sophomore at Dulles High School, Sugar Land.*

My brush with Harvey

Harsh Kumar

"It would be really cool if Harvey struck us at Houston"

"You do not know the human dimensions of it till it happens. Nature can remind us anytime of our ephemeral existence. You don't want that."

Above is excerpt from one of my those 'random' discussions with my Dad in car – while I was secretly thinking of holidays it will force on my school. You know who spoke what.

Then it happened. And happened in a way as if to ensure I didn't lose any lesson out of it. My parents, probably accustomed to years of usual false warnings, decided to go to my sister at Tyler. I was happy to be in company of my friends, so I didn't mind. However, Harvey just had to strike that night, causing both of my parents to be stuck at Tyler.

Alone with my friends, I watched every day, as the news became flooded (#seewhatIdidthere) with an ever-growing number of tragedies. I was slowly losing my innocent obliviousness about the true sufferings of the victims of natural disasters. Although I knew that my dad's warnings were coming true, I decided to ignore it rather than accept it.

But more was in store. With Harvey gone, I learnt about community efforts about volunteering. BANA efforts tacked me into it through friends and family. I contributed voluntarily to some salvage efforts together with my Dad and finally saw, with my own eyes, the damage caused by this disaster. I am grateful to the fortuitousness of this all, as I learnt to have empathy for victims of natural disasters. It also taught me a lot about our existence – ephemeral or whatever. Most importantly, I learnt the need to help each other in times of crises.

I would just want to say one thing: Community matters a lot, even more so in times of crises.

** Harsh Kumar is a sophomore at Seven Lakes High School, Katy.*

Fair and Not So Lovely

Ananya Choudhary

If I were to summarize any trip I've taken to India it'd be a crown of beauty, fields of green, and a pesky tube of fair and lovely. It is a whitening cream that has been avidly used by the majority of the female population in India, not to mention the sprinkle of male consumers. This cream has been a phenomenon in the nation since 1973 and is still used as a fighting agent for the war against natural skin tanning, since being “dark” is not considered so lovely.

I can assure you I have had my fair share of fair and lovely exposure, whether it be television ads or in street venders telling me to buy solutions for my skin to “enhance my beauty” but it wasn’t until recently I, and many others, have disconnected from the epidemic, because maybe fair is not so lovely.

Society likes to brand people according to their appearance, and regardless of the many people who proved that looks don’t matter, but the world continues to misjudge. “Fair & Lovely has reflected a Women’s Dream for the past 40 years. This is a brand, which has championed the deepest ambitions and desires of women.” According to the creators of Fair & Lovely a women’s deepest ambition is to be lighter, it is these superficial thoughts that lead to the inferiority of women yet they continue to market the belief that appearance is the most important thing.

India is home to people of indigenous heritage, and modern beauty. With every class and individual comes a unique appearance that cannot be described by one universal term, especially a term of “fairness”. But there are few who still believe that lighter is better, and people in America imagine those of buttery brown skin to be flawless, it is this that proves that beauty lies in the eyes of the beholder, and the biggest factor of beauty is that that lies within the brain. Companies that encourage such fake views of beauty are the reason for discrimination and false judgments.

This country of India inhabits so many intelligent people, but yet a driving factor of this nation is the superficial views a commercial has brought. By encouraging the view that beauty comes from appearance we are setting up for failure, and in my trip to India it surprised me to see how many people were willing to do so.

During my trip to India I noticed the effects that societal pressure have on every individual, and it isn’t until we step out of this stereotypes that the country and its people will be able to step out of this fair and lovely phenomenon. So maybe it’s time we realize that fair is not so lovely.

** Ananya Choudhary is a sophomore at Seven Lakes High School, Katy.*

A Conversation with Mr. Gopal and Mrs. Manju Sahu

Akash Sinha

Akash Sinha *is a high school senior at Katy ISD. He sat down with* ***Mr. Gopal Sahu*** *and his wife* ***Mrs. Manju Sahu*** *at the residence of Dr. Santosh Verma on March 11, 2017 to learn about their reflections of BANA. Mr. Sahu served as President of BANA during 1995-1996.*

AS: When did you come to Houston?
Mr. **Sahu**: I came during September 1976 from New York.

AS: Why did you to come to Houston?
Mr. **Sahu**: I had to come to Houston for my job. In 1976, New York City was going bankrupt, so I had to move out. Lots of people – lots of my friends – moved to Houston at the time. About 14,000 people moving to Houston then.

AS: Did you come directly from India?
Mr Sahu: Yes. Actually, I came directly with a green card. My green card was given at the airport. After I left the airport, I didn't know where to go. I was literally crying.

AS: Would you like to tell us something about you and your family?
Mr. **Sahu**: My wife's name is Mayarani Sahu, but we all call her Manju.

Mr. **Sahu**: I have two sons. They are grown up and married. They live in Commonwealth subdivision. I have four grandchildren. I also have three daughters. My first daughter-in-law is an auditor and the second is an internal security manager. My older son works in Exxon; however, the other works for the Prince Company economic management.

AS: Would you say they are culturally enriched with India?
Mr. **Sahu**: Well, that is the biggest problem that I have seen right now because they don't have any idea of what we do. They don't have much interest either. They just come one or two times; I leave them alone because it is very difficult sometimes to pull them to do something they don't want to do. They are missing so much of the Bihari and Indian culture. I try to get them involved, but just this morning I talked with my younger son about the picnic and he said, "No Daddy, you

go ahead and do this without me." But, my daughter-in-law's niece is very excited. You see, this is because they just came from India.

AS: During what years were you most active in BANA?
Mr. **Sahu**: We founded Bihar Association in Bronx, New York in 1971. Back then we were three people, Mr. Saran, who does the Miss India Pageant worldwide now, and Bijay Choudary, who lives in Commonwealth now. He also came to Houston from New York. We were very involved in New York. In 1976 the Bihar Association brought up a very nice bicentennial Bihari cultural dance in Central Park, New York.

AS: What's your favorite memory from that time period when you founded Bihar Association in New York?
Mr. **Sahu**: First of all, the interest, it came all of a sudden because Mr. Saran is from Patna, Bihar and we got together and talked about starting something – because we had about 20 to 30 Bihari families at the time – so we thought, why don't we get together for celebrations such as, Holi, Diwali, with Bihari food and everything like that? This is how it started and then it started getting bigger and bigger. It was so cohesive and good that we still have more friends in the tristate area (New York, Connecticut, and New Jersey) than we have here. We always meet and have a great time together. Now, the name has changed from BANA to BAJANA. That stands for Bihar and Jharkhand Association of North America.

AS: Do you think BANA is doing a successful job in its purpose?
Mr. **Sahu**: I think yes, because right now, I think it has gotten bigger and better than what we expected. Right now, in New York it's a big political association because several political leaders visit BAJANA. They have several events there.

Mrs. **Sahu**: In the early years of BANA in Houston we got lots of help from everybody. We have so many people here. I can recall few names like Naresh Prasad, Ruganath Prasad, Rajendar Prasad, Smriti Prasad, and Bijay Choudary. After that, many young people are starting to take over. It's growing beautifully, and we are so happy. We've moved from here to Dallas, but when we see how the Bihar Association is growing, we are very happy.

Mr. **Sahu**: There were just 8 or 9 families initially; but then there was a big influx of Biharis in to Oil and Gas Companies. Big influx; that was in the eighties or something like that. Because a lot of people from Oil and Gas Companies came, BANA started getting bigger and bigger

Mrs. **Sahu**: And I should say that all the ladies from Bihar started getting together for Holi and Diwali party and picnic at BANA events. We are very happy to see that BANA has grown a lot.

AS: For our last question, is there any advice from either of you – or both of you – for our young future leaders?
Mrs. **Sahu**: Please come and join Bihar Association and make it successful. Please come to all events!

Mr. **Sahu**: You know…we will make it to the Cultural Fest on 25th November and the picnic. But our suggestion for the young people is to come aboard, and figure out what you want us to do for you guys and what you can do for the people of Bihar and Bihar itself. I'm so happy and proud that this association has flourished and that the young people have started joining and taking part in the BANA events and activities.

A Conversation with Dr. Ganesh Thakur

Abhiraj Sinha

Abhiraj Sinha *is a senior at Memorial High School in Houston. He interviewed* ***Dr. Ganesh Thakur*** *who is a global technical and business executive. Dr. Thakur has worked for several petroleum and natural gas companies, including BP and Chevron. He has published over 60 technical articles, several books, holds a number of patents. Dr. Thakur hales from Bihar.*

AS: Good morning sir, how are you?
GT: Good morning! I am well, how about you?

AS: Good! I am fantastic! The first question is: Where have you originally come from? Why did you come to USA?
GT: I was born in a small village in the Godda District in Bihar. Now it is part of Jharkhand. I went to high school in a small town called Dumka. After that I attended the Indian School of Mines, in Dhanbad. I came to the U.S primarily for higher studies, to do my masters and Ph. D at Pennsylvania State University.

AS: How difficult was it in transitioning from the Bihar to the USA?
GT: In the beginning, it was difficult, mainly from a cultural point of view. It was not very difficult from the studies point of view because the college that I went to in India, the Indian School of Mines, is very well respected. They had a very good undergraduate program.

AS: What do you remember as your best memories from Bihar?
GT: A lot. The first is education. I had received very good education and guidance from my parents and grandparents. My grandfather was a high school teacher. He used to teach math and Indian languages. He provided extremely good guidance to me. Then I went to the Indian School of Mines Dhanbad, where I got an extremely good education. And then I married my beautiful wife 47 years ago. So I really have great memories of Bihar and Jharkhand.

AS: As a follow-up to that, it is clear that throughout the 47 years in the workforce, you've reached executive level positions in multiple companies. How do you feel you achieved those positions?
GT: I think achieving those high-level positions really were not my initial goal. My initial goal was to work hard and do well in a given job and keep improving my technical and professional skills, communications skills, and also interpersonal skills. Giving presentations, writing reports, writing papers slowly helped me in developing my career with time.

AS: So, there are many people out there who are starting off as entrepreneurs or starting off as engineers. What advice would you give to the new engineers who want to be successful in their position and possibly advance to even higher positions?
GT: My advice to young professionals are, of course, technically, professionally, you have to be sound in your business. But, that is not enough. You may be technically brilliant and a hard worker, but you also need to develop your interpersonal skills, oral communication skills, written skills, skills to work with teams, take a leadership role, able to follow others, lead others, and able to work with difficult individuals; all part of your professional life. One has to develop skills in all of these areas. This is the recipe for success. It is also true that the sooner that you develop these skills and refining and getting feedback on these skills and trying to develop ourselves, the better we become as an individual. So in my opinion, that is very important to start early, just as we start our technical and professional skills and develop early.

AS: Do you teach your students these interpersonal skills?
GT: I started teaching at University of Houston six months ago. Most of my career, I have been in large companies and working and running professional organizations like Society of Petroleum Engineers (world-wide). In the last six months, I have been focusing on teaching and research. I want to teach courses that are not currently being taught in the universities. One of the courses I have developed is Integrated Petroleum Reservoir Management for advanced MS and Ph.D. students. We are learning by working in teams in that course. It is a multidisciplinary team effort. That is the kind of training that I want to provide, so that these students when they go to work in major or independent oil companies, they become very successful in these areas. These courses have aspects of interpersonal skills, working in teams, being able to work with each other, lead a team, and following your leader. This is the kind of environment they will face in their professional careers.

AS: In 2012, you were the president of the Society of Petroleum Engineers. What were your goals entering the organization as president and how do you feel you accomplished that?
GT: To be honest with you, I was fortunate to become the president of the society of petroleum engineers. I was the first one of Indian heritage to have occupied the presidency of the society of petroleum engineers. It is an elected job so you had to be nominated. I had never thought I would become president of the society but slowly by working in the organization, I volunteered my time and clearly did a lot of work in different areas and they liked my work so they elected me. When I became president, I had some goals and those were: First, we ran the business in a financially sound way. Second, we grew the membership all around the world, especially in the developing countries. Third, we grew our training program by over 200%.

