



The Lakshmi Mittal and Family  
**SOUTH ASIA INSTITUTE**  
HARVARD UNIVERSITY

# 2023 Program for Scientificallly-Inspired Leadership (PSIL)

Telangana, India

Program Handbook





The Lakshmi Mittal and Family

**SOUTH ASIA INSTITUTE**

HARVARD UNIVERSITY

**The Program for Scientifically-Inspired Leadership (PSIL)** brings together three groups of students to create the PSIL community: Harvard undergraduates, Osmania university students, and high school students from BC welfare schools in Telangana. While high school students are developing leadership skills, Harvard undergraduates and Osmania Students are learning how to be effective teachers. By interacting with one another, all three groups gain a deeper understanding of teaching and learning as well as expand their worldviews as they share experiences with people from many different backgrounds. PSIL is structured with the scientific method as its central theme. This is because the scientific method ensures unbiased and objective investigations in the pursuit of knowledge. PSIL focuses on the scientific method rather than concepts one learns in science classes and applies this scientific method towards the development of soft skills critical for growth.

By no means is this a one-way transaction of ideas and thoughts. Through their interactions with you, PSIL instructors will hone their teaching skills and get an opportunity to immerse in and absorb the rich cultural heritage of Telangana.

PSIL '23 is enabled by a memorandum of understanding between **President and Fellows of Harvard College** and **BC welfare Government of Telangana**, and **Osmania University**.



## Program Director



**Dominic Mao** is the Assistant Director of Undergraduate Studies for two of Harvard's life science concentrations and a lecturer in the Department of Molecular and Cellular Biology at Harvard. He was born in Imphal, Manipur and lived there for 16 years after which he lived in Gujarat for about 10 years. Looking back at his journey, he remembers a handful of people who genuinely cared and steered him in the right direction. He loves photography and music (there is a special place in his heart for rock music!). He also loves to cook!

## Instructors



**Kate Condra** is a senior studying Human Developmental and Regenerative Biology with a secondary in Global Health and Health Policy and a citation in French. Originally from Asheville, North Carolina, she enjoys spending free time outdoor--hiking, biking, and skiing. At Harvard, she is a member of the women's varsity volleyball team and is a member of the Fishman lab, where she studies the cardiac nervous system. She also mentors first year students as a peer advising fellow. Passionate about teaching, she is a member of Pre-College Research Institute, where she serves as a biology instructor.



**Jaylen Cocklin** is a sophomore (second year) studying History and Literature with a focus on American Studies. He is from Columbia, South Carolina. As an undergraduate research partner at the Radcliffe Institute for Advanced Study at Harvard University, he investigates the use of the abolition movement to mask the imperialistic motives of European nations in West Africa. Jaylen is also involved in the Harvard Political Review, the Harvard Undergraduate Legal Committee, and the Harvard Student Labor Action Movement. He also volunteers at the local homeless shelter and at local elementary schools where he tutors, mentors, and teaches kids how to play basketball. In his free time, Jaylen enjoys writing poetry, playing basketball, and watching movies.



**PK Vincze** is a sophomore (second year) studying Molecular and Cellular Biology. She is originally from the snowy mountains of Colorado. At Harvard, she helps teach first year students in an introductory life science course, is a member of the varsity rugby team, and a member of the undergraduate women in Medicine. Her interests include biological research and drug development, and she is a certified Emergency Medical Technician. She has also tutored students at the middle and high school levels to grow their math and science knowledge. Outside of academics, she trains with the USA Rugby national team. In her free time, she loves to spend time with her dog outdoors, skiing, and being with family + friends.



## Instructors



**Shefali Prakash** is a sophomore (second-year) at Harvard studying Applied Mathematics, Economics, and Computer Science. She is from Phoenix, Arizona, though her family is originally from India. At Harvard, Shefali is involved with the startup and entrepreneurship ecosystem. She helps run Harvard Ventures and is a member of Harvard Undergraduate Capital Partners. In addition to her interests in startups, she is passionate about education equity and has spent countless hours teaching and tutoring. On campus, she is a tutor for First Gen Investors, and works to bridge the financial literacy gap. In her free time, she loves reading, spending time with her friends, and playing tennis.



**Sarah Ramberran** is a junior (third year) studying Government, Comparative Religion, and Global Health and Health Policy. She is from Newark, New Jersey. At Harvard, she conducted research at the Harvard Kennedy School on the political implications of cultural institutions. She interns for the Harvard Law Review and helps teach an introductory data science class. She is the director for Ghungroo, the largest student run production at Harvard that showcases South Asian art and culture. In her free time, she loves watching movies, drinking tea, and finding new flavors of ice cream.

