

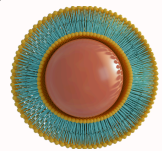


TEAM:

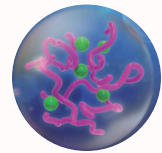
ORIGINS OF LIFE



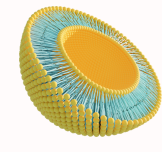
CONTENT



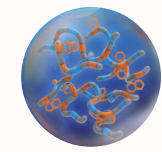
ABOUT BIYOGEN



ABOUT TOOL



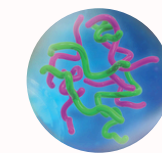
OUR TEAM MEMBERS



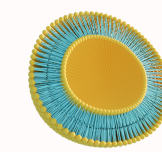
TEAM MENTOR - DR. DUHAN TOPARLAK



JOURNAL CLUB MEETINGS



BRUCE DAMER MEETING



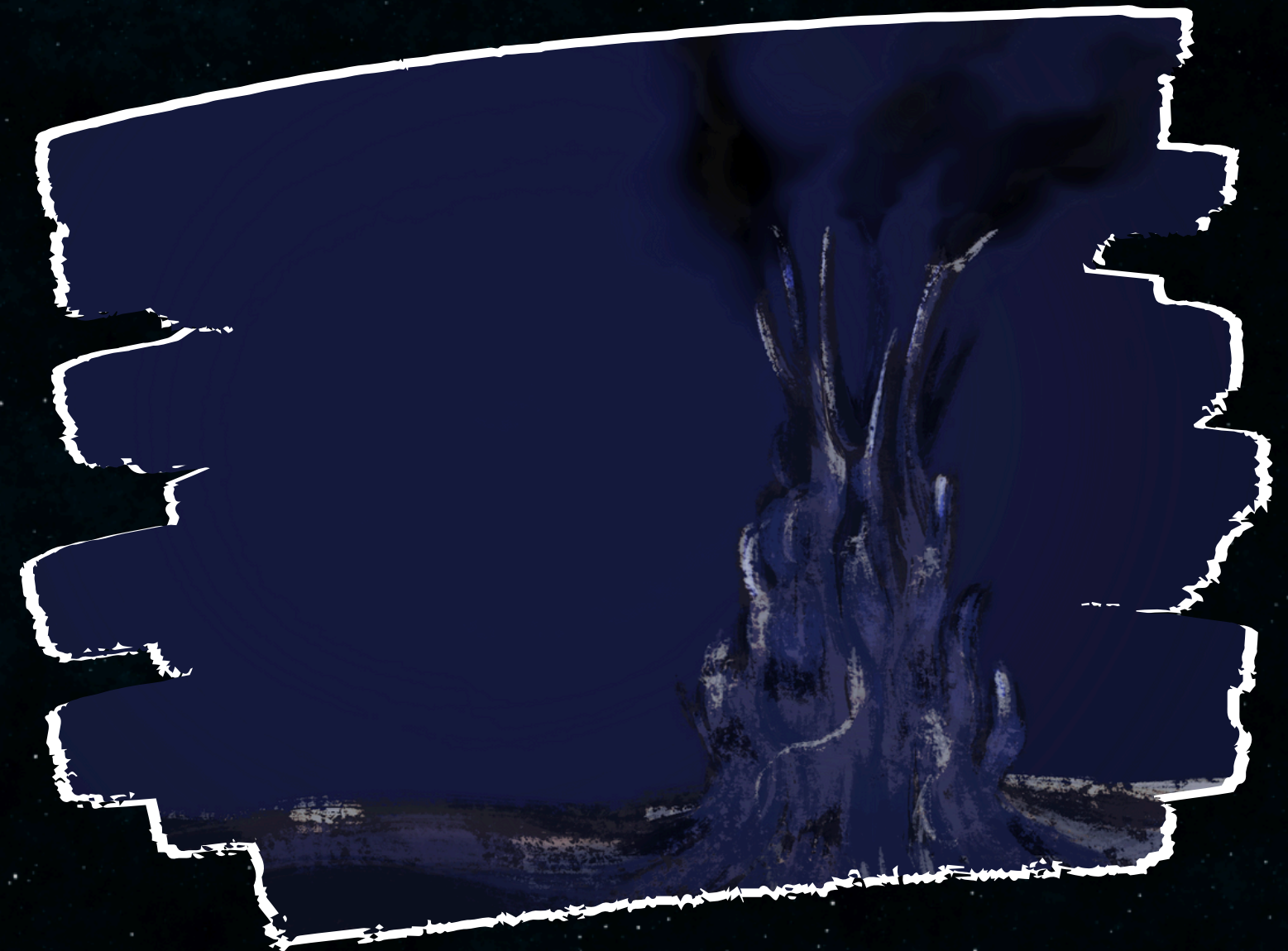
COMPETITIONS



ABOUT ASTROBIOLOGY AND THE ORIGINS
OF LIFE CONFERENCE



CONTACT



ABOUT BIYOGEN

Our club was established in 2016 under the name "Science and Genetics Society" within Yıldız Technical University. Since 2017, it has continued its activities under the name "Biotechnology and Genetics Club" (BIYOGEN). Since our establishment, we have been contributing by training competent and effective young individuals in the field of basic sciences, reflecting them to the industry, technology, and the public.



ABOUT TOOL

Our team operates within the Biotechnology and Genetics Club at Yıldız Technical University; a group of scientists, lecturers, and engineering candidates! Our goal is to conduct research on **the origin and evolution of life in the universe** while **examining life in a cosmic environment** alongside our teammates.



Simay Mercimek



Caner Karabaşoğlu



Beril Akgöl



Ayşenur Saytaş

OUR TEAM MEMBERS



Berfin Ezgi İlhan



Sudegöl Bekmezci



Özge Belgin Kutlu



Ahmet Kağan Korucu



Fazilet Doğa Yazıcı



Pamir Batu Kiray



Aysel Sağlam



Esin Üsküplü



