



The Night Science Train-the-Trainer Summit

Led by Itai Yanai & Martin Lercher
together with Oliver Bogler, CEO of the Night Science Institute

Date: April 24th, 2026

Location: 115 Broadway 8th Floor New York, NY 10006

Agenda:

- Arrival & Breakfast (8:30-9:00)
- Part 1 (9:00-10:00)
An overview of the creative scientific process and the Night Science initiative
- BREAK (10:00-10:30)
Ice-breaker with coffee
- Part 2 (10:30-12:00)
Leading a Night Science session
- Lunch (12:00-13:00)
- Part 3 (13:00-15:30 with a 15 minute BREAK)
Six additional thinking tools covered in the Night Science Workshop
- Part 4 (15:30-17:00)
Personalizing and presenting the Night Science content
- Reception (17:00-18:00)

At the heart of every scientific discovery lies a creative process, yet this process is rarely taught to early-career researchers. While creativity was once considered an innate gift, recent studies suggest that creative thinking skills can be cultivated through training. Numerous studies have demonstrated the effectiveness of creativity training programs. Research has shown that well-designed creativity training programs focusing on cognitive processes like critical thinking and problem-solving produced significant improvements in creative performance. Experienced scientists gravitate to a set of common tools for creativity, including analogies, reframing scientific puzzles, and importing/exporting ideas and techniques across fields. However, very few universities currently formally teach science creativity, and a canonical process for the teaching of established tools is lacking.

To address this problem we have developed over the last 6 years a program that cultivates scientific creativity among early career researchers. To ensure broad and lasting impact, this 1-day Train-the-Trainer program now seeks to equip established scientists and educators across academia, research institutes, and industry with the tools to teach and sustain the creative scientific process within their own communities.

Learning Objectives

Through this Summit, participating researchers and education specialists will absorb the ethos and attitude of running a Night Science workshop. After the summit, they will be able to:

- **Explain the philosophy of the night science concept:**
The distinction and complementarity between Night Science (creative discovery) and Day Science (hypothesis testing), and situate this framework within the philosophy and practice of science.
- **Lead a complete Night Science Workshop:**
Implement the canonical structure of a Night Science Workshop, including framing, pacing, exercises, and reflective discussion.
- **Teach core Night Science thinking tools:**
Understand and convey the full set of Night Science tools.
- **Adapt Night Science content to diverse scientific domains:**
Personalize examples, metaphors, and anecdotes to different fields, institutional contexts, and trainee populations.
- **Develop original teaching materials:**
Produce a draft version of Night Science content in the participant's own voice, suitable for delivery in their home institution.
- **Join a distributed community of practice:**
Engage with shared resources and a network of trainers committed to disseminating Night Science and contributing to long-term cultural change in science.

Part 1

An overview of the creative scientific process and the Night Science initiative

This introductory session lays out the rationale and importance for teaching the creative process. Participants will receive an overview of the Night Science philosophy including the dichotomy in the scientific research process: (1) the creative process of hypothesis generation and discovery which we refer to as “night science” and (2) the executive hypothesis-testing process which we call “day science”. While Day Science logic and methods and the Night Science thinking requires spontaneity, and for this, there exists a set of simple guidelines, which are necessary to teach. In a nutshell night science thinking requires openness and improvisation, as we need a safe space, a sandbox for ideas. The Night Science thinking tools have been published by Itai Yanai and Martin Lercher in a series of **editorials**, discussed in the popular **Night Science Podcast**, and taught in **workshop** throughout the world. Together, participants will acquire the necessary background for understanding how to bring the teachings of the creative scientific process back to their academic or industry setting.



BREAK – Ice-breaker with coffee

Part 2

Leading a Night Science session

Each Night Science Workshop is organized into sessions, each of which describes and exercises a specific thinking tool employed in the creative scientific process. Each session follows a particular structure that allows participants to get into a rhythm of exploring a specific tool and working with it. The goal of this part of the Summit is to present a complete Workshop session in the way the participants will later teach it. This exemplary session will be on “Interdisciplinarity & Renaissance minds,” describing how disciplines and fields are historical constructions that represent just one way of clustering knowledge. The session also explores the ‘expert’s dilemma’ between disciplinary day science expertise and interdisciplinary Night Science creativity, which often involves the import or export of ideas and technologies across fields. This session is followed by an exercise on finding connections between fields, wherein first the instructors will demonstrate the exercise and then the participants will pair up and seek to find connections among their scientific ideas. Following this one-hour session, we will switch to a meta level to discuss the principles used to carry it out successfully.

Lunch

Part 3

Six additional thinking tools covered in the Night Science Workshop

The Night Science Workshop introduces seven thinking tools to its participants. One of these – improvisational creative discussions – is introduced in Part 1, while another one – Interdisciplinarity & Renaissance minds – is presented as a complete Workshop session in Part 2. In this part of the Summit, we cover the remaining five tools at the instructor level:

The two languages of science: Science reporting is precise. But the language of discovery is distinct, thriving on analogies, metaphors, and anthropomorphisms, exploiting intuitive powers that evolved in response to human social interactions.

What is the question: A crucial step in many discoveries is the invention or refocusing of a scientific question, and we explore ways in which questions may be formulated or rephrased to facilitate scientific progress.

The data-hypothesis conversation: The creative process thrives on an attitude that encourages exploration and speculation. Science relies on a back-and-forth between data and ideas, with the two corresponding modes of investigation overcoming each other’s limitations.

Contradictions and Perseverance: Contradictions are often perceived as nuisances; but embracing them counteracts our tendency for confirmation bias. We exercise how Night Science’s exploratory mode counteracts cognitive biases, opening the door to new insights able to profoundly alter the course of a project.



Science as a meta-puzzle: Science is puzzle-solving. Nature’s puzzles are different from human-devised puzzles in one crucial aspect: in an ongoing research project, you can never be sure what kind of puzzle you are in. We discuss how conscious ‘puzzle-switching’ boosts our scientific creativity.

Part 4

Personalizing and presenting the Night Science content

The goal of this session is for participants to develop a first draft of the Night Science material as they would present it in their own institutional context. Participants begin by reflecting individually on which elements of the Night Science framework resonate most strongly with their own scientific experiences and identifying anecdotes or examples they wish to incorporate. They then work in pairs to integrate these personal narratives with the core workshop material, refining both content and delivery. The workshop leaders circulate to provide targeted feedback and guidance. The session concludes with short participant presentations of their personalized approaches, followed by an introduction to an online community resource for sharing materials and supporting continued exchange.