AS: How has the election to the National Academy of Engineering impacted you?
GT: It has had a great impact. National Academy of Engineering is a very unique recognition that I was recognized for, last year. It is very difficult to get elected especially for those who are working in private companies. I was pleasantly surprised when I was nominated and elected for the National Academy of Engineering in 2016. My role is to work on critical things the US government needs advice on and focus on critical needs whether it is related to energy or the environment or science and technology. I am going to become pretty active in terms of committees and their

respective functions. The National Academy has created benefits for me already. The Texas Governor, Mr. Greg Abbott, has a program called the Governor's university research initiative. He granted me three million dollars for the University of Houston. The University matched it dollar for dollar. So I had a six million dollar program as soon as I joined the University. It's financially very rewarding and my purpose is to work on cutting edge technology that helps the university, the Houston area, and the state of Texas. I'm going to be working on unconventional resources, improved oil and gas recovery, and water resources.

AS: What are some of the projects that you are working on and how is it helping India?
GT: Right now I am the principal investigator of a project that involves Oil India Limited, which is an oil and gas exploration/producing company. We have a joint venture with OIL and the University of Houston. I am leading that effort. I was in India for 2 weeks earlier this year, in January 2017. We are helping them apply different types of new and existing technologies in a very effective way. I also represent the government of India on some critical projects that I cannot talk about because it involves legal aspects with some other companies and so on. So, there are several projects that I am constantly involved in with the government of India and other Indian companies.

AS: Even though you have been in the U.S for so long, how have you been always connected to Bihar and Jharkhand or people of other countries? What advice would you give on how to establish these connections and what you should look for?
GT: I go there very often! Over there, I am very well connected to the Indian School of Mines, which happens to be in Jharkhand. I am the chairman of their Alumni Association of North America. So, my connection with Jharkhand, Bihar, our families, and with the government is a continuous process. Every week, I communicate to them via telephone and video conferencing. Establishing connections is a life-long process. I was working for the society unselfishly. Whatever assignment I got, I always focused on those and did those things very well. I do this typically by working with people and making sure we get along together and you are a part of the team. Before you know it, your network starts to grow and multiply. I have worked on SPE projects everywhere in the world. I have developed a friendship with people professionally, especially with petroleum engineers and geoscientists around the world. This is something that is a continuous process of development. Before you know, you have thousands and thousands of friends and colleagues all over the world. And the world is very small for you.

AS: My final question: Any advice that you would give to people in my generation who are striving for excellence?
GT: Excellence is kind of a habit. We have to work hard and do good in studies; we have to do good in sports; but whatever we do, we have to continuously strive to be excellent in that particular field. Never forget that is just one aspect of the whole things. There are social skills, interpersonal skills, communication skills, and skills to get along with people, and skills to get things done with other people. For that, we have to continuously develop. Once you combine these things together, nobody will stop you. You're going to be successful. You're going to achieve excellence. Excellence is not going to happen in one day. It's a matter of doing something over a long period of time. It takes 10, 20, 30, or 40 years. Even then we are not perfect. Even then we do not have all the attributes we would like to have. Identifying things, what we are good at and what we are bad at and improving ourselves everyday, is the key to excellence.

AS: Thank you so much for your time.
GT: It has been a great pleasure for me.

This was a very well organized picnic. Great job. It is obvious that organizing committee did put lots of hard work and careful planning to make this event successful – V.S.


Guest Guide
Conference Center
EGW ANNUAL MEETING
WOODSEDGE MENS RETREAT
ST CATHERINES OF SIENNA EPISCOPAL
ABIDING FAITH UMC
CAMPSITE 1
CAMPSITE 2
CAMPSITE 3A
CAMPSITE 3B
BIHAR ASSOCIATION
CALVARY EPISCOPAL CHURCH
PEARLAND KERALA CLUB
ST CYPRIANS YOUTH RETREAT
BANA
Assoc. of North America
www.biharassociation.net
BANA Camp Allen 2017

It was very well organized. I really appreciate all the organizers.
subhasini.v@gmail.com

BANA Academic Fest 2017

BANA Academic Fest is an excellent platform for kids to get a head start for the upcoming school year. The event is a one of a kind program and we highly appreciate the enormous efforts of the organizers. – **amitabhrati@yahoo.com**

I really was impressed with the way you handled the results giving the kids their answer sheet and the answer key. That gives the kids closure and helps them improve. **– Aarti Jhaveri**

BANA has been doing a splendid job with Academic Fest. What makes it even more admirable is the fact that the organizers must be putting money out of their pockets to run this event! As someone who has organized events like this in the past, I think BANA can collect more fees for the event. $30 - and the children can participate in all the events! As a parent, I do not mind spending more - my child is getting much more value from BANA AF. 3 cheers to BANA leaders for putting the interests of children ahead of everything else - other Indian organizations can learn from you. -- **rdhulipala@gmail.com**

Thoroughly enjoyed the event. Hats off to all BANA members for making this event so successful. looking forward to see next event – A.S.

Very good program. Kudos to participants, parents and organizing committee. Well done. – S.U.H.

Great performance. Felt like home away from home – A.M.

Well organized event. Keep it up. – M.K.C.


BANA CULTURAL FEST 2016


BANA CULTURAL FEST 2016


BANA CULTURAL FEST 2015


BANA CULTURAL FEST 2015


CASIO
BANA CULTURAL FEST 2014


BANA CULTURAL FEST 2014


BANA CULTURAL FEST 2013


BANA CULTURAL FEST 2013


BANA CULTURAL FEST 2012

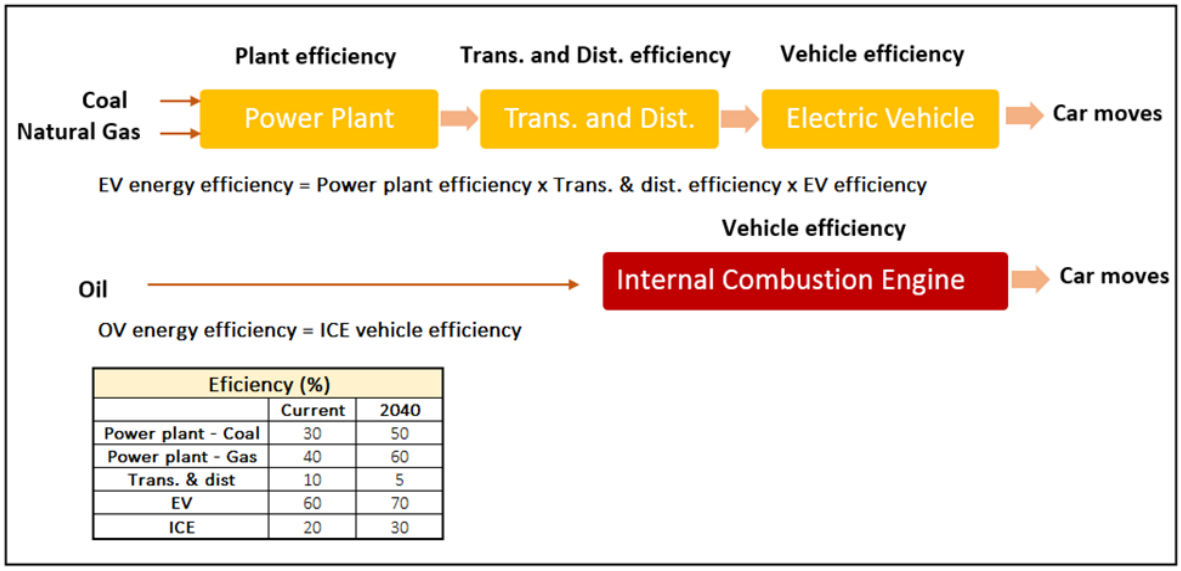

BANA CULTURAL FEST 2012

How Clean is Electric Vehicle?

Balram Suman

Utilization of clean energy resources is desired to prevent further damage to environment. Around 20% of the global energy consumption occurs in the transportation sector. This sector also accounts for one-sixth of worldwide carbon dioxide (CO2) emissions and a significantly higher (one-third) in the United States. Around one-third of the transportation sector energy consumption moves the cars worldwide, which accounts for significant CO2 emissions. In addition, the number of cars worldwide is expected to double from 0.9 billion in 2016 to 1.8 billion in 2040. Since majority of these cars have internal combustion engines (oil-powered) vehicles (OV), efforts are in place to utilize clean energy resources to prevent further environmental damages. To minimize CO2 emissions due to cars, electrical-powered vehicle (EV) have recently gained traction, and consequently the number of EV cars is expected to grow 100 times from 1 million at present to 100 million in 2040.

Historically, the human civilization did transit from one energy resource to another such as from wood to coal, but the process has been very slow, in fact never ending. The pace is dictated by a smooth adaptation in technology, economics, and human behavior spaces. In this article, we analyze how clean electrical-powered vehicles are with respect to oil-powered vehicles and subsequently summarize options to minimize CO2 emissions further.



Eficiency (%)		
	Current	2040
Power plant - Coal	30	50
Power plant - Gas	40	60
Trans. & dist	10	5
EV	60	70
ICE	20	30

Figure 1: Schematic of various efficiencies across the energy chain and representative estimates. No CO2 emissions due to non-fossil based resources hydro, wind, solar, nuclear etc.) are considered and these resources therefore not shown in the above schematic.

Currently, OVs have internal combustion engines and use predominantly gasoline, but have a poor energy efficiency. It converts only ~20% of the energy stored in gasoline to power at the wheels. In contrast, EVs use the electrical energy from the grid where a primary source of power generation is coal, natural gas, nuclear, solar, wind etc. Since renewable resources do not

contribute to CO2 emissions, we therefore focus only on coal and natural gas primary energy resources for electricity generation. Power plant energy efficiencies are 30% and 40% for coal and natural gas, respectively. In the United States, the transmission line and distribution loss is ~5%, but could be as high as 25% in developing nations. Therefore, for the purpose of this analysis, we assume an average 10% transmission and distribution loss worldwide. EVs convert ~60% of the electrical energy from the grid to power at the wheels. These give overall energy efficiency (energy return on energy invested, EROEI) of 18% (using coal) and 24% (using natural gas) considering electricity generation is from only one energy source to understand their relative CO2 contributions. We assume zero CO2 emission using any non-coal/natural gas resources (solar, wind, hydro, nuclear etc.) in this analysis. For the long term, i.e., ~2040, we consider the US EIA listed technological advancement options to achieve a 50% increase in OVs efficiency, i.e., from 20% to 30%, and that for EVs around 20%, i.e., increases overall efficiency from 60% to 70%. We assume transmission and distribution line losses will be less, i.e., ~5% thereby transmission and distribution efficiency is ~95%. To account for the power plant efficiency improvement, its efficiency is taken as 60% for natural gas and 50% for coal. These are pictorially represented and summarized in Figure 1.

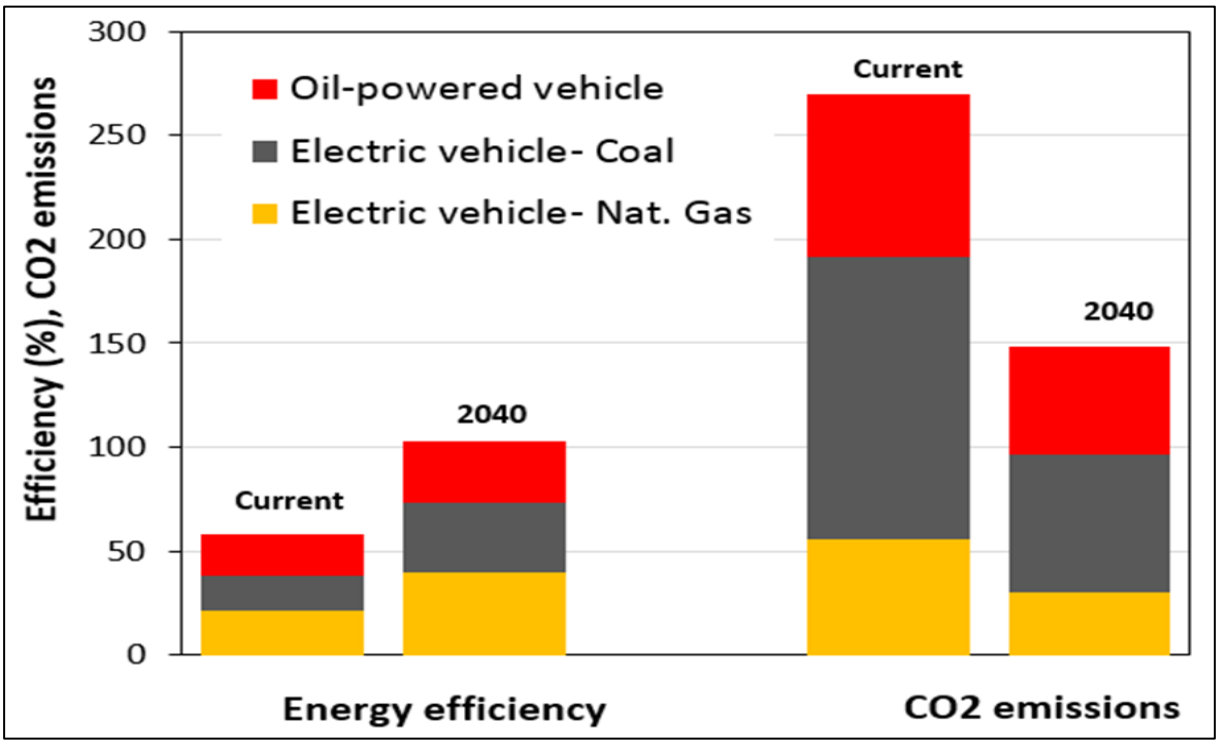


Figure 2: Energy efficiency (%) and CO2 (lb) emissions per 100kBTU energy at the wheels for each vehicle. Efficiency and CO2 emissions for each vehicle should be compared, not total since market share of each vehicle is not considered.