Helin Aydemir



Ece Gezici



Taha Ammar Kalkan

TEAM MENTOR - DR. DUHAN TOPARLAK

Dr. Duhan Toparlak graduated from METU with a degree in Biology, developing an interest in synthetic and evolutionary biology. Awarded a Fulbright Scholarship, he earned a master's in Chemical Engineering at Rensselaer Polytechnic Institute, focusing on bioengineering. He completed his Ph.D. in Chemical Biology at the University of Trento under Prof. Sheref Mansy, collaborating with Nobel Laureate Prof. Jack Szostak at Harvard on prebiotic chemistry and the origins of life. After postdoctoral research at Yale, he joined the Bayley Group at the University of Oxford in 2022, supported by HFSP and Marie Curie Fellowships, working on functional nanopore, single-molecule chemistry, and catalysis.



JOURNAL CLUB MEETINGS

Coacervate-membrane interactions

Sun, et al., *Nat. Chem.* 2022

45



Team: Origins of Life Journal Club
Protein Sentezinin Kökenine ve Evrimine Moleküler Bakış

Evrin Fer
Doktora Öğrencisi - Kaçar Lab
University of Wisconsin-Madison
İletişim: fer@wisc.edu
15.10.2024



DR. TIEMEI LU

EVİRİM FER

Our weekly meetings involve presentations and discussions on current articles we read on various topics related to our field, such as **RNA World**, **Hydrothermal Vents**, **Protocell**, and **simulation studies**, under the observation of our mentor, **Dr. Duhan Toparlak**. We also have the opportunity to **invite renowned researchers** in the field to our meetings and listen to their work directly from them.

The Hot Spring Hypothesis

Progenot?
Stromatolite?