## Instructor Fellows



**Satya Aravind Pandavula** is a senior (fourth year) at Osmania University studying Electrical Engineering. He has been awarded the Prerana Student of the Year 2022 award for his accomplishments. He constantly strives to explore and enjoys learning new things through hands-on experience. In addition to his studies, He is an active leader in several organizations on campus, including YOUVA, a government NGO run by students and Xplore OUCE, a broadcasting club that he founded and he is also the president of the Industrial Engineering and Operations Management student chapter. Satya is an adventurous and outgoing individual with a diverse range of interests. He loves exploring outdoors, working out, cooking, photography and enjoying great food and laughs with his family and friends. He is a well-rounded individual with a strong commitment to both his academic pursuits and community.



**Siliveru Laxmi Tanuja** is a fourth year Bachelor of Arts- Bachelor of Legislative Law (BA LLB) student at University College of Law, Osmania University. Apart from academics Tanuja loves reading books, articles and watching news. She loves teaching, especially social sciences. Occasionally, she gives tuitions to school students. She loves asking questions and listening to different narratives. Especially, she loves listening to oral histories. She has the courage to speak truth to the power. She believes in critical thinking and an advocate of the same. She encourages others to read, especially the marginalized and always voices her support to the underprivileged and suppressed classes. She is an open minded person who is always ready to learn and also unlearn things, if they aren't supported by reason. Yes, she is a rationalist!



## Instructor Fellows



**Meghana Dhanraj More** is a second year student in University College Of Law (ou) Studying Ballb. She completed her schooling from AFS KV HAKIMPET in commerce, is very passionate about singing and in her free time loves to watch movies, do cycling, and listen to music and write poems. She wants to explore new places and meet new people. She is interested in law and her goal is to contribute to society in some or other way.



**Gaali Gaurav Krishna** is a curious and ambitious student, pursuing degrees in Electrical Engineering (Senior) at Osmania University and Programming and Data Science (Sophomore) at IIT Madras (POD). As the chair of the campus's IEEE student chapter, he brings together like-minded individuals to explore and learn about the latest developments in the field. He is currently working on a variety of research papers with his fellows and college faculty. Last year his team won the National 1st prize for in a hybrid electric vehicle design competition. In addition to his love for science and technology, he is an ardent football fan and enjoys watching and talking about the sport. He can be found at the movies when he's not hitting the books or cycling across the city trails or programming. He loves travelling to experience cultures. He believes that being open to new experiences and perspectives is key to personal and professional growth, and he is always looking for ways to make a meaningful and lasting impact. He believes that entrepreneurship is one of the most effective ways to do so. He is constantly seeking out new ideas and opportunities to turn his passions into successful businesses that can make a difference.



**Neha Surampalli** is a senior (fourth year) at Osmania University studying Electrical Engineering. She has an ongoing project and research on Photovoltaic systems. Besides studies, she is highly involved in a variety of activities on campus. She serves as the Chair of the Women in Engineering club, which works to promote diversity and inclusivity in the field of engineering. She is also the secretary for IEEE, and Director of operations for IEOM Student branches. Outside of school, she is the vice president of Street Cause PAW, an animal welfare organization where she devotes major chunk of her time, for the well-being of strays. She serves as a pet adoption counselor, and raises awareness about animal issues through drives in schools. She loves learning and exploring new things, and is always looking for new opportunities to grow and challenge herself. In free time, she enjoys music and reading books. She believes everyone is given a little spark of madness, and they mustn't lose it !



## Osmania Faculty (PSIL Residential Administrators)



**Dr. Chalamalla Venkateshwarlu** is an assistant professor in the Department of Political Science at the University College of Arts and Sciences, Osmania University. He obtained his Ph.D. degree from Dept of Political Science, Osmania University and Post Doctoral Fellow (PDF) from the Indian Council of Social Science Research (ICSSR), New Delhi. He is also working as the Executive Editor for The Indian Journal of Social Sciences Research (IJSSR), and is the founder of the Hyderabad Institute of Social Sciences (HISS). He is guiding 8 M. Phil Scholars and 10 Ph.D Scholars. He is the Subject Coordinator in Political Science at the Centre for Distance Education (CDE) at OU, Executive Member (EC) of the Cooperative Credit Society of OU and a member of a number of committees in research and development organizations in OU.