We next estimate the amount of CO2 production per MMBTU at the wheels. The amount of CO2 per MMBTU conversion estimates is taken from the US EIA. We plot short (~current) and long term (~2040) energy efficiency and CO2 emissions per unit energy at the wheels for EVs and OVs in Figure 2. EVs-Nat. gas and EVs- Coal mean the primary energy source for electricity generation is coal and natural gas for respective EVs.

Figure 2 could be summarized as:

- Overall efficiency is increasing and CO2 emissions are decreasing with time.
- Overall energy efficiency of these three vehicles are similar in short as well as long term.
- CO2 emissions per unit energy usage at the wheels is the highest with EV- coal, least with EV- gas and in between those two is for OVs in short as well as long term.
- This suggests that EVs are not necessarily cleaner than OVs and can, in fact, be cleaner or dirtier depending on the primary energy used in generating electricity. Overall, EVs are as clean as its primary energy resource. When EVs use electricity generated using coal, they are actually worse in CO2 emissions than OVs by as much as producing ~55% and ~25% more CO2 per unit energy at the wheels in short and long term, respectively. However, when the grid power is generated using natural gas, the emissions are 35% and 40% cleaner by reducing CO2 emissions than OVs for a short and long term, respectively. Overall, we are expected to make progresses in overall energy efficiency and emissions regardless of a choice of vehicles in the future.
- Energy resources for electricity production are a key component to decide EVs emission level, and therefore it is important to estimate the EVs emission using the power generation mix. The power generation mix is the percentage of thermal, nuclear and renewable energy, such as hydropower, used to produce electricity. We estimate short and long term EVs CO2 emissions level using a weighted sum of CO2 emissions based on a power generation mix. We assume no emissions from non-fossil fuel energy resources for electricity generation, and as a result, the non-fossil fuel based resources proportion of the power mix does not contribute to CO2 emissions at all. We plot EV and OVs emissions in Figure 3 for different countries and worldwide for short as well as long term.

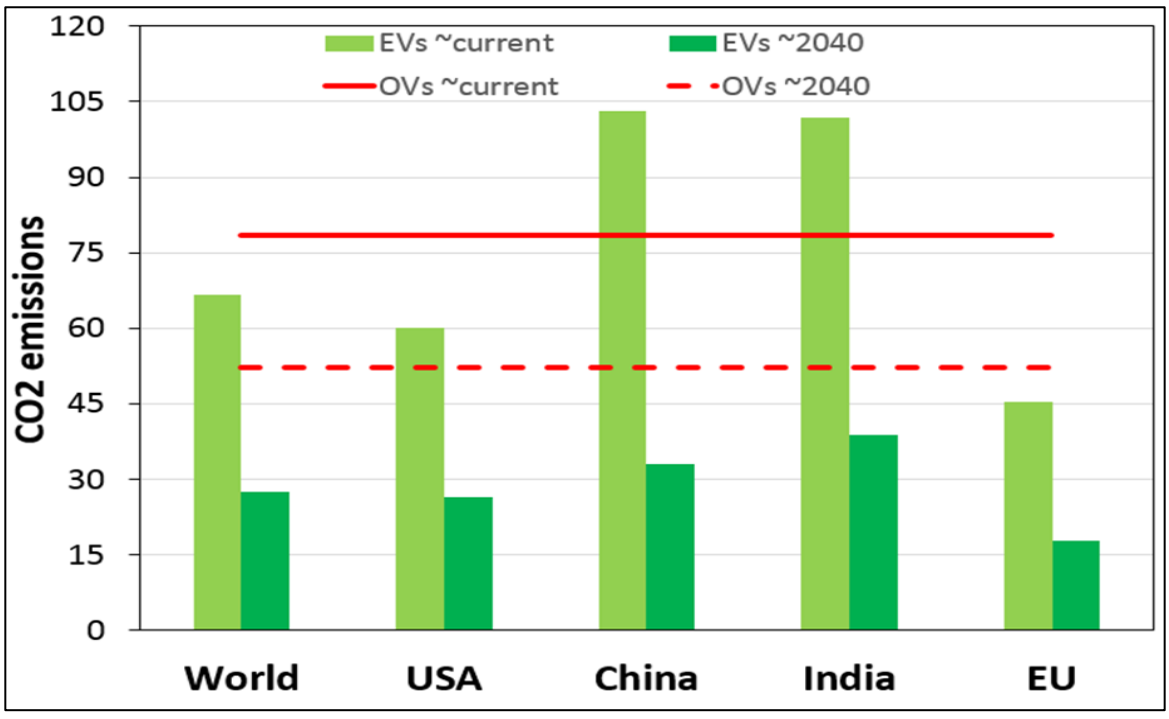


Figure 3: CO2 (lb) emissions per 100kBTU energy at the wheels for world and selected countries.

One could infer using Figure 3:

- CO2 emissions per unit energy at the wheels are reducing for EVs as well as OVs across geographical areas with time. Emissions due to EVs are decreasing due to a cleaner power mix and better efficiencies across the energy chain such power plant and vehicle. OVs emissions are going down due to an increase in an efficiency of internal combustion engines.
- EVs in China and India currently will emit significantly higher CO2 than OVs since coal dominates the power generation mix in both countries. However, both countries' power mix is expected to improve significantly in a long term.
- EU has the cleanest power mix, significant contribution from nuclear, wind, and solar, and that is reflected in the lowest CO2 emissions due to EVs.
- Due to an efficiency improvement in OVs in the future, a power generation mix and EVs efficiencies need to be improved to be competitive.
- The underlying assumption for adoption of EVs is that they would need to offer better value in terms of capital cost and operational expense through their operating life. Currently, an EV costs nearly double of an equivalent OV. However, the cost of EVs is expected to as cheap as OVs, as per Bloomberg report. In addition, consumers should be reasonably satisfied with driving range, recharge time, and battery cost, weight and space along with availability of infrastructure such as charging stations.
- A selection of energy resources depends on reliability, economics, and emissions. A unitless term net capacity factor is the ratio of an actual average electrical energy output over a given period of time to the rated peak (name plate) capacity. The net capacity factor for coal is much superior to gas since the power company switches off a natural gas plant as the demand drops to maximize profit. For wind and solar, it is actually poor (~20%) due to weather variability and a power company's goal to maximize profit. In addition, the power company typically selects an older plant where the capital is depreciated to maximize earning. The emission actually comes last. Thus, given an option to select an energy resource for electricity generation, a relatively non-clean option will most likely be selected and a reliable source for electricity generation will serve a base load.

Beyond CO2 emissions, EVs need to be light thereby requiring high performing metals from headlights to on-board electronics such as super conductive and light Lithium, Cobalt, Nickel etc. for battery. These rare metals come from potentially environmentally destructive mines due to their availability in tiny traces at inconvenient places and frequent presence of radioactive elements. Their extraction percentage of the total materials pulled out of the ground is mostly fraction of percentage (~0.2%). The refining processes are complex since they do not occur as native elemental metals in nature, only as part of the host mineral's chemistry. Subsequent transportation, further processing, and manufacturing of batteries augment it further. In addition, recycling of batteries is not adequately addressed yet. Overall, a need of rare earth metals results in a lot of pollution that should be taken into account for a better comparison. . Furthermore, supply of these materials are concentrated. 75% of the world supply of lithium is in Chile, Argentina and Bolivia, 65% of the world supply of cobalt is in Africa, and 65% of the supply of graphite comes from China. That could pose another potential challenge.

To reduce further CO2 emissions regardless the choice of vehicles in the transportation (car) sector, we next explore some options and start with a basic equation.

Total CO2 emissions = Number of vehicles x Mileage per vehicle x Energy efficiency x CO2 emissions per BTU of primary energy source.

- Number of vehicles can be reduced by ride sharing, public transportation, virtual workplace, etc.
- Reduction in mileage per vehicle requires change in human behavior.
- Energy efficiency could be increased further by having driverless cars, technological advancement in car industry, power plant efficiency etc.
- CO2 per BTU can be reduced by use of better fuel choices at source – such as gas and renewables. A carbon tax (Costs for CO2) is a good initiative in this direction to incentivize power companies to select options to reduce CO2 emissions.

In conclusion, EVs are as good as the primary resources used for generation of electricity. We need to be prudent in selecting power generation mix before using electricity for transportation along with resolving some of the challenges in mining the rare earth metals. Though it appears that EVs are a lot better for environment, it is important to take the complete chain into account for both production of the car as also the fuel. For starter, use of coal in power plants actually nips the advantage that EVs might seem to enjoy when it comes to environment. In addition, as stated, to protect environment, we need to use other options such reducing number of vehicles, mileage per vehicle (human behavior), energy efficiency, and application of cleaner grid using greener primary energy resources.

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2. *US Department of Energy (mostly Energy Information Administration) for CO2 production per MMBTU, power generation mix (current and forecast for USA), power plant, EVs and OVs efficiency, i.e., energy to wheel conversion and capacity factor.*
3. *International Energy Agency for power generation mix (current and forecast for India, China, world, and Europe).*

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Diabetic eye disease

Dr. Pranav Ranjan

Diabetes mellitus is one of the most common human genetic diseases that affect millions of people globally. There are three common types of diabetes.

- **Type 1 diabetes**: found in children and young adults where the body does not produce insulin.
- **Type 2 diabetes**: the most common form of diabetes. Either the body does not produce enough insulin or the body's cells are insulin resistant..
- **Gestational diabetes**: blood sugar increases during pregnancy due to lack of insulin production and utilization.

Diabetic eye disease is a group of disorder mostly comprising of

- **Diabetic retinopathy** - damage to the blood vessels in the retina.
- **Cataract** - clouding of the eye's lens. Cataracts develop at an earlier age in people with diabetes.
- **Glaucoma** - increase in fluid pressure inside the eye that leads to optic nerve damage and loss of vision. A person with diabetes is nearly twice as likely to get glaucoma as other adults.

Diabetic Retinopathy:

It is the most common diabetic eye disease which occurs when blood vessels in the retina change due to prolonged high blood sugar levels which damages capillaries (tiny blood vessels) that supply blood to the retina. Sometimes these vessels swell and leak fluid or even close off completely. In other cases, abnormal new blood vessels grow on the surface of the retina.

There are two types of diabetic retinopathy:

1. Non-proliferative or Background diabetic retinopathy (NPDR)

NPDR is the earliest stage of diabetic retinopathy where damaged blood vessels in retina begin to leak extra fluid and small amounts of blood into the eye. Sometimes, deposits of cholesterol or other fats from the blood may leak into the retina.

NPDR can cause

- **Microaneurysms**: small bulges in blood vessels of the retina that often leak fluid.

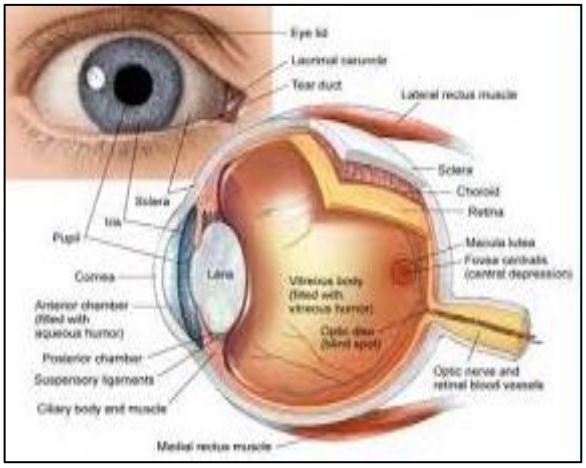
- **Retinal hemorrhages**: tiny spots of blood that leak into the retina.
- **Hard exudates**: deposits of cholesterol or other fats from the blood that have leaked into the retina.
- **Macular edema**: swelling or thickening of the macula caused by fluid leaking from the retina's blood vessels. Macular edema is the most common cause of vision loss in people with diabetes.
- **Macular ischemia**: Closure of small blood vessels (capillaries) leading to less blood supply to macula causing its improper functioning.