Simay

Duhan Toparlak

BRUCE DAMER MEETING



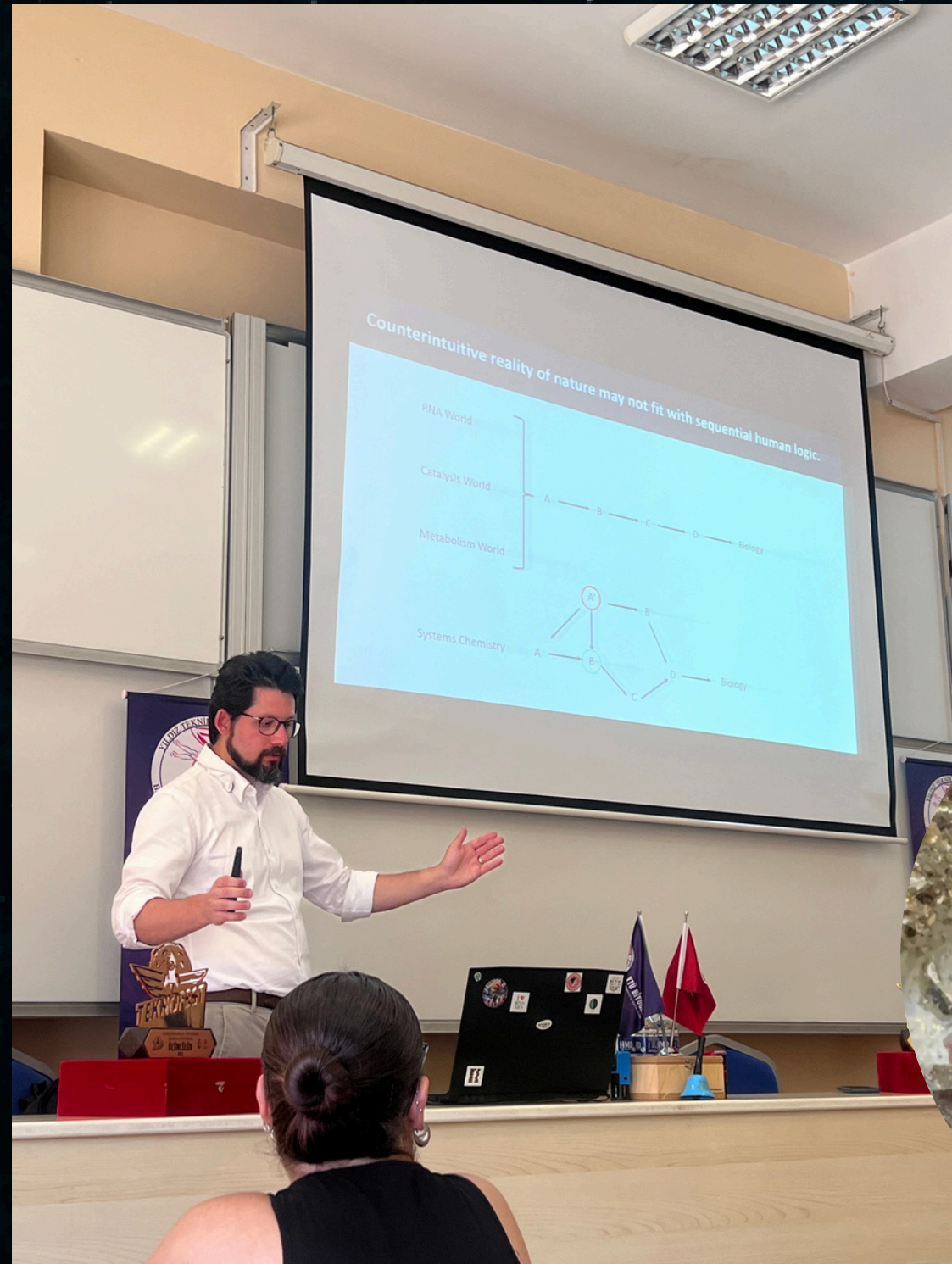
→ **STROMATOLITE**

Dr. Bruce Damer, who continues to work on the questions "How did life start on Earth?" and "How can we direct this life to a sustainable path in the cosmos?" was met on the occasion of the astrobiology conference last year. We had a **face-to-face meeting** with Dr. Damer. At this meeting, we also had the opportunity to observe the samples brought by Dr. Damer. It was truly a privilege to hold a stromatolite fossil in our own hands and smell the dust containing polycyclic aromatics isolated from the Murray meteorite!



