



29th Annual **INCOSE**
international symposium

Orlando, FL, USA
July 20 - 25, 2019

Keynote Speaker

Prashant Dhawan

Co-Founder, Biomimicry India



Speaking Topic: **Biomimicry - A Bioinspired approach to Systems Thinking**

Biography. Prashant Dhawan is the Co-founder of the Biomimicry India Network. He holds a degree in MS (Master of Science) in Biomimicry from the Arizona State University, U.S.A and Biomimicry Professional Certification from Biomimicry 3.8, USA. He also holds a degree in Architecture from SPA Delhi, and an MBA from ISB Hyderabad.

Prashant has conducted Biomimicry workshops and talks in various forums and educational institutes which include IIT Gandhinagar, Centre for Environmental Planning and Technology University (CEPT University in Ahmadabad), NIT (Trichy), NID (Bangalore, Vijayawada & Kurukshetra), NIFT (Hyderabad & Delhi), Ahmedabad University, RVCA, BMSCE, BMSIT and Shristi school of Art, Design and Technology (Bangalore) amongst others. He has also conducted Biomimicry workshops for corporates and these include a full day workshop for senior executives of Mahindra & Mahindra (Mumbai) and Axis Bank.

Prashant prefers to call himself an amateur researcher of issues related to sustainable happiness.

Abstract. The systems that exist in living nature have evolved over a period of 3.8 billion years under operating conditions, limits and boundaries that apply to all that exists on our planet including the human species. If we look at nature's systems, for example an ancient forest, we find there is zero waste, zero pollution and nothing akin to a crisis of 'unemployment' in the billions of plant and animal species.

At the current time, humanity is grappling with problems of pollution, waste, endemic poverty, unemployment and an impending ecological disaster. It appears that these are unintended consequences and indicators that the human systems are far from perfect and misaligned to the ecological health of the planet. Evidence from living nature suggests that systems in nature are among the most time tested solutions that we can learn from and have a lot to offer in terms of ideas that can change our world for the better.

But how do we translate the systems and processes that work so well in living nature into usable solutions for our problems? Can and should everything in nature be mimicked?

And that is where biomimicry comes into the picture. The talk introduces 'Biomimicry' - a multidisciplinary and systems based approach, that helps us look at nature, not just as a source of raw materials, but as a source of ideas and solutions/advanced technologies. Biomimicry has now made available a formal structure and methodology to learn from nature. Biomimicry is relevant and applicable across sectors and at various scales, whether it be learning from additive zero waste manufacturing in nature, selforganisation, self-healing, self-assembly to urban scale systems/smart cities that mimic forest ecosystems.

The talk will also include a few examples and case studies of biomimicry based projects and design explorations from the workshops conducted by the speaker (in India).