2. <u>Proliferative diabetic retinopathy (PDR)</u>

When many of the blood vessels in the retina close, the retina responds by growing new abnormal blood vessels (neovascularization).The new vessels are also often accompanied by scar tissue which may cause the retina to wrinkle or detach.

PDR may cause more severe vision loss than NPDR because it can affect both central and peripheral vision. PDR affects vision in the following ways:

- **Vitreous hemorrhage**:
- **Traction retinal detachment**:
- **Neovascular glaucoma**:



<u>Symptoms</u>

- Spots, dots or cobweb-like dark strings floating in your vision (called floaters);
- Blurred vision;
- Vision that changes periodically.
- Dark areas in your field of vision;
- Poor night vision;
- Colors appear washed out or different;
- Vision loss.

<u>Diabetic retinopathy risk factors</u>

- **Blood sugar levels**: Lower blood sugar levels can delay the onset and slow the progression of diabetic retinopathy.
- **Blood pressure**: controlling blood pressure reduces the risk of retinopathy progression and visual acuity deterioration. Target blood pressure for most people with diabetes is less than 130/80 mmHg.
- **Duration of diabetes**: The risk of developing diabetic retinopathy increases over time.
- **Blood lipid levels (cholesterol and triglycerides)**: Elevated blood lipid levels can lead to greater accumulation of exudates, protein deposits that leak into the retina.
- **Pregnancy**: If you have diabetes and become pregnant, your risk for diabetic retinopathy increases.

Detection

The only way to detect diabetic retinopathy and to monitor its progression is through a comprehensive eye exam

- **Visual acuity test** - This uses an eye chart to measure how well you can distinguish object details and shape at various distances.
- **Slit-lamp exam** - A type of microscope is used to examine the front part of the eye, including the eyelids, conjunctiva, sclera, cornea, iris, anterior chamber, lens, and also parts of the retina and optic nerve.
- **Dilated exam** - Drops are placed in your eyes to widen, or dilate, the pupil to examine retina.
- **Fluorescein angiography** - Fluorescein angiography evaluates retinal vascular system.
- **Optical coherence tomography (OCT)** - It is a non-invasive scanning laser that provides high-resolution images to evaluate macular edema, a retinal thickness.
- **Ultrasound** - Done in case of vitreous hemorrhage to determine the condition of retina.

Schedule for eye check up

- **Type 1 Diabetes**: Within five years of being diagnosed and then yearly.
- **Type 2 Diabetes**: At the time of diabetes diagnosis and then yearly.
- **During pregnancy**: Pregnant women with diabetes should be seen in first trimester because retinopathy can progress quickly during pregnancy.

Treatment

The best treatment for diabetic retinopathy is prevention. Strict blood sugar control will significantly reduce the long-term risk of vision loss. Treatment does not usually cure, but slows the progression of vision loss.

- **Laser (surgery)**: Laser surgery shrinks abnormal new vessels and reduces macular swelling. Treatment is often recommended for people with macular edema, proliferative diabetic retinopathy (PDR) and neovascular glaucoma.

- **Vitrectomy (surgery)**: Vitrectomy is done to remove blood and scar tissue that accompany abnormal vessels in the eye. Removing the vitreous hemorrhage allows light rays to focus on the retina again.

- **Medication (injections)**: Steroid and anti-VEGF (vascular endothelial growth factor) medications are commonly used. Anti-VEGF works by blocking a substance known as vascular endothelial growth factor which contributes to abnormal blood vessel growth in the eye. An anti-VEGF drug can help reduce the growth of these abnormal blood vessels. . The medication reduces the swelling, leakage, and growth of unwanted blood vessel growth in the

retina. It may be given once or as a series of injections at regular intervals, usually four to six weeks

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Clean Coal

Arun Misra

Utilizing the vast reserves of Coal has been an area of public and scientific concern, investigation, and public discussion. 'Clean Coal' is more of a hype than substance. A myth than fact. But the coal is abundant in many parts of the world. It is relatively easy to mine an transport. It is extensively used from small family hearths to large coal-fired power plants, and is an excellent source of energy. The environmental impact of burning coal is environmentally undesirable. Hence, we must work diligently to make coal 'cleaner'. The breakthrough in the use of coal will come by increasing its share in total energy market. Presently, coal is not being utilized enough, because other energy resources are more economical and burn environmentally more safely. The use of coal is increasing very fast, but the processes of making it 'cleaner', and environmentally safer, which is of paramount importance, has not received much attention. The combustion of coal to produce Coal-gas or Syngas is fairly well known. It appears that biological processes for the utilization of coal products, especially syngas, may provide a cost effective means to obtain alternative industrially important chemicals and fuels.

The use of microorganisms for the solubilization of coal is being attempted at various laboratories. However little attention has been given to the utilization of syngas through microbial fermentation. Clostridium thermoaceticum, in glucose-limited cultures gown at the expense of CO and CO2, autotrophically utilizes syngas. The hydrogenase enzyme of this bacterium functions in both the production and consumption of H2. Both heterotrophic and autotrophic roles exist for this enzyme in the production of acetate. We have been looking into the ability of C. thermoaceticum to utilize syngas (a mixture of CO, CO2, and H2) and to see if this bioconversion of syngas can yield usefull fuels and/or chemicals. This microorganism also contains the enzymes CO-dehydrogenase, and formate dehydrogenase, which are both required for the bioconversion of syngas and the production of acetic acid. In an effort to genetically engineer C. thermoaceticum to overcome its natural physiological limitations as a syngas utilizer, naturally occurring plasmids and phages may be developed as cloning vectors.

Genetics of anaerobic bacteria is still in its infancy, due to the lack of proper laboratory techniques. However, several evidences for the transfer of a thermophilic genes into mesophilic environment have been illustrated.

The continued presence of enzymes activity in plasmid cured C. thermoaceticum, confirms that the plasmids were not associated with the key enzymes of acetate biosysthesis. However, the identification of these plasmids, and transformation of comperent cells of Escherichia coli with the 30 kb plasmid of C. thermoaceticum, and its further characterization should go a long way towards developing a cloning vector for gene transfer in industrially important thermophilic and anaerobic acetogens and methanogens.

The strain improvement of bacteria to utilize coal for generating fuels and chemical should be accomplished by creating 'super bugs' using genetic engineering techniques. However, gene transfer and introduction of newer traits in bacteria are accomplished using bacterial viruses, phage. Phages of clostridia of industrial importance have bee reported as contaminants causing extensive damage to acetone-butanol fermentation Industry.

Further studies on the phage towards obtaining a lysogenic strain, or developing one by mutagensis for its use as vector to transform the genes for co-hydrogenase, the key enzyme involoved in the conversion of CO or syngas to acetic acid by this organism, is required. But this should comprise another approach, in addition to other methods of coal bioprocessing, especially with fungi.

Coal-fired power plants are still the largest source of generating energy. Problems associated with the disposal of nuclear waste, and adverse environmental impacts of hydroelectric dams, points towards further utilization of coal. Until we are able to contain the undesired aspects of coal-burning, like super showers on the lakes, we will not be able to use this abundant resource available to us. Microbial and genetic Engineering approaches should go a long way towards developing 'Clean Coal Technology', for generating plenty of affordable energy in environmentally safer ways. Solar, wind and geothermal sources of energy will also have their fair share of the total energy spectrum.

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Peak Oil a Myth?

Balram Suman

Key contributors to the advancement of the human civilization are fire, wheel, and money. Oil fuels wheel for over last 100 years. This has been the most efficient energy resources for wheel thereby playing a critical role for the modernization of human civilization. However, we have a finite amount of oil reserves. This leads to a couple of obvious question: How much oil do we have and how long will it last. In this article, we'll analyze this aspect with the help of a famous Peak Oil concept.

Peak Oil or Hubbert's Peak refers to the peak of the entire planet's oil production. The theory suggests after Peak Oil, the oil production will go through a terminal decline leading to an increase in the oil price. The oil energy resource is directly impacting people's life across the globe, and therefore beyond Peak Oil, the world economy will severely be impacted.

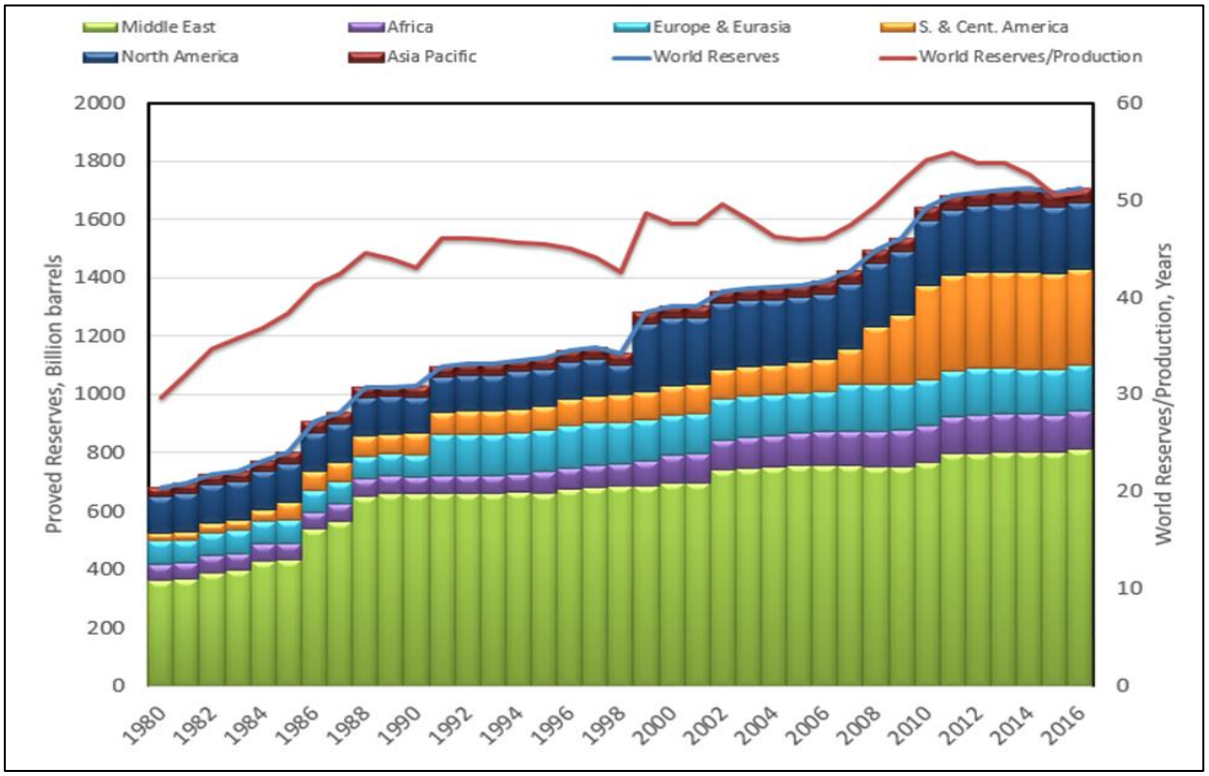

Figure 1: Total and regional oil reserves

One could investigate the viability of Peak Oil using the proved world reserves and its ratio with current production. The proved oil reserves are amount of oil to be produced with a reasonable (>90%) certainty under existing economic and operating conditions, and the ratio of the proved reserves with production is a measure of the longevity of the oil deposit. To gain insights, we plot the proved world oil reserves along with the same for each geographical region and the ratio of world reserves and current production in Figure 1 (BP Statistical Review). The source of the figure

has to be outlined here unless it is an analysis by the author. Below it says it's from analysis made by BP but the same should be stated clearly before we ask readers to go through the data.

Each region has some key producing countries. A list of them for each region in the order of their current proved reserves in the region is as follows:

1. Middle East: Saudi Arabia, Iran, Iraq, Kuwait, and United Arab Emirates,
2. Africa: Libya, Nigeria, Algeria, and Angola,
3. Europe & Eurasia: Russian Federation,
4. South and Central America: Venezuela and Brazil,
5. North America: Canada and USA, and
6. Asia Pacific: China.