**Dr. Syeda Azeem Unnisa** is an Assistant Professor in the Department of Environmental Science and is the director of Minorities Cell in Osmania University. She holds a M.Sc. and Ph.D in Environmental Science and Technology from Jawaharlal Nehru Technological University Hyderabad (JNTUH). She has 20 years of experience in teaching and research in the specialized area of water, wastewater, solid waste management and biodiversity. She is a diploma holder in Integrated Programme in Nanotechnology, NCTC.



**Dr. B. Mangu** is a Professor in the Department of Electrical Engineering at the University College of Engineering in Osmania University, Hyderabad. He received his B.E. and M.E. degrees from Osmania University and received his Ph.D degree in the Department of Electrical Engineering at IIT Bombay. His areas of interest include Renewable Energy Systems and Power Electronics. Prof. B. Mangu is the Principal Investigator for two research projects funded by DST-PURSE (Department of Science & Technology). He has delivered lectures on various power electronics related topics to the participants from academia and industry organized by NCPRE and SEMI India.



**Dr. Konda Nageswara Rao** is the director of the Dr. B.R. Ambedkar Research Center at Osmania University and teaches in the Department of English, Arts College, OU. He is the national secretary for the Association of English Studies of India (AESI). His research areas include Indian Writings, subaltern literature, Dalith Studies, Buddhism and Feminism. He is keenly interested in the studies related to caste and class dynamics in the country.



|          | 7-Jan                          | 8-Jan            | 9-Jan            | 10-Jan           | 11-Jan           | 12-Jan    |
|----------|--------------------------------|------------------|------------------|------------------|------------------|-----------|
|          | SATURDAY                       | SUNDAY           | MONDAY           | TUESDAY          | WEDNESDAY        | THURSDAY  |
| 8:00 AM  | Registration                   | Breakfast        |                  |                  |                  |           |
| 8:30 AM  |                                |                  |                  |                  |                  |           |
| 9:00 AM  | Opening ceremony               | Lecture 2        | Lab 3            | Instructor panel | Prep             | Farewells |
| 9:30 AM  |                                |                  |                  |                  |                  |           |
| 10:00 AM | Sectioning icebreakers         | Lab 2            | Lecture 4        | Lecture 5        | Capstone         |           |
| 10:30 AM |                                |                  |                  |                  |                  |           |
| 11:00 AM | Lecture 1                      |                  |                  | Talk 4           |                  |           |
| 11:30 AM |                                |                  |                  |                  |                  |           |
| 12:00 PM | Lunch                          |                  |                  |                  |                  |           |
| 12:30 PM |                                |                  |                  |                  |                  |           |
| 1:00 PM  | Lab 1                          | Talk 2           | Lab 4            | Lab 5            | Talent show prep |           |
| 1:30 PM  |                                | Lecture 3        |                  |                  |                  |           |
| 2:00 PM  |                                | Extracurriculars | Talk 3           | Talk 5           | Talent show      |           |
| 2:30 PM  |                                |                  |                  |                  |                  |           |
| 3:00 PM  | Talk 1                         |                  |                  |                  |                  |           |
| 3:30 PM  | Tea Break                      |                  |                  |                  |                  |           |
| 4:00 PM  | Extracurriculars               | Extracurriculars | Extracurriculars | Extracurricular  | Tea Break        |           |
| 4:30 PM  |                                |                  |                  |                  |                  |           |
| 5:00 PM  | Office hours                   |                  |                  |                  | Social gathering |           |
| 5:30 PM  |                                |                  |                  |                  |                  |           |
| 6:00 PM  | Prep time                      |                  |                  |                  |                  |           |
| 6:30 PM  |                                |                  |                  |                  |                  |           |
| 7:00 PM  | Dinner                         |                  |                  |                  |                  |           |
| 7:30 PM  |                                |                  |                  |                  |                  |           |
| 8:00 PM  | Students retire to their dorms |                  |                  |                  |                  |           |



## **Scientific Racism, Jaylen Cocklin**

What is Scientific Racism? In this lecture, we'll explore the history of scientific racism. Students will learn about how scientists in the past have co-opted the authority of science as objective knowledge to justify racial inequality. The lecture breaks down the history of scientific racism starting from the Atlantic Slave Trade and the Age of Enlightenment to today. Overall, this lecture will give students a better understanding of implicit bias when conducting scientific research.

## **The Art of Communication, Kate Condra**

Have you ever heard a great speech and thought wow that person is really gifted? Well, turns out it's not a gift, it's a skill that you must learn and work at. Communicating your ideas can be difficult, not to mention intimidating, but with a few tips and a practice, anyone can master the art of communication. Today, communication skills are necessary for whatever career you go into. Whether it's medicine, computer science, journalism, or more, clearly communicating your thoughts and goals are essential to success. Furthermore, great communication forges relationships with those around you and expands the boundaries of information and knowledge. In this brief class, we will explore what makes a great speech--and what makes a not-so-great speech-- to prepare you for eventually telling your own story. We will learn that although it can be scary, public speaking and communication is powerful in today's world.

