



## **BIOTECHNOLOGY COOPERATION FOR THE U.S.-INDIA INITIATIVE ON CRITICAL AND EMERGING TECHNOLOGY (iCET) WORKSHOP SERIES**

### **VIRTUAL WORKSHOP 1**

**Maximizing the Potential for Bilateral Collaboration:  
Opportunities for Biotechnology Cooperation**

**August 28, 2024**

**10:00 am –12:30 pm EST**

**7:30 – 10:00 pm IST**

The U.S. National Academies of Sciences, Engineering, and Medicine (NASEM), together with the Indian National Science Academy (INSA), will convene experts from both countries for two virtual workshops and one in-person workshop.

### **Workshop Goals and Objectives**

The primary goal of this workshop series is to identify short-, medium-, and long-term opportunities for U.S.- India biotechnology cooperation consistent with the initiative on Critical and Emerging Technology (iCET) and beyond.

To accomplish this goal, workshop participants will discuss areas particularly well suited for bilateral biotechnology cooperation. For example, genomics, synthetic biology, biomanufacturing, protection of critical biotechnology data and information, knowledge exchange on relevant safety and security practices, toward developing efficient, effective, and harmonized regulatory approaches across a diversity of relevant sectors will be among the areas considered for enhanced cooperation.

Following these discussions, a peer-reviewed workshop proceedings will be published and available online free of charge.

**WEDNESDAY, AUGUST 28, 2024**

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**10:00 am EST  
7:30 pm IST**

**Welcome and Opening Remarks**

Dr. Rita Guenther  
Senior Program Officer (Project Lead)  
*U.S. National Academies of Sciences, Engineering, and Medicine*

Dr. Narinder Mehra  
Vice President for International Affairs  
*Indian National Science Academy*

**10:05 am EST  
7:45 pm IST**

**Introduction and Workshop Objectives**

Dr. Michele Garfinkel (Workshop Series Planning Committee Co-Chair)  
*Independent Researcher*

Dr. Pawan Dhar (Workshop Series Planning Committee Co-Chair)  
*CVJ Centre for Synthetic Biology & Biomanufacturing*  
*Co-Founder and Director*  
*East West Protection, LLC*

**10:15 am EST  
7:45 pm IST**

**India and U.S. Government Priorities for Biotechnology Collaboration**

**Session Goals**

- Understand key Indian and U.S. priorities for biotechnology cooperation.
- Identify current and potential opportunities for enhancing U.S.-India biotechnology cooperation.
- Identify challenges to biotechnology cooperation and means of overcoming them.

**Discussion Questions**

1. What lessons can be learned from existing cooperative biotechnology efforts?
2. What are the existing and anticipated challenges to biotechnology cooperation, and how can these challenges be addressed?
3. What strategies can be employed to strengthen and enhance biotechnology cooperation?

**Session Moderator**

Dr. Harshini Mukundan (Workshop Series Planning Committee Member)  
*Lead, Chemical and Biological Technologies*  
*Office of National and Homeland Security*  
*Scientist, Biological Sciences Directorate*  
*Lawrence Berkeley National Laboratory*  
*Visiting Scientist, Los Alamos National Laboratory*  
*Adjunct Professor, University of New Mexico*

## **U.S.-India Strategic Partnership: Strategic Focus on Biotechnology Cooperation**

Dr. Shankar Sundaram  
*Special Assistant to the U.S. President*  
*Senior Director for Global Health Security and Biodefense*  
*National Security Council, White House*

## **Challenges in Indian-U.S. Collaboration in Critical and Emerging Biotechnologies**

Dr. Sanjay Mishra  
*Senior Advisor*  
*Department of Biotechnology*  
*Ministry of Science and Technology*  
*Government of India*

**10:45 am EST**  
**8:15 pm IST**

### **Discussion**

**10:55 am EST**  
**8:25 pm IST**

## **U.S.-India initiative on Critical and Emerging Technology (iCET)**

### **Session Goals**

- Provide an overview of the origin, goals, and accomplishments of iCET to date.
- Discuss U.S. and Indian government priorities for biotechnology under the iCET framework.
- Identify high-level objectives for biotechnology cooperation between the United States and India under iCET.

### **Discussion Questions**

1. How might the successes of iCET to date in other areas inform biotechnology cooperation?
2. What are the most promising areas for biotechnology cooperation, and what steps are needed to realize their potential?
3. Which areas of biotechnology cooperation are most elusive and how might these challenges be overcome?

### **iCET: A View from New Delhi**

*Representative from India*

### **iCET: A View from Washington**

Mr. Rhys Dubin (Confirmed)  
*Policy Advisor*  
*Office of the Special Envoy for Critical and Emerging Technology*  
*U.S. Department of State*

**11:25 am EST**  
**8:55 pm IST**

### **Discussion**

**11:35 am EST**  
**9:05 pm IST**

## **Initial Reflections on Priorities for Biotechnology Cooperation**

### **Session Goals**

- Synthesize understanding of existing policy frameworks through which U.S.-India biotechnology cooperation can be strengthened.
- Identify initial areas ripe for enhanced U.S.-India biotechnology cooperation.
- Identify possible challenges for U.S.-India biotechnology cooperation and potential means of addressing them.

### **Discussion Questions**

1. Which areas for U.S.-India biotechnology cooperation emerge as most promising in the short-, medium-, and long-term?
2. What are the most clearly identified possible challenges for U.S.-India biotechnology cooperation and how might they be most helpfully be addressed? By whom?
3. How might this discussion most effectively be continued during the in-person workshop?

### **Enhancing Success by Identifying and Overcoming Challenges to Biotechnology Cooperation: Framing Remarks**

Dr. Shambhavi Naik (Workshop Series Planning Committee Member)  
*Head of Research*  
*The Takshashila Institution*

### **Maximizing Critical and Emerging Biotechnology Cooperation**

Dr. Ramaswamy Subramanian (Workshop Series Planning Committee Member)  
*Professor*  
*Department of Biological Sciences*  
*Purdue University*

**11:55 am EST**  
**9:25 pm IST**

### **Discussion**

**12:05 pm EST**  
**9:35 pm IST**

### **Thematic Takeaways and Future Directions**

Dr. Michele Garfinkel (Workshop Series Planning Committee Co-Chair)  
*Independent Researcher*

Dr. Pawan Dhar (Workshop Series Planning Committee Co-Chair)  
*CVJ Centre for Synthetic Biology & Biomanufacturing*

**12:25 pm EST**  
**9:55 pm IST**

**Concluding Remarks and Next Steps**

Dr. Rita Guenther  
Senior Program Officer (Project Lead)  
*U.S. National Academies of Sciences, Engineering, and Medicine*

Dr. Narinder Mehra  
Vice President for International Affairs  
*Indian National Science Academy*

**12:30 EST**  
**10:00 pm IST**

**Adjourn**