Using Figure 1, one could infer the following:

i. The total world oil reserves along with each region are increasing historically, and the current world reserves is ~1.7 Trillion barrels.
ii. Middle East accounts for ~50% of the world reserves and is followed by South and Central America with ~20%.
iii. Africa, Europe & Eurasia, and North America have ~10% of the world reserves.
iv. Asia Pacific oil reserves only contribute to ~2% (though 60% of the world population reside!).
v. Similar to reserves, the ratio of reserves and production is mostly increasing historically due to technological advancement and increased capital expenditures. A slight decline in recent years is due to a significantly higher increase in the oil production relative to reserves. The current ratio of oil reserves and production is ~50 years.

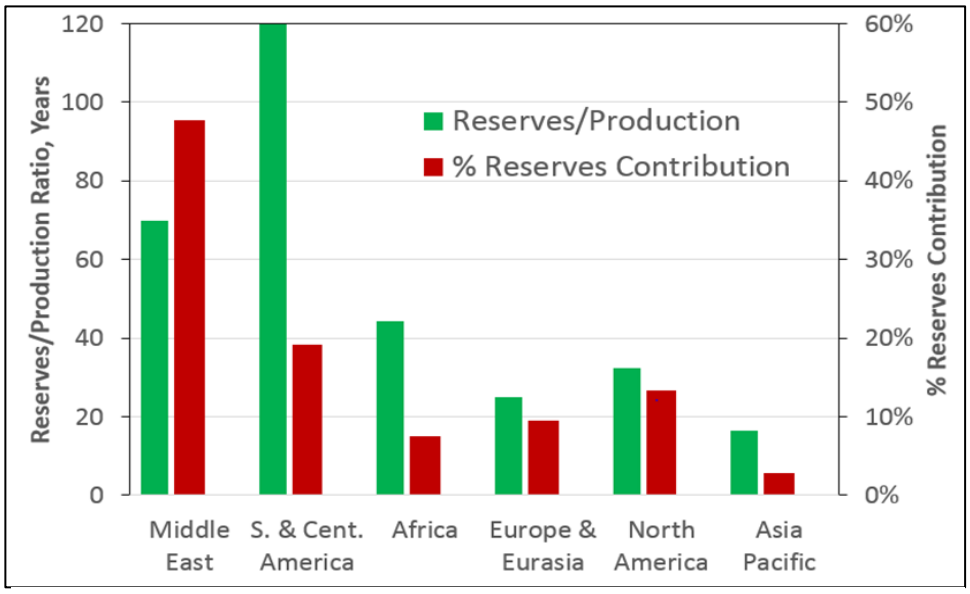

Figure 2: Regional reserves contribution and its ratio with production

Figure 2 shows the percentage reserves contribution year end 2016 (current) and its ratio with the current production. Around 70% of the oil reserves are in Middle East and South & Central America together, and the ratios of reserves and production are ~70 and ~120 years for those two regions, respectively. Other regions have oil for ~30 years barring Asia Pacific with ~15 years. Regions with higher reserves have greater reserves and production ratio.

The current world reserves are ~1.7 Trillion barrels, and as per IEA, the peak oil demand varies from ~103 to ~117MMBO per day depending on policy scenarios. Assuming an average peak production as ~110MMBO per day, the current proved reserves will last for over 40 years when consumed at the peak oil production rate. Given the historical trend of a continuous increase in the proved reserves and its ratio with production due to technological advancement, the trend is expected to continue. In addition, this is only proved reserves. Considering unproved resources, oil is expected to last for ~200 more years. As a result, Peak Oil is not expected in the foreseeable future. It is instead most likely to have a peak demand driven by market and regulatory policy. The big question is when and how the demand reaches to its peak level. This suggests a part of the oil reserves will remain underground and the society will move on to next energy resources. As stated by the former Saudi oil minister, Sheik Ahmed Zaki Yamani once stated his OPEC colleagues "The Stone Age didn't end because we ran out of stones. It ended because we invented bronze tools, which were more productive."

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मेरा वतन

Nausha Asrar

ये मेरा वतन हे, ये वतन मेरा रहेगा
खुशबु हें हम ईसकी, ये चमन मेरा रहेगा
वो धुप, वो बरसात, वो बारिश, वो पनाले
खेतों में गड़े पावं, वो बहते होए नाले
वो अज़म जो मिट्टी को भी सोने की बनाले
ये हिन्द के बासी ये जिगर सोज़ जयाले
गठरी में बंधा इनकी ये मन मेरा रहेगा
ये मेरा वतन हे, ये वतन मेरा रहेगा

मरता हे यहां शेख़ तो रोता हे बरहमन
सिक्खों के गुरुद्वारे में आते हें क्रिश्चन
होली में लगाते हें यहां रंग जो मोमिन
रक्षा को बुलाती हे बहन भेज के बंधन
उस पयार के बंधन का चलन मेरा रहेगा
ये मेरा वतन हे, ये वतन मेरा रहेगा

नफ़रत ना सिखाओ कि हें बापू के वचन याद
भूले नहीं हम आज भी आज़ाद की फ़रयाद
नवहरु के गुलाबों से हे गुलशन मेरा आबाद
मज़हब के शिकंजों से मेरा मुल्क है आज़ाद
उलफ़त ही वज़िफ़ा व भजन मेरा रहेगा
ये मेरा वतन हे, ये वतन मेरा रहे गा

सुरज की तरह रोज़ अभरता हुवा भारत
दुनिया की नगाहों में निखरता हुवा भारत
यादों के झरोकों से उतरता हुवा भारत
परदेस में पलकों पे मचलता हुवा भारत
में जाऊं कहीं, मेरा वतन मेरा रहेगा
खुशबु हें हम ईसकी यह चमन मेरा रहेगा

** Dr. Nausha Asrar is an active member of BANA. He has great interest and is well known in Houston for his Hindi and Urdu poetry.*

तुम्हारी महफ़िल

Nausha Asrar

तुम्हारी महफ़िल में आ गया हूँ , ये दिल तुम्हारा ये जाँ तुम्हारी
ये मेरे अल्फ़ाज़ कब हैं मेरे , ये बोलते हैं ज़ुबान तुम्हारी

न पूछ मुझसे पिघल गया क्यों , मैं तेरे साँचे मैं ढल गया क्यों
हमारे बर्फ़ीले जिस्मो जाँ पर बरस पड़ीं बिजलियाँ तुम्हारी

मैं बादलों पर सवार जैसे , तू बारिशों कि फुहार जैसे
सजे हैं ख़्वाबों के ये हिंडोले, खुली हैं ज़ुल्फ़ें जहाँ तुम्हारी

हुआ है क्या ये पता नहीं है, हमारी कोई ख़ता नहीं है
क़ुसूर है मोस्मों का सारा, हुई जो रुत जवाँ तुम्हारी

हैं मेहरबाँ ये हवाएँ मुझ पर , उड़ा गाईं जो यूँ तेरा आँचल
के मिल गया आसमान मुझको जो सज गाईं कहकाशाँ तुम्हारी

मैं हँसते हँसते ये जान देता , ख़ुदा से जन्नत भि माँग लेता
जो ज़िक्र होता वहाँ तुम्हारा, जो बात होती वहाँ तुम्हारी

मैं बे नवा सा ग़रीब शाएर, न कोई ख़ुशबू न रंग मुझ में
हमारी ग़ज़लों के फूलबन को सजा गाईं तितलियाँ तुम्हारी

** Dr. Nausha Asrar is an active member of BANA. He has great interest and is well known in Houston for his Hindi and Urdu poetry.*

If Vihaan Were…

Ayaan Singh

If Vihaan were a monkey, he would
be a very weird mammal, obnoxious and cuckoo

If Vihaan were a natural disaster, he would
be a tsunami, sneaky and furious

If Vihaan were a body of water, he would
be a lake, calm and cool

If Vihaan were a movie, people would line
up to see him, funny and cute

If Vihaan were a store product, everyone
would want to get him, weird and nice

If Vihaan were a city, he would
have a larger population than NYC, attractive and cheerful

** Ayyan is a 4th grade student at Walker Station Elementary School, Sugar Land. He has dedicated this poem to his younger brother Vihaan.*

The First Day

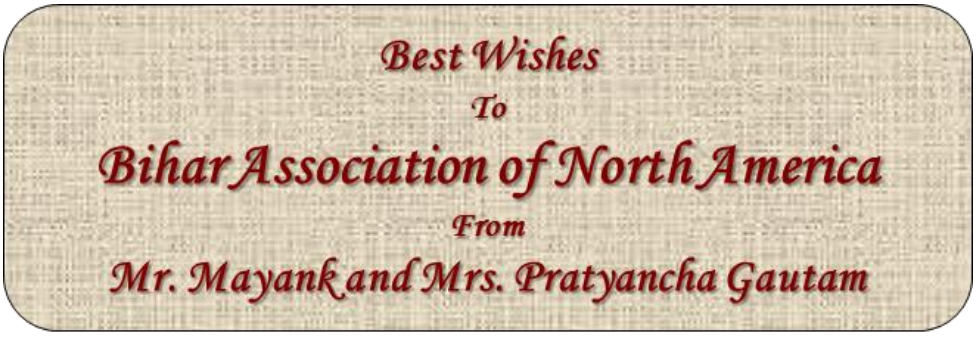
Ayaan Singh

It was the first day of school. I was starting in a place called Walker Station Elementary (WSE). The sweaty palms and butterflies in the stomach stuck to me like sticky white rice. My last school was minuscule compared to WSE. I was afraid because there were so many children and WSE is a public school. My last school was a private school. Walker Station Elementary is humongous! It was at that moment when I found out that I was NEVER going to fit in at the school.

When I walked inside the big school I kept my head down. All the other children stared at me. After the stares came the whispers. My face burned. I wanted to go home. I hated being there. But then I saw Rayyan, who was also on my neighborhood basketball team and he was at the school too. Finally! Someone that I actually knew! So, after that, I walked to the classroom with my parents. I saw a bunch of children seated on their desks staring at me. I wondered, if are these kids really that bad? We were given worksheets to keep us busy. A week later, we had a test. When our results came back everyone got 70s and 80s. I was the only one who got a 100! Others looked at me and said, "Wow, he's awesome". I couldn't stop smiling. My report card came with all good grades. I was so proud of myself! Now I know that school isn't that bad.

The first time I entered second grade, I was scared. But everyone is scared. These are the times I will NEVER forget. I could just feel my heart thumping, my hands being sweaty and all the stress running through my body. But now this is my third year at WSE. I also remember tapping my fingers on my desk, looking at the board. I thought, this was an extraordinary year.

** Ayyan is a 4th grade student at Walker Station Elementary School, Sugar Land.*



Quotation

All Birds find shelter during a rain. But Eagle avoids rain by flying above the Clouds.

A.P.J Abdul Kalam

BANA Academic Fest

Academic Fest 2017

BANA Academic Fest 2017 was held at the Houston Community College in Stafford on August 19, 2017. As in the years 2015 and 2016 we awarded top three students at every grade level for Math, Science and Vocabulary. For Spelling Bee, Arts and Speech the top five students in their group level (primary, elementary or middle) were awarded. The Math and Science tests were set by TMSCA and SAT and Vocabulary were set by Testmasters, Sugar Land. The number of students at the High School level reached record levels, so we introduced grade level awards for SAT this year.