→ **MURRAY METEORITE**

DR. DUHAN TOPARLAK & DR. ALIAKSEI MINIUKOVICH



PYRITE

2024 NASA SPACE APPS CHALLENGE

Find our project's details here: <https://tool7.godaddysites.com>

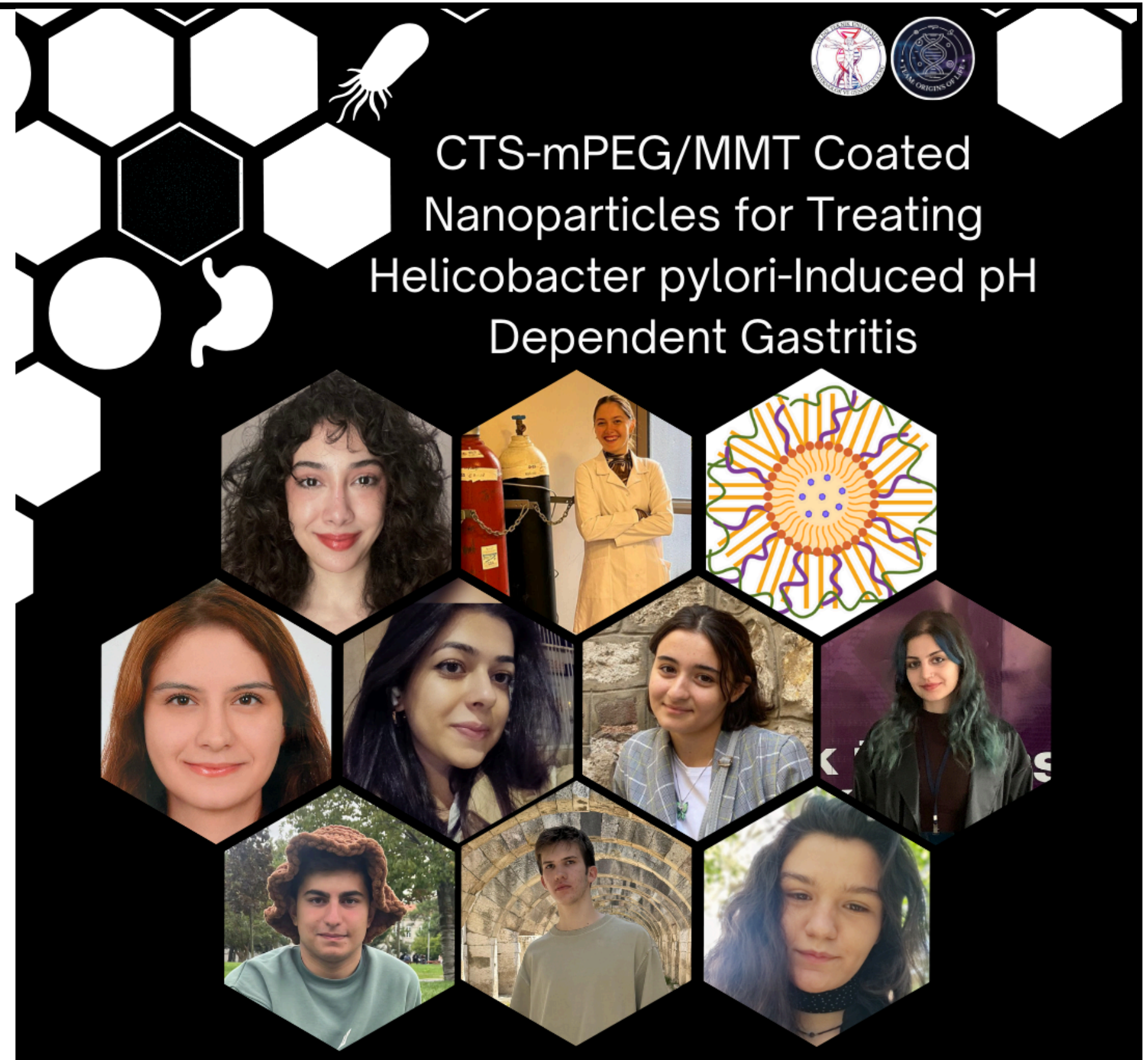
Tool

Ayşenur Saytaş, Aysel Sağlam, Beril Akgöl, Doğa Yazıcı, Esin Üsküplü, Öykü Özen
Beyond Sunlight: An Aquatic Chemosynthetic World

AQUAVERDIS

2025 GOGEC CONFERENCE

In this project, we aimed to develop **PLGA-based droplet nanoparticles** encapsulating **Eupatilin** for the treatment of CagA-positive *Helicobacter pylori*-induced gastritis. To ensure stability, biocompatibility, and acid resistance, the system is coated with **chitosan-mPEG/MMT**, allowing for controlled release of the therapeutic agent. The nanoparticles will be characterized using SEM, FTIR, XRD, and MTT assays, offering a novel and efficient therapeutic approach.