## **It Starts With an Observation, PK Vincze**

This lecture will introduce students to the key fundamentals of the scientific method, provoking the idea that we must first ask the question: "why?". We will focus on asking thought provoking questions that have really driven scientific discovery within history and even our daily lives. At its core, science is about starting with an initial observation and question, and how we choose to further investigate it. The lecture will draw from a variety of well-known scientific achievements and experiments to allow students to gain a practical understanding of how we use science in everyday life. Students will be able to work hands-on with one of the most useful pieces of scientific technology to make their own discoveries beyond just what is normally expected.

## **The Essentials of Entrepreneurship, Shefali Prakash**

Elon Musk, Bill Gates, Dhirubhai Ambani, and Narayan Murthy. What do all these names have in common? They are all some of the world's greatest entrepreneurs who have changed the course of history. But what even is entrepreneurship? Entrepreneurship is the key force of innovation that brings about societal progress. Everyone has it in them to be an entrepreneur, because entrepreneurship is just a problem-solving mindset. It is simply a way of thinking. It is not only recognizing that problems exist in the world, but it is a way of seeing solutions that others may not have. This lecture will introduce students to the fundamentals of entrepreneurship and seeks to inspire students to adopt an innovative mindset when addressing the problems around them.

## **Cinema and Social Change, Sarah Ramberran**

Cinema's importance on our lives and our society is indisputable. The impact of films should not just be constrained to the glitz and glamor that the industry presents. Whether it be a romantic comedy, a thriller, or sci-fi, films inevitably influence society's fashion, perspectives, and culture. Rather, we will look at the multifaceted impact of films and explore societal critiques that can be found even in the most simple forms of cinema. We will discuss how cinema can be a gateway for social change and how a simple idea can evolve into a project that takes a team and influences the world. This lecture will allow students to reevaluate how they watch films and observe the changes in the film industries through time, including the prevalence of nepotism. Students will be able to more clearly articulate not only film summaries, but their larger socio-political commentary, and perhaps also consider what could have been done better to leave a more lasting impact on the audience.



## **Intro to Volleyball**, Kate Condra

As a member of the volleyball team at Harvard, the sport is a huge part of my life that I am excited to share with you all! This extracurricular will serve as a brief introduction to the game and will allow you to practice some fundamental skills. We will also play some fun games that require teamwork and competition.

## **Play the Referee: Rugby!**, PK Vincze

One of the fastest growing team sports across the globe, rugby culture is based upon teamwork and the idea that every individual is needed in order to accomplish a goal. Members will be encouraged to break "outside the box" in creative drills, team building exercises, and friendly games to build friendships with fellow members and become better leaders. Rugby is a game for everyone that can allow students an opportunity to get outside the classroom and exercise while also having fun !

## **Come Dance With Me!**, Sarah Ramberran

Schoolwork is important, but so is your ability to express yourself, relax, and laugh. In this extracurricular, you will let loose and choreograph a short dance in a small team. This may be new, but you will learn to work together with others and uncover hidden dancing skills. You have the unique opportunity to choose songs and your only task is to have fun with your peers. You will get a chance to walk away with more dance experience, confidence, team-working abilities, and prepare a performance for the talent show!

## **Self-Defense and the Art of Karate**, Shefali Prakash

Self-defense is such an important part of every person's life. By knowing the basics of martial arts, you will be able to defend yourself and others during crucial moments. Beyond just being able to protect yourself, knowing karate helps you stay physically fit and emotionally alert, and also boosts your self-esteem and confidence. Join us in learning the art of self-defense!

## **The Art of Debating**, Jaylen Cocklin

The ability to debate - to present persuasive arguments, undermine the logic of others, and turn the tables against withering cross-examinations - is one of the truest tests of one's intellectual capacity. Learning how to debate effectively will help students in all aspects of their daily life. This extracurricular will teach students how to debate and how they can apply it to their daily lives. Students will also get a chance to debate in teams with each other.



The Lakshmi Mittal and Family  
**SOUTH ASIA INSTITUTE**  
HARVARD UNIVERSITY

# NOTES



The Lakshmi Mittal and Family  
**SOUTH ASIA INSTITUTE**  
HARVARD UNIVERSITY

# NOTES



The Lakshmi Mittal and Family  
**SOUTH ASIA INSTITUTE**  
HARVARD UNIVERSITY

# NOTES