Primary

Math – Grade 1

First	Krithik Manoharan
Second	Anubhav Bhatnagar

Math – Grade 2

First	Ayansh Kumar
Second	Tanish Gade
Third	Harshil Sanklecha

Math – Grade 3

First	Ronak Hiwale
Second	Anshul Jhaveri
Third	Gautham Venkataraman
Third	Eesha Kumar

Art - Grades 1 to 3

First	Ronak Hiwale
Second	Eesha Kumar
Third	Bhavika Ranjan
Fourth	Anubhav Bhatnagar
Fifth	Anvi Gandhi

Spelling Bee- Grades 1 to 3

First	Tanish Gade
Second	Aaliya Sharma
Third	Krishna Harish
Fourth	Sai Lakshmi Gedda
Fifth	Harshil Sanklecha

Elementary

Math – Grade 4

First	Krish Jha
Second	Rahul Sanklecha
Third	Ishaan Singh

Math – Grade 5

First	Vishal Surya
Second	Smithi Gopalakrishnan
Third	Sanskriti Manoharan

Science – Grade 4

First	Kunal Pikle
Second	Srisamhita Ponnapalli
Third	Ishaan Singh

Science – Grade 5

First	Sankriti Manoharan
Second	Vishal Surya
Third	Rajni Nitturi

Art - Grades 4 and 5

First	Rajni Nitturi
Second	Smithi Gopalakrishnan
Third	Srisamhita Ponnapalli
Fourth	Sanskriti Manoharan
Fifth	Rahul Sanklecha

Spelling Bee - Grades 4 and 5

First	Megha Joshi
Second	Lasya Dhulipala
Third	Rajni Nitturi
Fourth	Ishaan Singh
Fifth	Shaun Israni

Academic Fest 2017, Continued …

Middle

Math – Grade 6

First	Neil Kaul
Second	Ramya Srinivasan
Third	Harekas Bindra

Math – Grade 7

First	Sri Veda Chinapuvvula
Second	Adarsh Agrawal
Third	Abhitej Devireddy

Math – Grade 8

First	Ashmit Bhatnagar
Second	Amber Kaul
Third	Amogha Pokkulandra

Science – Grade 6

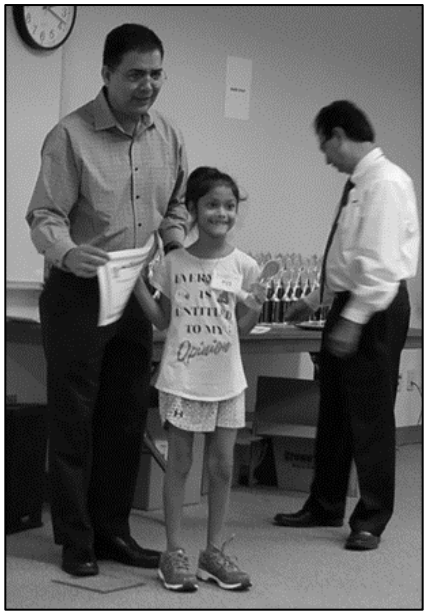
First	Aum Jhaveri
Second	Ramya Srinivasan
Third	Shriman Thandra

Science – Grade 7

First	Arjun Kumar
Second	Adarsh Agrawal
Third	Adhithi Venkatraghavan

Science – Grade 8

First	Amogha Pokkulandra
Second	Amber Kaul
Third	Arjun Surya



Vocabulary – Grade 6

First	Shriman Thandra
Second	Aum Jhaveri
Third	Eesha Nair

Vocabulary – Grade 7

First	Adarsh Agrawal
Second	Sri Veda Chinapuvvula
Third	Arjun Kumar

Vocabulary – Grade 8

First	Amber Kaul
Second	Amogha Pokkulandra
Third	Ashmit Bhatnagar

Speech - Grades 6 to 8

First	Surmayee Thakur
Second	Sweta Gupta
Third	Kusum Gorantla
Fourth	Adarsh Agrawal
Fifth	Arjun Kumar

High

SAT – Grade 9

First	Samhitha Bandi
Second	Ethan Jiang

SAT – Grade 10

First	Utkarsh Singh
Second	Pranav Gopalakrishnan

SAT – Grades 11 and 12

First	Shobha Dasari
Second	Akash Karanam

Debate - Grades 9 to 12

First	Anuraag Routray
Second	Ethan Jiang
Third	Arya Ranjan

Academic Fest 2016

BANA Academic Fest 2016 was held at the Houston Community College in Stafford on August 20, 2016. As in 2015 we awarded top three students at every grade level for Math, Science and Vocabulary. For Spelling Bee, Arts and Speech the top five students in their group level (primary, elementary or middle) were awarded. The Math and Science tests were set by TMSCA and SAT and Vocabulary were set by Testmasters, Sugar Land.

Primary

Math - Grade 1

First	Sanskruti Kalepu
Second	Akshita Cheraku
Third	Tanish Gade

Math - Grade 2

First	Anshul Jhaveri
Second	Krishna Harish
Third	Kaavya Rajarathnam

Math - Grade 3

First	Kavin Krishna
Second	Krish Jha
Third	Tegh Bindra

Arts

First	Rashi Patel
Second	Ayaan Singh
Third	Sameeha Vaswani
Fourth	Naomi Thakur
Fifth	Kaavya Rajarathnam

Spelling Bee

First	Kavin Krishna
Second	Akhil Rajarathnam
Third	Kaavya Rajarathnam
Fourth	Aaliya Sharma
Fifth	Eesha Kumar

Elementary

Math - Grade 4

First	Yunyi Ling
Second	Sanskriti Manoharan
Third	Smithi Gopalakrishnan

Math - Grade 5

First	Neil Kaul
Second	Aryan Arora
Third	Anant Asthana

Science - Grade 4

First	Yunyi Ling
Second	Lasya Dhulipala
Third	Talitha Du Plooy

Science - Grade 5

First	Ramya Srinivasan
Second	Anant Asthana
Third	Neil Kaul

Arts

First	Lasya Dhulipala
Second	Dhruv Patel
Third	Neha Harish
Fourth	Yunyi Ling
Fifth	Smithi Gopalakrishnan

Spelling Bee

First	Megha Joshi
Second	Eesha Nair
Third	Harekas Bindra
Fourth	Lasya Dhulipala
Fifth	Anant Asthana

Academic Fest 2016, Continued …

Middle

Math - Grade 6

First	Adam Chen
Second	Arjun Kumar
Third	Sneha Sinha

Math - Grade 7

First	Amogha Pokkulanda
Second	Amber Kaul
Third	Ashmit Bhatnagar

Math - Grade 8

First	Sameer Gupta
Second	Abhinav Basvoju
Third	Hursh Jha

Science - Grade 6

First	Arjun Kumar
Second	Bharati Kalepu
Third	Adarsh Agrawal

Science - Grade 7

First	Amogha Pokkulanda
Second	Amber Kaul
Third	Jack Lee

Science - Grade 8

First	Surya Chokkar
Second	Abhinav Vadassery
Third	Hursh Jha

Vocabulary - Grade 6

First	Adarsh Agarwal
Second	Arjun Kumar
Third	Sneha Sinha

Vocabulary - Grade 7

First	Amber Kaul
Second	Jack Lee
Third	Amogha Pokkulanda

Vocabulary - Grade 8

First	Ethan Jiang
Second	Hursh Jha
Third	Divya Joshi

Speech

First	Surya Chokkar
Second	Ethan Jiang
Third	Kusum Gorantla
Fourth	Abhinav Basvoju
Fifth	Abhinav Sinha

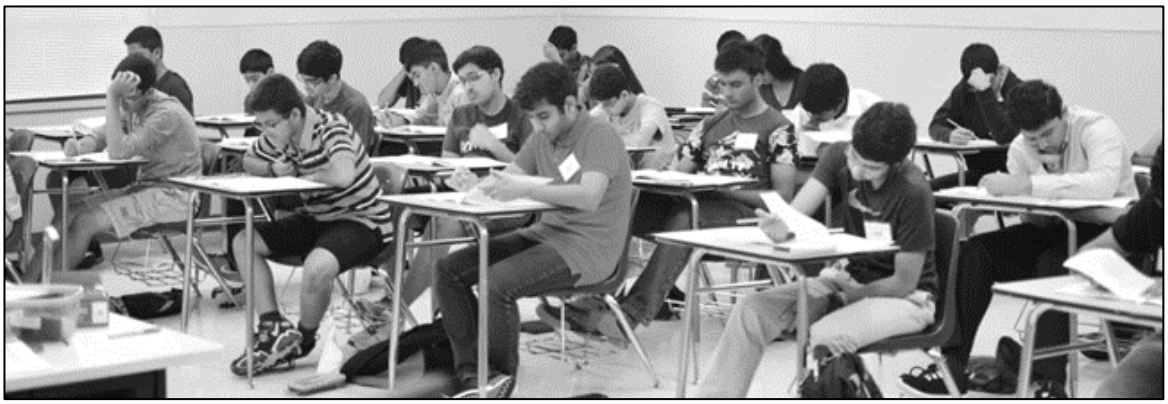
High

SAT

First	Vijay Nitturi
Second	Adarsh Pokkulandra
Second	Akash Karanam

Debate

First	Anuraag Routray
Second	Vivek Sinha
Third	Tony Jha



Academic Fest 2015

BANA Academic Fest 2015 was held at the VPSS Haveli in Stafford on August 16, 2015. Continuing To encourage participation of all grades in the contest we started this year to award top three students at every grade level for Math, Science and Vocabulary. For Spelling Bee, Arts and Speech the top five students in their group level (primary, elementary or middle) were awarded. The Math and Science tests were set by TMSCA and SAT and Vocabulary were set by Testmasters, Sugar Land.

Primary

Math - Grade 1

First	Kaavya Rajarathnam
Second	Rajat Sarkar
Third	Shreeya Guatha

Math - Grade 2

First	Aman Singh
Second	Kavin Krishna
Second	Khyati Singh

Math - Grade 3

First	Sage Wang
Second	Shreya Parekh
Third	Smithi Gopalakrishnan

Arts

First	Sreela Gutha
Second	Aadi Gandhi
Third	Kavin Krishna
Fourth	Smithi Gopalakrishnan
Fifth	Kaavya Rajarathnam

Spelling Bee

First	Eesha Kumar
Second	Chetan Gorantla
Third	Rajni Nitturi
Fourth	Sahash Gupta
Fifth	Akhil Rajarathnam

Elementary

Math - Grade 4

First	Aryan Arora
Second	Anant Asthana
Third	Jessica Ji

Math - Grade 5

First	Rich Wang
Second	Dylan yu
Third	Justin Chang

Science - Grade 4

First	Justin Li
Second	Harekas Bindra
Third	Anant Asthana

Science - Grade 5

First	Rich Wang
Second	Arjun Kumar
Third	Dylan Yu

Arts

First	Trisha Patel
Second	Dylan Yu
Third	Stuti Kumari
Fourth	Arjun Kumar
Fifth	Myra Saxena

Spelling Bee

First	Ashlee Thomas
Second	Anvi Garyali
Third	Dylan yu
Fourth	Rishav Sarkar
Fifth	Justin Chang

Academic Fest 2015, Continued …

Middle

Math - Grade 6

First	Amogha Pokkulandra
Second	Ashmit Bhatnagar
Third	Kusum Gorantla

Math - Grade 7

First	Abhinav Basvoju
First	Hursh Jha
Third	Raksheet Kota
Third	Sameer Gupta

Math - Grade 8

First	Shanth Koka
First	Harshitha Gedda
First	Siddharth Muppalla

Science - Grade 6

First	Amoga Pokkulandra
Second	Kusum Gorantla
Third	Ashmit Bhatnagar

Science - Grade 7

First	Raksheet Kota
Second	Hursh Jha
Third	Rakshita Kota

Science - Grade 8

First	Harsh Kumar
Second	Shanth Koka
Third	Shaan Parekh

Vocabulary - Grade 6

First	Amogha Pokkulandra
Second	Puneet Singh
Third	Prisha Patel

Vocabulary - Grade 7

First	Ethan Jiang
Second	Raksheet Kota
Third	Hursh Jha

Vocabulary - Grade 8

First	Siddrath Muppalla
Second	Shaan Parekh
Third	Harsh Kumar

Speech

First	Tony Jha
Second	Shivam Prakash
Third	Amogha Pokkulandra
Fourth	Pari Prasad
Fifth	Anurag Routray

High

Debate

First	Shreetika Singh
Second	Vivek Sinha
Third	Abhiraj Sinha

SAT

First	Saijayanth Mosalakanti
Second	Akash Karanam
Third	Adarsha Pokkulandra

Academic Fest 2014

BANA Academic Fest 2014 was held at the Houston Community College in Stafford on August 9, 2014. To encourage participation of all grades in the contest, at BANA we continued with grade level best score award for a student who did not fall in the top three in the Primary, Elementary and Middle categories.