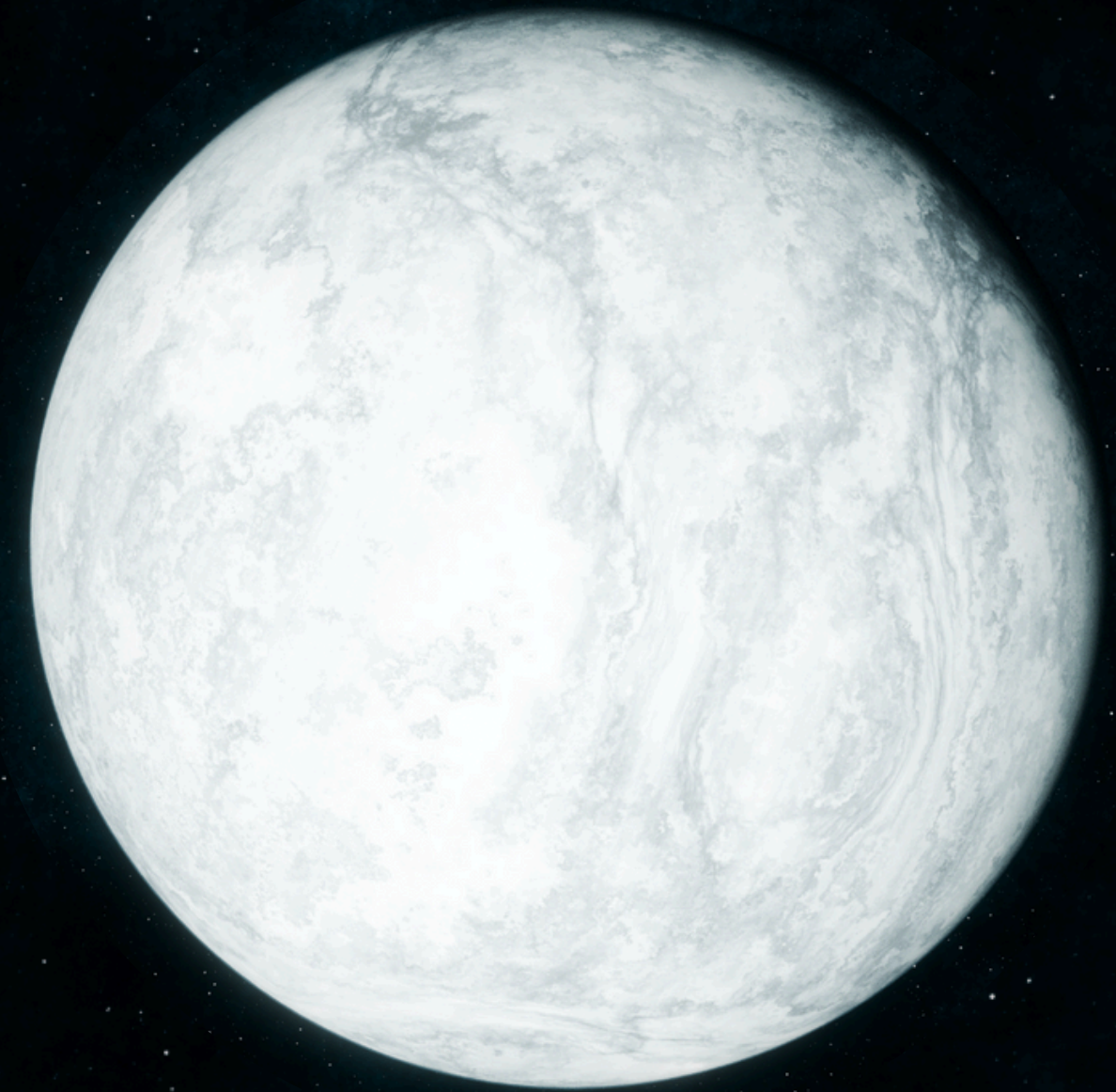


CTS-mPEG/MMT Coated
Nanoparticles for Treating
Helicobacter pylori-Induced pH
Dependent Gastritis

The collage features a central graphic of a honeycomb lattice with a bacterium, a stomach, and a DNA helix. It also includes logos of the University of the Philippines and the Department of Chemistry, and several portraits of the project members.

ABOUT ASTROBIOLOGY AND THE ORIGINS OF LIFE CONFERENCE

As Team: Origins of Life, we organize our **Astrobiology Conference every year**, inviting expert researchers in the field along with our volunteer team members, and conducting it in two sessions. The areas our conference focuses on: **the origin of life, astrophysics, prebiotic chemistry, deep-sea biology, protocell, lipid structures.**



PAST PARTICIPANTS

I. CONFERENCE

Nazım Ata
Merve Yeşilbaş
Arsev Umur Aydınoglu
Fatma Pir Çakmak
Nurhan Kahraman
Daniel Angerhausen
Deniz Kutay Atabay
Graham Lau

II. CONFERENCE

MoEP
Duhan Toparlak
Team Life to Beyond
Ulrich Muller
GUHEM
Bruno Cuevas Zuviria
Norcel
David Catling

III. CONFERENCE

Arda Deniz Dokuzoglu
Elif Asena Meric
Nurgul Celik Balcı
Dirk Schulze-Makuch
Mustafa Yücel
Matthew Pasek
Sheref S. Mansy

PAST CONFERENCE LINKS

I. Astrobiology and Origins of Life Conference

First Day

<https://www.youtube.com/live/lkBqDaMA7VU?si=3CXbU9bnwlS-DFNh>

Second Day

<https://www.youtube.com/live/7LHuLqa44xl?si=nBUhCNbzExJdrQ8m>

III. Astrobiology and Origins of Life Conference

First Day

<https://www.youtube.com/live/ntWl0wHesu4?si=igt3lVQSFEEDXRrM>

Second Day

<https://www.youtube.com/live/Y8DLEyMy0hc?si=JTy4qyRUr3aE5jRd>

<https://www.youtube.com/watch?v=9lL41ey3Dto&t=1756s>

CONTACT



TEAM: ORIGINS OF LIFE

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Club Project Team*

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