Primary

Math

First	Khyati Chandra
Second	Pooja Shah
Third	Chetan Gorantla
Special Grade 3	None
Special Grade 2	Shrey Parekh
Special Grade 1	Medha Menon

Arts

First	Pooja Shah
Second	Dia Anand
Third	Chetan Gorantla
Special Grade 3	Medha Menon
Special Grade 2	Shrey Parekh
Special Grade 1	Khyati Chandra

Spelling Bee

First	Pooja Shah
Second	Shrey Parekh
Third	Chetan Gorantla
Fourth	Medha Menon
Fifth	Khyati Chandra

Elementary

Math

First	Arnav Gupta
Second	Abhitej Devireddy
Third	Arjun Kumar
Special Grade 5	Karan Sura
Special Grade 4	Vishnu Indukuri

Arts

First	Trisha Patel
Second	Ashlee Thomas
Third	Kusum Gorantla
Special Grade 5	Kavin Rajendra
Special Grade 4	Arjun Kumar

Spelling Bee

First	Khyatee Ranjan
Second	Arjun Kumar
Third	Sweta Gupta
Fourth	Ashlee Thomas
Fifth	Kusum Gorantla

Middle

Math

First	Sanath Govindarajan
Second	Siddharth Muppalla
Third	Govind Chada
Special Grade 8	Arya Ranjan
Special Grade 7	Pratik Pohuja
Special Grade 6	Raksheet Kota

Vocabulary

First	Govind Chada
Second	Sanath Govindarajan
	Siddharth Muppalla
Third	None
Special Grade 8	Arya Ranjan
Special Grade 7	Pratik Pohuja
	Anurag Routray
Special Grade 6	Hursh Jha
	Raksheet Kota

Speech

First	Surya Chokkar
Second	Khushi Desai
Third	Samhitha Bandi
Special Grade 8	Arya Ranjan
Special Grade 7	Ishan Danayak
Special Grade 6	Rakshita Kota

High

SAT

First	Shomik Verma
Second	Juhi Choudhury
Third	Yashi Prasad
Third	Shreetika Singh

Debate

First	Shreetika Singh
Second	Poornima Tamma
Third	Sai Jayanth Mosalakanti

Academic Fest 2013

BANA Academic Fest 2013 was held at the Houston Community College in Stafford on August 24, 2013. To encourage participation of all grades in the contest BANA introduced grade level best score award for a student who did not fall in the top three in the Primary, Elementary and Middle categories.

Primary

Math

First	Siddarth Potturu
Second	Adarsh Agrawal
Third	Arjun Kumar
Special Grade 3	Aditi Kumari
Special Grade 2	None
Special Grade 1	None

Arts

First	Sravya Gullapali
Second	Adhithi Venkaraghavan
Third	Aditi Kumari
Special Grade 3	Khyatee Ranjan
Special Grade 2	None
Special Grade 1	Arthi Bhavaraju

Spelling Bee

First	Sravya Gullapalli
Second	Arjun Kumar
Third	Ashlee Thomas
Fourth	Trisha Patel
Fifth	Adarsh Agrawal

High

SAT

First	Poornima Tamma
Second	Shomik Verma
Third	Suhas Narendrula

Debate

First	Shreetika Singh
Second	Poornima Tamma
Third	Smriti Ahuja

Elementary

Math

First	Shourav Dasari
Second	Surya Chokkar
Third	Sarthi Mathuria
Special Grade 5	Abhinav Sinha
Special Grade 4	Kusum Gorantla

Arts

First	Kusum Gorantla
Second	Surmayee Thakur
Third	Sunaiana Ayyagari
Special Grade 5	Pari Prasad
Special Grade 4	Parisha Patel

Spelling Bee

First	Shourav Dasari
Second	Abhinav Sinha
Third	Surya Chokkar
Fourth	Prisha Patel
Fifth	Puneet Singh

Middle

Math

First	Akash Karanam
Second	Sanath Govindrajan
Third	Surya Indukuri
Special Grade 8	Ashish Singh
Special Grade 7	Arya Ranjan
Special Grade 6	Siddharth Krishnakumar

Vocabulary

First	Sanath Govindrajan
Second	Siddharth Krishnakumar
Third	Deepshikha Karna
Special Grade 8	None
Special Grade 7	Ashish Singh
Special Grade 6	Anuraag Routray

Speech

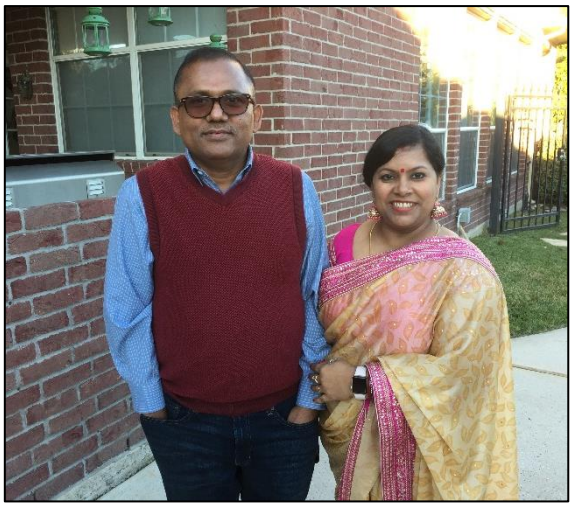
First	Tony Jha
Second	Meghna Potturu
Third	Shivam Prakash
Special Grade 8	Abhiraj Sinha
Special Grade 7	Akilesh Kumar
Special Grade 6	Anuraag Routray

BANA Report for 2015-2016

Executive Committee 2015-2016

President	**Santosh Jha**
Vice President	**Santosh Verma**
Secretary	**Krishna Kumar**
Treasurer	**Atul Sinha**
Member	**Mayank Gautam**
Member	**Nazish Hoda**
Member	**Pankaj Singh**

Message from President 2015-2016 Mr. Santosh Jha



The past seven years on the BANA executive committee have been nothing short of fulfilling. When I first joined the Executive Committee in 2011 as Treasurer, I was just looking to carry out my responsibilities as Treasurer as best I could. I was happy to play my small part in this organization. Looking back on these past seven years as a BANA executive member – Treasurer (2011-2012), Vice-President (2013-2014), and President (2015-2016) – I've realized just how significant of an impact being a part of this organization can have on greater Houston community. Working together with the common goal of sustaining our cultural values and, as stated in BANA's

motto - “Fostering Academic Excellence” - has been a truly rewarding experience. Personally, I’ve always had a strong desire to play a role in fostering youth academic excellence. As President I dedicated my term to making as much progress towards this initiative as possible. With the full support and enthusiasm of my tireless Executive Committee, we took two major steps.

First of all, we established a standard for all tests in the annual BANA Academic Fest. In the past, tests and their level of difficulty would vary from year to year so by standardizing all tests, our most important event of the year became more competitive and more widely accepted by the greater Houston community. This allowed BANA to serve the entire Houston community – not only to the people of Bihar but to everyone, thus expanding the impact and recognition of our organization. As part of the standardization process, we coordinated with TestMasters prep service for SAT practice tests. These tests provided by TestMasters were similar in style and difficulty to the official SAT exams administered by the College Board. Due to our partnership, high school students competing at the Academic Fest were able to practice for their real SAT exams under real test-taking conditions with real test-questions, thus enhancing their preparation. In the Middle school category, BANA became a member of TMSCA (Texas Math and Science Coaches Association). TMSCA organizes multiple math and science competitions throughout the year and ends with a state championship competition in the spring. BANA-TMSCA gave an opportunity to children of the Houston community to get an early start in their preparation for the competition season. TMSCA agreed to provide us with new, never-seen-before tests specially made for us to administer at our Academic Fest. TMSCA also complied with our request to make the tests more challenging than normal so as to provide better practice for the kids and also make it more competitive.

As we generalized the Academic Fest for wider reach, it became more competitive and challenging for our BANA kids. This led to our second major initiative towards fostering academic excellence: establishing weekly tutoring for our BANA kids. Every Sunday, we started hosting math tutoring sessions to coach our kids and help them prepare for excellence in the Academic Fest. Krishna Kumar & I started this program from my garage eventually set the weekly meetings at Krishna Jee’s house. There were about 12 kids who participated regularly and took advantage of this opportunity. I am very grateful for Krishna Jee and all the effort he has put into helping our kids in their pursuit of academic excellence.

Lastly, I would like to express my sincere gratitude to my hard-working Executive Committee and the entire BANA community for helping and supporting me along the way. Everything was truly a team effort and we made wonderful memories along the way. I wish current BANA President Dr. Santosh Verma good luck and I know he will work tirelessly to continue taking BANA to greater heights. I am grateful to be able to continue to serve BANA by serving on the Board of Directors in the coming years.

Regards,

Santosh Jha

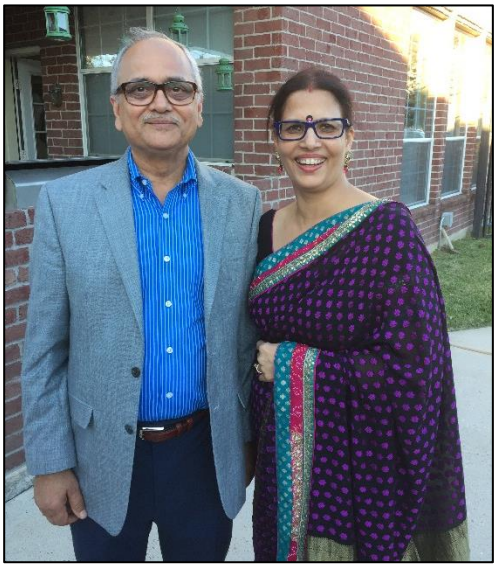
BANA President 2015-16

BANA Report for 2013-2014

Executive Committee 2013-2014

President	**Chandeshwar Sharma**
Vice President	**Santosh Jha**
Secretary	**Geetika Kamal**
Treasurer	**Santosh Verma**
Member	**Sunil Sinha**
Member	**Atul Sinha**
Member	

Message from President 2013-2014 Dr. Chandeshwar Sharma



Dear friends,

I am delighted to share my gratitude with all of you. First of all, I would like to thank my executive team members such as Mr. Santosh Jha (Vice-President), Dr. Santosh Verma (Treasurer), Mrs. Geetika Kamal (Secretary), Mr. Atul Sinha (Member), Mr. Sunil Sinha (Member) and Mr. Subodh Santhalia (Member) for their tireless efforts to conduct all activities so smoothly. My special thanks

to Mr. Rakesh Sinha whose dedication is always instrumental in conducting successful Academic Event and organizing all stage shows.

I will like to take you down the memory lane of my tenure during the years of 2013-2014. Every tenure leaves its own legacy behind and so did mine. To be honest, I became the BANA President on my own persistence. I wanted to do a great cultural show with BANA members. I wrote, I directed and many acted a grand stage show, “Aisi Thi Amrapali”. The cultural evening was witnessed by all BANA families and many children and adults participated in our signature play. It became a milestone event in the BANA history. So many memories of this play are embedded in our minds. Before the grandeur of Amrapali, we had also performed many plays such as “Loha Singh in Bandhan Toote Na”, “Hum Tum aur Kutte ki Dum”, “Gandhi Chori” and “Bhoole Bisare Rastey”, but Amrapali was a solo performance that brought all BANA acts together. All success credits go to all the participants and their families who changed their lives and schedules around for weeks to accommodate our lengthy rehearsals. Hon’ble Consul General of India-Houston Mr. P Harish also witnessed this performance as Chief Guest of the evening.

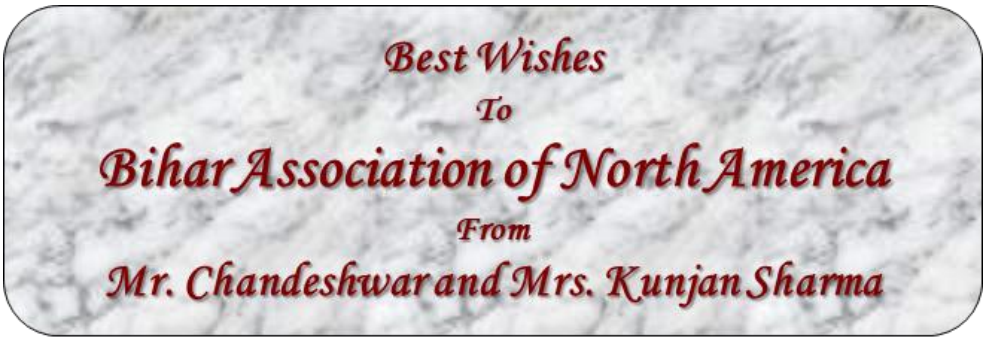
In addition to the stage performance we also organized picnics in a different way. We cooked Chhole and Puri during our spring picnic event on 27th of April, 2013. It will not be out of place to mention that it was my wedding anniversary and my wife, Mrs. Kunjan Sharma took the lead in cooking and serving the food to all participating members. Our picnic was a success because of the constant support we received from all BANA members. It was such a great feeling to celebrate our anniversary with all of BANA. The following year, we cooked Litti-Chokha during our picnic. Every tenure since my time at BANA has done a wonderful job of bringing all of us together in form of cultural shows and activity filled picnics.

BANA is a big family and all BANA events are celebrated as family events. That’s why we have been successfully running this organization for last 25 years. Last but not the least, I would like to thank all BANA members whose active support enabled me and my team to conduct all regular and special events of BANA during my tenure. Now we are celebrating BANA’s Silver Jubilee year. Let’s come together and make this year a memorable one.

Wishing you a great time ahead

Chandeshwar Sharma

BANA President 2013-2014



BANA Account Statement – 2017

Nazish Hoda (Treasurer)

Balance Transfer (Jan, 2017)		**$24,397.69**
Expenses during 2017		**$ 9,633.65**
2016 Expense	$ 433.55	
Spring Picnic	$2,467.23	
Academic Event	$3,786.96	
Camping	$ 250.00	
Cultural Fest	$ 500.00	
Gala Night (not final)	$ 75.00	
Web Hosting Fees	$ 731.68	
Event Insurance	$ 280.06	
Miscellaneous	$ 109.17	
Donation to SEWA	$1,000.00	
Income during 2017		**$13,037.98**
Annual Membership Fees	$8,853.00	
Sponsorship	$1,000.00	
Spring Picnic	$ 95.00	
Academic Event Registration	$2,695.98	
Academic Event (Food, T-shirts, other)	$ 394.00	
Current Balance		**$27,802.02**

BANA Account Statement – 2015-2016

Atul Sinha (Treasurer)

Account Statement for 2016

Balance Transfer (as of Jan, 2016)	**$21,074.82**
Expenses during 2016	**$17,541.13**
Spring Picnic	$ 2,433.00
Academic Event	$ 4,019.00
Cultural Fest	$ 6,945.00
Camping	$ 3,778.00
Miscellaneous	$ 366.13
Income during 2016	**$20,864.00**
Annual Membership Fees	$11,007.00
Sponsorship	$ 5,063.00
Academic Event Registration	$ 3,669.00
Cultural Fest	$ 875.00
Gala Night	$ 250.00
Ending Balance	**$24,397.69**

Account Statement for 2015

Balance Transfer (as of Jan, 2015)	**$21,800.82**
Expenses during 2015	**$15,383.00**
Spring Picnic	$1,921.00
Academic Event	$3,448.00
Cultural Fest	$6,185.00
Gala Night	$2,582.00
Miscellaneous	$1,247.00
Income during 2015	**$14,657.00**
Annual Membership Fees	$9,402.00
Sponsorship	$2,150.00
Cultural Fest	$ 410.00
Academic Event Registration	$2,445.00
Miscellaneous	$ 250.00
Ending Balance	**$21,074.82**

BANA Account Statement – 2013-2014

Santosh Verma (Treasurer)

Account Statement for 2014

Balance Transfer (as of Jan, 2014)	**$22,017.05**
Expenses during 2014	**$13,641.23**
Spring Picnic	$1,836.09
Academic Event	$3,833.64
Cultural Fest	$4,065.44
Camping	$1,288.00
Miscellaneous	$ 756.13
Non-profit status	$1,861.93
Income during 2014	**$13,425.00**
Annual Membership Fees	$9,500.00
Sponsorship	$2,425.00
Academic Event Registration	$1,500.00
Ending Balance	**$21,800.82**

Account Statement for 2013

Balance Transfer (as of Jan, 2013)	**$20,990.76**
Expenses during 2013	**$12,562.71**
Spring Picnic	$1,860.06
Academic Event	$3,276.69
Cultural Fest	$5,253.78
Gala Night	$1,130.06
Miscellaneous	$1,042.12
Income during 2013	**$13,589.00**
Annual Membership Fees	$9,901.00
Sponsorship	$ 501.00
Cultural Fest	$ 505.00
Academic Event Registration	$2,100.00
Miscellaneous	$ 582.00
Ending Balance	**$22,017.05**

जय बिहार

Bijay Choudhary

बिहार, एक इकलौता राज्य जिसके नाम से हमारे देश का नाम बनता है ...
B - भारत, Bharat; I - इंडिया, India; H - हिन्दुतान, Hindustan; A - आर्यावर्त, Aryavart; R - रिवा, Riva, ये इंडिया का बहुत पुराना नाम है

जय बिहार जय बिहार

बिहार - जिसने देश को पहला राष्ट्रपति दिया
बिहार - जहाँ सबसे पहले महाजनपद बना अर्थात विश्व का पहला लोकतंत्र
बिहार - जहाँ भगवान राम की पत्नी सीता का जन्म हुआ
बिहार - जहाँ महाभारत के दानवीर कर्ण का जन्म हुआ
बिहार - जहाँ भगवान् महावीर का जन्म हुआ, बुद्ध और महावीर को ज्ञान मिला
बिहार - जहाँ सिखों के दसवें गुरु गोविंद सिंह जी का जन्म हुआ
बिहार - जहाँ के राजा चन्द्रगुप्त मौर्य से लड़ने की हिम्मत सिकंदर को भी नही हुई
बिहार - जहाँ के राजा महान अशोक ने अरब तक हिंदुस्तान का पताका फहराया और उसका स्तम्भ आज देश का राष्ट्रीय चिन्ह है
बिहार - जो गांधी जी का पहला प्रेरणादायक स्रोत बना जिसने आज़ादी की आधारशिला रखी (चंपारण)
बिहार - जहाँ राजा जरासंध, पाणिनि (जिसने संस्कृत व्याकरण लिखा), आर्यभट्ट जिन्होंने शून्य, दशमलव और सूर्य सिद्धांत दिया, चाणक्य (महान अर्थशास्त्री), रहीम, कबीर का जन्म हुआ
बिहार - जहाँ के नंदवंश से लड़ने की हिम्मत सिकंदर की भी नही हुई और बिना लड़े विश्वविजेता डर कर भाग गया
बिहार - जहाँ के 80 साल के बूढ़े ने 1857 के क्रांति में दो बार अंग्रेजों को हराया, अंग्रेजो के दांत खट्टे कर दिए (बाबु वीर कुंवर सिंह)
बिहार - जहाँ भिखारी ठाकुर (विदेशिया) का जन्म हुआ
बिहार - जहाँ शारदा सिन्हा जैसी महान भोजपुरी गायिका का जन्म हुआ
बिहार - जहाँ स्वामी सहजानंद सरस्वती, राम शरण शर्मा, राज कमल झा, विद्यापति, रामधारी सिंह दिनकर, रामवृक्ष बेनीपुरी, फणीश्वर नाथ रेणु, देवकी नंदन खत्री, इन्द्रदीप सिन्हा, राम करण शर्मा, महामहोपाध्याय पंडित राम अवतार शर्मा, नलिन विलोचन शर्मा, गंगानाथ झा, ताबिश खैर, कलानाथ मिश्र, आचार्य रामलोचन सरन, गोपाल सिंह नेपाली, बिनोद बिहारी वर्मा, आचार्य रामेश्वर झा, राघव शरण शर्मा, नागार्जुन आचार्य जानकी बल्लभ शाश्त्री जैसे महान लेखको का जन्म हुआ
बिहार - जहाँ बिस्मिल्लाह खान का जन्म हुआ
बिहार - जहाँ दशरथ मांझी जैसा Mountain Man का जन्म हुआ
बिहार - जहाँ एक साधारण शिक्षक SUPER 30 जैसा निःशुल्क कोचिंग बिना किसी सहायता के चलाकर गरीब बच्चों को IIT में दाखिला दिलाता है

जय मातृभूमि, जय बिहार !!

** Mr. Bijay Choudhary is a senior member of BANA. This article originally appeared on WhatApps by Anonymous.*

Please visit our interactive website!

www.biharassociation.net

Be a member of BANA and enjoy all our events.

Academic Fest

BANA organized the Annual BANA Academic Fest. This event has become well known in the Houston Community and has also drawn a large attendance. It is one of the best-organized events.

Biharika

Biharika is the magazine of the people of BANA and represents their thoughts on diverse culture of Bihar, golden heritage of Bihar, current social issues and various articles on current events.

Cultural Event

It's cheerful fun time in BANA, showcasing Indian music, culture and tradition.

Picnic

(BANA Membership form is available online please visit www.biharassociation.net

BANA Chapters in North America

Georgia Chapter	Dallas Chapter
Arun Misra - President 5005 Johns Creek Court Alpharetta, GA 30022 USA 770-449-1796	**Gopal Sahu - President** 601 Oakmont Lane North Fort Worth, TX 76112 USA 817-457-6515
Pennsylvania Chapter	**Kentucky Chapter**
V R P Sinha - President 10514 Forrest Hill Drive Wexford, PA 15090 USA 412-367-2030	**Nilesh Sharma - President** 2719 Utah Drive Bowling Green, KY 42104 USA 270-393-0255

Renu Eye & Maternity Centre

Address: 1 - North SK Puri, Boring Road, near AN College, Patna, Bihar 800013, India
Hours: Monday – Saturday: 10 AM – 9 PM. Closed Sunday.
Phone: +91 612 257 5096, +91 933 431 5416
Clinic/Hospital – Direct: +91 612 257 0166

About Dr. Pranav Ranjan

Dr. Pranav Ranjan is an experienced Eye Surgeon in Patna, with nearly 25 years of practice as an Ophthalmologist, since 1991.

He is Consultant and HOD at Renu Eye Centre, located in the North Sri Krishna Puri area of the city. He is also a Visiting Consultant at Kurji Holy Family Hospital in Kurji, Patna.

With a Master's degree in Ophthalmic Surgery (MS), Dr. Pranav Ranjan is a specialist in cataract surgery with the latest MICS (micro-incision) system, and multifocal, toric, accommodative lenses. His other areas of specialty includes glaucoma and Lasik.

Dr. Ranjan has completed fellowships in IOL microsurgery at Aravind Eye Hospital in Madurai, and in contact lens at the Contact Lens Institute of India in Aligarh. He also underwent phaco-emulsification training at LV Prasad Eye Institute in Hyderabad.

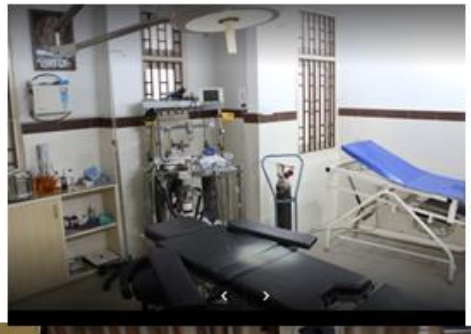
Dr. Pranav Ranjan's Specialization

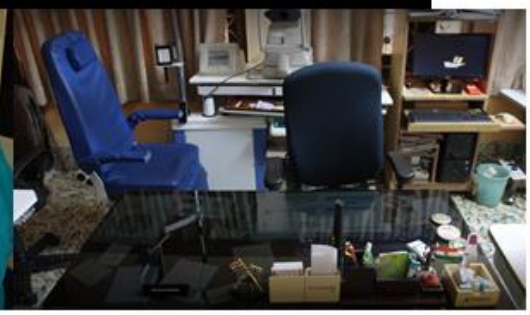
- Cataract
- Glaucoma
- Refractive Surgery
- Contact Lens
- Macular Degeneration
- Conjunctivitis
- Diabetic Retinopathy
- Endopthalmitis
- Hypertensive Retinopathy
- Refractive Errors
- Stye
- Uveitis

About Dr. Nibha Mohan

Dr. Nibha Mohan MBBS, MS, FICOG is an experienced obstetrician and gynecologist with over twenty five years of clinical experience. She specializes in infertility and complex surgical procedures. Currently she is working in Patna Medical College and Renu Maternity Centre. She also treats female patients for various ailments such as Uterine Fibroids or Myomas, Ovarian Cysts, Endometriosis, Pelvic Organ Prolapse, Urinary Problems, Sub-fertility, Menopause, Gynecological Cancers, Abnormal Pap Smears, etc.

One of the leading gynecologists of the city, Dr. Nibha Mohan has gained a loyal clientele over the past few years and is also frequently visited by several celebrities, aspiring models and international patients. The efficiency, dedication, precision and compassion offered at the clinic ensure that the patient's well-being, comfort and needs are kept at top priority. The clinic is equipped with latest equipment and boasts highly advanced surgical instruments that help in undergoing meticulous surgeries or procedures.





Astha Vikas Trust

Madhubani Mithila Painting

Astha Vikash Trust, Astha Hospital
Benipatti, Dist - Madhubani, Bihar
PIN - 847223, India

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